Infrastructure, Activities and Operations

This report details the current and proposed new infrastructure and activities associated with ski area operations on public conservation land managed by the Department of Conservation and makes up part of the application by NZSki Ltd (the Applicant) for a Lease, Licence and Easement. Operations within Coronet Peak Recreation Reserve include ski area assets currently owned and managed by NZSki Ltd.

The current lease agreement between the Department of Conservation and NZSki Ltd has expired.

A comprehensive catalogue and description of Coronet Peaks assets is provided together with an outline of the activities that take place within Coronet Peak Ski Area.

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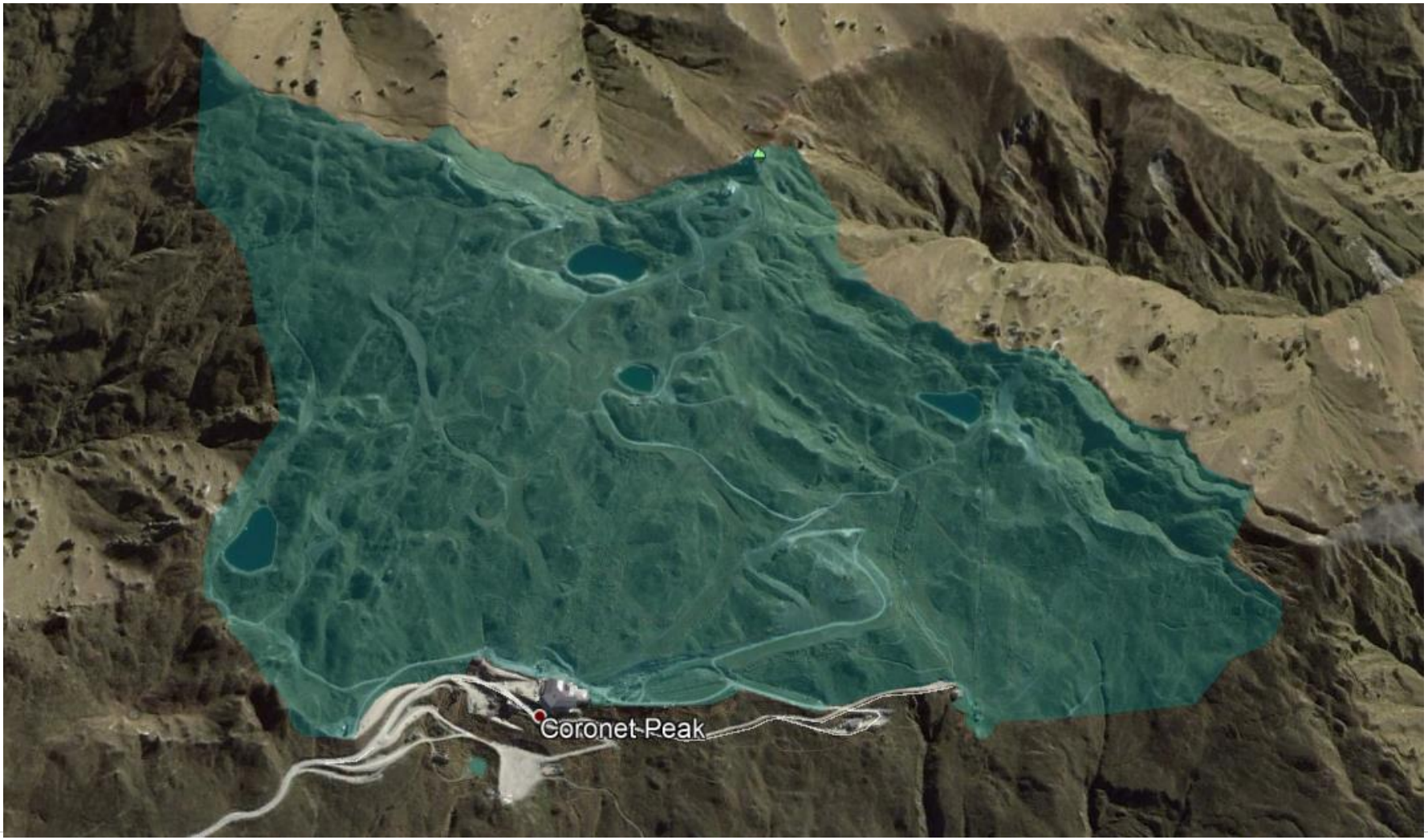
1 Summary of Proposed Ski Area Licence Area

Using a web-based area calculation tool, the current skiable terrain enclosed by the ski area boundary shown in blue has been calculated at approximately 218 Ha.



2 Asset Catalogue

The following table identifies the key NZSki-owned assets permanently located within the proposed licence area. The Asset Catalogue provides images of lease assets (corresponding figures), land area occupied for proposed lease and licence areas, and assets are referenced to the auxiliary maps (1-3) or map within this document, and an icon to identify the main purpose of each asset.

Description	Figure	Activity (Map**)	Area m^2 *	Use
Greengates Drive Station	1	Lease	200	
Greengates Return Station	2	Lease	206	
Greengates chair and cables		Easement	-	
Coronet Express Drive Station	3	Lease	370	
Coronet Express Return Station, including storage garage	4	Lease	880	
Coronet Express chair, gondola and cables		Easement	-	
Meadows Drive Station	5	Lease	267	
Meadows Return Station	6	Lease	139	
Meadows chair and cables		Easement	-	
Sunkid Carpet	7	Lease	43	
Beginner Carpet	8	Lease	224	
Dual Magic Carpet	9	Lease	471	
Kaser Carpet	10	Lease	328	
T-Bar Drive Station	11	Lease	61	
T-Bar Return Station	12	Lease	20	

T-Bar cables		Easement	-	
JSD's Lodge (Base Building)	13	Lease	4334	
First Aid / Patrol Base	14	Lease	138	
Heidi's Hut	15	Lease	113	
RS1B – Elephant pit reservoir	16a	Lease***	5666	❄
PS100 Pump House & Transformers	16b	Lease***	102	❄
RS1A – Top reservoir	17	Lease	12705	❄
PS200 & RS200 – co sited shed and reservoir	18	Lease	1825	❄
PS300 – Sara Sue Pump shed	19	Lease	107	❄
RS300 – Sara Sue Reservoir	20	Lease	12293	❄
PS400 – Big easy Pump shed and bore	21	Lease	38	❄
PS500 – Rocky Gully Pump Shed	22	Lease	71	❄
RS500 – Rocky Gully Reservoir	23	Lease	7784	❄
Maintenance Workshop	24	Lease	709	
30,000L Diesel Tank	25	Lease	18	
10,000L Petrol Tank	26	Lease	17	
Power Factor Hut	27	Lease	102	
Ice Bar	28	Lease	24	
Water tanks (in ground)	29	Easement	-	
Wall St Transformer & switch gear	30	Lease	9	
Viewing deck (timber)	31	Easement	70	
Snowfactory (proposed)	32	Lease	31	❄
Race team huts	33	Lease	62	
Patrol top hut	34	Lease	14	
Airways Hut (Summit Building)	35	Lease	28	
Wastewater Treatment Pond	36	Lease	4000	
Wastewater treatment tanks (in ground) and hut above.	37	Lease	100	
Wastewater Dispersal Field	Section 7	Easement	-	

Underground systems and infrastructure (Sewage/communication/ water)	Section 3	Section 3 map (Easement)	-	🛠
Telecommunication	Section 11	Section 11 plan (Easement)		🛠
Power reticulation	Section 5	Section 5 (Easement)	-	🛠
Snowmaking infrastructure (snow guns/water reticulation)	Section 7	Section 7 Plan Easement	-	❄
Carparks and access road	Section 9	Licence	83 Ha	
Skiable terrain area		Licence	218 Ha	
	Total Lease		**53,493 m2**	
	Total Licence		**218 Ha**	

Comments:

* Area has been calculated using Google Earth measurement tool

** Reference is to the attached supporting individual maps
Map 1 Lease
Map 2 Licence
Map 3 Easement and third party

*** PS and RS refer to Pump Stations and Reservoirs, part of the snow making infrastructure.

KEY (colours denote use on attached supporting individual map sheets 1 - 3)

Patrol, Yellow

Maintenance/Infrastructure, Light Blue

Snowmaking Orange

General Staff/Public, Green

Private operators, Red

Lifts, Navy Blue

Carpark green

Skiable area Green

2(a) Images of Assets

Figure 1: Greengates Drive Station - 200m²

Figure 2: Greengates Return Station - 206m²

Figure 3: Coronet Express Drive Station – 370m²

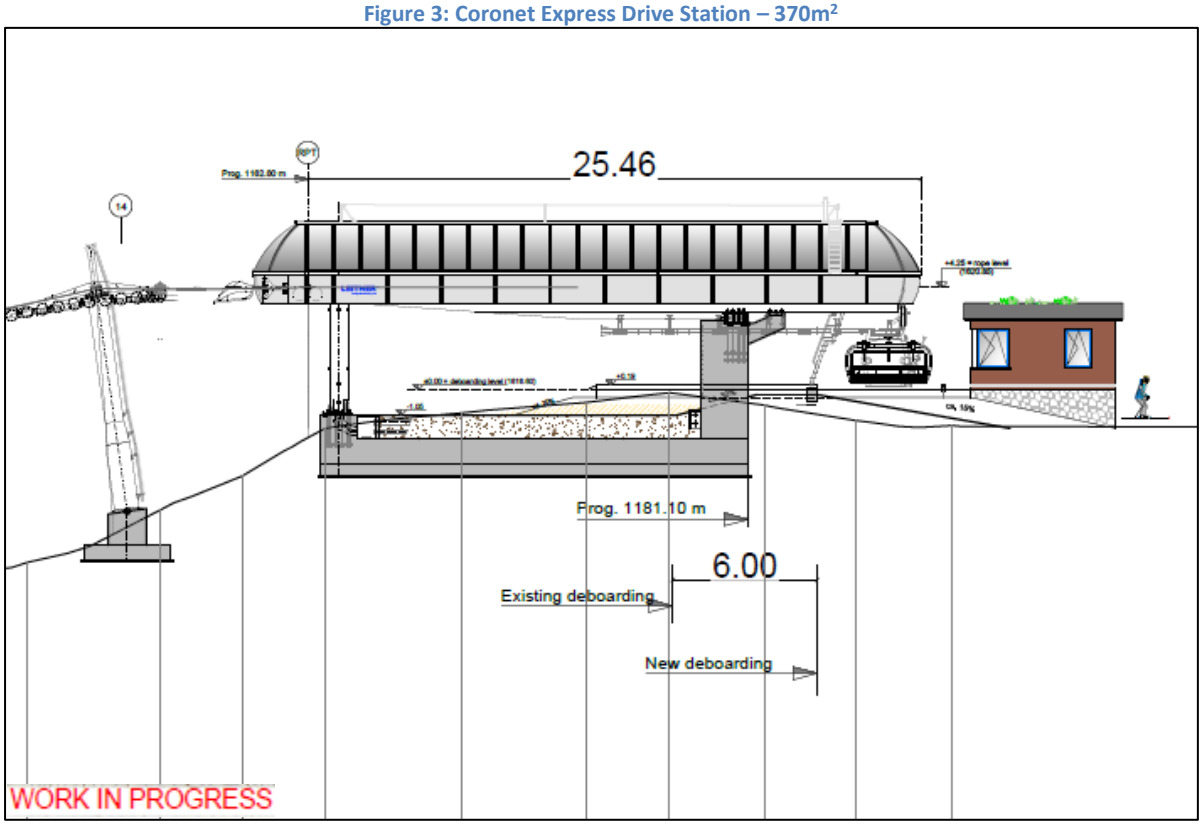


Figure 4: Coronet Express Return Station – 880m²

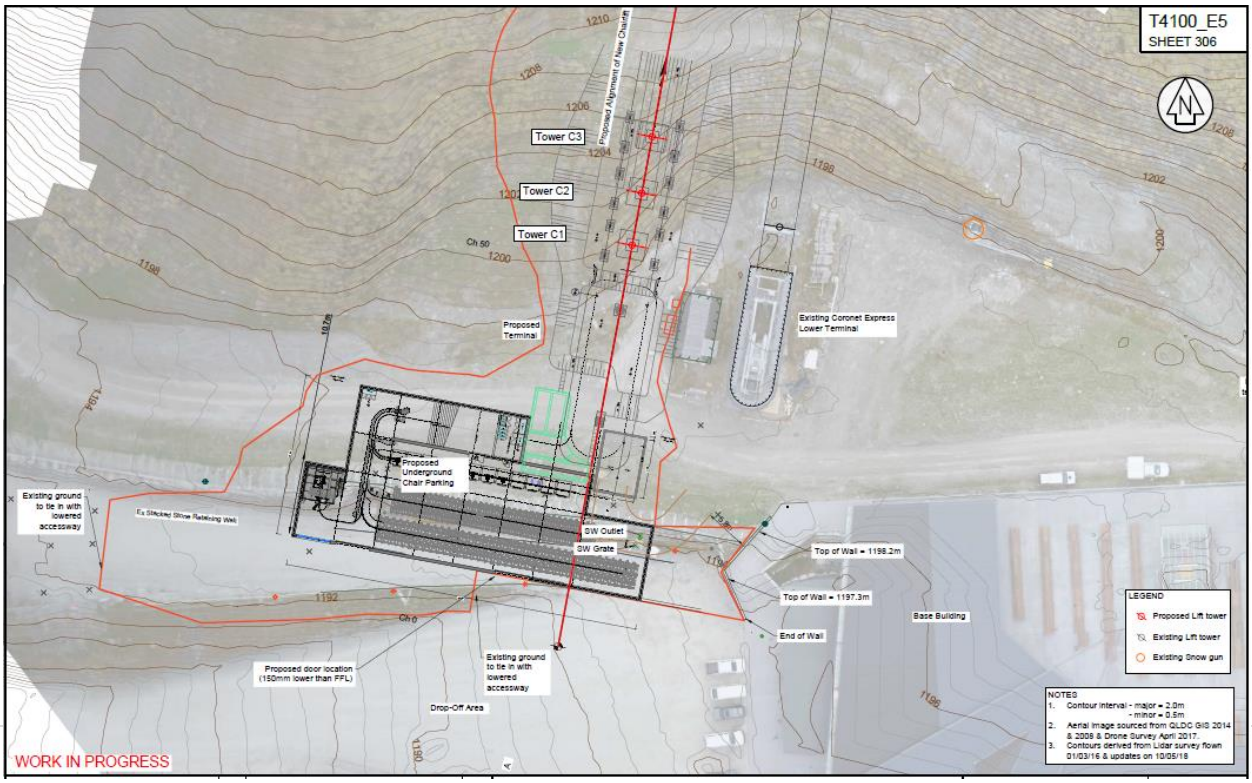


Figure 4.1: Coronet Express Gondola Cabins

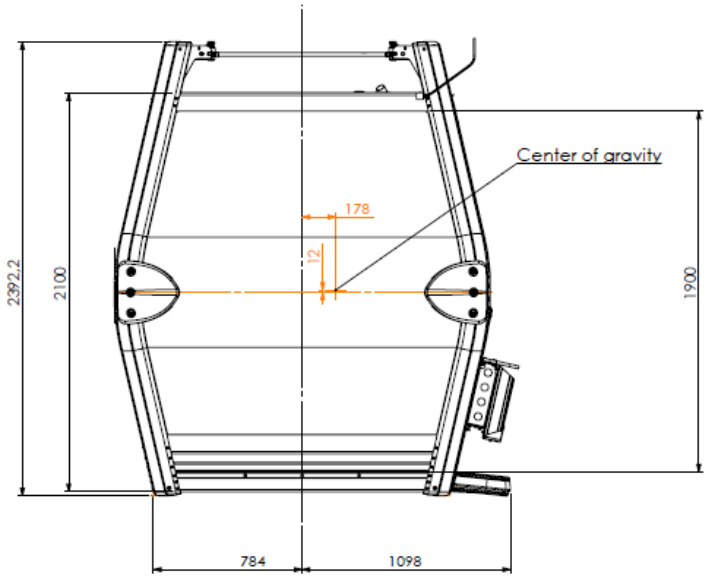


Figure 4.2: Coronet Express Chairs

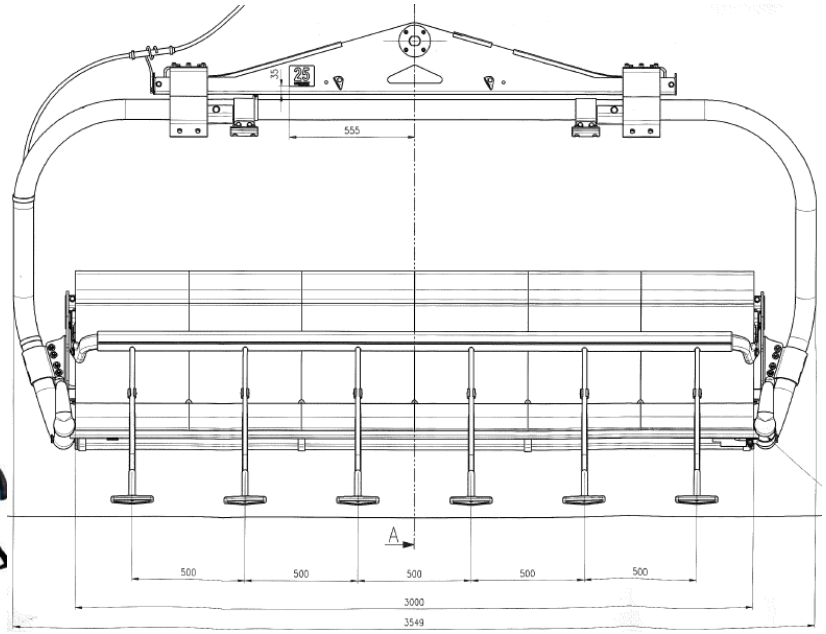

555
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Figure 4.3: Coronet Express Chair and Gondola Parking Garage – 880m²

The parking garage is designed to house 72 chairs and 12 Gondola cabins. The lift line can accept any configuration of chairs and gondolas up to a maximum of 72.

Figure 5: Meadows Express Drive Station - 267m²

Figure 6: Meadows Express Return Station - 139m²

Figure 7: Sunkid Carpet - 43m²

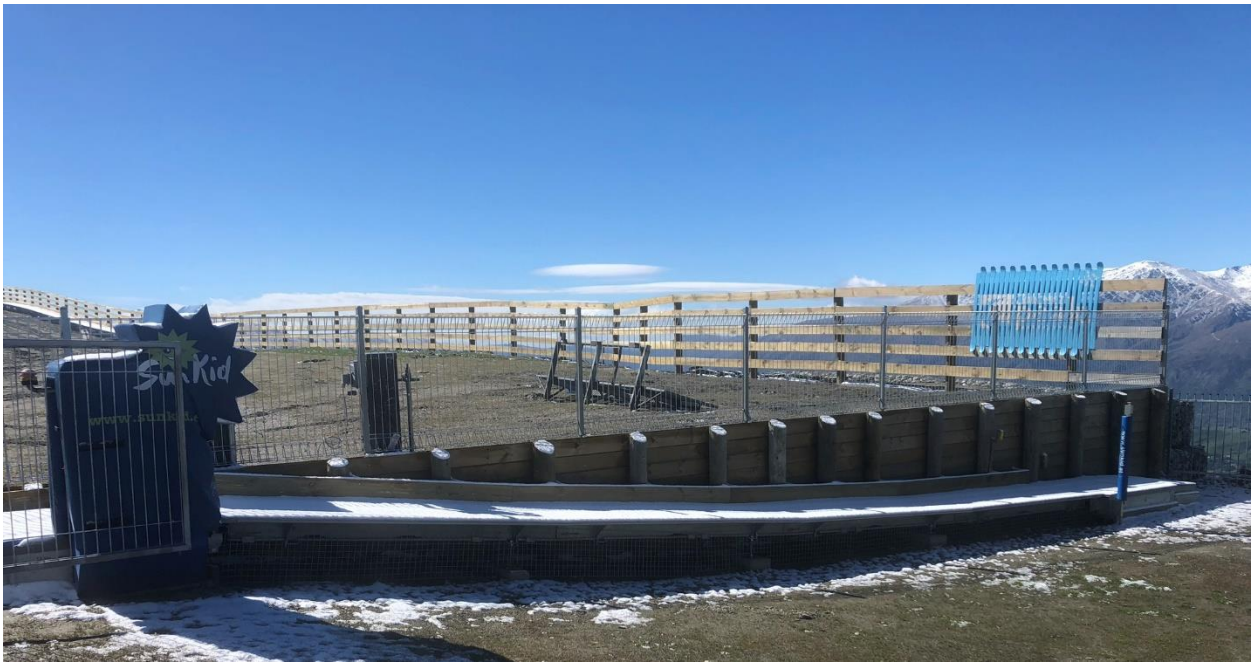


Figure 8: Beginner Carpet - 224m²

Figure 9: Dual Magic Carpet - 471m^2

Figure 10: Kaser Carpet - 328m^2

Figure 11: T-Bar Drive Station - 61m²

Figure 12: T-Bar Drive Station - 20m²

Figure 13: JSD's Lodge (Base Building) - 4334m²

Figure 14: First Aid / Patrol Building - 138m²

Figure 15: Heidi's Hut - 113m^2

Figure 16 (a and b): PS100 - 178m^2 & RS1B 5488m^2

Figure 17: RS1A – 12,705m^2

Figure 18: PS200 & RS200 - 1825m^2

Figure 19: PS300 - 107m²

Figure 20: RS300 – 12,293m²

Figure 21: PS400 - 38m^2

Figure 22: PS500 - 71m^2

Figure 23: RS500 - 7784m²

Figure 24: Maintenance Workshop - 809m²

Figure 25: 30,000L Diesel Tank – 18m²

Figure 26: 10,00L Petrol Tank - 17m²

Figure 27: Power Factor Hut - 102m²

Figure 28: Ice Bar - 24m²

Figure 29: 5 x 25000 Litre Underground Water Tanks

The underground tanks provide storage for potable water and firefighting

Figure 30: Wall St Transformer and switch box

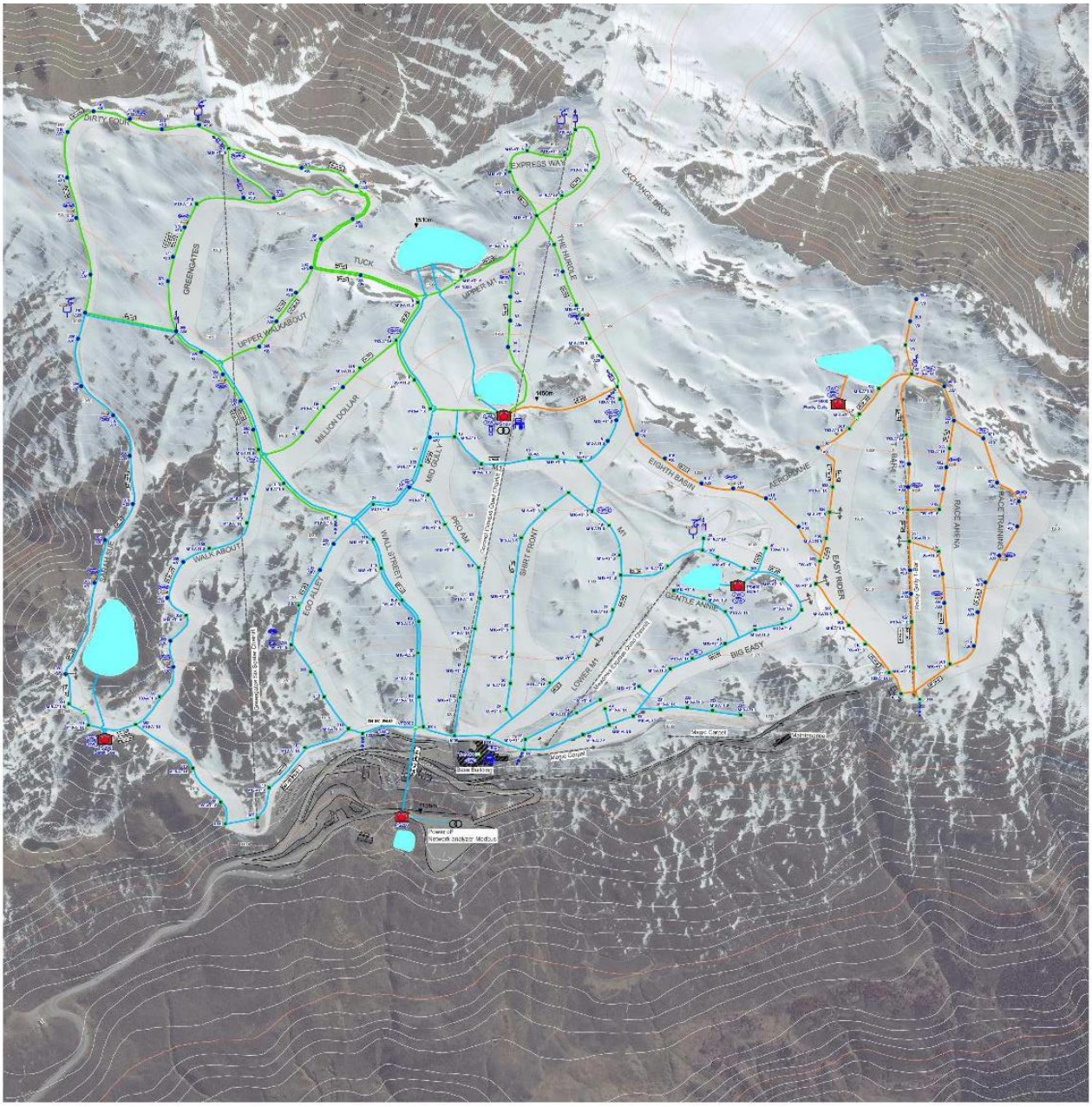
Figure 31: Wooden viewing deck

Figure 33: race huts and storage

Figure 34: Patrol top hut associated with Coronet Express lift

3 Underground Systems/Infrastructure

An underground network of cables, pipes and plant have been installed within the Ski Area for a variety of purposes ranging from communication, power, water reticulation, drainage and snowmaking. Every chairlift has underground power and communication from top to bottom. The Coronet Express chairlift will also have potable and wastewater pipelines for future developments. All services have been accurately located and mapped.



*Low resolution image of the snowmaking masterplan indicating underground services – Power, Fibre, Water, Compressed Air & Drainage.

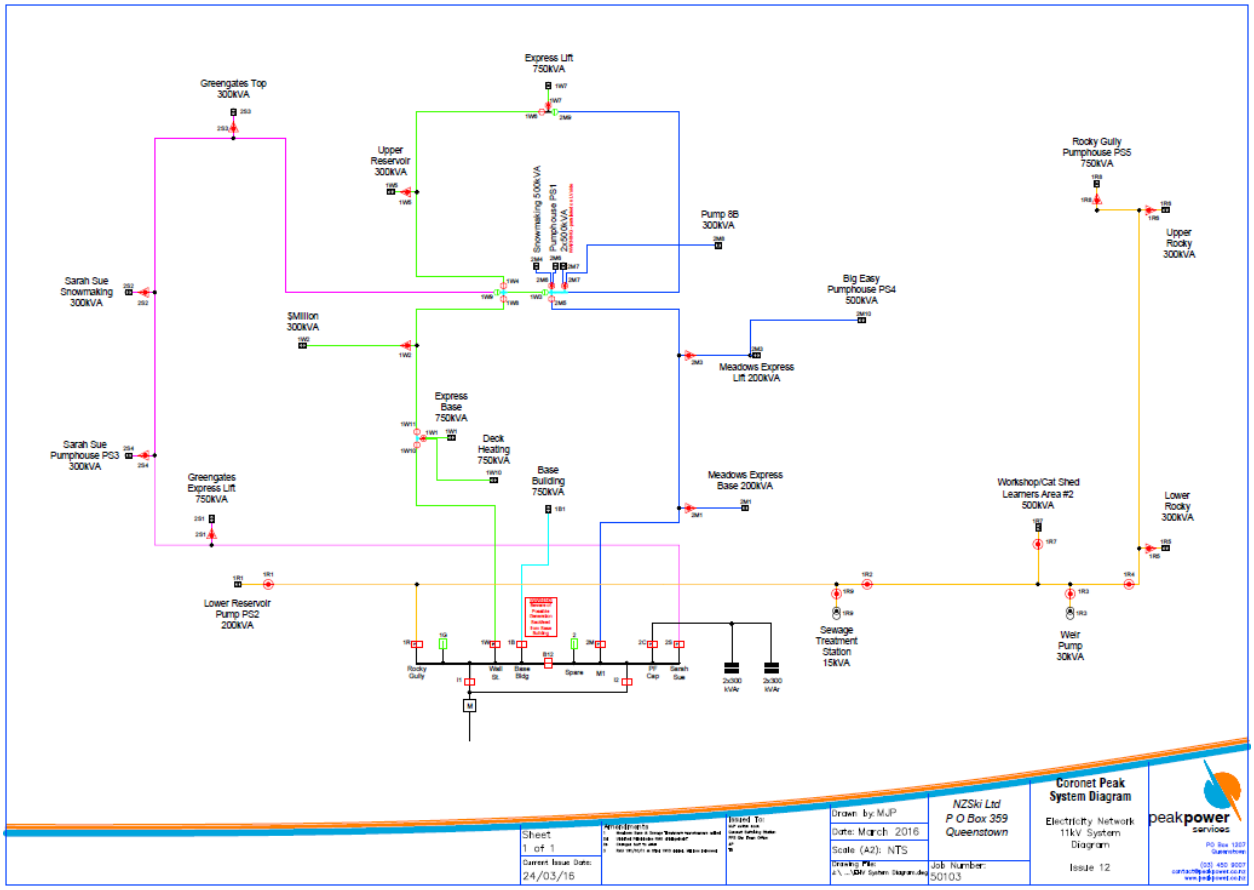
4 Snowmaking Infrastructure

Coronet Peak has the largest fully automated snowmaking system in the southern hemisphere. A significant investment which has guaranteed the ski season will be open between 80 and 120 days each year. There are 217 snowguns processing up to 400L of water per second. In perfect weather conditions the system can produce enough snow to open the ski season within 48 hours providing a stable economic environment for the entire Wakatipu basin.

The snow guns require power, water and air to produce snow crystals. The water and air are supplied from a network of pumphouses, reservoirs and aquafers (figures 16 – 23). The Otago Regional Council have awarded individual consents to take, discharge and dam water from each location. The air is supplied from compressors mounted on the snow gun itself or from a central location situated in the pumphouse.

5 Power Infrastructure

Coronet Peak receives electrical power via an overhead power line which travels directly up the mountain from a small substation on Malaghans Road. The overhead lines enter the power factor hut (Figure 27) and are then distributed to a network of transformers around the mountain.



In the event of a power failure we have a 380KVA diesel powered backup generator which automatically starts and supplies power to the essential services in JSD's lodge. Each chairlift has its own emergency diesel motor to safely evacuate any passengers during an electrical power outage.

6 Potable water

Coronet Peak has consent to take up to 4.3L of water per second from an unnamed spring located 100m to the west of JSD's lodge. The spring is one of many tributaries of Station Creek. The spring water is pumped 180m above the JSD's Lodge and stored in 5 x 25,000l underground tanks before travelling back down the mountain to be shared with 6 ski club huts occupying sites located around the Coronet Peak car parks. These club huts have independent leases with DOC.

A – Gobblers Lodge, **B** – Rocky Gully Ski Club, **C** – Wakatipu Ski Club, **D** – Southland Ski Club, **E** – Vincent Ski Club, **F** – Otago Ski Club

7 Wastewater

Coronet Peak uses a submerged air filtration system to process all wastewater and sewage. The wastewater treatment plant (WWTP) is located 400m below JSD's lodge and is also used by each of the 6 club huts, Heidi's Hut (figure 15) and the Maintenance workshop (figure 24). The WWTP can treat and discharge up to 65m3 of treated effluent per day. Any inflow greater than 65m3 is diverted into a 3000m3 storage pond where it is stored and treated when inflow is less than 65m3 per day.

The treated effluent is discharged to an irrigation field which further treats the effluent prior to it entering the natural waterways. See 'Map 3 Easement and third party Coronet Peak 2019' file for area location.

On the 10th November 2010, a concession easement (OT-27554-OTH) to convey sewage and electricity and a concession lease (OT-27580-OTH) for the WWTP and storage pond were obtained.

8 Fuel

Coronet Peak has a 30,000L double skinned, diesel tank (figure 25) and a 10,000L underground petrol tank (figure 26).

The diesel tank is located at the Maintenance workshop and stores fuel required by an extensive vehicle fleet. The vehicles are used for winter road clearing, snow grooming, earthworks, lifting and transporting. The tank is filled with Wintermix diesel and deliveries are required every couple of weeks during the winter. The tank is operated by a bowser which is controlled by a key-fob allocated to each vehicle.

The petrol tank is located at the top of Meadows Express and stores fuel required by a small fleet of snowmobiles and 4WD trucks. The snowmobiles provide transport to our Snowmaking, Patrol and Maintenance crews. This tank is filled at the start of winter each year.

JSD's lodge also has a 20,000L Diesel tank which is required to heat the building and provide a backup supply of hot water during peak periods. This tank is topped up every couple of weeks.

A dual bank of 10 x 45kg LPG cylinders are also located at JSD's lodge for cooking. The industrial kitchen uses these 20 cylinders every couple of weeks and one bank of 10 is replaced weekly.

Each of the fuel storage areas listed above are inspected and awarded location test certificates at specified intervals.

9 Access Road and Car Parks

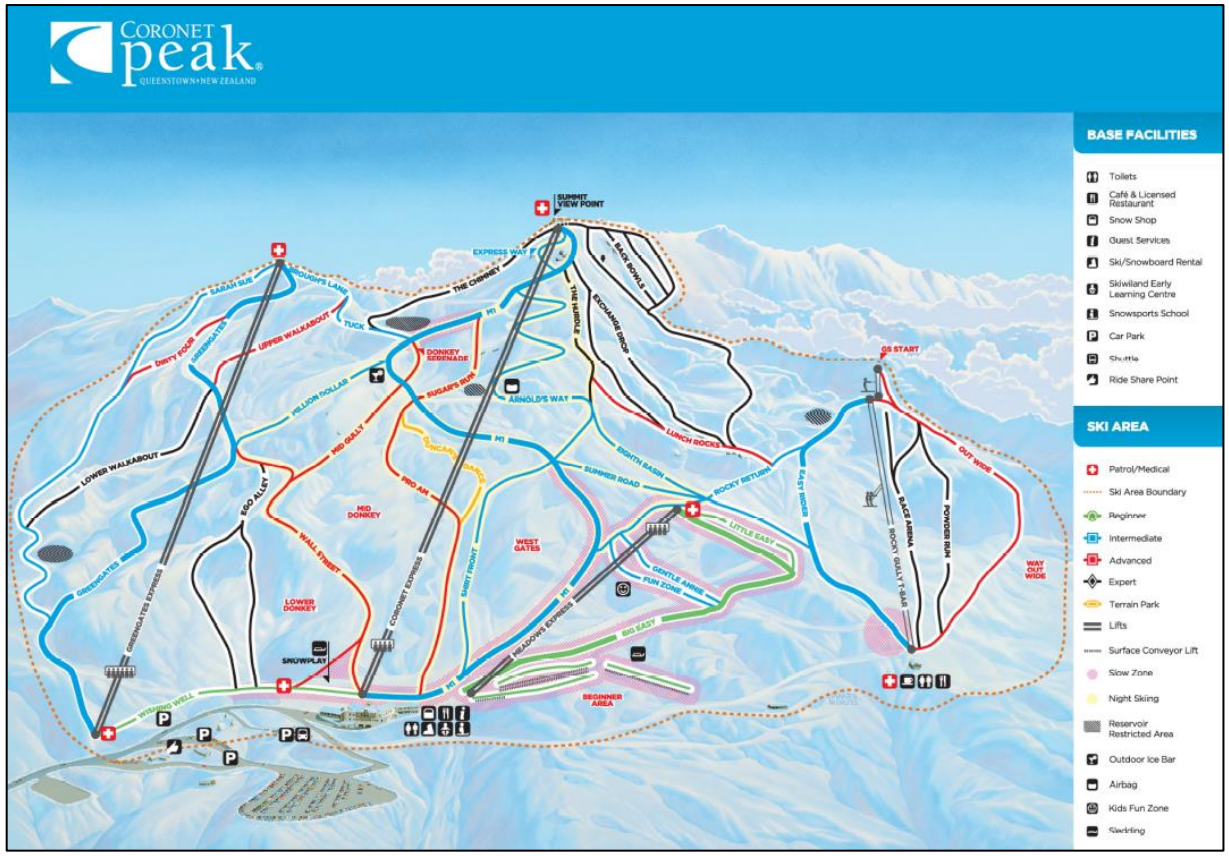
The Coronet Peak access road is publicly owned and managed by Queenstown Lakes District Council (QLDC). The sealed access road is 8km from the turn off at Malaghans road and it provides access to Skippers road and several residential properties. Downer have the annual maintenance contract for the QLDC road network. Coronet Peak become sub-contractors to Downer between 1st June and the end of the ski season each winter and take responsibility of the winter road maintenance.

There are 7 dedicated car parks at Coronet Peak with an approximate capacity for 1250 vehicles. The top 6 car parks are included in the primary Coronet Peak lease. A Department of Conservation concession was acquired for car park 7 on the 29th November 2011 (OT-27836-SKI).

Coronet Peak
Car Park 7 – 7602m^2

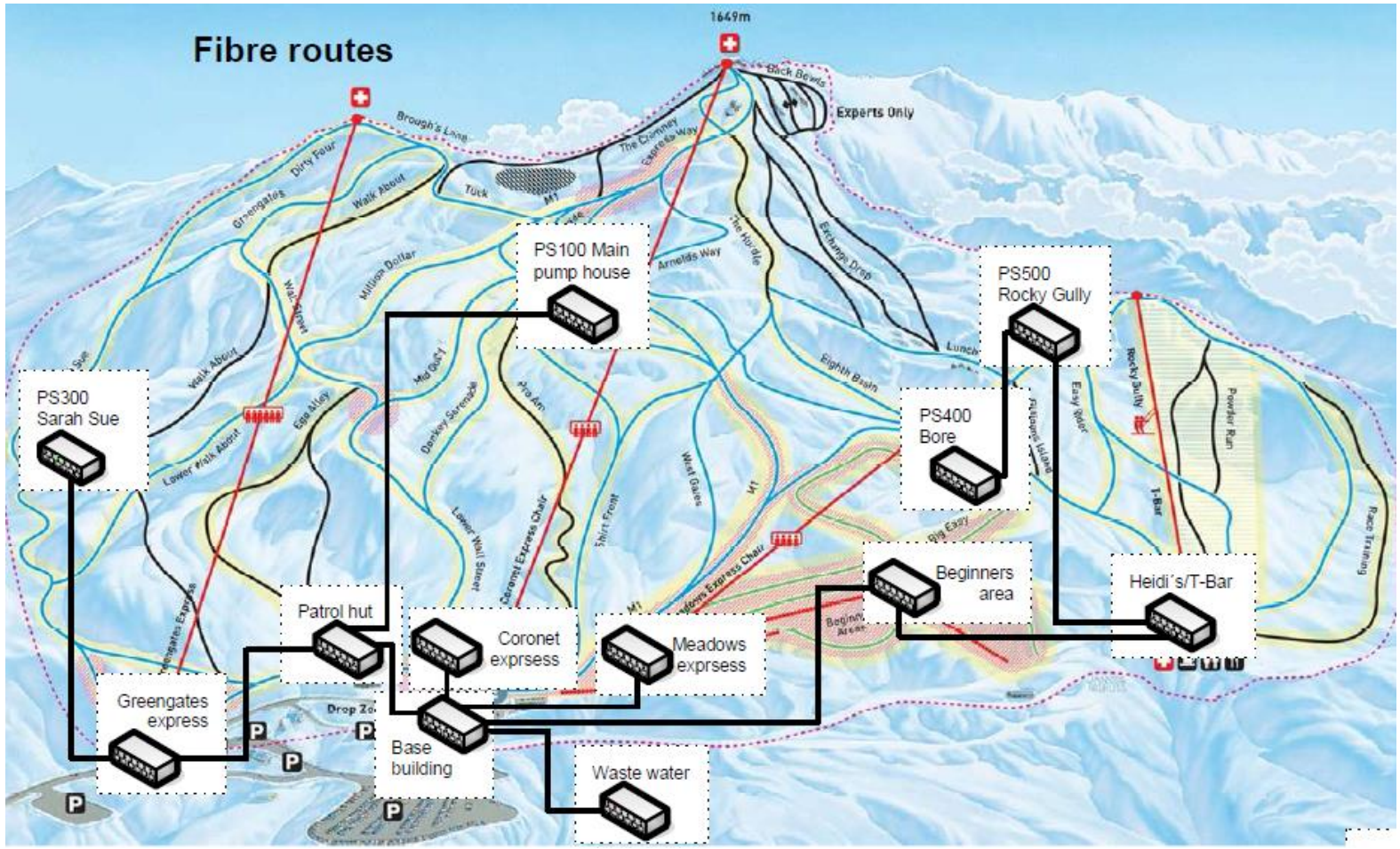
10 Trail Network

The Coronet Peak trail network is shown below. The trails are groomed routinely throughout the season by our fleet of Pisten Bully snow cats. Trails have been created and refined over many years of development using heavy machinery such as bulldozers and diggers. A common visual characteristic of trails that traverse across contours is a cut bank on the uphill side of the trail and a built-up bank on the downhill side of the trail. On these trails a run-off angle of approximately 5 degrees is created to assist with drainage. Trails that run directly downhill are less obvious but have generally been cleared of larger rocks and, in some cases, rolled flat to assist with establishing an even snow cover at the start of the winter season. Earthworks are generally carried out to improve traffic flow and reduce injury hotspots that are identified by detailed analysis.



11 Telecommunication

Coronet Peak utilises a voice over internet protocol (VOIP) telecommunication system. The VOIP system operates via an underground network of Fibre cables with the main server located in Queenstown and backup server located at Mt Cook. A simplified schematic of the fibre network is displayed below.



12 Third Party Operators

Coronet Peak has several commercial agreements with other entities who occupy or use Coronet Peak to conduct their business. The following table and map explain the relationship NZSki has with the various businesses.

Map ref	Business	Activity Description	Agreement to occupy - transmission equipment & antennas	Re-imbursement for power usage	Agreement to launch from 4 sites	Area m^2
1	Airways Corporation	Airways controls all domestic and international air traffic travelling within New Zealand's Flight Information Region (FIR), which totals 30 million square kilometres – one of the largest areas of airspace in the world.	✓	✓		21
	Kordia	Kordia is a New Zealand government-owned broadcast and telecommunications company, operating in Australia and New Zealand. It provides national communications services for broadcast and telecommunications customers in New Zealand, as well as specialised network systems. Korida also have an independent agreement with DOC to occupy a parcel of land within the Coronet Peak recreational area which they sub lease to others (unknown). They have recently ? laid a 90mm pair of galvanised pipes up the side of the summit to connect their equipment between the two sites.		✓		22
	Tourism Milford Ltd	Guided walks and overnight lodges on the Routeburn and Milford tracks (sister company)	✓			1
	Northern Southland Transport	Freight and haulage company (sister company)	✓			1
	QLDC	District council	✓			1
2	Mediaworks	MediaWorks New Zealand is a New Zealand-based television, radio and interactive media company entirely owned by Oaktree Capital Management.	✓	✓		1
~~3~~	~~Delta~~	~~Utility services company providing infrastructure support to the community. Energy, communications, waste and vegetation.~~				3
4	2 Degrees	2degrees is a telecommunications provider that operates in New Zealand. Its mobile network launched on 4 August 2009 after nine years of planning. 2degrees offers prepaid and pay-monthly monthly mobile services as well as fixed-line phone and broadband services.	✓	✓		6
	Lightspeed	LightSpeed Technology Group has been operating in the Wakatipu basin since 1993. From residential or business planning and optimisation of network design to installation, maintenance and advice regarding ongoing improvements.	✓			1
5	Vodafone NZ	Vodafone New Zealand is a telecommunications company operating in New Zealand; it is a subsidiary of the London-listed company Vodafone Plc. It is New Zealand's largest mobile phone operator, based in Auckland, and was formed in 1998, after Vodafone purchased BellSouth's New Zealand operations.	✓	✓		4
	Chorus	Chorus is a provider of telecommunications infrastructure throughout New Zealand. It is listed on the NZX stock exchange and is in the NZX 50 Index. It is the owner of the majority of telephone lines and exchange equipment in New Zealand.	✓	✓		3
	Spark	Spark New Zealand Limited is a New Zealand telecommunications company providing fixed line telephone services, a mobile network, an internet service provider, and a major ICT provider to NZ businesses. It has operated as a publicly traded company since 1990.	✓	✓		3
	NZSki	Internet and phone relay to Remarkables Ski Area across the valley				
	NZ Police	The New Zealand Police is the national police force of New Zealand, responsible for enforcing criminal law, enhancing public safety, maintaining order and keeping the peace throughout New Zealand.	✓			1
6 A,B,C,D	Coronet Tandems	An independent operator providing tandem paragliding and hanggliding tours			✓	6A = 350 6B = 450 6C = 300 6D = 300
	Skytrek	An independent operator providing tandem paragliding and hanggliding tours			✓	
	Infinity Paragliding	An independent paragliding school offering a range of courses from 1 day introductions to advanced solo piloting			✓	
	G-Force	An independent operator providing tandem paragliding and hanggliding tours			✓	
	Extreme air	An independent paragliding and hang gliding school			✓	

Site 1 . The ‘airways’ hexagon (Summit building). NZski owned property. Also shown below is the Kordia site (DOC). Kordia have linked these two sites with over ground galvanised pipes.

Site 2. An aerial mounted on a wooden post above the top of Greengates lift. Media works hosts the control equipment in a corner of the lift control hut at top of Greengates.

Site 3. Removed and co-hosted (we believe but cannot confirm) at the Kordia site (no image supplied).

Site 4. Hut and aerial tower side of Learners slope.

Site 5. Hosted within the basement of JSD’s Lodge (Base Building) and aerials mounted on outside of building. Includes our own reticulation of network to Remarkables.

Launch site 6A is outside the Coronet Peak area. The Paragliding companies have an independent agreement with DOC to launch from this site.

Launch sites 6B & C are approximate areas inside the Coronet Peak ski area.

Site 6D is outside of the DOC recreation reserve and administered under the NZSki agreement with LINZ.

Indicative locations of third-party operators