

Before Queenstown Lakes District Council

In the matter of The Resource Management Act 1991

And The Queenstown Lakes District proposed District Plan –
Rezoning Hearing Topic 12 – Upper Clutha mapping

STATEMENT OF EVIDENCE OF YVONNE PFLUGER FOR

Glendhu Bay Trustees Limited (#583)

Dated 11 April 2017

Solicitors:

Maree Baker-Galloway | Rosie Hill
Anderson Lloyd
Level 2, 13 Camp Street, Queenstown 9300
PO Box 201, Queenstown 9348
DX Box ZP95010 Queenstown
p + 64 3 450 0700 | f + 64 3 450 0799
maree.baker-galloway@al.nz | rosie.hill@al.nz

**anderson
lloyd.**

Qualifications and Experience

- 1 My name is Yvonne Pflüger. I am employed as a Principal Landscape Planner for Boffa Miskell Limited (“BML”), an environmental consultancy specialising in planning, design and ecology. I have been employed at BML’s Christchurch office for ten years and am a Principal in the company.
- 2 I hold a Masters degree in Landscape Planning from BOKU University, Vienna (Austria, 2001) and a Masters degree in Natural Resources Management and Ecological Engineering from Lincoln University (NZ, 2005). I am a Full Member of the Resource Management Law Association and a registered member of the New Zealand Institute of Landscape Architects, as well as a Certified Environmental Practitioner under the Environment Institute of Australia and New Zealand.
- 3 I have practised as a landscape planner for over 15 years on a wide range of projects including environmental and visual effects assessments, nature conservation and river restoration, and recreation planning. As part of my professional career in Austria, I have been involved as a project co-ordinator in several projects funded by the European Union, which involved the preparation of management plans for designated protected areas.
- 4 During my time at Boffa Miskell I have played a key role in preparing several landscape studies for various territorial authorities throughout New Zealand’s South Island, including studies for Banks Peninsula, the Southland Coast, the Te Anau Basin, which included the assessment of the landscape’s capacity to absorb future development. I was the project manager and key author of the Canterbury Regional Landscape Study Review (2010) and Ashburton, Invercargill, Hurunui and Christchurch District landscape studies (2009-2015). The preparation of the above mentioned studies, and subsequent hearing evidence, involved evaluating landscape character and quality for these regions and districts and advising councils on objectives and policies for the ongoing management of the landscape.
- 5 I have also prepared a large number of landscape and visual assessments for development projects of varying scales within sensitive environments, including preparation of landscape evidence for Council and Environment Court hearings. Relevant projects that I have been or am involved in within the Queenstown Lakes District include Treble Cone gondola, Parkins Bay resort and golf course, Jacks Point Zone, a number of gravel extraction operations, the Queenstown airport runway extension and several consent applications for private rural subdivisions. I also presented evidence at the current District Plan Review hearing on Chapter 21 (Rural Zone Stream 02), Jacks Point Zone and Ski Area Subzones.

- 6 Of particular relevance to this hearing is my involvement in the preparation of the Glendhu / Cattle Flat Resource Study (BML, 2006- see **Appendix 1** of my evidence) and the assessment report relating to the landscape and visual effects of the consented Parkins Bay Resort in 2006, which accompanied the AEE for the application. This assessment involved iteration between the Darby Partners' designers and the BML assessment team and has led to the consented proposal.
- 7 I confirm that I have visited Glendhu/Parkins Bay on several occasions over the past years, including most recently in February and March 2017. As part of my assessment work on site, I have prepared a photographic record of the area from a variety of viewpoints within Glendhu/Parkins Bay and from the Wanaka- Mt Aspiring Road. A number of these images are included in my graphic attachment (**Appendix 4**), which I will refer to throughout my evidence for illustrative purposes.
- 8 In preparing this evidence I have reviewed:
- (a) The reports and statements of evidence of other experts giving evidence for Glendhu Bay Trustees Ltd, relevant to my area of expertise, including:
 - (i) The evidence Mr John Darby of Darby Partners
 - (ii) The design and master planning evidence of Mr Brett Thomson
 - (iii) The planning evidence of Mr Chris Ferguson
 - (iv) The ecology evidence of Dr Judith Roper - Lindsay
 - (v) Cattle Flat Resource Study Resource Study, which was prepared by BML in 2006 and used to inform the land use planning for Treble Cone gondola
 - (b) Technical landscape report accompanying S42a report prepared by Marion Read landscape architect
- 9 I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2014. This evidence has been prepared in accordance with it and I agree to comply with it. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

Scope of Evidence

- 10 I have been asked by Glendhu Bay Trustees Ltd to prepare evidence in relation to the proposed Glendhu Station Zone (GSZ) to assess the natural character, landscape and visual amenity effects of the proposal. My evidence is focussed

on the effects from the already consented level of development at Parkins Bay¹, as compared to the proposed level of development through the special zone, including the manner in which staging and implementation has been changed compared to the consent. As part of my evidence I will also comment on the positive elements and environmental benefits that formed part of the consented development, which will be retained and advanced further through the zone.

- 11 I structure my evidence under the following headings:
- (a) Background, including Cattle Flat / Parkins Bay Resource Study
 - (b) Existing Environment, including landscape context and site description
 - (c) Proposal Description, including changes to relief sought
 - (d) Assessment of Visual, Landscape and Natural Character Effects
 - (e) Statutory Considerations and Landscape Status
 - (f) Conclusion

BACKGROUND

Cattle Flat / Parkins Bay Resource Study

- 12 The purpose of the resource study for Glendhu and Cattle Flat Stations (see **Appendix 1** of my evidence) was to give guidance to the landowners of the Glendhu and Cattle Flat Stations (in association with Darby Partners) as to the future management of the two stations. The context for the resource study was that both Glendhu and Cattle Flat Stations had completed the tenure review process. The objective of the resource study was to identify features or physical characteristics that will influence future land use options. Across the wider study area only a few locations were considered to have some potential to absorb a greater level of landscape change. The Parkins Bay area was identified as having moderate or varied potential to absorb change. This finding reflects:
- (a) the extent of existing modifications resulting from relatively intense agricultural use (past and present);
 - (b) a contained visibility due to the surrounding landforms and inward focus of the area towards Parkins Bay itself;

¹ through consent RM070044 and confirmed by Environment Court interim and final decisions

- (c) the relative quality of ecological values in the valley landscape compared with much of the higher-lying station land.
- 13 The visual quality and landscape context of the area express a degree of human modification, domestication and agricultural activity. The majority of areas included in the resource study are more natural than the Glendhu-Parkins Bay landscape. This makes the area included in the proposed Glendhu Station Zone more suitable to absorbing further change, avoiding more natural landscapes. It was recognised that the capability of individual sites would vary both in relation to the site's characteristics and in relation to the scale and prominence of any proposed built development. As part of the resource study it was noted that the specific siting and design of any new buildings must be complementary to the character and qualities of the landscape.
- 14 The design for the consented Parkins Bay development was based on the findings of the study, siting buildings in the areas of varied or moderate change absorption capability. The current proposed zone builds on these original design concepts and underlying landscape characteristics.

EXISTING ENVIRONMENT DESCRIPTION

- 15 This section of my evidence provides a description of the broad landscape context and its formative processes, followed by a detailed characterisation of the immediate landscape that the proposed GSZ encompasses.

Location and Wider Landscape Context

- 16 Parkins Bay is situated on the western shore of Lake Wanaka, some 13km west of Wanaka township to the south of the Matukituki River mouth. The proposed GSZ is located within the north-eastern corner of Glendhu Station. The GSZ is surrounded by distinctive and dramatic landscapes, such as Lake Wanaka, the Matukituki River or the Harris Mountain Range. Parkins Bay is within a sheltered part of Lake Wanaka - partially separated from the main lake by Roy's Peninsula and Glendhu Bay.
- 17 The Cattle Flat resource study/ landscape assessment described eight distinctive character areas within the surrounding environs of Glendhu Station:
- (a) Lake Wanaka
 - (b) Glendhu, Parkins and Paddocks Bays
 - (c) Roy's Peninsula
 - (d) Fern Burn
 - (e) Ice sculpted rocks
 - (f) Harris Mountains

(g) Lower Motatapu Valley

(h) Lower Matukituki

- 18 In terms of its formative processes the surrounding landscape shows clear signs of ice-age glaciation, located at the confluence of the Matukituki and Motatapu glaciers. Overlaid on this ice sculptured landscape are the fluvial and depositional landscape characteristics of the valley floors and lake edges. The lakeshore benches and beaches of Glendhu Bay, Parkins Bay and Paddock Bay display a distinctive landscape character. These beaches were formed following the drop in lake level that accompanied the retreat of glaciers after the last ice age. The Lake Wanaka islands and Roy's Peninsula north of the study area are partly submerged equivalents of the landforms west of Parkins Bay. The outwash of gravel from the Matukituki River now connects the peninsula (former island) to the mainland.
- 19 The Glendhu and Parkins Bay landscapes are dominated by the lake and the major enclosing mountain ranges and peaks. Roy's Peninsula and the headland west of Damper Bay constrict the views between Lake Wanaka and Glendhu Bay, visually enclosing the areas from outside views. The bay area is first viewed from the Wanaka-Mt Aspiring Road as it rounds the lower slopes of Roy's Peak.
- 20 The lakeshore area forms a well-defined transition between Lake Wanaka with its tree-lined (willows and poplars) foreshore and the pastoral, more open landscape to the south. The willows and poplars along the lakeshore and on the Fern Burn delta contrast with the natural character of the lake and mountain ranges and add visual diversity. The area has picturesque qualities which reflect its small scale, sheltered bays and colourful and varied vegetation cover. These characteristics contrast with the dramatic natural landscapes of the elevated ice sculptured landform to the west and the Harris Range beyond.
- 21 An existing campground is located in Glendhu Bay extending over 1km along the lake shore, on the true right of the Fern Burn (**see Appendix 4, VP 1 and 2**). This part of the Lake Wanaka foreshore is very popular with campers, boaters and picnickers, particularly over the summer months. Glendhu Bay recreation reserve is an extremely popular camping ground, which is generally full to capacity over the peak holiday periods. The existing campground and associated structures have noticeable visual effects on the landscape character of the immediate foreshore. The enclosing landforms and the protection they provide result in Parkins Bay having many of the qualities of a small picturesque lake rather than as an extension of the spacious, wild and dramatic main lake.
- 22 Alluvial flats south of Glendhu Bay dominate the landscape around the lower Fern Burn alongside the Motatapu Road. They denote the old path of the Motatapu River, which has now been captured by the Matukituki River and no longer enters

the lake at Glendhu. The Fern Burn Flats form the entrance to the Motatapu Valley with the largely willow-lined Fern Burn riverbed. The terraces on the true right of the Fern Burn and on the Parkins Bay flats are used for more intensive farming than the steeper surrounding slopes. Within this valley landscape shelterbelts, hedges and small exotic conifer plantations are distinctive features, giving it a more structured and modified appearance. Alpha Burn enters the flats through an incised gorge in the slopes below Mt Alpha and then meanders to Glendhu Bay. The willows along the riverbed of lower Alpha Burn are a distinct part of the developed farmland in this area. Visually the moraine landform along the true left of Fern Burn above Parkins Bay separates the upper Fern Burn flats from the lake.

Site Description Glendhu Station Zone

- 23 The proposed GSZ lies within the lower landforms surrounding Parkins and Glendhu Bay. While a large area of proposed Open Space Farm Activity Area extends across the adjacent *roches moutonees*, the areas where built development is currently proposed are confined within the modified bay and Fern Burn Flats area. Lake Wanaka forms the boundary of the development area within the GSZ to the north. Alpha Burn Stream marks the eastern boundary. The southern boundary is the crest of the terraced slopes that back Parkins Bay, and a wide gully that narrows towards the lake forms the western boundary. This part of the proposed zone contains hummocky and terraced slopes on the moraine landform and the flat areas located on the Fern Burn fan and the Lake Wanaka foreshore. The *roche moutonee* rises immediately behind the proposed Golf, Residences and Foreshore Activity Areas to the west, while the Harris Mountains form the distant backdrop when viewed from the lake. The proposed Open Space Farm Activity Area and regeneration/ revegetation will extend beyond this area along the slopes of the *roche moutonnee*.
- 24 Glendhu Station has been grazed as a pastoral lease and following the tenure review as private farm land since the 1850s. Changes in landuse have been accompanied by changes in the landscape. The Beech forest that previously would have existed in many parts of the station were lost to fire and replaced by tussock. Under early pastoralism the station area became introduced pasture with fences, tracks, roads, shelter belts, farm buildings and homesteads. The land cover changes and historic buildings, such as woolsheds, provide the context for this cultural landscape.
- 25 At a broad overview scale the Parkins/Glendhu landscape can be seen as a developed area or 'node' of modification set in an otherwise predominantly natural mountain, river and lake landscape that extends in all directions. At a more detailed scale, this modified area is seen as containing a number of subtly distinct landscape areas reflecting differences in their landform, landcover, landuse and

history, displaying a range of distinctive local characteristics and qualities. In general terms the Fern Burn Valley landscape can be differentiated into:

- (a) the lakeshore areas, located on the northern side of Wanaka- Mt Aspiring Road,
- (b) the western hummock slopes on the western side of Fern Burn Stream, and
- (c) the eastern farm terraces east of Fern Burn Stream, which also contain the existing node of development around the Glendhu Farm Homestead.

Glendhu/ Parkins Bays and Lakeshores

- 26 The lakeshore areas to the south of the Fern Burn Delta contain the existing campground (**see Appendix 4, VP 1 and 2**). To the west of the delta the shore currently contains open paddocks where the golf course is consented, with the consented jetty, clubhouse and shearers' quarters at the base of the rocky elevated lakeshore landform in the west (**see VP 5 to 8**). The lakeshore near these buildings (and further west) contains several mature stands of visually prominent Lombardy Poplars (approximately 30 metres in height) as shown in **VP 7**. This is a flattish area with about 150m between the lakeshore and the base of the elevated rocky knoll, where the buildings and car parks were consented. The eastern boundary of this area is currently formed by a row of poplars along the DoC walkway connecting the lakeshore with the Mt Aspiring Road.
- 27 East of the poplars are open alluvial flats that extend to the Fern Burn delta. Part of the consented golf course (holes 11-18), practice area and maintenance compound) will be situated within this area. Currently, the open flats are used as an informal, small-scale golf course and native woody vegetation has been removed, with stands of willows and other exotic trees along the shore line (**see VP 6**). The improved pasture extends from the road to close to the lakeshore and across to Fern Burn, with a few willows located along Fern Burn. The maintenance compound is consented in this area near the road (**see VP 8**). This eastern side of the fan contains mature willows, poplars and conifers which visually separate the shore of Glendhu Bay from Parkins Bay.

Western Hummock Slopes

- 28 South of the Wanaka -Mt Aspiring Road, moraine material has formed a hilly landscape along the eastern base slopes of the ice sculptured mountain above Parkins Bay (**see VP 11**). This part of the valley floor rises towards the distinct landform of the scoured rock formation and provides a diverse surface structure. The terraces and slopes which extend south from the lakeshore areas were grazed in the past, but have been retired from grazing. As part of the consented development in this area planting of native vegetation has been undertaken over

the past years as described in Dr Roper-Lindsay's evidence². The area also contains regenerating matagouri, kanuka and bracken, particularly along the terrace and hummock faces as well as weed shrubs, such as briar rose. The visitor accommodation residences are consented in several pods within this hummocky and terraced area (**see VP 11 and 12**). The landform provides high absorption capabilities for low, small-scale structures. One of the existing tracks has already be upgraded to form an access road to the house sites on top of the western terraces, where earthworks are currently taking place to excavate the building platforms of Stage 1 of the consented development. Mt Aspiring Road follows the base of the lowest terrace.

Eastern Farm Terraces and Farm Homestead Area

- 29 The Motatapu Road and Fern Burn Stream dissect the Fern Burn Valley into two parts. The flat grazed terraces in the eastern side are distinctively different in their landform compared to the hummocks on the western side described in the section above. The terraces step up from the lower -lying lake shore on the northern side of the Wanaka- Mt Aspiring Road with pronounced steep terraces face (approx 3-4m in height). Visually the lower terraces are perceived together with the shore area containing the campground, which are on the opposite side of the road at a similar elevation (**see Appendix 4, VP 1 and 2**). The terrace edges are pronounced through the presence of mature conifers, while the flat terraces are devoid of woody vegetation. Alpha Burn confines the area to the east with dense stands of willows lining the stream.
- 30 The Glendhu Station Homestead area is located just to the north of the Motatapu Road turn off. The area is visually secluded through a complex series of river terraces and numerous stands of mature trees that surround the farmstead area. A number of buildings are located within this cluster, while only a few of them are visible from the road (**see VP 3 and 4**). A large woolshed is the most prominent building when approaching from the east, as it is on the more open flats near the Motatapu Road turn off (**see VP 2**). The actual homestead building is located on the northern side of the road, close to the shores of the Fern Burn Delta.

CONSENTED PARKINS BAY GOLF RESORT

- 31 In summary the consent confirmed by the Environment Court in 2012 provides for the following development components:

² Stock have been removed from the consented development area subject to the consent over the last two years. Stock have been excluded from all the area south-east of and including the Gully/wetland planting since June 2015; and from the entire property south of the road since February 2016. A small number of animals occasionally graze land to the north-west of the Gully/wetland, over the roche mountonee.

- (a) 18 hole golf course spanning Mt Aspiring Road;
- (b) lakeside buildings:
 - a club house with restaurant and café;
 - a jetty;
 - 12 visitor accommodation units over two levels in three buildings;
- (c) 42 residences/visitor accommodation units of specific design to be set on lots of between 3525m² and 8719m²;
- (d) revegetation of approximately 65ha including areas within the golf course and around the proposed dwellings;
- (e) covenanted areas from which stock are excluded to allow for natural regeneration; and
- (f) a network of public access trails.

CHANGES TO RELIEF SOUGHT

- 32 The proposed Glendhu Station Zone includes a number of components of relevance to this landscape assessment. Since preparing the submission the submitter has undertaken a review of the activities originally proposed in the Glendhu Station Zone chapter and has amended the relief sought. I provided input and recommendations in relation to these changes to ensure that any potential landscape and visual amenity effects can be addressed. The changes include amendments to activity areas in terms of their spatial extent, as well as proposed changes to plan provisions, which are explained in detail in Mr Ferguson's evidence. An updated version of the structure plan is attached to Mr Ferguson's evidence (11 April 2017), and the proposal is described within the evidence of Mr Thomson (4 April 2017).
- 33 The proposed amendments to the relief sought in relation to the spatial extent of activity areas can be summarised as follows:
- (a) Lodge Activity Area: This originally proposed area is removed from the structure plan together with related provisions, and the land included within the Open Space Farm Activity Area.
 - (b) Lake Shore (LS) Activity Area: The extent of this area has been modified to remove it from the high-lying terrace to the west of the consented Shearers' Quarters. The area is extended to the east beyond the area of the consented Clubhouse to encompass the head of Parkins Bay, which was contained within the consented golf course. The shape of the activity area has been refined to contain built development on the lower terrace and along the lake shore.

- (c) Residential (R) Activity Area: The residential pod on the northern side of Wanaka- Mount Aspiring Road has been removed and the golf course will remain on this currently open paddock where it is currently consented. The four remaining pods on the hummock slopes are aggregated into one larger pod, removing the area of OS/F in the center of the pod, which shifts the expectation from farming to a focus on revegetation. The Residential Activity Area now also identifies the proposed locations for the 50 residences within a Homesite overlay. As part of the amended relief, I was asked to consider the location of the eight additional specific homesites, which are identified as HS 2, 7, 12, 14, 15, 23, 25 and 27 on the structure plan. These sites are not identical and have been refined since the eight homesites sought at the time of the Council land use consent hearing. I assessed the location of these eight homesites as part of my on-site investigations in the context of the consented 42 homesites, which are also identified as part of the “Homesite Overlay” within the overall R Activity Area. The height restrictions on all the Homesites have been refined and reduced from the height limit as submitted.
- (d) Golf (G) Overlay: This overlay is proposed to extended over the consented Maintenance Compound (8m building height) and the Fern Burn Stream.
- (e) The Moraine Slope Protection Area Overlay has been edited slightly due to better contour information to better fit the moraine slope.
- (f) The Covenant Protection Overlay has been added to the Structure Plan over much of the GS(OS/F) activity area, and provisions included to reflect the underlying restrictions on development imposed by the landuse consent.

ASSESSMENT OF NATURAL CHARACTER, LANDSCAPE AND VISUAL AMENITY EFFECTS

34 The assessment of landscape and visual amenity effects in this section is structured by proposed activity area, outlining the visibility, and visual and landscape effects for each of the development components within the GSZ separately. This is followed by an assessment of cumulative effects that includes an overall analysis of activities. The assessment of effects of the proposed Glendhu Station Zone takes into account the following:

- (a) the change absorption capability of the landscape as outlined in the existing environment description of my evidence, based on the findings from the Cattle Flat Resource Study;
- (b) the consented resort development and the expected changes to the landscape associated with the components of this development;

- (c) the proposed changes associated with the GSZ, based on the amended relief sought in terms of spatial extent and provisions.

Campground (C) Activity Area

- 35 The C activity area extends across the two terraces on the southern side of Wanaka- Mt Aspiring Road opposite the existing campground. The location of the campground extension would be visually associated with the existing campground that contains numerous buildings of various sizes (**see Appendix 4, VP 1 and 2**). Within the proposed activity area a Spatial Layout Plan (SLP) is proposed as a Restricted Discretionary Activity with buildings as a controlled activity in locations identified in the SLP. The matters of discretion for the SLP include the layout and location of open space and camping ground activities; the effects on landscape and amenity values, including to ensure terrace escarpments and areas immediately above any terrace remain free from activity, and the visibility and dominance of built form when viewed from Wanaka – Mount Aspiring Road. A setback of 20m from roads and a maximum building height of 5m will help to avoid visual dominance adjacent to the main viewpoints long Wanaka – Mount Aspiring Road.

Visibility and Visual Effects

- 36 Visibility of the proposed C activity area would be predominantly confined to a 500m long stretch of the Wanaka- Mt Aspiring Road between the Alpha Burn bridge and the Motatapu Road turn off (**see Appendix 4, VP 1 and 2**). Any visual effects would be seen in the context of the existing development in this area. When travelling in a westerly direction the background to the view is formed by the Harris Mountains near Treble Cone. The steeply rising slopes of Roy's Peak forms the impressive backdrop when approaching from the west. While the currently open terrace contributes to the openness of the foreground view, the focal point of the views is formed by the surrounding mountain ranges. The long-distance views would remain due to the low height limit and setback for buildings from the road. The location of any buildings would be assessed through the restricted discretionary SLP where their visibility can be taken into account.
- 37 The majority of the upper terrace is obscured from views from the Wanaka- Mt Aspiring Road through the difference in elevation between terraces. While the lower terrace and the northern edge of the upper terrace are clearly visible from the road, buildings at 5m height could potentially be absorbed without any visual effects with an appropriate setback. I support the requirement for a SLP in the C activity area, as I consider it important to ensure that buildings would be located sensitively at the back of the terraces, away from the road and edge of the upper terrace.

Landscape Effects

- 38 The existing campground currently represents the most intense node of modification and activity within the Glendhu/ Parkins Bay area. In particular, during the summer months the existing campground along the lake shore is a bustling place with a high number of caravans parked up in the area. In terms of their landscape sensitivity I consider the flat terraces suitable for the activity area due to the higher level of modification that has occurred on the more intensively farmed flats. On the flat terraces the need for earthworks can be minimised and screen planting could effectively reduce visibility of structures and campers.

Natural Character Effects

- 39 There would be no natural character effects in relation to the campground activity area, since the area extent was amended to exclude the Alpha Burn stream bed and a 20m setback requirement for buildings is proposed.

Farm Homestead (FH) Activity Area

- 40 The FH activity area straddles the northern end of Motatapu Road, near the turn-off from the Wanaka- Mt Aspiring Road. Currently this area contains a mix of buildings, structures and uses, such as a woolshed, wedding function venue and a number of sheds on the northern side of Motatapu Road (**see Appendix 4, VP 2 to 4**). The open terrace area on the eastern side of Motatapu Road is visually more sensitive than the more complex terrain to the west (**see VP 2**), where clusters of mature trees provide more visual diversity and screening of existing development (**see VP 4**). The Fern Burn has created a terrace near the western-most extent of the proposed FH area that cannot be seen from outside viewpoints due to the low-lying nature and the surrounding mature trees associated with the terrace edge and stream.
- 41 The use of this area is restricted to small scale commercial activities that are designed to complement and support the campground and visitor accommodation activities, such as farm stays, conferences, events and functions (e.g. weddings), farm tours. This would also include use of existing buildings relating to farm products and farming, such as a small scale butcher, packing shed, craft brewery and tannery, together with farming structures. There would also be provision for outdoor recreation activities, public access tracks, a new road access alignment and areas of indigenous revegetation.
- 42 Similar to the campground activity area, buildings would be controlled. Small scale farm buildings (up to 100m² and 4m in height) are permitted, as they are within the Open Space Farm (OS/F) activity area. Visitor accommodation and other commercial activities would be restricted discretionary, where the scale / bulk and location, as well as the external appearance of buildings with respect to

the effect on visual and landscape values of the area can be taken in to account. A 20m setback from the roads, in combination with a lower limit for building height (4m) and building size (max 500m²) within 100m of roads, will reduce the visual prominence of any buildings on the more open flat areas adjacent to most likely viewing population. In the remaining, more enclosed areas within FH an 8m height can be more easily absorbed.

Visibility and Visual Effects

- 43 The visual sensitivity for the eastern part of the FH activity area is higher than for the western part on the upper terrace where existing development is located. I therefore support the proposed rule package that directs larger-scale buildings away from the eastern part of FH, which is located within 100m of Motatapu and Wanaka- Mt Aspiring Road (**see VP 2**). The range of public viewpoints where the remaining area can be seen from is very limited due to the existing vegetation and complex landform (**see VP 3 and 4**). I, therefore, consider the proposed activity status for potential buildings within this existing cluster of modification appropriate, as they area can be differentiated from the OS/F areas in terms of the existing intensity of development.

Landscape Effects

- 44 With low, smaller-scale buildings on the eastern side of Motatapu Road, a more comprehensively designed entrance situation to the activity area could be created from the Wanaka- Mt Aspiring Road turn-off without adverse effects on the more open part of the FH area. In my view, a clustered approach to development that is in character with the existing woolshed and homestead in this area, would not create adverse landscape effects in light of the existing level of development already present in this node of existing buildings.

Natural Character Effects

- 45 There would be no natural character effects in relation to the farm homestead activity area, since the area excludes the Fern Burn stream bed and a 20m setback requirement for buildings is proposed.

Lake Shore (LS) Activity Area

- 46 The Lake Shore Activity Area (LS) is designed to accommodate a series of buildings, including 12 visitor accommodation units over two levels in three buildings, functions and events. A consented golf course club house with restaurant and café and visitor accommodation (referred to as Shearers' Quarters) are located in the western part of the proposed LS areas as part of the resort. The proposed level of development within the LS area is closely aligned with the consented buildings, while the extent of the area wraps around the head

of Parkins Bay (see Appendix 4, VP 5 to 7). In order to also accommodate more public amenities and further car parking in the LS area, the buildings may be located further east than under the consented development (see VP 11 and 13). However, the size and scale of built development (3,500m² GFA for all buildings) would remain similar to the consented buildings.

- 47 The LS area also allows for a range of activities anticipated under the consent, such as a jetty to facilitate public access to the activity area from Lake Wanaka and associated public access tracks, vehicle access and parking.

Visibility and Visual Effects

- 48 The visibility of the consented development would be lower than the potential visibility of buildings, if they were to be located on the western side of the proposed LS activity area. This difference in visibility is due to the screening function of the terrace landform that confines the LS area to the west and the existing vegetation in form of mature trees, in particular poplars. The eastern part of the LS area does not benefit from the same level of existing screening. Therefore, buildings in this area would be visually more prominent when viewed from the DOC walkway (see VP 7) and the Wanaka- Mt Aspiring Road (both Glendhu Bluffs (see VP 13) and the straight stretch of road immediately to the south of the LS area (see VP 8)). In my view this increased potential visibility would not necessarily translate into adverse visual effects, if the buildings are well-designed and appropriately located in relation to the golf course and lake shore.

Landscape Effects

- 49 The level of development at the head of the bay would be more pronounced, but in my view the integration of public amenities into the design of the area may provide benefits that change the overall perception of users of the area in relation to the built development associated with the golf course. It was never the intention to hide the components of the Parkins Bay golf resort and in my view, it would not be incongruent to see these core parts of the development more clearly from public view points. In general, buildings and jetties are appropriately placed at the head of a bay, as is often the case with homesteads in the district. I consider it, however, important to direct car parking away from these more prominent locations, so that high-quality buildings can act as focal points within Parkins Bay.

Natural Character Effects

- 50 The natural character to the lake shore itself within the LS activity area is currently comparatively low due to the almost complete absence of native vegetation. The natural patterns and processes would be even further modified through the consented golf course and associated buildings. In addition, a 20m setback from

waterways and a 3m setback from the boundary with the marginal strip along the Lake Wanaka lakeshore is proposed. I, therefore consider the natural character effects that would arise over and above the consented development to be low.

Golf (G) Activity Area

51 The Golf Activity Area (G) is designed to incorporate the golf course, maintenance, operational facilities, underpasses and driving range. This would be very similar to what has been consented in the past. A Golf Facilities overlay within this Activity Area provides for a maintenance compound contained in the same general location as the consented compound with a 20m setback from the road and the Fern Burn (**see Appendix 4, VP 5 to 8**).

Visibility and Visual Effects

52 The visibility of the golf course would remain the same as under the existing consent. Currently, the compound is consented in the south eastern corner of the G area, next to the Wanaka – Mt Aspiring Road and the Fern Burn (**see VP 8**). The visibility of the maintenance compound would be very similar to this as it is in the same general location.

Landscape Effects

53 In light of the existing consent it is considered that no additional landscape effects would arise from this proposed activity area in the GSZ.

Natural Character Effects

54 The natural character effects of the G area on Lake Wanaka would be identical to the consented golf course. In addition, the G area extends further east, across the Fern Burn, which was proposed as OS/F in the past. The design of a golf course would have to be undertaken in a manner that the natural patterns and processes of the Fern Burn are not impacted upon and I understand this would require consideration through a concession under the Conservation Act. A 20m building setback from the waterway and a 7m earthworks setback either side of the waterway would assist with minimising the effects that could arise from an encroachment of the more intensively managed turf onto the gravel riverbed.

Residential (R) Activity Area

55 The Residences Activity Area (R) provides for 50 residences and/or visitor accommodation units, outdoor recreation activity, public access tracks and areas of indigenous revegetation. As part of the consented Parkins Bay Resort 42 homesites were identified and some of these sites are currently undergoing earthworks to establish the building platforms. The specified Homesites Overlays provide for the location of the 50 residences / visitor accommodation units, which

includes an additional eight sites for residences that do not form part of the consented development. For the consented homesites the visibility was analysed in detail through the past Council and Environment Court hearing processes. The eight additional homesites have been investigated further following the Council and Environment Court hearing to identify how they could be integrated into the site and wider landscape without causing adverse effects.

- 56 My assessment of effects below focusses on these eight homesites, which I have visited as part of my on-site investigations to assess their suitability to accommodate further residences of the scale proposed. The eight additional specific homesites, which are identified as HS 2, 7, 12, 14, 15, 23, 25 and 28 on the structure plan are located in three separate clusters within the consented residential/ visitor accommodation development. HS 2 and 7 are on lower terraces near the eastern boundary of the activity area; HS 12, 14 and 15 are in close proximity to each other in the eastern corner of the top terrace; while HS 23, 25 and 28 are on the upper western terrace.
- 57 I found during my site investigations that there are other higher and lower-lying homesites in the vicinity of these proposed eight locations as described in further detail below. They are all located within a few metres of neighbouring consented sites and not particularly high or outlying in comparison to the other 42 homesites. Based on my understanding of the topography I gained from my own site investigations, contour information, and the proposed additional height restrictions now included, I was able to draw conclusions about the potential visibility of the proposed homesites.

Visibility and Visual Effects

- 58 The varied landform incorporating a number of rising terraces and hummocks to the west of the Fern Burn and south of the Wanaka – Mt Aspiring Road is complex. Within this landform small-scale, appropriately designed residences can be absorbed without adverse visual effects (**see Appendix 4, VP 9 to 12**). Some of the currently consented homesites required additional screening vegetation to minimise their visibility from the Wanaka – Mt Aspiring Road. A similar identification process was followed for the additional eight homesites.
- 59 In the following paragraph I provide a table with details in relation to the location and landform for each one of the homesites:

Homesite Number	Location and Landform
HS 2	Located on the second terrace to the south of Mt Aspiring Road with relatively flat terrain. Located to the west of consented HS 1 and the north-east of consented HS 5. RL 305.0m cut into existing terrain with access from south. .
HS7	On slightly elevated terrace immediately adjacent to west of consented HS 6. Site naturally well contained by surrounding hummock landform (340m). RL 337.0m cut into existing terrain with access from south.
HS 12	On eastern side of consented HS 13 (RL 359.5m). Together with consented 16-18 these sites form a high-lying cluster in south eastern corner. The ridge provides a number of dips and to accommodate cut-in building platforms that would not appear on the ridgeline. RL 357.0m cut in from southern side of ridge with access from west behind HS13.
HS 14	On north western side of consented HS 13 (RL 359.5m). Together with consented 16-18 these sites form a high-lying cluster in south eastern corner. The ridge provides a number of dips and to accommodate cut-in building platforms that would not appear on the ridgeline. RL 355.0m with direct access form east. Well below HS13 and access road.
HS 15	On western side of consented HS 13 (RL 359.5m), east of HS 16 (RL 355.5m). Together with consented 16-18 these sites form a high-lying cluster in south eastern corner. The ridge provides a number of dips and to accommodate cut-in building platforms that would not appear on the ridgeline. RL 358.0m with access form south. Below HS13 and access road.
HS 23	In north western corner near gully landform, where consented HS 24, 26 and 27 lie in centre of this cluster. Located near ridge together with consented HS22, which is lightly lower-lying (RL 361.0m). Cut into landform from south (RL 362.0m) with access from south; below access road.
HS 25	In north western corner near gully landform, where consented HS 24, 26 and 27 lie in centre of this cluster. Located in upper part of gully below ridge near water tank. RL 364.0m, access from east
HS 28	In north western corner near gully landform, where consented HS 24, 26 and 27 lie in centre of this cluster. Located on small lower-lying terrace, well below the main ridgeline. With RL 351.0m one of lower sites in consented cluster below access road.

60 Based on my on-site analysis I could not detect any substantial differences in the visibility of the consented homesites compared to the eight additional sites, which were suitable in my view to accommodate dwellings without inappropriate adverse visual effects.

Landscape Effects

61 The landscape effects of the consented development with 42 homesites would not be exacerbated or changed to a significant degree, given that all eight homesites are located throughout the existing development area. This means that the extent of the modified area would not be increased and the effects on the landscape, as they relate to visibility would not be substantially different to the currently consented scenario. I consider that the eight proposed homesites can be absorbed into the landscape without inappropriate adverse landscape, visual or amenity effects.

Natural Character Effects

- 62 No natural character effects would arise, since none of the sites are located in proximity to the lake, a waterway or wetland.

Cumulative Effects of Proposed Glendhu Station Zone

- 63 The previous sections covered the potential effects associated with each of the individual components of the proposed GSZ that contains a level of development higher than would be expected in the existing Rural Zone of the ODP. However, the cumulative effects that would arise in combination of these effects are also relevant.
- 64 In this context it is worth mentioning that the GSZ also includes a wider area that is not just confined to Glendhu/ Parkins Bay and the lower Fern Burn Valley, but includes large areas of Open Space Farm Preserve Activity Area (OS/F), which provide for farming activities, recreation activities, including public access tracks, farm access tracks, areas of ecological enhancement and indigenous revegetation. Small scale farm buildings (up to 100m² and 4m in height) are permitted within the OS/F activity area.
- 65 The majority of the GSZ would be managed for farming purposes with regeneration, which takes into account its high landscape values. Within the OS/F revegetation is proposed on the Moraine Slope and the Gully/tributary areas near Fern Burn (required by EC decision), as described in the evidence of Dr Roper-Lindsay.
- 66 Within the Covenant Protection Areas, which are described in detail in Mr Ferguson's evidence, an elevated level of protection will be achieved through non-complying activity status for buildings, apart from farm buildings, building alterations/ relocations, temporary buildings and a wedding chapel. The exceptions are two Covenant Protection Areas on the Fern Burn Valley floor, where up to two dwellings would be a restricted discretionary activity. Through the introduction of this additional level of protection landscape areas that have been identified as sensitive and protected through covenants as part of the resource consent, would receive a higher level of protection than in the Rural General Zone.
- 67 The proposed development within the GSZ is confined to the less natural parts of the station and confined to the visual catchment within the lower Fern Burn Valley floor, including the Glendhu/ Parkins Bay lake shore. Within this comparatively small part of the station the level of existing and consented development is considerably higher than on the surrounding landscape character areas. In my view, the submitter's approach to consolidate development in this confined part of the wider landscape, is preferable to a spread of development.

68 While there would be cumulative effects within the lower Fern Burn visual catchment, not all components would be perceived at the same time by travellers along the Wanaka- Mt Aspiring Road. The only viewpoints where all development aspects of the zone would be perceived in combination are high-lying vantage points, such as Roy's Peak. However, due to the existing level of development within the area, I do not consider that the additional cumulative effect would be significantly adverse.

STATUTORY CONSIDERATIONS

Landscape Status ONL versus VAL

69 The majority of the landscape stretching for many kilometres to the north, west and south of the proposed GSZ is highly natural and is identified as an Outstanding Natural Landscape (ONL) in the Operative and Proposed District Plan. The ONL is continuous to the Mt Aspiring National Park some 37kms to the west. Roy's Peninsula to the northeast of Parkins Bay is a prominent landform protruding out into the lake and is identified as an Outstanding Natural Feature (ONF) in the District Plan.

70 Within Appendix 8B to the Operative District Plan the Fern Burn Valley is identified as a Visual Amenity Landscape (VAL). Planning Map 7 of the PDP however incorporates this area into the broader ONL. The evidence of Dr Read considers the Fern Burn valley flats should remain as part of the wider District ONL as identified in the PDP (para 3.1). Dr Read provides in her paras 6.3 -6.4 background to the Environment Court decision³, where it was noted by the Court that the Fern Burn Flats form a relatively small area, completely contained and dominated by the surrounding mountain and lake landscape. This led the Court to the conclusions that the valley flats are too small to be separated out from the wider ONL, since the mountains dominate the perception of the landscape even when viewed from within the more modified valley.

71 I reviewed the relevant parts of the Environment Court decision, as well as the relevant reports prepared by Dr Read⁴ and Ms Steven⁵ for the District Plan Review. I also visited the areas and formed my own view about the scale in

³ Upper Clutha Tracks Trust v Queenstown Lakes District Council (first Parkins Bay decision)

⁴ Refer to Report to Queenstown Lakes District Council on appropriate landscape classification boundaries within the District, with particular reference to Outstanding Natural Landscapes and Features; Marion Read, 1st April 2014, p10

⁵ Refer to Peer Review of Landscape Assessment - Outstanding Natural Landscape of the Upper Clutha, Part of the Queenstown Lakes District. for the Queenstown Lakes District Council by Anne Steven Landscape Architect, June 2014, p.27

relation to a district-wide ONL review. Based on my own mapping experience at this scale with other districts, I agree that the area is too small in the context of the surrounding mountain ranges to form a separate landscape. However, if the valley was adjacent to an existing wider VAL, I would include it into that landscape based on its characteristics, which are in my view more closely aligned to the modified landscape character expected in VALs than the more natural ONLs.

- 72 I note that Ms Steven shows a map in her report (p 51 Motatapu- Fern Burn, see **Appendix 3**) that illustrates the extent of the more modified parts of the landscape surrounding Glendhu Bay, mapped at the scale 1:50.000 on aerial photo. This map correctly shows the Fern Burn valley and Glendhu Bay/ Parkins Bay as an area with low to moderate levels of naturalness between the natural wider Roy's Peak- Mt Alpha range and the *roche moutonnee* adjacent to the west.
- 73 In summary, I consider that the Fern Burn valley flats and Glendhu/ Parkins Bay lake shore display characteristics of a VAL with a level of modification that is not generally expected in an ONL. However, I agree with Dr Read that the area is too small to be identified as a stand-alone landscape, which justifies its inclusion in the district-wide ONL.

Proposed Queenstown Lakes District Plan

- 74 The provisions within the proposed Glendhu Station Zone are to be assessed as to whether they give effect to relevant objectives of the plan. The provisions that have relevance to activities undertaken within the GSZ in relation to landscape matters include those from Chapter 3 (Strategic Directions) and Chapter 6 (Landscape). **Appendix 2** of my evidence contains the relevant provisions from Chapters 3 and 6.

Chapter 3 Strategic Directions

- 75 Objective 3.2.5.1 relating to the protection of the Outstanding Natural Features and Landscapes (ONF/Ls) from inappropriate subdivision, use and development is very closely related to Objective 6.3.1 and is addressed in the section below.

Chapter 6 Landscape

- 76 Chapter 6 deals with Landscapes, where recognition is made of the significant value the district's landscapes play in people's lives. The Chapter outlines that the district's landscapes have been categorised into three classifications within the Rural Zone. These are Outstanding Natural Landscapes (ONLs) and Outstanding Natural Features (ONFs) with the remaining bulk of the district being Rural Landscapes Classifications (RLC). The latter retains varying landscape characteristics and amenity values. The objectives and policies from Chapter 6 Landscape recognise and provide for the management of landscape values as a

significant resource for the District. Given that the GSZ falls within a wider ONL, Objective 6.3.3 is relevant. This primary objective relating to the Districts ONF/Ls is for the protection, maintenance or enhancement of the District's ONF/Ls from the adverse effects of inappropriate development.

77 In relation to the policies under this objective it is worth noting that all the built development associated within the GSZ is located within the parts of the ONL that have a moderate or varied change absorption capability as identified in the Cattle Flat Resource Study (Policy 6.3.4.3). As shown in the map in **Appendix 3**, the Fern Burn valley floor and Glendhu Bay/ Parkins Bay lake shore where activity areas are proposed is already modified and displays a low to moderate level of naturalness. In the context of the existing development and the consented resort and golf course in this area, I consider that the proposed zone with its amended activity areas and provision would not degrade the landscape quality, character and visual amenity of the ONL (Policy 6.3.3.2). The proposal has taken into account the potential positive effects that can be achieved through revegetation of previously farmed areas that have been cleared of native vegetation (Policy 6.3.4.4). The large areas of proposed open space that will continue to be farmed provide an important balance of land within more sensitive and natural parts of the station.

78 The proposal will provide for a range of recreation and tourism opportunities in a special landscape. The activities will be located in appropriate parts of the proposed GSZ, where they can create a sense of place associated with the existing development. This includes an extension to a popular campground in an area where it is visually associated with the one on the Glendhu Bay lake shore. The rural/ artisan activities associated with the farm homestead will build on the character of the existing node of development and will read as a coherent cluster of buildings. The golf course and associated buildings, such as the clubhouse will become the features of Parkins Bay without substantially changing the character already expected under the consented golf resort. The proposed residential accommodation will be in character with the consented, individually sited homesites in a varied part of the landscape that is suited to absorbing this type of change.

Glendhu Station Zone Objectives and Policies

79 I note that the proposed provisions for the GSZ include an objective (44.3.1) and a number of policies that address the provision of a high quality tourism development while providing for the protection of the Outstanding Natural Landscape that makes up the zone⁶.

⁶ The key relevant policies are:

- 80 These policies have been developed specifically to ensure that the key values of the outstanding natural landscape are protected and I consider these policies appropriate support for protection of landscape within areas of high level of naturalness. This would, in my view, be an equivalent or better protection than would otherwise occur through Rural Zone policies and provisions.
- 81 The Landscape Protection Areas originally identified on the Structure Plan in the submission were not directly based on landscape character or any specific evaluation of landscape values. The areas were derived from the Environment Court decision as a response of the Court to a range of issues woven through the consent consideration, including visibility, open space, ecology and general amenity. The Landscape Protection Areas related either to land with conservation value (for example as a QEII covenant or identified through Tenure Review) or to areas identified as meriting specific conditions relating to water quality, pest control, fencing, etc. These areas were identified on the Structure Plan as part of the submission directly as a response to the resource consent decision. Based on further refinements, it is now proposed that these generic Landscape Protection Areas are removed and only those areas relating specifically to consent conditions (and now proposed rules) be included as “Farm and Vegetation Management Areas”. Landscape values are better recognised and managed through the proposed policies outlined above and the rules specifically designed for the Covenant Protection Areas, where most buildings are non-complying.
- 82 In Dr Read’s Para 3.1(c) she highlights that the consented development anticipated within Glendhu Station is subject to very strict controls including extensive covenants, detailed designs, and comprehensive environmental compensation. I consider that the refined land management, use and development outcomes now proposed from a landscape effects’ perspective would be comparable to those consented. While the special zone is proposed to

44.3.1.1 *To protect the character of the Glendhu Station, Glendhu Bay and Parkins Bay landscape from adverse effects of inappropriate subdivision, use and development by:*

- a. *Identifying areas with the capacity to absorb change based on the Glendhu / Cattle Flat Resource Study*
- b. *Avoiding development that would adversely affect those values that contribute towards high levels of naturalness and/or where an area has low ability to absorb change.*
- c. *Managing effects on land to ensure that activities maintain or enhance the character and values of the landscape and minimise visible effects from public places.*
- d. *Enabling the use of land, subject to:*
 - i. *maintaining views into the site when viewed from Lake Wanaka and maintaining views across the site when viewed from the Wanaka – Mount Aspiring Road; and*
 - ii. *establishing appropriate controls over building development within the Zone in order to maintain amenity appropriate to the activities within each Activity Area.*

44.3.1.2 *To recognise and provide for the role of the OS/F Activity Area in protecting open space and landscape values, and ecological and recreational opportunities, in compensation for enablement of subdivision, use and development within the other activity areas.*

encompass the entirety of the Glendhu Bay Station, this would in my view, not be incompatible with the objectives and policies of Chapter 6 of the PDP given the amended objectives and policies for the zone, the improved Covenant Protection Areas and comparable activity status for development within the OS/Fs. The objectives and policies above acknowledge the quality and importance of the landscape, with a rule framework that would only allow for a limited liberalisation of future development within the proposed zone (see Dr Read Para 6.12). Overall, it is also important to consider that the proposed management and development included in the zone maintains and enhances the landscape values of the environment by retiring the land from grazing and replacing large areas with native vegetation as part of an integrated revegetation strategy.

CONCLUSION

- 83 My evidence provides a description of the existing landscape values found within Glendhu Station. I also provide background information about the Glendhu/ Cattle Flat Resource Study and the findings regarding the landscape's capacity to absorb change.
- 84 I have reviewed the proposed GSZ activity areas and associated provisions in light of the amendments that have been made by the submitter to the relief sought. I assessed the visual amenity, landscape and natural character effects of all proposed activity areas and provided an overall assessment of cumulative effects for the entire GSZ.
- 85 I concluded that the proposed development would not cause inappropriate visual or amenity effects on the Glendhu – Parkins Bay landscape in comparison to what has been consented by the Environment Court due to an amended rule framework that would provide sufficient control over any future development within the activity areas. Natural character effects can be avoided by providing sufficient setbacks from the lake and streams.
- 86 The objectives and policies have been amended to strengthen the protection of the Outstanding Natural Landscapes within the GSZ to a similar level as in the Rural Zone. An elevated level of protection will be achieved through non-complying activity status in covenanted areas within the OS/F compared to the Rural Zone. The proposed development within the GSZ is confined to the less natural parts of the station and confined to the visual catchment within the lower Fern Burn Valley floor, including the Glendhu/ Parkins Bay lake shore.
- 87 Within this comparatively small part of the station the level of existing and consented development is considerably higher than in the surrounding landscape character areas. In light of this development within a confined node located in a

much broader district-wide ONL, I consider that appropriate landscape outcomes can be achieved through the activities proposed in each of the Activity Areas.

The proposed comprehensive regeneration and revegetation programmes would, in my view, provide additional benefits that enhance the overall visual amenity associated with the proposed use, management and development within the Glendhu Station Zone.

Dated 11 April 2017

Yvonne Pfluger

Appendix 1 Cattle Flat Resource Study

Glendhu / Cattle Flat

RESOURCE STUDY ▶ JUNE 2006



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Introduction

This report presents the results of a comprehensive resource study of an area called the Glendhu/Cattle Flat Corridor. The study was initiated by the land owners of the Glendhu and Cattle Flat Stations in association with Darby Partners Ltd. The following sections of the report set out:

- location of the study area;
- background to the study and why it was initiated;
- the methodology adopted;
- European heritage associated with Glendhu and Cattle Flat Stations;
- the summary findings of each of the specialist studies;
- a collation of the main physical and planning influences on land use within the Cattle Flat/Glendhu Corridor;
- identification of the constraints and opportunities for land use within the Cattle Flat/Glendhu Corridor at a “macro level”, including infrastructure and District Plan objectives and policies; and
- higher level or strategic guidance and recommendations on the location of future land use options within the Cattle Flat/ Glendhu Corridor.

Location of the Study Area

The study area relates to the Cattle Flat and Glendhu stations. It is located a short, 15 minute drive west of Wanaka township and comprises an area of approximately 120km². The study area boundaries are defined by the following topographical and physical features:

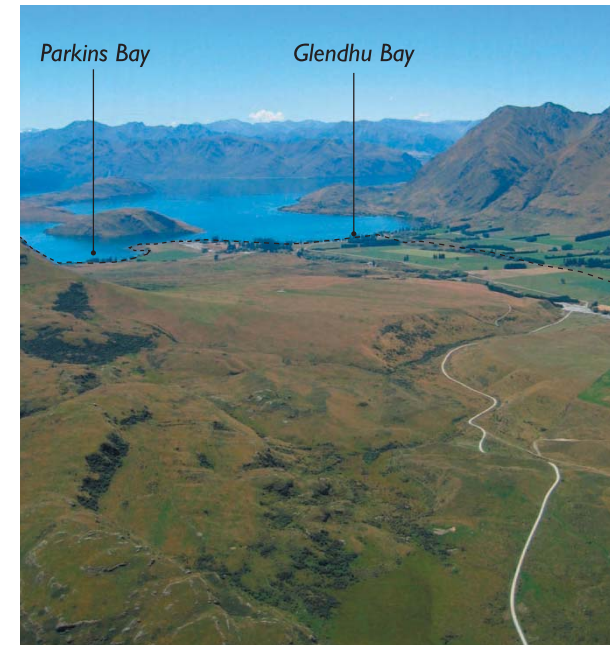
- the Matukituki River to the north
- Lake Wanaka to the east
- The front ridge (Treble Cone) of the Harris Mountains to the west; and
- End Peak and Roys Peak to the south.

The Wanaka-Mount Aspiring Road, serves as the main access route through the Corridor connecting Wanaka township with the Mount Aspiring National Park. Treble Cone Ski-field is located on Cattle Flat Station and is a popular tourist attraction with high visitor numbers in winter. Much of the Study Area is highly visible from the Treble Cone Ski-field.

The study area has a complex topography comprised of steep, northeast facing mountain slopes, river flats for the Matukituki and Motatapu Valleys and distinct glacial landform features. Lake Wanaka dominates both Glendhu and Parkins Bays with the water/land interface defined by exotic tree planting such as poplars. Treble Cone and End Peak are visually impressive features along the Harris Mountain Range and provide a clear visual boundary to this landscape.



Looking over Cattle Flat from the Treble Cone Skifield



Looking east over Glendhu Station

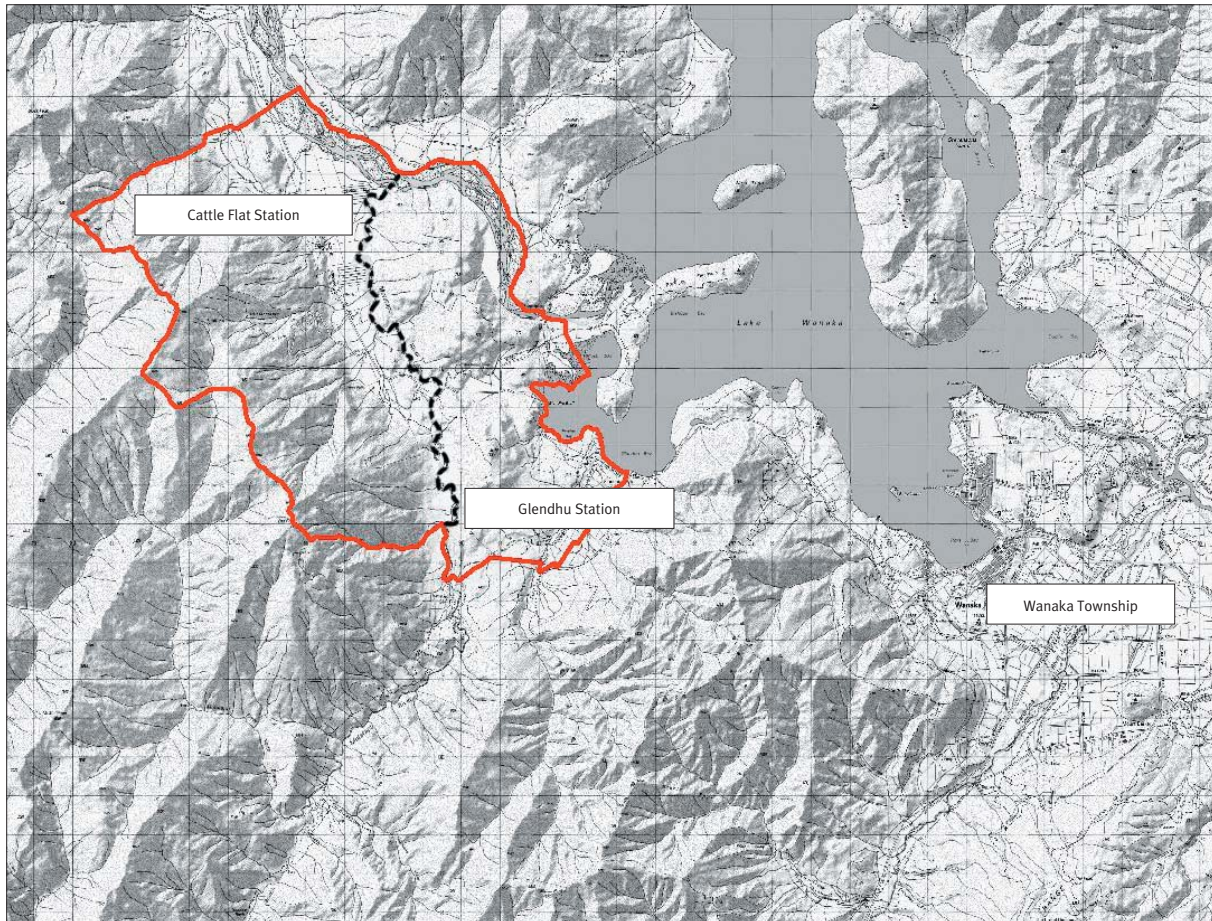


Figure 1. Location Plan

Cattle Flat-720ha conservation area in Crown ownership-9ha recreation reserve in Crown ownership-890ha conservation area subject to granting of concession and continuation of existing easement-2966ha freehold (subject to conditions)

Glendhu-293ha plus 9ha conservation area in Crown ownership-0.2ha recreation reserve in Crown ownership-11ha to be freehold as part of land exchange-2802ha freehold (subject to conditions)

Background to the Study

TENURE REVIEW

For more than a century high country land has been leased to generations of South Island farmers. These leases provide for grazing of the land for pastoral farming purposes subject to a range of restrictions on other land activities. The leases have been subject to a perpetual right of renewal.

Under the Crown Pastoral Land Act 1998 the Government created a process for the review of pastoral leases in the high country. This process gives opportunity for leaseholders to invite Land Information New Zealand to review their lease. This is a legal process of review which enables formerly leasehold land to become freehold and land with “significant inherent values” (historic, scientific, ecological or cultural) to be restored to full Crown ownership and control.

The general intention of the review is for the leaseholder to gain freehold title over part of the land which is free of the restrictions previously imposed by a lease while the land with significant inherent values is managed by the Department of Conservation. The review can be subject to conditions. Freehold land may also be subject to some form of protective mechanism such as a QEII Trust or Conservation Act covenant. A successful review could provide a range of outcomes with increased options for economic use of freehold land, protection of land with significant inherent values, increased public access and enhanced or new recreation opportunities.

This process represents a significant change in land holding and management for the high country, many parts of which have been leased to the same families for generations.

Both Glendhu and Cattle Flat Stations have applied for and completed tenure review. Figure 2 shows those areas of these stations which are to be:

- restored to full Crown ownership and control as both conservation area and reserve;
- areas of existing conservation estate within the study area;
- land to become freehold; and
- areas to be subject to conservation covenants in favour of the Minister of Conservation, Te Runanga o Ngai Tahu and Queen Elizabeth II Trust.

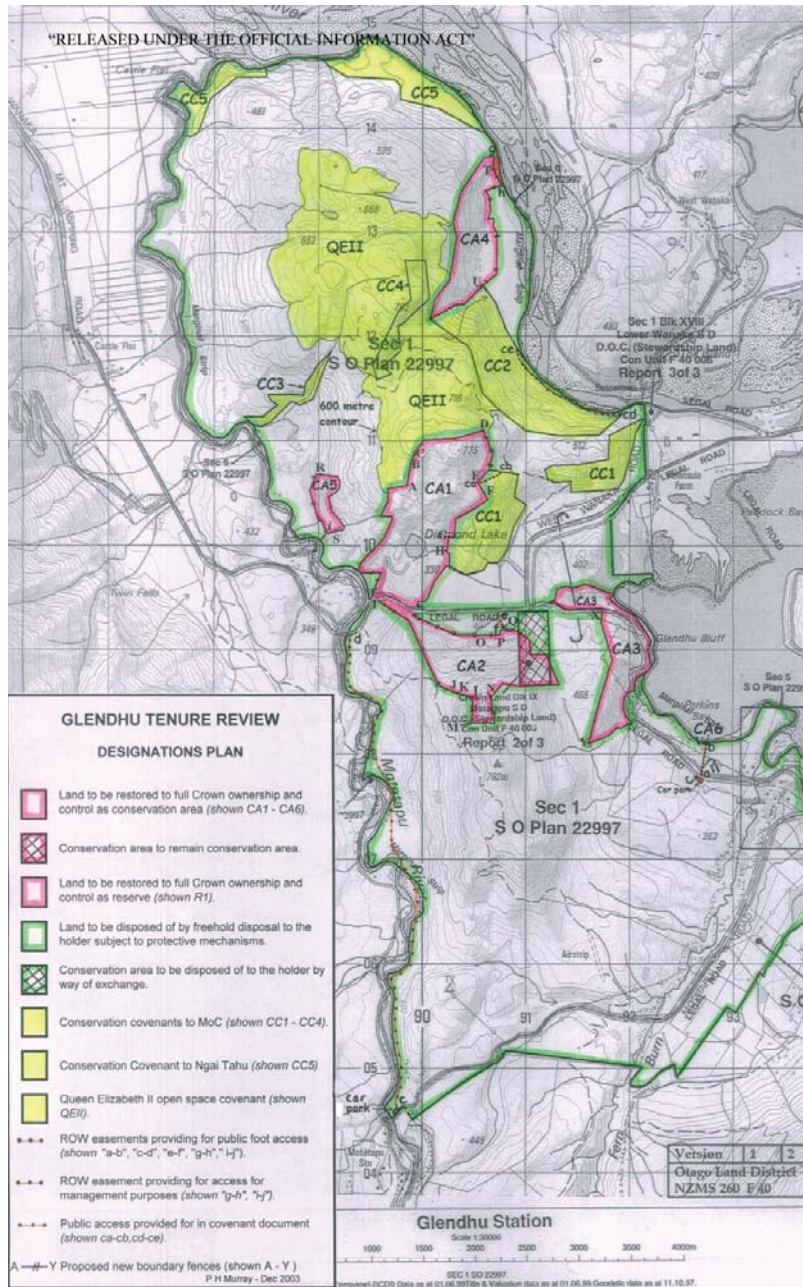


Figure 2.

The outcome of this process is that both Cattle Flat and Glendhu Stations are able to explore other land use options. This presents opportunities which did not previously exist. During the tenure review process Glendhu Station engaged Darby Partners Ltd to assist them in land use planning for their farm. The Company was then similarly engaged by Cattle Flat Station. It became apparent, as part of this process that there was considerable merit from an environmental and planning perspective to consider the area as a whole.

A comprehensive study would avoid the mistakes made in other areas where ad hoc planning decisions have resulted in piecemeal and unco-ordinated land use decisions with consequential effects on ecological and landscape values. The three parties have now joined together to initiate and co-operatively support a resource study of the Cattle Flat-Glendhu Corridor that will identify features or physical characteristics that will influence land use options. These are related to:

- hydrology
- topography
- landscape
- ecology values of the Study Area

This information is considered within the context of the District Plan and capacity of existing infrastructure. The base information is then collated, analysed and assessed at a high level to provide some guidance as to the suitability of different areas of the Corridor for a range of land use options.

It is intended that these activities should complement the core activity of high country farming, not detract from it. The greatest care will be required to ensure that future land use is integrated in a way that important characteristics and values within the Glendhu-Cattle Flat Corridor are maintained.

Methodology

The study methodology is based on the traditional steps of:

- information gathering;
- analysis and evaluation;
- collating individual study results to provide an overview of landuse constraints or opportunities; and
- assessment of the significance of the findings;
- development of a guiding strategy, recommendations or policies.

Darby Partners Ltd engaged specialist consultants to undertake 6 studies of the Glendhu – Cattle Flat Corridor. These include:

- Landscape - Boffa Miskell Ltd.
- Geology - Royden Thomson
- Hydrology - URS
- Ecology - Boffa Miskell Ltd.
- Planning - Boffa Miskell Ltd.
- Traffic - Traffic Design Group

STEP 1 INFORMATION GATHERING

Each of the studies were undertaken by appropriate specialists and involved identifying and then describing the features and values of the existing environment. This has been done at a “macro” level.

STEP 2 ANALYSIS AND EVALUATION

The “base” information describing the existing environment from Step 1 was then analysed or evaluated to confirm the nature of the values and their significance. For example, patterns in the landscape which assist in identifying landscape units with similar characteristics or areas of similar vegetation type or habitat.

In addition to the physical attributes of the environment consideration has been given to the District Plan policy framework as well as the status of existing infrastructure servicing the area eg. roading, power supply, telecommunications.

STEP 3 ASSESSMENT

Each of the studies then assesses the results of the data identified in Step 2 in terms of significance or implication for future landuse options. For example, are the areas of indigenous vegetation of high ecological value or do particular units of landscape character have a greater ability to visually absorb change than others.

STEP 4 COLLATION OF INDIVIDUAL STUDY RESULTS

Identification of land use constraints and opportunities

Maps are a visual tool to explain and describe the findings of each study. Using GIS the findings of each study are able to be collated and overlaid. This in turn provides a comprehensive visual tool to understand the combined influences of the physical environment.

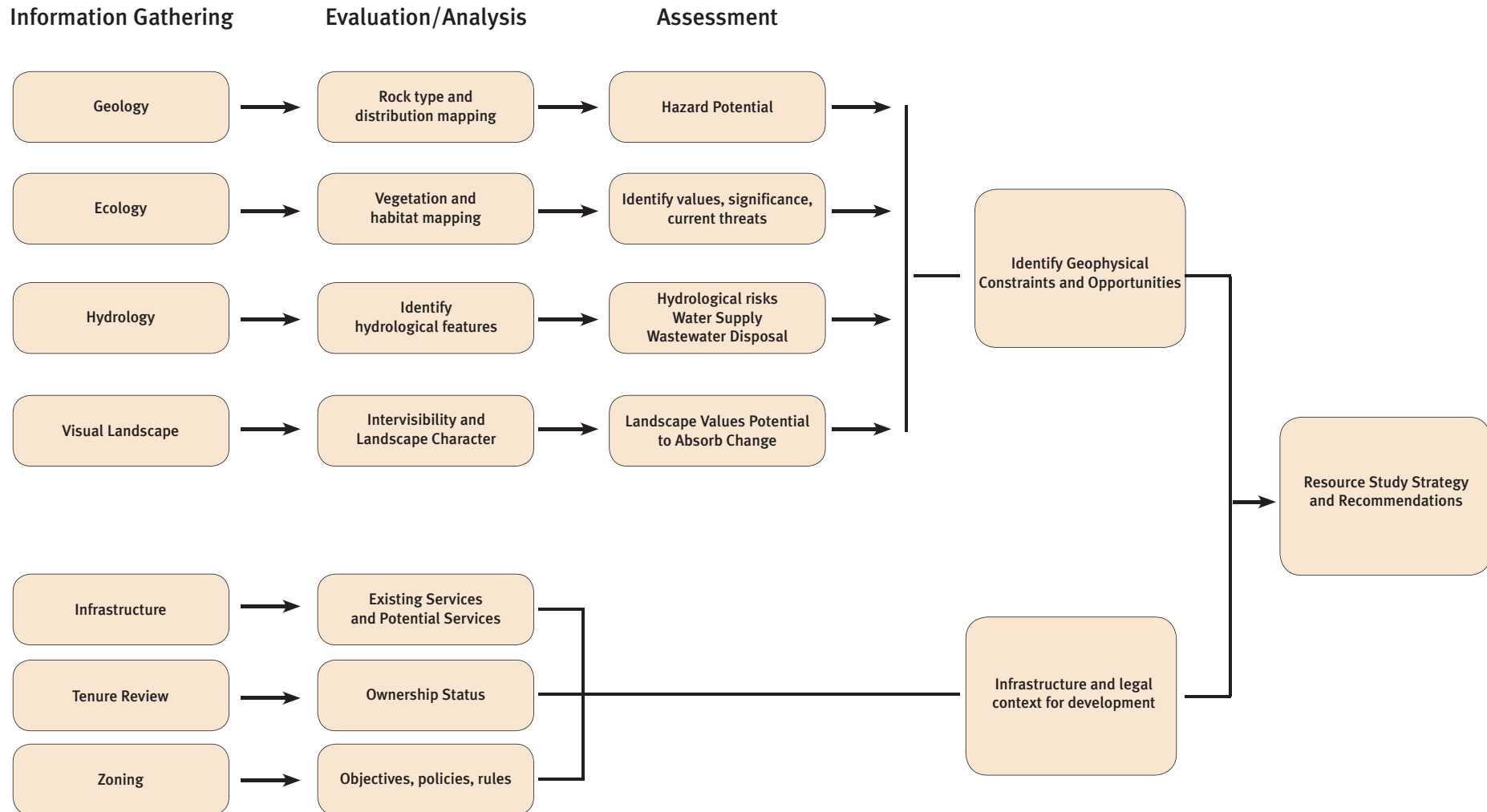
This mapping is then analysed in conjunction with information relating to infrastructure as well as the planning policy from the District Plan. The analysis of this combined information may show where land use opportunities or constraints exist within the Corridor Study area.

STEP 5 STRATEGY DIRECTION/POLICIES/GUIDANCE

On the basis of the final mapping and analysis the report develops some guiding policies or direction for future land use. These are expressed at a higher, strategic level with the aim of directing or guiding the location of future land uses.

As a study, the document has no legal status. It can however, be used as a research or background document that provides information on future landuse options and identifies what some of the costs or benefits of those options may be. It may be referred to by interested parties, including decision-makers, when considering the relative merits of specific proposals or when considering activities and their location within the Study area.

Methodology



History

The High Country of the South Island has a rich history for both Maori and Europeans.

Tangata Whenua for the South Island, Te Runanga o Ngai Tahu, were predominantly coastal dwellers until 500-800 years ago, when inland movement began to occur. High country exploration was often transitory with the predominant motivation being hunting, trading and access to Pounamu.

The LINZ report for Glendhu (June 2004) describes that land in the vicinity of the Study area was visited by tangata whenua who were based in the lower Waitaki. Early in the 18th century Waitaha had occupied the area, but left after a battle with Te Runanga o Ngai Tahu. This battle is said to have taken place at the settlement of Parakarehu, which was in the vicinity of Glendhu Bay. Any settlement is likely to have been small and only seasonally occupied with some 20 people thought to have occupied the area around Wanaka and Hawea.

The area was abandoned in 1836 after a Te Puoho raiding party swept through the area.

The only other known occupation site was at the junction of the Motatapu and Matukituki Rivers known as Nehenehe. At the time of European arrival no permanent occupants were recorded at this site and there is no known archaeological evidence of occupation in the area. Possible middens at Nehenehe have not been found while an adze has been discovered near the west Wanaka bridge and a wooden paddle was found near the Diamond Lake turnoff.

The majority of the South Island, including most of the high country was in Ngai Tahu stewardship until the Crown purchases of 1844. The first Europeans to visit the area arrived in 1853 and in 1859 John Roy of Wellington arrived and proceeded to take up land around

the lake up to the Matukituki and Motatpu Rivers. The land was surveyed off as Run 334 and became known as "Roys Run". The farm was managed by a Henry Norman whose house was sited on the shores of Glendhu Bay. It was at this house in 1861 that the first white child in Central Otago was born.

John Roy sold this run to Wilkin and Thompson of Wanaka Station in 1862. The 1880s saw falling wool prices, the spread of rabbits and falling wool production (due to destruction of native grass cover). This eventually led to the Lake Wanaka Run being subdivided into the smaller runs of Wanaka, Glendhu, West Wanaka, Mount Burke and Minaret Stations. In 1897 Glendhu and West Wanaka Stations were acquired by Henry Barker who then sold these to W A Scaife and Sons in 1908.

In 1928 West Wanaka and Glendhu were separated but Glendhu continued to be farmed by three generations of the Scaife family until 1969. Glendhu was then split again in 1980 to create the Alpha Burn Pastoral Lease. The McRae family have now been farming Glendhu for the past three generations. No physical remains of historic sites of European origins are known apart from parts of the original Glendhu homestead which are incorporated into building extensions and alterations of the current homestead and an old homestead fireplace in Parkins Bay.

Sheep were introduced to the area in 1859 and have been the backbone of the high country economy since that time. There has however been a diversification to cattle and deer over more recent time. The use of helicopters was pioneered by Sir Tim Wallis in the late 1960s in the Matukituki Valley with the live capture of deer occurring from the early 1970s. Deer farming at Cattle Flat was later initiated in 1991 as a natural progression from the shooting and capture operations. Helicopters have now become a permanent feature of the Station's operation and Cattle Flat is the main helicopter access and rescue base for the Mt Aspiring National Park. It was in this same period that farmers and musterers began to replace horses with 4 wheel drive vehicles.

Recreation has also been an important component of landuse in the locality. This began with hunters and climbers using the area for access to the mountains. Between WW1 and WW2 the original Alys Scaife golf course at Alpha Burn Creek was designed and built. This 9 hole course was built in association with the lakeside flats which lie between the original homestead and the existing woolshed (behind the camping ground) and operated until the early 1960s.

In 1972 Cattle Flat Station was purchased by Willian Ewing and in the following year, Treble Cone purchased a 950ha block of alpine terrain as well as easements for both road and cableway. This provided the beginnings of the Treble Cone ski field and secured long term access between the valley floor and the skifield.

Glendhu Station has also diversified into homestays as well as hire of its iconic, lakeside woolshed for functions, weddings and homestays.

Changes in landuse have been accompanied by changes in the landscape. The Beech forest that previously would have existed in many parts of the Corridor Study area were lost to fire and replaced by tussock. Under early pastoralism this became introduced pasture with fences, tracks, roads, shelter belts, farm buildings and homesteads. In addition to these features the cultural landscape is also characterised by buildings, jetties, woolsheds and yards located along the foreshore. These buildings and facilities often provided the main point of access to the stations from surrounding settlements.

The process of tenure review will continue this evolution of landuse. The ownership established through the review will influence how land is accessed, used and managed in the future with consequential changes to landscape patterns.



Geology

Mr Royden Thomson was commissioned to provide a geological survey of the Study Area and to identify areas of potential natural hazard. This report can be found in Appendix A.

Existing geological maps were found to be small scale and of insufficient detail to enable reasonable interpretation for the purpose of assessing the underlying geomorphology. New mapping was therefore undertaken for the purpose of this Study.

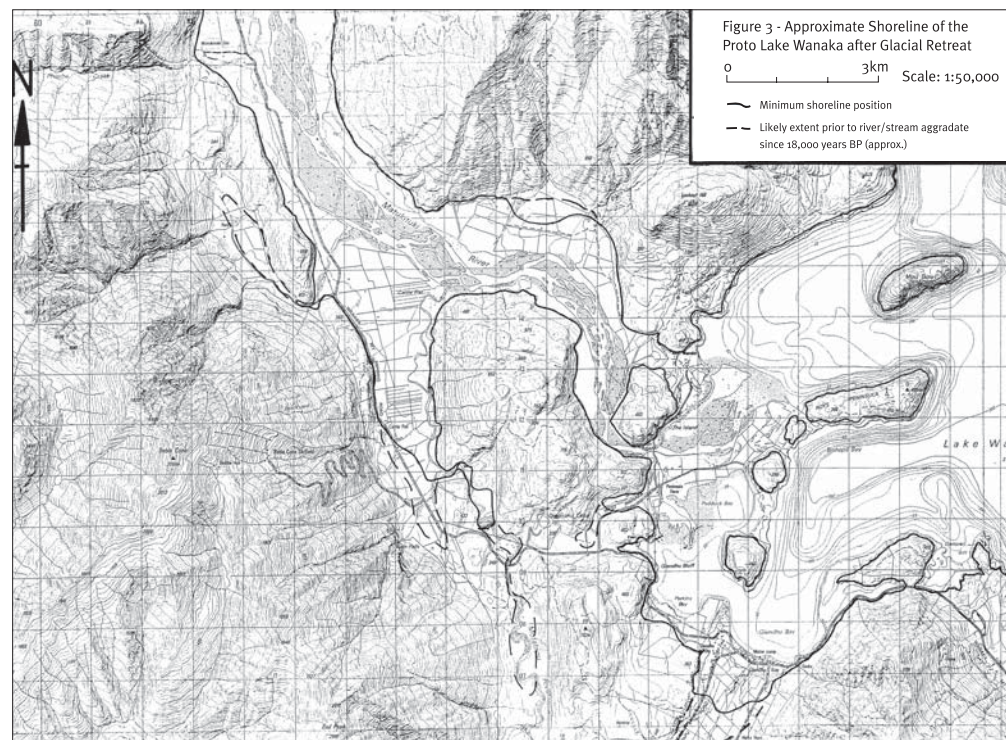
The study establishes the base line information for assessing the geological formations, with inherent landscape values as well as potential geological hazards. The Corridor Study area is distinguished by the marked differences in relief that occur within its boundaries and also the presence of several important terrain elements. Of particular note are:

- (a) Steep mountains to the south west with End Peak at 2100m a.s.l being the highest point.
- (b) Steep west-facing hills to the east of Glendhu Bay, the highest point which is Roys Peak being 1578m a.s.l
- (c) Lake Wanaka
- (d) The Matukituki River channel and lower valley (occupying the north east boundary of the study area)
- (e) The Motatapu Valley
- (f) Irregular, centrally placed low hills characteristic of roche moutonee.

The mountainous physiography within the Study area is a result of seismic activity created by the convergence of the Pacific and Australian continental plates. The End Peak – Treble Cone region is frequently affected by microseismic activity at shallow crustal depths while Motatapu Valley is considered a probable surface expression of a regionally persistent fault. No other faults of significance are known in the study area although further detailed mapping of schist attitudes would assist with the improved definition of any faults that may exist.

Glacial erosion is considered to have generated most of the landforms in the area, including valley walls, hanging valleys and roche moutonee. Repeated glacial incursions have had a dominating effect on the landscape with the last event of significance occurring some 18,000 years ago when the glacial terminus reached to Wanaka township.

Following glacial melting, Lake Wanaka was formed in a depression with the level of the lake determined by the nature and height of moraine. River incision over time has eroded the outlet moraine resulting in a progressive reduction in the level of the lake. It appears that until relatively recently (in geological time) that a significant proportion of the Study area was within the lake environment. From a geological perspective this has academic implications in terms of the dynamics of change and complexity of deposits that may be influential in hazard assessment.



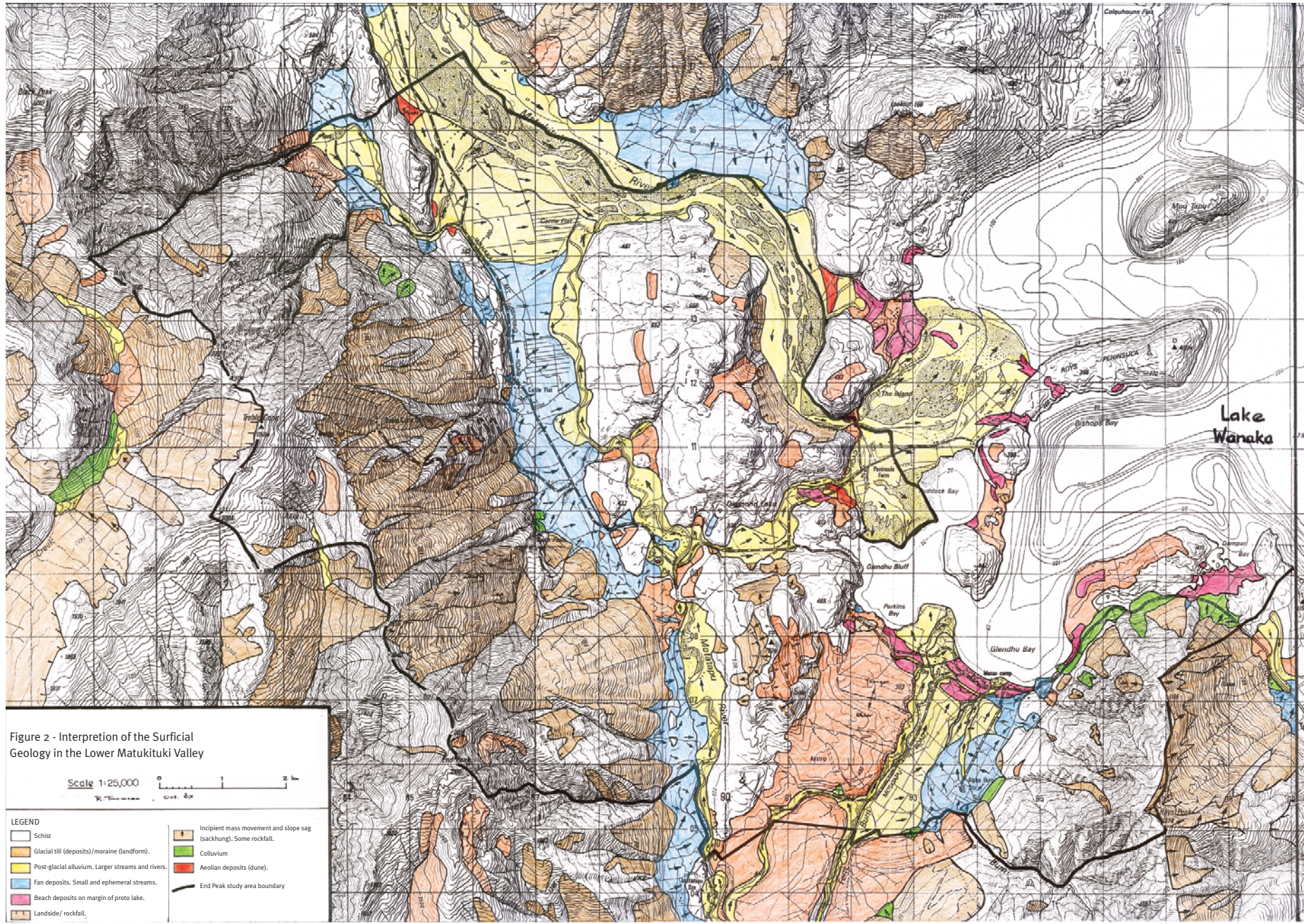
The types of rocks identified in the Study area include:

ROCK TYPE AND DISTRIBUTION	
Schist	This is the basement rock in the area – a range of textures, weathering and strength characteristics are anticipated and the schist is overlain by late Tertiary lake sediments.
Glacial till	These are remnant deposits left by glacial activity. The best preserved deposits lie south-west of Glendhu Bay where ice pushed into the Motutapu Valley and left moraines with distinctive surface morphologies and arterial characteristics.
Post-Glacial River Alluvium	The Motutapu and Matukituki Rivers have formed moderate to extensive floodplains and deltas following the retreat of a glacier some 18,000 years ago. Materials are comprised of well-graded, sandy gravel with some cobbles (of moderate permeability).
Fan deposits	Fluvial in origin these have been deposited in front of lesser catchments by subordinate streams (some of which may be ephemeral). The detritus tends to be angular and permeable, as evidenced by the high fines content.
Beach deposits	Loose, fine gravel formed on the margin of Lake Wanaka in sheltered environments.
Land/rockslide/sagging	Found on the higher, steep terrain, associated almost exclusively with schist in the study area:
Rockfall	Prevalent on the bluff terrain west of Glendhu Bay but also at the base of steep slopes. Considered to be a common failure type in the schist. Likelihood should be assessed on a site specific basis.
Colluvium	Minor in relation to the Study area.
Aeloian Deposits	Of erratic distribution and thickness. Considered to be minor in relation to the Study area.

ANALYSIS

Having regard to the types of rock, their distribution and observed geological formations a range of geological hazards have been identified within the Study area. These include

POTENTIAL HAZARDS	
Seismotectonic hazards	There is potential for surface rupture within the study area – with deformation probably aligned along the Motutapu Valley. This potential is assessed as very low within the next 200 years. Due consideration should be given to the shaking effects of earthquakes generated on the Alpine Fault or other faults known to be active in Central Otago. Siting of structures should give weight to the effects of rockfall and the more active lobes of landslides in particular. Liquefaction may be possible where are fine-grained sediments are overlain by coarser detritus (deposited as Lake Wanaka shrunk over time).
Landslides and Rockslides	Difficult to determine – from a risk perspective each feature should be assessed in isolation. There is potential for first time slides on steeper slopes, especially during a significant seismic event. Risk assessed as very low in the next 200 years.
Rockfall	Essentially as for the slide category i.e., potential for on-going occurrences and first time failures. Each locality needs to be individually evaluated.
Floods and Debris Flows	Debris flows can impact fan terrain in front of mountains to the west of the study area, particularly fan apexes. Storm events have generated debris flows in the vicinity of the lower ski-field access road in the last few decades. It is anticipated that all tributaries draining east from landslide-prone slopes are susceptible to future events.



Climate

The general area surrounding southern Lake Wanaka has a relatively dry climate. The Corridor Study area lies between the extremes of the wet Southern Alps and very dry Central Otago. The eastern most areas receive on average between 800 and 900mm of rain per annum while the north western areas receive on average between 1000 and 1250mm. The highest elevation areas receive between 2000 and 3000mm of rain per annum. Temperatures are relatively cool with the average annual temperature being 10.7°C. Overall, the climate is “continental” with hot summers with a mean daily maximum for January of 24.1°C and cold winters with a mean daily maximum for June of 8.4°C. In Wanaka there are 84 days of air frost per annum on average.

Soils

There are five main soil groupings within the Study Area. These are raw, recent, gley, pallic and brown soils. These are determined largely by topographical and hydrological factors as well as the parent material.

SOIL TYPE AND DISTRIBUTION	
Raw soils	Young soils associated with sites of erosion or deposition. Lack a topsoil. Found in association with riverbeds and steep rocky areas.
Recent soils	Derived from recently deposited alluvium and colluvium, present along major rivers and streams as well as active fans at the base of slopes. Of moderate to high natural fertility and well drained.
Gley soils	Derived from alluvium and colluvium but subject to frequent saturation by groundwater and can become leached of nutrients. Fertility varies.
Pallic	Occur on moderate to gentle slopes in drier areas, typically in bottom of valleys. Derived from loess, are weak, drought-prone in summer and wet in winter. Of moderate to low fertility.
Brown	Upper elevation areas that receive high rainfall and of low to moderate fertility.

Ecology

Boffa Miskell has been commissioned to prepare a report which identifies the ecological values within the Glendu – Cattle Flat Corridor and then undertakes an analysis of the impacts of development on those values. Areas with high ecological values and areas with potential for ecological enhancement are also identified. See Appendix B for a copy of this report.

HISTORIC VEGETATION

The report describes historical and current vegetation patterns. Prior to human arrival the Study area would have been covered in forest below the natural timberline except in areas of active erosion and basin areas subject to pooling of cold air in winter and poorly drained wetlands. Fertile and well-drained soils of the lowlands would have supported podocarp forest including matai and totara while the less well-drained areas would have supported kahikatea. The gley soils of lower fertility would also have supported kahikatea, mountain beech and flax with raupo and carex species in wetlands. Due to the harshness of frosts some areas would be dominated by snow tussock, matagouri and other cold tolerant shrubs.

The upland areas would have been dominated by beech species with shrubs on the raw and recent soils of bluffs and debris slopes.

CURRENT VEGETATION

Much of the native beech and lowland podocarp forests have now gone as a result of fires lit by Maoris and then European pastoralists. Most of the native forest is now restricted to the valleys of the mountainous north and west and scattered remnants in gullies and deep valleys that were difficult to burn.

The Study area comprises a diverse mix of vegetation types reflecting the variable climate, substrate, landform and past land uses.

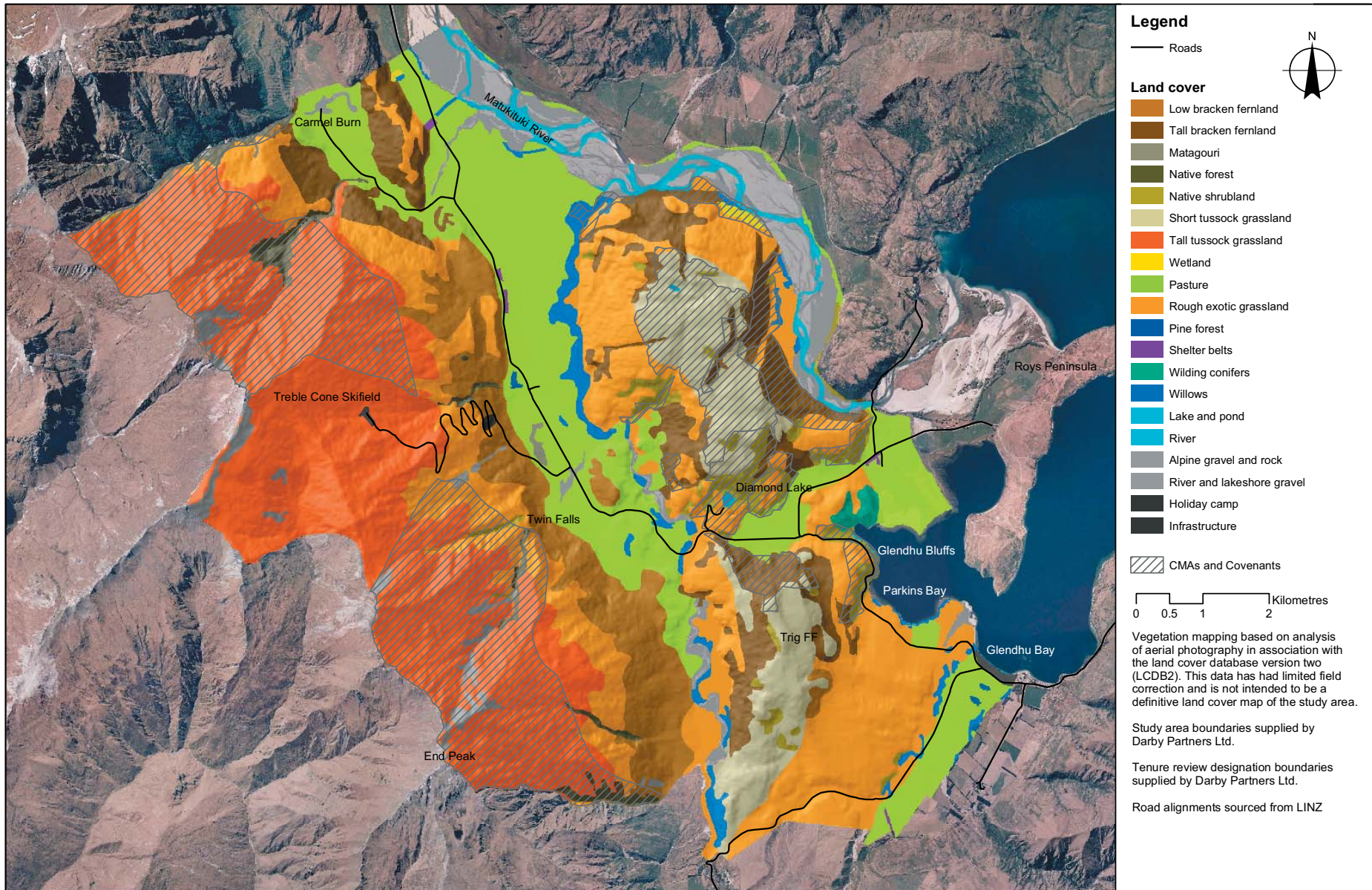


Figure 3 - Current Site Land Cover

CURRENT VEGETATION TYPES

Tall tussock grasslands and alpine fellfields	The highest altitude areas are the least modified and retain a cover of snow tussock, interspersed with other alpine species. Alpine fellfields are present at the highest levels with native cushion and mat forming plants as well as grasses. Small tarns and wetlands can be found in depressions and basins.	Native shrublands	occurring. Prevalent on the glacially-scoured schist hills adjacent to Parkins Bay and the lower Matukituki River, where they occur on bluffs and gullies protected from fire. Diverse in species. A rare and threatened species <i>Olearia hectori</i> can be found north of Diamond Lake. Manuka and kanuka also form native shrublands in hilly areas. These tend to occur in drier areas and be less diverse in species composition and structure than the broad-leaved shrublands.	Exotic Vegetation	cent to hillsides. In addition, small wetlands occur in upland depressions and seepage areas. Low altitude wetlands contain a mixture of raupo, rushes and sedges but in some places are being invaded by crack willow, are grazed or drained. Higher altitude wetlands contain a mix of sedges, grasses, mosses and ferns. Some contain the threatened <i>Deschampsia caespitosa</i> and <i>Carex tenuiculmis</i> .
Rough Exotic and Short tussock grasslands	At lower levels, contain a diverse mix of native and exotic species but tend to be dominated by sweet vernal, browntop and cocksfoot along with widely spaced hard tussock. Highly variable with distribution of species depending on landform and degree of human modification such as over-sowing, top-dressing, burning and grazing. Native species of shrubs, herbs and ferns can be found in rocky places and areas not recently burned.	Bracken Fernland	Tends to be abundant on the lower slopes of the Harris Mountains, especially near valley bottoms and also on the steep slopes and gullies of the hills adjacent to Parkins Bay and the lower Matukituki River where protected from wind and fire. With right soil and moisture conditions can reach 2m in height. Will in time be succeeded by the broad-leaved species. Bracken is subject to active control with burning and herbicide spraying keeping it low in stature and sparsely spread in some locations.	Weeds	Lowest and flattest areas of the Corridor are dominated by exotic species with pasture on river flats, crack willow in riparian locations, a few small stands of managed pine forest scattered throughout the flats, with wilding pines amongst the native scrub north of the Glendhu Bluffs and tall exotic trees in Glendhu Bay.
Native forest	Remnants present in gullies, e.g., Carmel Burn, stream below Treble Cone Ski-field. Dominated by mountain beech some outward regeneration of these remnants is	Wetlands	Present in a few lowland locations, namely Diamond Lake and on lower river flats in seepage zones and adja-		Most notable are tussock hawkweed within the native tussock grassland which is considered to be interfering with natural regeneration patterns as well as competing in forest remnants with indigenous herb, grass and sedge species. Willow is considered to severely inhibit the growth and regeneration of indigenous species in riparian and wetland areas while exotic pines are invading manuka shrubland with the ability to inhibit natural succession..

FAUNA

Numerous native bird species have been recorded within the Corridor including falcon, kea, Australasian harrier, bellbird, pipit, grey warbler, fantail, tomtit, NZ shoveler, paradise shelduck shags, scaup and grey duck. Exotic species also present include mallard ducks, sylarks, sparrows, finches, quail, Canada geese and swans. Both the kea and the falcon are currently listed as acutely threatened species while the Grey Duck is listed as chronically threatened.

FISH

The Study Area contains a number of different freshwater habitat for fish including:

- Upland tarns
- Upland steep creeks
- Small lowland lakes and ponds
- Meandering lowland rivers
- Braided lowland rivers
- Lowland streams
- Artificially straightened lowland streams

Fish survey data is limited for the Corridor and is essentially restricted to that undertaken for the tenure review process and areas of similar habitat outside the Corridor. Species that may be present include koaro, brown trout, rainbow trout, Chinook salmon, common bully, brook char, banded kokopu and long-finned eels.

INVERTEBRATES

The high alpine and tussock land areas of the Corridor appear to have high indigenous invertebrate values with threatened and uncommon species present as well as a potentially new species of weevil. Aquatic invertebrate communities are healthy and consistent with a pristine environment.

REPTILES

Given the abundance of suitable habitat numerous skink and gecko reptiles are likely to inhabit the Study Area, such as open rock outcrops, boulder fields, rock-strewn grasslands, shrublands, fernland and riverbed. The Roys Peak and Cromwell geckos are listed as nationally critical and nationally threatened species respectively.

INTRODUCED MAMMALS

Chamois, goats and hares are present as will be possums, mice, rats, stoats, ferrets, cats, rabbits and deer. All of these species are likely to have an impact on native fauna and flora. Rats and stoats are key predators of birds, reptiles and invertebrates while mice and rats are seed predators in the beech forest. Possums, goats, chamois and deer browse vegetation while commercial stock have the ability to trample, graze and cause eutrophication of forest, shrubland and wetland communities.

SUMMARY OF THREATENED SPECIES

The study area contains many plant and animal species listed as threatened in published lists (Hitchmough 2002) summarised as follows:

Threatened species that occur within the study area, their threat status and their primary habitats.

Species	Type*	Rank**	Category	Primary habitat
Roys Peak gecko***	L	1	Nationally critical	Alpine scree and rocky areas
<i>Carmichaelia kirkii</i>	P	2	Nationally endangered	Shrubland associated with bluffs
Kea	B	2	Nationally endangered	Alpine
<i>Olearia hectorii</i>	P	3	Nationally vulnerable	Shrubland associated with bluffs
<i>Deschampsia cespitosa</i>	P	5	Gradual decline	Wetlands
<i>Pachycladon cheesemani</i>	P	5	Gradual decline	Open rocky areas/bluffs
Eastern falcon	B	5	Gradual decline	Nests in rocky areas
Grey duck	B	5	Gradual decline	Lakes, rivers and ponds
<i>Hypsigthocus hudsonae</i>	I	6	Range restricted	Alpine
<i>Carex tenuiculmis</i>	P	7	Sparse	Wetlands
<i>Clematis marata</i>	P	7	Sparse	Shrubland
<i>Olearia lineata</i>	P	7	Sparse	Shrubland and some wet gullies

* L = lizard, P = plant, B = bird, I = invertebrate.

** 1 is most threatened and 7 is least threatened.

*** May be present but not confirmed.

The presence of *Carmichaelia kirkii* and *Olearia hectorii* within the site is considered to be notable. The discovery of *Carmichaelia kirkii* within the site is a major westward extension of its known range within the Otago Region and the *Olearia hectorii* population is large on a national context. Although kea is listed as nationally endangered, its presence is not particularly significant as they range widely and are not likely to be critically dependent on the site for survival. Although Roys Peak gecko has not been recorded within the Study Area its close proximity to known populations would suggest that a more intensive survey may be needed to confirm its presence or otherwise.

SIGNIFICANCE

Numerous indigenous species occur within the site, with at least 11 of these being listed as threatened in published lists. As such, the Study Area includes sites of high conservation importance. Although the majority of the threatened species and high value ecological areas occur within lands designated for the purposes of conservation, some areas of high ecological value also occur on freehold land. Any land use proposals should consider the location and importance of these areas. The most suitable areas for changes to land use from an ecological perspective are those that occur at lower altitudes in vegetation types dominated by exotic species (Figure 6). Considerable benefit for native species and ecosystems could be gained with targeted restoration programmes as well as identification and management of current threats to ecosystems. Such management would improve the ecological health of the Study Area and would also be of benefit to the ecological functioning of the wider environment.

If there is an objective to enhance the local ecological values as part of an overall land use strategy then the first step should be to exclude development from areas that currently provide the highest ecological value or alternatively to adopt non-obtrusive or low impact activities within these areas. Restoration in strategic areas can improve the overall connectivity of the study area. Management options to assist enhancing ecological values include:

- Exotic weed management
- Exclusion of stock/fencing
- Cease or restrict burning and spraying in identified locations where development not required
- Measures to reduce the spread of accidental fire.
- Management of plant and animal pest
- Removal of exotic conifer species
- Active restoration in identified locations such as Hospital Flat.

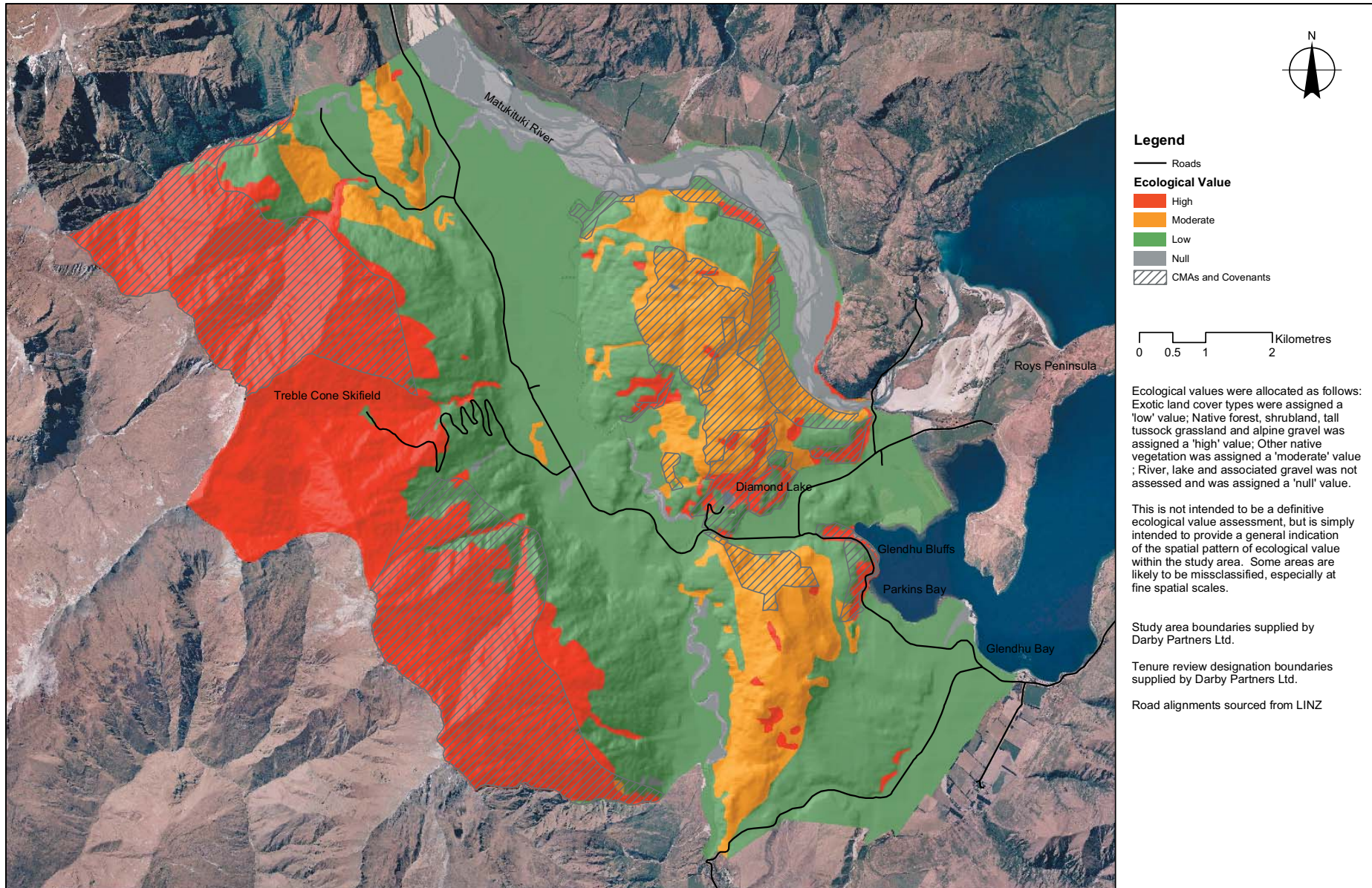


Figure 6 - Estimated Distribution of Ecological Value

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Hydrology

URS was commissioned to prepare a hydrological report of the Study area (see Appendix C). This report identifies the main hydrological features – surface and ground- that may be influential in land use planning with regard to:

- hydrological risks or hazards; and
- suitability for the establishment and operation of servicing for water supply and wastewater disposal.

RAINFALL

Using NIWA rainfall data for Queenstown and the surrounding area URS has identified that the average monthly rainfall can vary between 58mm and 95mm with the wettest months being May, June and October and the driest months being February and July – September. A significant proportion of the precipitation during winter is snow falling at higher altitudes.

As the mountain catchment is very steep (typical grades of 3 horizontal to 1 vertical) with little or no vegetative cover and thin soils the majority of rainfall discharges as surface flow. On the valley floors the relatively permeable sands and gravels means that a high proportion of rainfall over this area will percolate to ground.

RIVER SYSTEMS

The Motatapu and the Matukituki are the two main river systems within the Study Area. Both have large mountainous catchments – the Matukituki being approximately 80,000ha and the Motatapu catchment being 25,000ha in area. The Matukituki River discharges to Lake Wanaka.

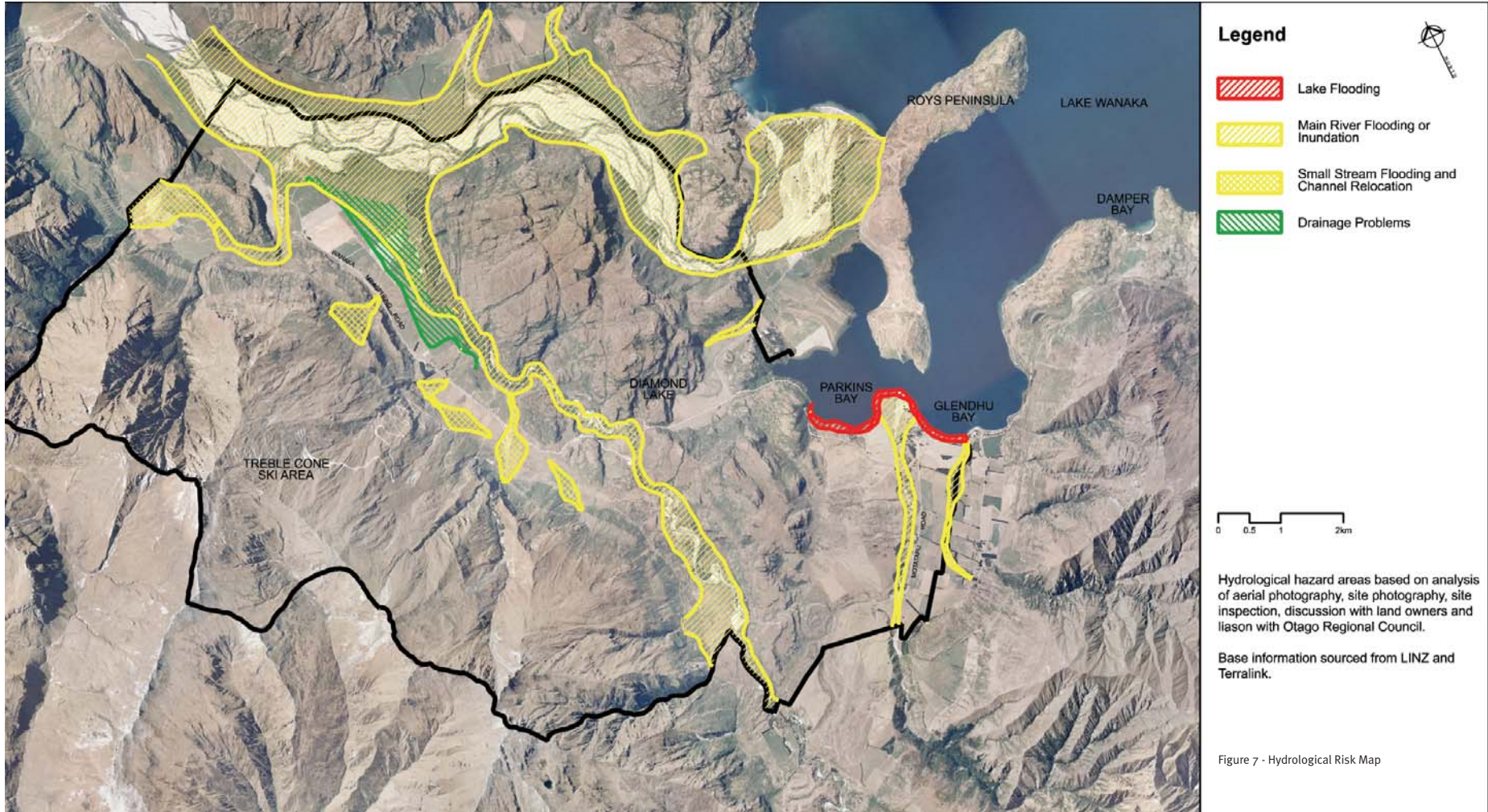
Peak seasonal flows in these rivers are generally in spring and early summer as a result of snow melt. Elevated flows therefore often occur over a reasonably prolonged period. Due to the nature of the catchments of these rivers they tend to carry a high bed load of silts and gravels.

In addition to the large river systems the Study area also contains a number of streams which drain the small, steep catchments. The catchments of these streams are relatively small i.e., less than 1000ha and are subject to significant variations in flow within short timeframes. In the higher catchments streams have elevated flows during snow melt but otherwise will have little or no base flow for the balance of the year. The report specifically discusses Jack Hall Stream which is the main waterway serving the Glendhu Bay catchment and displays similar characteristics to those streams draining the Treble Cone and End Peak areas. It has significant variations in flows over a relatively short period of time following rainfall events and little or no flow at other times of the year.

The streams do respond rapidly to rainfall intensity.

FLOOD RISKS

Lake level rise	<p>The Study Area encompasses some 14km of lake frontage between Dampier Bay and Paddock Bay. Along this length there are a number of locations where the land is relatively low lying and may be subject to flooding from the lake, particularly Glendhu and Paddock Bays. Lake level rises tend to occur in spring and early summer due to snow melt and high rainfall (noting that this is exacerbated following seasons of high snowfall and then warm temperatures and inflow to the lake exceeds discharge to the Clutha River). Extreme events may result in an increase in lake level of several metres (3.1m for 150 year return period) and extend over a period of weeks or months.</p>	Small Stream Flooding	<p>Peak flows generated by high intensity rainfall events considered to be of short duration with waters receding in less than a 24 hour period.</p>
Flooding from Large Rivers	<p>Extreme events can result in flows that exceed the channel capacity and result in inundation of low lying areas adjacent to the channel. Greatest period of risk is during the spring snow melt and the period of inundation may last several days or weeks. Large quantities of sediment can be expected to be deposited. Areas at risk of flooding are shown on the following map. Extensive willow growth in the river channel in the vicinity of Cattle Flat is a limitation on the flood capacity of the channel and increases the potential for and extent of over-bank flows. It is understood that there is a programme to remove or reduce willows in this locality. Stopbanks are not considered an option in this locality.</p> <p>Motatapu flooding is generally restricted to lower reaches. Overtopping of the channel has occurred every 2 to 3 years in recent times but natural slope of land has restricted inundation to within 100m of normal channel.</p> <p>Matukituki flooding is restricted to low lying areas adjacent to the channel. Farming is known to occupy old channels of this braided river system.</p>	Stream Relocation	<p>The mountain catchments are steep and as a result the stream flows have a high velocity and are capable of transporting large quantities of rock, gravel and sediment. High intensity rainfall in the mountain catchments can mobilise slip and scree slopes which will add further volume to the material transported by run-off. This material is deposited at the foot of mountain ranges and over time can result in channel relocations. Current stream alignments are considered relatively stable however this is assisted by periodic removal of gravel and sediment. Rock protection works currently protect road crossings at intersections with streams to prevent break-outs and scouring of bridge abutments.</p>



ASSESSMENT

Based on the above table of hydrological risks URS recommend that the following matters are taken into account as part of any development proposal:

BUILDING FLOOR LEVELS

In Areas of Lake Level Rise

The normal lake level is 278.5m. The assessed lake level for an event with an annual exceedence probability in the order of 0.67% (150 year return period) is 281.6m. Using rules in the Town Centre Zones as a guide floor levels above the 282.5 contour to provide suitable protection from lake level rise and wave run-up.

In Areas of Flood Risk from Rivers

Any change in land use in the vicinity of the Motatapu and Matukituki Rivers would require consideration of flood risk. Built development may be possible provided building platforms are raised above flood levels and there is no restriction on flood path or redirection of flow.

Channel Control Works

Along Wanaka Mount Aspiring Road channel control works may be required to protect built development from stream relocation e.g. rock armouring of stream banks, training banks, regular removal of sediment.

Hydrological Issues Related to Land Use

Cattle Flat between the Wanaka Mount Aspiring Road and the Motatapu River Soils with poor drainage. Built development possible only with construction of elevated building platforms. Saturated soils will require consideration for road and building foundations Stormwater drainage and wastewater disposal problematic.

Wanaka Bays Area	No obvious drainage problems to preclude built development. More detailed assessment is recommended to assess soil permeability, depth of topsoil and depth to groundwater for wastewater disposal.
Cattle Flat/Motatapu Valley	Limited groundwater resource likely to be available at shallow depth within the area adjacent to the river. Abstraction flows may be limited during drier months in order to maintain flows within river. Groundwater not a secure source and treatment of water would be required.
Lower Motatapu/ Matukituki River Area	Although groundwater hydraulically connected to the river system, the volume of water likely to be significantly greater than from further up the Motatapu River with less likelihood of restrictions. Need for treatment would need to be confirmed by testing.
Glendhu Bay	Depth to groundwater increases with distance from the lake. Large groundwater abstractions are likely to draw water from the lake due to link between groundwater and lake. Not considered to be a secure source and would require treatment for domestic consumption.

Traffic

Traffic Design Group has been commissioned to investigate the transport resources in the Glendhu Cattle Flat Corridor. This report is attached as Appendix D.

The principal road servicing the Corridor is the Wanaka – Mount Aspiring Road which starts within the urban area of Wanaka. This is a fully sealed road all the way to the Treble Cone skifield entrance.

It is a high standard, two-way rural arterial road (6.0m seal width typical) with minimal roadside shoulder width. The speed limit is 100km/h and the vertical alignment generally follows flat to rolling topography. A widened sealed shoulder is provided along the northern side of the road alongside the Glendhu motor camp, but not on the southern side.

Mototapu Road intersects with the Wanaka – Mount Aspiring Road, just west of the motor camp. It is an unsealed road extending for a distance of some 6 to 7km. It is 4m-6m wide with sections that only accommodate single lane movement. Similarly, the West Wanaka Road connects with the Wanaka – Mount Aspiring Road further to the west. This road is approximately 5km in length, unsealed and between 4m and 6m wide with sections of single vehicle width. Of note is the single lane suspension bridge over the Matukituki River.

There are two single lane bridges along the Wanaka – Mount Aspiring Road (west of Glendhu Bay and across the Motutapu River) as well as single lane cattlestop east of the Treble Cone access. The two single lane bridges on the sealed section of the road are considered to be localised “pinch points”. The highly directional flow of traffic to and from the ski-field means that there is a constant stream of vehicles using the bridges during peak periods.

Beyond the ski field entrance a two-lane gravel road continues alongside the Matukituki River, passing over three single lane bridges on its way to the Mount Aspiring Park.

Activities within the Corridor which generate traffic include Treble Cone ski field and the Glendhu Bay motor-camp. Traffic will also pass through the Corridor on its way to the Mount Aspiring National Park. Traffic surveys indicate that the greatest traffic flows occur on a Saturday in winter when the ski field accounts for 99% of all traffic movements. Over the summer months other land uses generate traffic but only at 40% to 65% of the winter volume.

In May 2001 the average daily traffic volume between:

- Mototapu Road and West Wanaka Road was 340 vehicles (two way) and
- From West Wanaka Road to the end of the sealed carriageway was 140 vehicles (two way)

These volumes were surveyed outside the peak winter ski season. Traffic generated by winter activities at Treble Cone ski field were surveyed in 2002 with up to 1,000 vehicles per day. The winter traffic flows are also highly directional in response to the opening and closing of the ski field.

Having regard to these volumes of traffic the Wanaka-Mount Aspiring Road is assessed as having an A level of service for a significant proportion of its length during summer. This level of service diminishes in winter with an A level achieved only from the Treble Cone ski-field to the northern edge of the study area and the balance of the road operating with a C or D level of service.

Levels of service range between an “A” level - where a driver can travel along a road at the intended speed limit without any significant disruption or inconvenience - down to an “E” which indicates significant delay to the desired travel time.

ANALYSIS

On the basis of the above it is not anticipated that land use changes within the Study Area will result in any significant traffic or road safety issues during summer. A reduction in the level of service could be anticipated in winter however when considering the cumulative effect of traffic additional to that generated by the Treble Cone ski-field.

It is recommended that more detailed investigations are carried out in relation to specific land use proposals.

Landscape

Boffa Miskell has prepared a landscape report identifying the natural character, landscape and amenity values within the Study Area. It provides a preliminary evaluation of the potential of different parts or units of the landscape to absorb change. This report is attached as Appendix E.

The main land types within the Study Area are:

Mountain Slopes

Wanaka-Hawea Mountains to the north of the Study Area. Visually prominent and highly visible from the Treble Cone Ski-field.

Richardson Mountains form the eastern boundary of the Study Area. Extremely steep and visually rugged features.

Harris-Cardrona Mountain Range – includes most east facing mountain slopes in the Study Area. Deeply incised gorges and canyons, extensive rock outcrops and bluffs. Treble Cone, End Peak and Roys Peak form prominent features along the eastern ridge of the range.

River flats and fluvial terraces

Matukituki River – includes valley floors and floodplains, forming northern boundary of the Study Area.

Motatapu and Fern Burn Rivers – comparatively narrow riverbeds, with extensive fluvial terraces.

Moraine Outwash Plains and Isolated Mountains

Roches Moutonees – outcrops of resistant bedrock with a gentle abraded slope on the up-stream side of the ice and a steep rougher slope on the downstream side.

Morain Outwash Plains – material dumped by retreating ice appearing as long moraine ridges. Characterised by undulating landforms and extensive ablation and terminal moraine material, also found in depressions on and around the isolated mountains within the Study Area.

Lakes

Lake Wanaka – the lake is not part of the Study Area however the beaches along Glendhu and Damper Bay are.

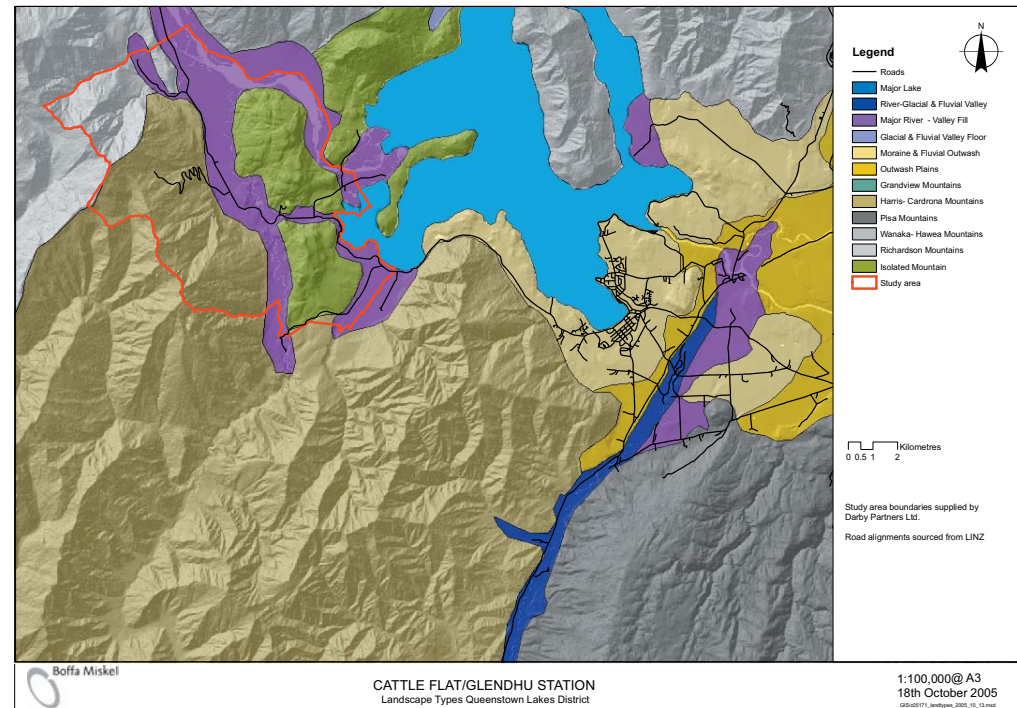


Figure 8

The landscape provides a high level of visual diversity and 9 distinct landscape character units were identified as part of the landscape character assessment. These were based on geomorphological patterns and variations in land cover. For each of these character units the report assesses their ability to absorb change.

Landscape Character Units



Landscape Unit 1: Harris Mountains



Landscape Unit 4A: Lower Motatapu River



Landscape Unit 6: Motatapu Valley Fans



Landscape Unit 8B: Hospital Flat and Diamond Lake



Landscape Unit 2: Carmel Burn Arm and Flats



Landscape Unit 4B: Upper Motatapu River



Landscape Unit 7: Fern Burn, Alpha Burn and Glendhu Station Flats



Landscape Unit 8C: Isolated Mountain (Roche Moutonnee) south of Hospital Flat



Landscape Unit 3: Matukituki River



Landscape Unit 5: Cattle Flat Station Flats



Landscape Unit 8A: Isolated Mountain (Roche Moutonnee) north of Hospital Flat



Landscape Unit 9: Lakeshore benches and beaches of Glendhu, Parkins and Paddock Bay

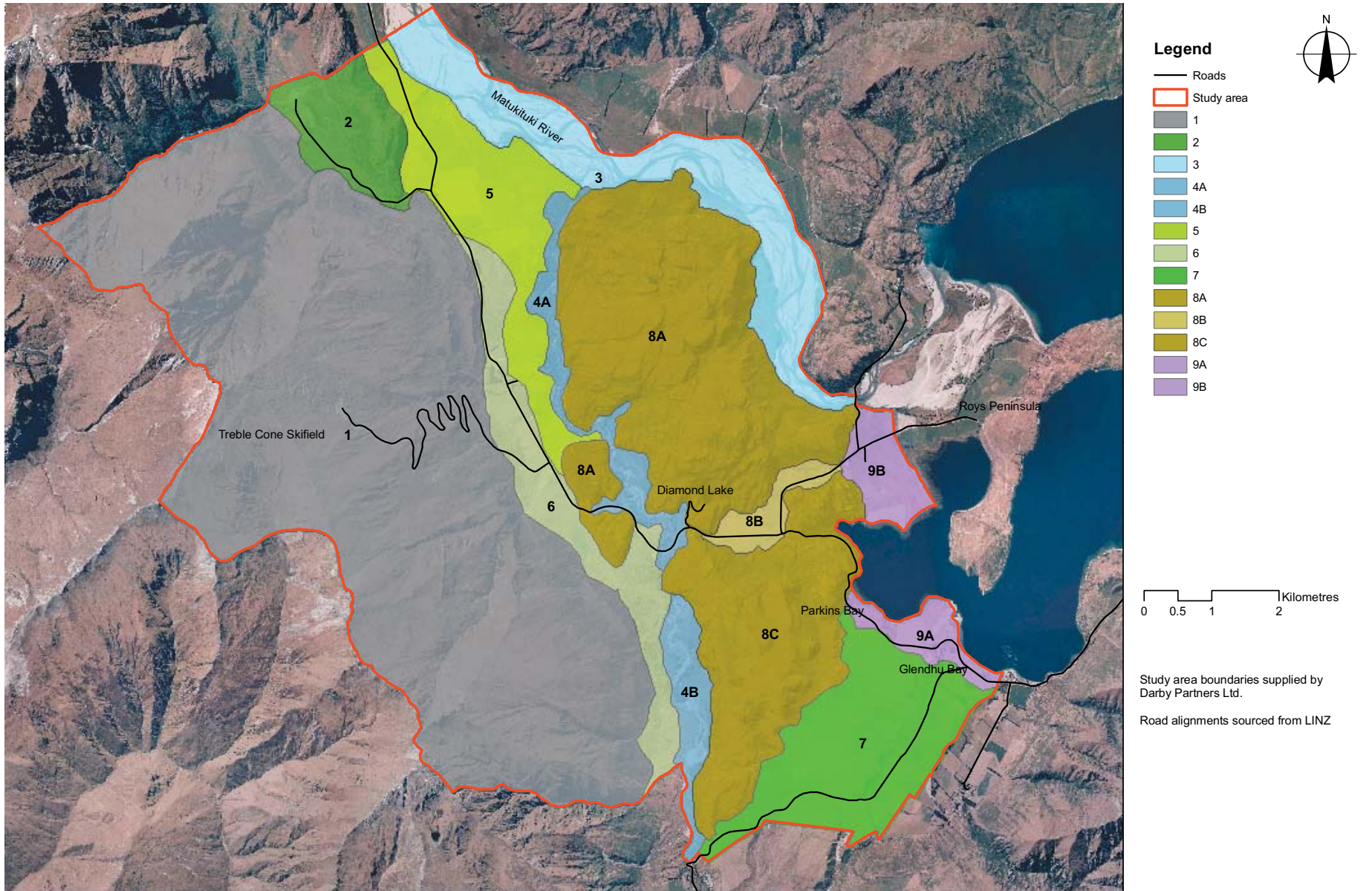


Figure 9 - Cattle Flat/Glendhu Station - Outline Landscape Character Units

LANDSCAPE ASSESSMENT UNITS

Unit Number	Landscape Values and Natural Character	Landuse Potential
Unit 1 Harris Mountains	High natural character on mountain slopes (above 1100m).Aesthetic values significant. Provides backdrop to entire Glendhu Bay and a visual boundary to the Mount Aspiring National Park. Changing light and weather conditions and contrast between mountains and foreground described as spectacular.	Landuse potential is limited due to steepness except for recreation activities which are high. Treble Cone ski-field major attraction.
Unit 2 Carmel Burn Arm and Flats	Carmel Burn Arm interesting geographic feature which encloses the flats and provides a special background for the Carmel Burn River.	Agronomic value high and valley floors currently used for semi-extensive grazing. Private land, not accessible to public.
Unit 3 Matukituki River	A natural, braided river consisting of recent and active braids with extensive gravel. Largely natural condition with willow trees in riparian margin. Water is milky turquoise in colour as a result of glacial origins.Dominance of exotic pasture impacts on natural character. Forms an integral part of valley ecosystem.Aesthetic values assessed as high due to domination and scale of landscape feature.	Wetlands mostly drained for agricultural purposes and intensively grazed. Exotic pasture dominant.Serves as entrance way to Mount Aspiring National Park.Recreation values are fishing, duck shooting and tramping.
Unit 4 Motatapu River	Higher natural character above road bridge than in lower reaches.River channel is narrow and willow-lined.High aesthetic values.	Valley is farmed.Highly valued for recreation opportunities:- canoeing and tubing popular- mountain biking- rock climbing - informal camping
Unit 5 Cattle Flat Station Flats	Due to wetland drainage natural values are low.Appearance of the valley floors varies seasonally in response to deciduous vegetation and colours. Provides visual links and crates an entrance to the valley between the isolated mountain to its east and the Harris Mountains to the west.	High agronomic value and used for grazing.
Unit 6 Motatapu Valley Fans	Whilst flat parts of Motatapu Valley have been modified with exotic pasture, the Valley fans retain greater natural character. Provide a visual link between the steep mountain slopes and the flat pastoral terraces adjacent to the Motatapu River.	Extensive grazing
Unit 7 Fern Burn, Alpha Burn and Glendhu Station Flats	Dominated by exotic pasture and trees, while areas of hummocky topography contain briar rose, matagouri and kanuka shrubs. The surface texture created by the topography in combination with vegetation creates a natural appearance and visually contrasts with the steep mountains.	High agronomic value
Unit 8 Isolated Mountains	Roche moutonees visibly reflect their formative processes.Described as impressive, the landforms are central to the wider landscape. Appear as solid blocks from distant elevations with irregularities and hummocks more apparent in close proximity.	Diamond Lake area popular with picnickers and trampers in summer.
Unit 9 Glendhu, Parkins and Paddock Bays	Part of an enclosed dramatic, romantic mountain and lake landscape of high value. Lakeshore provides a transition between pastoral landscape and the lake. Dominated by poplars, willows is of high visual quality and adds diversity. Seasonal colours widely appreciated and recorded.	Boating, picnickers, camping ground. Water based recreational activities

VISIBILITY

The next step was to analyse the visibility of each Landscape Unit from the Mount Aspiring and/or Motutapu Roads and key viewpoints from homestead areas on Cattle Flat, Glendhu and Alpha Burn Stations, the Treble Cone Ski-field and Lake Wanaka. The results of that assessment are as follows:

Landscape Character Unit	Visibility	Visible from
Landscape Unit 1: Harris Mountains	High	Most viewpoints, some parts not visible from valley floor
Landscape Unit 2: Carmel Burn Arm and Flats	Low	Flats not visible
Landscape Unit 3: Matukituki River	Moderate	West of Hospital Flat
Landscape Unit 4A: Lower Motutapu River	High	West of Hospital Flat
Landscape Unit 4B: Upper Motutapu River	Low	Road bridge only
Landscape Unit 5: Cattle Flat Station Flats	High	West of Hospital Flat
Landscape Unit 6: Motutapu Valley Fans	High	West of Hospital Flat
Landscape Unit 7: Fern Burn, Alpha Burn & Glendhu Station	Varied	High Glendhu Bay, varied from Motutapu Rd.
Landscape Unit 8A: Isolated Mountain north of Hospital Flat	Varied	Highly visible feature, some terraces hidden from views
Landscape Unit 8B: Hospital Flat and Diamond Lake	High	Within Hospital Flat only
Landscape Unit 8C: Isolated Mountain south of Hospital Flat	Varied	Highly visible feature, some terraces hidden from views
Landscape Unit 9A: Lakeshore Glendhu Bay	High	Glendhu Bay
Landscape Unit 9B: Lakeshore Parkins and Paddock Bay	Moderate	Glendhu Bay

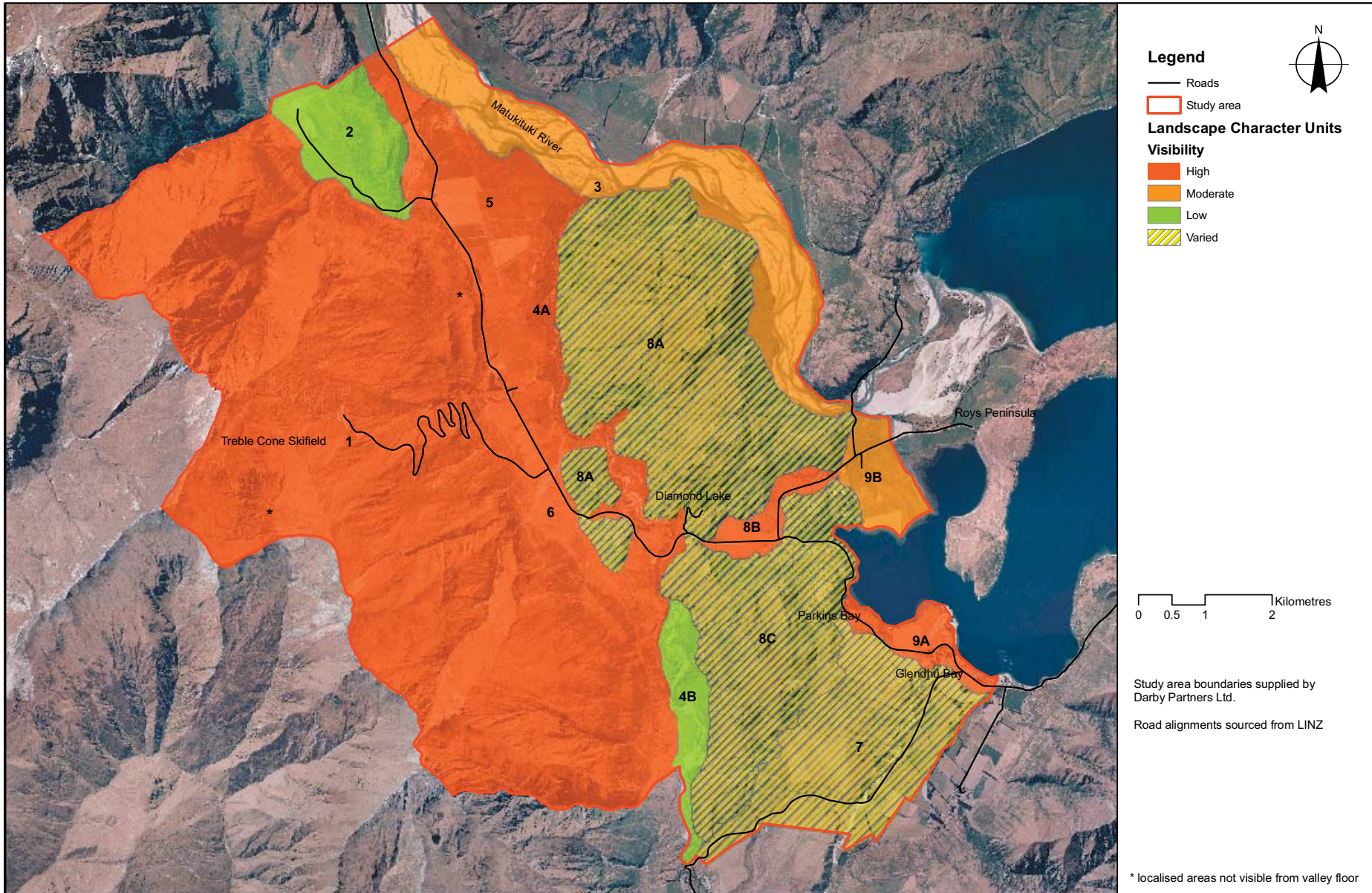


Figure 10 - Cattle Flat/ Glendhu Station - Visibility Landscape Character Units

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ABILITY TO ABSORB CHANGE

Each Landscape Unit was then further assessed to determine the degree to which the landscape could accommodate change at a residential scale. The higher the visual prominence, the lower the ability to visually absorb development and maintain existing visual character.

Landscape Character Unit	Ability absorb change	Comments
Landscape Unit 1: Harris Mountains	Low	Steep slopes highly visible with low mitigation potential, some areas not visible from valley floor
Landscape Unit 2: Carmel Burn Arm and Flats	High	Flats not visible
Landscape Unit 3: Matukituki River	Low	Any flood protection works will impact natural character
Landscape Unit 4A: Lower Motatapu River	Moderate	If flood protection needed, highly visible, high mitigation potential
Landscape Unit 4B: Upper Motatapu River	Moderate	If flood protection needed, not visible from road, low mitigation potential
Landscape Unit 5: Cattle Flat Station Flats	Moderate	Highly visible from road, high mitigation potential
Landscape Unit 6: Motatapu Valley Fans	Low	
Landscape Unit 7: Fern Burn, Alpha Burn & Glendhu Station	Varied	Only partly visible from road, high mitigation potential
Landscape Unit 8A: Isolated Mountain north of Hospital Flat	Varied	Only partly visible from road, limited mitigation potential
Landscape Unit 8B: Hospital Flat and Diamond Lake	Low	Highly visible from road, low mitigation potential
Landscape Unit 8C: Isolated Mountain south of Hospital Flat	Varied	Only partly visible from road, limited mitigation potential
Landscape Unit 9A: Lakeshore Glendhu Bay	Moderate	Highly visible from road, moderate mitigation potential
Landscape Unit 9B: Lakeshore Parkins and Pad-dock Bay	Varied	Partly visible from road, varied mitigation potential

SUMMARY

Only one area, the Carmel Burn Arm and Flats is considered to have high absorption capability. The bulk of the Harris Mountains, the Matukituki River, Motatapu Valley Fans, Hospital Flat and Diamond Lake are all considered to have low potential for absorbing change. The remaining Landscape Units have moderate or varied potential to absorb change. Clearly it is important to consider the type of activity proposed and detailed analysis will be required for specific land development proposals.

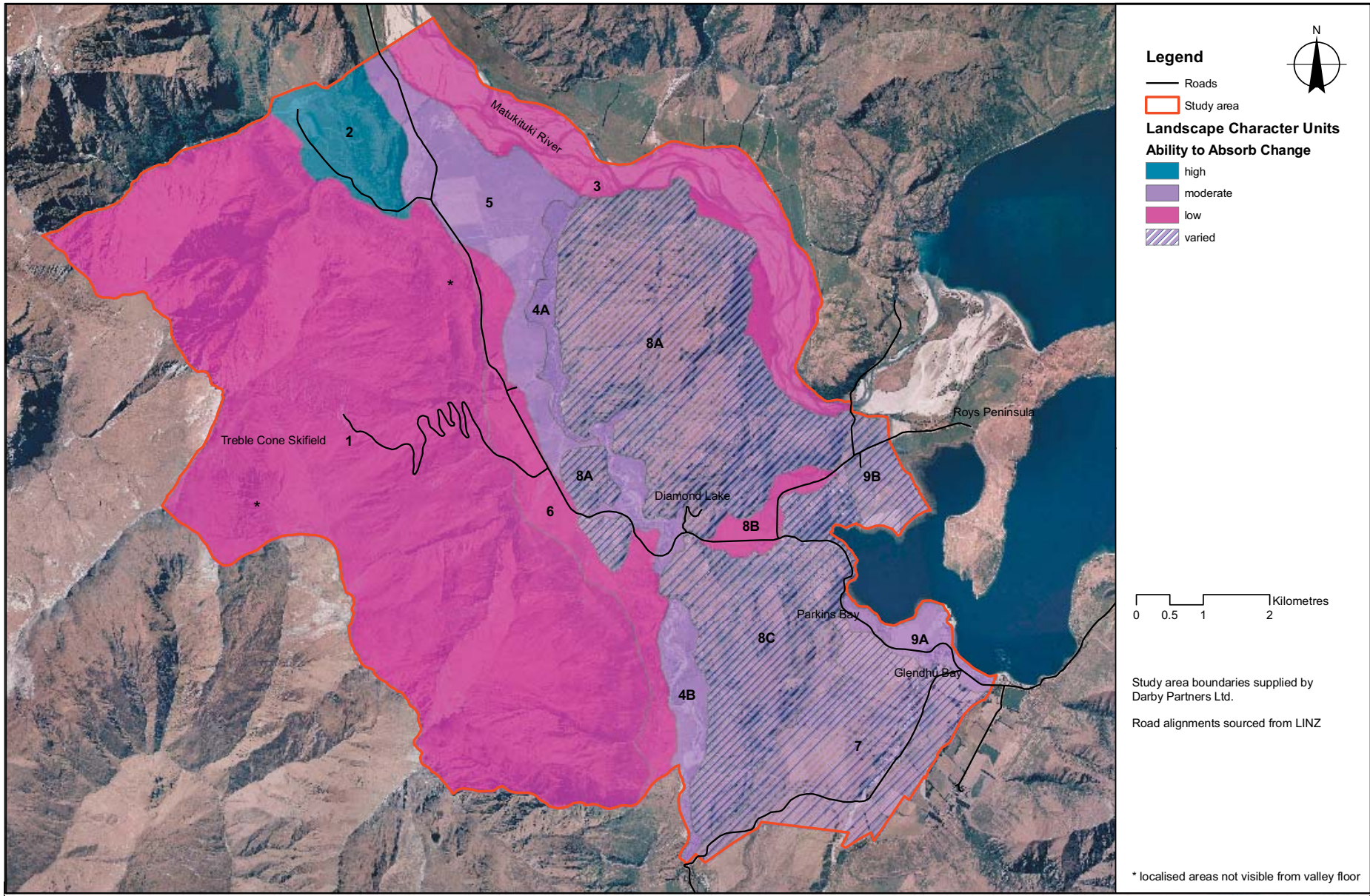


Figure 11 - Cattle Flat/ Glendhu Station - Ability of Landscape Character Units to Absorb Change

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Planning Context

District Plan Policy Guidance

The following are some of the key policy directions that may be relevant to consideration of future land use options in the Glendhu / Cattle Flat corridor.

Subdivision

- Density and character of development is important.
- Subdivision provides an appropriate time to secure protection of significant cultural, landscape and ecological sites including the margins of lakes and rivers.
- The desirability of public access to river and lake margins is a matter of importance repeated throughout the District Plan.
- The opportunity to create ecological and amenity linkages and a rural walkway network.
- Multiple use of public open space and recreational areas is supported while increased use of private open space is encouraged.

Transport

- The District Plan is concerned to achieve a safe and efficient transport network.
- Consideration of the nature and intensity of activities is important in relation to capacity and function of road.
- New roading and access is to have regard to landscape values and the natural environment
- The consolidation of urban areas is promoted as a way of reducing vehicle trip lengths and enhancing the efficient use of fossil fuels.
- The consolidation of visitor accommodation close to main traffic routes along with increased pedestrian and cycle linkages are encouraged to further increase energy efficiency.

Landscape

- The District Plan directs subdivision and development to those areas with the greater potential to absorb change. This requires consideration of topography, ecological systems and natural conservation values.
- Openness is an important feature.
- Only limited development is considered appropriate in rural zones with comprehensive and sympathetic development encouraged.
- The placement and design of structures in the rural area is important, with buildings in harmony with the line and form of the landscape and the skyline, ridges, prominent slopes and hilltops avoided. Roads, tracks and car parks are similarly encouraged to locate on the edge of landforms.
- Earthworks are an important consideration due to the potential to alter the natural shape and form of the landscape.

Nature Conservation Values

- Nature conservation values are important District wide. This involves protecting and enhancing the function of indigenous ecosystems and maintaining a sufficient viable habitat.
- The preservation of the natural character of lakes, rivers, wetlands and their margins is a matter of national importance as is the protection of outstanding natural features and landscapes.
- Lake Wanaka is identified as a popular picnicking, boating and swimming destination.
- Significant resource management issues for Lake Wanaka include preservation of natural character, relationship with Takata Whenua, landscape and amenity values, navigation and conflict between lake users.

Other

- The quality and quantity of the District water resource is important.
- Water supply, disposal of waste water and stormwater are all matters that the District Council require to be addressed in a way that does not adversely affect the environment (note may involve regional authority to achieve).
- The District Plan recognises the importance of the role of Kai Tahu as customary kaitiaki for the District. Sites of cultural and traditional significance are to be protected and water quality retained and improved.
- Heritage - to balance the demand to change activities with protecting and enhancing heritage resources, in order to preserve the character and history of the district. This may require liaison with either the Historic Places Trust or takata whenua. For cultural landscapes this may require maintenance of inter-connections and historic spatial patterns.

RURAL GENERAL ZONE

The Resource Study Area is zoned Rural General in the Queenstown Lakes District Plan except for the area occupied by Treble Cone Ski Area which is a special sub-zone of the rural zone.

The Rural General Zone is described in the District Plan as an area characterised by farming activities and a range of rural diversified industries such as horticulture and viticulture. The purpose of the Zone is to manage activities in a way that:

- protects and enhances nature conservation and landscape values;
- sustains the life supporting capacity of the soil and vegetation;
- maintains acceptable living and working conditions and amenity values for residents and visitors; and
- provides for a wide range of outdoor recreation.

The Ski Area Sub-Zones aim to provide for the continued development of ski-field activities within the identified boundaries.

The objectives for the Rural General Zone identify those matters that the Council and community consider important in relation to the Zone. These objectives are concerned with:

- protecting rural character and landscape values;
- the life supporting capacity of both soil and water;
- rural amenity; and
- mineral extraction.

At a policy level activities not reliant on rural resources are directed to areas where rural character is not adversely impacted. The range of buildings considered appropriate in a Rural General Zone is linked to those required for productive rural activities and worker accommodation.

There is an emphasis on preservation of the visual coherence of the landscape with structures sited in areas with the greatest potential to absorb change. In particular, the avoidance of structures on the skyline, ridges, hills or prominent slopes is supported. Extractive industries such as mining are controlled.

Allied to rural character is rural amenity. The Plan identifies that noise, dust, traffic and smell are an integral part of rural life however activities are required to ensure that such impacts do not create a genuine nuisance or health risk.

The Plan is also concerned that intensive subdivision and built development has the potential to compromise or reduce the life supporting capacity or extent of productive soils.

Although a wide range of activities is provided for, the Council has limited the minimum size of allotments to maintain opportunity for the use of soils.

Overall, the Rural General Zone is seeking to:

- Protect outstanding natural landscapes and features and maintain/enhance the openness and naturalness of these features
- Retain strong management of the visual effects of development
- Enhance natural character
- Provide for variety in the form of the settlement patterns based on the absorption capacity of the environment
- Provide for development whilst also retaining soil life-supporting capacity
- Avoid conflict between land uses.
- Provide for development and structures which are sympathetic to the rural environment

These environmental outcomes reflect a strong desire to maintain the landscape values of the rural areas of Queenstown-Lakes District.

The rules of the Rural General Zone reflect the strong policy guidance on landscape values with standards for building design, location and appearance that require Council consideration of individual projects.

Activities such as earthworks and planting are similarly controlled. Accordingly, the assessment matters for resource consents require considerable analysis of landscape, amenity and visual impacts arising from development.

The majority of the study area is identified as an Outstanding Landscape with lake edge areas, Glendhu and Parkins Bays and the Motutapu Valley floor identified as Visual Amenity Landscapes.

These landscape types are defined as follows:

Outstanding Natural Landscape – landscapes to which Section 6 of the Resource Management Act applies. They are described as “the romantic landscapes – the mountains and the lakes” of Queenstown Lakes District.

Outstanding Natural Feature – features to which Section 6 of the Resource Management Act applies.

Visual Amenity Landscapes – landscapes to which particular regard is to be had under Section 7 of the Resource Management Act. They are characterised by human modification but are:

- Adjacent to outstanding natural features or landscapes; or
- On ridges or hills; or
- Visible from public roads; or
- A combination of the above.

Outstanding natural features and landscapes are required to be protected from inappropriate subdivision, use and development, particularly where values of openness and naturalness are threatened. In Visual Amenity landscapes managing the adverse effects of subdivision and development, particularly from public places and roads, is a key issue.

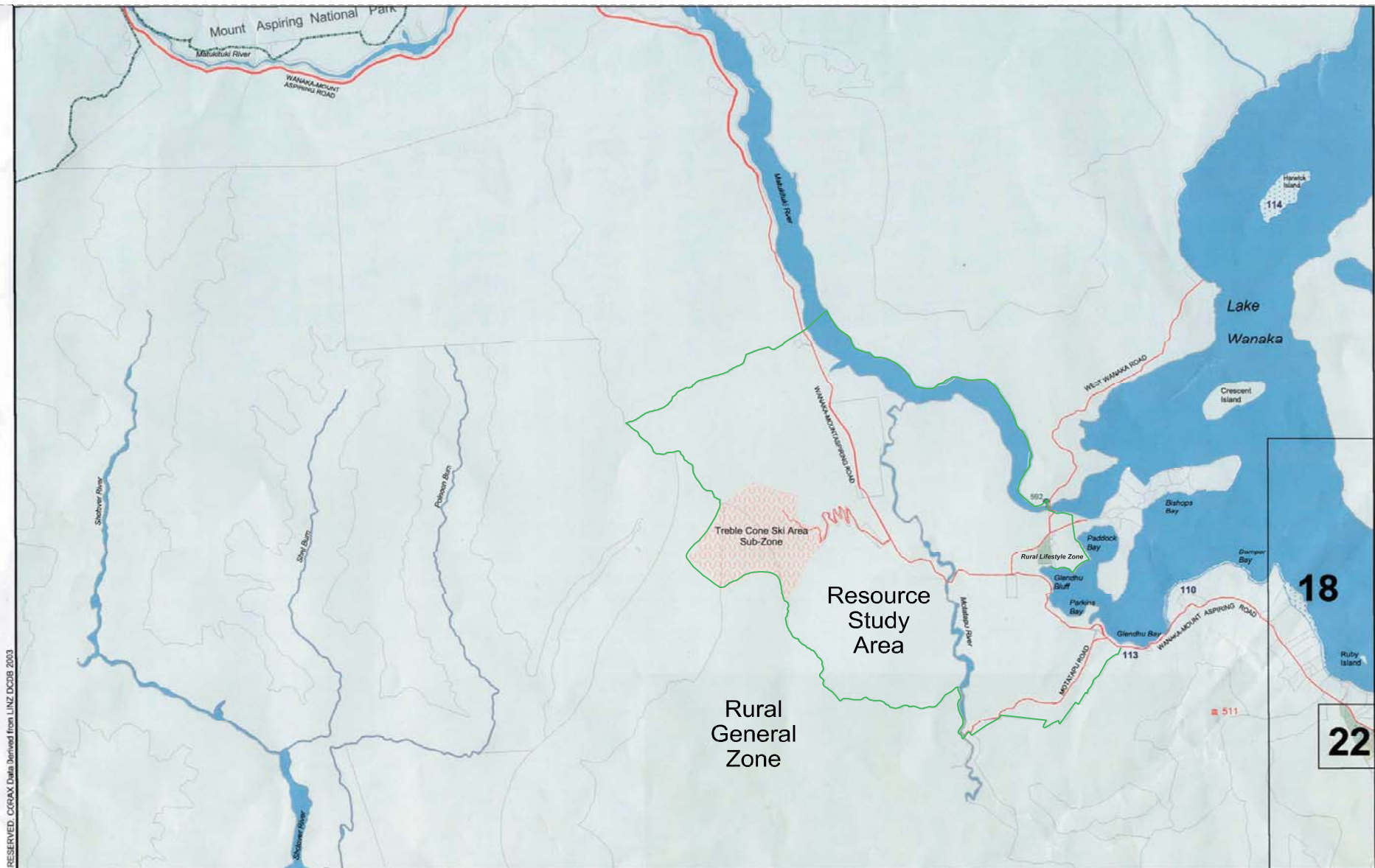
The provisions of the District Plan indicate that the Council will require a high level of understanding of the area and identification of localities able to absorb change before landuses which involve built development can occur. The Plan does not discourage development, but at a policy level it directs this to areas capable of visual change and additionally seeks to ensure that impacts on amenity, water and natural character are avoided or minimised.

OTAGO REGIONAL POLICY STATEMENT

The Otago Regional Policy Statement provides an overview or policy framework for the Otago Region. Key policy directions include:

- To recognise and provide for cultural values, including sacred places, mahika kai and the mauri and wairua of water bodies
- To avoid, remedy or mitigate degradation of natural and physical resources resulting from land uses
- To protect outstanding natural features and landscapes
- To promote diversification in the use of the land resource whilst ensuring adverse effects are addressed
- To promote public access opportunities
- To maintain and enhance water quality
- To preserve the natural character of rivers, lakes and their margins
- To promote a built environment that will meet the needs of future generations
- Recognise and protect heritage
- Efficiency in development and use of infrastructure
- Promote fuel efficient modes of transport and safe and efficient transport network
- Protect natural ecosystems
- Recognise and understand significant natural hazards, including the mitigation of hazards such as flooding and erosion.
- Restrict development in known hazard areas
- Promote improved energy efficiency

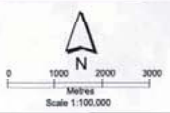
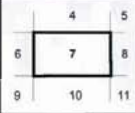
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Queenstown Lakes District Council

Figure 12 - Partially Operative District Plan Maps

June 2004



West Wanaka
Lake Wanaka
Upper Shotover

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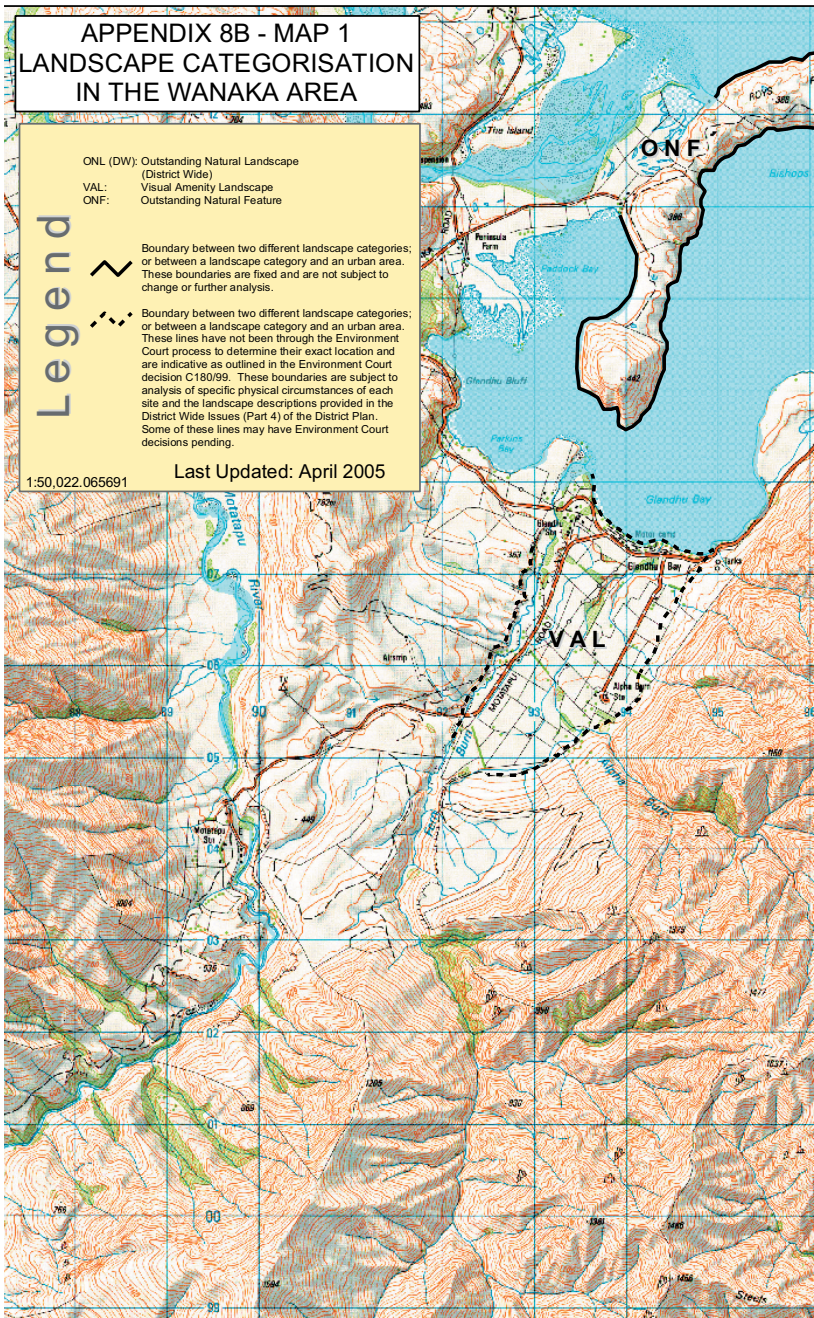


Figure 13 - Landscape Categorisation in the Wanaka area

Resource Summary

The following tables provide a summary for each landscape character unit within the Cattle Flat/Glendhu Corridor Study Area in relation to resources, land uses and ability to absorb change. These guidelines are intended to provide a basis for consideration and further refinement of future land use options.

RESOURCE SUMMARY	UNIT 1 - HARRIS MOUNTAINS
Geology	<ul style="list-style-type: none"> Schist with associated rock slides and landfall
Hydrology	<ul style="list-style-type: none"> Subject to small, isolated area of small stream flooding and channel relocation above Wanaka-Mt Aspiring Road.
Ecology	<ul style="list-style-type: none"> Low and tall bracken fernland Tall tussock grassland Extensive areas identified as Conservation Management Areas Ranges from low ecological value at base of mountains to high ecological values with increasing altitude
Visibility	<ul style="list-style-type: none"> High visibility from most viewpoints, excluding some areas of valley floor Treble Cone basin is hidden from view from the Lower Motatapu Valley floor.
Existing Land Uses	<ul style="list-style-type: none"> Recreation, open space, conservation
Potential Land Uses	<ul style="list-style-type: none"> Limited due to steepness and visibility Further intensification of Treble Cone Ski Area Sub Zone Visual amenity/open space/conservation
GUIDELINES	
Potential to Absorb Change	<ul style="list-style-type: none"> Low Most of the Treble Cone basin is hidden from view from the Lower Motatapu Valley floor
Infrastructure	<p>Access to the upper basin is a limiting factor for further development of Treble Cone as well as access to mountains generally</p> <p>Ski field infrastructure – provides an existing base for further intensification of activity. Infrastructure will require up-grading over time.</p> <ul style="list-style-type: none"> Road Electricity Sewerage, water
Public Access and Recreation	<ul style="list-style-type: none"> Access via Treble Cone skifield access road available, but limited Skiing, snowboarding, tramping, mountain biking



RESOURCE SUMMARY	UNIT 2 – CARMEL BURN ARM AND FLATS
Geology	<ul style="list-style-type: none"> • Fan deposits • Schist • Post glacial alluvium
Hydrology	<ul style="list-style-type: none"> • Subject to some flooding or inundation from the Matukituki plus small stream flooding and channel relocation
Ecology	<ul style="list-style-type: none"> • Pasture • Rough exotic grassland • Tall bracken fernland of low to moderate ecological values
Visibility	<ul style="list-style-type: none"> • Low except for slopes facing the Wanaka Mount Aspiring Road which have high visibility
Existing Land Uses	<ul style="list-style-type: none"> • Agronomic value is high and valley floors are currently used for semi-extensive grazing
Potential Land Uses	<ul style="list-style-type: none"> • High agronomic value
GUIDELINES	
Potential to Absorb Change	<ul style="list-style-type: none"> • High within the secluded flats but low where hill slopes face the Wanaka-Mount Aspiring Road.
Infrastructure	<ul style="list-style-type: none"> • Wanaka-Mt Aspiring Road by-passes to the northwest. Any intensification in land use resulting in more traffic easily accommodated over summer, but level of service for road would drop over winter. • Water abstraction from ground not secure, particularly during drier months. Treatment of groundwater for any domestic use would be required.
Public Access and Recreation	<ul style="list-style-type: none"> • Limited. In private ownership



RESOURCE SUMMARY	UNIT 3 – MATUKITUKI RIVER
Geology	<ul style="list-style-type: none"> • River channel with associated flood plain, terraces and delta
Hydrology	<ul style="list-style-type: none"> • Subject to flooding and inundation
Ecology	<ul style="list-style-type: none"> • River and lakeshore gravel of no ecological value, but isolated patches of low to high values on margin • Exotic pasture dominant
Visibility	<ul style="list-style-type: none"> • Moderate
Existing Land Uses	<ul style="list-style-type: none"> • Recreation • Wetlands drained for agricultural purposes and intensively grazed
Potential Land Uses	<ul style="list-style-type: none"> • Agronomic •
GUIDELINES	
Potential to Absorb Change	<ul style="list-style-type: none"> • Low due to openness of landscape and high natural character values. This relates to flood protection works as well as built development
Infrastructure	<ul style="list-style-type: none"> • Use of groundwater in this area possible (hydraulically connected to the River) but need for treatment would need to be confirmed by testing.
Public Access and Recreation	<ul style="list-style-type: none"> • Part of entrance way to Mount Aspiring National Park. Fishing, duck shooting, tramping. • District Plan seeks to enhance public access to river margins.



RESOURCE SUMMARY	UNIT 4 – MOTATAPU RIVER (UPPER AND LOWER)
Geology	<ul style="list-style-type: none"> • River channel with associated flood plain
Hydrology	<ul style="list-style-type: none"> • Subject to flooding and inundation
Ecology	<ul style="list-style-type: none"> • River, pasture, willows • Low ecological value
Visibility	<ul style="list-style-type: none"> • High west of Hospital Flat • Low at the road bridge
Existing Land Uses	<ul style="list-style-type: none"> • Farming • Recreation – canoeing and tubing, mountain biking, rock climbing, informal camping.
Potential Land Uses	<ul style="list-style-type: none"> • Any change to land use specific to areas where natural character and aesthetic values are not adversely affected • Farming • Recreation
GUIDELINES	
Potential to Absorb Change	<ul style="list-style-type: none"> • Moderate
Infrastructure	<ul style="list-style-type: none"> • Availability of water variable depending on location • Any intensification in land use resulting in more traffic could be easily accommodated over summer, but level of service for road would drop over winter.
Public Access and Recreation	<ul style="list-style-type: none"> • District Plan seeks to enhance public access to river margins • Continuation of existing recreation activities



RESOURCE SUMMARY	UNIT 5 – CATTLE FLAT STATION FLATS
Geology	<ul style="list-style-type: none"> • Post glacial alluvium • Fan deposits
Hydrology	<ul style="list-style-type: none"> • Subject to main river flooding or inundation • Areas of drainage problem
Ecology	<ul style="list-style-type: none"> • Pasture • Low ecological values
Visibility	<ul style="list-style-type: none"> • High visibility from road • High mitigation potential
Existing Land Uses	<ul style="list-style-type: none"> • High agronomic value and used for grazing
Potential Land Uses	<ul style="list-style-type: none"> • High Agronomic and grazing • Natural character is low but high visibility means that any built development would need to complement landscape and be appropriately sited.
GUIDELINES	
Potential to Absorb Change	<ul style="list-style-type: none"> • Moderate
Infrastructure	<ul style="list-style-type: none"> • Any intensification in land use resulting in more traffic could be easily accommodated over summer, but level of service for road would drop over winter. • Groundwater flows may be restricted over summer. Treatment of water for domestic consumption would be required.
Public Access and Recreation	<ul style="list-style-type: none"> • Private ownership



RESOURCE SUMMARY	UNIT 6 – MOTATAPU VALLEY FANS
Geology	<ul style="list-style-type: none"> • Fan deposits – angular and permeable
Hydrology	<ul style="list-style-type: none"> • Areas of small stream flooding and channel relocation
Ecology	<ul style="list-style-type: none"> • Pasture – low with isolated areas of moderate value
Visibility	<ul style="list-style-type: none"> • High
Existing Land Uses	<ul style="list-style-type: none"> • Extensive grazing on elevated fans.
Potential Land Uses	<ul style="list-style-type: none"> • Limited due to high visibility, limited potential to mitigate adverse visual effects and the high natural character values of the Harris mountain slopes.
GUIDELINES	
Potential to Absorb Change	<ul style="list-style-type: none"> • Low
Infrastructure	<ul style="list-style-type: none"> • Any intensification in land use resulting in more traffic could be easily accommodated over summer, but level of service for road would drop over winter.
Public Access and Recreation	<ul style="list-style-type: none"> • Only as thoroughfare to Mt Aspiring National Park, Treble Cone ski field or to access local walks



RESOURCE SUMMARY	UNIT 7 – FERN BURN, ALPHA BURN AND GLENDHU STATION FLATS
Geology	<ul style="list-style-type: none"> Fan deposits Post-glacial river alluvium
Hydrology	<ul style="list-style-type: none"> Some potential for flooding and inundation
Ecology	<ul style="list-style-type: none"> Pasture, rough exotic grassland of low ecological value
Visibility	<ul style="list-style-type: none"> Varied High from Glendhu Bay, but varied from Motatapu Road
Existing Land Uses	<ul style="list-style-type: none"> Grazing
Potential Land Uses	<ul style="list-style-type: none"> Limited in the valley floor and on the slopes surrounding the valley due to visibility, need to maintain visual amenity and need for built development to be complementary to landscape character. Note that slopes form backdrop to Lake Wanaka foreshore.
GUIDELINES	
Potential to Absorb Change	<ul style="list-style-type: none"> Varied High mitigation potential in specific locations
Infrastructure	<ul style="list-style-type: none"> Motatapu Road currently only gravel road with limited capacity
Public Access and Recreation	<ul style="list-style-type: none"> Limited, in private ownership



RESOURCE SUMMARY	UNIT 8 – ISLOATED MOUNTAINS
Geology	<ul style="list-style-type: none"> • Dominated by roche moutonee • Schist, post glacial alluvium and glacial till, isolated aeolian deposit
Hydrology	<ul style="list-style-type: none"> • Potential for flooding only on boundaries alongside the Matukituki and Motatapu Rivers
Ecology	<ul style="list-style-type: none"> • Varied rough exotic grassland, willows • Tall bracken fernland • High values around Glendhu Bluffs • Subject to extensive areas of conservation covenants / conservation management areas
Visibility	<ul style="list-style-type: none"> • Varied due to hummocky topography with some terraces hidden from view but other sites of high visibility
Existing Land Uses	<ul style="list-style-type: none"> • Farming and recreation • Diamond Lake popular with picnickers and trampers
Potential Land Uses	<ul style="list-style-type: none"> • Built development only in areas that are hidden from view to avoid adverse effects on natural character and aesthetic values. Access to any built development would have potentially high landscape effects and need to be carefully sited. • Potential to create/enhance ecological links between conservation areas and/or lake foreshore • Potential for enhancing recreation activity and linkages
GUIDELINES	
Potential to Absorb Change	<ul style="list-style-type: none"> • Moderate to varied
Infrastructure	<ul style="list-style-type: none"> • Any intensification in land use resulting in more traffic could be easily accommodated over summer, but level of service for road would drop over winter. • Electricity infrastructure placed underground in Diamond Lake locality
Public Access and Recreation	<ul style="list-style-type: none"> • Diamond Lake popular with picnickers and trampers • Opportunity to enhance and link recreation activities



RESOURCE SUMMARY	UNIT 9 – GLENDHU, PARKINS AND PADDOCK BAYS
Geology	<ul style="list-style-type: none"> • Post glacial alluvium • Beach deposits in sheltered places
Hydrology	<ul style="list-style-type: none"> • Potential for lake flooding
Ecology	<ul style="list-style-type: none"> • Pasture, willows, rough exotic grassland
Visibility	<ul style="list-style-type: none"> • High on Glendhu Bay lakeshore • Moderate Parkins and Paddock Bays lakeshore
Existing Land Uses	<ul style="list-style-type: none"> • Camping ground • Pastoral farming • Popular base for water related recreation, picnicking
Potential Land Uses	<ul style="list-style-type: none"> • Recreation base and linkages • Enhance public access
GUIDELINES	
Potential to Absorb Change	<ul style="list-style-type: none"> • Moderate at Glendhu Bay with moderate mitigation potential • Varied at Parkins and Paddock Bays, with varied mitigation potential
Infrastructure	<ul style="list-style-type: none"> • Any intensification in land use resulting in more traffic could be easily accommodated over summer, but level of service for road would drop over winter. • More detailed assessment for soil permeability, depth of topsoil and depth to groundwater is required
Public Access and Recreation	<ul style="list-style-type: none"> • Boating • Picnickers • Camping Ground • Water based



Management Strategy

Figure 14 shows the combined influence of landscape and ecology values on land use change.

The main features of this plan are:

- The Harris Mountains have high ecological value and low potential to absorb any change in land use
- The Glendhu and Parkins Bays and areas of Cattle Flat have moderate potential to absorb change
- The Matukituki River has low potential to absorb change
- Significant areas between the Wanaka Mount Aspiring Road and the Matukituki River are subject to conservation covenants or have been identified as conservation management areas
- Due to subtle changes in the topography and the alignment of the Wanaka Mount Aspiring Road there are significant areas where there is varied potential to visually absorb change.

Accordingly, the Management Strategy for future land use options is to be guided by the following principles:

- 1 Protection of the natural character values of the non-modified parts of the Harris Mountains, the Upper Motatapu Valley and the Matukituki River.
- 2 Protection of the visual amenity values of the foreshore of Lake Wanaka.
- 3 To recognise that the Queenstown Lakes District Plan identifies Treble Cone as a Ski Area Sub Zone which provides a basis or node for enhancing recreational activities and access to the Harris Mountains
- 4 Seek opportunities to enhance public access to the mountains, lake foreshore and river margins for recreation.
- 5 Seek opportunities to create and/or enhance ecological linkages between conservation management area, areas subject to conservation covenants, the lake foreshore, river margins and mountains.
- 6 To restrict built development to areas with moderate or varied absorption capability where further detailed assessment has confirmed that the locations are either not visible from public places or have the potential for any adverse effects on landscape values to be mitigated. It is recognised that the capability of individual sites will vary in terms of the scale of any built development able to be absorbed.
- 7 The location of any access roads needs to be considered as part of any assessment as to capability of built development.
- 8 The siting and design of any new buildings must be complementary to the character and qualities of the landscape.

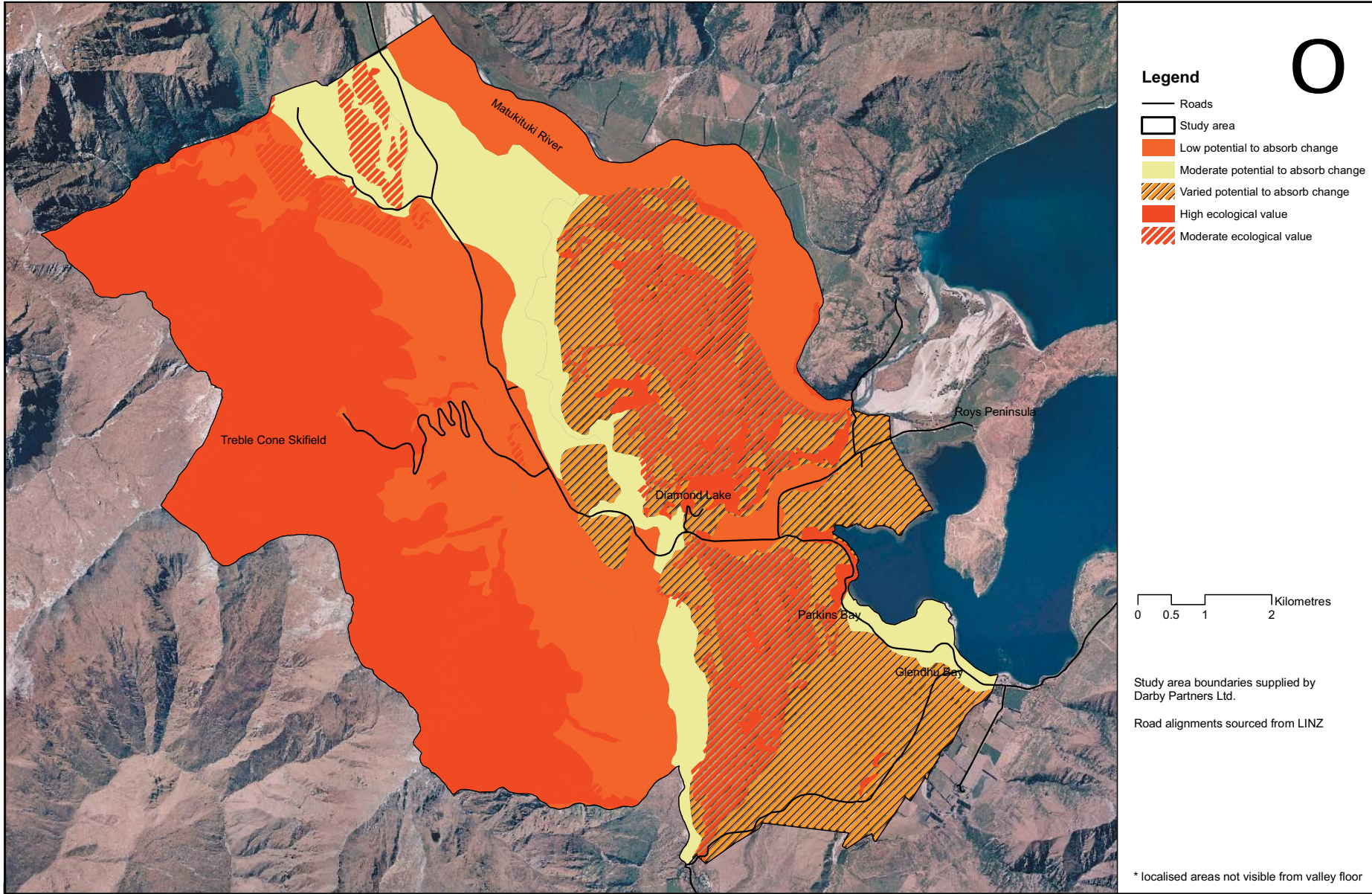


Figure 14 - Cattle Flat/ Glendhu Station - Development Suitability - Landscape and Ecology

1:50,000 @ A3
28th October 2005

GIS\c05171_changeabsorption_2005_10_28.mxd

APPENDIX 2 Relevant Objectives and Policies from the PDP

Chapter 3 Strategic Directions

3.2.5.1 Objective – Protection of the natural character quality of the Outstanding Natural Features and Landscapes and Outstanding Natural Features from inappropriate subdivision, use and development. (QLDC Right of Reply, 07/04/16)

Chapter 6 Landscapes

6.3.1 Objective - The District contains and values Outstanding Natural Features, Outstanding Natural Landscapes, and Rural Landscapes that require protection from inappropriate subdivision and development Landscapes are managed and protected from the adverse effects of subdivision, use and development. (QLDC Right of Reply, 07/04/16)

6.3.2 Objective - Avoid adverse cumulative effects on landscape character and amenity values caused by incremental subdivision and development Landscapes are protected from the adverse cumulative effects of subdivision, use and development. (QLDC Right of Reply, 07/04/16)

Objective 6.3.3– The Protection, maintenance or enhancement of the District's Outstanding Natural Features and Landscapes (ONF/ONL) from the adverse effects of inappropriate development. (QLDC Right of Reply, 07/04/16)

Policy 6.3.3.2 *Ensure that subdivision and development in the Outstanding Natural Landscapes and Rural Landscapes adjacent to Outstanding Natural Features would not degrade the landscape quality, character and visual amenity of Outstanding Natural Features.* (notified version)

Policy 6.3.4-13.3 *Avoid subdivision and development that would degrade the important qualities of the landscape character and amenity, particularly where there is no or little capacity to absorb change.* (QLDC Right of Reply, 07/04/16)

Policy 6.3.4-23.4 *Recognise that large parts of the District's Outstanding Natural Landscapes include working farms and accept that viable farming involves activities which may modify the landscape, providing the quality and character of the Outstanding Natural Landscape is not adversely affected.* (QLDC Right of Reply, 07/04/16)

6.3.4-33.5 *Have regard to adverse effects on landscape character, and visual amenity values as viewed from public places, with emphasis on views from formed roads.* (QLDC Right of Reply, 07/04/16)

6.3.8 Objective - Recognise the dependence of tourism on the District's landscapes. (notified version)

Policy 6.3.8.1 *Acknowledge the contribution tourism infrastructure makes to the economic and recreational values of the District. (notified version)*

Policy 6.3.8.2 *Recognise that commercial recreation and tourism related activities locating within the rural zones may be appropriate where these activities enhance the appreciation of landscapes, and on the basis they would protect, maintain or enhance landscape quality, character and visual amenity values. (notified version)*

APPENDIX 3 Map Motatapu Fern Burn Levels of Naturalness

Map from Peer Review of Landscape Assessment - Outstanding Natural Landscape of the Upper Clutha, Part of the Queenstown Lakes District. for the Queenstown Lakes District Council

Prepared by Anne Steven Landscape Architect, June 2014



APPENDIX 4 Graphic Supplement to Evidence

Prepared by Boffa Miskell Ltd, April 2017

Glendhu Station Zone

District Plan Review Hearing for Glendhu Bay Trustees Limited (#583)


Graphic Supplement to support the Assessment of Landscape and Visual Effects of Yvonne Pfluger

April 2017





LEGEND

 PHOTOGRAPH LOCATION
VP#

Sourced from the LINZ Data Service and licensed for re-use under the Creative Commons

Proposed Campground Activity Area occupying both terraces

Glendhu Bay Campground



Viewpoint 1: View from Wanaka- Mt Aspiring Road on western side of Alpha Burn. Existing Glendhu Bay campground is visible on the right. Terraces on the left would form part of the Campground Activity Area.

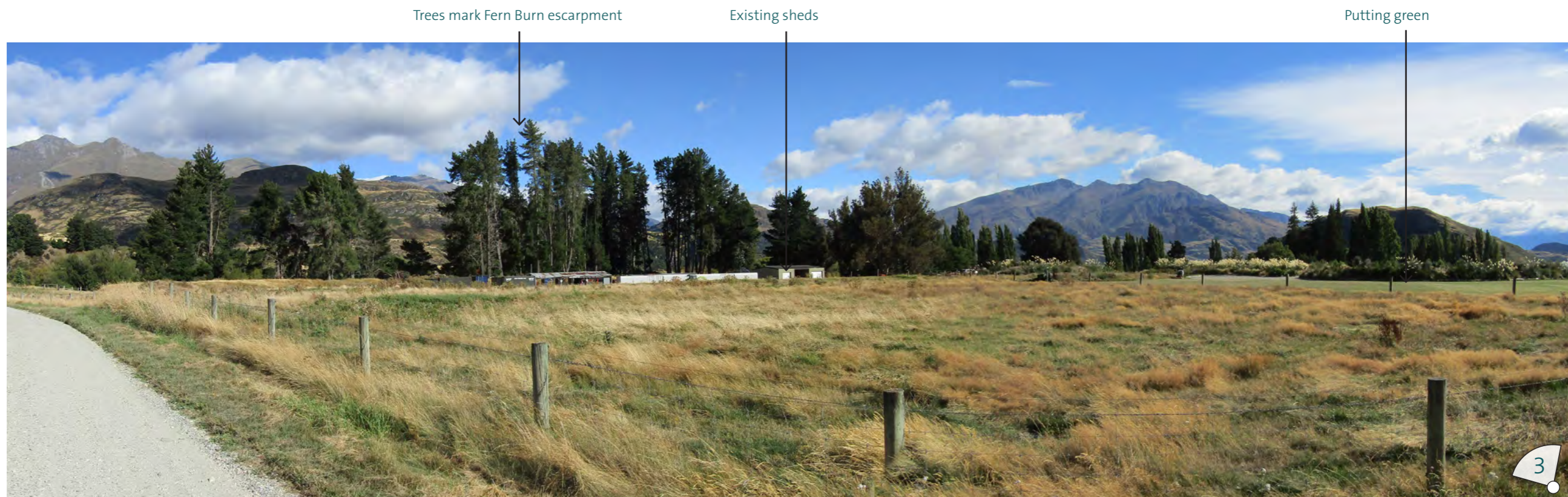
Motatapu Road

Woolshed

Glendhu Bay Campground



Viewpoint 2: View from Wanaka- Mt Aspiring Road between Alpha Burn and Motatapu Road turn-off. Existing Glendhu Bay campground is visible on the right. Terraces in foreground on the left would form part of the campground, with Farm Homestead Activity Area on either side of Motatapu Road. The Farm Homestead Activity Area includes the mature trees visible behind the woolshed on lower and upper terrace.



Viewpoint 3: View into the Farm Homestead Activity area from Motatapu Road on the upper terrace. The area includes a number of existing sheds and buildings, clustered in the complex terrain that has been carved out by the Fern Burn. Mature exotic trees line the Fern Burn and terraces.



Viewpoint 4: Looking into the Farm Homestead activity area from the north west. Several buildings are clustered in this area, which is largely surrounded by mature exotic trees.



Viewpoint 5: On the western side of Fern Burn the views open up across the Golf Activity Area on the right towards the Lakeshore Activity Area. The line of mature poplars marks the alignment of the DOC walkway that leads to the Parkins Bay lakeshore.



Viewpoint 6: View across the Golf Activity Area towards the Lakeshore Activity Area, where the clubhouse and visitor accommodation would be located.



Viewpoint 7: View from top of terrace to the south west of the bull paddock where the Clubhouse, Shearers' Quarters and associated carpark are consented. The DOC walkway follows the far side of the row of poplars.



Viewpoint 8: View from Wanaka - Mt Aspiring Road to the east across the Golf Activity Area. Parkins Bay is visible on the left. The mature trees behind the Golf Maintenance Compound mark the Fern Burn stream bed. The DOC walkway to Parkins Bay starts on the left.



Viewpoint 9: View from Wanaka - Mt Aspiring Road towards the south east with Mt Alpha in the background. The lower terrace on the right of the image contains the golf course. Residential/ visitor accommodation is located on the upper terrace and not visible from this point.



Viewpoint 10: View in southerly direction from Wanaka- Mt Aspiring Road further east than VP 9 above. The lower terrace on the right and centre of the image fall within the Golf Activity Area, while the upper terraces contain building clusters of the consented residential/ visitor accommodation development.



Viewpoint 11: Panorama from Glendhu Bluffs across Parkins Bay.

Wanaka - Mt Aspiring Road

Western Gully



Viewpoint 12: Overview of site on zoomed in photo taken from Glendhu Bluff towards the western part of the Residential Activity Area. The diggers indicate where the first stages of the consented proposals are currently being built. The gully on the right demarcates the western boundary of the Residential Activity Area.



Viewpoint 13: Zoomed in photo of Lakeshore Activity Area taken from Glendhu Bluff.