Re: Ref 69588-SKI

Re: CONCESSION APPLICATION: 69588-SKI: REQUEST FOR FURTHER INFORMATION

As per the letter dated the 28th September 2018 requesting more information on the following subjects please find below the responses from NZSki to address the 5 points raised by DOC.

1) A detailed site plan: Enclosed. Reference Additional Information Attachment [1] Overall Site plan.

2) A comprehensive summary of the project: Enclosed

3) Clarity on the ecological effects of the individual elements of the works proposed. The ecological assessment fails to include any assessment of the effects of proposed new chairlift construction or proposed snow making facilities, including fragmentation of existing vegetation:

   As requested, the following discussion provides further information on the assessment of effects for the chairlift and snowmaking facilities, and where applicable references relevant sections of the of E3 ecological assessment – which was attached to the original concession application as Appendix [F].

New Chair lift Construction:

- Base Terminal, Towers 1 & 2: are all located within the existing car park area of the Drop Zone. This area is highly modified and as a car park with continual vehicle access and is barren of any vegetation.

Figure 1. Yellow arrow showing site of bottom terminal, tower 1 & 2 of chairlift in existing carpark/drop zone.

- Tower 3: Is founded on rock (see Figure 3 below). There is lichen vegetation on the rock and a mixture of tussock & small grasses surrounding the base of the rock. The rock is the end of a ridge of rock spreading south of the site.
    - The foot print of the foundation is all that is excavated out of the rock face. Any debris is placed on surrounding rock areas and once the concrete foundation is set some elements of rock will be placed back around the base to minimise visual disturbance. Any excess rock will be trucked from site.
    - As outlined in E3Scientific Ecological Assessment refer page 5 Fig 2 and reprinted below; the photo shows a dotted black line which is the track required to access Tower 3 and the locations of Towers 3, 4 and 5. Reference is also made to construction of the track on page 8 paragraph 2.

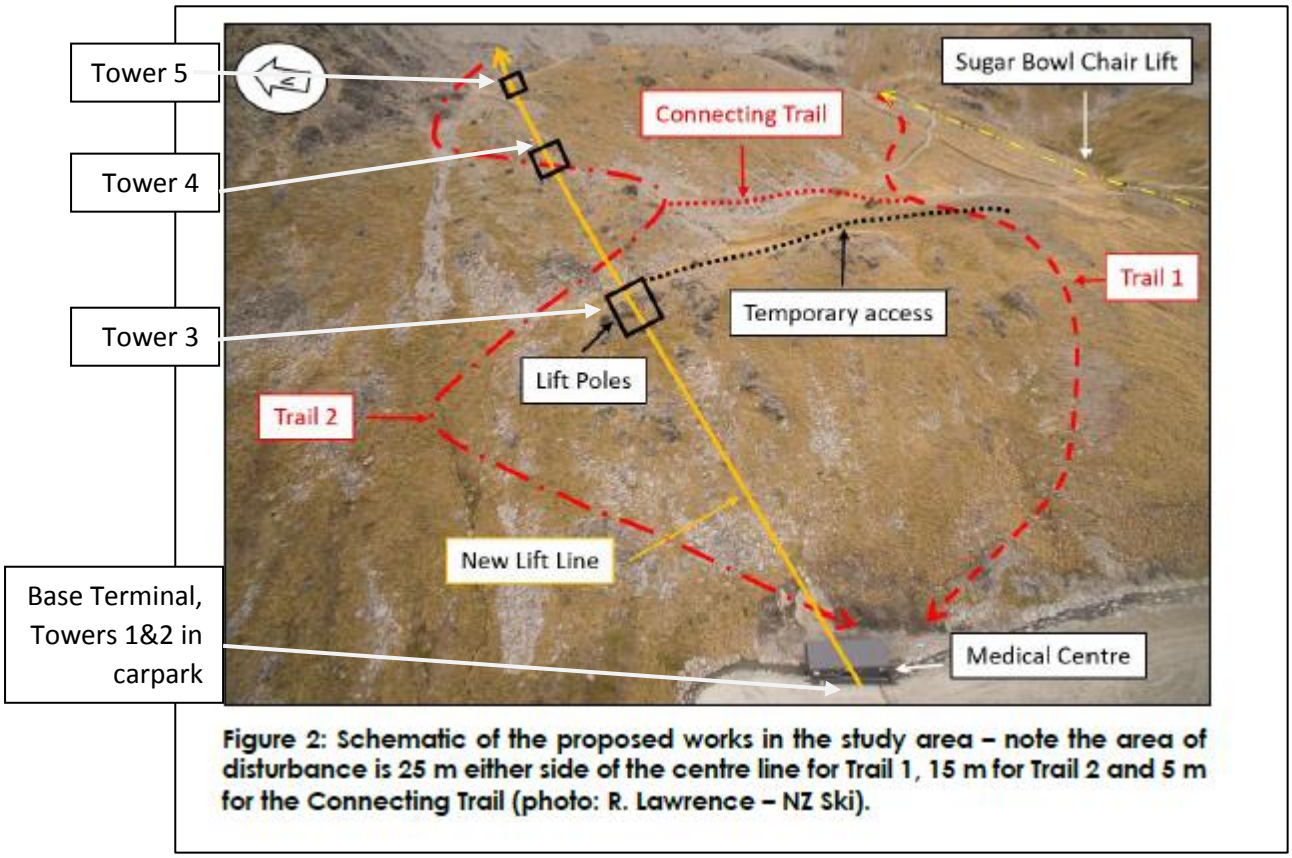

Figure 2: E3 Ecological Report

Figure 3: Site of Tower 3 foundation.

- Tower 4: Is sited on the east edge at chainage 375m of the proposed Sugar Stash trail. As trail development progresses a track will be formed to provide vehicle access to site. All material removed from the foundation excavation is proposed to be utilised in the trail development except for surface vegetation which will be relocated to the base of the tower. Foliage consists of small grasses, sparse cushion fields and tussock plants.
    - As outlined in E3Scientific Ecological Assessment (refer page 5 Fig 2) the photo shows the locations of Towers 3, 4 and 5.

Figure 3. Looking from Tower 3 site up to Tower 4 (yellow arrow)

- Tower 5: Is sited adjacent and south west of the proposed Sugar Stash trail at chainage 530m. The site has dense cover of Macra tussock which will be removed and placed on the existing

Stash trail until the concrete foundation is laid and will then be relocated back to surround the base of the tower. Any excess material/fill will be trucked and laid on the proposed trail development in the area.

- Tower 6, 7,8,9 & 10 & Top station: These are all situated amongst open rock. No vegetation is present. All towers are located within or at the edge of the proposed trail development leading away from the top of the proposed chair lift. All towers are founded on solid ground, no water courses, wetlands or fragile environments have been encountered while assessing these tower locations.

Snow making Installation:

- The ecological effects of the proposed snowmaking installation are addressed within the E3 ecological assessment, as the trenching required for the snowmaking installation is to be formed within ski trails (modified terrain) at a depth of 1.5m in ground.

- All trenching and burial of pipe, electrical cabling, air lines and earthing strap is carried out in a single trench. All excavated trench material is set to one side while equipment is placed in the trench, fines material is placed over and around the pipse and cabling before excavated material is relocated to backfill the trench.

- After the snow making installation is complete any surface vegetation will be reinstated back over the backfilled trenches in accordance with the agreed DOC revegetation protocols

4. Details on mitigation works and restoration proposed.

i) revegetation plans for the ski trails and associated cut and fill areas i.e. what re-vegetation is proposed on the new ski trails; confirmation if all the new cut and fill areas will be re-vegetated and if the coverage of replanted vegetation will be similar to the current cover density.

All revegetation protocols will be followed as per the established "Revegetation Protocols" documented and outlined between the Department of Conservation and NZSki Ltd 2015. This document has been supplied as part of the overall application on the 2nd August 2018.

With any earthworks not all vegetation can be saved, dependent on the type of vegetation. For example tussock is very hardy and survives in most cases where small cushion fell field vegetation is extremely hard to retain.

The Remarkables (RE) have and will where possible hand transplant vegetation (mainly small grasses, Poa Colensoi for example) into baskets and store until trail works are complete and revegetation protocols take place.

RE has also established reclamation of the landscape utilising schist veins which reflect the surrounding landscape. These are established where revegetation of areas is not possible through lack of product.

The goal will be to have, over time, a similar coverage of vegetation to the existing environment. Where not enough vegetation is available to fully cover areas a longer term approach is established. This involves both collecting seed from site and hand propagating it into open ground areas (where soil sits) or sending seed away to be germinated and returned to site at a later date for planting out. It must be realised that there are already open areas across the basin and along the proposed trail development where vegetation is non-existent. RE will make every effort to retain existing flora relative to what is already established.

ii) restoration work proposed associated with each chairlift tower.

The restoration of vegetation and landscape at the base of the tower foundations will be very easily re-laid. All vegetation that was at the site prior will be placed/bedded in after construction works are complete. Any tracks to the site that had to be created for access will be reinstated with the foliage cover that was present prior to development. A digger will relocate the vegetation clumps, before manual labour follows to ensure that plants are properly bedded and roots underground.

iii) the proposed restoration of fellfield and cushionfields vegetation, including the extent of this revegetation (Note: revegetation of fellfield and cushionfields vegetation is considered more difficult than for snow tussockland)

Where cushion fields and fellfield vegetation exist any previous works in this environment has proved it is very hard to retain stock once disturbed. The plan with this environment is to:

a. Move and disturb as little as possible.
b. Where possible use digger to uplift bigger sods with as much soil mass as possible. Place only once off site so the next move back onto site will be by picking up with digger bucket and laying on ground in final location.
c. Lay in a mass, connected, to reduce drying out and wind erosion during period between removal and relocation.
d. Collect seed from growing plants to hand propagate in same area at a later date providing there is a good soil mass to place seed in.

It should be noted that the Sugar stash trail was modified to avoid the area of significant established cushionfield identified in the E3 ecological assessment at the northern side of the trail (ref E3 report, Fig 5).

iv) restoration and revegetation associated with any facilities that are to become redundant. Consideration of any additional mitigation or offsetting proposed.

The infrastructure from the existing Sugar chairlift will be removed as described in the project summary. Bare ground will be exposed where the old chairlift end terminals/stations and towers are removed. It is proposed to divide tussock plants to spread stock to cover in areas with tussock surrounds, and to mitigate the visual effects by using rock to laying schist seams amongst areas surrounded by cushion fields.

v) assessment of the net loss of vegetation i.e. the balance between the area to be disturbed and that to be restored into native vegetation.

As outlined in the E3Scientifc Ecological Assessment under the heading "Description of activity and Existing Environment" clause 2.2 page 7 – "Of the 122,000m^2 of trail development approximately 77,678m^2 is covered by indigenous vegetation."

The upper terrain exists of massive rock boulders down to schist debris that has fallen from the steep faces above. Little to no vegetation is evident in the upper reaches of the proposed trail development. Of the 77,678m^2 where vegetation does exist on the lower terrain there is approximately 20,000m^2 of existing cushion and fellfield vegetation. Up to 80% of this vegetation maybe initially lost, however a longer term recovery of this terrain is programmed to occur by collecting seed from growing plants to hand propagate over time. Where tussock is the main cover of the remaining 57,678m^2 we are confident of retaining at least 80% of this stock after relocation into its final position.

5. *Wetlands: Discussion on measures to mitigate the loss of any wetland area. Also, discussion on measures to be taken to avoid any impact from sedimentation, hydrological change or other impact, upon wetlands adjacent to the new ski trails. (Note: the application states that the proposal avoids some larger more important wetlands).*

Trail Development – Avoidance of Significant Wetlands

The proposed trail network has been developed in close conjunction with the ecological team in order to mitigate the effects on wetlands.

The proposed trail network was reviewed against both the E3 ecological assessment and the existing wetlands surveyed and recorded as per the 2011 "Assessment of Wetlands at The Remarkables Ski Area" attached. The areas mapped by Wildlands Consultants are identified as areas of significant ecological value and are no go zones identified in the Wildlands report as wetland 10,11 & 12.

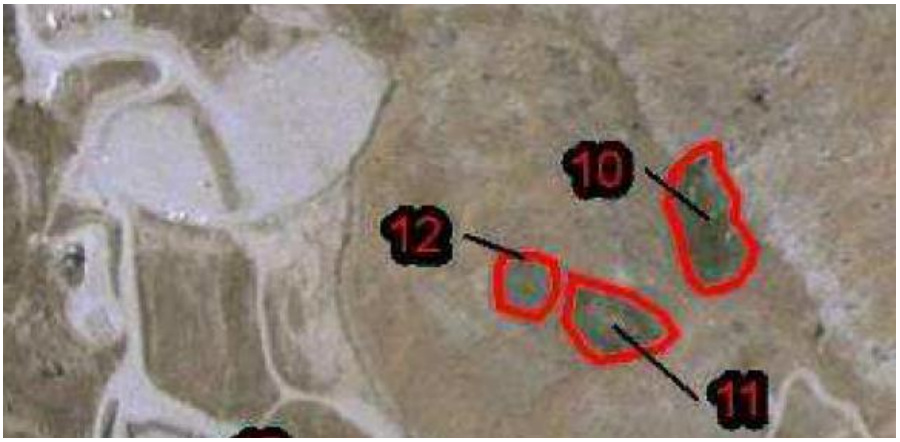

Figure 4: Except from Assessment of Wetlands at the Remarkables Ski Area, Appendix 1

The trails initially proposed by NZSki in early plans were revised after ongoing consultation with E3 to ensure that the developed trails and their cut and fill batters did not encroach upon these significant wetlands. As per E3Scientifc's Ecological Assessment Fig5, pg14 these trails were routed around these mapped significant wetland areas wetlands (eg Wetlands 10,11 & 12), even through from a trail design perspective, it wasn't the optimal terrain layout.

Trail Development – Small Seepage Area, proposed mitigation alternative option

There is also a small seepage area close to the Rastus Burn for which this concession application sought earthworks over for creation of the proposed Sugar trail (ref E3 report, Fig5, pg14). This was because this area was only described as a seepage by E3; was very small, and not identified as a wetland within the Wildlands report. It is at a crucial trail junction where we anticipate a large congregation of skier traffic.

Fig 5, E3 Report, Seepage Area identified in Purple, with preferred trail layout

If DOC consider that the potential reclamation of this seepage area may delay or inhibit the approval of this concession application, an alternative earthworks proposal is attached for DOC consideration. This proposal severely the trail width in this bottom section to completely prevent earthworks through the small seepage area. However this is non-optimal from a skier experience viewpoint as it may increase the potential for skier accidents as skiers converge in this area of the trail where it narrows.

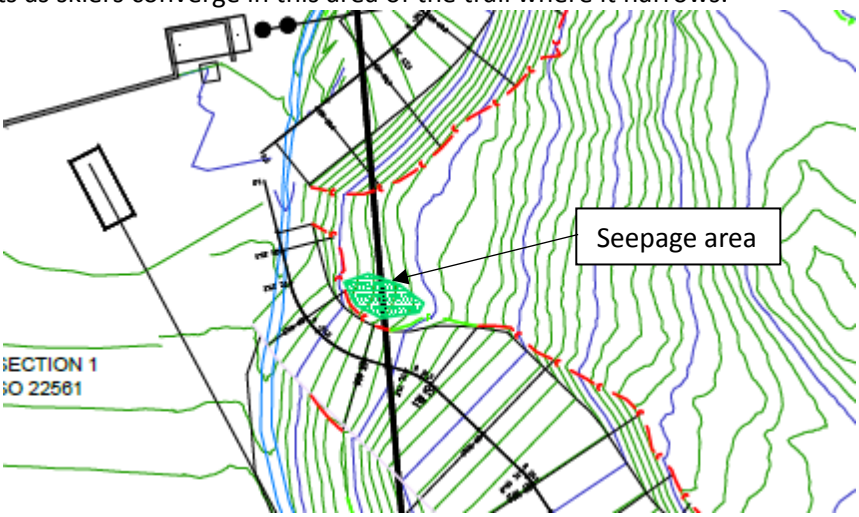

Fig 6, Revised lower trail network earthworks plan, that avoids the seepage area

Mitigating the Effects – Sediment Control Plan

As there are earthworks in close proximity to identified wetlands, sediment control measures will be implemented, as outlined in the "Site Sediment and Erosion Control Plan". This plan applies to any case where there is potential for sediment movement across all areas of the proposed development project – including prevention of sediment flow into wetlands. This has been noted in Section 6.3 of the E3 Ecological Assessment.

Mitigating the Effects - Construction Management

The temporary access trail route to the Tower 3 location has been routed to avoid the significant wetland areas (10,11&12). Refer to E3 report pg 8 paragraph 2.