ASSESSMENT OF LANDSCAPE AND VISUAL EFFECTS

Coronet Peak Summer Snow Activity

Department of Conservation Concession

NZSKI Limited

June 2019

patch

landscape ■ architecture ■ planning

1. INTRODUCTION

1.1. This report provides an assessment of the actual and potential landscape character and visual effects of a proposed summer snow activity on the Coronet Peak Ski Field.

1.2. This report responds to the *Guide to Preparing Your Environmental Impact Assessment for Concessions Applications* and a *Request for Further Information* to NZ Ski Limited dated 17 May 2019. The report below provides landscape comment with regard to:

- The effects of a proposed summer snowfield;
- The effects of a proposed snow making structure;
- The cumulative effects of the existing ski area infrastructure, the proposed structures, snowfield and activity.

2. DESCRIPTION OF THE LANDSCAPE

2.1. Coronet Peak (1,649masl) is part of the Harris Mountains, which extend from the Wakatipu Basin north to the Matukituki River. The Shotover River and its upper catchments, including Branches mark the western extent of the Harris Mountains while the Motatapu River and Soho Creek mark the mountain's eastern extents. These mountains increase in height to the north, with the highest summits near the northern extents of the range, including Black Peak (2,283masl) and Treble Cone (2,088masl). Coronet Peak and Mt Dewar are the southernmost peaks of the Harris Mountains which end markedly at the Wakatipu Basin.

2.2. The Coronet Peak massif is a complex landform. It holds a series of summits, ridges and valleys which are punctuated by rocky outcrops, scrub and tussock clad slopes. The northern and western slopes of Coronet Peak fall steeply down the craggy slopes of the Dirty Four Creek and Deep Creek catchment to meet Skippers Canyon. Its easterly slopes more gently roll towards the Arrow River through Coronet Creek and Bush Creek, which are separated by a long alpine ridge connecting Coronet Peak to Brow Peak (1,407masl). Coronet Peak's south face has a more consistent grade and tumbles down gently towards the Wakatipu Basin. This easterly face holds the Coronet Peak Ski Field and the Coronet Peak Recreation Reserve (**Figure 1**).

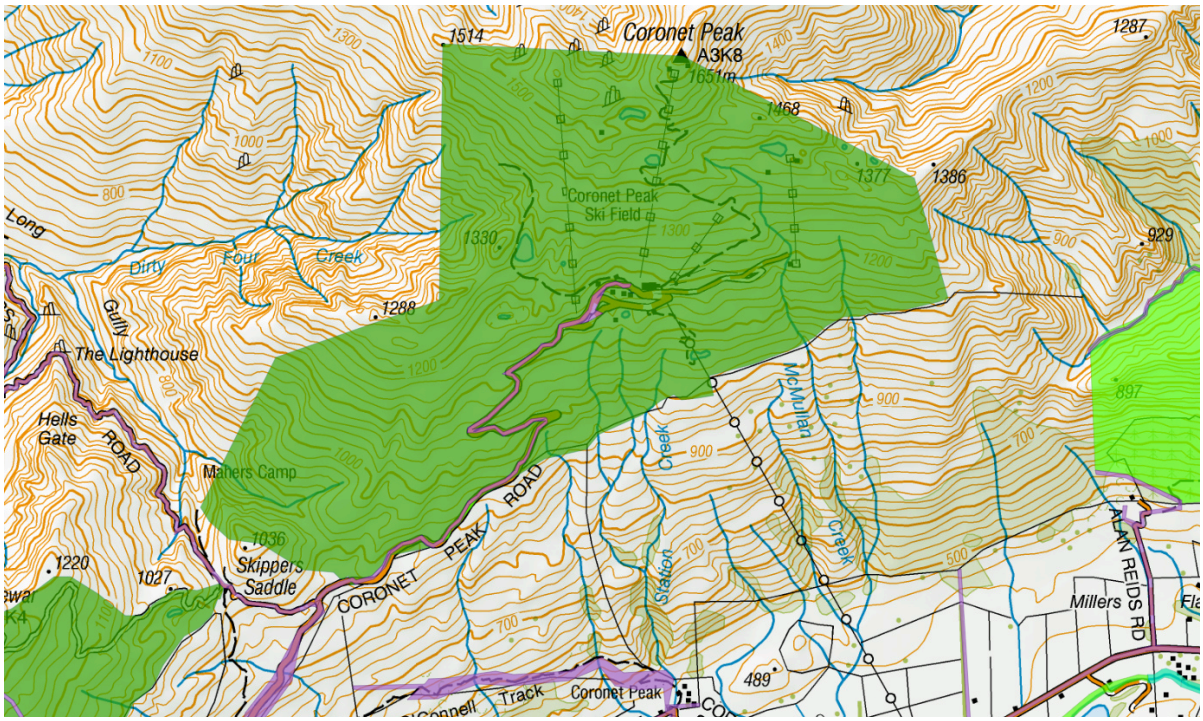

***Figure 1**: The Coronet Peak Recreation Reserve in green.*

2.3. The Coronet Peak Ski Area Sub-zone exists within a parcel of land known as the Coronet Peak Recreation Reserve, a Recreation Reserve under section 17 of the Reserves Act 1977, and also on a Crown Pastoral Lease administered by Land Information New Zealand. It is also subject to Queen Elizabeth the Second Nation Trust open space covenant.

2.4. The Coronet Peak Recreation Reserve is set across the mountain's south facing slopes from approximately 900 masl to the summit. It takes in some of the north-facing land north of the Greengates Express top terminal and closely follows the ridge which connects Coronet Peak to Brow Peak to the east. The eastern and northeastern extents of the Sub-zone are better defined by natural features than the northwestern and western extents.

2.5. The Coronet Peak Recreation Reserve is a popular place for passive and active recreation. In summertime, the road to the Reserve is used by tourism operators and independent visitors who seek elevated views of the wider Wakatipu Basin. The primary summertime recreation activities within the Reserve include paragliding and mountain biking, both as part of independent and guided trips. While much of the summertime recreation activity currently takes place near and below the Coronet Peak Ski Area's base facilities, it is understood that some mountain bikers,

hikers and paragliders use the mid and upper mountain above the ski area base facilities. In winter the primary users of the Reserve are participating in snow sports, while some paragliding and backcountry access activity is understood to occur.

2.6. The Coronet Peak Recreation Reserve currently hosts:

- Three chair lifts, from west to east being the Greengates Express 6-seater, the Coronet Express quad and the Meadows Express quad. Rocky Gully T-bar provides lift access to the area known as Rocky Gully. The mountain also has 4 conveyors near the base of the Meadows Express chair. Each chair lift and the T-bar has a top and bottom terminal building;
- A base building and first aid building near the base of Coronet Express chair, a maintenance building below Rocky Gully, a maintenance building below the base building, a maintenance building to the west of the Greengates Express lift line, a restaurant known as Heidi's Hut near the base of the Rocky Gully T-bar and another maintenance building near the midway point up Coronet Express chair;
- A series of snowmaking machines;
- Three reservoirs;
- Snowfencing and signage;
- Car park areas near and below the base building and Greengates Express chair;
- Earthworked areas with formed ski runs and mountain bike tracks;
- Six buildings which act as accommodation and club rooms for various ski club related activities;
- The summit of Coronet Peak hosts an 'observation tower' and various telecommunications equipment.

2.7. In terms of character, the south face of Coronet Peak is part of a modified alpine landscape. This modified character is the consequence of earthworks which have formed roads, parking areas, reservoirs, ski trails and mountain bike trails across the mountain face as well as the presence of structures including lift towers, snow making machines and buildings. This modified character is the result the public's attraction to snow activities in winter and hiking, mountain biking and air sport activities in summer. The balance of the Coronet Peak Recreation Reserve on the lower, western extents are largely unaffected by this modification and retain a highly natural alpine landscape character. The ski field infrastructure described above forms part of a modified

landscape character which exists within the context of a much larger, natural mountain landscape which forms the northern frame of the Wakatipu Basin.

3. DESCRIPTION OF THE PROPOSAL

3.1. The full details of the proposal are contained within the body of the application. In summary the proposal seeks to establish a 'Snow Factory' structure, a summer snowfield and a summer snow activity on Coronet Peak.

3.2. The Snow Factory structure will require an approximately 67m^2 concrete foundation. This foundation will be set on an existing bench in the landform below the Meadows Express Chairlift top station (**Attachment A**). This foundation will support two 40' shipping containers with an ancillary structure atop the containers. The total height of the Snow Factory will be 8.5m (**Figure 2**) It is proposed to colour the 'Snow Factory' in a dark grey which matches the other building within the ski area.

3.3. The Snow Factory will create snow which will be piped to the base area and spread across the slope to create a snowfield (**Figure 3**). This snowfield will be located on an existing learner slope, near the Meadows Express Chairlift base station between two existing 'Magic Carpet' conveyors. The learner slope is a low graded slope bound to the north by steeper land and to the south by a 1.8m high snow fence. The total snow coverage of the learner slope in summer will be approximately 4,000m^2 in area at a depth of approximately 350mm. This summertime snow activity will be in operation throughout the summer months.

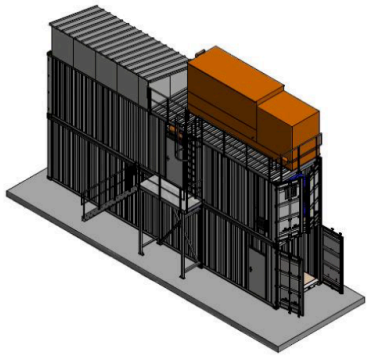

Figure 2: A 3D model of the Snow Factory

Figure 3: An image of an existing summer snowfield

4. METHOD AND CONSIDERATIONS

4.1. In undertaking this assessment, the site was visited on 5 June 2019 and the line of proposed summer snow activity was walked. A desktop study was then undertaken using images taken from key view-points in and around Coronet Peak and the Wakatipu Basin during different times of the year. This desktop study also included the use of GIS, Google Earth's Viewshed tool and Apple Maps.

4.2. In undertaking this assessment, the *Guide to Preparing Your Environmental Impact Assessment for Concessions Applications* is referred to and particular regard is given to:

Structures *This includes baches, hotels, campgrounds, huts, and ski area modifications, telecommunication sites, pipelines and wharves.*

Areas that have already been modified could be more acceptable for consideration for development than untouched areas.

Design, Location and Colour System

The design/location and colour systems proposed for the project are relevant to an assessment of environmental effects. It is expected that concept plans, designs, and landscape details will be provided as part of your overall application package.

Transport and Access

Will access to the site, either by foot, road or by services, result in:

Disturbance of any conservation values?
Result in any impact upon the areas landscape features?
Lead to any erosion or slippage?

Landscape values

Damage to landforms.
Impingement on the landscape i.e. stands out as being 'non-natural'.
Damage to geological features.
Reduction of the natural character of wetlands, rivers and streams.
Loss of open space.

Any activity that has an impact on landscape values is likely to have other significant impacts on vegetation, wildlife or their habitat.
For the construction of any facility you are required to look at alternative locations outside the conservation area or the national park.
Can any existing buildings/structures be used?
Examine alternative designs that will blend the facility into the landscape. Designs that have relief, as few levels as possible, that use natural materials and colours that harmonise with the environment will be preferred.
Colour schemes should always have dark roofs and all colours should have low light reflectivity.
For telecommunications, look at alternative locations, co-siting and other options to blend in facility.

4.3. This report uses the following definitions:

- **Landscape character and amenity effects** – These effects derive from changes in the physical landscape, which may give rise to changes in its character and how this is experienced. This may in turn affect the perceived value ascribed to the landscape.
- **Visual effects** – Visual effects relate to the changes that arise in the composition of available views as a result of changes to the landscape, to people's responses to the changes, and to the overall effects with respect to visual amenity.

5. LANDSCAPE AND VISUAL ASSESSMENT

Landscape Character and Amenity Effects

5.1. Snow in summer is not a regular occurrence, and permanent snow in the alpine environment in this part of New Zeland is generally only present in areas above 2200masl. Therefore, the notion of a permanent snowfield on Coronet Peak, especially between the months of January to April will not be natural in character. However, it is relevant to consider the proposed snow activity in the context of the modified ski area landscape. The purpose and intent of all the modification in this part of Coronet Peak is to provide for snow sports activities (and some other recreation

activities such as mountain biking). The lower parts of the Coronet Peak Ski Area around the base building are highly modified in character. This modified character is attributed to the presence of snowmaking machines, chairlift terminals and towers, snow fences, modified landforms, road, tracks, signage, conveyors and the nearby Coronet Peak base building, associated structures and the ski club lodge buildings.

5.2. The proposed snowfield will be located within the highly modified character area of the Coronet Peak Ski Area's base facilities. It will be located between two existing conveyors. The snowfield will be well contained physically by the existing conveyors, the up-slope of the mountain to the north, the snow fence to the south, a rise in the landform to the east and the base building and associated structures to the west. This physical containment will see the unnatural character of the snowfield confined to a landscape character area which is already highly modified and unnatural in character.

5.3. The proposed snowfield will result in a **low**[1] adverse effect on landscape character as it will be set within an area which is already modified; where activity, especially snow sports activity is expected. The landscape character and amenity of the surrounding landscape, especially those areas near Rocky Gully, Green Gates and the upper ridges and summits will remain mostly natural in character and will be adversely affected to a **very low** degree by the proposed summer snowfield.

5.4. With regards to the proposed Snow Factory structure, it will be located on an existing bench below the Meadows Express Chairlift top station. This structure will be contained physically by a ridge to the west and the steep slope to the north. It will be set in an area dominated by the Meadows Express Chairlift. The built form of the Snow Factory will largely be amalgamated with the larger Meadows Express Chairlift and the top two towers.

5.5. Container-type structures are peppered throughout parts of the ski area and are largely an expected type of built form in this more modified ski area landscape, especially where lift towers,

[1] In assessing the extent of effects, this report uses the seven-point scale recommended by the *NZILA 6.0 Practice Support Documentation, Best Practice Note, Landscape Assessment and Sustainable Management 10.1*, (02/11/10). The scale is: Extreme, very high, high, moderate, low, very low, negligible.

earthworks, snow making machines, fences, signs and other ski area infrastructure is present. Container structures are temporary in character. The Snow Factory structure will result in a **very low** adverse effect on the landscape's character with particular regard to natural character and openness.

5.6. The proposed Snow Factory structure, snowfield and activity will result in no more than **low** adverse effects on landscape character and amenity and will not result in adverse cumulative effects, such that the overall landscape character will be changed.

Visual Effects

5.7. A set of photographs (**Attachment B**) are attached to this report which show the location of the proposed activities as viewed from the Wakatipu Basin and the slopes of Coronet Peak. These photographs have been taken at different times of the year. Coronet Peak has a different visual quality when it is with snow than when it is without. It is worth noting that in the autumn and in low snow periods, much of the piste on ski runs is packed with snow while other parts of the mountain is without total snow coverage. This creates a visual and character effect similar to the proposed snow activity.

5.8. The summer snowfield is proposed to be spread across a narrow bench which has been cut into the mountain's slopes to form the learner area. This bench is bound by a steep uphill slope to the north, a gentle rise to the east, a 1.8m high snow fence to the south and the base building and Meadows Chairlift bottom terminal to the west (**Attachment B, Image 10**).

5.9. The surrounding landforms and buildings will contain the snowfield visually such that it will generally only be seen from locations at a higher elevation than the snowfield (above 1,180masl). The existing snow fence will provide screening of the snowfield from wider basin views to the east and south. (**Attachment B, Image 1 - 6**).

5.10. The Snow Factory structure is proposed to be located on a small bench below the Meadows Express Chairlift top station. A ridge to the west of the Snow Factory structure and the steep uphill slope to the north will screen the Snow Factory from western and northern views. The elevated nature of the Snow Factory on a slope at an elevation of around 1,280 masl, and its

height will present the structure to wider basin views. Colour controls are recommended to mitigate the structure's visual effects.

Snow Factory Structure

5.11. When Coronet Peak is without snow, the existing structures, including the base buildings and lift stations better recede visually into the landscape patterns. The dark grey colour of the landscape's natural rock tors, the light grey colour of the exposed soil, the natural tawny colour of the tussocks, the green and red colours of the native scrubs and the shadows across the land all increase the landscapes visual absorption capacity when the mountain is without snow. When the mountain is with snow, the rock tors and the shadows created by the landform provides the main visual absorption capacity. During these snow-covered times, the existing ski area infrastructure is most visible.

5.12. The Snow Factory structure will be located on the mid-mountain slopes, near the Meadows Express Chairlift top station and the top two lift towers. The Snow Factory will be coloured a similar dark grey to the existing chairlift station, towers and other buildings on Coronet Peak.

5.13. From farther afield, at distances greater than 3km, the dark grey colour visually amalgamates structures with the natural patterns of the mountain landscape, both in summer and winter. It is considered in summer and winter the proposed snow factory will result in **negligible** adverse visual effects as viewed from farther afield at distances greater than 3km.

5.14. From closer locations, the Snow Factory will largely be screened by the ridge to the west and by the steep mountain slope above the structure. The Snow Factory will not be visible from Skippers Road (**Attachment B, Image 7**). The Google Earth view shed tool provides a rough indication of the Snow Factory's visibility from the upper mountain (**Figure 4**). The Snow Factory will largely only be viewed from near the base area and from the mountain slopes between Meadows Express Chairlift and Rocky Gully. From these areas the structure will not meaningfully increase the visual effects of the existing snowfield infrastructure and will result in no more than **low** adverse visual effects.

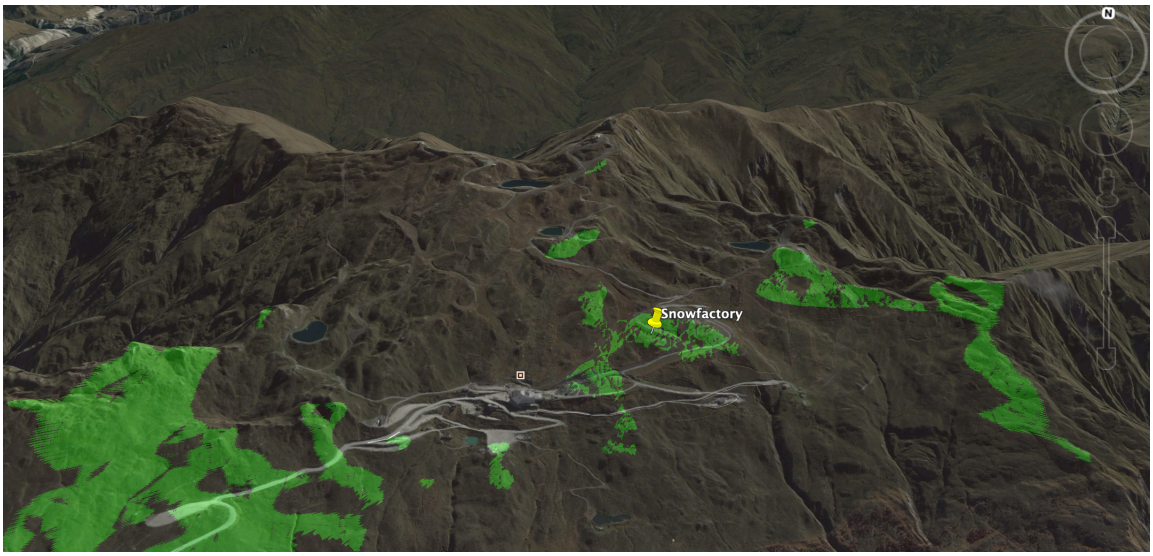

Figure 4: Google Earth Viewshed tool demonstrating the general areas where the Snow Factory may be visible.

5.15. Overall, the proposed Snow Factory will result in a **low** adverse visual effect. This effect will be highest in winter when the landscape's visual absorption capacity is the lowest. This low adverse effect will be experienced only in the context of other existing ski area infrastructure.

5.16. The proposed snow factory structure will not result in adverse cumulative effects such that the overall visual amenity or landscape character will be changed.

Summer Snowfield

5.17. As discussed above, the summer snowfield is well contained visually by natural and man-made elements. The snow fence to the south of the proposed snowfield provides the primary visual mitigation from views farther afield. There are gaps between the rails in the snow fence and it is difficult to assess the likely visibility of the snowfield through these gaps. It is considered that the snow fence will provide a high degree of visual mitigation. A condition is recommended that if approved, the visibility of the snowfield shall be assessed further during the first season of the summer snow operation and if it is assessed as visible from wider valley views, the screening effect of the fence shall be increased.

5.18. It is considered that the existing snow fence and proposed visibility condition will ensure the proposal will result in no adverse visual effects on receptors in the valley floor (**Attachment B, Image 1 - 6**).

5.19. The snowfield will not be visible from Skippers Road (**Attachment B, Image 7**) but it may be visible from the Mt Dewar Track above Coronet Peak Road. From this public track the snowfield may be seen at a distance of approximately 3.8 kilometres away. It is considered that the snowfield will appear as a very small part of the wider visible landscape and will result in **very low** adverse visual effects on users of the Mt Dewar Track.

5.20. From the lower parts of Coronet Peak Road, Coronet Peak itself is widely visible and the mountain forms part of the visual amenity. As a receptor travels higher on the mountain, the mountain becomes less visible in its entirety and the view out across the valley becomes the dominant amenity.

5.21. The rolling landform and steep slope above the snowfield largely screen it from many views within the folds of the mountain. The Google Earth view shed tool provides a rough indication of the snowfield visibility from the upper mountain (**Figure 5**).

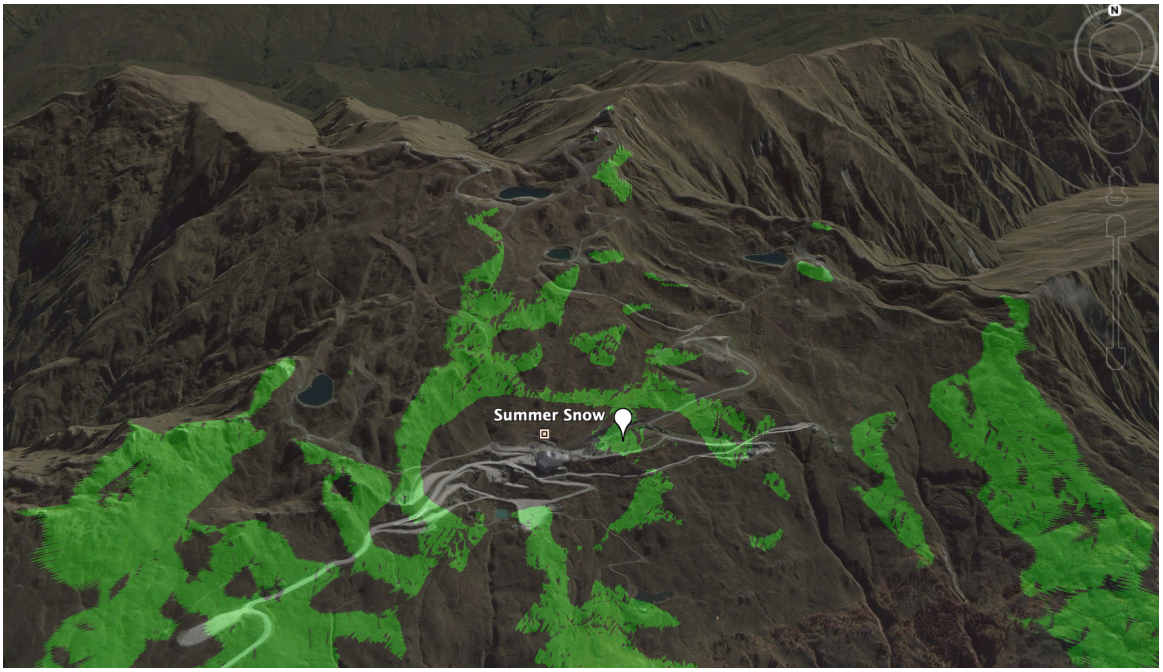

Figure 5: Google Earth Viewshed tool demonstrating the general areas where the summer snowfield may be visible.

5.22. In summer, the upper mountain slopes are used by a variety of recreationalists and naturalists and the summer snowfield will only be visible in the context of the existing base facilities. Where visible, the matt white colour of the snow will contrast with the natural patterns and the snowfield will be highly visible. It is considered that the proposed snowfield will result in adverse visual effects to a **moderate** degree when receptors are in the immediate vicinity (approximately 500m) of the snowfield, in the areas near the base building (**Attachment B, Image 9**). This area is already modified in character. The snowfield will not be visible or form part of any valued view that is frequented by visitors to Coronet Peak seeking the scenic qualities across the wider Wakatipu Basin. Most of those views are held from the roads below the snowfield.

5.23. From the higher parts of the mountain above 1,100masl, the visual amenity is embodied in the vast panoramic view away from the mountain (**Attachment B, Image 8**). Receptors who can view the snowfield from these higher, more distant places will experience a **low** to **very low** adverse visual effect. Distance will render the snowfield less and less dominant and the wider panoramic views more dominant. While parts of the snowfield may be visible from some upper, distant parts of the mountain, the wider visual amenity will be adversely affected to no more than a **low** degree.

5.24. The proposed snowfield will not result in adverse cumulative effects such that the overall visual amenity or landscape character will be changed.

6. CONCLUSION

6.1. The proposal seeks to establish a Snow Factory structure and summer snowfield within a modified part of Coronet Peak. The snowfield will be well contained by existing landform and structures such that it will not be visible from areas at, or below the elevation of the snowfield. The Snow Factory will be coloured to match the existing ski area structures and natural patterns.

6.2. It is considered that the Snow Factory structures will be similar in character to existing and expected structures in this part of a more modified ski area landscape. The Snow Factory will be well absorbed within the scale and character of the ski area. It will result in no more than **very low** adverse visual and character effects.

6.3. The snowfield will be an unnatural element confined to an area already affected by ski area modification. The snowfield will result in low adverse effects on natural character but will not change the character of the landscape. In terms of visual effects, there will be a moderate adverse visual effect on receptors in the immediate area, where the snowfield will dominate the view. However, from most of the mountain the snowfield will not be visible, or will only be partially visible and the wider panoramic views will remain dominant. From these more distant and elevated views the snowfield will result in **negligible to low** adverse visual effects.

6.4. The proposed Snow Factory and snowfield will not result in adverse cumulative effects such that the overall visual amenity or landscape character of Coronet Peak will be changed.

7. RECOMMENDATIONS

- *The 'Snow Factory' container structures shall be colored in a dark grey to brown colour with a LRV of between 20% and 7%.*
- *The summer snowfield shall be reasonably difficult to see from the Wakatipu Basin, the Coneburn area and the surface of Lake Wakatipu. During the first season of summer snow operation the visibility of the snowfield shall be assessed by a suitably qualified professional to determine if the snowfield is visible, beyond the reasonably difficult to see threshold. If the summer snowfield is visible, the operator must mitigate those effects by extending or increasing the screening effect of the existing fence to the south of the snowfield or by other means.*

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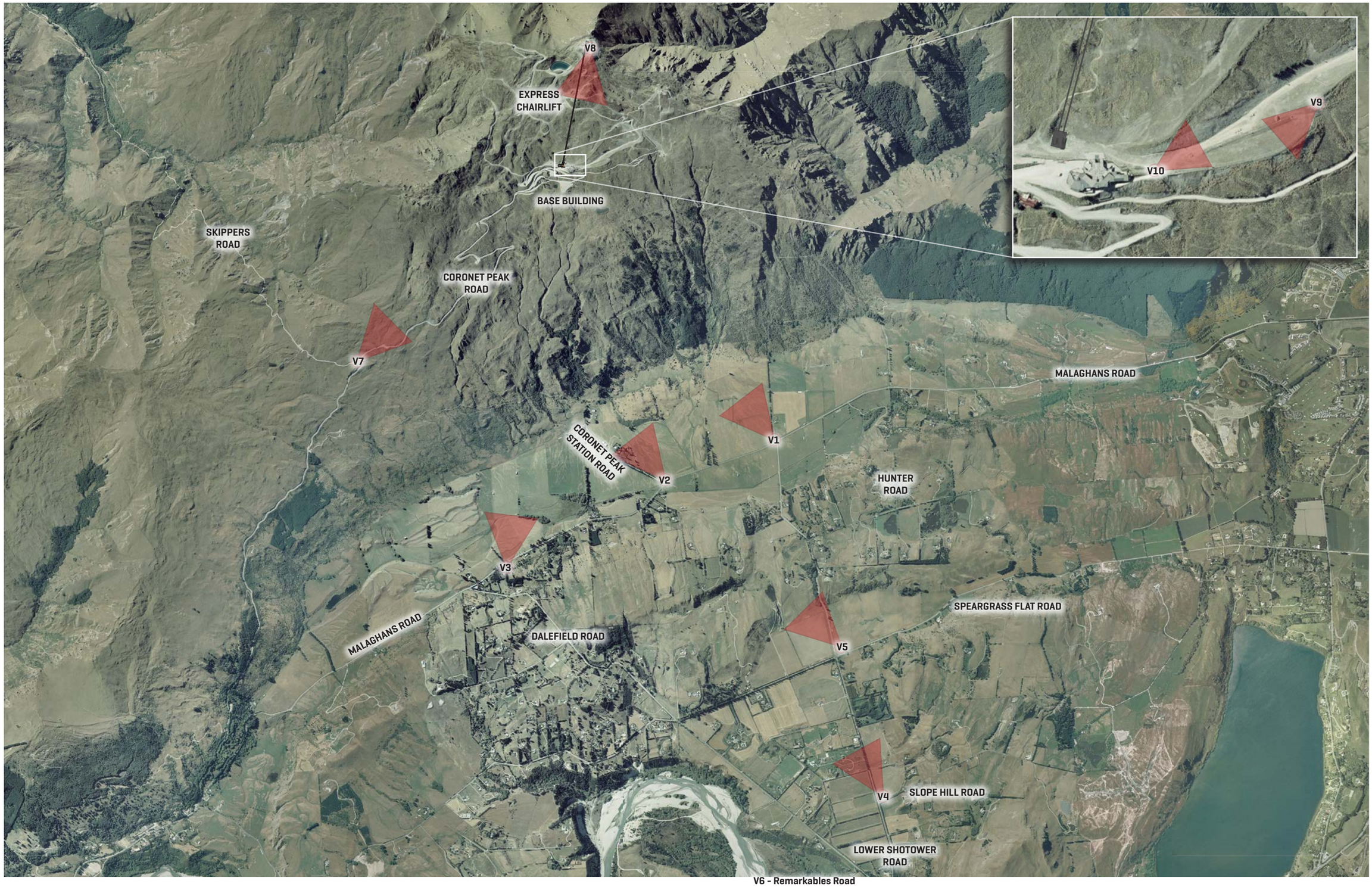
NZSKI LTD. - Coronet Peak Summer Snow

Location Map

14 June 2019



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NZSKI LTD. - Coronet Peak Summer Snow
View Point Location Map
14 June 2019

2 October 2018

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Reference : PA18215 IS01

NZSKI LTD. - Coronet Peak Summer Snow

View 1 - Hunter Road / Malaghans Road

14 June 2019

2 October 2018

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Reference : PA18215 IS01

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View 2 - Malaghans Road / Coronet Peak Road

14 June 2019

2 October 2018

patch

Reference : PA18215 IS01

NZSKI LTD. - Coronet Peak Summer Snow
View 3 - Malaghans Road / Dalefield Road
14 June 2019

2 October 2018

patch

Reference : PA18215 IS01

NZSKI LTD. - Coronet Peak Summer Snow
View 4 - Lower Shotower / Queenstown Trail
14 June 2019

2 October 2018

patch

Reference : PA18215 IS01

NZSKI LTD. - Coronet Peak Summer Snow

View 5 - Hunter Road / Speargrass Flat Road

14 June 2019

21 February 2019

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Reference : PA18215 IS01

NZSKI LTD. - Coronet Peak Summer Snow
View 6 - Remarkables Road
14 June 2019

5 June 2019

patch

Reference : PA18215 IS01

NZSKI LTD. - Coronet Peak Summer Snow
View 7 - Skippers Road / Coronet Peak Road
14 June 2019

9 May 2019

patch

Reference : PA18215 IS01

NZSKI LTD. - Coronet Peak Summer Snow
View 8 - Coronet Express Top Station
14 June 2019

5 June 2019

patch

Reference : PA18215 IS01

NZSKI LTD. - Coronet Peak Summer Snow
View 9 - Magic Carpet Conveyor Lift
14 June 2019

5 June 2019

patch

Reference : PA18215 IS01

NZSKI LTD. - Coronet Peak Summer Snow
View 10 - Meadows Express Station
14 June 2019