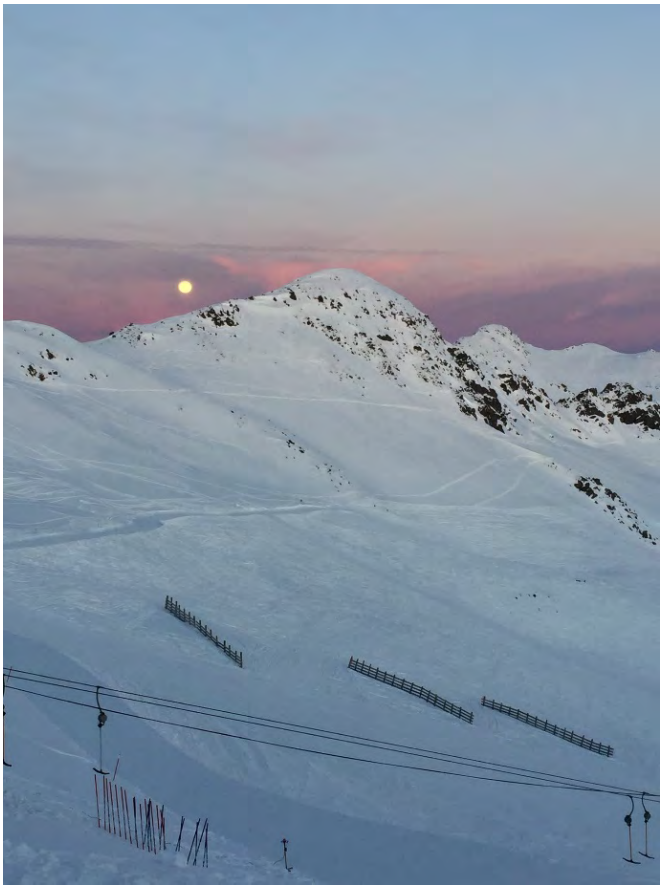

RAINBOW SPORTS CLUB INC. CONCESSION APPLICATION

Application for licence and lease - Rainbow Mountain Area.

Te Manahuna Consulting
temanahuna.co.nz

Prepared by Te Manahuna Consulting for the Rainbow Sports Club Incorporated.

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Concession Application

Form 3b – Private/commercial facility/structures

The Department recommends that you contact the Department of Conservation Office closest to where the activity is proposed to discuss the application prior to completing the application forms. Please provide all information requested in as much detail as possible. Applicants will be advised if further information is required before this application can be processed by the Department.

This form is to be used when the proposed activity is the building or use of any private or commercial facility or structure on public conservation land managed by the Department of Conservation. Examples may include lease of land to erect an information centre; authorisation to erect a weather station; or construct or lease a private/commercial campground or lodge. This form is to be completed in conjunction with either Applicant Information Form 1a (longer term concession) or Applicant Information Form 1b (one-off concession) as appropriate.

Please complete this application form, attach Form 1a or Form 1b, and any other applicable forms and information and send to permissions@doc.govt.nz. The Department will process the application and issue a concession if it is satisfied that the application meets all the requirements for granting a concession under the Conservation Act 1987.

If you require extra space for answering please attach and label according to the relevant section.

Rainbow Mountain Area – the family place for skiing fun in Nelson and Marlborough.

Contents

A. Description of Activity

Please describe the proposed activity in detail – where the site is located, please use NZTM GPS coordinates where possible, what you intend to use the building for, whether you intend to make any changes to the infrastructure.

Please include the name and status of the public conservation land, the size of the area for which you are applying and why this area has been chosen.

If necessary, attach further information including a map, a detailed site plan and drawings of proposal and label Attachment 3b:A.

Introduction

This application covers the licence area and the lease areas including the base facilities and other facilities which are required to enable the continued operation of the Rainbow Mountain Area which has been under a lease since 1981, initially with the N.Z. Forest Service and then with the Department of Conservation, since 1987.

Background

The Rainbow Mountain Area is owned by Rainbow Sports Club Inc (RSCI). It is located in the northern South Island in Marlborough region on the St Arnaud Range at the head of Six Mile Creek, off the Rainbow Valley Road.

Figure 1: Location of Rainbow Mountain Area

The mountain area is in the humid and sub-humid zone with 1500-1600mm of rainfall, an average of 1600 hours of sunshine and mean temperatures ranging from 0 to 14C degrees. The prevailing winds are from the south-west to north-west.

There are five lifts providing skiing and snowboarding for all ages and levels of experience and skill. It has a small learner's area. The open nature of the mountain area means it receives a reasonable amount of sunshine hours. This and its variety of learner to intermediate terrain makes it very popular with families

and schools from the Nelson and Marlborough areas. The terrain is 25 per cent beginners, 55 per cent intermediate and 20 per cent advanced.

A terrain park provides another experience for both skiers and snowboarders.

History

Rainbow Mountain Area was developed in the early 1980's by the Rainbow Skifield Development Ltd. This included developing the access road from the Rainbow Valley Road and the series of lifts. They ran the area till December 1991 when it was transferred to the Rainbow Valley Mountain Area Limited.

Initially the area ran as a commercial ski field. A second-hand chairlift was purchased from Round Hill and installed in 1991. This was later removed and replaced with the current T-bar lift from Ohau Snowfields in 2004.

A snowmaking system was installed in early 1989 and a terrain park with a half pipe was constructed in the 1990's and has since been modified several times.

In 2002 the commercial operation ceased. In 2004 the Club was formed and with loans from club members the mountain reopened and has been run as a non-profit organisation since.

The licence area includes several other extensive cirque basins which provide back country experiences for more adventurous and competent skiers and snowboarders.

Location

Rainbow Mountain area borders the eastern side of the Nelson Lakes National Park within the St Arnaud Range at the head of Six Mile Creek. The area is accessed by road, via the Rainbow Valley Road, east of the St Arnaud village. It 35kms from St Arnaud to the field carpark with the final 8km up the gravel ski access road. The area is one and a half hours drive away from Nelson and Blenheim, making it the closest Mountain area to these urban centres and the only ski are in the Nelson Marlborough region.

The St Arnaud Range runs in a southwest to northeast direction. It features a series of cirque basins typical of those found throughout the Southern Alps. One of these, the Six Mile Creek basin in which the main ski basin is situated lies in a southerly direction. The McCrae basin or West Bowl, to the south of the main basin lies in a south-easterly direction.

The Six Mile Creek Basin has terrain ranging from steep scree slopes in the upper basin to scree slopes, tussock and subalpine vegetation across the rest of the basin. There is one large tarn in this basin.

Figure 2: Main basin at the head of Six Mile Creek

The McCrae basin features large areas of tussock and subalpine vegetation with one large tarn and several smaller ones.

The base area is at 1540masl and the highest point is at 1758masl. The vertical rise is 218m with the terrain varying between easy to moderate slopes.

Weather

Snowfalls normally occur between June and October but in recent years like with most of the ski fields in the South Island have become less regular and reliable. Because the area is in the northern and eastern part of the Southern Alps the snowpack is usually about 1.0 – 2.0m at the elevation of the mountain area.

As with many ski areas close to or in the Southern Alps the prevailing wind is westerly. A typical storm pattern is north-west changing to west with wet snow and strong winds and as the storm system moves into the southerly quarter (south-west to south), temperatures cool down and the snow becomes drier.

The area is also exposed to the south to south-east flow but the cold frontal systems associated with this weather pattern usually only bring strong winds and little snow to the area. However, depressions which become trapped by a blocking high over the North Island can bring significant snowfall from the north-east direction.

As a result of the effects of climate change the mountain area is already prone to significant variability in the amount of snowfall it receives from year to year and the extent of its' season. The effects of climate change on ski fields in New Zealand was researched by Jordy Hendrikx et al in 2010, (Hendrikx, 2010). Over the proposed life of this concession, the effects of this are expected to become more of an issue resulting in more variability in winter seasons and reliable snow conditions.

Current business operations

The ski field is a member of Ski Areas Association of New Zealand and operate a modern best practice ski area during the season from end of June to end of September (average of 75 days).

The area employs between 36 and 39 staff during the season in the following roles: Management (1), Operations (3), Ski School (13), Ski Patrol (3-4), Rentals (2-4), Lifts (4) and Cafe/Office (6) and Shuttles (4).

The area has a safety and operations system which is outlined in the document Rainbow Sports Club Safety Management System, (Rainbow Sports Club, 2019).

Visitor numbers

The area is an important asset to the regional economy and is the only mountain area servicing the Nelson and Marlborough regions. The snowfield provides a valuable recreational opportunity to engage in a healthy sport while visiting the great outdoors.

Total daily skier visits of 22,000 occurred in 2019. This number is assessed from daily car and lift line counts. A big day will see 1,000 visitors to the area or around 280 cars. Over the past five years visitor numbers have fluctuated between 15,000 to 23,000 skier visits, (see Figure 3: Rainbow Skier Visits).

School groups makeup a significant number of the users with up to 5 school groups (around 250 pupils), per week, visiting the snowfield, with a total of around 2600 students a year, (around 12 per cent of the total visitors). The inter school ski championship day has around 400 pupils participating from 50 schools, at a primary, intermediate and secondary level. The mountain area is attractive to schools because of its proximity to the main population centres in the area and it has excellent beginner and intermediate terrain with a relatively sunny and warm aspect. The club also provides an extremely attractive discounted package for schools of $50 per pupil.

The snowfield is also popular with local families. It is estimated that 85 per cent of the skiing visitors are families. The area also gets a number of sightseers, (non-skiers or boarders), who visit the area to see snow and just have fun in an alpine snowy environment.

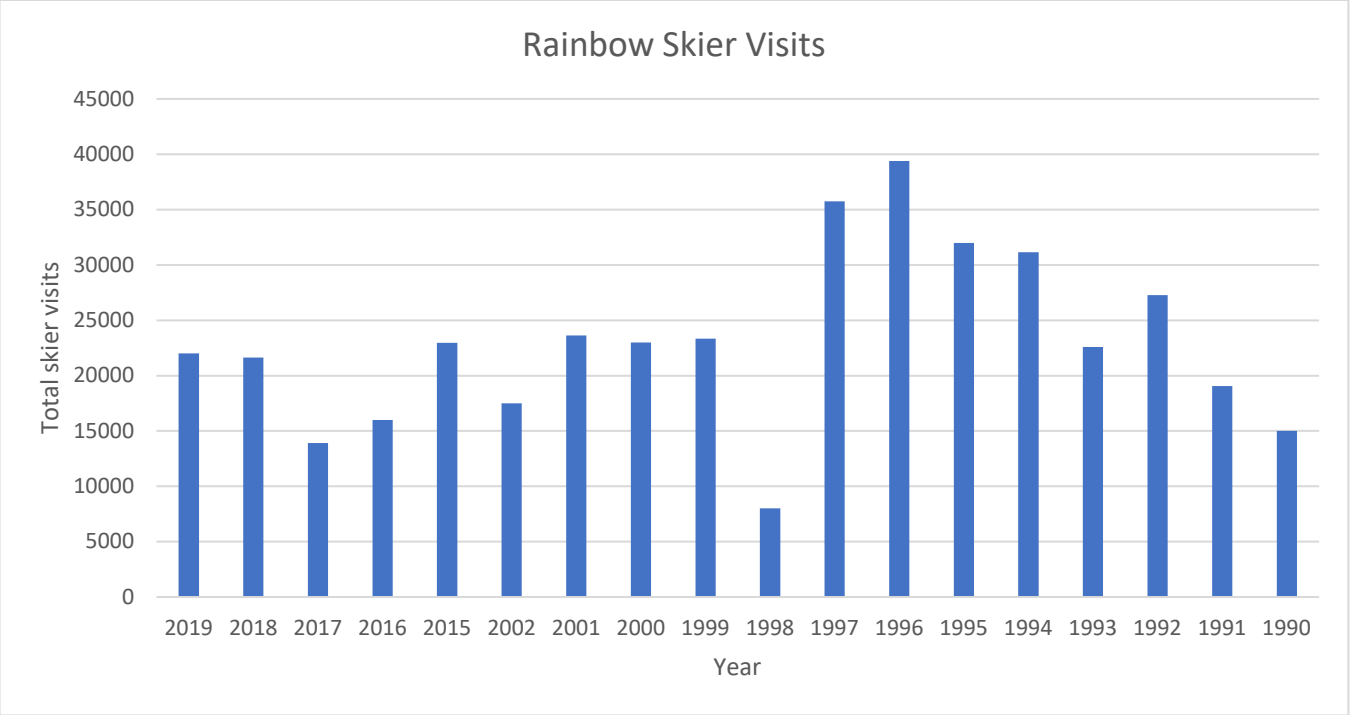

Figure 3: Rainbow Skier Visits[1]

[1] Figures for 2003-2014 not available from the SAANZ source

Figure 4: Rainbow Mountain Area in winter

Planning matters

Status of the conservation land

The mountain area is located within the Rainbow Conservation Area, being Conservation Unit no. 00012, NaPALIS ID 2803468.

DOC Authorisations

The mountain area has been authorised by the Department of Conservation under the Rainbow Valley Ski Area Limited, Deed of Renewal of Licence (Department of Conservation , 2003).

Conservation Management Strategy

Rainbow is the only ski field in the Nelson Marlborough Conservancy now after the demise of Mt Robert. The “Conservation Management Strategy for the Nelson / Marlborough Conservancy, 1996-2006”, (CMS), allows “Snow sports where the impacts on the environment and other recreational values are acceptable”, (Department of Conservation, 1996). The CMS is currently being revised however this version is still the current document.

Several sections and objectives apply specifically to ski field operations in the CMS including 14.7: Recreation Concessions, 14.11: Commercial Structure and Public Works and 17.4: Winter Sports. These objectives and their application have to be considered in the context of the overriding Tikanga Maori and the Natural and Historic values outlined in the document.

District and Regional Planning

The mountain area is within the Wairau Awatere Resource Management Plan, (WARMP) Zone under the Marlborough Regional and District Plans. The current licence area of the ski field and the access road are within the dedicated “Ski field zone”. This zone provides dedicated rules and policy to provide for the ongoing operation of the ski field, (Marlborough District Council, 2011).

The zone is surrounded by the “Conservation zone”, which reflects the ski fields location with the St Arnaud range and on the boundary of the Nelson Lakes National Park, (Marlborough District Council, 2011).

There are 10 active resource consents for the ski field for various activities including trail construction and grooming, new building and alterations, road and carpark access, liquor sales, discharge permit for sewage and hazardous substance storage.

It appears that the water permit issued in 2008 for diverting and taking water for snowmaking has expired. However, the activity of “the abstraction of water from tarns for the purposes of snowmaking or a tarn augmentation is a Permitted Activity”, subject to rules in the plan, (Marlborough District Council, 2020).

The full list of current resource consents is documented at Table 1: Resource Consents

Tangata Whenua Iwi and Statutory Acknowledgements

The ski field is within the mapped statutory acknowledgement area of three iwi, Ngaiti Toa Rangatira, Rangitane o Wairau and Ngaiti Rarua. These are broad areas which cover the entire Wairau River catchment, including the headwaters of Six Mile Creek, (Marlborough District Council, 2020).

Each iwi clearly identifies in their statement of association the importance of the Wairau River and its mauri or lifeforce.

Licence Area

One licence area is being applied for covering the main basin which contains all the facilities and the other surrounding cirque basins for associated back country snow activities with an area of 764ha and the 4.4 km of the access road outside of this main licence area with an area of around 9ha if it is 20m wide.

Mountain area licence (Figure 6)

The proposed main mountain area licence has a length of 11.5km and encompasses around 764ha of land that is within the Rainbow Conservation Area. The proposed area includes all the assets of Rainbow Ski Area and the potential skiable terrain from the existing lift facilities. It does drop below the base facilities, but this allows for skiing down below these facilities and getting picked up by a vehicle in a very good snow year.

The mountain area licence boundary starts 4.2km up the Rainbow Skifield Road, in Six Mile Creek at 1060masl and runs directly uphill to the ridge to the north to around 1860masl and to the south to around 1800masl. The boundary to the north follows the ridge between the Six Mile Creek and the Woolshed Creek catchments around to above Powder Valley and then along the ridge between Six Mile Creek and the Travers Valley above the T-bar return terminal. The boundary then follows this ridge around the West Bowl to Mt McCrae and then to the ridge between the Arnst Valley and Six Mile Creek where it intersects the boundary on the south side of Six Mile Creek. (See Figure 6: Mountain area and road licence area).

Figure 5: West Bowl or McCraes Basin with Mt. McCrae

Access road licence area (Figure 7):

The other part of the licence area is the gravel road and surrounds from the Rainbow Conservation area boundary to the 4.2km mark on the road where the road enters the mountain area licence area. It is proposed that this be 20m wide, (10m either side of the centreline), to allow for enough leeway for road repairs and alterations as required. The access road beyond the gate is open to the public by vehicle throughout the winter and during summer if staff are on the field. Otherwise the gate is locked the rest of the time and walking, or bike access is only allowed from this point. See Figure 7: Road access licence area.

Activities applied for under the licence

The mountain area requires a licence enabling the full management and control of all the activities relevant to the operation and control of an alpine downhill snowfield. This includes the following activities:

Lift operation

Safe operation of the lifts for the public, school groups and staff.

Retail and hire of equipment

Café operation including the sale of food and alcohol at the main café. The Rainbow Café has a current alcohol on licence which expires on the 23 July 2023. (Licence ID 52/ON/032/2020).

The retail operation includes the sale of snow sports accessories and equipment and the hire of ski and snowboarding gear.

Snowsports instruction

Provision of snowsports instruction within the main licence area. This is provided by qualified instructors from New Zealand and overseas.

Ski patrol and avalanche control

The area needs to maintain a safe environment for visitors. This requires a comprehensive snow safety programme, rescue and first aid service. This is operated in accordance with best practice and industry standards and guided by the Rainbow Sports Club safety Management System (RSCSMS), (Rainbow Sports Club, 2019)

These operations include the following:

- Day to day ski patrol operations.
- Operation of skidoos for rescue work and access.
- Operation of the on-site weather station.
- Closure (along the main ski area boundary and within the licence area) and signing of areas for public safety. Managing winter season backcountry access so as this activity does not endanger clients on the main snowfield. Rainbow support the "Backcountry Touring Access Guidelines[2]" and utilise them when access is requested by ski tourers.
- Storage, use of and disposal of explosives.[3]
- Operation of helicopters for access and heli bombing within the licence area.[4]
- Public advice about avalanche hazard outside the licence area in the surrounding terrain, (backcountry), using the New Zealand Mountain Safety Council system. There is an MSC avalanche advisory board at base buildings and the top of the T-bar.

[2] Backcountry touring access guidelines published by FMC and NZAC.

[3] Rainbow has a current Location Test Certificate (renewed in 2020).

[4] Rainbow has adopted the SAANZ Snow Blasting Standard Operating Procedures, (SAANZ).

Accommodation for staff on the field

The field requires up to 6-12 staff to stay overnight throughout the season. They are accommodated in the staff accommodation building which has living room, kitchen and 6 bedrooms. The staff who are required to stay overnight include manager, operations staff, groomer drivers and ski patrol.

During periods of extreme avalanche risk the base facilities and especially the staff accommodation could be threatened by an avalanche out of Little Dog Chutes or with the Big Dog Chutes. The avalanche atlas shows this path crossing the "Easy Way Home" trail and coming within 15m of the end of the staff accommodation building. This risk is managed by on site avalanche management and if necessary, evacuation of the staff accommodation building during high risk overnight periods, (see, Figure 30: Avalanche paths – above main base area).

Avalanche Control

The area is subject to avalanche hazard like any mountain area in New Zealand. The area has a comprehensive avalanche atlas, (Williams, 1999), and management regime for managing this risk. It follows best practice SAANZ procedures with its management and control procedures. Avalanche control is undertaken in the main basin, parts of the West bowl and on the road paths when required. Some of the road paths that require control lie above the access road licence area outside of the mountain area licence.

Snow making and grooming

The operation of snowmaking and grooming machinery, (currently 2 Kassbohrer Pisten Bully groomers), on a 24-hour basis, during suitable conditions to ensure the operation of the snowfield area during winter. The snowmaking is currently undertaken over an area of 6ha, on the main T-bar run below tower 10, platter lift area, terrain park and the learner's area. (Figure 52: Snowmaking area and system). This includes the addition of the additive Snomax[5] as part of the snowmaking.

Grooming of the snow surface and movement of snow to provide snow covered ski trails and access to key parts of the licence area as required. This occurs across the ski trails and immediate surrounding areas.

Snowmax[6]

Water that contains Snomax freezes faster and more evenly and lasts longer. The result is 40% more snow and better snow quality. The snow lasts longer and is easier to handle.

[5] Snomax is a trade name.

[6] http://www.snomax.com/company/snomax-film.html

SNOMAX is a biological material whose proteins in small numbers catalyse the formation of ice crystals. It is used on ski slopes as an additive to snow-making water to produce better snow at higher temperatures. SNOMAX is produced from inactivated micro-organisms and is harmless to the health of humans, animals, and plants. No negative effects of SNOMAX were observed on vegetation.

The efficiency of a snowmaking system can be measured with the aid of various parameters. Different systems can be compared with each other based on the water consumption, energy input, the quantity of snow generated, and the amount of time spent on slope preparation. At the beginning of December 2013, the independent Brendle Group studied the difference between making snow with and without SNOMAX at Kirkwood Mountain Resort. The actual effect of SNOMAX was measured in a direct comparison.

The test carried out in real conditions in Kirkwood Mountain Resort confirms the positive effect of SNOMAX in many respects. SNOMAX produces up to 90% more snow with an extra 3.5% of water and the same amount of energy. The differences in warmer temperatures and high levels of atmospheric humidity are particularly pronounced. In total, therefore, less water and less energy are needed to generate the same amount of snow. At the same time less, input is required from the snow operations team. This reduces the overall operating costs and, most importantly, it is good for the environment. The lower expenditure of energy and water brings lasting advantages in respect of the environment.

Helicopter operations

The mountain area needs to be able to utilise helicopters for safety, avalanche management, maintenance, and construction purposes in the licence area. The avalanche management may require the landing and bombing of areas outside of the licence area for the purpose of protecting the safety of visitors using the licence area and the road. A helipad is located next to the Day Lodge.

Summer slope grooming

This involves rock picking and machinery. This is required because the frost heave is continually pushing rocks out of the ground. They become an issue as they both damage the groomer tracks when grooming the ski trails in winter and can become a hazard for skiers and snowboarders. They also mean that more snow depth is required to achieve cover in years when the area is relying on snowmaking to achieve initial and adequate coverage. This is undertaken in the summer months in consultation with the local DOC staff and within the annual modification allowances. The rocks are lifted out of the ground and set down in an area where they will not be an issue.

Telecommunications

Operation and maintenance of the mountain area radio system including the mast and with the solar powered radio repeater located in the West Bowl, (Figure 74: Radio repeater). (The NZTM reference is noted in Table 4: NZTM and Lat/ Long coordinates for buildings and structures outside the base lease area). There are also three webcams located at the learners, café, and top of the T-bar. The field also has local SAR radios and satellite phones for use in an emergency.

Photography and filming for the promotion of the mountain area

The mountain area undertakes photography and filming for mountain area advertising and promotional purposes on a regular basis. This will be either undertaken by staff or on contract. This material will be used in the website, brochures or for other marketing purposes for the mountain area only. Aerial filming is quite likely to be done by drone nowadays so this should be covered by the licence. The area does not allow the use of private drones in accordance with DOC policy. Any other filming or photography by third parties will be referred to the Department for separate concession advice and permitting.

Backcountry access

The use of the back country and back country access is controlled by a gate system and closures for ski field clients. Backcountry users cannot be stopped from accessing the land beyond the boundary of the main snowfield area basin as it is public conservation land. They are advised of the weather forecast, avalanche hazard and requested to sign the backcountry intentions sheet. (Rainbow Sports Club, 2019). They are advised that they can access the backcountry and re-enter the snowfield area through the access route and gate from the top of the learners area out to the West Bowl, so as not to endanger clients on the main snowfield. (Figure 14: Main ski trail area and backcountry access route and gate).

Access road

The 8km of gravel road from the Rainbow Conservation area boundary to the carpark is used for access to the mountain area. The access road beyond the gate is open to the public by vehicle throughout the winter and during summer if staff are on the field. Otherwise the gate is locked and walking, or bike access is only allowed from this point.

The ski field needs to maintain this road and the water tables and clear snow and grit the road surface in snowy or icy conditions in the winter season. This is a permitted activity under the Wairau Awatere Resource Management Plan (WARMP), (Marlborough District Council, 2011). No salt or chemicals are used to remove snow and ice from the road.

Gravel supplies for maintaining the road and carpark are extracted from river gravel source beside the Rainbow Valley Road and 5.5km north of the gate. It is outside the Rainbow Conservation Area and is weed free. Heavier material is taken from a couple of sites on the upper access road. A total of 1000m^3 per annum is available as a permitted activity within the “ski field zone”, under the WARMP.The “ski field zone” includes an access road corridor which is approximately 300m wide, (Figure 7: Road access licence area).

At times avalanche control needs to be undertaken on the access road as per the avalanche management regime. There are several paths above the road that can at times run to the road. The road is closed to the public and staff other than safety staff during these operations. There is one road avalanche path outside of the current licence area which is noted in Figure 9: Avalanche path outside the licence area requiring control.

An area called the Boneyard which is within the road access licence area is located close to the gate and is used for storage of ski field assets when required.

Carparking

The mountain area has a 14,000m2 carpark which is capable of parking up to 280 cars.

Maintenance

The area needs to be able to undertake maintenance and repair of all the assets included within the licence area, base area, and footprint leases, including the replacement of like with like and earth disturbance. This maintenance includes water, power, telephone, radio, sewage, snowmaking, snowfences, buildings and lifts.

Accommodation for visitors

The RSCI wants to operate overnight accommodation, within the on-mountain accommodation buildings and the Day Lodge. Access to accommodation on the hill would allow people to use the alpine area for the purpose of education, sightseeing, hiking, cultural activities, photography, walking, botany, sports, and recreation. This would be like the sort of operation undertaken by the Temple Basin Ski Club at Temple Basin near Arthurs Pass.

Leases - Areas requiring a lease

It is proposed that the buildings and structures be subject to either a lease area or footprint lease. It is proposed that the main area adjacent to the carpark where there are thirteen buildings and structures should be covered by a footprint lease area of 0.25ha with a perimeter of 283m.

The other facilities spread across the licence area would be covered by a footprint lease for each individual facility, including the eight remaining buildings, and the three hazardous substances facilities.

There are 24 buildings and other assets within the ski field licence area. All the buildings are detailed in Tables 1, 2 and 3 in the Attachment 3b:A. Photos of each building are provided in the attachment as well.

Floor plans are available for all these buildings if required.

Base lease area

The proposed base lease area would include the following thirteen buildings/assets and all the underground infrastructure associated with these buildings and facilities. The base lease area is designed to enable public access around either end of it. The proposed area is shown in

1. Main base area building containing ski hire and ski repair.
2. Ski Patrol and first aid building
3. Toilet Block
4. Generator shed
5. A Frame building, (downstairs-café, shop and ticket office; upstairs-office)
6. Staff accommodation, (kitchen, living room and 6 bedrooms)
7. Staff room, (for daytime use)
8. Workshop and toolshed
9. Road shed
10. Directors hut
11. Patrol storage shed
12. Storage containers (2)

Other buildings and structures requiring a footprint lease

There are eleven other buildings and assets within the proposed licence area which are outside the proposed base area lease. They are mapped on Figure 31: Buildings and assets outside base lease area and Table 4: NZTM and Lat/ Long coordinates for buildings and structures outside the base lease area.

1. T-bar Bottom Terminal drive station
2. T-bar Return station hut
3. Generator shed - (300kVa) and fuel bowser
4. Generator shed - (17kVa)
5. Intermediate Platter drive station hut
6. Pump shed
7. Day Lodge (ex Mt. Robert)
8. Doppelmayr hut

9. Bulk Fuel Storage
10. Explosive magazine
11. Repeater

These eleven buildings and assets require individual footprint leases. NZTM map references for these assets are noted in Table 4: NZTM and Lat/ Long coordinates for buildings and structures outside the base lease area. Descriptions of each are found in Table 3: Building descriptions: outside main base area lease and Figure 31: Buildings and assets outside base lease area.

Facilities and assets to be included in the licence area

The facilities within the licence area include lifts, carpark, access road, helicopter landing pad and snowmaking infrastructure and the buildings and facilities within the proposed base lease area.

Six lifts (Figure 41).

- Main T bar lift – a combination New Zealand built and Doppelmayr lift which is 880m long and installed in in 2004. It is constructed of 12 steel towers, a drive station and a return terminal. (Figure 43: T-bar lift and Figure 44: T-bar lift).
- Platter lift – a custom designed lift which is 400m long and was installed in 2006. It is constructed of 3 steel towers, a drive station and a return terminal. (Figure 45: Platter lift top tower looking down to the drive terminal).
- Beginners or learners lift - a customised designed lift, which is 100m long and was installed in its current location around 2010. It is constructed a drive station and return terminal. (Figure 50: Learners area and top drive tower looking towards return tower).
- Terrain park lift – a customised designed lift, which is 170m long and was installed in 1990's. It is constructed a drive station and return terminal. (Figure 48: Terrain Park lift).
- West Bowl lift - a customised designed lift, which is 60m long and was installed around 2005. It is constructed of a drive station and return terminal. (Figure 46: West bowl lift return tower at top of ridge and Figure 47: West Bowl drive terminal looking towards ridge).
- Tube park lift - a customised designed lift, which was 60m long. The lift cable and gear has been removed but the drive station and return terminal are still in place. (Figure 51: Tubing lift site with safety fence).
- All the lifts are powered by electric motors and the towers painted in Karaka Green colour.
- The licence needs to include the repair, maintenance and required replacement (with like for like) of all this infrastructure (both above and below ground), on an as required basis.

Terrain Park (Figure 61):

- This was initially constructed in 1990's with a half pipe but now has two jumps and involved some terrain modification over an area of 0.8ha. The total volume of material involved in the construction of the jumps was around 1900m^3.
- The area is mostly just bare rock and scree but has revegetated since construction, (Figure 62: Terrain park, (top return tower - top centre of photo).
- The construction of the terrain park was constructed in consultation with the local DOC office.

- The licence needs to include the repair and maintenance of the terrain park on an as required basis.

Trails

- There is an extensive network of trails on the mountain. The area that has been modified about 22 ha to allow for these trails is clearly illustrated in several of the photos in this document.
- The licence needs to include the repair and maintenance of the trails on an as required basis.

Snow fences (Figure 54):

- Snow fences are designed to deposit snow behind a barrier that slows the wind speed down and causes the snow to accumulate from where it can be groomed and used for providing better snow coverage. They are effective both with storm snow and snow making.
- There are 21 snow fences at 7 different locations, constructed of tanalised wooden deer fence posts and 5-6 horizontal planks (150 x 50mm) with gaps between them. (Figure 59: Snow fences mid slope on the T-bar).
- They are between 15-20m in length and 1.8m high, (Figure 60: Snow fences above the platter lift).
- They were constructed in in the 1990's and early 2000's in consultation with the local DOC office.
- The licence needs to include the repair, maintenance and required replacement (with like for like) of all this infrastructure (both above and below ground), on an as required basis.
- The licence needs to include the addition, removal and relocation of snowfences in the future in consultation with the DOC office.

Snowmaking infrastructure (right to convey water):

- Snowmaking is a feature of all modern ski areas allowing them to guarantee snow cover when natural snow is lacking and increasingly important as the effects of climate change become more noticeable.
- The snowmaking system covers the main trails alongside the T-bar, platter lift area, learners area and the terrain park.
- The snowmaking reservoir is the large tarn in the main basin at an elevation of 1598masl, with a surface area of 13,000m^2 (Figure 55: Main tarn for water supply) and a capacity of 11,500,000 litres based on the permitted 1m draw down of the tarn to 1597masl.
- The water drawn off for snowmaking is replaced by natural inflow and water diverted from a separate larger tarn (4.35ha), located in the McCrae basin, 265m to the west with a surface elevation 15m above the main tarn. A 300m pipe connects the two tarns and the draw from this tarn is currently 3l/s during the snowmaking season.
- The water is supplied to the system via a 130m long 150mm feeder main, pumped by two multi stage horizontal centrifugal pumps from the pump house situated beside the main basin tarn. The pump has a capacity of
- Fish screens – are installed on the inlet pipes.
- Snowmaking pipelines and hydrants – there is 1350m of pipeline which feeds the twenty hydrants for the snowmaking on T-bar lift, platter lift and learners' slopes. There are three fixed snowmakers.
- The hydrants are low profile and about 1m above the ground. (Figure 58: Hydrant with electric supply on post located above terrain park)

- The fixed snow makers with permanently mounted guns are 2.5m off the ground, two are TechnoAlpin snowmakers and the third one an older SMI model. (Figure 56: Permanent TechnoAlpin snowmaker).
- There are five mobile snowmakers of three different makes – SMI, TechnoAlpin and Dema Lenk. (Figure 57: Mobile snowmakers).
- The pumps and snowmakers are powered by the 400V 3- phase power system provided by the 300KVA generator.
- The consents to take water for this scheme were originally consented in 1989 under water take MLB890052 and renewed under water permit U941487 in 2008. This latest permit has now expired and is replaced by the permitted take under the rules for the "ski field zone" in the WARMP, (Appendix 2: Conditions for Permitted Activities).
- The licence needs to include the repair, maintenance and required replacement (with like for like) of all this infrastructure (both above and below ground), on an as required basis.

Electricity infrastructure (right to convey electricity): (Figure 64).

- Electric cables - 400V, 3 phase cables connect to all the buildings, lifts, pump shed and pumps and associated infrastructure from the generators located at T-bar terminal and the by the ski hire building. (Figure 64: Underground infrastructure - main basin).
- There are two large generators on the field (100KVA and 300KVA), which provide the power for the facilities and buildings. There is a small 17KVA generator at the T-bar drive terminal which provides power for the staff accommodation etc at night. The 300KVA generator provides the power for the snowmaking.
- Snowmaking infrastructure and upper mountain – this is also connected to the generators on the lower mountain. Cabling for this is in the same lines as the water reticulation for the snowmaking.
- The electricity infrastructure connecting the base buildings, is within the proposed base area lease as outlined. Electricity supply outside of this proposed base area lease includes lines to the pumps, snow making system and the lifts.
- The licence needs to include the repair, maintenance and required replacement (with like for like) of all this infrastructure (both above and below ground), on an as required basis.

Sewage infrastructure (right to convey sewage): (Figure 63)

- Sewage pipes connect the toilets, A-frame and staff accommodation buildings to the septic tank sited down the road at Poo Corner, which is then connected to the flout chamber and soakage field. See, Figure 65: Septic tank at Poo Corner and Figure 66: Soakage field below Hairpin Corner on TLHS stream.
- The licence needs to include the repair, maintenance and required replacement (with like for like) of all this infrastructure (both above and below ground), on an as required basis.

Potable water (right to convey water): (Figure 64)

- Water supply pipes connect the siphon from the upper tarn to the pump shed tarn, and then to the toilets, A-frame, staff accommodation and staff day room.

- The licence needs to include the repair, maintenance and required replacement (with like for like) of all this infrastructure (both above and below ground), on an as required basis.

Diesel fuel lines (right to convey fuel): (Figure 64)

- Diesel supply pipes connect the bulk diesel tanks to the generator sheds at both the ski hire building (100KVA) and the T-bar drive station, (300KVA and 17KVA).
- The licence needs to include the repair, maintenance and required replacement (with like for like) of all this infrastructure (both above and below ground), on an as required basis.

Carpark (Figure 68)

- 1.4ha carpark between the proposed main base area lease area and the Day Lodge building. It includes the batters and banks around the carpark, (Figure 68: Carpark and helipad areas).
- The licence needs to include the maintenance and repair of the carpark on an as required basis.

B. Alternative sites considered

If your application is to **build, extend or add** to any permanent or temporary structures or facilities on public conservation land, please provide the following details:

- Could this structure or facility be reasonably located outside public conservation land? Provide details of other sites/areas considered.
- Could any potential adverse effects be significantly less (and/or different) in another conservation area or another part of the conservation area to which the application relates? Give details/reasons

No - all these structures / facilities are existing.

The other permanent structures and facilities that are planned in the near future will be within the proposed main licence area and cannot be constructed outside this area. Replacements and modifications are being considered for the ski hire building and the A-frame accommodation. However, no plans have yet been drawn up for these proposals.

C. Larger area

Is the size of the area you are applying for **larger** than the structure/facility **YES ~~/ NO~~**

If **yes**, please detail the size difference in the box below, and answer the following 3 questions, if **no** please go on to the next section:

Is this necessary for safety or security purposes? **YES ~~/ NO~~**

Is this necessary as an integral part of the activity? **YES ~~/ NO~~**

Is this essential to carrying on the activity? **YES ~~/ NO~~**

If the answer to any of the above is yes, please provide details and attach supporting evidence if necessary and label Attachment 3b:C.

The main licence area, (764ha) which is larger than the structures and facilities covers all the skiable terrain accessible from all the lifts and includes the footprint lease structures and the other features of the mountain area like the terrain park.

This larger area is essential for the legal operation of the mountain area on public conservation land.

D. Exclusive possession

Do you believe you need **exclusive possession** of the public conservation land on which your structure/building is located, i.e. no one else can use the land during your use of it? **YES** ~~/ NO~~
(Exclusive occupation requires a lease which requires public notification of the application)

If **yes**, please answer the following 3 questions, if no please go to the next section:

Is exclusive possession necessary to protect public safety?**YES** ~~/ NO~~

Is exclusive possession necessary to protect physical security of the activity? **YES** ~~/ NO~~

Is exclusive possession necessary for the competent operation of the activity? **YES** ~~/ NO~~

If the answer to any of the above is yes, please provide details and attach supporting evidence if necessary and label Attachment 3b:D.

An exclusive lease is required over the buildings, storage sheds and the hazardous assets as they are all required as part of the business of running a professional and safe mountain area and are locked and inaccessible to the public. These buildings and facilities are all detailed in the section Leases - Areas requiring a lease (p.17).

E. Technical Specifications (for telecommunications sites only)

Frequencies on which the equipment is to operate
151.5
Power to be used (transmitter output)
10 - 15.2dBw
Polarisation of the signal
Vertical
Type of antennae
Folded dipole
The likely portion of a 24 hour period that transmitting will occur
16/24
Heaviest period of use
0600hrs – 1700hrs

F. Term

Please detail the length of the term sought (i.e. number of years or months) and why.

Note: An application for a concession for a period over 10 years must be publicly notified, an application for a concession up to 10 years will not be publicly notified unless the adverse effects of the activity are such that it is required, or if an exclusive interest in the land is required.

The term for the licence and leases should be 30 years because the RSCI has invested a large amount of capital and is planning further improvements which require the certainty of term. Certainty of term is also likely to mean that the concessionaire will take good care of the public conservation land.

It will also give RSCI the confidence to invest in more technology like snowmaking to protect the mountain area as the effects of climate change become more profound. Currently the snowmaking is limited in its scope but was originally planned to be able to extend to up to 12 guns giving a much larger capacity to make snow for all the main runs on the field.

Given the prognosis for the future of snowsports over the next 30 years RSCI is wanting to consider other alternatives to snowsports as well like offering accommodation outside the winter season.

Rainbow provides a unique opportunity in the Nelson Marlborough area for access to the sub alpine and alpine environment of the St. Arnaud Range via an easy summer access road. This is a significant asset to the communities of Marlborough, Nelson, and greater Tasman area and has the potential to be used for a range of alternative activities to winter activities. These include but are not limited to, education, training, hiking, cultural activities, botany, events, sports, and other recreation that fits within the purpose of the Conservation Act. The Rainbow Sports Club needs to widen its opportunities to utilise the capital investments on the mountain across a wider part of the year. This will help to ensure the viability of the Club and its infrastructure in the face of climate change and other changes and risks that are likely over the term of the new concession.

The club has included in this application the activity to operate summer accommodation as outlined above within the existing buildings on the mountain, (refer to “Accommodation for visitors" page 16).

G. Bulk fuel storage and other hazardous substances

Under the Hazardous Substances and New Organisms Act 1996 (HSNO Act) 'Bulk fuel storage' is considered to be any single container, stationary or mobile, used or unused, that has a capacity in excess of 250 litres of Class 3 fuel types. This includes petrol, diesel, aviation gasoline, kerosene and Jet A1. For more information on Hazardous Substances, go to: http:/www.business.govt.nz/worksafe/information-guidance/legal-framework/hsno-act-1996

Do you intend to store fuel in bulk on the land as part of the activity? **YES ~~/ NO~~**

If you have answered yes, then please provide full details of how and where you intend to store the fuel, and label any attachments including plans, maps and/or photographs as Attachment 3b:G. If your concession application is approved, you will be required to provide a copy of your HSNO compliance certification to the Department before you begin the activity.

Bulk fuel storage

The generators, main snowmaking pump and groomers used on the mountain area are fuelled with diesel. There is one bulk diesel double skinned storage tank with a capacity of 20,000l located close to the workshop. The tank is connected to the three generators by an underground fuel line. This tank complies with the HSNO Act and the relevant regulations. (See, Figure 31: Buildings and assets outside base lease area Table 4: NZTM and Lat/ Long coordinates for buildings and structures outside the base lease area**.**, #9; and Figure 75: Bulk fuel storage at base area).

There is also a diesel fuel bowser at the site of T-bar drive station and 300kVa generator shed for refuelling groomers and other vehicles.

Hazardous Substances Storage

Petrol (for the snowmobiles), and other hazardous supplies (like engine oil, hydraulic oil and other lubricants for the machinery), are brought to the field in 20 litres or smaller containers and stored in combined volumes less than the trigger for bulk storage standards (less than 250 litres).

These goods are stored in the road shed.

All relevant buildings are sign posted in accordance with the HSNO Act and the relevant regulations.

Explosives Storage

There is one explosive safe located below the snowfield, close to the hairpin bend for storing the explosives used for avalanche control. See, Figure 31: Buildings and assets outside base lease area, #10; and Figure 76: Explosives magazine. The explosives store (magazine) is an older type but fully compliant with AS2187, (Australian Government, 1998) and located in isolated site away from public and staff. The explosives storage has a current Location Test Certificate (renewed in 2020) and is appropriately signed. Explosives are made up in patrol first aid room.

NZTM map references for the assets outside the base lease area are noted in Table 4: NZTM and Lat/ Long coordinates for buildings and structures outside the base lease ar.

H. Environmental Impact Assessment

This section is one of the most important factors that will determine the Department's decision on the application. Please answer in detail.

In column 1 please list all the locations of your proposal, please use NZTM GPS coordinates where possible. In column 2 list any special features of the environment or the recreation values of that area. Then in column 3 list any effects (positive or adverse) that your activity may have on the values or features in column 2. In column 4 list the ways you intend to mitigate, remedy or avoid any adverse effects noted in column 3. Please add extra information or supporting evidence as necessary and label Attachment 3b:H.

Refer to Steps 1 and 2 in your Guide to Environmental Impact Assessment to help you fill in this section.

Environmental Impact Assessment Schedule			
Location on public conservation land	Special feature or value	Potential effects of your activity on the feature or value (positive or adverse)	Methods to remedy, mitigate or avoid any adverse effects identified
Rainbow Mountain Area	Alpine grasslands	The facilities are all existing and have been constructed over the last 39 years, mostly in the early years of operation. The construction of these facilities has in places required the removal of vegetation. The effect is dependent on the type and size of the facility.	In sensitive areas in the future an ecological assessment will be completed during the planning stage and the effects mitigated during and after the construction phase. Future design will avoid where possible the removal of and damage to vegetation. Where feasible the replanting of tussocks will occur in accordance with the Vegetation Protocols (See Form 3C, Figure 25). Staff are briefed on the importance of the minimising and avoiding unnecessary damage. Ensure the damage is restricted to the final build platform.

Environmental Impact Assessment Schedule			
Location on public conservation land	Special feature or value	Potential effects of your activity on the feature or value (positive or adverse)	Methods to remedy, mitigate or avoid any adverse effects identified
Rainbow Mountain Area	Landscape features	The Rainbow Mountain Area has been established for 39 years and is an accepted part of the landscape.	Developments which are going to have an impact on landscape are always subject to a landscape assessment. Earthworks have generally triggered an earthworks consent which is granted with strict conditions. Construction is always done to best practice and current standards. For instance, banks are battered and excavated material placed and landscaped so as to minimise the effect on the surrounding area. More sensitive areas are re- grassed where they are prone to erosion following the build phase. Other areas are allowed to naturally revegetate.
Toilets and waste disposal system	Water quality and clean air	Sewage spill or overflow which either pollutes the site or the water table.	Maintain the waste process to prevent overflows and malfunctioning of the system and odour issues.

Environmental Impact Assessment Schedule			
Location on public conservation land	Special feature or value	Potential effects of your activity on the feature or value (positive or adverse)	Methods to remedy, mitigate or avoid any adverse effects identified
Groomed areas within the licence area	Alpine grasslands and vegetation Fragile soils	Oil, diesel and hydraulic fluid spills. Damage to vegetation when there is a shallow snowpack.	Maintain the groomers in top condition with regular maintenance including the regular checking of hydraulic hoses. Mop up any spills which do occur by using best practice spill retrieval techniques and preventing any spillage into waterways. Removing any affected snow or soil from the site to an appropriate site for disposal. Avoiding grooming areas with shallow snowpack and uncovered vegetation.

Environmental Impact Assessment Schedule			
Location on public conservation land	Special feature or value	Potential effects of your activity on the feature or value (positive or adverse)	Methods to remedy, mitigate or avoid any adverse effects identified
Snow making areas and use of Snomax	Tall tussock grasslands	SNOMAX is a biological material whose proteins in small numbers catalyse the formation of ice crystals. It is used on ski slopes as an additive to snow-making water in order to produce better snow at higher temperatures. SNOMAX is produced from inactivated micro-organisms and is harmless to the health of humans, animals, and plants. No negative effects of SNOMAX have been observed on vegetation.	No negative effects of Snowmax on the environment have been reported in the literature. In total, therefore, less water and less energy are needed to generate the same amount of snow. At the same time less, input is required from the snow operations team. This reduces the overall operating costs and most importantly, it is good for the environment. The lower expenditure of energy and water brings lasting advantages in respect of the environment.
Intakes for snowmaking and domestic water	Native fish	Intake can suck in small native fish and kill them.	Fish screens are required by the consent and are fitted to the intakes of all water takes.

Environmental Impact Assessment Schedule			
Location on public conservation land	Special feature or value	Potential effects of your activity on the feature or value (positive or adverse)	Methods to remedy, mitigate or avoid any adverse effects identified
Fuel storage and reticulation	Soils and vegetation	Fuel spillage damaging vegetation or soils	Bunded fuel storage or double skinned tank facility at base area. Storage in small quantities at all sites outside of bulk fuel site. Fuel usage is monitored at each machine site and compared to total fuel usage to audit any leakage. Mop up any spills which do occur by using best practice spill retrieval techniques and preventing any spillage into waterways. Turn off pump in the event of a leak and repair the leak before proceeding with pumping more fuel.
Access road	Generally, weed free environment	Importing of weeds and weed seeds	Removal of any weed seeds from imported machinery before use or transporting gravel up the road.

Environmental Impact Assessment Schedule			
Location on public conservation land	Special feature or value	Potential effects of your activity on the feature or value (positive or adverse)	Methods to remedy, mitigate or avoid any adverse effects identified
Mountain area and especially around the base area	Clean unspoilt environment	Rubbish left around the area during and after the ski season	Rubbish and recycling system is managed by Smart Environmental. Oil is stored in 200l drums. Scrap metal is recycled by Sims Pacific Metals, Nelson. Rubbish and recycling is regularly transported to town.
Mountain Area	Increased visitors	Human impacts on the environment Exposure of visitors to the conservation land and its values Healthy outdoor activity which has positive benefits for the individuals both visiting and engaging in snow activities.	Provision of excellent facilities like toilets and rubbish disposal. Managing ski traffic to minimise impacts on the environment like where there is a shallow snowpack.

Environmental Impact Assessment Schedule			
Location on public conservation land	Special feature or value	Potential effects of your activity on the feature or value (positive or adverse)	Methods to remedy, mitigate or avoid any adverse effects identified
Avalanche control	Vegetation and the clean environment	Possible damage to vegetation and manmade structures. Remains of exploded charges littering the slope in summer. Unexploded charges on the slope.	This damage is the collateral for running a safe mountain area for the public. This litter (if any) is cleaned up when the snow has melted after winter. RSCI has standard procedures for unexploded charges as part of its avalanche control procedures[7].

[7] Rainbow has adopted the SAANZ Snow Blasting Standard Operating Procedures

Environmental Impact Assessment Schedule			
Location on public conservation land	Special feature or value	Potential effects of your activity on the feature or value (positive or adverse)	Methods to remedy, mitigate or avoid any adverse effects identified
Slack country	Natural quiet and low visitation	Increased visitors to this area may affect the experience of other back country skiers. Increased visits to the backcountry are also a positive as active backcountry recreation is a key objective of protecting and making these lands accessible.	The level of current back country use is low so the effect will be minimal.

I. Other

Is there any further information you wish to supply in support of your application? Please attach if necessary and label Attachment 3b:I.

The Attachment 3b:I contains extracts from relevant reports on the Landscape, Botanical and Fauna values.

Attachments

Tables

Figures

Attachment 3b:A

Licence

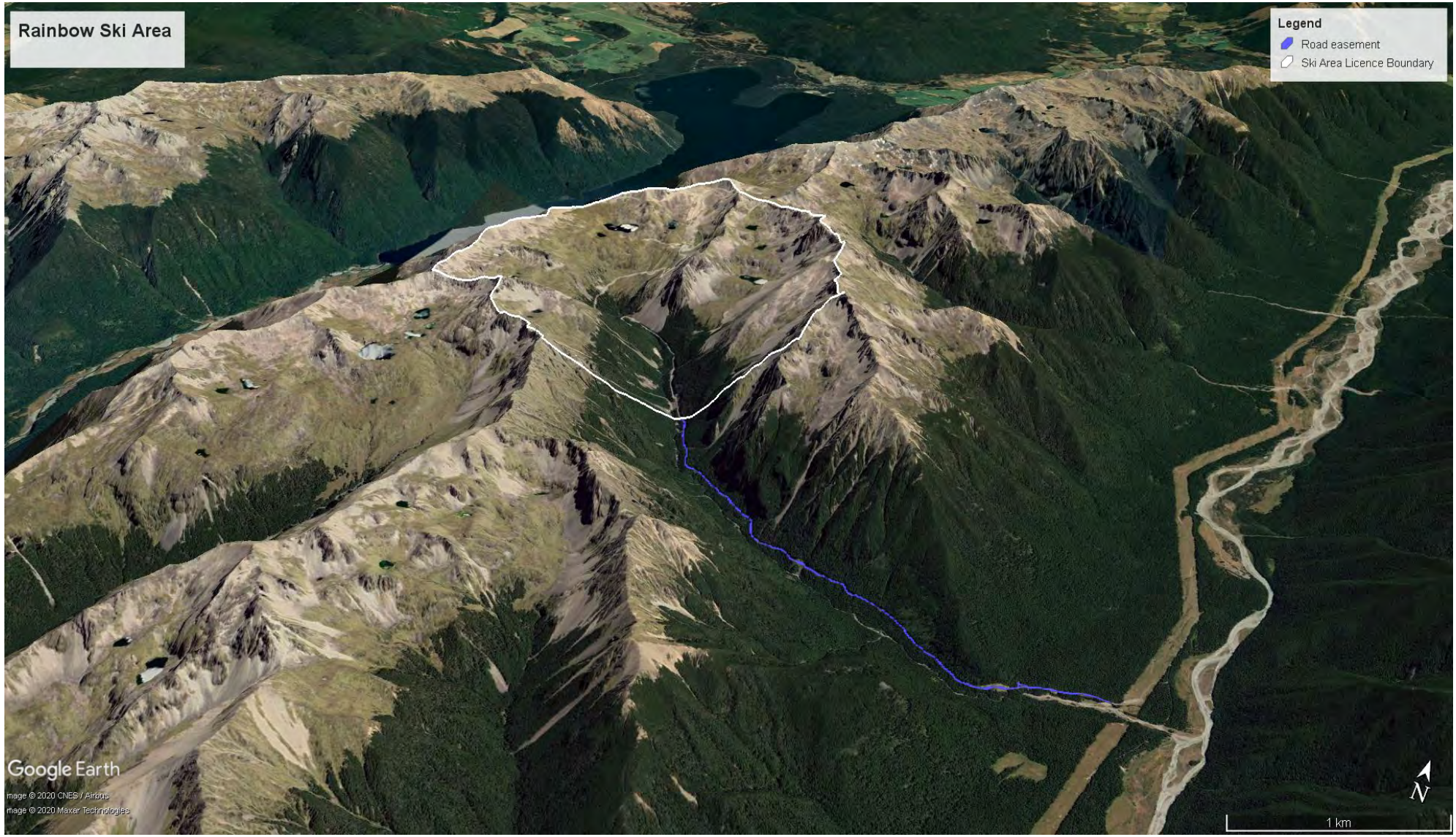

Figure 6: Mountain area and road licence area

Figure 7: Road access licence area

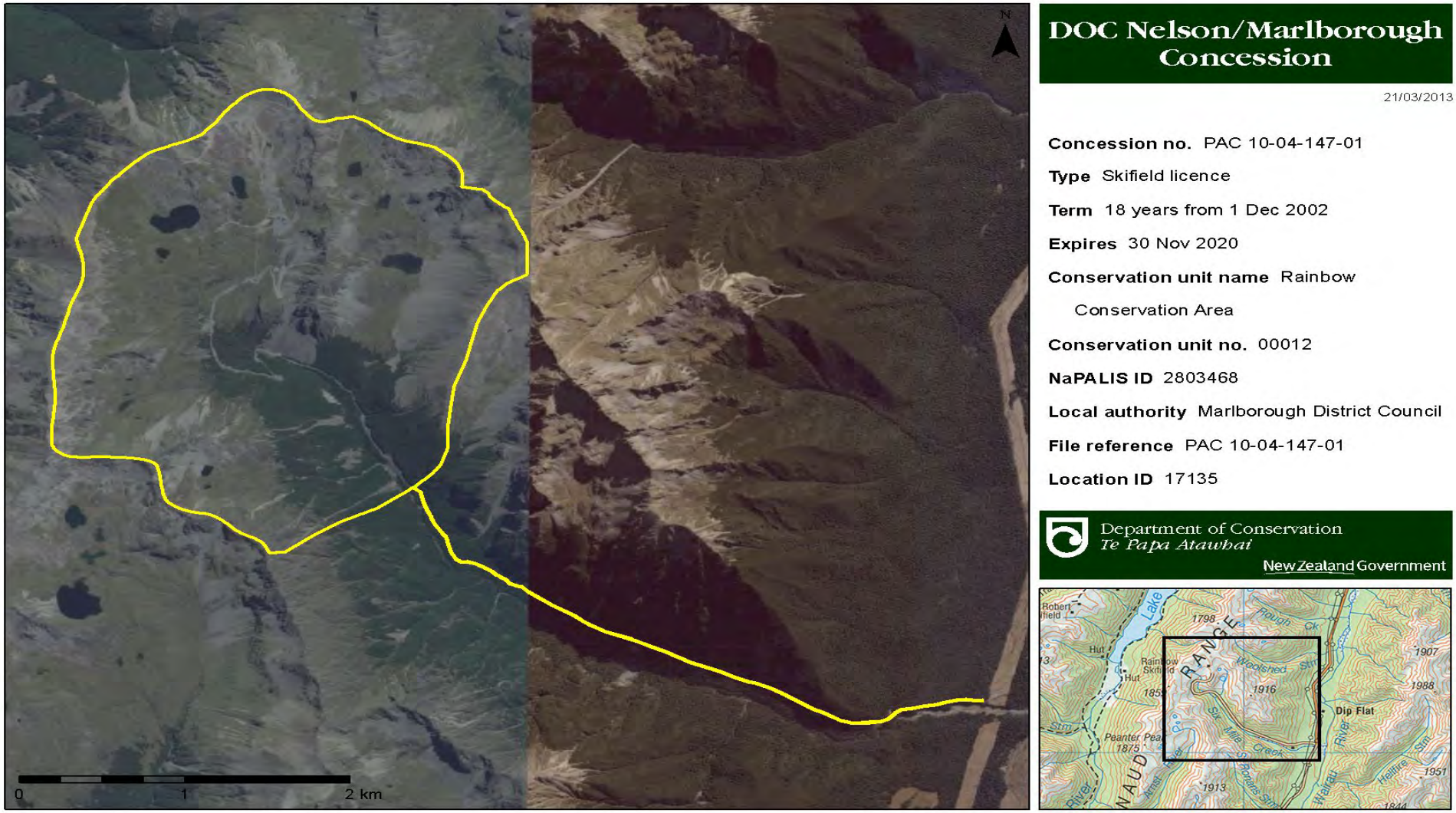

Figure 8: Current licence area

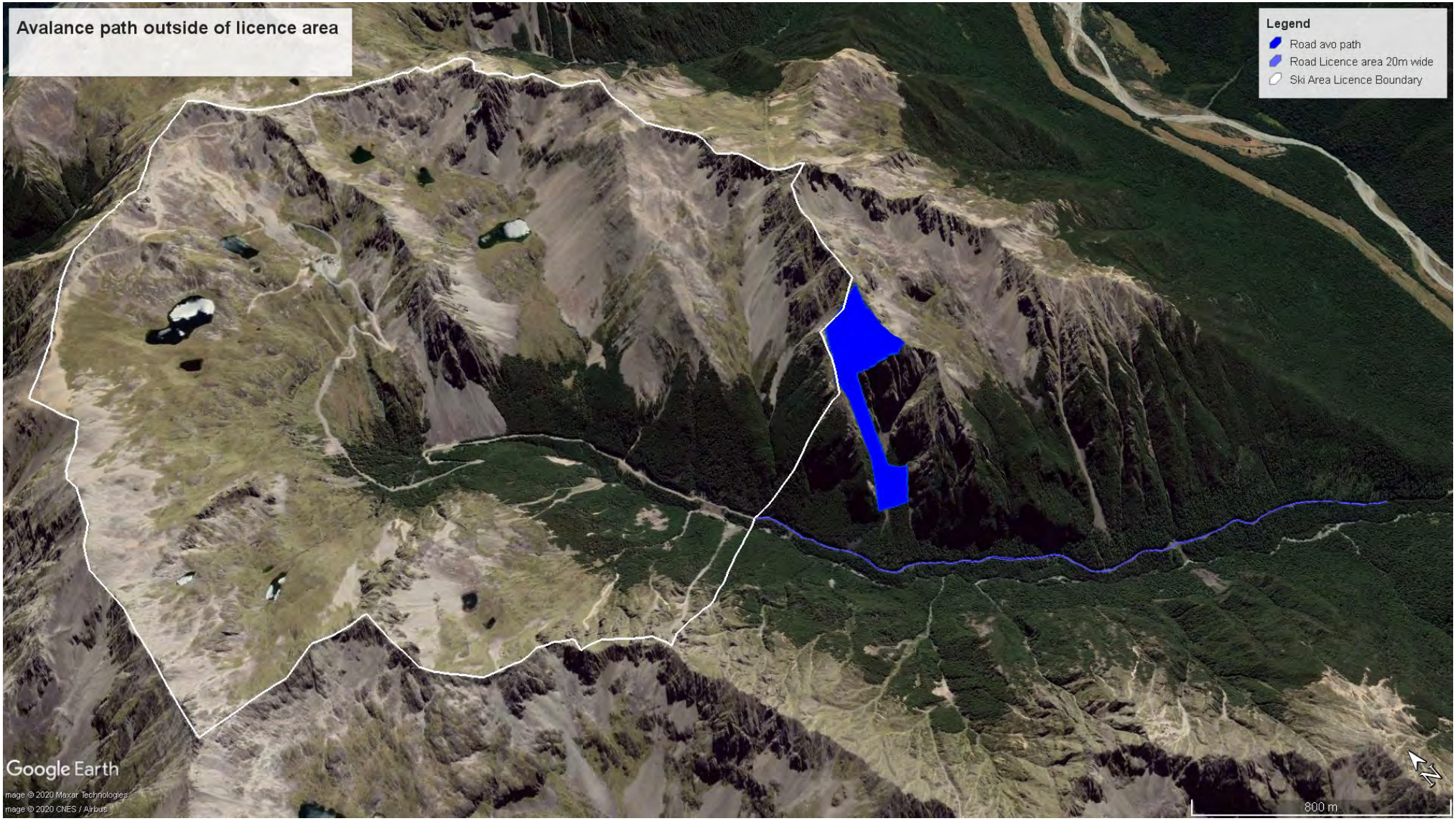

Figure 9: Avalanche path outside the licence area requiring control

Figure 10: Main basin – top section - West Bowl trail in foreground

Figure 11: Main basin - mid section

Figure 12: Lower mountain slopes, base area and carpark, main tarn and pumphouse, T-bar lift.

Rainbow Mountain Area Resource Consents				
Resource consent #	**Year**	**Type**	**Activity**	**Active/ Expired**
U930135	2008	Land Use	Land disturbance for a range of earthworks purposes	Active
U941540	2008	Land Use	Land disturbance for developing new trails etc	Active
U970213	2008	Land Use	Ski tracks and rock grooming	Active
U970334	2008	Land Use	Land disturbance for improvements to the access road and carpark	Active
U050081	2012	Land Use	Cut and fill earthworks	Active
U940243	2008	Land Use	Carpark for 27 cars	Active
U130243	2013	Land Use	Reinstate rope tows	Active
U100098	2010	Land Use	New building and extend and alter existing buildings	Active
U980304	2008	Land Use	Sell liquor at café	Active
U160236	2016	Land Use	Discharge permit and hazardous substance storage	Active

Table 1: Resource Consents[8]

[8] The taking of water for snowmaking is a permitted activity under the ski zone rules, (see Appendix 2: Conditions for Permitted Activities).

Figure 13: Rainbow Mountain Area viewed from the Day lodge and carpark

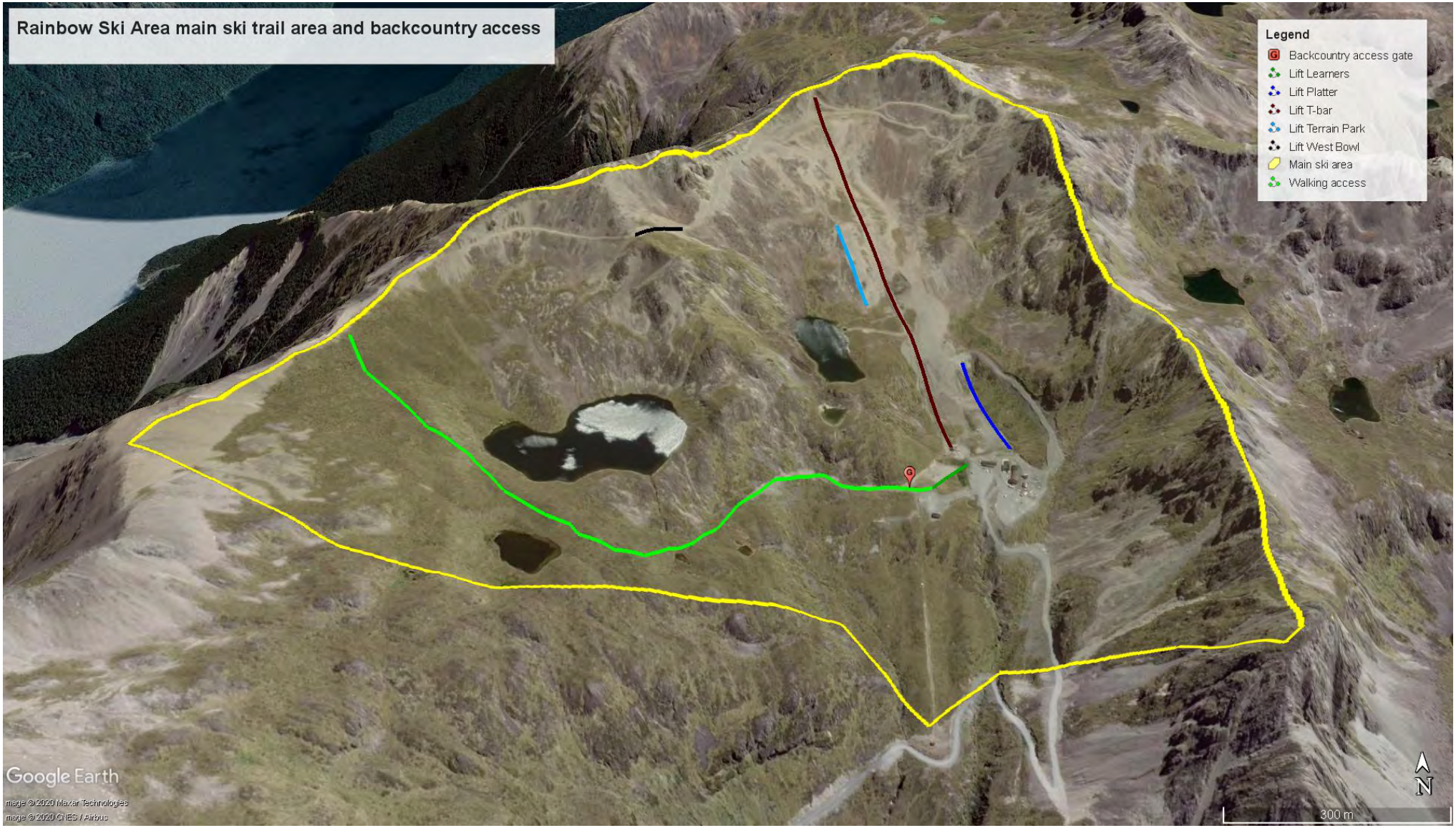

Figure 14: Main ski trail area and backcountry access route and gate

Leases for buildings, structures, and other assets

Building descriptions- main base area lease						
Building name	**Map ref. no.**	**Photo reference**	**Purpose**	**Area main building m2**	**Area of ancillary features m2**	**Construction**
Main base area building	1	Figure 17	Ski hire and ski repair	189.0		Roof – Corrugated iron Exterior – Wood Foundation- Wooden piles
Ski patrol HQ	2	Figure 18	Ski patrol headquarters and first aid room	23.4		Roof – Corrugated iron Exterior – Wood Foundation- Sleepers
Toilet block	3	Figure 19	Main public toilet block with 3 male toilets, 1 urinal and 6 female toilets. Along with a 38,000 litre septic tank connected to a soakage bed.	58.5		Roof – Corrugated iron Exterior – Steel Foundation - Sleepers
Generator shed 100KVA	4	Figure 20	100kva generator for night time power generation. Excess heat used for drying ski gear.	20m container		Roof – Steel Exterior – Steel Foundation- N/A

Building descriptions- main base area lease

Building name	Map ref. no.	Photo reference	Purpose	Area main building m2	Area of ancillary features m2	Construction
A-frame building	5	Figure 21 Figure 22	Downstairs – café, shop and ticket office; Upstairs – office	390		Roof – Corrugated iron Exterior – Wood Foundation – Concrete pad
Staff accommodation	6	Figure 23	Kitchen, living room and 6 bedrooms. Accommodation for staff working on the mountain at night like groomer, snowmaking and ski patrol staff.	285		Roof – Corrugated iron Exterior – Wood Foundation – Concrete pad
Staff room	7	Figure 25	Daytime staffroom	Part of staff accommodation area		Roof – Corrugated iron Exterior – Wood Foundation - Concrete pad
Workshop and toolshed	8	Figure 26	Engineering workshop for maintaining assets and storage of tools.	128		Roof – Corrugated iron Exterior – Wood Foundation - Concrete pad
Road shed and hazardous goods storage	9	Figure 26	Storage of snow mobiles, signs, road cones, chains, shovels etc. Hazardous goods storage.	25.5		Roof – Corrugated iron Exterior – Corrugated iron Foundation - Concrete pad

Building descriptions- main base area lease						
Building name	**Map ref. no.**	**Photo reference**	**Purpose**	**Area main building m2**	**Area of ancillary features m2**	**Construction**
Directors hut	10	Figure 27	Accommodation	56		Roof – Corrugated iron Exterior – Wood Foundation - Sleepers
Patrol storage shed	11	Figure 28	Storage of patrol gear	21		Roof – Corrugated iron Exterior – Wood Foundation - Sleepers
Storage containers (2)	12	Figure 29	Storage of goods.			20m steel container

Table 2: Building descriptions: Main base area lease

Figure 15: Proposed base lease area

Base area buildings

Figure 16: Main base area lease building

Figure 17: Ski hire and repair building with 100KVA generator shed at LH end of the building

Figure 18:Ski patrol building

Figure 19: Toilets

Figure 20: Generator shed 100KVA

Figure 21: A-frame

Figure 22: A-frame building, café, ticket office, retail shop, offices

Figure 23: Staff accommodation

Figure 24: Workshop, staff room and staff accommodation

Figure 25: Staff room

Figure 26: Workshop, toolshed and roadshed

Figure 27: Directors hut

Figure 28: Ski patrol storage shed

Figure 29: Storage containers

Avalanche paths above the main base area

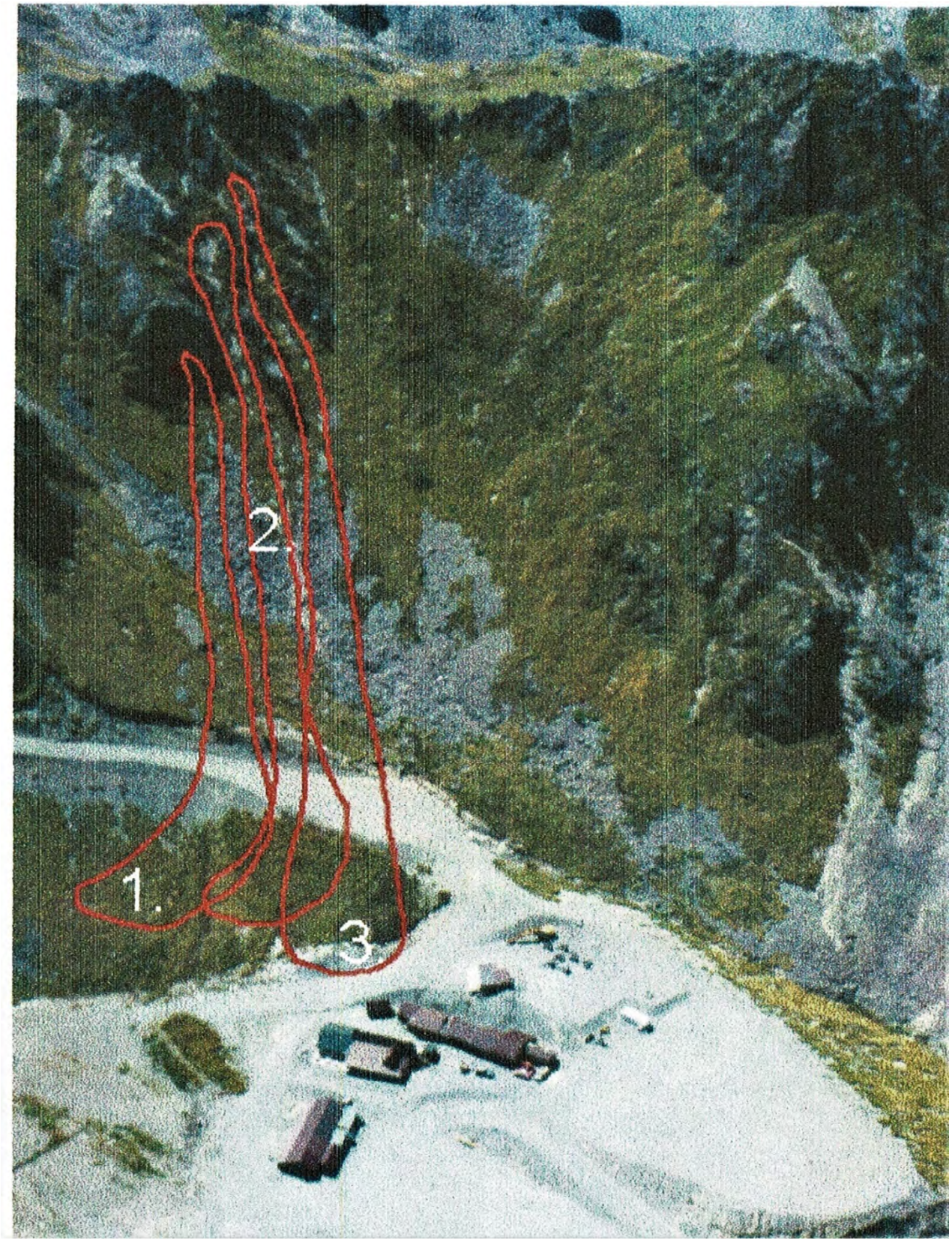

Figure 30: Avalanche paths – above main base area

Buildings outside the main base area lease

Building descriptions for other buildings outside the main base lease area						
Building name	**Map ref. no.**	**Photo reference**	**Purpose**	**Area main building m^2**	**Area of ancillary features m^2**	**Construction**
T-bar bottom terminal drive station	1	Figure 31	Drive station and controls for the T-bar lift. Control room.	130 (including #2 & #3 below)		Roof – Corrugated iron Exterior – Wood Foundation – Concrete
Generator shed and fuel bowser (300KVA)	2	Figure 34	Diesel generator -300KVa	Included in #1		Roof – Corrugated iron Exterior – Wood Foundation – Concrete
Generator shed (17KVA)	3	Figure 35	Diesel generator -17KVa	Included in #1		Roof – Corrugated iron Exterior – Portacom Foundation – Sleepers
T-bar top terminal hut	4	Figure 36	Top hut for lift operator shelter.	6.25		Roof – Corrugated iron Exterior – Wood Foundation – concrete piles

Building name	Map ref. no.	Photo reference	Purpose	Area main building m2	Area of ancillary features m2	Construction
Platter lift hut	5	Figure 37	Hut for lift operator shelter.			Roof – Steel Exterior – Wood Foundation – Steel Sledge
Pump shed	6	Figure 38	Pumping water for snowmaking	24		Roof – Corrugated iron Exterior – Wood Foundation – Concrete
Day Lodge	7	Figure 39	Original Mt Robert day lodge	120		Roof – Corrugated iron Exterior – Wood Foundation – wood piles
Doppelmayr shed	8	Figure 40	Original T-bar access base shed	16		Roof – Corrugated iron Exterior – Steel weatherboard Foundation – Concrete

Table 3: Building descriptions: outside main base area lease

Figure 31: Buildings and assets outside base lease area

Rainbow NZTM Lat/ Long Coordinates for buildings and structures - outside base area lease							
Building/ Structure	**Lat**	**Long**	**NZTM East**	**NZTM North**	**NZMG East**	**NZMG North**	**Group**
DAY LODGE	-41.87643626	172.86005439	1588387.6	5363933.3	2498377.0	5925610.8	Building
DOPPELMAYR HUT	-41.87934997	172.85946096	1588338.9	5363609.7	2498328.3	5925287.1	Building
GENERATOR SHED 17KVA	-41.87502739	172.86069748	1588440.7	5364089.8	2498430.1	5925767.4	Building
GENERATOR SHED 300KVA	-41.87505211	172.86070746	1588441.6	5364087.1	2498430.9	5925764.6	Building
PLATTER SHACK	-41.87511100	172.86176699	1588529.5	5364080.7	2498518.9	5925758.2	Building
PUMP SHED	-41.87283103	172.85896098	1588296.3	5364333.4	2498285.5	5926011.1	Building
TOP T-BAR SHACK	-41.86734600	172.85881396	1588283.1	5364942.4	2498272.2	5926620.2	Building
EXPLOSIVES MAGAZINE	-41.88032102	172.85949801	1588342.2	5363501.9	2498331.5	5925179.3	Other
HELIPAD SITE	-41.87647599	172.86046403	1588421.6	5363928.9	2498411.0	5925606.4	Other
REPEATER	-41.88193889	172.85020000	1587571.0	5363321.0	2497560.1	5924998.2	Other
WEATHER PLOT	-41.87605899	172.85981401	1588367.6	5363975.2	2498356.9	5925652.7	Other
SEPTIC FLOAT	-41.87915072	172.86096425	1588463.6	5363632.0	2498453.0	5925309.5	Septic
SEPTIC SOAK FIELD	-41.88031502	172.86066076	1588438.7	5363502.7	2498428.0	5925180.1	Septic
SEPTIC TANK	-41.87694001	172.86193203	1588543.5	5363877.6	2498532.9	5925555.1	Septic

Table 4: NZTM and Lat/ Long coordinates for buildings and structures outside the base lease area

Figure 32: T-bar drive terminal

Figure 33: T-bar drive terminal and 300KVA generator shed

Figure 34: Generator 300KVA and 17KVA

Figure 35: Generator 17KVA

Figure 36: T-bar - top hut and tower 12

Figure 37: Platter lift hut and platter lift drive station

Figure 38: Pump shed

Figure 39: Day lodge

Figure 40: Doppelmayr shed

Lifts and trails

Figure 41: Lifts

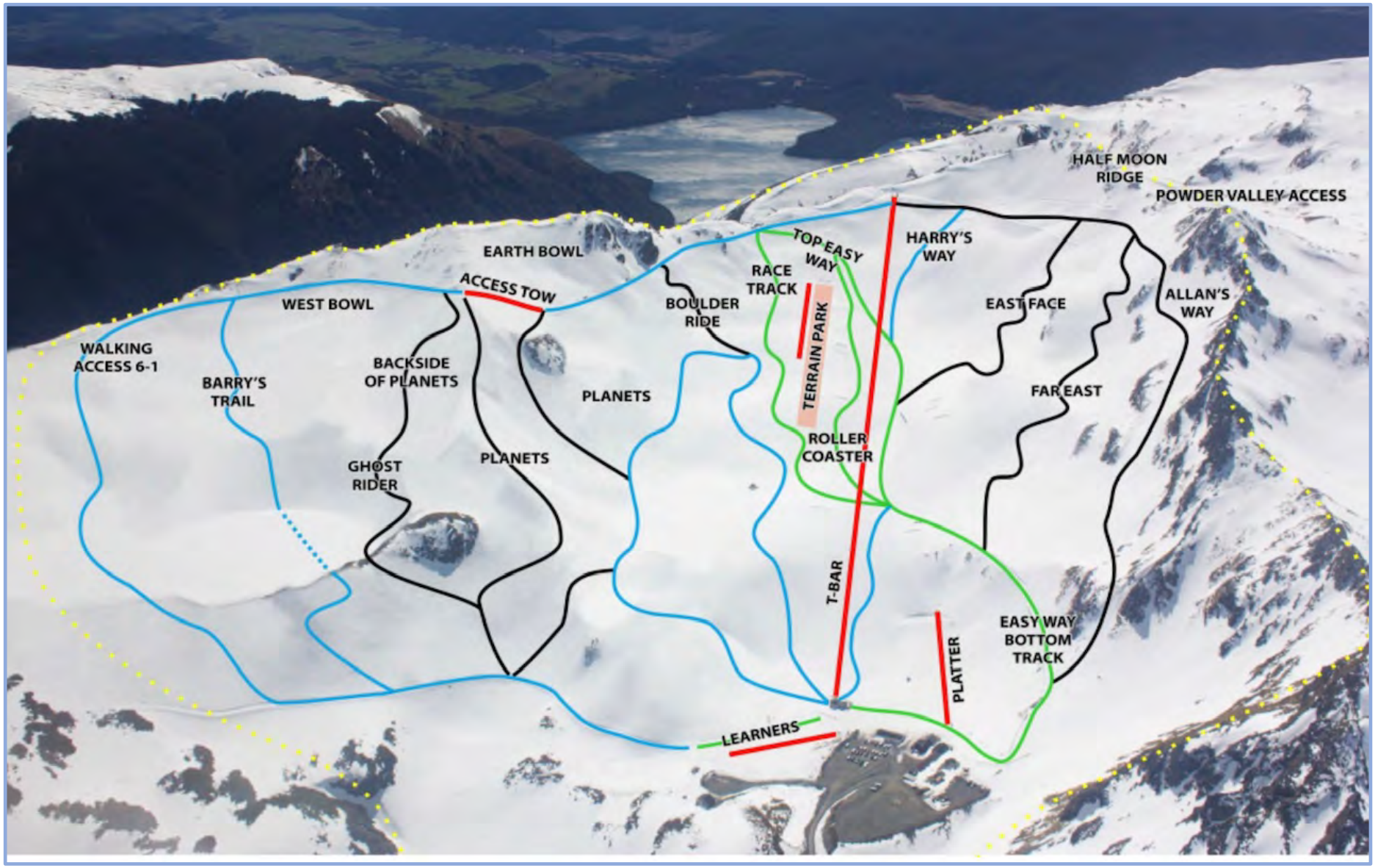

Figure 42: Trails

Figure 43: T-bar lift looking down from T

Figure 44: T-bar lift – return terminal

Figure 45: Platter lift top tower looking down to the drive terminal

Figure 46: West bowl lift return tower at top of ridge

Figure 47: West Bowl drive terminal looking towards ridge

Figure 48: Terrain Park lift return tower in distance

Figure 49: Terrain park lift drive terminal

Figure 50: Learners area and top drive tower looking towards return tower

Figure 51: Tubing lift site with safety fence

Snowmaking system and snowfences

Figure 52: Snowmaking area and system

Figure 53: Snowmaking area (scree areas), looking down T-bar with Terrain Park (right foreground), snowfence 10 and the pump shed tarn

Figure 54: Snow Fences

Figure 55: Main tarn for water supply

Figure 56: Permanent TechnoAlpin snowmaker

Figure 57: Mobile snowmakers

Figure 58: Hydrant with electric supply on post located above terrain park

Figure 59: Snow fences mid slope on the T-bar

Figure 60: Snow fences above the platter lift

Terrain Park

Figure 61: Terrain park

Figure 62: Terrain park, (top return tower - top centre of photo)

Underground infrastructure – septic system

Figure 63: Underground infrastructure – septic system

Figure 64: Underground infrastructure - main basin

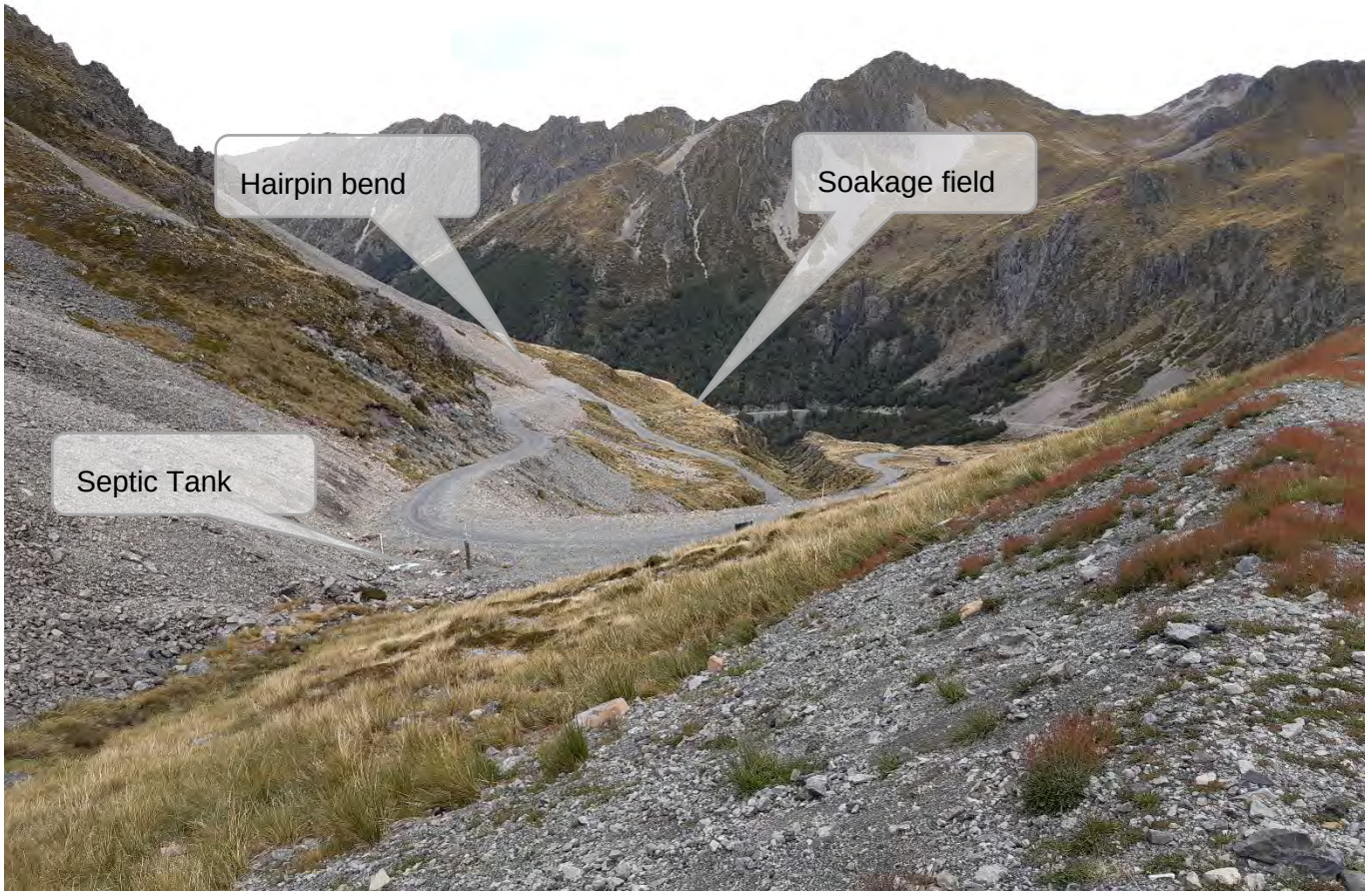

Figure 65: Septic tank at Poo Corner

Figure 66: Soakage field below Hairpin Corner on TLHS stream

Figure 67: Flout chamber and sewage line, (looking uphill from hairpin bend).

Vehicle and helicopter access

Figure 68: Carpark and helipad areas

Figure 69: Upper part of the access road above the bushline showing Hairpin bend

Figure 70: Access road through beech forest

Figure 71: Gate at bottom of access road

Figure 72: Road avalanche paths

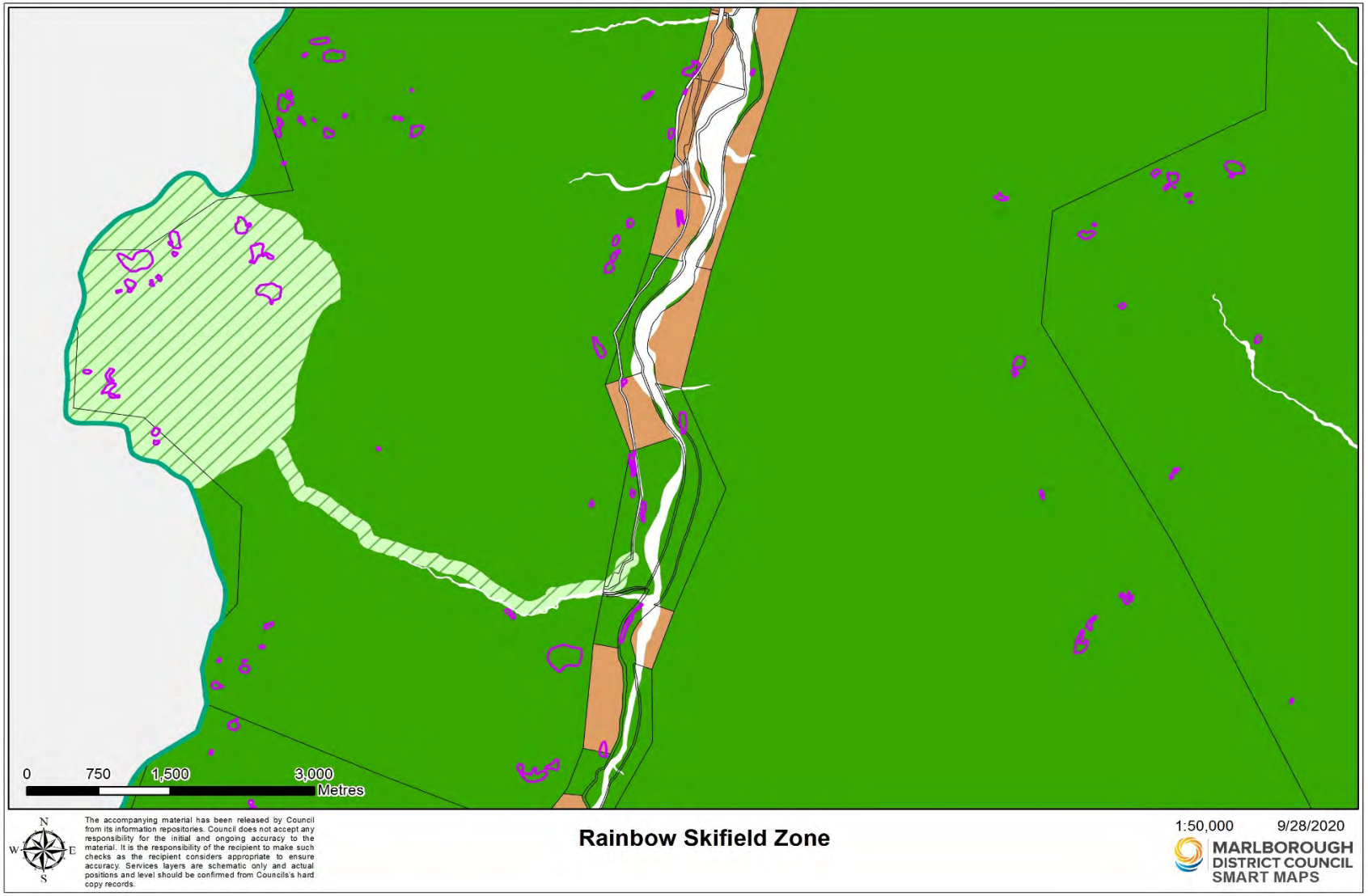

Figure 73: Skifield Zone from the WARMP

Other facilities

Figure 74: Radio repeater

Attachment 3b:G.

Hazardous substances

Hazardous substances facilities						
Building name	**Map ref. no.**	**Photo reference**	**Location description**	**Purpose**	**Area m2**	**Construction**
Bulk fuel storage	9		Located within the carpark	Portable bulk fuel storage – 20,000l	18.2	Double skinned tank
Explosive magazine	10		Located below the field and below the road at	Storage of explosives for avalanche control	N/A	Steel safe
Fuel bowser	3		Located next to 300kva generator shed	Fuel dispensing for groomers etc.	N/A	

Table 5: Hazardous fuels and goods

Figure 75: Bulk fuel storage at base area

Figure 76: Explosives magazine

Figure 77: Fuel bowser on side of 300KVA generator shed

Attachment 3b:I

Rainbow Ski Field ecological assessment

Introduction

The ski field is described in the CMS as being within the Inland Marlborough biogeographic unit which features extensive beech forest habitat and tussock grasslands. It notes the presence of kea and falcon as vulnerable species in these areas.

Field survey

The ski field was visited on two days during the week of the 2-6th March 2020. On the second visit an overview of the botanical and ecological values of the area was undertaken by Rob Young (B.Sc.Botany) and Martin Heine, B.Sc. (Botany Hons).

Rob has a BSc. (Botany) and has undertaken extensive botanical survey work early in his career with the NZFS as well as maintaining a continued interest in botanical matters during his 34-year career in the National Park Service and DOC.

The ski field is in the Travers Ecological District, which is part of the Marlborough Ecological Region.

Previous surveys and information

There appears to be little documented ecological information on the area. The area was surveyed in 1987 when Tony Druce, Nelson Botanical Society produced a full species list for the “Six-mile Skifield. This species list was updated in 1996. This list is available if required. (Druce, 1987). Another visit by the Wellington Botanical Society in January 2015 provides a brief overview of the botanical highlights for this group of keen botanists, (Wellington Botanical Society, 2015).

The Protected Natural Areas Programme never extended to this location and a more recent study undertaken by the MDC of Sites of Natural Significance has not yet covered this area (Marlborough District Council, 2019).

Figure 78: Rainbow ski field - main basin

Description of the area

The mountain licence area (764ha) is typical of the many high mountain glaciated cirque landscapes in the Southern Alps. There are 5 cirque basins all of which have similar features with rock, scree, talus, snowgrass, tarn, and wetland ecosystems. There are eleven tarns some of significant size (up to 4ha), within the licence area. At the lower elevations black beech forest dominates with an understory of shrubs and other plants associated with this forest type.

All the ecosystems outside the main ski field basin appear to have not been disturbed (other than the 0.5km track at the top of the western basin) and can be considered fully intact. The beech forest has clearly been impacted by the construction of the access road. However, the impact is confined to a narrow strip, and in most places, areas disturbed during construction in 1981, alongside this corridor have been recolonised by both beech and other understory plants.

The main basin where the operational mountain area is situated has been significantly affected by the existing infrastructure, previous earthworks, and the ongoing operations of the mountain area. The main ski field operational area is approximately 72ha and it contains three distinctive ecotypes:

- Snowgrass and tarn communities
- Natural scree, talus, and bluff systems
- Disturbed scree and talus

Each of these three make up approximately one third of this main ski field basin area.

The snowgrass, tarn, natural scree, and bluff systems are all relatively intact and have not been disturbed in any significant manner. Contrary to this the areas of disturbed scree and talus have been significantly modified because of terrain modification and the installation of the ski field infrastructure. This area amounts to about 22ha.

Figure 79: Western basins with large tarn and intact grasslands

Botanical survey

The purpose of the survey on 5th March 2020 was to provide a rapid overview of the plant communities at the Rainbow Mountain Area. This was not a comprehensive survey of the site. The focus of the survey was the ski field operational area where all the development has taken place rather than the wider licence area (764ha) and the area adjacent to the road.

We traversed sample areas of the main basin including:

- Modified scree and talus
- Natural scree and talus
- Ridgeline
- Western and main basin snowgrass ecosystems
- Ephemeral tarn
- Main tarn

- Modified scree and talus

The area we surveyed was near Tower 10 at 1660m. These scree areas are heavily modified and would have originally been similar in appearance and ecology to the adjacent intact scree slopes. There were only a few scattered plants found in these areas including pioneer plants like *Epilobium pyconostachium* and *Epilobium rubra-marginata* and sorrel. Several scattered natives were also found including, *Chionchloa flavescens, Poa colensoi, Kelleria vilosa var. vilosa, Celmisia sessiflora* and *Celmisia sinclarii.*

Natural scree and talus

Again, this area was close to Tower 10 within an area of natural scree and talus. While several of the plants present in the disturbed zone were also present here, notably there were several others which inhabit these intact rocky zones. The plants were generally more abundant but often within niches which do not exist in the disturbed scree. We noted *Celmisia laricifolia, Celmisia sessiflora, Celmisia spectabilis, Poa colensoi, Dracophyllum pronum, Veronica epacridea, Agrostis muelleriana* and most notably the vegetable sheep, *Haastii pulvinarus*.

Figure 80: Scree and talus slopes surrounding the modified scree slopes in the centre of the photo

Ridgeline

We walked the ridgeline from the top of the T-bar station to the west before dropping down to the track out to the west basin. This ridgeline is on the boundary of the ski licence area. It is very exposed to the prevailing westerly wind and is subsequently a harsh environment. The plants found here reflect adaptions to the characteristics of this ecotype, but there are still niches where the small delicate plants like the native harebell, *Wahlenbergia albo-marginata*, the native woodrush, *Luzulla rufa*, *Ranunculus insignis* and the

native gentians are found. More often the plants exhibit the typical adaptions of alpine plants found in such a harsh environment like *Phyllachne colensoi, Kelleria villosa var. villosa, Veronica epacridea, Aciphylla monroi, Celmisia laricifolia and Celmisia incana*. Other plants noted here included, *Raoulia australis, Epilobium spp. Chionchloa pallens* and again the vegetable sheep, *Haastii pulvinaris var pulvinaris.*

Western and main basin grasslands

These grasslands are dominated by *Chionchloa flavescens* and *C. pallens* interspersed with wet seeps and small coarse screes and boulderfields. *Chionchloa australis* is also present. They occupy the majority of the sub alpine and alpine zones across the ski licence area. There is a wide variety of other small herbaceous plants scattered amongst the dominant snowgrasses including the creeping matipo, *Myrsine nummularia, Pentachondra pumila,* the mountain daisy, *Celmisia lateralis*, snow marguerites like *Dolichoglottis lyalli* and the much smaller plantain, *Plantago unibracteata*.

Ephemeral tarn

This tarn is located north-east and downhill of Tower 10. It is immediately adjacent to the main ski run and is bordered by disturbed scree and natural scree and talus fields. It is typical of this sort of tarn found in this sub alpine zone. The tarn surface is a rock pavement. However, above this pavement area which is occasionally under water numerous plants were found. These included the snowgrass *Chionchloa pallens var. pilosa*, *Poa colensoi* and *Rytidosperma australe*. The small shrubs like the whipchord hebe, *Veronica hectorii* and *Coprosma atropurpurea* are common. Again, many small herbs are present like *Luzula pumila, Viola cunningham,* mountain daisies, gentians and the exotic sorrel.

Figure 81: Ephemeral tarn and surrounding area

Main tarn

The large tarn in the skifield main basin is typical of the tarns found in this environment. The surrounding vegetation is dominated by I mixed with several shrubs like *Veronica hectorii subsp. coarctata, H. decumbens* and *Dracophyllum pronum*. There is a wide range of herbaceous plants in this zone including *Celmisia monroi, Ranunculus insignis, Astelia petriei* and *Aciphylla glaucescens*. Again, many small herbs

are present like *Lobelia angulata, Viola cunningham, Luzula pumila, Gentianialla spp*. and the species found in wetter areas like *Drosera arcturi* and *Carpha alpina*. *Hieracium pilosella* was also present but notably like the other areas at Rainbow exotic species were not abundant.

Figure 82: Main tarn

Threatened plant list 2017

The complete range of native plants found at the site have been reviewed against the updated threatened plant list. (de Lange & et al., Conservation Status of New Zealand indigenous vascular plants, 2017., 2017). There was one plant *Raoulia australis* which was found both in the original species list and during the speedy survey in March 2020 which is classified as At Risk – Declining.

Fauna

The alpine and sub alpine areas of the Rainbow ski field environment does not have a rich fauna associated with it, which is typical of these environments in the ranges just east of the Main Divide.

A full assessment of the fauna values is required to adequately describe them comprehensively.

Birds

Bird species likely to be present in the sub alpine area of Rainbow are New Zealand falcon, N.Z. pipit, chaffinch and greenfinches, (D. Butler, 1991). Kea, (Nestor notabilis), have not been sighted in the area recently.

The Wellington Botanical Society trip report (Wellington Botanical Society, 2015), noted the presence of kaka, kakariki, riflemen and whitehead in the beech forest.

Reptiles

No lizards or invertebrates were sighted during either day, however both days were quite cool which would have reduced any activity by these species. There are some old records (1965) for Nelson Green Gecko near bush line in the lower Hamilton River and some others in similar habitat for common skink (*Oligosoma polychroma*). This species has now been split into 5 clades so it could now be South Marlborough grass skink[9].

Invertebrates

No specific information on invertebrates was found but the invertebrate fauna is likely to be typical of the sub alpine areas in the Southern Alps.

Native fish

Native fish are highly likely to be present in the alpine streams and tarns. Species likely to be present are common bully, koaro, banded kokopu and alpine galaxias, (Leathwick J et al, 2008). The Native Freshwater Fish Database does not have much in the way of records for the Six Mile catchment. There are some fish records in the lower reaches of some other streams – longfin eel, upland bully and dwarf galaxias in Woolshed Stream, and dwarf galaxias in Merry and Nocatchem Streams.[10]

Summary of fauna values

In summary, the fauna values of the Rainbow Mountain Area are going to be typical of the values found at similar subalpine sites in the area.

Other relevant natural value and planning information

LENZ classification

The mountain area is within an area classified under the Land Environments of New Zealand threat category as “less reduced and better protected”. It is well represented in protected area systems with 77 per cent protected. It is all within Environments P1 and P2 which make up a large part of the extensive area of the eastern Southern Alps. (Leathwick, 2003) (Leathwick, J et al, 2002), (DOC, 2016).

Sites of Natural Significance, (SONS)

There are no SONS within the mountain area.

Conservation Management Strategy

The Nelson Marlborough CMS describes this area as part of the Upland Ecosystems. Over half of the protected lands are in this category. For the full description of this system refer to the Nelson Marlborough CMS. (DOC, 1996).

[9] Pers. Comms. Dean Nelson, DOC.

[10] Pers. Comms. Dean Nelson, DOC.

Table of Appendices

Appendix 1: Vegetation Protocols

PROTOCOLS FOR SOIL AND VEGETATION DISTURBANCE AND RESTORATION ON PUBLIC CONSERVATION LAND
Department of Conservation, Te Manahuna / Twizel.

1. Introduction

This protocol sets out the measures required to avoid, remedy and mitigate any adverse effects of the works associated with the construction at on public conservation land where works involve earthworks and removal of native vegetation.

The protocol provides a practical means of achieving agreed environmental outcomes and is code of practice providing for:

- Work site control measures
- Vegetation and soil removal and disposal
- Vegetation stockpiling
- Work site re-planting, restoration and aftercare

2. Objective of the Protocol

The objective of this protocol is to ensure:

1. A clear understanding is maintained between the Department of Conservation (DOC) and the concessionaire/ contractor and any sub-contractors on the standards to be applied to any works involving soil and/or vegetation disturbance and disposal.

2. That the vegetation cover uplifted at the construction site is where possible restored as near as possible to its original density and diversity on the areas affected by the works, at the conclusion of the construction.

3. Contractors experienced at working in the sensitive environments shall be used.

3. Method of Implementation

The primary method of implementation and the operational standards for the construction of the trail will be through the Code of Practice as specified below in clause 4.

The concessionaire/ contractor will require its staff and contractors to act in accordance with the protocol and implement it as required. DOC staff will be able to provide advice if necessary, to staff and contractor(s).

4. Code of Practice

4.1 The following code of practice reflects an understanding between the concessionaire/ contractor and DOC about how the works can best be undertaken to minimise the effects on the vegetation and how the disturbed site should be appropriately restored in recognition of the natural and scenic values of the area.

The purpose of the code of practice is to set operational standards that will minimise the impacts on the environment from the works undertaken and to rehabilitate the work site to a high standard ensuring the shortest possible time for vegetation recovery and establishment.

4.2 Vegetation and soil removal

4.2.1 Prior to the contractor starting any vegetation removal works at the work site the concessionaire / contractor shall ensure that an onsite briefing takes place between the concessionaire / contractor and the contractor(s).

4.2.2 Where it is deemed feasible to use material for restoration the contractor must remove and set aside the vegetation layer with the prime focus being to minimise the damage to the plants and to maximise the likelihood that whole plants remain intact, including sufficient root material to ensure plant survival.

4.2.3 Where the contractor must remove the vegetation then this will be done in such a manner to ensure the end result minimises the damage to any surrounding plants, significant vegetation is not removed and the material is disposed of in a sensitive manner so it does not affect live vegetation or is visually obtrusive.

4.2.4 All excavated soil and rock material must be placed in such a manner to ensure it minimises the damage to any surrounding plants, the material is placed in a sensitive manner and the finished works fit in visually with the surrounding landscape.

4.3 Replanting Measures

4.3.1 Wherever reasonably possible vegetation should be replanted in the area it had been taken from, used to restore other areas of disturbed ground around the site or used elsewhere at the site where restoration of the vegetated cover is a priority.

4.3.2 Vegetation stockpiled as a result of the works must be carefully lifted and progressively re-instated as works are completed. Replanted material must be planted deep enough so that the roots are not exposed above ground.

4.4 Monitoring

4.4.1 The affected areas shall be monitored over the duration of the works and over an agreed maintenance period, following completion of the construction of the trail. The purpose of the monitoring is to assess the degree of re-instatement of the vegetation cover and to detect whether any noxious weed species have been accidentally introduced to the area.

4.5 Aftercare

4.5.1 An agreed aftercare plan may be required for the replanted areas affected by the construction works.

4.5.2 If the monitoring shows that the degree of re instatement is not satisfactory at certain sites then the concessionaire/ contractor will undertake mitigation measures to ensure recovery of the vegetation at these sites to a standard satisfactory to the Operations Manager.

4.5.3 At the 3 monthly intervals following construction, any new works must be inspected for new weed species invasion. Any weeds with the potential to spread rapidly or become a potential problem (e.g: broom, gorse, thistles, lupins, etc), which appear to be a result of the works must be controlled in manner agreed with the Operations Manager.

Sally Jones
Te Manahuna /Twizel Operations Manager

Appendix 2: Conditions for Permitted Activities

Conditions for Permitted Activities

46.1.2

Skifield Maintenance

Skifield maintenance including rock and snow grooming of existing ski runs, slope stabilisation and erosion control, avalanche and stream control works, and access road maintenance is a Permitted Activity subject to the following:

46.1.2.1

Vegetation Clearance

46.1.2.1.1

Woody vegetation (except for plantation trees and noxious plants under the Noxious Plants Act) shall not be removed by chemical, fire or mechanical means within 8 metres of any permanently flowing river, or any lake or wetland.

46.1.2.1.2

No vehicle may be operated for the purposes of vegetation clearance within 8 metres of any permanently flowing river, or the margin of any wetland or lake.

46.1.2.1.3

The indigenous vegetation cover of a vegetation clearance site shall be restored with an eco-sourced indigenous cover within 24 months of the end of the operation, to a level where the amount of bare ground is no more than 20% greater than that prior to the land disturbance taking place, except for carparking.

46.1.2.1.4

Top soil shall not be removed to a depth greater than 20 mm over more than 15% of any vegetation clearance site, except for carparking.

46.1.2.2

Excavation

The excavation of land is a Permitted Activity provided that:

46.1.2.2.1

Except for direct approaches to bridges, crossings and fords, no excavation may take place within 8 metres of any permanently flowing river, wetland or lake.

46.1.2.2.2

With the exception of earthworks related to the maintenance of the access road, not more than 1,000 m3 may be excavated in any two year period.

46.1.2.2.3

The gradient of any side cut excavation must not exceed an average of 9.5° (1:6) and must not exceed 11.3° (1:5) along any length of more than 20 metres.

46.1.2.2.4

Storm water controls, water tables cut-offs, and culverts are to be installed to ensure that erosion does not occur on the inside edge of the cut. No culvert size less than 300 mm may be used to drain any side-cut excavation.

46.1.2.2.5

Batters and side casting are to be stabilised by appropriate measures such as hyrdo-seeding, or coverage with geotextile matting.

46.1.2.2.6

Run-off from water tables or surface of side cut excavations is to be directed to stable land areas.

46.1.2.2.7

Stream crossing are to be stable and suitable for fish passage.

46.1.2.3

Filling

The filling of land is a Permitted Activity provided that:

46.1.2.3.1

The material does not contain any:
a) Hazardous substances.
b) Combustible or organic materials.
c) Any other contaminant subject to chemical or biological breakdown.
d) Liquids or sludges

46.1.2.3.2

That the material is sourced from within the Skifield Zone.

46.1.2.3.3

That the volume of material does not exceed 1,000 m3.

46.1.2.3.4

That the filling operation is at least 8 metres from the nearest surface water body.

46.1.2.3.5

Where practicable that the filled area is covered with at least 200 mm of topsoil and sown down with a suitable vegetative cover when infilling has been completed to achieve rapid revegetation.

46.1.2.4

General Conditions Applicable to all Land Disturbance.

46.1.2.4.1

No woody material of greater than 100 mm diameter shall be left in any permanently flowing river, lake or wetland as a result of a land disturbance operation.

46.1.2.4.2

All land disturbance sites are to be stable when subject to a storm event of return frequency of 1 in 10 years or less.

46.1.3

Water Take For Skifield Operation

46.1.3.1

The abstraction of water from tarns for the purposes of snowmaking or a tarn augmentation is a Permitted Activity provided that:

a) Abstraction from any tarn shall cease when drawdown reaches 1 metre.

b)Tarn water level measurements shall be taken relative to a fixed reference point.

c)The pumping rate in respect of any abstraction shall not exceed 7.6 m3/minute.

d)Records shall be taken of drawdown whenever the tarn is used for snowmaking purposes.

e)Records shall be kept of any diversion rates when water is used for augmentation purposes.

f) Records shall be supplied to the Council not later than 1 December in any given year.

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