

CONCESSION APPLICATION

NZSKI LIMITED

PROPOSED PASSENGER LIFT SYSTEM, SNOW MAKING
INFRASTRUCTURE AND EARTHWORKS FOR TRAIL
FORMATION.

THE REMARKABLES SKI AREA – QUEENSTOWN

May 2022

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Refer the attached reports from

- A. E3Scientific – Shadow Basin Terrestrial Ecological Assessment
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- 1. Conservation Act 1987
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1.0 THE APPLICANT AND PROPERTY DETAILS

Site Address:	251 Remarkables Ski Area Access Road, State Highway 6, Queenstown
Applicants Name:	NZSki Limited
Full Name/Address of each owner or occupier of the site	Department of Conservation & NZSki Limited

Address for Service

NZSki Limited,
The Remarkables Ski Area
PO BOX 359
QUEENSTOWN 9348

Attention:

Site Legal Description:

The site subject to this application is legally described as:
Section 1 SO 22561 as held in Record of Title
OT8D/636 and
Pt Section 1 Blk X Shotover SD s held in Certificate of
Title OT8D/636.

Site Area:

The total site area is 700 Hectares.

District Plan Zoning:

Operative - Rural General Zone (Ski Area Sub-Zone)
Proposed – Rural (Ski Area Sub-Zone)

Brief Description of Proposal:

Replacement of the existing Shadow Basin passenger lift system and associated trail works and indigenous vegetation clearance. Snow making infrastructure will be installed along proposed new trails. Realignment of the vehicle access road within Shadow Basin for safe vehicle access. Decommissioning of the existing chair lift infrastructure involves removal of towers and end stations back to ground level.

List of Information Attached:

Appendix [A] Site Location Plan

Appendix [B] Survey Office Plan SO 22561

Appendix [C] Plans of Passenger Lift System & Associated Buildings

Appendix [D] Southern Land Development Consultants (SLDC) Proposed Earthworks Plans

Appendix [E] Protocols for the Rehabilitation of Natural Alpine Environments Following Ski Area Developments between Department of Conservation and NZSki Ltd.

Appendix [F] E3Scientific Ecological Report – Shadow Basin Terrestrial Ecological Assessment

Appendix [G] E3Scientific Lower Shadow Basin Lift Station Freshwater Assessment

Appendix [H] Blakely and Associates Landscape Assessment

Appendix [I] Wildlands Herpetologist Survey

2.0 SITE DESCRIPTION AND RECEIVING ENVIRONMENT

2.1 Site Description

The subject site is commonly referred to as The Remarkables Ski Area and is contained within the Department of Conservation administered Rastus Burn Recreation Reserve on the northern end of the Remarkables (Kawarau) Mountain Range.

The Remarkables Ski Area (RSA) is utilised by NZSki Limited pursuant to a lease agreement with the Department of Conservation and associated Concessions.

RSA is located in the head waters of the Rastus Burn Stream. The ski area commences at approximately 1600 metres above sea level and access to the site is obtained from the Queenstown-Kingston Highway via a 13km long access road which is now largely sealed. A site plan indicating the location of RSA is contained within **Attachment [A]**.

The site is characteristic of the Queenstown Lakes District Council's Ski Area Sub-Zone with developed ski runs, operational chairlifts and other important infrastructure including RSA base building, car park areas and snow making equipment.

However, the locality retains a highly natural character due to the surrounds of this mountain cirque. Double Cone overshadows RSA from the south at 2,319 metres above sea level.

Lake Alta, a 13.9 hectare alpine lake at 1,800 metres above sea level (asl) in part feeds the Rastus Burn Stream which flows through the Rastus Burn Recreation Reserve.

Vegetation cover throughout the Rastus Burn headwaters changes significantly due to altitudinal succession. At the lower altitudes the vegetation cover largely comprises tall tussock grassland interspersed with alpine wetlands and cushion fields ascending into areas of rock field.

At the lowest part of RSA at approximately 1,600m asl lays the existing car parking, maintenance building, medical building, bottom lift stations and base building.

2.2 Legal Encumbrances

The subject site is contained within Certificate of Title OT8D/636. There are no legal encumbrances registered against this Certificate of Title which are of relevance to this proposal. A copy of the Certificate of Title is contained within **Attachment [B]**.

2.3 Receiving Environment

The receiving environment includes the remaining 700 hectares of the Rastus Burn Recreation Reserve which includes a proportion of RSA access road, the effluent disposal ponds and ski area car parking. The Rastus Burn Recreation Reserve covers the Rastus Burn 6 catchment from approximately 1,000m asl to the ridgeline separating the Rastus Burn and Doolans catchments at approximately 2,000m asl.

The area contains a mixture of unmodified alpine vegetation, rock bluffs and the incised Rastus Burn Stream which is fed from Lake Alta and a number of smaller tributaries and alpine wetlands within the upper Rastus Burn.

The Remarkables Conservation Area adjoins the south west boundary of RSA and includes Lake Alta and Double Cone summit and extends south to south west into Wye Creek and further south towards the Hector Mountains and Nevis Valley. The Remarkables Conservation Area is almost entirely free of physical development and to date is less widely used for commercial recreation purposes.

2.4 Written Approvals

The proposed development sits within an area administered by the Department of Conservation on behalf of the Crown and hence this Concession application is made to the Department of Conservation.

As will be discussed below, the applicant is pursuing other statutory approvals under the Resource Management Act for the proposed development from both the Otago Regional Council and Queenstown Lakes District Council. These processes are occurring concurrently with the Concession application.

No other parties have been consulted with or approvals sought by the applicant.

3.0 DESCRIPTION OF THE PROPOSED ACTIVITY

4.1 Overview

A Concession is sought from the Department of Conservation to replace the existing Shadow Basin passenger lift system at The Remarkables Ski Area, Leases for the construction of top and bottom lift stations and associated buildings.

The proposed replacement passenger lift system is a six seater detachable chairlift that will be constructed and operated to modern safety standards.

Replacement Shadow Basin passenger lift system

This concession application request for the lift system comprises of lease, licence and easement areas, in accordance with recent similar concession applications to the Department. For the replacement passenger lift system:

- leases are sought over the top and bottom station footprints including the operator control rooms and carrier parking facility,
- a right-of-way easement is sought to pass ski carriers by means of haul rope and lift towers,
- an easement is sought to convey telecommunications underground along the lift alignment,
- a right-of-way easement is sought for access to pass vehicles for operations and maintenance.
- an easement is also sought to convey air, water and communications underground for snowmaking, and power underground for lift operations and snowmaking.

The replacement lift system is proposed on a different alignment to the existing lift. It will commence from the same location but veer south of the existing alignment and extend to a higher elevation than the existing passenger lift system, in order to open up an additional 46.7 hectares of lift accessed terrain within the existing Remarkables Ski Area concession. It will increase the carrying capacity from 1,500 persons per hour to 2,400 persons per hour.

Construction of the replacement lift system involves earthworks for new trail development, earthworks for construction of top and bottom stations and tower foundations, and earthworks trenching for buried lift utilities and snowmaking. There will be indigenous vegetation clearance associated with these earthworks.

All lift and tower locations, trail development and snowmaking has been planned to have the least impact possible to existing vegetation whether it be cushion field, fell fields, alpine grasses or tussock by nature. Wherever possible NZSki will replant indigenous vegetation either by storing and replanting back in the original area at earthworks completion, or by removing from the area and replanting in suitable alternative habitats within the ski area, in consultation with DoC and ecologists and in accordance with agreed and proven rehabilitation protocols.

The top station earthworks will include cutting into the north face and below the ridge line at an elevation of 1,995m asl. Egress away from the unload of the lift requires two trails to be created, Calypso Trail will lead snow users northwest down towards the existing trail network and the existing Shadow Basin chairlift top station, and Cushion Trail will skirt around and to the east from the unload for a length of 183m.

Snowmaking infrastructure is proposed to support the ski trails from the top station of the chair lift down the length of Calypso Trail, with short extensions down Sunrise face and mid steeps trails, all largely within the footprint of the trail earthworks.

It is also proposed to alter and extend the existing road access within Shadow Basin to enable secure loads and safe access to and from the proposed top station for construction and ongoing maintenance beyond the

construction period. This will be achieved through the deposition of cut to fill material as part of the proposed trail works. Cut to fill balances on site for the top station excavation, ski trail and road access earthworks.

In consultation with ecologists, NZSki has made modifications to its concept top station location, tower locations and ski trail earthworks plan in order to minimise impact on the indigenous biodiversity. The above ski trail earthworks have also been planned to avoid all Regionally Significant Wetland areas as identified by Neil Simpson and E3Scientific's full Rastus Burn Recreation Survey carried out in 2019.

Earthworks will be required for each of the tower foundations along the alignment. A trench will also be required to lay and bury power and communications cabling along the length of the chairlift alignment from top to bottom stations for the chairlift.

At the existing Shadow Basin bottom station location, there is a stream that exits Shadow Basin and runs along the western boundary of the existing day lodge. This stream was modified when the original Shadow Basin chair lift was installed (1985). At that time, the stream bed was raised by up to 5m over a distance of 20m when the original chair lift was constructed. It is NZSki's request to remove that built-up material and bring the stream bed back to near its original water course, closer to the natural level it was at prior to any development modifications. The proposed lift bottom station is at 1611.06m asl which involves dropping the existing modified ground level by 4m to a similar level to the base building deck. This also makes it easier for guests to traverse the snow from building to lift. The original stream flow path will be maintained and the proposed structure locations are all setback a minimum of 10m from the stream flow path.

A parking facility to store the lift carriers (chairs) is also proposed at the bottom station in order to store the chairs out of the weather to minimise maintenance requirements and maximise operational life. This is best practice for modern detachable lift systems.

The bottom station earthworks require approximately 10,500m³ of material to be removed from site (refer drawing W3021_E1_Sht 302_E1 Sheet E302 from Appendix [C]). The proposed location for material to be deposited is at the north end of car park 2, a location currently underutilised [REDACTED]

4.2 Proposed Built Form

As identified above, RSA maintains a passenger lift system which provides access into Shadow Basin. It is proposed to establish a replacement passenger lift system which will increase the passenger carrying capacity into Shadow Basin plus increase the efficiency of ski area utilisation by ski area patrons. The proposed passenger lift system is a six seat detachable chair lift and is being supplied by a reputable lift supplier – Doppelmayr Lifts NZ.

The replacement passenger lift system has an incline length of 929.50m and rises approximately 375m in elevation. The proposed bottom station is to be located in the existing bottom station position, but 4m lower in elevation than the existing station at an altitude of approximately 1,611m. Specifically, the existing modified ground level will be lowered by 4m to establish the ground level close to the level of the original terrain prior to any development, approximately 1m above the base building deck elevation. This platform will be almost level with the ground level at the rear of the base building therefore enhancing the ease of access for patrons. The bottom station will be 6.921m in height above the finished ground level and the canopy structure over the passenger lift system will measure 9.89m wide and 21.99m long.

A chair storage building is to be constructed on the north side of the bottom station. It is approximately 25m long by 6m wide (maximum dimensions). Extending beyond the internal part of the building an overhead rail to hold up to 11 chairs will be erected. This storage building is connected to the lift system for the chairs to

transfer on and off the main line. Modern lifts commonly have chair storage facilities to prevent the wear from exposure to high winds and weather if chairs stayed online at altitude outside of operational hours.

The outside colours of the bottom station include:

- Polycarbonate windows which are clear in colour;
- The windows will be held in frames coloured Anthracite Grey (Similar to Resene Mirage cc which has an LRV of 10%);
- The primary outside colour is Anthracite Grey (Similar to Resene Mirage cc which has an LRV of 10%);
- The strip on top and the trumpets at one end of the terminal will be Pure Green (Similar to Resene Vida Loca which has an LRV of 29%);
- And the underbelly will be coloured Traffic White • All colours are in matte finish.

A separate control and LV room is proposed on the southern side of the bottom station. This proposed building will measure 3.279m in height above finished ground level. This building will be coloured Basalt – a Kingspan product.

The top station is located within Shadow Basin, below the ridgeline. This area is part of the Rastus Burn Recreation Reserve and sits within Pt Section I BLK X Kawarau SD. The ground level at the top station is at an altitude of 1,986m asl. The top station has a maximum height of 6.921m above finished ground level. The canopy over the passenger lift system components is the same size as the lower station being 9.890m wide and a maximum of 31m long.

The outside colours of the top terminal include:

- Polycarbonate windows which are clear in colour;
- The windows will be held in frames coloured Anthracite Grey (Similar to Resene Mirage cc which has an LRV of 10%);
- The primary outside colour is Anthracite Grey (Similar to Resene Mirage cc which has an LRV of 10%);
- The strip on top and the trumpets at one end of the terminal will be Pure Green (Similar to Resene Vida Loca which has an LRV of 29%);
- And the underbelly will be coloured Traffic White;
- All colours are in matte finish.

In addition, the top station has an integrated lift operator building with storage space. This proposed building will measure 3.704m in height above finished ground level, 8.09m wide and 6.09m long.

The lift has eleven towers independent of the top and bottom station structures. Towers are located within Pt Section I BLK X Kawarau SD. The highest tower is 14.18m high (maximum, tbc with final lift supply) to enable sufficient span clearance. The existing Shadow Basin passenger lift has 16 towers which will be removed and remediated back to ground level.

Each tower will be painted dark grey similar to 'Ironsand' which has an LRV of 9% with the exception of the 'head gear' which will be galvanised. An example of the tower head structures is illustrated below



Fig 1: Example of paint colour and galvanised 'head' structure.

Plans of the proposed passenger lift system top and bottom stations and the details of the alignment are contained within Appendix [C].

4.3 Proposed Earthworks and Alteration to access Road involving earthworks.

The earthworks are not all in direct association with the construction of the passenger lift system itself but also associated with the ski trails that will complement the new passenger lift system and increase utilisation of the available terrain within the existing ski area.

Southern Land (SLDC) have prepared earthworks plans to illustrate the location of the proposed ski trails and the associated volumes, cut heights and fill volumes of earthworks necessary for the proposal. In total the entire proposal necessitates earthworks of approximately 130,000m³ of cut to fill material. The proposed earthworks plans prepared by SLDC are attached in Appendix [D].

All earthwork area will follow the Protocols for Rehabilitation of Natural Alpine Environments following Ski Area Developments between the Department of Conservation and NZSki Ltd (PRNAE).

Ski Trail Earthworks

The SLDC plans illustrate the creation of two new trails referred to as 'Calypso Trail' and 'Cushion Trail'.

Calypso Trail is proposed to be a 30m wide trail connecting with the already established 'Calypso' trail that is part of the existing Shadow Basin trail network. The proposed trail works will commence at an elevation of approximately 1990m asl and will have a length of 363m and will connect with existing Calypso Trail at 1935m asl. A cut to fill measure assures balance in material that requires moving. The gradient will vary from 25.6% to 12.5% along the 363m length of works.

The Calypso Trail will necessitate approximately 40,000m³ of cut to fill material to construct. The maximum cut heights and fill depths will be 28.7m (chainage 260) and 34.5m (chainage 90) respectively. The pegged width of the trail is a maximum 30m across.

Cushion Trail entry is 50m downhill of the unload point of the chairlift along Calypso Trail and veers to the right then heading east through and under the overhead cabling of the chair lift below tower 9 along 20m below the ridge line towards the main basin. It runs for 183m at a width of 12 to 15m. The overall width from top of batter on the right to bottom or toe of batter, on the left of trail construction, varies with a maximum distance of 20m.

Shadow Top Station Access Road Earthworks

Road Access for all vehicles runs 55% on existing road carriage. There are two areas where the existing gradient is too steep to use and alterations to the track means approximately 70m or 5% of previously unmodified terrain is required to create the incline that vehicles can traverse safely. Outlined in Appendix (D).

Lift Top Station Earthworks.

To prepare the site for a concrete foundation consisting of approximately 100m³ of concrete a platform will be prepared by cutting away at the northern aspect face at 1990m asl, covering an area of approximately 800m², a cut to fill measure creating a platform approximately 25m x 10m for placement of the top station foundation. Material will be back filled around the base compacted to assist as support for the station structure.

Approximately 4,000m³ of material will cut to fill in this measure. As much vegetation as possible will be removed from site prior to excavation and relocated once works are complete.

Bottom station Earthworks

The existing bottom station was constructed over and around the discharge stream from Shadow Basin in 1985. The area was raised 5m above the original landscape and stream bed. The proposed development locates the bottom lift station at roughly the same ground level as the base lodge which is also the same level of the original stream bed. This requires a cut measure of approximately 10,500m³ of material. The excavated material is to be deposited as land fill in car park 2. The area is recognised as heavily modified previously and as reported in E3Scientific's survey only a small area is in its original state. All finished surfaces will be re-vegetated as per the PRNAE.

Intermediate tower foundations

There are 11 intermediate towers with 3 in close proximity to the bottom station and 2 in close proximity to the top station. Each foundation has a footprint of approximately 3m by 3m rising 0.6m before reducing to a 1.5 by 1.5m upper column varying in height from 0.5m to 1.3m. A level pad must be formed at each location and set in ground by 1.5m to 2m. Each location therefore requires a working area of approximately 8m by 8m. Once the platform has a finished concrete foundation in place the material from the site is placed back around the column of the foundation overlaying the concrete base. Any vegetation is relocated to the same area if not already placed in a permanent position on removal. A 20t digger is required to access each site, it is anticipated that the digger will make one journey along the line to create the holes and another trip to back fill the excess material at each tower location.

A communications trench to carry fibre, power and safety communication cabling is laid the full length of the lift line. A smaller 5t digger will bury the services 0.6m below the ground surface and reinstate the path as near to its original state as possible as it travels along.

Decommissioning of the existing fixed Grip Quad Chair lift

The existing chair lift has 16 intermediate towers located along its path. All above ground structures are to be removed including the bottom and top stations. Initially the haul cable will be removed then the bottom station, Intermediate towers and lastly the top station and lift hut. Where possible any inground cabling will be removed along the length of the chair lift line.

Snow Making installation

Over a distance of approximately 1.3km a trench will run through modified terrain to facilitate the installation of snow making infrastructure. Being water pipe, airline, power cable, communications cable and fibre optic telecommunication cabling. The trench will be 1.2m deep and a width of 1m. It is the final step in earthworks winding up already modified terrain to facilitate pit and snow gun installation at approximately 50m spacings. In all 39 pits and a mix of fan guns and Lance (Stick) guns will be located along the buried infrastructure.

Proposed Earthworks Mitigation

As with previously implemented development proposals at RSA the applicant proposes adherence to a document entitled “Protocol for the Rehabilitation of Natural Alpine Environments Following Ski Area Development Between Department of Conservation and NZSki Limited.” (PRNAE)

This protocol sets out practical means of achieving a high standard of environmental rehabilitation during and following development works at either Coronet Peak or The Remarkables Ski Areas. NZSki requires its staff and contractors to act in accordance with this protocol.

The scope of the document includes any work that results in any environmental disturbance including (not limited to) the indigenous vegetation, native fauna, soil, wetlands, streams, lakes and natural landforms of the ski area.

The document sets out protocols to minimise the erosion and sedimentation of exposed soils (and soil among transplanted vegetation), optimising the longer term regeneration of indigenous vegetation through natural dispersal, to otherwise replicate a high standard of natural appearance to any ground not occupied by permanent structures or required to regularly bear mechanised traffic; and to establish a clear understanding between the staff and contractors of both the Department of Conservation (DOC) and NZSki on the required standards for:

- Work site control measures;
- Removal and replacement of vegetation and soil medium;
- Management of soil erosion and sediment control;
- Ongoing monitoring and maintenance of rehabilitated areas;
- Contracted monitoring; and
- DOC’s ability to suspend works.

The applicant proposes to undertake all earthworks in accordance with the relevant protocols for site works contained in this document. A full copy of the protocols is contained within **Appendix [E]**.

4.4 Proposed Clearance of Indigenous Vegetation



Photo above portrays top station location, Towers 8,9 & 10, Calypso & Cushion trails

The proposed development has been assessed from an ecological perspective by E3Scientific. The development area covers a variety of geographical features and vegetative habitats including natural rock field, regenerating or relocated vegetation, fellfield as well as snow tussock grassland, faces and plateaus, cushion field, the Rastus Burn and tributaries of the Rastus Burn.

As a result of the earthworks that will be undertaken as detailed in Section 4.3 above the proposal will remove approximately 48,856m² of indigenous vegetation from the development area during the construction period. Indigenous vegetation communities in the study area proposed to be modified include snow tussock grassland, cushion field, fellfield, and scree slopes. Within the total area of disturbance of 48,856m² approximately 38,187m² is unmodified which includes rock field and natural vegetation, and 10,669m² is modified, which includes disturbed areas and relocated vegetation.

Most of this vegetation will be temporarily stored until it can be relocated back to the side batters of the earthworks once the trails have been established, in accordance with the PRNAE.

All tall tussock grassland vegetation will be excavated, stored upright and relocated back onto the exposed cut and fill batters once the trails have been completed.

The cushion field vegetation and tussock that will be required to be uplifted will also be reinstated back on batters primarily in the same areas it was removed from once works are complete or at time of uplifting.

Threatened plant species identified by E3Scientific during their assessment will be relocated prior to the start of the earthworks. These species include “the At Risk – Naturally Uncommon *Anisotome lanuginosa*, *Aciphylla lecomtei* and *Carex berggrenii* and the Not Evaluated – Data Deficient *Brachyscome* “Montana”.

In order to mitigate the effects of the proposed indigenous vegetation clearance e3Scientific have recommended the following management measures refer section 6.8 of the e3Scientific – Shadow Basin [REDACTED] Terrestrial Ecological Assessment.

In addition to the above it is noted that NZSki Limited has a successful history of vegetation reinstatement within its proposed development programmes.

As with previously implemented development proposals at RSA and detailed above in Section 4.3, the applicant proposes adherence to a document entitled PRNAE.

This protocol sets out practical means of achieving a high standard of environmental rehabilitation during and following development works at either Coronet Peak or RSA. NZSki requires its staff and contractors to act in accordance with this protocol.

The scope of the document includes any work that results in any environmental disturbance including (not limited to) the indigenous vegetation, native fauna, soil, wetlands, streams, lakes and natural landforms of the ski area and includes specific controls for the removal, transportation, storage and re-instatement of disturbed vegetation as well as monitoring and enhancement of the re-instated areas with seed. A copy of the rehabilitation protocols is contained within Appendix [E].

The applicant has had to physically modify the trail plans to meet the recommendations of E3Scientific and subsequently ensure the least amount of modification to important ecological habitat occurs.

The applicant proposes to form an access trail over the un-named watercourse exiting Shadow Basin which is an outflow from Shadow Basin. The applicant has put forward an earthworks design proposal which ensures the hydrological functions of this water course will be maintained.

Specifically, clean rock will be used to form the trail surface over this 'crossing' to ensure that the water flow is not impeded, and the downstream hydrological effects are avoided.

In addition to the above, the proposals operational requirements have also been assessed against the potential adverse environmental effects of natural hazards.

The passenger lift system design was reviewed to ensure that no towers were established in any area of possible unstable rock movement from above.

Overall, it is considered that the applicant has balanced the operational requirements against the relevant environmental considerations and has reduced the potential adverse effects on ecological values and minimized the risk from natural hazards.

4.5 Proposed Infrastructure and Servicing

The subject site is already connected to a reticulated power supply and The Remarkables Ski Area contains a backup diesel generator on site.

The proposed passenger lift system will be connected to the existing reticulated power source via a distribution from the transformer at Shadow base station. Power is also required to be extended within Shadow Basin in order to service the new top station and operator control rooms and new snowmaking.

Telecommunications cabling that is required as part of the lift operations and safety systems will be required along the length of the chairlift line from top to bottom to connect with every chairlift tower and both stations and operator rooms. Trenching will provide for these services to be installed 0.6m below ground on a bed of AP20 metal and backfilled with the excavated material.

Snowmaking infrastructure (underground water, power, air, communication networks, and snowmaking pits as well as above ground snowmaking fan guns and lances) will be run along the new trails and within the proposed earthworks extents. The underground services will be trenched at 1.2m below ground level and installed on a bed of AP20 metal prior to back filling with the excavated material.

Snow making water is already provided within The Remarkables Ski Area via existing DOC Concessions² and ORC Water Permits³ that authorise abstraction of water from Lake Alta via a submersible pump to a pump

house above the existing Alta passenger lift system. This pump house distributes the snow making water supply throughout The Remarkables Ski Area.

The proposed snow making does not require any further water take than what is provided for within these existing approvals.

4.6 Natural Hazards and Geotechnical Investigations

The proposed passenger lift system is to be constructed in an alpine environment where several natural hazards exist. NZSki Ltd have considered the following matters:

- Rock fall potential hazard
- Snow avalanche hazard
- Wind
- Flood risk, erosion or debris flow

The avalanche paths in the area are mapped and well understood. The applicant operates a robust avalanche control programme and the avalanche risks are managed. The avalanche risk is not allowed to build up sufficiently to cause damage to structures and avalanches are triggered by bombing to reduce their presence and risk to The Remarkables Ski Area.

The lift structure has been designed appropriately for loads calculated in accordance with the relevant New Zealand Standards. In particular wind and snow loads on the built structures have been assessed using the relevant standard from the 1170 suite of loading standards.

Foundation stability and bearing capacity for the lift bottom station, tower foundations and top station are to be calculated by NZ engineers to meet New Zealand Standards.

The foundation ground materials are considered suitable for the passenger lift system. Foundations conditions are anticipated to be either over consolidated glacial till or rock. High allowable bearing capacity is anticipated from these materials.

No signs of instability at the foundation locations has been identified. Any return period of rock fall from this area appears to be in the order of hundreds of years and the return period for such an event is consistent with the design return period for other natural phenomena such as wind and earthquake loading given in the loadings standard NZS 1170.0.

5.0 ASSESSMENT OF ENVIRONMENTAL EFFECTS

The proposed development is considered to raise the following actual or potential effects on the environment:

- Positive Effects;
- Effects on Landscape, Visual Amenity and Human Use Values;
- Effects on Ecology and Indigenous Vegetation;

- Temporary Nuisance & Environmental Effects of Earthworks;
- Effects on Infrastructure and Servicing; and Cumulative Effects

In assessing the actual or potential effects on the environment from the categories listed above, reliance has been placed on the various supporting reports and assessments as outlined throughout the application.

Positive Effects

The proposal is considered to result in positive effects. Specifically, the proposal will provide for a modern passenger lift system with high safety standards that will increase the efficiency of Ski Area patron movements within RSA and increase the utilization of the available ski terrain within the Recreation Reserve.

The proposed new lift alignment will mean that only one passenger lift system is needed to be utilized to access the entirety of Shadow Basin. The proposed new alignment means that a 47% increase in lift accessed terrain is achievable from the top lift station than is from the existing alignment, therefore enhancing the offerings and overall quality, efficiency, and safety of the recreational experience for patrons of The Remarkables Ski Area.

Effects on Landscape, Visual Amenity and Human Use Values

While the Ski Area Sub-Zone is a District Plan Zoning regime it is considered to be a relevant matter when considering the effects of the proposal on landscape, visual amenity and human use values.

Specifically, a handful of areas have been identified in the Operative and Proposed Queenstown Lakes District Plans as Ski Area Sub-Zones to enable the consolidation and development of Ski Area Activities and their associated infrastructure within an environment that has capacity to absorb these features.

The Operative Queenstown Lakes District Plan is considered to provide an appropriate framework for consideration of the effects of the proposal on landscape and visual amenity and overall human use values of the environment in this assessment of the proposed activities under the Conservation Act.

Notwithstanding the above, or that the Ski Area Sub-Zone is anticipated to contain various buildings, passenger lift systems and other infrastructure to facilitate Ski Area Activities, the District Council still retains control over the location, external appearance and size of buildings within this Zone and the location, external appearance, alignment and methods of construction for passenger lift systems. Accordingly, Blakely Wallace Associates (BWA) landscape architects were engaged by the applicant to undertake a landscape visual assessment of the proposed development with regards to the District Council's matters of control. A copy of the landscape visual assessment is attached as Appendix [H].

A Controlled Activity Consent pursuant to Rule 21.12.3 whereby the construction of a passenger lift system in the ski area Sub-Zone requires consent with control exercised in the respect of the extent to which;

The passenger lift system breaks the line and form of the landscape with special regard to skylines. Ridges, hills and prominent slopes;

BWA writes that "the upper lift line and top station will not break the skyline but will be backdropped by the upper Cirque basin headwall and cones and ridges as a whole and will be absorbed by the scale of the receiving environment." Appendix [H] page 16.

This assessment is outlined below:

- (a) *Whether the ski tow or lift or building breaks the line and form of the landscape with special regard to skylines, ridges, hills and prominent slopes.*

BWA architects have created a visual representation to demonstrate what part of the proposed new chairlift will be visible from the Wakatipu Basin.

The overall summary of Landscape and visual effects is;

- a) Within the ski area subzone, low-moderate. There will be some adverse effects. Within context of the Ski Area Sub Zone this is considered acceptable.
- b) Landscape and visual effects outside the Ski Area Sub Zone is low. This equates to low adverse effects.

The proposal has given significant thought to balancing environmental considerations against the operational considerations of the applicant. Specifically, as noted above the applicant has worked closely with E3Scientific to modify the locations of the lift towers and the location/dimensions of the proposed new ski trails.

These modifications have been made to ensure that the proposed development works do not physically impact on any wetlands (as defined by E3Scientific) within the Shadow Basin due to the high ecological values that such areas hold.

(b) Potential effect on surrounding environment.

The proposal will not have a significant effect on the surrounding environment. The proposed passenger lift system and associated buildings, trail works and associated vegetation clearance are all located within an area that is characterized by RSA base facilities, car parking and existing ski infrastructure comprising, lifts, snow making equipment, operational buildings and an extensive trail network.

The proposal represents the replacement of a passenger lift system as opposed to introduction of additional infrastructure. The implementation of this infrastructure is not uncharacteristic within the Queenstown Lakes District's Ski Area Sub-Zones which anticipate the consolidation of such works within the Sub-Zone boundaries.

Similarly, while the proposal will disturb a large area and involve earthworks to develop new trails it is important to note that the scale of these works is also not uncharacteristic of the Ski Area Sub-Zone and has been undertaken for the development of the Sugar Bowl and Curvey Basin lifts and trail works in recent years.

There will be adverse effects on the indigenous vegetation and associated ecological values but these effects can be appropriately mitigated through adherence to the PRNAE developed for vegetation clearance and terrain development at Coronet Peak and The Remarkables Ski Area.

In addition, a number of conditions have been recommended by E3Scientific and subsequently volunteered by the applicant to ensure appropriate rehabilitation of indigenous vegetation and protection of the fauna that exists within the vegetative communities and importantly the Regionally Significant Wetlands in the vicinity of the development area.

The rehabilitation of the landscape with vegetation will assist in minimizing the visual effects of the proposed trail works and built form such that the overall effect on the natural landscape character, visual amenity and human use values when viewed from the surrounding landscape will be less than minor.

(c) Impact of lighting on the enjoyment of an adjoining property.

The proposed passenger lift system will not be significantly lit. There will be low level lighting within the operator's huts but no lighting on the passenger lift system towers themselves. The lighting of the operator's

huts will be so far away from adjacent property and inconsequential in the scale of the other Remarkables Ski Area facilities so as not to spoil the enjoyment of the adjacent land.

Human Use Values

In terms of human use values, the proposal is considered to enhance the quality of the recreation experience had at The Remarkables Ski Area. The landform modification and impacts on the vegetative cover will be noticeable but it will also be in close proximity to the existing learner's area, base buildings and car parking, trail works and passenger lift system within Shadow Basin therefore the effects of the modification can be readily absorbed into the character of the existing environment.

Further, the disturbed area will be subject to re-vegetation and this will partly mitigate the proposed changes to the natural environment.

The proposal will not impact on any existing water takes. It is acknowledged that Regionally Significant Wetlands play an important hydrological function and that water quality and quantity is an important cultural consideration as outlined in the Kai Tahu Ki Otago Natural Resource Management Plan.

It is noted that consultation is occurring with Kai Tahu Ki Otago Limited and Te Ao Marama Incorporated as part of the resource consent applications ensuring their involvement and consideration of the proposal. Specific attention has been made to ensuring that altering of one existing water course outflow does not diminish their hydrological functions and maintains the existing flow characteristics of this feature. Accordingly, the potential adverse effects on human use values are considered to be less than minor.

Temporary Nuisance and Environmental Effects of Earthworks

Nuisance effects of earthworks are typically related to noise, vibration and the emission of dust and discharge of sediment.

In the case of The Remarkables Ski Area the subject site is removed from sensitive receivers in respect of noise and dust. Specifically, there are no residential neighbour's or other commercial interests on adjoining land that would be affected by noise, vibration and dust due to significant separation distances.

The key environmental concern of temporary earthworks in this environment is the containment and controlled discharge of sediment to ensure that it does not enter water ways and specifically wetland ecosystems.

In this case, the applicant has a set of developed protocols for development at The Remarkables Ski Area which specifically addresses earthworks and the associated environmental effects including erosion and sediment management requirements. Refer to the PRNAE. This document contained in **Appendix [E]** which the applicant volunteers (by way of Concession condition) to abide by specifies the following in respect of erosion and sediment control during earthworks and for the completed design standards of trails to avoid long term sediment run-off:

"5. Management of soil erosion and sediment control

- a. *The surface of vehicle tracks, formed ski trails and any other disturbed ground without a cover of indigenous vegetation will be managed to improve water infiltration, minimise rilling and sheet erosion, reduce suspension of sediment and provide micro sites for wind borne seed to settle. Control measures include;*
 - *shaping / crowning the surface;*
 - *applying an appropriate gravel surface in problem areas;*

- forming of earth, rock or vegetation bunds;
 - Ripping or roughening soils perpendicular to the slope angle; and
 - Constructing water tables/swale drains to intercept and divert surface flows.
- b. *Where the slope angle exceeds 30 degrees natural features such as rocks could be incorporated into the slope where this lends to the stability of the site; this would require prior approval from DOC and potentially the support of geotechnical experts. This solution would be considered on a site by site basis.*
- c. *Water tables/swales must have a catchment area no greater than 2,000m². Ski trails must have functioning swales no less than 60m apart. All water tables/swales must be clear of sediment and able to convey water.*
- d. *Water tables and swales must lead to an appropriately designed and armoured settlement pond to capture sediment so only clear water disperses into the surrounding landscape. These ponds must be large enough to 'settle' the flow and allow sediment to be deposited, particularly from heavy rainfall events. Precise dimensions will depend on the area and erosion potential of catchment above, however, these may be graduated areas 1m wide x 2m long x 1m deep. They should be armoured with rocks or surrounded by soil mounds and tussocks or geotextile materials. Sediment captured by settlement ponds are to be redistributed to assist re-vegetation of disturbed areas, whether previous or planned earthworks e.g. used to fill gaps between transplanted tussocks or to improve the mineral soil content when planting nursery tussocks. Settlement ponds must be maintained such that they provide a means of monitoring the effectiveness of control measures thereby assist adjusting management approaches to reduce the potential for recurrent erosion.*
- e. *To protect wetlands and wetland vegetation from sediment no surface water carrying sediment must be allowed to run into wetland areas. Settlement ponds must not exit onto wetland areas. Water tables and swales must be designed to maintain the hydrological integrity of adjacent seepages and wetlands.*
- f. *Areas requiring erosion control measures are to be prioritised based on the following criteria:*
- *Vulnerability to erosion (eg; slopes > 20 degrees, unconsolidated soils, disturbed ground adjacent to compacted soils)*
 - *Saturated soils on cut faces where seepages have been intercepted,*
 - *Remediation of slips or slumped land and stabilisation of land to prevent further or repeated slope failures.*
 - *Settlement areas that require armouring or treatment in order to filter water,*
 - *Stabilisation works required to facilitate revegetation.*
 -
- g. *Areas identified for erosion control and soil conservation work may vary from year to year as revegetation occurs and slope and soil stability is achieved.*
- h. *Significant developments will have a soil conservation and erosion control plan in place prior to the commencement of works. This plan will demonstrate how the objectives of this protocol will be achieved.*

6. Ongoing monitoring and maintenance of the rehabilitated area

- a. *The purpose of the monitoring is to assess the progress of rehabilitation and advise NZSki how to prevent or minimise risks to re-growth becoming self-sustaining;*
- b. *All development and rehabilitation works will be monitored at least once prior to the commencement of work and again at completion of works. Interim monitoring may be required, depending on the*

nature of work. Following completion, regular monitoring will continue until DOC resolves, at its sole discretion, that the rehabilitation of the natural environment can progress unaided;

- c. *Additional monitoring of erosion and sediment control measures will be made during or following significant periods of rainfall.*
- d. *Where monitoring establishes significant risks to rehabilitation, DOC will require NZSki to take any reasonable steps to rectify the situation and return the area to its desired condition. Any additional work required will be carried out at the cost of NZSki;*
- e. *In the event that an area is not rehabilitated following works, monitoring will continue until rehabilitation works have begun. Attention will be paid to preventing erosion during any lay period;*
- f. *DOC should reserve the right to recover the actual and reasonable costs of monitoring work.”*

It is considered that the management techniques for control of these effects and the on-going monitoring regime to ensure their suitability is comprehensive. It is volunteered that all works be undertaken in accordance with this document.

Provided that such a condition is implemented on any Concession issued by the Department of Conservation it is considered the temporary nuisance and environmental effects of the earthworks will be less than minor.

Effects on Ecology and Indigenous Vegetation

As identified above, the main vegetation types that are proposed to be cleared include indigenous snow tussock grassland, cushion field and scree slope.

It is noted that four At Risk plant species have been identified within the vegetation types identified above. Specifically:

- At Risk – Naturally Uncommon *Aciphylla Lecomtei* was identified in the snow tussock grassland;
- Not Evaluated – Data Deficient *Brachyscome “Montana”* was identified in the snow tussock grassland;

Significant numbers of invertebrate species are known to inhabit the area as identified on other surveys in The Remarkables Ski Area by E3Scientific staff and noted in the Rastus Burn Ecological Survey carried out by Neil Simpson and Melissa Jager dated August 2020.

Wildlands herpetologist survey note that lizard habitat is present on site, within the exposed rock, scree and snow tussock grasslands. None were found during the survey of the proposed trail development and chair lift tower line aligning with proposed development areas all above 1,600m asl. However, one McCanns Skink was identified during the survey just below the base facility at an elevation of 1,550masl. The McCann skink species present within the study area is classified non-threatened McCann’s skink (*Oligosoma maccanni*).

E3Scientific note that of the avifauna surveyed Pipits were observed during the site visit. Species that have been recorded also include the kea (*Nestor notabilis*), eastern falcon (*Falco novaeseelandiae novaeseelandiae*), paradise shelduck (*Tadorna variegata*), harrier hawk (*Circus approximans*) and southern black-backed gull (*Larus dominicanus dominicanus*). The Eastern Falcon, and New Zealand Pipit are both ‘At Risk’ species with the falcon recovering and the Pipit in decline. Kea are also noted as being nationally endangered.

E3Scientific summarise the ecological values of the development area as:

“The vegetation and habitat within the study area have been determined using the criteria outlined in the 2018 EIANZ Guidelines. The ecological value and significance for the range of study areas and communities present has been summarised in Table 8 of that report. The habitat and vegetation within

the site are likely to be utilised by the NZ Pipit which has high ecological value, Kea and eastern Falcon which have Very High ecological value.

The removal of the vegetation proposed within this application will result in permanent habitat loss for threatened native bird species that utilise the alpine environment. The kea, falcon and NZ Pipit have a Very High, High and Moderate-High ecological value, respectively, however E3Scientific note that there is abundant habitat that these species can use within the Remarkables area.

The removal of the habitat will have a Low magnitude of effect, as there will only be a minor shift away from the base line conditions, in relation to habitat that these birds utilise. The ecological effect on the permanent removal of habitat will be Moderate for the kea and Low for the falcon and NZ Pipit.

No alteration to the flow path or flow direction of any water courses will occur despite the deposition of clean fill materials within the identified water courses. The ecological impact of these works is described by E3Scientific as being less than minor provided consent conditions recommended are implemented.

The proposed works are all within the District Council's Ski Area Sub-Zone which seeks to consolidate such activities into a designated area. Given the proximity of the proposed vegetation clearance to the current ski field activities the works cannot be completely avoided. Mitigation and remedial actions will be put in place as described within this application.

Additionally, E3Scientific acknowledge the restoration programme of work that the applicant has developed in conjunction with the Department of Conservation which can help to ensure the ecological effects of the proposal are mitigated effectively, and the applicant's proven track record of relocating threatened plants as well as snow tussock grassland.

E3Scientific acknowledge that the applicant proposes to relocate all the individuals of two Naturally Uncommon plant species as well as the existing snow tussock grassland habitat which will include the Data Deficient *Brachyscome* species. E3Scientific notes that the applicant has a track record of successfully restoring vegetation in similar development projects across The Remarkables Ski Area.

Further to the above, and as identified in Section 4.4 of this application, the applicant has volunteered that all of E3Scientifics proposed conditions outlined in 6.8 of their report be included as conditions on any resource consent granted by the Council and any Concession granted by the Department of Conservation.

Overall, the loss of habitat for native and threatened species does require mitigation and E3Scientific advise that the recommended Concession conditions referred to above and in Section 4.4 of this application be implemented for the impact from the proposal to be considered no more than minor⁵.

⁵ *E3Scientific Ecological Report, Section 6 – Recommended Management Measures, page 53.*

The expert advice of E3Scientific is accepted and as such, the potential adverse effects on indigenous vegetation and biodiversity are considered to range from low to high

Effects on Infrastructure and Servicing

The proposal will not have any significant adverse effects on infrastructure and servicing. As noted above the proposed passenger lift system can be connected to The Remarkables Ski Area's existing reticulated power supply and there is a backup generator contained on site for emergencies.

There is a slightly greater demand on electricity for the implementation of the snow making infrastructure however, this is expected to be within the capacity of the existing reticulated power supply.

The passenger lift system will influence an increase in patronage and has an increased capacity. The demand on potable water and waste water supplies will increase but demand for both are already accounted for within existing Permits issued by the Otago Regional Council ^{6,7}.

Storm water from the roof of the proposed buildings will be minimal and simply discharged direct to ground where it will infiltrate the soil structure and end up in the Rastus Burn Stream.

Snow making will be provided for along the proposed new trails and the snow making services will be installed in trenches beneath the earth work area. The applicant holds existing Water Permits from ORC⁸ and Concessions from DOC⁹ to abstract water from Lake Alta for snow making.

No changes are needed to the existing permits and volumes of abstraction provided for therein to service the proposed development and additional snow making infrastructure as sufficient capacity exists within the limits set in these documents.

Given the above the effects on servicing and infrastructure are considered to be less than minor.

Effects of Natural Hazards

As identified above in Section 4.6 of this application the subject site and the proposed passenger lift system are subject to a range of natural hazards due to construction and operation in an alpine environment.

In regards to the risk from natural hazards it is important to understand that the risks associated with development and recreational activities in RSA can never be entirely eliminated. Further, there is no specified statistical threshold of acceptable risk tolerability in this area.

As there is an absence of any such pre-determined risk tolerability threshold determined through public consultation and implemented by the Department of Conservation in their planning documents or alternatively by the Otago Regional Council or Queenstown Lakes District Council guidance is taken from the relevant resource management planning instruments¹⁰.

⁶ *RM14.336.01 – 02 Waste Water Discharge Permit and Monitoring Bore Permit issued by ORC 16th April 2015*

⁷ *RM16.115.01 Water Permit issued by ORC*

⁸ *RM11.368.01 to RM11.368.04 issued by the ORC on 23rd January 2013*

⁹ *DOC Concession Ref 49957-SKI issued 25th October 2016*

¹⁰ *QLDC Proposed District Plan Stage 1, Natural Hazards Chapter, Operative Regional Policy Statement and Proposed Regional Policy Statement*

These relevant documents simply direct that the effects of natural hazards in respect of any land use proposal are to be minimized as far as is reasonably practicable.

The passenger lift system structure has been designed appropriately for loads calculated in accordance with the relevant New Zealand Standards. In particular wind and snow loads have been assessed using the relevant standard from the 1170 suite of loading standards.

Based on the expert assessment of Stantec it is considered that the hazard risks from snow and wind loading in this environment have been adequately minimised.

The avalanche paths in the area are mapped and well understood by the applicant. The applicant operates a robust avalanche control programme and the avalanche risks are managed by suitably qualified personnel employed by the applicant. The avalanche risk is assessed daily and not allowed to build up sufficiently to cause damage to structures or significant risks to patrons. Manmade avalanches are triggered by bombing to reduce the natural risk of avalanche as far as is reasonably practicable.

Overall, based on the expert assessment of these hazards and the measures taken to minimise the effects of natural hazards as far as is reasonably practicable, it is considered that the potential adverse effects of such matters are no more than minor.

Cumulative Effects

A cumulative effect is a gradual build-up of consequences over a period of time and includes a combination of effects from other activities to create an overall effect on the environment that will occur through the implementation of a proposed development.

The granting of consent to the proposed passenger lift system, the associated earthworks and removal of indigenous vegetation will result in cumulative effects of change to the landscape and potential loss of biodiversity.

It is acknowledged that wetlands provide an important function in the hydrology of the Rastus Burn Recreation Reserve. NZSki has modified the proposed works so that all Regionally Significant wetlands mapped in ecological studies in the vicinity of the works have been avoided.

E3Scientific have concluded that the habitat and affected species are relatively common and widespread in the Remarkables Ecological District therefore there is not likely to be a significant loss of ecological diversity resulting from the proposal subject to the implementation of their recommended conditions.

The development itself will be characteristic of and complementary to the existing ski area infrastructure in the vicinity and will provide some mitigation of the areas of indigenous vegetation that will be disturbed through the recommendations of E3Scientific and the DOC/NZSki development protocols.

The applicant has proposed to create crossings over the unnamed stream and wetland outflow with large clean rocks to ensure that the hydrological patterns of these water courses are not diminished by the proposed works.

Given the above and that the development is proposed within an environment that anticipates these types of commercial recreation facilities and the consolidated growth and development of ski area activities it is considered the environment is not at its saturation or breaking point in terms of either landscape or ecological biodiversity and accordingly the environment is considered to be capable of absorbing the effects of the proposed development subject to the implementation of the conditions proposed within this application.

NZSki Climate Adaption Plan

NZSki are committed to sustainability. As Kaitiaki of the mountains we have an enduring commitment to our environment, people, and communities to ensure they benefit from our presence. We use the concepts of kaitiakitanga and manaakitanga to guide us, understanding that our environment is the backbone to our operations and the reason we love what we do. Our promise is to share our passion for the mountains with our people, community and guests, making sure they have an unforgettable experience.

We build our sustainable business planning around short and long term objectives focusing on the domains of: strategy and vision, governance and policies, brand and reputation, external stakeholders, workforce and culture, and environmental management. Climate adaptation does not have a separate standalone plan but is rather integrated within several domains of our sustainability planning as well as our key asset management plans.

As ski area operators, we rely on snow to be able to provide a valuable recreational experience to our guests. We recognise that the predicted effects of climate change over the next 40 years will negatively affect our operations unless we plan to adapt our operations to mitigate the effects of climate change. “The best estimates of New Zealand temperatures are for an expected increase of about 1°C by 2040, and 2°C by 2090. However owing to the different emission scenarios and model climate sensitivities, the projections of future warming cover a wide range: 0.2–2.0°C by 2040 and 0.7 to 5.1°C by 2090” [<https://environment.govt.nz/publications/climate-change-effects-and-impacts-assessment-a-guidance-manual-for-local-government-in-new-zealand/2-projections-of-future-new-zealand-climate-change>].

This document also notes high confidence in shortened duration of seasonal snow lying, moderate confidence in rise in snowline, and low confidence in a decrease in snowfall events.

A QLDC report on Climate change implications [*Bodeker Final Report* <https://www.qldc.govt.nz/your-council/our-vision-mission/climate-action-plan>] indicated Winters (June-August) in the district will get warmer with the seasonal lowest minimum temperatures increasing by as much as 2 to 3°C and the winter season highest daily maximum temperatures increasing by 5 to 7°C compared to the baseline period (2000 to 2009), under the very high emissions scenario and depending on location. However, because warmer air can hold more moisture, there is also possibility that some places may have increased snowfall in storm events.

We plan to adapt our operations as the climate changes by considering the following

Strategy & Vision

- Continuing to embed sustainability and the principles of kaitiakitanga and manaakitanga in our culture
- Recognise that Remarkables has the higher elevation of our two Queenstown resorts, and focus growth and development of winter operations at The Remarkables
- Target future development at higher elevations at Remarkables where there is greater natural snowfall
- Look to provide alternative experiences for our guests that enable them to enjoy the alpine environment that aren't reliant on snowfall.

Governance and Policies:

- Set clear KPI's and reporting measures aligned with sustainability domains.
- Continuing our Kaitiakitanga committee get together to initiate and implement new sustainable ways of working and restoring our environment

Environmental Management

- Measure and report on our carbon emissions to understand areas where we can best direct reduction efforts. Align reporting with SAANZ carbon calculator.

Key Asset Management

- The threat posed by global warming is taken into consideration when planning forward investments and especially when evaluating our approach towards snowmaking asset replacements and renewals.

Given climate change predictions, the need to produce snow in marginal temperatures (c. -2°C) and to make full use of all available snowmaking weather windows will become of increasing importance.

- energy efficient snowmaking at marginal temperatures.
- Stay current with worldwide innovations in snowmaking and grooming technology and snow retention practices. Newer snowmaking technology can operate with greater production rates at marginal temperatures and is becoming progressively more efficient (power and water consumption vs snow production). Fan guns now have triple the flow rate and huge improvements in performance in marginal temperatures compared to the early installation fan guns in the early 2000's.
- Our grooming machines will continue to be regularly replaced with the latest technology machines. This now includes SnowSAT. SnowSAT is a program that allows our team to groom slopes more efficiently. As they drive over snow, SnowSAT measures the amount of snow underneath the groomer ensuring we only take it from areas where there is excess and push it to areas that need it. This new system means 15% less power and diesel used when grooming our slopes.

6.0 STATUTORY ASSESSMENT

1. Conservation Act 1987

This application is made under Part 3B of the Conservation Act 1987. The relevant parts of the Conservation Act relating to the assessment of this proposal are considered to be Sections 17T, 17U, 17W, 17X, 17Y, 17S and 17Z.

Each of these Sections is addressed below:

Section 17T

Section 17T(1) requires that the Minister must consider an application for a Concession if the application—

- (a) complies with [section 17R\(2\)](#); and
- (b) is not returned under [section 17SA](#); and
- (c) is not declined under [section 17SB](#); and
- (d) is not returned under [section 17SD\(4\)](#).

Section 17R(2) is not applicable in this instance. The application is considered to be comprehensive and contains all necessary information to enable assessment and does not need to be returned as being deficient in such information under Section 17S.

The proposal is not considered to be in non-compliance with, or obviously inconsistent with, the provisions of this Act or any relevant Conservation Management Strategy or Conservation Management Plan that would require the application being immediately declined under Section 17SB.

At this stage the Department has not requested further information but if such information is requested the applicant will provide it within the specified time and therefore the proposal will not need to be returned in accordance with Section 17SD(4).

Section 17T(2) enables public notification of the proposal in accordance with Section 17SC(3) whereby the Minister may publicly notify any application for a permit or an Easement if, having regard to the effects of the permit or easement, he or she considers it appropriate to do so.

In this case, the Concession and associated works will occur within the Rastus Burn Recreation Reserve and within the existing extent of The Remarkables Ski Area operational area. The proposal is a replacement of an existing passenger lift system and realignment of an existing road. The applicant considers it at the Department's discretion whether this proposal meets the threshold for public notification.

Section 17U

Section 17U outlines the matters that the Minister must have regard to when considering an application. Section 17U(2) provides for the application to be declined if the information available in the application is insufficient or inadequate to enable assessment of the effects (including the effects of any proposed methods to avoid, remedy, or mitigate the adverse effects) of any activity, structure, or facility or if there are no adequate methods or no reasonable methods for remedying, avoiding, or mitigating the adverse effects of the activity, structure, or facility.

In this case, the application is considered to comprehensively cover the proposal and associated effects and mitigation methods. The proposal is clearly understandable.

Based on the expert landscape, ecological and hazards reporting provided with the application it is considered that the proposal demonstrates adequate and reasonable methods to mitigate the effects of the proposal such that the proposal does not need to be declined.

Section 17U(3) specifies that the Minister cannot grant an application for a Concession if the proposed activity is contrary to the provisions of this Act or the purposes for which the land concerned is held. The proposal is considered to be consistent with the provisions of the Conservation Act 1987 and as will be detailed below in the assessment of the Otago Conservation Management Strategy, the proposal is consistent with the purposes for which the land is held.

Section 17U(4) requires that the Minister shall not grant any application for a concession to build a structure or facility, or to extend or add to an existing structure or facility, where they are satisfied that the activity—

(a) could reasonably be undertaken in another location that—

(i) is outside the conservation area to which the application relates; or

(ii) is in another conservation area or in another part of the conservation area to which the application relates, where the potential adverse effects would be significantly less; or

(b) could reasonably use an existing structure or facility or the existing structure or facility without the addition.

It is considered that there is no other location outside the Rastus Burn Recreation Reserve the proposal could be undertaken. It is part of the operation of the established Remarkables Ski Area and cannot feasibly be implemented outside of this area.

It is not possible to locate the passenger lift system and associated works elsewhere within the Rastus Burn Recreation Reserve as the proposal is specifically for providing access and enhanced recreational areas within the Shadow Basin. For operational reasons the proposed location is the best for the efficient operation of RSA and as described in the AEE, the location and alignment has balanced the environmental (ecological and hazard) requirements against the operational needs of the RSA.

In regards to part (b), the existing Shadow Basin lift is approximately thirty five years old. The applicant advises that the new lift system has advanced operating requirements and health and safety features due to the advancement in lift technology over the last three decades. In addition, replacement parts for the existing lift are becoming difficult or impossible to source as their design is now obsolete. Accordingly, it is

not considered viable to continue to utilise the existing passenger lift system and associated trails into the future.

Section 17W

Section 17W(1) specifies that where a Conservation Management Strategy or Conservation Management Plan has been established for a conservation area and the strategy or plan provides for the issue of a Concession, a Concession shall not be granted in that case unless the Concession and its granting is consistent with the strategy or plan.

A detailed assessment of the Otago Conservation Management Strategy is outlined below this assessment of the Conservation Act 1987. This assessment confirms that the proposal is consistent with the Conservation Management Strategy and the expected use of the Rastus Burn Recreation Reserve.

Section 17W(3) specifies that the Minister may decline any application, whether or not it is in accordance with any relevant Conservation Management Strategy or Conservation Management Plan, if he or she considers that the effects of the activity are such that a review of the strategy or plan, or the preparation of a strategy or plan, is more appropriate.

RSA is within the Western Lakes and Mountains/Ngā Puna Wai Karikari a Rākaihautū Place in the Conservation Management Strategy 2016 ('CMS').

It is an area of spectacular glaciated mountain ranges, with a core of permanent snow and ice. Below the snowline, a complete sequence of indigenous vegetation exists from high alpine fellfield and low-alpine snow tussock lands, through to mixed shrublands and beech forest to tussock grassland on the flat valley floors. This area includes the outstanding landscapes of both mountains and lakes and high ecological values.

The CMS recognises the three commercial ski fields of which The Remarkables is one of these.

The relevant outcomes for this area are:

- The mountains, lakes and rivers are cherished natural wonders that draw international and domestic visitors and provide an outstanding backdrop to and locations for a wide range of outdoor adventures and activities while supporting distinctive indigenous ecosystems and species.
- Prominent landscape and geological features (ridgelines, and mountain tops) remain in their natural state, or are unmodified beyond their state at the time of becoming public conservation lands and waters. Within public conservation lands and waters away from prominent landscapes and geological features, structures may be present where well-blended into the landscape or where buildings already exist.
- The Remarkables, Coronet Peak and Treble Cone ski fields provide for intensive use and are highly valued recreation and tourism opportunities enabling access to high-altitude areas. Recognition of the ski fields' location on public conservation lands and waters, and conservation interpretation, are readily apparent to visitors. Ski fields are managed in a precautionary approach in terms of new and additional structures and terrain modification. Further development of existing ski fields may occur, in preference to any new ski fields. Disturbed areas are restored to an agreed standard comparable with that which was present prior to any development.

It is considered that the proposal is consistent with the Conservation Management Strategy and further, that the effects of the proposal as assessed by experts in landscape, ecology and hazards are of a scale that it would be inappropriate and unnecessary to initiate a review of the Conservation Management Strategy.

Section 17X

This section of the Act enables the Minister to enforce conditions that they consider appropriate for the activity, structure, or facility, including (but not limited to) conditions relating to or providing for:

- The activity itself, the carrying out of the activity, and the places where it may be carried out;
- The payment of fees/rent/bonds;
- The restoration of the site,
- Periodic review of the terms and conditions of a Concession;

The applicant has volunteered a number of conditions that have been recommended in the expert ecological advice of E3Scientific and it is expected that these will be included on any Concession granted by the Department.

It is also expected that conditions of the Concession will be imposed regarding the adherence to the PRNAE in **Appendix [E]** to ensure that collectively with E3Sc's recommendations there is appropriate mitigation of the earthworks and vegetation clearance activities associated with the passenger lift system.

In terms of conditions regarding fees and reviews it is anticipated that no additional fees and reviews are required in respect of this proposal as such fees are considered to be appropriately provided for within the Deed of Lease for the operation of The Remarkables Ski Area between the Department of Conservation and the applicant.

Section 17Y

Section 17Y specifies that a condition of the Minister's granting a concession shall be that the applicant pay any specified rents, fees, and royalties to the Minister; and shall pay any other levy or charge made on an occupier or owner of land, as a result of the grant of a lease, licence, or easement, either to the Minister or as directed by the Minister.

Further it specifies that the rent, fee, or royalty may be fixed at the market value, having regard to—

- (a) any circumstances relating to the nature of the activity; and
- (b) the effects of the activity on the purposes of the area affected; and
- (c) any contractual conditions, covenants, or other encumbrances placed upon intrinsic resources, natural resources, or historic resources by the concession.

In addition, it specifies that rent, fees, and royalties for a concession shall be reviewed at intervals not exceeding 3 years.

Similar to the discussion above for Section 17X no additional fees and reviews are required in respect of this proposal as such fees are considered to be appropriately provided for within the Deed of Lease for the operation of RSA between the Department of Conservation and the applicant.

Section 17S

The main components of Section 17 of the Act have already been discussed under the discussion of Section 17T above.

Section 17Z

This section of the Act specifies the timeframes for which approvals under the Conservation Act may be granted.

With respect to Concession and associated lease, licences and easements it is specified that these may be granted for a term not exceeding 30 years, but in exceptional circumstances, the Minister may grant a term not exceeding 60 years. Given that the existing Shadow Basin passenger lift system has been in place for approximately 35 years it is considered appropriate to apply a term of 40 years for this proposal.

This will provide certainty that the Concession will exist for the anticipated lifetime of the passenger lift system, with some flexibility in case of expanded duration of the longevity over and above that of the existing system.

The overall duration of the Concession will also be appropriate given the expense of the infrastructure and associated works which will be in the millions of dollars.

No additional fees and reviews are required in respect of this proposal as such fees are considered to be appropriately provided for within the Deed of Lease for the operation of The Remarkables Ski Area between the Department of Conservation and the applicant.

2. Otago Conservation Management Strategy 2016

The Remarkables Ski Area sits within the Department of Conservations Western Lakes and Mountains/Ngā Puna Wai Karikari a Rākaihautū Place in the Conservation Management Strategy 2016 (CMS).

This Place has outstanding landscape, ecological, cultural and recreational values. Outdoor recreation and tourism activities are highly valued with outdoor activities such as tramping, mountain climbing, hunting, kayaking and angling largely occurring on or from public conservation lands and waters.

Queenstown and Wanaka are recognised focal places for a large number of visitors and the areas around these settlements are important nationally for commercial tourism and three commercial ski fields (Coronet Peak, The Remarkables and Treble Cone), are specifically acknowledged and noted as being on public conservation lands and waters.

Within this place pest plants and animals, habitat modification, and fire are noted as the most immediate threats to conservation values.

With specific regard to The Remarkables and Tāpuae-o-Uenuku/Hector Mountains the CMS notes that this geographic area contains high ecological values due in part to the area's location in a transition zone between the wetter west and the drier Central Otago mountains and valleys.

Tussock grasslands are extensive and largely unmodified. The alpine and subalpine vegetation includes the eastern extent of several species including mountain snow tussock, cut-leaved alpine buttercup and Birleys hebejeebie. The area has a wide range of habitats—rock bluffs, boulderfields, cushionfields, tussockland, wetlands, lakes, forest and shrubland—extending from 350 m to 2320 m.

The CMS goes further to state that Lake Alta (1807 m) is notable for its spectacular cirque setting below Double Cone, and for the absence of aquatic plants and fish, although plankton and invertebrates are seasonally abundant. Kea are present on The Remarkables, at their eastern limit.

The area supports high invertebrate diversity, including endemic and threatened species, such as several species of giant weevil, two black cicadas, a flightless stonefly and a rock-bluff moth.

The CMS details that The Remarkables, with its close proximity to Queenstown, and outstanding landscape and recreational values, is subject to many development proposals. Providing recreational and tourism opportunities for a growing number of visitors to some parts of The Remarkables, while ensuring protection of outstanding landscapes, indigenous ecosystems and natural character, is noted as an ongoing challenge for the Department of Conservation.

Within the outcome statement for the Western Lakes and Mountains/Ngā Puna Wai Karikari a Rākaihautū Place The Remarkables Ski Area is afforded specific recognition where it is noted that it provides for intensive use and are highly valued recreation and tourism opportunities enabling access to high-altitude areas.

Recognition of the ski fields' location on public conservation lands and waters, and conservation interpretation, are readily apparent to visitors. The CMS outcome statement requires that ski fields are managed in a precautionary approach in terms of new and additional structures and terrain modification. Further development of existing ski fields may occur, in preference to any new ski fields and that disturbed areas are restored to an agreed standard comparable with that which was present prior to any development.

It is considered that this proposal is aligned with the values of the Western Lakes and Mountains/Ngā Puna Wai Karikari a Rākaihautū Place. Specifically, a high level of expert advice and reporting has been provided with this application to ensure that a precautionary and comprehensive approach is taken to understanding and avoiding remedying or mitigating the potential adverse effects of the proposal on landscape, visual amenity, ecological and human use values.

The proposal represents development of and within an existing ski area rather than expansion beyond the current ski area boundaries or development of entirely new ski areas.

Conditions have been volunteered to restore the disturbed areas and their vegetative communities as much as is practicably possible. Conditions of consent recommended by E3Scientific have been volunteered by the applicant and the applicant also volunteers to abide by the protocols for development works established by DOC and NZSki Limited. The applicant has an established and successful history of restoration of areas of disturbed vegetation.

Having regard to all of the above it is considered that the Department of Conservation has a high level of information from which to make a decision on this Concession application. The applicant has also demonstrated that they have a willingness to adhere to the environmental recommendations for the development works to ensure that the conservation values of The Remarkables Ski Area are not significantly adversely affected.

The following Policies of relevance are found below the outcome statement for this place:

2.3.21 When considering, applications for new utilities, structures or facilities throughout this Place (with the exception of the upper Wye Creek valley), should have particular regard to the potential adverse effects on:

- a) natural ecosystems, landscapes and natural character, particularly in areas where structures and facilities are currently absent;*
- b) catchment water quality and quantity, including in Lake Alta;*
- c) priority ecosystem units and threatened species;*

- d) *natural quiet;*
- e) *current recreational uses; and*
- f) *opportunities available for such structures or developments off public conservation lands and waters.*

2.3.22 *May allow further development and/or expansion of The Remarkables ski field (with the exception of the upper Wye Creek valley) in accordance with Policies 3.25.1– 3.25.6 in Part Three, provided that adverse effects (including cumulative effects) are avoided, remedied or mitigated on the following values:*

- a) *the outstanding natural landscapes and ecological values of The Remarkables and the Tāpuae-o-Uenuku/Hector Mountains; Commonly referred to as 'Skippers road end'.*
- b) *the landscape and ecological (including water quantity and quality) values of the priority ecosystem unit at Lake Alta;*
- c) *the recreational experiences of other users; and*
- d) *the ability of users to access the area year round.*

It is considered that the proposal and AEE has considered the potential effects on natural landscapes, ecosystems and character, catchment water quality and quantity, ecosystem units and threatened species and current recreational uses.

Comprehensive expert advice and reporting has been obtained on landscape and ecological issues. Threatened species have been identified and in most cases, relocation is proposed. The receiving environment of the wider Rastus Burn Recreation Reserve and District Plan's Ski Area Sub-Zone has been given consideration in the assessment of recreational uses.

The possibility of developing such facilities on land other than Public Conservation Land has also been discussed and in recognition of the existing ski area facilities and the Council's Ski Area Sub-Zone there are no other viable locations.

The proposal is therefore considered to be in accordance with Policy 2.3.21.

In regards to Policy 2.3.22 it is considered that the effects on outstanding natural landscapes and ecological values will be appropriately avoided remedied or mitigated in accordance with the expert landscape and ecological advice received from Blakely Wallace & Associates and E3Scientific.

No impacts on the landscape and ecological values of Lake Alta will occur as a result of this application.

The proposed passenger lift system will occur within a basin that is already modified by ski field terrain and landform modification. The proposal will result in a more efficient access to Shadow Basin and provide more ski trails for and enhance recreational offering.

The proposal will not affect access to the Rastus Burn Conservation Area. Accordingly, the proposal is considered to be consistent with this Policy.

The specific policies for ski field development are contained in Section 3.2.5 of the CMS and state:
Policies

3.25.1 May allow further development of existing authorised ski fields, where their natural values are already modified, in preference to the development of new ski fields.

3.25.2 Should in considering the development of new and existing authorised ski fields apply a precautionary approach to the approval of new structures, accommodation facilities and terrain modification and consider both the likely effects of water use (for snow-making), the likely longevity of the field in the face of climate change, and any appropriate land remediation and facility removal costs should the ski field cease to operate.

3.25.3 Process all applications for renewals of existing authorisations for ski fields as concessions.

3.25.4 Where practicable, encourage non-skier and/or non-ski season visitor use, and visitor use beyond the ski field consistent with the outcomes at Place.

3.25.5 Should provide opportunities for conservation education and interpretation.

3.25.6 Should allow over-snow vehicle use for the purpose of ski field management within ski field lease/licence areas subject to the provisions of the lease/licence and in accordance with Policy 3.2.12.

The proposal meets Policy 3.25.1 in that the proposed development will occur within The Remarkables Ski Area and not result in development of new ski fields. Of importance is that even the specific basin subject to the development proposal is already modified for ski area activities and infrastructure.

In regards to Policy 3.25.2 a precautionary approach to consideration of the application is being undertaken. The development proposal has been a collaborative approach with the application, with surveyors, E3Scientific, lift manufacturers and Blakley Wallace & Associates to achieve a proposal that balances environmental considerations with the operational requirements of the applicant.

Land remediation is a big component of the mitigation works volunteered in this application.

In regards to Policy 3.25.4 the proposal will not have a negative effect on the ability of the Department of Conservation to encourage and provide for non-skier and non-ski season visitor use as there will be no impediments to public access arising from the proposal.

In regards to Policy 3.25.5 the proposal itself does not include conservation education and interpretation however it is noted that RSA has in recent years, hosted an educational walk around including local Council staff and also as education for local schools to demonstrate the areas of previous terrain modification and the positive results of vegetation transportation techniques.

With NZSki's history of successful vegetation re-instatement and that expected in future works such as this proposal, it can be an educational experience for other land managers to see how protocols can be developed and successfully implemented and which can potentially be transferrable to other ski areas and sensitive environments in Otago.

Over snow vehicles use will be required in the proposed development area to enable grooming of the trails to be created. This will be undertaken in accordance with the conditions of NZSki's Deed of Lease.

Overall, the proposal is considered to be generally consistent with the relevant Outcomes and Policies of the Otago Conservation Management Strategy.

7.0 CONCLUSION

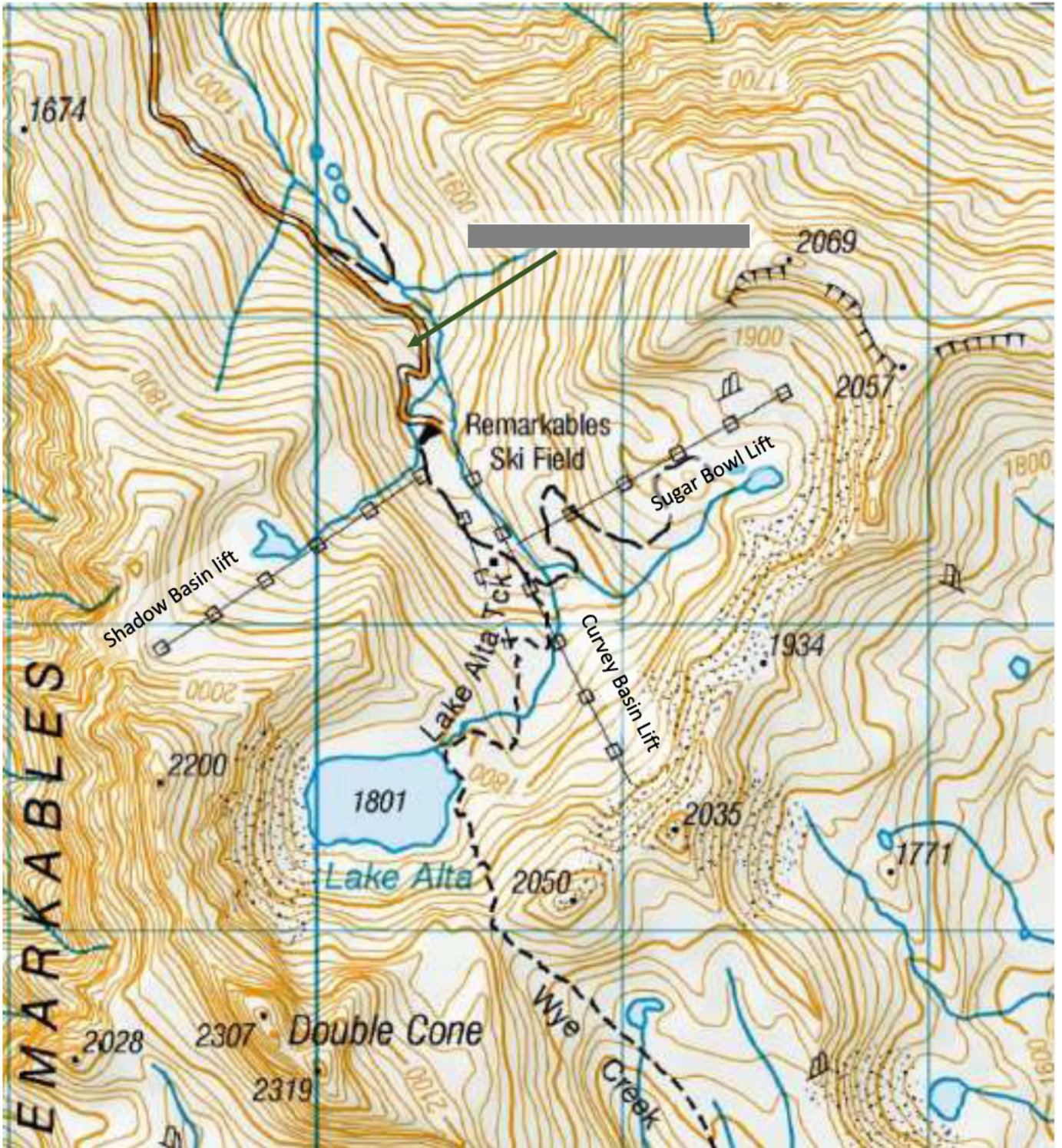
A Concession comprising lease, licence and easement areas is sought from the Department of Conservation to replace the existing Shadow Basin passenger lift system and realign a section of the ski area access road within Shadow Basin.

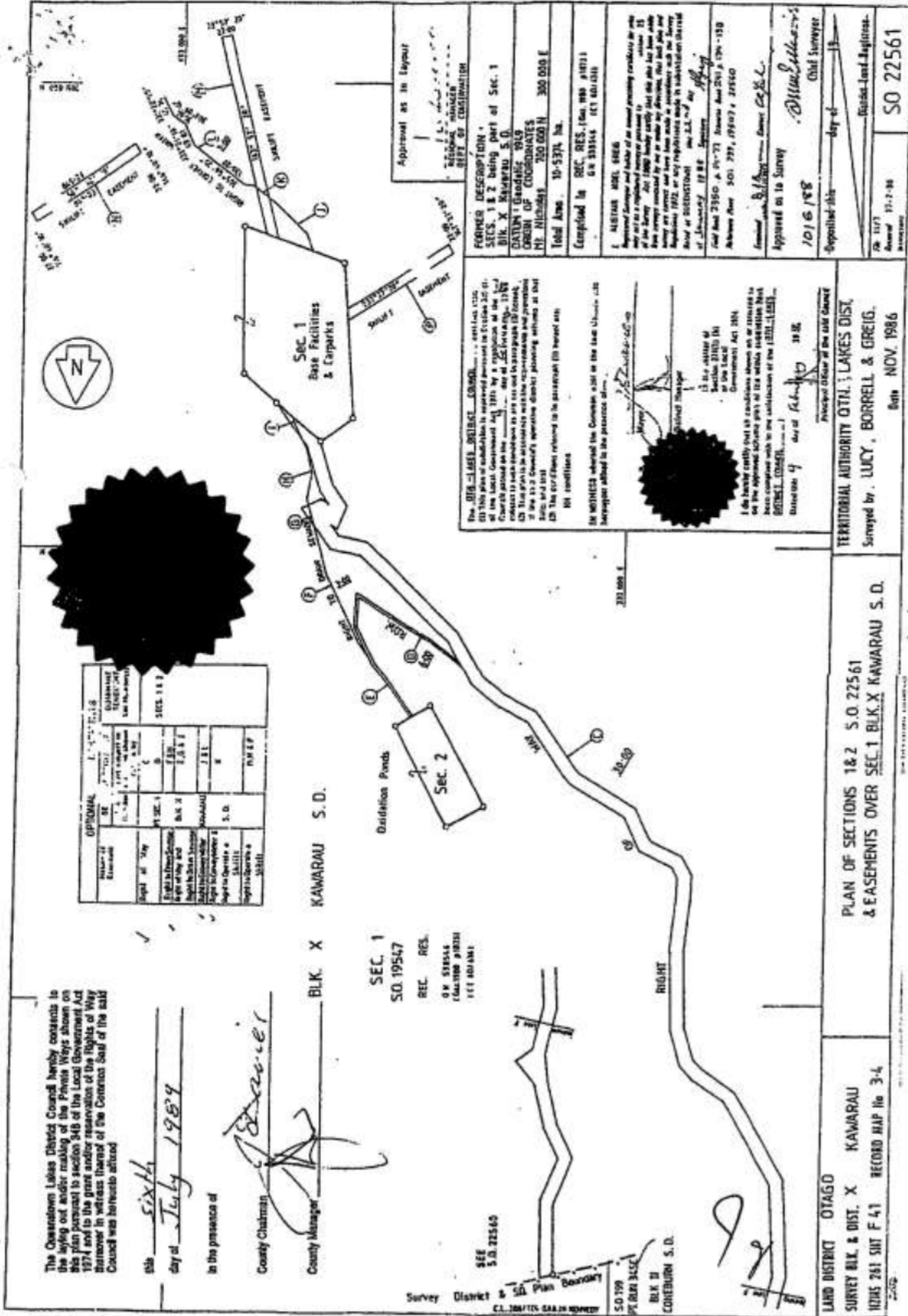
The replacement passenger lift system will be on a different alignment. The proposal involves earthworks for the lift infrastructure as well as new trail development associated with the new passenger lift system. There will be indigenous vegetation clearance associated with the earthworks.

Earthworks are also required in the vicinity of a stream bed in order to drop the level of the stream near the existing bottom station (to its original level, while maintaining the same flow path) and found the new bottom station at a lower level.

The proposed development is considered to be in accordance with the Conservation Act 1977 and consistent with the relevant Outcomes and Policies of the Otago Conservation Management Strategy 2016. Overall, and in accordance with the assessment contained in this report, it is considered that the proposal may be granted as proposed subject to suitable conditions being imposed on the Concession.

Appendix: [A] Site Location Plan





Appendix [C] Plans of Passenger Lift System and Associated Buildings

As per attached documents

Appendix [D] Southern Land Development Consultants (SLDC) Proposed Earthworks Plans

As per attached documents

Appendix [E] Protocols for the Rehabilitation of Natural Alpine Environments Following Ski Area Developments between Department of Conservation and NZSki Ltd.

As per attached documents

Appendix [F] E3Scientific Ecological Report – Shadow Basin and Car Park Expansion Terrestrial Ecological Assessment

As per attached documents

Appendix [G] E3Scientific Lower Shadow Basin Lift Station Freshwater Assessment

As per attached documents

Appendix [H] Blakely and Associates Landscape Assessment

As per attached documents

Appendix [I] Wildlands Herpetologist Survey

As per attached documents