



WHAKAPAPA SKI AREA

INDICATIVE DEVELOPMENT PLAN

2011

1 July 2011

DRAFT FOR CONSULTATION

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1. INTRODUCTION

1.1 Tongariro National Park

Whakapapa Ski Area is located on the northern slopes of Mt Ruapehu and within Tongariro National Park. The Park is administered by Department of Conservation under the National Parks Act 1980.

The Tongariro National Park Management Plan requires a ski area concessionaire to “prepare and maintain indicative development plans which provide for the operation of ski areas for approximately ten years”.

This Indicative Development Plan (IDP) has been prepared to outline those facility developments RAL would like to implement on Whakapapa Ski Area during the period through to 2020. This plan updates the previous IDP which was prepared in September 2001.

We emphasise the term "indicative" as used in the title. Prior to each stage of development being implemented it must be accepted that the effects of previous developments and other planning concepts incorporated within the document will be further considered. The plan must be flexible and continuously under review. Proposed facilities have been outlined as to use and location. No architectural or engineering details are included.

1.2 Tangata Whenua

Tongariro National Park and in particular the three mountains of Ruapehu, Ngauruhoe and Tongariro includes land of special significance to local Iwi. Land north of the summit of Mt Ruapehu includes traditional lands of the Ngati Tuwharetoa tribe and the Ngati Hikairo hapu. The nucleus of Tongariro National Park is the three mountain peaks which in 1887 were gifted to the people of New Zealand by Horonuku Te Heu Heu Tukino; the then Paramount Chief of the Ngati Tuwharetoa people. This gift was made to the people of New Zealand, to be gazetted as a National Park, for the use of all people. Since the time of this sacred "Gift" people have come to the National Park, and the ski area in particular, to "use" the area for recreation.

The upper slopes of Whakapapa Ski Area, including much of the available intermediate and advanced skiing terrain, is located within the original "Gift Area".

There are a number of other Iwi who have a traditional and close association with Mount Ruapehu. There is currently a wide claim before the Waitangi Tribunal, “National Park Inquiry – Wai 1130”, which involves all of these Iwi. It is expected the Tribunal will issue its findings in the next year or so and RAL understands the Crown will then commence negotiation on settlement of claims. The Tribunal findings and subsequent settlements with the Crown will provide clarity as to which Iwi rightfully have tangata whenua status and therefore must be consulted on the cultural effects of ski area operation and development. In the interim RAL will continue to consult with many Iwi and endeavour to develop and maintain meaningful, open and effective relationships.

In the past ten years there have been many changes implemented to ski area operations and developments, both proposed and implemented, which are intended to mitigate those cultural effects which have been either clearly stated (eg disposal of effluent) or have been more perceived by RAL (eg terrain modifications).

1.3 World Heritage Status

Tongariro National Park was inscribed on the World Heritage list in 1990 for its outstanding natural values and then again in 1993 for its outstanding cultural values. The national park therefore has dual World Heritage status. RAL fully supported the applications for World Heritage listing under both criteria. RAL consider that Mount Ruapehu is a unique and diverse volcanic landscape and has particular cultural and religious significance for Maori people. The mountains of Tongariro National Park are symbolic of the spiritual links between the community and its environment.

The national park was granted World Heritage status under both World Heritage criteria at a time when the Whakapapa and Turoa ski areas were well established on the slopes of Mt Ruapehu.

The 1990 International Union for Conservation of Nature (IUCN) report which recommended listing the national park for its outstanding natural values outlined concerns resulting from a 1987 field visit regarding:

“The extent of the ski development on Mt Ruapehu, the current plans for expansion and the impact of these developments on cultural values and ‘image’ of the park. This is compounded by new proposals for slope grooming and snowmaking which would have substantial impacts on scenic values and stream hydrology. It has been suggested that the ski fields of Tongariro would be very susceptible to effects of global warming which would require an upward movement of skiing activity.”

This IUCN report concluded that:

“In the preparation of the new management plan for the park, both these issues have been resolved in the manner that protects the natural values of the park and enhances the cultural and spiritual values associated with the Maori people. Ski field development is constrained within specific zones which have detailed plans and measures to place limits on their expansion and operation.”

The 1993 report which recommended the national park also be inscribed for its outstanding cultural values does not include any reference to ski area issues.

A later IUCN report in 2002 indicates that the original attributes which led to inscription of the national park for both natural and cultural values are now stronger and the earlier issues of concern, particularly those that related to recreational use, have significantly diminished. This 2002 report makes specific reference to the Whakapapa sewage scheme of which RAL was a significant promoter and funder. RAL agreed and committed some years ago to the principal that the natural and cultural values of Ruapehu can only be sustained if the treatment and disposal of all human waste is undertaken away from the slopes of the mountain. This principal is now 100% met at both Whakapapa and Turoa Ski Areas.

Since 1990 RAL has not promoted any increase in the current designated ski area boundaries, including the upper boundary. RAL's main planning and investment since then has been based around use of snow making and other snow management practises that will ensure a full winter snow season will continue to be available and will provide for skiing and snowboarding within the existing ski area boundaries even under the current worst case climate change predictions for the next 60 to 100 years.

1.4 Ruapehu Alpine Lifts Ltd

Ruapehu Alpine Lifts Ltd (RAL) was incorporated in 1953 with its primary purpose being the promotion of skiing and other sport on Mt Ruapehu and the provision of amenities for the sport and recreation users of the mountain. The company is structured such that all income is used for this purpose and no return of profits is available for shareholders.

1.5 License

RAL has the right to operate Whakapapa Ski Area under a license issued by Department of Conservation. The current license was issued in 1990 and has a 30 year term with one right of renewal for a further 30 years.

The ability of RAL to develop the ski area is covered under clause 18 of the license:

18. *New Developments*

The Licensee may erect new facilities and upgrade its facilities with the prior written approval of the Licensor, under the following conditions:

- a) *The Licensee will prepare a Whakapapa Skifield Indicative Development Plan detailing its proposals. Such plan shall be reviewable yearly or at such other times as is mutually agreed between the parties.*
- b) *The Plan will be prepared in terms of the Park Management Plan and will comply with the latter in every respect, particularly as to the requirement for public safety and welfare.*

- c) *The Licensor's final approval shall be necessary and may be given subject to such terms and conditions as the Licensor sees fit in terms of the Act, the general statement of policies of the National Parks and Reserves Authority current at the time, the then current Tongariro National Park Management Plan and such other laws or regulations relating to matters of public safety and welfare as are current at that time.*

1.6 Tongariro National Park Management Plan

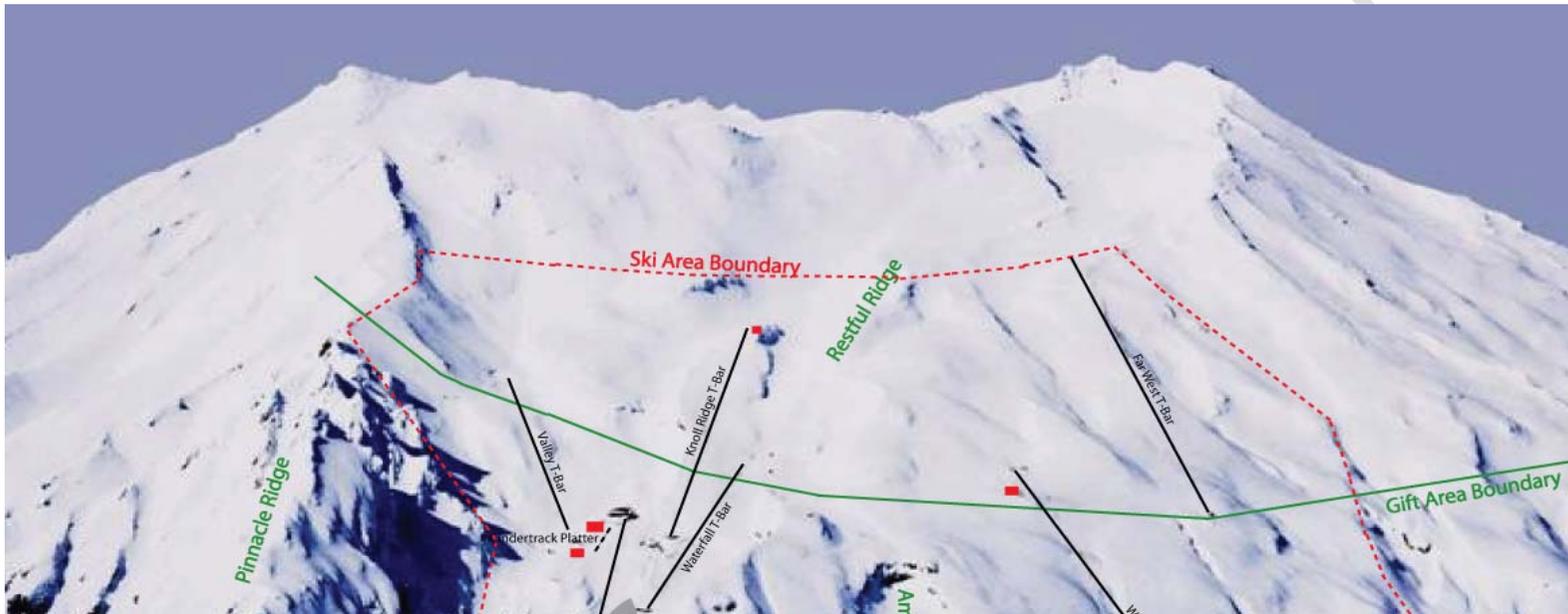
No development proposed is in conflict with the objectives and policies outlined in the Tongariro National Park Management Plan 2006 – 2016, in particular Part V Ski Areas.

1.7 Ruapehu District Scheme & Resource Management Act.

The activities and developments proposed within this Indicative Development Plan are subject to Ruapehu District Scheme and the consent processes required under the Resource Management Act.

2. SUMMARY

2.1 Gift Area Developments



There are currently five Chairlifts and T Bar lifts which are partially or totally located within the Gift Area, including:

- i. Valley T Bar
- ii. Knoll Ridge T Bar
- iii. Waterfall T Bar
- iv. West Ridge Chairlift
- v. Far West T Bar

RAL proposes that the number of lifts which extend into the Gift Area will reduce to four, including;

- i. Knoll Ridge Express
- ii. Delta Chairlift
- iii. Cornice Bowl T-Bar
- iv. West Ridge Chairlift



As illustrated on the photograph above this proposed lift configuration will also have the effect of concentrating lift facilities which extend into the Gift Area to a corridor extending through the central portion of terrain within the wider ski area boundary.

This reduction in the number of lifts which extend on to these upper slopes of the ski area is an acknowledgment of the sacred nature of the Gift Area, and is intended to mitigate as far as is practicable the cultural effects of ski area operation and development.

2.2 Design Carrying Capacity - Number of Persons on a Day

This IDP provides for changes to the ski area which are targeted at increasing the quality of experience and to better meeting customer's ever increasing expectations, rather than targeted at providing for any material increase in the daily number of visitors which the ski area will provide for.

The upgraded facilities proposed will provide for a very small increase in the Design Carrying Capacity of the ski area, from 5,010 persons on a day to 5,130 persons. But far more importantly these improvements will meet customer demands for shorter (if any) queue times at the principal lifts and in the Chalet facilities on an average busy day when visitor numbers are at the Design Carrying Capacity level. This Design Carrying capacity at 5,130 persons is significantly less than the potential 10,000 persons considered in prior long term planning exercises.

It is expected, and accepted, that on up to 10 days per season this Design Carrying Capacity will be exceeded by up to 20%. Car park facilities will be provided for these "above peak days" as are the sewage reticulation facilities. All other facilities are sized to cater for the Design Carrying Capacity and on these "above peak days" queue times at lifts and within cafeterias will be longer than is normally acceptable.

2.3 Facility Developments

The major developments proposed through this planning period include:

- **Lifts**

- Knoll Ridge Express – will replace the Valley & Knoll Ridge T Bars
- Delta Chairlift – which will replace the Waterfall T Bar
- Western Chondola – which will then allow removal of the National & Rockgarden Chairlifts
- Cornice Bowl T Bar – which is a relocation of the Far West T Bar

- **Chalet Buildings**

Total seating at Chalet facilities will increase from 1,050 seats to 1,310 seats. New chalet facilities will be developed at locations:

- Top of the Bruce Plaza
- Top Terminal Western Chondola – which will allow for removal of the West Ridge Kiosk

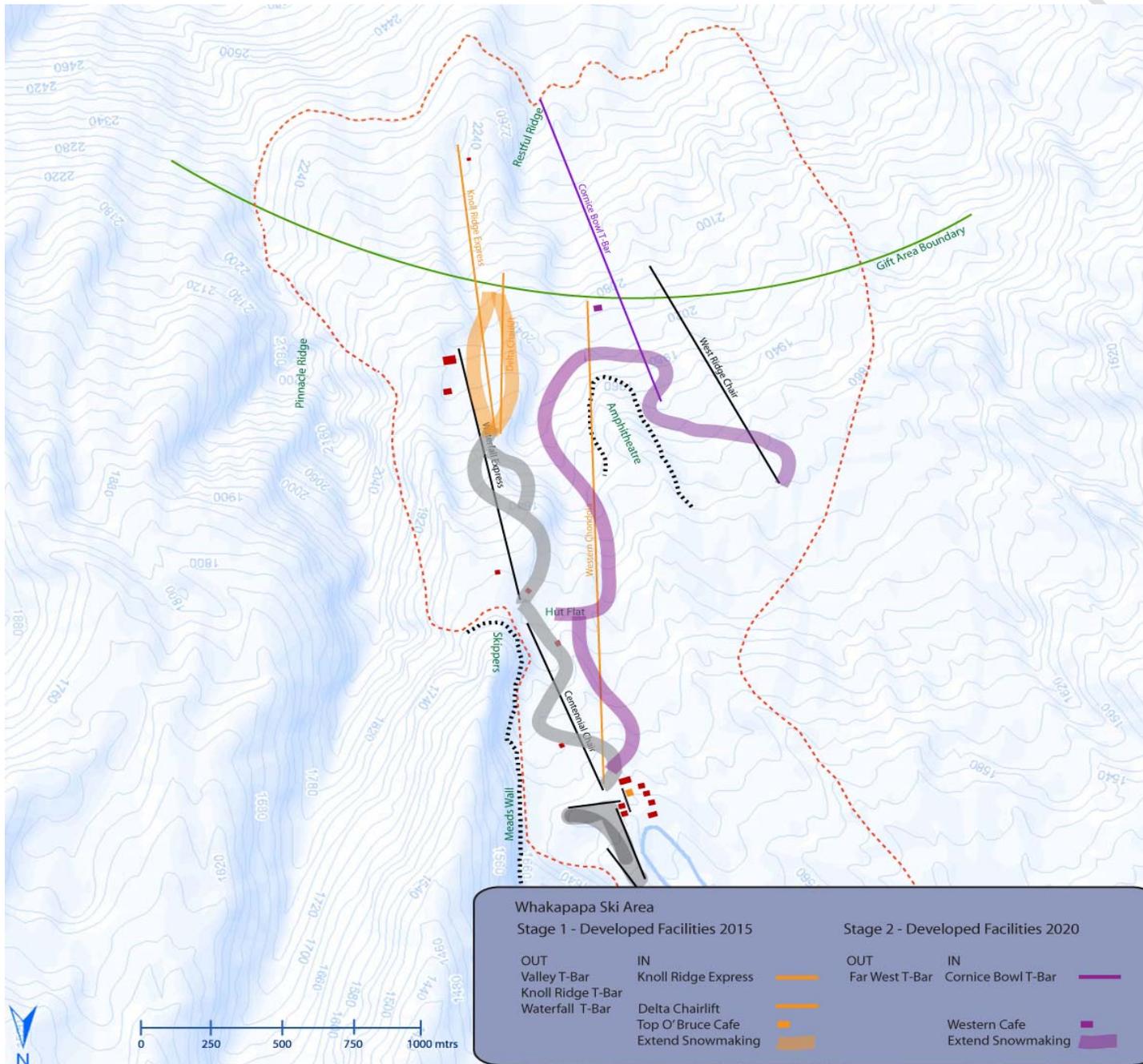
- **Snowmaking**

Snowmaking reticulation will be extended to cover trails on Knoll Ridge below 2,000m, Tennants Valley, Yankee slopes and West Ridge trails.

- **Top O' the Bruce Plaza**

There will be redevelopment of the Top O' the Bruce Plaza to provide enhanced facilities and services and to allow for more effective pedestrian movement through this key entry portal.





3. PRIORITY OF DEVELOPMENT

3.1 The priority for implementation of the main developments which are included within this IDP is :

	Stage 1 - Developed Facilities 2015	Stage 2 - Developed Facilities 2020
Lifts	<ul style="list-style-type: none"> o Knoll Ridge Express o Delta Chairlift o Western Chondola 	<ul style="list-style-type: none"> o Cornice Bowl T Bar
Chalets	<ul style="list-style-type: none"> o Knoll Ridge Kiosk (Temp Cafe) o Top of the Bruce Cafe 	<ul style="list-style-type: none"> o Western Cafe
Snowmaking	<ul style="list-style-type: none"> o Knoll Ridge to 2,000m 	<ul style="list-style-type: none"> o Tennants Valley o Yankee trails o West Ridge trails
Terrain Modifications	<ul style="list-style-type: none"> o Dog Leg o Nose Dive 	

3.2 This schedule, which provides the proposed order of development does not include a number of minor developments which are proposed for:

- Happy Valley replacement of Chairlifts and/or Platter lifts with Carpet lifts
- Kids Centre internal building changes and installation of a Carpet lift
- Top of the Bruce redevelopment of existing buildings within this Base Area Plaza plus construction of one new building.

The priority order for these smaller scale developments, with far lesser effects, must be more flexible.

4. ASSESSMENT OF EFFECTS

4.1 All developments identified will require preparation of a Works Approval Application for presentation to DOC and many projects will also require lodging of Resource Consent applications to District and/or Regional Councils. These applications will involve detailed consideration of effects of the development proposed.

As stated in section "1. Introduction" this IDP is prepared to provide an "outline" of developments proposed and no engineering or architectural details are included. Therefore within this IDP there cannot be a detailed Assessment of Effects for each proposal. The following is therefore a very broad assessment of some principal effects.

4.2 Infrastructure

The general infrastructure required for ski area operations has predominately been achieved in recent years. This IDP requires

- no further development of the access road
- only minor changes to carparks, and this is all within terrain which has already been modified for roads or carparks
- no change to mains power supply
- extension of sewage reticulation to the Western Express Cafe but no changes to the downstream sewage reticulation or systems
- some extension to snowmaking reticulation but no additional reservoir or storage facility.

4.3 Cultural Effects

RAL has been engaged with Ngati Tuwharetoa, Ngati Hikairo, Ngati Rangi and Ngati Uenuku over many years and placed significant resource and effort to better understanding the cultural effects of ski area operation and development.

Advocacy from Iwi has been a powerful influence on our operational management and the company's planning for recent and future development changes. Examples of material changes undertaken to mitigate cultural effects which are now consistently applied in ski area operations and planning include (but are not limited to);

Gift Area

RAL understands the upper slopes of the mountain, and in particular the Gift Area, is terrain which has the greatest significance to Iwi. RAL proposes within this plan to significantly reduce, from five to four, the number of lifts which extend into the Gift Area and will not pursue any further developments of structures within the Gift Area terrain.

Effluent Disposal

All human effluent which emanates from the ski area is reticulated within the Whakapapa Iwikau Sewage Scheme for treatment and disposal away from the mountain. This has eliminated the very negative cultural effect from discharge of treated human waste into the mountain.

Terrain Modifications

Iwi have expressed and implied their concerns at ongoing terrain modifications especially within the higher altitude and more culturally sensitive slopes. Over the past ten years ski area management has developed a more effective understanding of these concerns and will now always first endeavour to achieve the required outcome through greater use of snow management techniques including snowmaking, snow fencing and snow grooming. Terrain modification proposals referred to in this IDP are very few and relatively minor in scale compared to what was more normal ten and more years ago.

Structures

During the past twenty years RAL has removed, and not replaced, a total of ten lifts including;

National Downhill rope tows x2	Meads Wall rope tows x3	Staircase T Bar
Hut Flat rope tow	Pinnacle Platters x2	Cinder Track Platter

plus a total of six buildings, including;

Downhill Cafe & Workshops x3	Staircase toilet	Hut Flat toilet
Knoll Ridge Snow School Kiosk		

When implemented, this IDP would provide for the removal of a further two lifts which would not be replaced:

Valley T Bar	Rockgarden Chairlift
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Employment & Experience Opportunities

For many years RAL has worked with a variety of local agencies and organisations to assist with pre employment programs which provide the opportunity for individuals to develop the skills and knowledge such that they are stronger applicants for employment at the ski areas. There have been many staff engaged, and still working for us, who have participated in these programs. RAL is very keen to further develop these opportunities.

The great majority of local schools, including those for general population plus Kura and Kohanga Reo schools, which have active school based skiing participation programs. These are subsidised by the company with the support offered to Kura and Kohanga Reo being at a higher level than that offered to the main stream schools.

RAL will continue to support ongoing participation programs targeted at offering local youth the opportunity to further experience skiing and snowboarding outside of the specific school programs. The Tuwharetoa Snowboard Squad which has now operated for many years is an example of this support.

RAL will continue to work with all Iwi who have tangata whenua status to ensure every effort possible is made to eliminate or mitigate negative cultural effects.

4.4 Safety Effects

These proposed changes to the ski area and facilities included is about providing safer and more enjoyable experiences – they are not about providing for any significant increase in peak day number of visitors.

Avalanche Risks

All developments are located away from known avalanche paths. RAL operates an effective Snow Safety program to continuously assess the snow pack and manage any avalanche risk.

Volcanic Risks

Key facilities are located out of lahar paths. The Far West T Bar is in a location which adjoins a prominent lahar path, with this lahar path being particularly close to the load position and queueing area of the lift. The relocation of this lift, onto the Cornice Bowl terrain will significantly reduce this hazard and provide a very positive safety mitigation of the overall lahar risk to public.

RAL and DOC have committed significant resource to providing an effective Eruption Detection System which mitigates the risk from lahars at Whakapapa.

4.5 Visual & Ecological Effects

Of all likely upper mountain developments it is the lifts which have the greater visual effects especially when viewed from locations outside the ski area boundaries.

If implemented this plan will result in:

- the number of lifts located above the road end reducing from nine to seven, plus;
- large areas of terrain within the upper and more visually sensitive slopes, which have lifts currently, will become “facility free”. This includes all of the Te Heuheu Valley to the east and terrain to the west of the West Ridge Chairlift which currently incorporates the Far West T Bar.

All major developments will undergo Visual and Ecological Impact Assessments as part of the design and consenting processes.

5. DESIGN CARRYING CAPACITY

5.1 The current Design Carrying Capacity (DCC) is 5,010 persons on any one day. This IDP provides for changes to the ski area which are targeted at increasing the quality of experience and therefore better meeting customer's ever increasing expectations, rather than targeted at providing for any material increase in the daily number of visitors which the ski area will provide for. The upgraded facilities proposed will provide for a very small increase in the Design Carrying Capacity of the ski area, from 5,010 persons on a day to 5,130 persons. But far more importantly these improvements will meet customer demands for shorter (if any) queue times at the principal lifts and for an increase in the number of available seats in Chalet facilities.

Current Facilities - 2010

	People					DCC
	on Lift	queue time	in Queue	on Slopes	in Café	
	<i>min</i>					
Happy Valley Access	14	0.0	0	0	0	14
Double Happy	61	4.0	73	151	71	357
Happy Valley #1	23	3.0	40	55	30	148
Happy Valley #2	23	3.0	40	55	30	148
Centennial	160	7.5	176	70	102	508
Rockgarden	57	3.0	40	33	32	162
Hut Flat #1	10	2.0	33	10	13	67
Snowplayers @				542	135	677
Lower Mountain	348		402	915	413	2,079
National	150	4.0	62	14	57	283
Waterfall Express	172	6.5	303	181	164	821
Waterfall	57	5.0	90	54	50	252
Valley	90	5.0	118	78	72	358
Knoll Ridge	97	5.0	118	83	75	373
West Ridge	218	5.0	145	98	115	577
Far West	72	5.0	85	57	54	268
Upper Mountain	856		923	566	586	2,931
Total	1,204		1,325	1,481	999	5,010

Stage 2 Developed Facilities - 2020

		People					DCC
		on Lift	queue time	in Queue	on Slopes	in Café	
		<i>min</i>					
Happy Valley Access	Dble Chlift or Carpets	14	0.0	0	0	5	19
Double Happy	Dble Chlift or Carpets	61	1.0	18	155	77	312
Happy Valley #1	Platter or Carpets	23	1.0	13	55	30	121
Happy Valley #2	Platter or Carpets	23	1.0	13	55	30	121
Centennial	Dble Chairlift	160	2.0	47	70	91	368
Kids Centre	Carpet Lift	20	0.0	0	20	13	53
Hut Flat	Carpet Lift	20	1.0	17	20	19	75
Snowplayers @	10.0%				550	181	731
Lower Mountain		321		109	925	447	1,801
Western Chondola	Chondola x4	242	4.0	160	157	185	744
Waterfall Express	Express Quad	172	3.0	140	184	164	660
Delta Chairlift	Dble Chairlift	96	3.0	60	57	70	283
Knoll Ridge Express	Express Quad	198	4.0	200	220	204	822
West Ridge	Quad Chairlift	218	2.0	58	84	119	479
Cornice Bowl	T Bar	114	2.0	47	95	84	340
Upper Mountain		1,040		665	798	826	3,328
Total		1,361		773	1,723	1,273	5,130

cc Current Facilities - 2010

2%

5.2 It is expected, and accepted, that on up to 10 days per season this Design Carrying Capacity will be exceeded by up to 20%. Carparks facilities and the sewage reticulation infrastructure will have capacity for these “above peak days”. All other facilities and associated infrastructure are sized to cater for the Design Carrying Capacity and on these “above peak days” queue times at lifts and within cafeterias will be longer than is normally acceptable.

Proposed Developments

6. LIFTS

6.1 Summary

Major lift developments will include:

- Knoll Ridge Express – to replace the Valley & Knoll Ridge T Bars
- Delta Chairlift – which will replace the Waterfall T Bar
- Western Chondola – which will then allow removal of the National & Rockgarden Chairlifts
- Cornice Bowl T Bar – which is a relocation of the Far West T Bar

Current Facilities - 2010

	Lift	Altitude		Vertical	Length	vtm/hr (,000)
	Capacity (pph)	Base (m)	Top (m)	Rise (m)	Incl (m)	
Happy Valley Access	770	1,605	1,625	20	78	15
Double Happy	1,100	1,376	1,413	37	303	41
Happy Valley #1	800	0	0	50	226	40
Happy Valley #2	800	0	0	50	226	40
Centennial	1,410	1,625	1,762	137	744	193
Rockgarden	790	1,650	1,769	119	543	94
Hut Flat #1	1,000	0	0	10	125	10
<i>Lower Mountain</i>						433
National	935	1,660	1,830	170	1,153	159
Waterfall Express	2,800	1,760	2,018	258	1,005	722
Waterfall	1,080	1,940	2,060	120	605	130
Valley	1,420	1,975	2,178	203	787	288
Knoll Ridge	1,420	2,000	2,247	247	932	351
West Ridge	1,740	1,820	2,075	255	993	444
Far West	1,025	2,010	2,300	290	982	297
<i>Upper Mountain</i>						2,391
TOTALS						2,824

Stage 2 Developed Facilities - 2020

		Lift	Altitude		Vertical	Length	vtm/hr (,000)
		Capacity (pph)	Base (m)	Top (m)	Rise (m)	Incl (m)	
Happy Valley Access	Dble Chlift or Carpets	770	1,605	1,625	20	78	15
Double Happy	Dble Chlift or Carpets	1,100	1,376	1,413	37	303	41
Happy Valley #1	Platter or Carpets	800			50	226	40
Happy Valley #2	Platter or Carpets	800			50	226	40
Centennial	Dble Chairlift	1,410	1,625	1,762	137	744	193
Kids Centre	Carpet Lift	1,000			7	100	7
Hut Flat	Carpet Lift	1,000			10	125	10
<i>Lower Mountain</i>							346
Western Chondola	Chondola x4	2,400	1,630	2,040	410	1,848	984
Waterfall Express	Express Quad	2,800	1,760	2,018	258	1,005	722
Delta Chairlift	Dble Chairlift	1,200	1,940	2,050	110	605	132
Knoll Ridge Express	Express Quad	3,000	1,940	2,247	307	1,080	921
West Ridge	Quad Chairlift	1,740	1,820	2,075	255	993	444
Cornice Bowl	T Bar	1,400	1,960	2,300	340	1,100	476
<i>Upper Mountain</i>							3,679
Total							4,025

cc Current Facilities - 2010

43%

6.2 Minor Lift Developments

Happy Valley

Happy Valley currently is serviced by Chairlifts and Platter Lifts, with access being provided by a chairlift. Recent technology changes with Carpet lifts indicate this type of lift may provide a far more efficient and user friendly service in Happy Valley, replacing all of the current Chairlifts (x2) and Platter Lifts (x2). In 2011 a carpet lift is being trialed on the Happy Valley terrain.

Kids Centre

In 2009 RAL purchased the old Victoria University Ski Club lodge located on the eastern Rockgarden slopes and approximately 250m uphill of the Top O' Bruce. The intent is to redevelop this structure and the small valley adjoining the lodge to the east as a facility for children aged 3 – 12 years. This proposed use is dependant on over snow access using a tracked vehicle being permitted (currently being considered as part of a TNP Management Plan review).

The facility will require installation of one or two small (30m – 100m long) carpet lifts.

Temporary Relocation of Lifts

RAL would like to retain an option to relocate a Carpet Lift from Happy Valley to terrain adjoining and below the top terminal of the Western Chondola for periods late in the season when Happy Valley snow cover or snow condition does not allow operation of the Happy Valley beginner terrain. This may require the installation of some permanent foundations.

7. SNOW MANAGEMENT & TERRAIN MODIFICATIONS

There are many trails where the safety and ease of movement by skiers and boarders can be significantly enhanced through any or all of:

- the provision of additional snowmaking capacity, and/or;
- management techniques to more effectively catch and use natural snow falls, and/or;
- selective modification to the natural terrain.

All snow management options will be explored prior to any works application being developed for terrain modifications. These modifications will be evaluated in light of skier and boarder traffic flows, safety and the company's growing knowledge and expertise in snow management and with evolving techniques of terrain modification and restoration which are more "conservation friendly".

SNOW MANAGEMENT

This section is expected to cover all activities of snow management including snowmaking, snow grooming, and snow fencing.

7.1 Snow Making

Current

The existing snow making system provides a water resource and reticulation system which enables coverage on Happy Valley, Meads Wall, Rockgarden, Hut Flat, Staircase & Waterfall trails to an altitude of 1,900m at the base of the Waterfall T Bar. The water resource is from a 25,000cum reservoir located at the bottom of Happy Valley with replenishment of water to this reservoir being from a spring located a further 2km downstream in the Waipuna Valley. Pumping stations are located at the reservoir and at Hut Flat.

Proposed

Extensions to the reticulation system are proposed which will provide snowmaking capacity on the following terrain:

- Knoll Ridge to 2,100m
- Tennants Valley
- Yankee Face
- West Ridge trails

A further pump station, at an altitude of 1,900m, will be incorporated into the bottom terminal of the Knoll Ridge Express lift. No further pump stations are proposed.

The final stage of development down the West Ridge trails will require a review of the current water take. If additional water is required the current preferred option is to seek consent to move the Waipuna pump further down the Waipuna Stream where the spring fed flow increases to 11,000 litres/min, compared to 2,500 litres /min at the current pump location, and then increase the take . This would then allow the existing reservoir to supply the expanded system. On information currently available this could be a less intrusive solution that the alternate of constructing a second reservoir.

Further efficiencies in the overall snowmaking capability will emanate from use of newer technology snowmaking guns and from automation of the full system. It is expected the current inground infrastructure has sufficient capacity to provide for the proposed extensions to the reticulation system and for technology enhancements.

7.2 Grooming Machines

Total Skiable Area	500 hectares
Area Groomed Consistently	150 hectares
Groomer Vehicles Required	7

It is expected that with the full development as proposed the grooming fleet will consist of vehicles with a variety of horsepower and implements. This could include winch, snowblower, tiller and packer bar attachments. The majority of machines will be of the 250 - 300 hp class and similar to the current Kassbohrer PB 400 & PB 600 models.

These grooming machines will be supplemented by up to three excavators and two groomers set up with large snow buckets and/or blades specifically used for snow shifting activities from around buildings, lift terminals and some key trails. It is also envisaged that two to four oversnow tracked vehicles will be set up for other general uses eg carrying snow making guns, staff transport, maintenance servicing, food transport etc.

7.3 Snow Fences

Over recent years the company has installed a number of snow fences which are used to catch and/or trap wind driven snow. The climatic conditions experienced at Mt Ruapehu, especially the high winds which frequently accompany snow falls, ensure that snow fencing has an important role to play in maximising the utilisation of natural snow for creation and maintenance of ski trails. In simple terms "we must endeavour to keep the snow where we ski regularly and not where we do not ski".

It is envisaged that snow fences will continue to be a mix of portable units (ie freestanding on the early snow pack) and more structural units which will require installation of small concrete foundations.

On-going liaison will be maintained with DOC to ensure this activity continues to be an important and acceptable feature of our snow management techniques.

TERRAIN MODIFICATIONS

The following two trail improvements are required to improve skier and boarder safety and reduce the incidence of collision on what are very narrow high use trails.

7.4 Dog Leg

A key element of RAL planning regards having the proposed Knoll Ridge Express provide the lift access for the Te Heuheu Valley trails (and consequent removal of both the Knoll Ridge & Valley T Bars) is a requirement for terrain modifications through the Dog Leg area, to provide effective skier access from Te Heuheu Valley back to the bottom terminal of the proposed Knoll Ridge Express. The detail of these modifications will be included and considered within the overall Works Approval application for the lift.

7.5 Nose Dive & Waterfalls

There are currently two trails through this terrain, Nose Dive & Second Waterfall. The Nose Dive is a well graded but narrow trail, the Second Waterfall is a steep trail and they both merge causing significant congestion at this merge point. The two trails combined are inadequate to provide for the number, mix of skiers & boarders and ability level (advanced beginner, intermediate and expert skiers & boarders) who have to traverse this main route down Whakapapa.

RAL wishes to widen and lower the Nose Dive trail and create a third trail below the Nose Dive. This work is all within terrain which has previously been modified. The detailed Works Approval application is expected to be lodged during the summer of 2011/12.

8. CHALETS

8.1 Summary

“Shelter” Chalets

In recent years many customers, predominantly those who are visiting in larger groups, have been querying whether there is any “shelter” space available where they can bring and eat their own lunch. As we achieve higher standards of quality and ambience in new cafes this traditional Whakapapa “brown bag” customer has indicated they are less comfortable to occupy seats in the higher quality food outlets. RAL is proposing to offer “shelter” chalets which would provide seating, hot and cold water, possibly some vending machines selling food and snacks and toilet facilities. These “shelter” chalets would have lower quality seating and ambience. We are expecting to initially convert the Schuss Haus (which has not traded as a cafe for two years) and the Meads Wall Cafe (catering only for tobogganers on some days) to this style of “shelter” chalet; probably for the 2011 or 2012 seasons. A final decision on Meads Waff Cafe will depend on a review of the best location for “tobogganning”.

Knoll Ridge “Temporary Cafe”

Following the Knoll Ridge Fires of February 2009 this structure was built to provide a temporary cafe at this altitude for the period until the new replacement facilities were completed. At that time RAL expected to replace the 500 seats which were in the original Knoll Ridge Chalet with a 400 seat new Knoll Ridge Chalet and a 100 seat extension to Lorenz’s Bar & Cafe at the Top of the Bruce. In early 2010 the decision was made not to proceed with the extension of Lorenz’s Bar & Cafe as there were objections to the consent application and the cost of construction was significantly higher than expected.

The Knoll Ridge Temporary Cafe traded as a cafeteria through the 2009 winter season and then during the early part of the 2010 winter season until the new Knoll Ridge Chalet was fully open from September 2010. For the latter part of the 2010 season this temporary cafe remained open but only to provide a “shelter” and “brown bag” facility. The response from many, especially those bringing large school groups on ski trips, was surprisingly very positive and there were strong requests for the facility to remain and be available for use in this manner by groups. The facility was also reserved and used as a base for some large events (eg North Island Primary School Ski Champs, Extreme Skiing Competition) which did allow for these events to be run in a more professional and efficient manner.

Following review of this response and activity during the 2010 winter RAL has decided to pursue full consent for this facility and use it as a third “shelter” chalet with a focus on use by groups (primarily school groups) and events but also be available for use by independent members of the public. The consent application was lodged with RDC in February 2011 and the appropriate Works Approval application also lodged with DOC.

Summary Indicative Planning

Additional new chalet facilities are proposed for Knoll Ridge, Top O’ Bruce and at the top terminal of the Western Chondola.

This will provide Chalet facilities and seating capacity of:

Current Facilities - 2010			
	Inside	Outside	Total
DCC			5,010
<i>Chalet Facilities - seats provided</i>			
Top O Bruce Bistro	100	60	160
Happy Valley Bistro	120	30	150
Knoll Ridge Chalet	400	160	560
West Ridge Kiosk	40	20	60
Knoll Ridge Kiosk	80	40	120
	740	310	1050
	66%	34%	

Stage 2 Developed Facilities - 2020			
	Inside	Outside	Total
DCC			5,130
Café Seats Required - at DCC	1,018	255	1,273
	80%	20%	
<i>Chalets - seats to be provided</i>			
Top O Bruce Bistro	240	20	260
Happy Valley Bistro	120	40	160
Knoll Ridge Chalet	400	120	520
Western Chalet	100	30	130
Schuss Haus	80	20	100
Knoll Ridge Kiosk	100	40	140
	1,040	270	1,310
	79%	21%	

The Western Chalet will replace the existing West Ridge Kiosk.

8.2 Services

Sewerage

All effluent emanating from company facilities is now reticulated, treated and discharged to ground with the Whakapapa Iwikau Sewage Scheme. This will continue to be the only method for treatment and disposal of effluent.

Water Supply

Water supply will be principally from existing spring fed supplies supplemented by some stored rain water. All water available for public consumption will be treated and comply with appropriate water quality legislation.

The snowmaking system will provide an ability to pump water to some chalet facilities, to supplement the rain water catchment.

Fire Fighting

RAL is installing sprinkler fire suppressant systems in all large buildings. Each system, which may service sprinklers in a number of buildings within one general location (eg one system would service all buildings in the Top O Bruce Plaza and in Happy Valley), will require dedicated water storage tank(s) with minimum total capacity of 80cum plus pumping and control systems.

8.3 Comment

Under the current 2010 use parameters it is assumed that all skiers and snow players will on average use a food facility once per day and that each seat can be turned over five times per day. These broad assumptions determine that the total number of seats required throughout the ski area for a DCC of 5,010 persons is 1,000 seats, with required seats provided through a combination of inside and outside seating.

Current user trends with our customers confirms the food and beverage experience is an increasingly significant element of their day at Whakapapa and clearly the average time spent in a cafe on any one day is increasing each year. For our Stage 2 Developed Facilities we are assuming that the average use of a food facility will continue to be once per day but that each seat can only be turned over four times per day. Therefore the total number of seats required for a DCC of 5,130 will increase to 1,310.

Proposed Developments

9. CARPARKS

9.1 Summary

Current Facilities - 2010

DCC			5,010
" - average peak day	20%		6,010
	-2		
<i>Persons</i>			
- using Public Transport to/from ski area			300
- arriving in large bus	8 buses @	40	320
- arriving by car or van	1,800 cars @	3.0	5,400
			<u>6,020</u>

Carpark Spaces available		Buses	Cars
5 min & Authorised			40
BusPark		8	
Carpark	1		110
"	2		120
"	3		120
"	4		60
"	5		80
"	6		240
"	7		170
"	8		230
"	9		180
"	10		260
Loop Road			250
		8	1,860

Stage 2 Developed Facilities - 2020

Design Carrying Capacity (DCC)			5,130
" - "above peak day"	20%		6,160
	4		
<i>Transport Methods</i>		vehicles	persons
- using Public Transport to/from ski area			200
- arriving in large buses	8 buses @	40	320
- arriving by car or van - customers	1,880 cars/vans @	3.0	5,640
" - staff		40	
			<u>6,160</u>
	<i>Spaces required</i>	1,920 cars	

Carpark Spaces to be provided		Buses	Cars
5 min & Authorised			40
BusPark		8	
Carpark	1		110
"	2		120
"	3		120
"	4		60
"	5		80
"	6		250
"	7		180
"	8		250
"	9		200
"	10		260
Loop Road			250
		8	1,920

The above analysis requires management action to ensure average persons/car and persons /bus can be achieved at 3.0/car and 40.0/bus. Current surveys indicate average persons/car is 2.8 and persons/bus is 40. RAL believes there is a social and cultural trend in NZ which will assist in achieving the desired long term utilisation of car and bus use as is required.

As confirmed in the above table there is only a minimum increase in spaces required under these parameters. It is intended that any car park redevelopment will only occur within the general boundaries of the current car park terrain and changes will involve what is more “tidying up” of the carpark margins and existing modified terrain.

It is intended that all car parks be hard surfaced.

9.2 Overnight Car Parks

Iwikau Village can be developed to maximum beds of 1,600. Overnight car parks required at an average 3.0 persons/car is therefore 540. This number of car park spaces will be provided for in locations with reasonable proximity to lodges.

9.3 Shuttle Bus Service

The company will continue to provide a shuttle service between lower car parks and the road end.

Proposed Developments

10. BASE AREA PLAZA

10.1 The Top of the Bruce Entry Plaza provides the main base area facility for the Ski Area. The Plaza is the principle interface between the Bruce Road and the Ski Area. Development plans for the Plaza have been integrated with the operation and redevelopment of the Bruce Road, especially the upper terminus area, which occurred during the past 10 years.

The ongoing redevelopment of an entry plaza, so as to include all services and facilities required and allow for effective pedestrian, skier and service vehicle traffic, is one of the more complex planning exercises required for a ski area. It is envisaged that this redevelopment will be contained within the existing general area of the existing plaza.

10.2 RAL requirements for buildings within this general Plaza area are to provide for the following functions and services:

- Customer Service Office and all Ticket Sale activities
- Food & Beverage service including cafeteria facilities which also provide the predominant public shelter service
- Store and Distribution Centre – for both the company and the Clubs
- Ski Shop and Retail service
- Rental Ski Service Workshop
- Medical Centre and Ski Patrol base
- Staff Facilities including locker rooms, changing rooms, ski racks, lunch room
- Public lockers for short and long term storage of skis, boots and poles etc
- Public Shelter, open 24/7 with toilets and changing spaces
- Company Management and Administration.

Planning for the optimum redesign of the Plaza to provide for these uses is currently being reviewed.

11. OTHER ON-MOUNTAIN SERVICES

11.1 Kid's Centre - Ski Kindy/Creche

Whakapapa has a demand for a Kid's Centre that will offer a "care" facility and ski school lessons to young persons primarily in the 3 years to 12 years age group. It is envisaged that the facility will cater for up to 50 children and include adjoining dedicated spaces for snow play and beginner ski lessons.

In 2009 RAL purchased from Victoria University Ski Club the permit and lodge facility located on the eastern side of the Rockgarden approximately 150m uphill of the Top O' Bruce. The intent is to convert this facility and the terrain to the east of the building into this Kid's Centre. Initial development will involve internal modifications to the structure and installation of a Carpet Lift.

Redevelopment of this facility in this location is dependant on there being available an alternate (to walking or use of existing chairlifts) acceptable methodology for transportation of parents and children from and back to the Top O' Bruce. RAL has submitted on a review to the TNP Management Plan, which if agreed to, will allow use of an "oversnow taxi service" on these slopes. A decision on this is expected during 2011.

11.2 Rental

Current Facilities are:	Happy Valley Rentals	600 sets skis and 150 snowboards
	Top O Bruce Rentals	900 sets skis and 300 sets snowboards

The Top O' the Bruce Rental operation is expected to be expanded as part of the Top O' Bruce Redevelopment. This expanded facility is intended to provide space for an improvement in service standards plus an increase in rental stock available, to cater for the increasing percentage of skiers who are expected to rent their equipment.

11.3 Retail

The main ski shop for Whakapapa Ski Area will always be located in the Top O' the Bruce Plaza area. In 2010 the company closed, or did not replace after the Knoll Ridge Fires, the smaller facility which had operated at Knoll Ridge. No other dedicated Retail outlets are proposed.

12. MAINTENANCE & OPERATIONAL REQUIREMENTS

This section serves to outline any projected changes to the maintenance and operational facilities required to ensure the effective operation of Whakapapa Ski Area. Specifically excluded will be those facilities required in the Top of the Bruce Plaza. (Refer Section 10)

12.1 Mains Power Supply

Mains Power is currently reticulated throughout the ski area.

In the event of mains power failure alternate power is available from a number of diesel driven generators and stand by motors, including:

Generators	Top of the Bruce Knoll Ridge (new in 2011)	Happy Valley		
Stand By Motors	Centennial Chairlift National Chairlift	Rockgarden Chairlift Waterfal Express	West Ridge Chairlift Valley T-Bar	Knoll Ridge T-Bar Far West T-Bar

Within five years RAL propose to replace the majority of these 11 diesel driven motors with two larger 1.0 – 1.5 megawatt diesel driven generators located at or near the drive terminals of the Knoll Ridge Express and the Western Chondola. These large generators would generate electricity at 3,000 volts which would then be inputted direct into the existing mains power reticulation system.

12.2 Removal of Old Structures

The company is committed to removing all structures that are not required. This includes old foundations, buildings, cables etc. Once structures have been removed every effort will be made to restore ground to natural contours and, where appropriate, a program of replanting with native vegetation will be implemented.

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