



# Statement of Environmental Effects

## Alpine Coaster

Thredbo Alpine Resort  
Kosciuszko National Park, NSW

August 2022



Department of Planning  
and Environment

*Issued under the Environmental Planning and Assessment Act 1979*

Approved Application No DA 22/11272

Granted on the 31 March 2023

Signed S Butler

Sheet No 1 of 58

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# Executive Summary

Details	
<b>Development Proposal</b>	<p>This Statement of Environmental Effects (SEE) has been prepared to support the Development Application (DA) for the Alpine Coaster and Associated Works (hereinafter referred to as the Development). The Applicant for the DA is Kosciuszko Thredbo Pty Ltd (KT) (ABN 95 000 139 015).</p> <p>The Development is located within Thredbo Alpine Resort (Thredbo), Kosciuszko National Park (KNP), approximately 35 kilometres (km) south-west of Jindabyne, New South Wales (NSW).</p> <p>The purpose of the Development is to diversify KT's recreational activity offerings within the resort through the provision of a year-round rail-guided toboggan ride.</p> <p>The Development comprises the following works:</p> <ul style="list-style-type: none"> <li>• Vegetation clearing, trenching and earthworks;</li> <li>• Construction of alpine coaster, including a bottom and top station and track alignment;</li> <li>• Relocation / installation of snowmaking infrastructure;</li> <li>• Reconfiguration of existing car parking and pedestrian access;</li> <li>• Installation of fencing, lighting and signage; and</li> <li>• Installation of electricity services.</li> </ul>
<b>Site Details</b>	<p><b>Lot Description:</b> Lot 876/DP 1243112</p> <p><b>Total Development Footprint:</b> approximately 737 m<sup>2</sup></p> <p><b>Zoning:</b> Kosciuszko National Park, C1: National Parks and Reserves</p>
<b>Applicant</b>	Kosciuszko Thredbo Pty Ltd
<b>Key Planning Considerations</b>	<p>The Development is subject to the requirements of the <i>State Environmental Planning Policy (Precincts – Regional) 2021</i> (Precincts – Regional SEPP). As such, the Department of Planning and Environment (DPE) Minister for Planning is the consent authority for the DA.</p> <p>The Development has been assessed against the relevant requirements of the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth) (EPBC Act), <i>Environmental Planning and Assessment Act 1979</i> (EP&amp;A Act), <i>National Parks and Wildlife Act 1974</i> (NPW Act), <i>Biodiversity Conservation Act 2016</i> (BC Act), <i>Water Management Act 2000</i> (WM Act) and associated statutory instruments.</p> <p>The Development is consistent with the <i>Snowy Mountains Special Activation Precinct Master Plan</i> (DPE 2022) (Snowy SAP Master Plan).</p>
<b>Key Environmental Matters</b>	<p>The Development has been designed to minimise impacts on the surrounding environment. The Development will require the clearing of approximately 0.29 ha of Subalpine Woodland and up to 10 m<sup>2</sup> of Subalpine Riparian Scrub. ELA (2022) concluded the Development is unlikely to have a significant effect on threatened species, populations or ecological communities (or their habitats) listed under the BC Act. Further, the Development is unlikely to have a significant impact on any MNES or Commonwealth land listed under the EPBC Act, therefore referral to the Australian Government Minister for the Environment is not required. With the implementation of the proposed environmental controls and safeguards, the impacts to the natural environment are considered acceptable.</p>

	<p>No impacts to Aboriginal or European cultural heritage are proposed. The Development has been designed to fit in with the existing built form within the locality, as such no significant adverse impacts to the built environment are proposed.</p> <p>The socio-economic impacts of the Development will be positive through the provision of a year-round recreational activity that will contribute to the diversification of activities offered within Thredbo. The Development will also generate direct and indirect economic impacts (i.e. construction and operation jobs and local businesses may experience increased revenue from the Development in the form of purchase of goods and services).</p> <p>The Development is considered to be within the public interest given –</p> <ul style="list-style-type: none"> <li>• The Development is consistent with the aim and objectives of the Precincts – Regional SEPP;</li> <li>• The Development is consistent with the planned land use outcome for the site within the Snowy Mountains SAP Master Plan;</li> <li>• The Development is compatible with the site;</li> <li>• The Development will not have any significant adverse environmental impacts;</li> <li>• The Development is consistent with the principles of ESD.</li> </ul> <p>In summary, the Development will largely provide a positive contribution to the resort and diversification of year-round tourism offerings within the Snowy Mountains.</p>
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## Cross-reference Table – Mandatory Application Requirements

The following table provides a cross-reference to the mandatory application requirements for Development Applications outlined in the Department of Planning and Environment (DPE) *Application requirements* (March 2022).

Requirement	Reference in this SEE
<b>1.1 Information requirements for development applications</b>	
a. the name and address of the applicant	Executive summary
b. a description of the development to be carried out	Section 3
c. the address, and formal particulars of title, of the land on which the development is to be carried out	Section 2 <b>Error! Reference source not found.</b>
d. an indication as to whether the land is, or is part of, critical habitat	Section 6.2
e. an indication as to whether the development is likely to significantly affect threatened species, populations or ecological communities, or their habitats, unless the development is taken to be development that is not likely to have such an effect because it is biodiversity compliant development	Section 7.3
f. the estimated cost of the development	Detail provided separately as part of the DA.
g. evidence that the owner of the land on which the development is to be carried out consents to the application, but only if the application is made by a person other than the owner and the owner's consent is required by the Regulation	Detail provided separately as part of the DA.
h. a list of the documents accompanying the application	<ul style="list-style-type: none"> <li>Alpine Coaster_Estimated Cost of Works_ 20220801</li> <li>Statement of Environmental Effects</li> <li>Appendix B – Site Plans and Drawings <ul style="list-style-type: none"> <li>Alpine Coaster Site Plans</li> <li>Snowmaking trench section plans v.1</li> <li>TechnoAlpin Steel Pit Plan</li> <li>Tower Snowmaking Gun Plan</li> <li>VT Snowmaking Mains Proposal v8</li> </ul> </li> <li>Appendix C – Desktop Searches <ul style="list-style-type: none"> <li>AHIMS_22.07.22</li> <li>PMR_21.07.22</li> </ul> </li> <li>Appendix – D Geotechnical Investigation Report</li> <li>Appendix E – Flora and Fauna Assessment</li> <li>Appendix F – Site Environmental Management Plan</li> </ul>
i. a Statement of Environmental Effects. See section 1.2 below for detailed requirements	This document addresses the requirements for a SEE.
j. a site plan of the land.	Appendix B

k. drawings of the development.	Appendix B
<b>Table 1 – essential document requirements for a development application</b>	
l. an A4 plan of the building that indicates its height and external configuration, as erected, in relation to its site	Appendix B
<b>Section 1.2 Requirements for a Statement of Environmental Effects</b>	
a. the environmental impacts of the development	Section 7
b. how the environmental impacts of the development have been identified	Section 5
c. the steps to be taken to protect the environment or to lessen the expected harm to the environment	Section 8
d. any matters required to be indicated by any guidelines issued by the Planning Secretary	This SEE has addressed the applicable guidelines for the Development. Relevant guidelines have been referenced throughout.
e. drawings of the proposed development in the context of surrounding development, including the streetscape	Appendix B
f. development compliance with building heights, building height planes, setbacks and building envelope controls (if applicable) marked on plans, sections and elevations	Appendix B
g. drawings of the proposed landscape area, including species selected and materials to be used, presented in the context of the proposed building or buildings, and the surrounding development and its context	Section <b>Error! Reference source not found.</b> , Appendix B and Appendix F
h. if the proposed development is within an area in which the built form is changing, statements of the existing and likely future contexts	Sections 6.4 and <b>Error! Reference source not found.</b>
i. photomontages of the proposed development in the context of surrounding development	Full suite of photomontages not provided. Refer to Figures 4 and 5, and Appendix B for summer/winter render and 3D images.
j. a sample board of the proposed materials and colours of the facade	Appendix B
k. detailed sections of proposed facades	Appendix B
l. if appropriate, a model that includes the context.	-



# 1 Introduction

This Statement of Environmental Effects (SEE) has been prepared to support the Development Application (DA) for the Alpine Coaster and Associated Works (hereinafter referred to as the Development). The Applicant for the DA is Kosciuszko Thredbo Pty Ltd (KT) (ABN 95 000 139 015).

The Development is located within Thredbo Alpine Resort (Thredbo), Kosciuszko National Park (KNP), approximately 35 kilometres (km) south-west of Jindabyne, New South Wales (NSW).

The purpose of the Development is to diversify KT's recreational activity offerings within the resort through the provision of a year-round rail-guided toboggan ride.

Development in NSW alpine resort areas is governed by the *State Environmental Planning Policy (Precincts – Regional) 2021* (Precincts – Regional SEPP). The Department of Planning and Environment (DPE) Minister for Planning is the consent authority for development in the alpine resort areas under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This SEE and supporting reports have been prepared in accordance with the relevant statutory requirements.

## 1.1 Purpose

The purpose of this SEE is to:

- describe the proposed development in relation to the existing environment;
- evaluate the proposed development against the relevant statutory planning framework; and
- assess the following key issues in relation to the proposed development –
  - the impacts of the development on the natural, human and built environment and how these impacts have been identified
  - mitigation and management measures that will be taken to protect the environment or to reduce expected environmental harm
  - any specific matters identified by the Secretary of DPE.

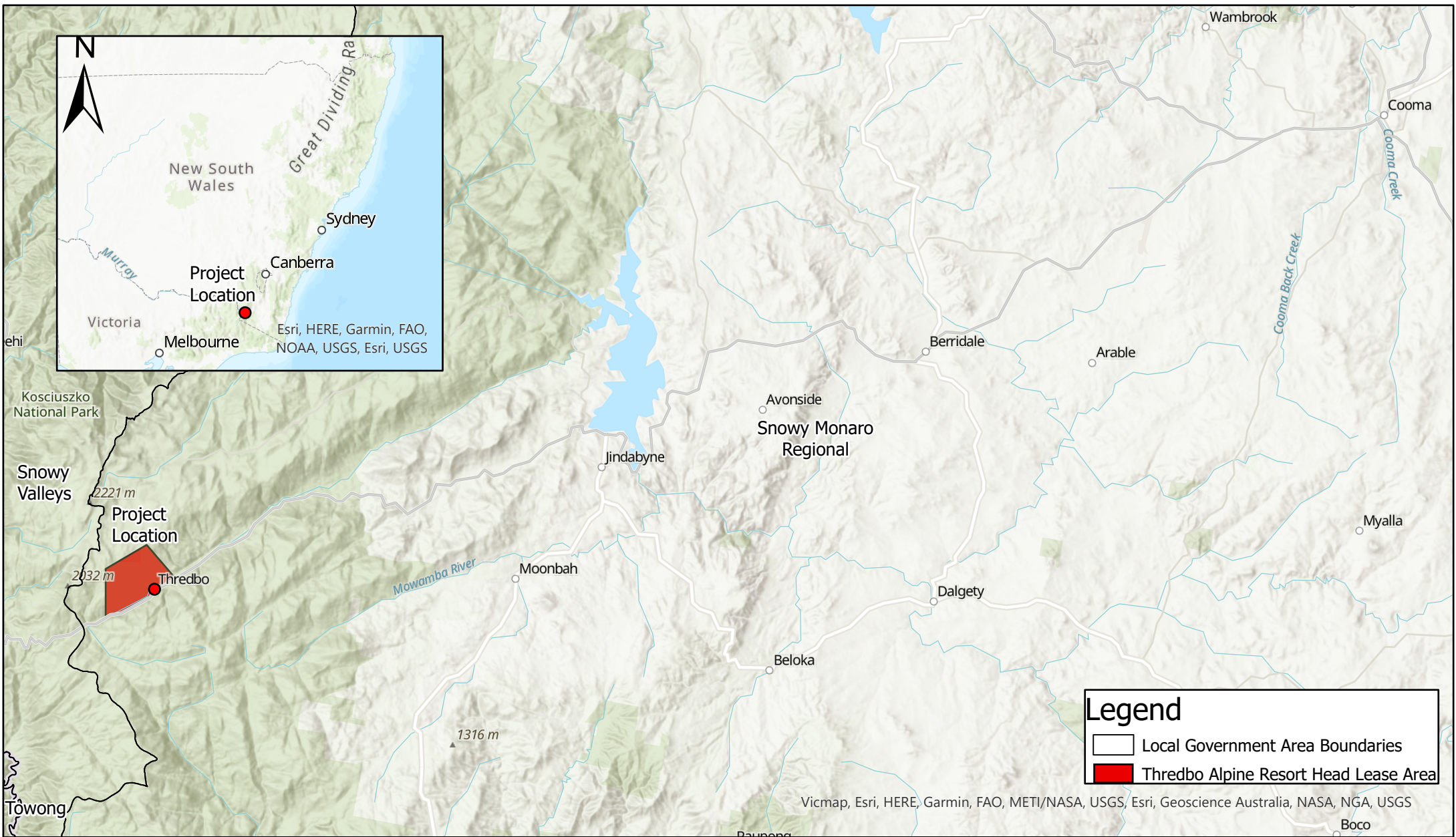
# 2 Site Context

## 2.1 Regional Context

The Development site is located in Thredbo, within the southern part of KNP, approximately 35 km south-west of Jindabyne in the Snowy Monaro Regional Council Local Government Area (LGA) (refer **Figure 1**).

## 2.2 Local Context

The Development site is located between the Valley Terminal base station and the Cat Shed, Thredbo NSW 2625 to the north west of the main village on land formally described as Lot 876/DP1243112 (**Figure 2**).



Scale: 1:305,832

3 1.5 0 3 6 9 12 Kilometers

Map Projection: Universal Transverse Mercator  
Horizontal Datum: GDA 2020  
Grid: GDA 2020 MGA Zone 55



**FIGURE 1: REGIONAL SITE  
CONTEXT**

Revision: A  
Date: 7/06/2022  
Produced By: KO  
**Figure 1**



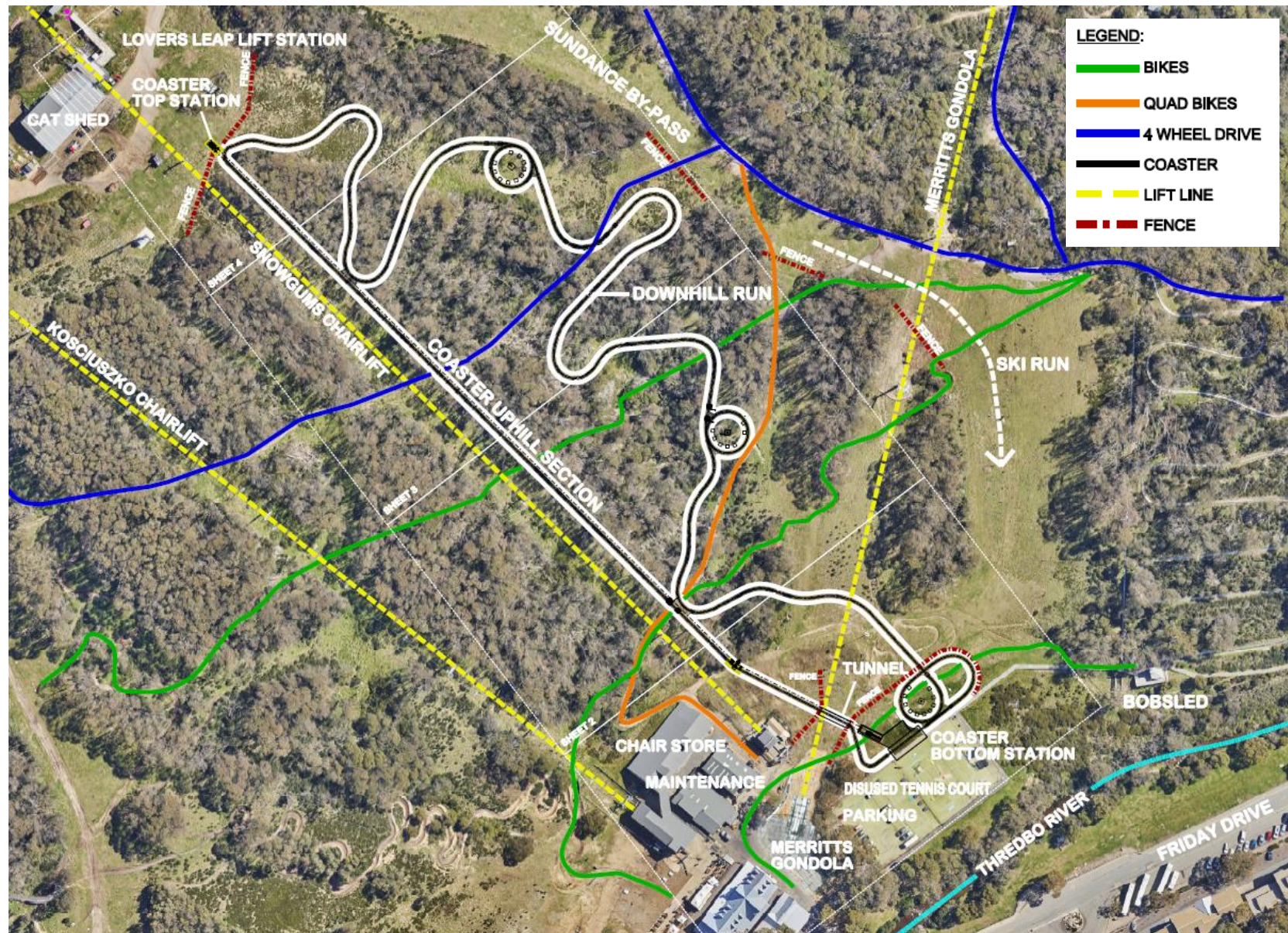


Figure 2: Project Location (Source: DJRD 2022)



## 2.3 Site Description and Suitability

The Development site comprises:

- The existing staff carpark / disused courts (hardstand area) adjacent to Merritts Gondola;
- Highly disturbed ski terrain (Sundance and Lovers Leap runs);
- Snowgums Chairlift and Merritts Gondola cleared corridor;
- Areas of undisturbed and disturbed native vegetation; and
- Mountain bike and vehicle access tracks.

The land uses within the Development site comprises recreational use and related infrastructure.

The Development site is considered suitable for the Development based on the following:

- The site provides the appropriate slope for the gravity-based ride which was informed by the early site analysis undertaken by Wiegand (Alpine Coaster manufacturer) in 2017;
- The base station area is previously disturbed and located within close proximity of the existing Valley Terminal resort base station facilities which offer guest services (i.e. Ticketing office), retail shops, bathrooms and hospitality venues;
- The base station is located within close proximity of the existing Merritts Gondola which provides uphill access for other recreational activities offered in the resort; and
- The majority of the infrastructure is located within highly disturbed ski runs and its location has been strategically designed to ensure that it does not conflict with other winter or summer operations and recreational activities, such as skiing, snowboarding, grooming operations, walking or mountain biking.

## 2.4 Zoning

The site is zoned as C1: National Parks and Nature Reserves (NSW Government 2022a).

## 2.5 Site Access

The site is accessible off Friday Drive, via the bridge (crossing Thredbo River) at Valley Terminal. Friday Drive is the main road through the village, accessible via the Alpine Way (refer **Figure 3**).

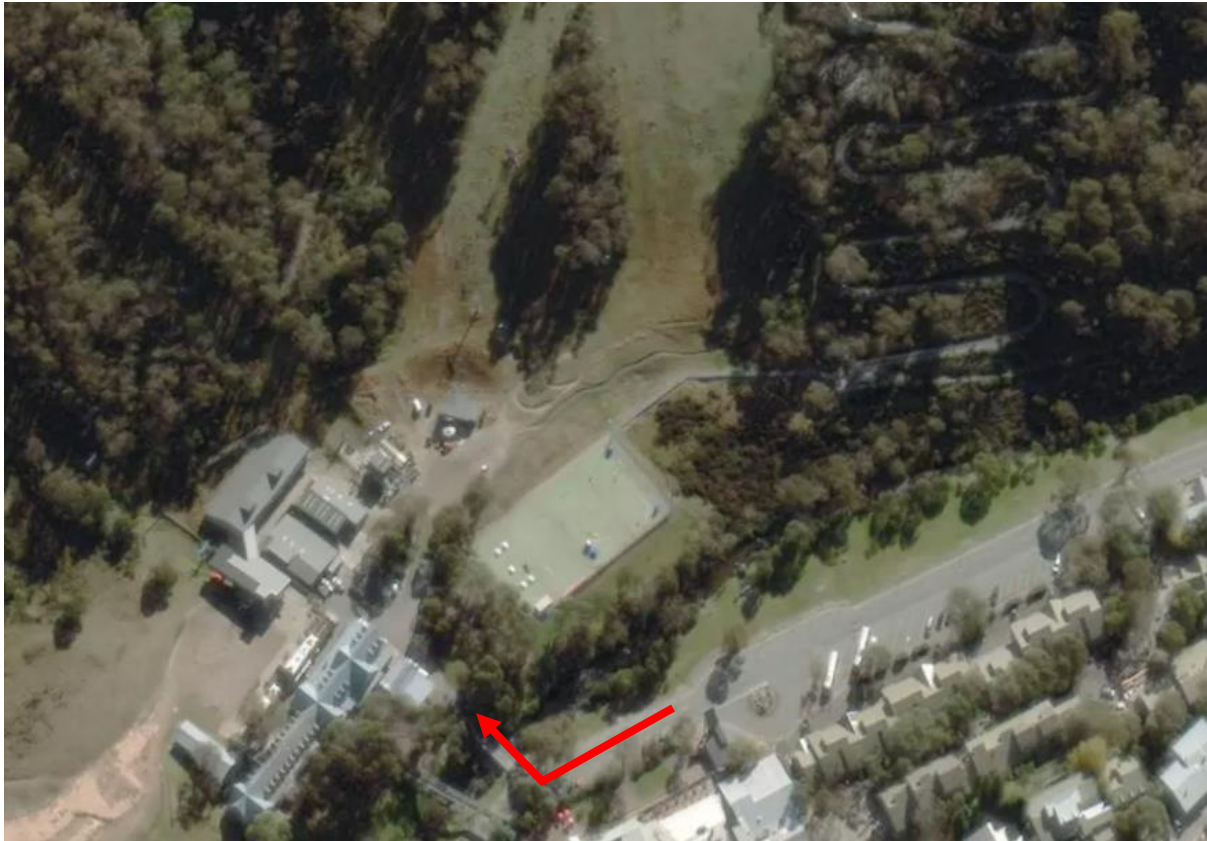


Figure 3: Site Access (Source: NSW Government 2022d)

## 3 Project Description

### 3.1 Purpose of the Development

The purpose of the Development is to diversify KT's recreational activity offerings within the resort through the provision of a year-round rail-guided toboggan ride.

### 3.2 Project Components

The Development comprises the following components:

- Vegetation clearing, trenching and earthworks;
- Construction of alpine coaster, including a bottom and top station and track alignment (refer to **Figure 4** and **Figure 5** for a summer and winter render of the proposed bottom station and lower track section);
- Relocation / installation of snowmaking infrastructure;
- Reconfiguration of existing car parking and pedestrian access;
- Installation of fencing, lighting and signage; and
- Installation of electricity services.





**Figure 4: Alpine Coaster Bottom Station Area – Summer Render (Source: DJRD 2022)**






**Figure 5: Alpine Coaster Bottom Station – Winter Render (Source: DJRD 2022)**

### 3.2.1 Alpine Coaster


The coaster comprises a fixed two-seater toboggan on a stainless steel track. The total length of the coaster is approximately 1,445 m, with a mix of uphill (approx. 405 m) and downhill track (approx. 1,040 m). The passenger is able to control the speed whilst riding the coaster. The uphill transportation of the toboggans is fully automatic and centrifugal brakes on the wheels allows for speed control in the downhill track (Wiegand n.d.). The track alignment comprises bridges, bends, straight sections, circles, downhill jumps (drops) and a tunnel for a thrilling and safe ride.

Key components of the coaster are provided in **Table 1**.

**Table 1: Key components of Alpine Coaster**

Component	Details
Track	<p><i>Track corridor</i> The typical cleared corridor for the track alignment is 4 m wide.</p> <p><i>Track</i> The track comprises of two (2) steel track tubes which are connected together by welding each tube to a stainless steel plate. The track turns have a minimum 9 m and a maximum 39 m radius, and the banking of the turns do not exceed 25 degrees. The track is predominately self-supported with some areas requiring foundations. Due to the flexible design, the alignment can be adapted to the existing terrain profile with circles or bridges (Wiegand 2022). The circles on the downhill track are incorporated to slow riders down when entering into the bottom station.</p>  <p><b>Plate 1: Example of bridges, circles and turns (Source: Wiegand 2022)</b></p> <p><i>Uphill lifting system</i> The uphill lifting system is fully-automatic from the bottom to top station. The toboggans get hooked to a steel-wire rope in the bottom station. The use of blocking systems inside the toboggans prevent the toboggans rolling back. The uphill section is located parallel to the existing Snowgums Chairlift alignment.</p> <p><i>Key design features</i> The track alignment will comprise three (3) circles, one (1) uphill bridge and two (2) downhill bridges (refer Drawing No. A1.226, <b>Appendix B</b>).</p>



	<p>The track will also comprise a tunnel section at the start of the uphill part of the track, comprises six (6) precast concrete culvert sections within an open trench and filled over. Excavation of up to approximately 3-4 m is proposed for the tunnel.</p> <p><i>Supports and footings</i></p> <p>All track supports are trestle type, except for the uphill section, bridges or circles (refer Drawing No. A1.226, <b>Appendix B</b>). The track height varies depending on the section / existing terrain profile. A summary of the different supports and approximate maximum height is provided below:</p> <ul style="list-style-type: none"> <li>• Main track – trestle supports (approx. Max height 4 m).</li> <li>• Uphill section – mono supports (approx. Max height 5.8 m);</li> <li>• Bridges – concrete footings (approx. Max height 4.9 m); and</li> <li>• Circles – concrete footings (approx. Max height 8 m).</li> </ul> <p>The trestle support footings comprise steel plates with a typical dimension of 250 mm x 250 mm with ground stakes at each corner.</p>  <p><b>Plate 2: Example of trestle supports for the main track and circle supports (Source: Wiegand 2022)</b></p> <p>The footings for the mono supports, circles and bridges are proposed to comprise reinforced concrete pad footings.</p> <p><i>Safety installations components</i></p> <p>The coaster comprises an automatic magnetic braking system when the maximum speed is exceeded and to slow down the toboggans at the end of the track. A brake conveyor is located at the end of the track which comprises a pair of magnets and aluminium sled blade.</p> <p>The coaster comprises a distance control assistance system on the complete length of the track. The system performs automatic braking manoeuvres when the safety distance is too short.</p>
<b>Top Station</b>	<p>The top station is located below the Cat Shed within a disturbed area. The station building has an approximate floor area of 30 m<sup>2</sup>, comprising a small bullwheel and operator room. Refer to Drawing No. A1.223 (<b>Appendix B</b>) for details.</p>
<b>Bottom Station</b>	<p>The bottom station is located adjacent to the existing carpark and Merritts Gondola base station within the existing embankment. The station building has an approximate floor area of 215 m<sup>2</sup>. The bottom station building will comprise metal cladding and corrugated roof sheets. The building will encompass an entry and exit ramp, covered loading area, uncovered loading area, toboggan storage, maintenance area, operator room and bullwheel. Refer to Drawing No. A1.220-222 (<b>Appendix B</b>) for details.</p>
<b>Toboggans</b>	<p>The coaster comprises a two-seated toboggan fixed to the track (max of 2 riders on one toboggan at a time). The wheels are constrained to prevent the toboggan from detaching from the track.</p>

	<p>The stainless steel tubes that are located just inside the outer tubes are for braking purposes. The smallest tubes in the middle of the track are to increase the safety for the riders by stiffening the track. The toboggans are equipped with lighting.</p> <p><i>Braking and speed</i></p> <p>The driver uses a manual wear-free brake to control the speed of the toboggan down the track. In addition to the manual brake, each toboggan is equipped with a speed governor or centrifugal brake, which prevents the toboggan from exceeding 40 km/hr. The safety belts are to remain latched during the entire cycle of the ride. It is prohibited for the riders to stop at any point along the ride except at the loading and unloading station and in the case of an emergency.</p>
<b>Walkway and Safety Netting</b>	<p>Any section of track that exceeds a height from the ground surface of 1.5 m requires a walkway and safety netting. The walkway is used only for inspections, maintenance, and emergency situations. The netting is provided as an added safety measure to prevent a person from falling when using the walkway.</p>

Source: Weigand n.d., Weigand 2022.

### 3.2.1.1 Stormwater Infrastructure

The site plans (Bottom Station Plan, Drawing No. A1.220, RevB) provided in **Appendix B** illustrate the installation of a stormwater network (i.e. pits and subsurface pipes around the bottom station and tunnel location). The site plans also show revegetation of the existing bank and new landscape areas which forms part of the operational stormwater management.

Stormwater pits will be installed to capture sediment runoff entering the stormwater system; and subsurface drainage will be installed to direct the flow of water to an existing discharge point (below gondola/adjacent to staff carpark) rather than being allowed to infiltrate the ground.

### 3.2.2 Car Parking

The existing staff car park below the proposed bottom station area will be reconfigured with fencing to provide for safer public access, and to ensure staff parking is retained. The car park will be line marked, allowing for 21 standard car parks, and two (2) accessible car parks. The design allows for a Village bus storage bay with removable bollards if required (refer Site Works Sheet 1 of 2, Drawing no. A1.225, **Appendix B**). The car and bus parking will remain for KT maintenance vehicles and staff only.

The redesign of the existing staff car park will be constructed in accordance with AS 2890.1:2004 *Parking Facilities Part 1: Off-street Car Parking*.

### 3.2.3 Pedestrian Access

Pedestrian access from the east will be via the existing footpath from Valley Terminal. The pedestrian access to the existing bobsled area will be reconfigured and retained as part of the new bottom station to allow pedestrian access to be retained from the west. The existing staff cark will be reconfigured with fencing and signage to allow for safe pedestrian access to the bottom station. Refer to the site plans (**Appendix B**) for pedestrian access details.

### 3.2.4 Fencing

The Development will include the installation of fencing at various locations within the site to aid in the management of pedestrian, skiers/snowboarders and vehicle traffic. Fencing types will include hard fencing and retaining and skier fencing. Refer to the site plans (**Appendix B**) for fencing locations, sections and elevations detail.

### 3.2.5 Lighting and Signage

The Development will require the relocation (approx. 3-4 m south of existing location) and upgrade of the existing light poles and power boxes at two (2) locations on the existing car park / disused tennis courts to allow for improved lighting around the new pedestrian footpath access points (entering from the west (Valley Terminal) and east (footpath leading to Woodridge accommodation precinct) (refer Site Works Sheet, Sheet 2 of 2, **Appendix B**).

The Development will comprise signage attached to buildings, as well as safety, directional and identification signage.

### 3.2.6 Electricity

The Development will include trenching for the installation of power cables to service the top and bottom stations. The works will require trenching to electrical pillars within the vicinity of the site.

The top station will gain electricity supply from the Cat Shed (refer to the power supply trench illustrated on Drawing No. A1.219-D, **Appendix B**). The trench will be approximately 60 m x 0.70 m wide x 0.6 m deep.

The bottom station will gain electricity supply from an existing connection within the Merritts Gondola base station (refer power supply trench, illustrated on Drawing No. A1.219-A, **Appendix B**). The trench will be approximately 50 m long x 0.70 m wide x 0.6 m deep.

### 3.2.7 Materials and Colours

A sample of the materials and colours for the Development is provided in the design drawings in **Appendix B**. The Development has been designed to ensure the built form is consistent with the existing infrastructure within the locality. For example, the roof and walls comprise corrugated metal with a colour scheme consistent with the Merritts Gondola base station building (i.e. Colorbond basalt and monument).

### 3.2.8 Relocation / Installation of Snowmaking Infrastructure

The Development will require the installation of new and relocation of existing snowmaking infrastructure as shown on **Figure 6**. The works will comprise:

- Removal of existing snowmaking lateral;
- Trenching for laying of pipes, pits and electrical and communications cable;
- Installation of new snowmaking pipe to connect to existing and new valve pits; and
- Installation of six (6) new valve pits and guns; and
- Installation of one (1) new manual hydrant.

The trenches will be approximately 0.8 m wide x 0.6-0.8 m deep. The disturbance footprint of the pits supporting the snowmaking guns will be approximately 3 m x 3 m wide x 1.6 m deep. A copy of the snowmaking infrastructure designs and a trench section plan is provided in **Appendix B**.

The relocation of snowmaking infrastructure is necessary for the construction of this Development, and will also have the following benefits:

- allows for increased snowmaking on lower Sundance to cater for increased traffic once the proposed new Snowgums Chairlift is installed (subject to future DA); and

- allows for future excavation works in the area (e.g. if required to support the proposed Snowgums Chairlift replacement) without further disturbance to the snowmaking infrastructure.

### 3.2.9 Landscaping and Rehabilitation

All landscaping and rehabilitation will be undertaken in accordance with the *Rehabilitation Guidelines for the Resort Areas of Kosciuszko National Park* (DECC 2007) (Rehabilitation Guidelines). Landscaping around the bottom station will be undertaken in the areas marked on the Bottom Station Plan, Drawing No. A1.220 (**Appendix B**). Landscaping within this area will be consistent with surrounding landscaped areas in the Valley Terminal base station area. The landscaped areas will enhance the visual amenity and aid in the management of run-off. All disturbed land within the construction corridor (e.g. service trenches, access routes) will be rehabilitated in accordance with the Rehabilitation Guidelines.

The landscaping and rehabilitation for the Development will utilise a selection of species listed in Appendix 10 (Rehabilitation Species List: Thredbo & Bullocks Flat) of the Rehabilitation Guidelines. A summary of the proposed landscape and rehabilitation species is provided in Appendix H of the SEMP (**Appendix F**). The proposed species are similar to those used for the Merritts Gondola Development within close proximity of the Development site. A detailed Rehabilitation Plan will be prepared for the Development prior to construction.

#### 3.2.10 Development Footprint

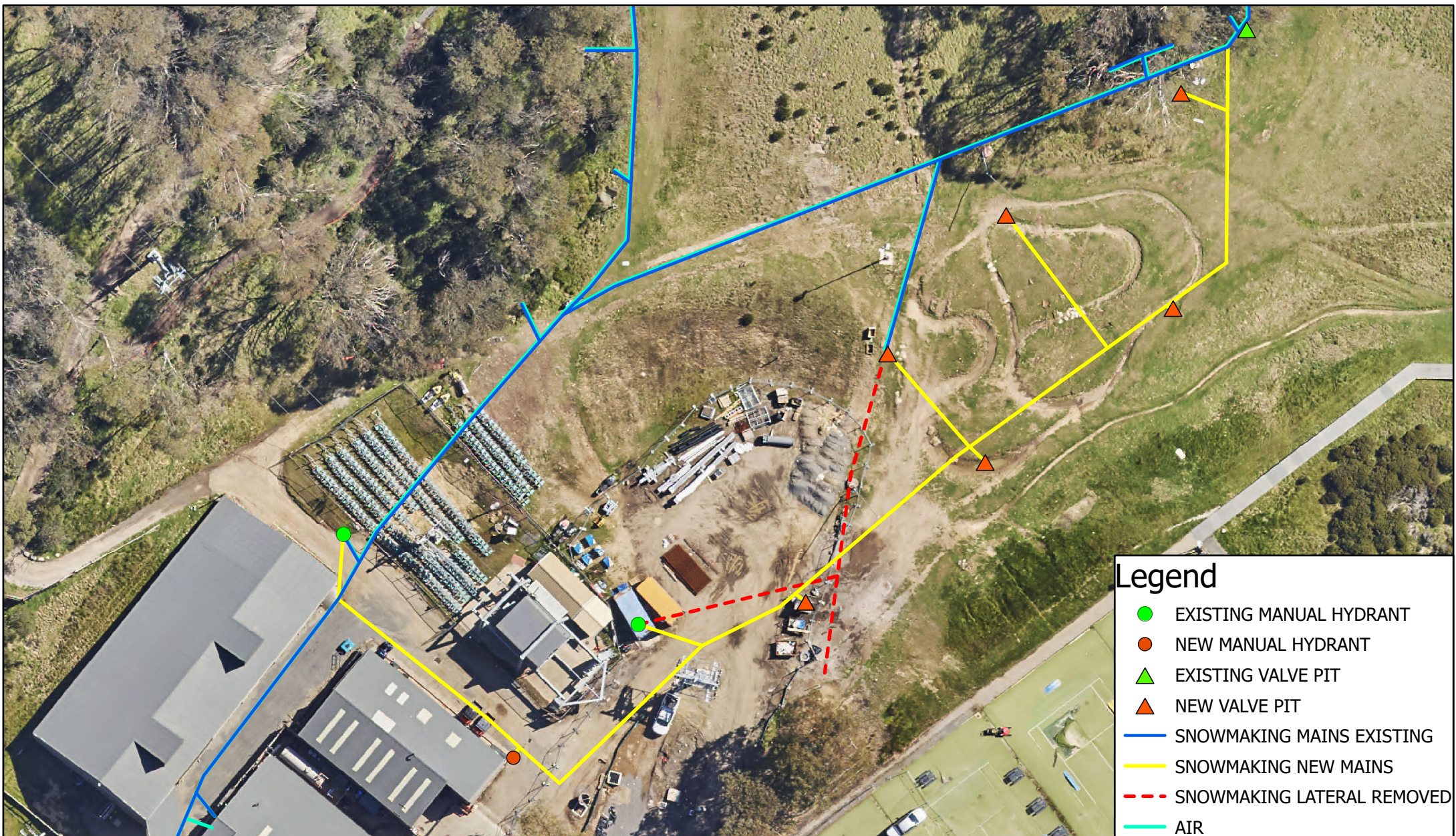
The approximate Development footprint is provided in **Table 2**.

**Table 2: Development Footprint**

Development Component	Approx. footprint (m <sup>2</sup> )
Top station	30
Trenching (power cable from Cat Shed to top station)	42
Bottom station	215
Trenching (power cable from bottom station to Gondola connection)	35
Fencing	20
Trestle supports / ground nails (downhill)	50
Trestle supports / ground nails (uphill)	18
Concrete and mono footings (downhill)	53
Concrete and mono footings (uphill)	20
Tunnel	60
Snowmaking trench	140
6 valve pits	54
<b>Total Footprint:</b>	<b>737</b>

The works within the existing car park / disused tennis courts is excluded from the footprint as no ground disturbance is proposed.

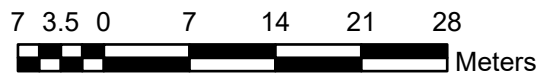




### Legend

- EXISTING MANUAL HYDRANT
- NEW MANUAL HYDRANT
- ▲ EXISTING VALVE PIT
- ▲ NEW VALVE PIT
- SNOWMAKING MAINS EXISTING
- SNOWMAKING NEW MAINS
- SNOWMAKING LATERAL REMOVED
- AIR

Scale: 1:617



Map Projection: Universal Transverse Mercator  
Horizontal Datum: GDA 2020  
Grid: GDA 2020 MGA Zone 55



## SNOWMAKING LAYOUT

Project: Snowmaking Services Proposal  
Valley Terminal

Revision: G

Date: 26/07/2022

Produced By: KO



### 3.3 Project Need and Alternatives

#### 3.3.1 Project Need

The *Snowy Mountains Special Activation Precinct (SAP) Master Plan* (NSW Government 2022) (Snowy Mountains SAP Master Plan) aims to foster a diversification of tourism land uses that facilitate year-round activity within KNP. The Development will provide a new all-weather year-round recreational activity that will directly contribute to the Snowy Mountains fulfilling its vision of becoming a year-round sustainable tourism destination.

#### 3.3.2 Project Alternatives

A range of alternatives to the final alignment and building locations have been explored since conceptual planning commenced in 2013, considering the constraints of the terrain and existing environmental values, safety risks and accessibility requirements.

There is limited disturbed land within the resort that lends itself to the optimal slope requirements for the Development, as well as being easily accessible from the village hub. The proposed location was determined following detailed option analysis based on safety, accessibility, and avoiding and minimising environmental impacts as much as practicable.

#### 3.3.3 Do-nothing Scenario

The do-nothing scenario is not considered a feasible alternative for delivering the planned land use outcomes for the site as identified in the Snowy Mountains SAP Master Plan.

To do-nothing would mean retaining the current bobsled which is nearing its end of design life and in need of considerable upgrade. The bobsled is an attraction that is only operational in the non-winter months/weather dependant as opposed to the Coaster which can run 365 days of the year in all weather conditions.

### 3.4 Construction Details

#### 3.4.1 Construction Timing

Pre-construction / construction activities are proposed to commence in summer 2022/23, with completion by the end of April 2024.

#### 3.4.2 Hours of Construction

All construction works shall be carried out between the hours of 7:00 am – 6:00 pm, 7 days a week. Out-of-hours works are not anticipated.

#### 3.4.3 Construction Site Access

The site is accessible via the existing Valley Terminal access road off Friday Drive (refer **Figure 3**). The bottom of the site is accessible via the existing staff car park, and the area between the machinery workshop and Merritts Gondola base station.

The top of the site (Cat Shed area) is accessible via the Mountain summer access road via Friday Drive.

### 3.4.4 Machinery, Plant and Equipment

The construction of the Development will require (but not limited to) the following machinery, plant and equipment:

- 4WD vehicles and utilities;
- Excavator;
- Front-end / skid-steer loader;
- Telehandler;
- Snow groomer with summer tracks;
- Utility Terrain Vehicles (UTV);
- Tipper trucks;
- Delivery trucks;
- Powered wire rope winch;
- Tree chipper; and
- Mobile crane.

### 3.4.5 Stockpile Sites

Temporary stockpiles will be required within the construction corridor to effectively manage materials during the works. The proposed temporary stockpile locations are located north of the proposed top station and the eastern end of the disused tennis courts. These dedicated sites are disturbed areas and devoid of native vegetation. Soil will be separated so that it can be used during rehabilitation works. The main stockpile locations will be located within Thredbo's Waste Transfer Station. Stockpile locations are identified in the SEMP (**Appendix F**).

All stockpiles will be managed in accordance with the *Soil Stockpile Guidelines for the Resort Areas of Kosciuszko National Park* (OEH 2017) (Soil Stockpile Guidelines) and SEMP (**Appendix F**).

### 3.4.6 Site Facilities and Material Storage

The site compound will be located at Friday Flat bus carpark. Materials will be transferred from Friday Flat to the site prior to placement.

The existing staff car park / disused tennis courts at Valley Terminal will be utilised for the site office, as well as storage of materials.

Existing amenities (e.g. toilets) at Valley Terminal will be available for construction staff.

### 3.4.7 Pre-construction Activities

Pre-construction activities involve site preparation works, which will include:

- Establishment of site boundary/fencing;
- Erection of site signage and pedestrian/traffic controls;
- Installation of erosion and sediment controls; and
- Vegetation clearing / trimming and surveying coaster track alignment.

### 3.4.8 Construction Activities

#### 3.4.8.1 Relocation / Installation of Snowmaking Infrastructure

The construction activities will comprise:

- Removal of existing snowmaking infrastructure nearby Snowgums Chairlift bottom station and the base of Sundance ski run; and
- Installation of new snowmaking infrastructure nearby Snowgums Chairlift bottom station and the base of Sundance ski run.

#### *3.4.8.2 Construction of top station*

The construction activities will comprise earthworks and the construction of the top station building, erection of fencing and trenching for the electricity supply from the Cat shed.

#### *3.4.8.3 Construction of track alignment and associated infrastructure*

The construction activities will comprise earthworks, installation of the track, footings (trestles, mono supports and concrete footings) and associated infrastructure such as the walkways, safety nets and fencing.

#### *3.4.8.4 Construction of bottom station*

The construction activities will comprise earthworks and the construction of the bottom station building and associated works, including works on the existing carpark/hardstand, footpaths, trenching for electricity supply, relocation of existing light poles and power boxes, construction of ramps, gabion walls, construction of tunnel section, erection of signage and installation of stormwater drainage infrastructure.

### **3.4.9 Post-construction Activities**

Post-construction activities will comprise:

- Rehabilitation and landscaping in accordance with the Rehabilitation Plan;
- Removal of erosion and sediment controls;
- Demobilisation of plant and machinery; and
- Site clean-up.

## **3.5 Operational Details**

### **3.5.1 Operational Timing**

The Development is anticipated to commence operation in May 2024.

### **3.5.2 Hours of Operation**

The Development will operate year-round in accordance with Thredbo's general lift operating hours which vary throughout the year. It is noted the Alpine Coaster is compatible for night time operation (i.e. fitted with rear and front lights).

### **3.5.3 Staffing Requirements**

It is anticipated the operation of the Alpine Coaster will require one (1) staff member in the top station, and four (4) staff at the bottom station. Note this may be subject to change depending on operational demand etc.



## 4 Relevant Legislation, Plans, Policies and Guidelines

### 4.1 Legislative Review

A review of key legislation and planning instruments applicable to the Development is provided in **Table 3**.

**Table 3: Legislative Review**

Acts & Planning Instruments	Summary
<b>Commonwealth</b>	
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)	<p>The EPBC Act provides a legal framework to protect and manage nationally and internationally important aspects of the Australian environment. The EPBC Act is administered by the Department of Climate Change, Energy, the Environment and Water (DCCEEW) (formerly DAWE).</p> <p>Under Part 3 of the EPBC Act, a person must not undertake an action (e.g. a development) that will have, or is likely to have, a significant impact on a protected matter (MNES), without approval from the Australian Government Minister for the Environment. Detail is provided in <b>Sections 7.11</b> and <b>7.11</b>.</p>
<b>State</b>	
<i>Environmental Planning and Assessment Act 1979</i> (EP&A Act)  <i>Environmental Planning and Assessment Regulation 2021</i> (EP&A Regulation)	<p>The EP&amp;A Act is the primary piece of legislation governing development within NSW. DPE assesses development proposals within NSW alpine resort areas where the Minister for Planning is the consent authority under Part 4 of the EP&amp;A Act. Section 4.15 of the Act sets out matters a consent authority is to take into consideration when determining a DA (refer <b>Section 4.2</b> for detail).</p> <p>This SEE has been prepared in accordance with the requirements of Schedule 1 of the EP&amp;A Regulation. Throughout the planning and design phases KT has considered the principles of ESD (refer <b>Section 4.5</b>).</p>
<i>National Parks and Wildlife Act 1974</i> (NPW Act)  <i>National Parks and Wildlife Regulation 2019</i>	<p>The NPW Act governs the establishment, protection, conservation and management of national parks, including the conservation of objects, places or features (including biological diversity) of cultural value within the landscape.</p> <p>As detailed in this SEE and supporting technical reports, appropriate environmental mitigation and management measures are proposed to ensure the Development results in acceptable environmental impacts.</p> <p><b>Aboriginal Cultural Heritage</b>            Section 87 of the NPW Act provides that a person who exercises due diligence in determining that their actions will not harm Aboriginal objects has a defence against prosecution if they later unknowingly harm an object without an Aboriginal heritage impact permit. A due diligence assessment has been undertaken in <b>Section 7.10</b>.</p>
<i>Biodiversity Conservation Act 2016</i> (BC Act)  <i>Biodiversity Conservation Regulation 2017</i> (BC Regulation)	<p>The purpose of the BC Act is to maintain a healthy, productive and resilient environment for the greatest well-being of the community, now and into the future, consistent with the principles of ESD. The Development is consistent with principles of ESD, as demonstrated in the subsequent sections of this report.</p> <p>The BC Regulation sets out threshold levels for when the Biodiversity Offset Scheme (BOS) will be triggered. The threshold has two elements:</p>

	<ul style="list-style-type: none"> <li>• Whether the amount of native vegetation being cleared exceeds the area threshold; and</li> <li>• Whether the impacts occur on an area mapped on the biodiversity values map (bvm).</li> </ul> <p>If clearing and other impacts, including biodiversity impacts prescribed by Clause 6.1 of the BC Regulation, exceed either trigger, the BOS applies. The BOS also applies when:</p> <ul style="list-style-type: none"> <li>• The ‘test of significance’ in section 7.3 of the BC Act identifies that the development or activity is likely to significantly effect threatened species or ecological communities, or their habitats; or</li> <li>• The works are carried out on a declared area of outstanding biodiversity value.</li> </ul> <p>If the BOS is not triggered, the test of significance detailed in section 7.3 of the BC Act must be used to determine whether a local development is likely to significantly affect threatened species. Refer <b>Section 7.3</b> and <b>Appendix E</b> for detail.</p>
<p><i>Water Management Act 2000 (WM Act)</i></p> <p><i>Water Management (General) Regulation 2018 (WM (General) Regulation)</i></p>	<p>Controlled activities carried out in, on, or under waterfront land are regulated by the WM Act. Waterfront land includes the bed and bank of any river, lake or estuary and all land within 40 m of the highest bank of the river, lake or estuary. The NSW Department of Planning and Environment – Water (DPE – Water) administers the WM Act and is required to assess the impact of any proposed controlled activity to ensure minimal harm to waterfront land. A controlled activity approval (CAA) must be obtained before commencing the controlled activity, unless an exemption applies under the WM (General) Regulation. Refer <b>Section 4.2.2.1</b> for detail.</p>
<b>Environmental Planning Instruments</b>	
<p>State Environmental Planning Policy (Precincts – Regional) 2021 (Precincts – Regional SEPP)</p>	<p>Development in NSW alpine resort areas are governed by Chapter 4 (Kosciuszko National Park and alpine resorts) of the Precincts – Regional SEPP. The aim of Chapter 4 is to protect and enhance the natural environment of the alpine resorts, in the context of KNP, by ensuring that development in those resorts is managed in a way that has regard to the principles of ESD. The objectives of Chapter 4 are:</p> <ul style="list-style-type: none"> <li>• To encourage the carrying out of a range of development in the alpine resorts that do not result in adverse environmental, social or economic impacts on the natural or cultural environment;</li> <li>• Provide planning controls to encourage esd; and</li> <li>• Minimise the risk of community exposure to environmental hazards within the alpine resort areas.</li> </ul> <p>Refer <b>Section 4.3</b> for an assessment of the Development against the key provisions of Chapter 4.</p>

## 4.2 Environmental Planning and Assessment Act 1979 (EP&A Act)

### 4.2.1 Section 4.15 of EP&A Act – Matters for Consideration – General

Pursuant to Section 4.15 of the EP&A Act, the consent authority is to consider the matters listed in **Table 4** in relation to the Development.

**Table 4: Matters for Consideration – General**

(1) Matters for consideration – General	Comment
the provisions of—	
(i) any environmental planning instrument	The Precincts – Regional SEPP is the only environmental planning instrument which applies to the site for this proposal. An assessment against the relevant sections of the Precincts – Regional SEPP have been addressed in <b>Section 4.3</b> .
(ii) any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority (unless the Planning Secretary has notified the consent authority that the making of the proposed instrument has been deferred indefinitely or has not been approved)	There are no draft Environmental Planning Instruments that are applicable to the Development.
(iii) any development control plan	There are currently no development control plans applicable to the site.
(iia) any planning agreement that has been entered into under section 7.4, or any draft planning agreement that a developer has offered to enter into under section 7.4	There are no planning agreements applicable to Thredbo under the Precincts – Regional SEPP.
(iv) the regulations (to the extent that they prescribe matters for the purposes of this paragraph)	The DA and supporting information has been prepared in accordance with the requirements of the EP&A Regulation.
(a) the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality	The likely impacts of the Development on the natural and built environment, and social and economic impacts in the locality have been assessed in <b>Section 7</b> .
(b) the suitability of the site for the development	The suitability of the site for the Development is described in <b>Sections 2.3</b> and <b>7.1</b> .
(c) any submissions made in accordance with this Act or the regulations	KT will consider any submission made during the DA assessment process.
(d) the public interest.	<p>The Development is considered to be within the public interest for the following reasons:</p> <ul style="list-style-type: none"> <li>• the Development is consistent with the aim and objectives of the Precincts – Regional SEPP;</li> <li>• the Development is compatible with the site;</li> <li>• the Development will not have any significant adverse environmental impacts; and</li> <li>• the Development is consistent with the principles of ESD.</li> </ul>

#### 4.2.2 Section 4.46 of EP&A Act – Integrated Development

Section 4.46 of the EP&A Act sets out development that is integrated development, requiring development consent and one or more approval under state legislation.

A review of the *Development referrals guideline* (DPIE 2021) has been undertaken to inform the DA. The Development is not nominated integrated development requiring referral, see below for detail.

#### 4.2.2.1 Controlled Activities

The Development will require the following works within 40 m of Thredbo River: car park sealing, line painting and the erection of fencing on the existing concrete hard stand. These minor works do not require a CAA given the following:

- No vegetation clearing is required;
- The works are located entirely on the existing concrete hardstand area;
- The works do not involve substantial excavation or deposition of material on waterfront land;
- The fence is located within waterfront land (but not the bed, bank, shore or land lying between the bed and the mean high-water mark);
  - The fence will be bolted to the existing concrete hardstand (no earthworks required)
  - The construction of the fence will not involve: substantial concrete footings, construction of brick or masonry walls, and or clearing and substantial earthworks and reshaping for a fence line.

### 4.3 Precincts – Regional SEPP – Chapter 4 Kosciuszko National Park and alpine resorts

#### 4.3.1 Section 4.9 of Precincts – Regional SEPP – Land Use Table (Thredbo Alpine Resort)

Pursuant to the Land Use Table in Section 4.9 of the Precincts – Regional SEPP, the Development is permissible development with consent within the Thredbo Alpine Resort as it will provide ‘recreational infrastructure’ and ‘snowmaking infrastructure’ which are permitted land uses.

#### 4.3.2 Section 4.12 of Precincts – Regional SEPP – Matters to be considered by Consent Authority

**Table 5** addresses Section 4.12 (Matters to be considered by consent authority) in relation to the Development.

**Table 5: Matters to be Considered by Consent Authority**

Matters for Consideration	Comment
(1) In determining a development application that relates to land to which this Chapter applies, the consent authority must take into consideration any of the following matters that are of relevance to the proposed development—	
a) the aim and objectives of this Chapter, as set out in section 4.1	The Development is consistent with the objectives of Chapter 4, as demonstrated in this report.
b) the extent to which the development will achieve an appropriate balance between the conservation of the natural environment and any measures to mitigate environmental hazards (including geotechnical hazards, bush fires and flooding)	The Development is predominately located within a highly modified site. The geotechnical risks of the Development have been assessed in the Geotechnical Investigation Report (Asset 2022). None of the proposed measures in the Geotechnical Investigation Report ( <b>Appendix D</b> ) will adversely impact on the conservation of the natural environment.
c) having regard to the nature and scale of the development proposed, the impacts of the development (including the cumulative impacts of development) on the following— i. the capacity of existing transport to cater for peak days and the suitability of access to	It is not anticipated that the Development will adversely impact on the capacity of the existing transport, reticulated effluent management system, existing waste disposal facility or existing water supply to cater for peak loads.

<p>the alpine resorts to accommodate the development</p> <p>ii. the capacity of the reticulated effluent management system of the land to which this Chapter applies to cater for peak loads generated by the development</p> <p>iii. the capacity of existing waste disposal facilities or transfer facilities to cater for peak loads generated by the development,</p> <p>iv. the capacity of any existing water supply to cater for peak loads generated by the development</p>	
d) any statement of environmental effects required to accompany the development application for the development	This SEE addresses this requirement.
e) if the consent authority is of the opinion that the development would significantly alter the character of the alpine resort—an analysis of the existing character of the site and immediate surroundings to assist in understanding how the development will relate to the alpine resort	The Development is not anticipated to significantly alter the alpine resort character as demonstrated in <b>Section 7.5</b> and <b>7.6</b> .
f) the <i>Geotechnical Policy—Kosciuszko Alpine Resorts</i> (2003, Department of Infrastructure, Planning and Natural Resources) and any measures proposed to address any geotechnical issues arising in relation to the development	A Geotechnical Investigation Report has been prepared in accordance with the Geotechnical Policy. Refer to Section 7 of the report ( <b>Appendix D</b> ) for the proposed measures to address the potential geotechnical issues identified within the Development site.
g) if earthworks or excavation works are proposed—any sedimentation and erosion control measures proposed to mitigate any adverse impacts associated with those works	Earthworks and excavation works are proposed. Erosion and sediment control measures will be implemented during construction to mitigate potential adverse impacts associated with these works. These controls are outlined in the SEMP ( <b>Appendix F</b> ).
h) if stormwater drainage works are proposed—any measures proposed to mitigate any adverse impacts associated with those works	The Development includes stormwater drainage works (i.e. installation of subsurface drainage pipe and inlet pits). A stormwater management plan will be prepared and implemented to mitigate any potential impacts associated with these works. A preliminary framework for the stormwater management plan is provided in Appendix E of the SEMP ( <b>Appendix F</b> ).
i) any visual impact of the proposed development, particularly when viewed from the Main Range	An assessment of the visual impacts of the Development is provided in <b>Section 7.5</b> .
j) the extent to which the development may be connected with a significant increase in activities, outside of the ski season, in the alpine resort in which the development is proposed to be carried out	It is anticipated that the Coaster will attract resort guests, however it is not anticipated to result in a significant increase in activities outside of the ski season.
<p>k) if the development involves the installation of ski lifting facilities and a development control plan does not apply to the alpine resort—</p> <p>i. the capacity of existing infrastructure facilities, and</p> <p>ii. any adverse impact of the development on access to, from or in the alpine resort</p>	Not applicable.
<p>l) if the development is proposed to be carried out in Perisher Range Alpine Resort—</p> <p>i. the document entitled <i>Perisher Range Resorts Master Plan</i>, as current at the</p>	Not applicable.

<p>commencement of this Chapter, that is deposited in the head office of the Department, and</p> <p>ii. the document entitled <i>Perisher Blue Ski Resort Ski Slope Master Plan</i>, as current at the commencement of this Chapter, that is deposited in the head office of the Department</p>	
<p>m) if the development is proposed to be carried out on land in a riparian corridor—</p> <p>i. the long term management goals for riparian land, and</p> <p>ii. whether measures should be adopted in the carrying out of the development to assist in meeting those goals.</p>	<p>The Development will comprise minor works on the existing hardstand / car park area which is located within the outer riparian corridor of Thredbo River. The outer riparian corridor is heavily disturbed due to previous development within the site. No impacts to Thredbo River or its associated riparian corridor are proposed. Refer to <b>Sections 4.2.2.1</b> and <b>7.2.3</b> for detail.</p>
<p>(2) The <i>long term management goals</i> for riparian land are as follows—</p>	
<p>a) to maximise the protection of terrestrial and aquatic habitats of native flora and native fauna and ensure the provision of linkages, where possible, between such habitats on that land,</p>	<p>No impacts to the riparian land associated with Thredbo River are proposed. The Development has been designed to minimise impacts on the existing environment. Appropriate stormwater drainage, erosion and sediment controls will be implemented during construction and operation to mitigate potential impacts on the receiving environment. Refer to <b>Section 8</b> and <b>Appendix F</b> for control measures.</p>
<p>b) to ensure that the integrity of areas of conservation value and terrestrial and aquatic habitats of native flora and native fauna is maintained,</p>	
<p>c) to minimise soil erosion and enhance the stability of the banks of watercourses where the banks have been degraded, the watercourses have been channelised, pipes have been laid and the like has occurred.</p>	
<p>(3) A reference in this clause to land in a riparian corridor is a reference to land identified as being in such a corridor on a map referred to in section 4.4.</p>	

## 4.4 Plans, Policies and Guidelines

### 4.4.1 Snowy Mountains Special Activation Precinct Master Plan

The *Snowy Mountains Special Activation Precinct Master Plan* (DPE 2022) (Snowy SAP Master Plan) sets out the vision, principles, and precinct-wide performance criteria to support the planning controls in three Environmental Planning Instruments (EPIs).

The Precincts – Regional SEPP requires that a master plan and delivery plan be prepared for each precinct (NSW Government 2022a). The delivery plan has not been prepared.

The Alpine Precinct Development Control Plan (Alpine DCP) for the Alpine sub-precinct and proposed amendments to the Precincts – Regional SEPP are yet to be finalised. The Alpine DCP will outline site specific development controls, design, staging and implementation of infrastructure and specific strategies for management of environmental impacts. As no site specific development controls have been developed to date, the relevant precinct-wide principles and criteria of the Snowy Mountains SAP Master Plan have been considered during the preparation of this SEE.

#### 4.4.1.1 Alpine Sub-Precinct and Thredbo Village West Structure Plan

Thredbo is nominated as one (1) of the nine (9) Alpine sub-precincts included in the Snowy Mountains Special Activation Precinct (SAP).

The Development is consistent with the features of the Thredbo Village West Structure Plan being part of a re-development of the Valley Terminal and enhancement of public realm. The Development will assist in achieving the “desired future character” to support year- round uses.

The Snowy Mountains SAP Master Plan stipulates where development is proposed on land outside of development areas, additional technical investigation may be required. The Development site is predominately outside the Structure Plan development areas and is largely within existing disturbed areas. Where native vegetation clearing or modification is proposed, these areas have been assessed by Eco Logical Australia Pty Ltd (ELA) to ensure potential impacts to biodiversity are first avoided, then minimised and mitigated through a range of measures implemented during construction and operation. As demonstrated in **Section 7.3**, some minor impacts to native vegetation are unavoidable.

The structure plan also identifies improvements to pedestrian access are prioritised, through the implementation of active frontages and new plazas to make Thredbo a more connected environment. The design incorporates the redevelopment of existing footpaths and the staff carpark / hardstand area linking guests between the Valley Terminal base station area and the eastern side of the village (footpath into Woodridge precinct).

#### 4.4.1.2 Environment and Sustainability

The protection of the natural, cultural and social values of KNP is a primary focus of the Snowy Mountains Special Activation Precinct. As demonstrated in this SEE and supporting technical reports, the Development will not result in any significant adverse impacts on natural values. The Development has been designed to first avoid impacts on biodiversity, then minimise and mitigate impacts through a range of mitigation measures implemented during construction and operation (refer **Sections 7.3** and **8**).

The Development will not adversely impact on any cultural values (refer **Sections 7.9, 7.10** and **7.11.1**).

The Development will contribute to the social values of KNP through the diversification of recreational activities offered within the resort and contribution to year-round tourism within the Snowy Mountains region.

The Snowy SAP Master Plan describes the future desired character of Thredbo as –

*“Thredbo is the densest alpine village among the alpine resorts, meaning future infrastructure improvements will focus on pedestrian connectivity within the resort and long-term public transport solutions at the Alpine Precinct scale. Developments and renewal within the village will continue to support a strong alpine design character, village heart and year-round uses”.*

The Development is consistent with the desired future character of Thredbo as it will provide a year-round recreational activity within the centre of the village. The Development has been designed to complement the existing alpine design character / built form (refer **Section Error! Reference source not found.** for detail).

The Snowy Mountains SAP Master Plan aims to ensure development maximises sustainability opportunities that contribute to the vision of becoming a year-round sustainable tourism destination. The Development will contribute to this vision through the following:

- The Development will provide a year-round recreational activity.



- The Development will not result in significant adverse impacts on cultural, heritage and biodiversity values within the locality.
- Climate change risks, hazards and opportunities have been considered in the design, construction and operation.

#### 4.4.2 Kosciuszko National Park Plan of Management 2006 (KNP PoM)

The KNP PoM outlines objectives and management strategies to guide the long-term management of values within specific areas of KNP. The KNP PoM includes several management zones and sub units. The Thredbo Management Unit is part of the Visitor Services Zone/Areas of Exceptional Recreational Significance subject to the provisions of Section 10 of the KNP PoM.

The management objective for the Thredbo Management Unit is outlined below:

*“The Thredbo Management Unit is managed so as to provide opportunities for visitors to enjoy, understand and appreciate the values of the park in ways that minimise adverse impacts”.*

As demonstrated in this SEE, the Development is consistent with the management objective for the Thredbo Management Unit.

#### 4.4.3 Geotechnical Policy Kosciuszko Alpine Resorts 2003

The *Geotechnical Policy Kosciuszko Alpine Resorts* (DIPNR 2003) (Geotechnical Policy) applies to the Development as the site is located within the “G” area of the Geotechnical Policy Map, Thredbo (G5). All DAs which include the carrying out of any works or the erection of any buildings within the designated “G” area as defined in the Geotechnical Policy maps are to be accompanied by a geotechnical report. A copy of the Geotechnical Investigation Report (Asset 2022) is provided in **Appendix C**.

#### 4.4.4 Community Participation Plan

There are two triggers for mandatory public exhibition outlined in the Community Participation Plan (DPIE 2019) that may be relevant –

- Table 1 (14 days for applications for development consent); and
  - The Community Participation Plan (p.19) notes *‘where we assess development applications under the SEPP (Kosciuszko National Park—Alpine Resorts) 2007 (now Precincts – Regional SEPP), no public exhibition will be undertaken for proposals that relate to works which are wholly internal to a building or where the site is located more than 50 metres away from a tourist accommodation building’*.
- Table 2 (28 days for works within the areas outlined in (a)-(d) subject to the SEPP (Kosciuszko National Park – Alpine Resorts) 2007 (now Precincts – Regional SEPP).

(a) the erection of a building with a footprint of more than 1,000 square metres,

(b) the erection of a new ski-lift line or the extension of an existing ski-lift line,

(c) damage to any plant that is part of:

(i) an endangered ecological community or a vulnerable ecological community, or

(ii) feldmark, short alpine herbfield or snowpatch on land identified as containing such a plant community in any Figure (other than Figures 1 and 11) in the Kosciuszko Resorts Vegetation Assessment,

(d) the disturbance of any wetland forming part of an endangered ecological community or a vulnerable ecological community.

The Development comprises both external and internal works to a building, therefore in accordance with the CPP, the Development must be placed on public exhibition for 14 days.



The building footprint of the Development is not greater than 1,000 m<sup>2</sup> (as demonstrated in **Table 2**) and the Development will not comprise any works subject to clauses (b)-(d). As such, under the Community Participation Plan (DPIE 2019), the Development does not meet the 28-day mandatory public exhibition requirements.

#### 4.4.5 Other Guidelines

The following guidelines have been considered during the preparation of this SEE:

- Application requirements (DPE 2022);
- Development referrals guide (DPIE 2021); and
- What to include with your development application (DA) (DPE 2017).

### 4.5 Assessment of Development against Ecologically Sustainable Development Principles

Australia's *National Strategy for Ecologically Sustainable Development* (1992) defines ESD as 'using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased'. The principles of ESD are defined in both State and Commonwealth legislation (EP&A Regulation, Schedule 2, Part 3, Clause 7(4); EPBC Act, Chapter 1, Part 1, 3A):

- *The precautionary principle, namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;*
- *Inter-generational equity, namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations;*
- *Conservation of biological diversity and ecological integrity promoted;*
- *Improved valuation, pricing and incentive mechanisms; and*
- *Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations.*

Throughout the planning and design phases, the Development has considered the principles of ESD, as demonstrated below:

- The Development does not pose a threat of serious or irreversible environmental damage. This SEE and supporting technical reports seek to provide robust scientific data and information to prevent and/or mitigate environmental degradation. Potential impacts have been identified in **Section 7** and appropriate mitigation measures are proposed (refer **Section 8**).
- The environmental impacts have been minimised where possible e.g. the Development utilises existing disturbed areas where practicable.
- A Flora and Fauna Assessment (ELA 2023) has been prepared to assess ecological impacts and to ensure the conservation of biodiversity and ecological integrity. The design aims to minimise clearing of native vegetation and minimise the extent of ground disturbance as much as practicable.
- No impacts to Aboriginal or European cultural heritage are proposed.

- KT have engaged with key stakeholders during the planning phase of the Development to understand stakeholders needs and concerns, and to ensure appropriate mitigation measures are incorporated into the design.

## 5 Assessment Method

The assessment for the Development consisted of a desktop review of publicly available data sources and information. The desktop review was followed by site visit carried out within the Development area to describe the environmental values present on the site and to aid the evaluation of potential impacts of the Development to those values. A summary of the assessment methods is provided in the following sections.

### 5.1 Desktop Assessment

A desktop assessment was carried out to identify relevant environmental values, that potentially occur within the Development area. Database and information sources utilised in the desktop assessment are listed in **Table 6**. The relevant database search results are provided in **Appendix C**.

Other resources were also investigated to inform the impact assessment, listed in **Section 10**.

**Table 6: Database Searches**

Database	Search Parameters
Aboriginal Heritage Information Management System Web Services (NSW Government 2022e)	Lat, Long From: -36.5049, 148.2975 - Lat, Long To: -36.5006, 148.3053
Biodiversity Values Map and Threshold Tool (NSW Government 2022b)	Site area
Protected Matters Search Tool (DAWE 2022)	1km buffer around site area
NSW BioNet	1 km buffer around site area
Water Management (General) Regulation 2018 hydroline spatial data 1.0 (NSW Government 2022c)	Site area
ePlanning Spatial Viewer (NSW Government 2022a)	Site area
Bush fire prone land mapping tool (RFS 2021)	Site area

### 5.2 Preliminary Site Assessment

A preliminary site assessment was undertaken by KT Project personnel and various technical consultants to validate the desktop assessment results, inform the design process and ensure appropriate environmental controls are implemented to avoid, mitigate and/or management potential impacts on environmental and cultural values.

The following key stakeholders were involved in the preliminary site assessment to discuss the preliminary design and potential site constraints:

- Dabyne Planning Pty Ltd (Dabyne Planning);
- Weigand;
- DJRD Architects;
- Eco Logical Australia Pty Ltd;
- Asset Geotechnical Engineering Pty Ltd;
- Department of Planning and Environment (DPE); and
- National Parks and Wildlife Service (NPWS).

## 5.3 Technical Assessments

### 5.3.1 Geotechnical Assessment

The Geotechnical Assessment was undertaken by Asset Geotechnical Engineering Pty Ltd (Asset). The assessment comprised a site investigation undertaken on 21 and 22 January 2021 comprising invasive investigation at 29 locations (25 by test pit and 4 by hand auger and Dynamic Cone Penetrometer (DCP) sounding). The detailed methods and results are provided in Sections 5 and 7 of the Geotechnical Investigation Report (**Appendix D**).

### 5.3.2 Flora and Fauna Assessment

The Flora and Fauna Assessment was undertaken by Ryan Smithers (Senior Ecologist and Accredited Person) from Eco Logical Australia Pty Ltd (ELA). The assessment comprised flora and fauna surveys and the preparation of a Fauna Assessment Report provided in **Appendix E**. The surveys were undertaken on 9 and 10 December 2019, and 10 May 2022. Survey methods are provided in Section 2.2 of **Appendix E**.

### 5.3.3 Technical Input

Dabyne Planning has provided previous extensive technical input into the preliminary and site analysis phase of the Development, which has informed in part the design of the development.

## 6 Existing Environment

This section outlines the existing environmental values of the site.

### 6.1 Land

#### 6.1.1 Topography

The regional topography comprises moderately to steeply sloping terrain upslope of the north-easterly flowing Thredbo River (Asset 2022). The Development site is located between approximately 1,365 – 1,493 m Australian Height Datum (AHD) (refer **Figure 7**).

Ground slopes over the coaster alignment generally range from 8-17° and some locally steeper sections up to approximately 25-30° (Asset 2022).

#### 6.1.2 Geology and Soils

The study area is underlain by Silurian granodiorite (Ecology Australia 2002). Soils are likely to comprise a mix of alpine humus soils, comprising sandy clay loams (ELA 2023).

#### 6.1.3 Land Uses

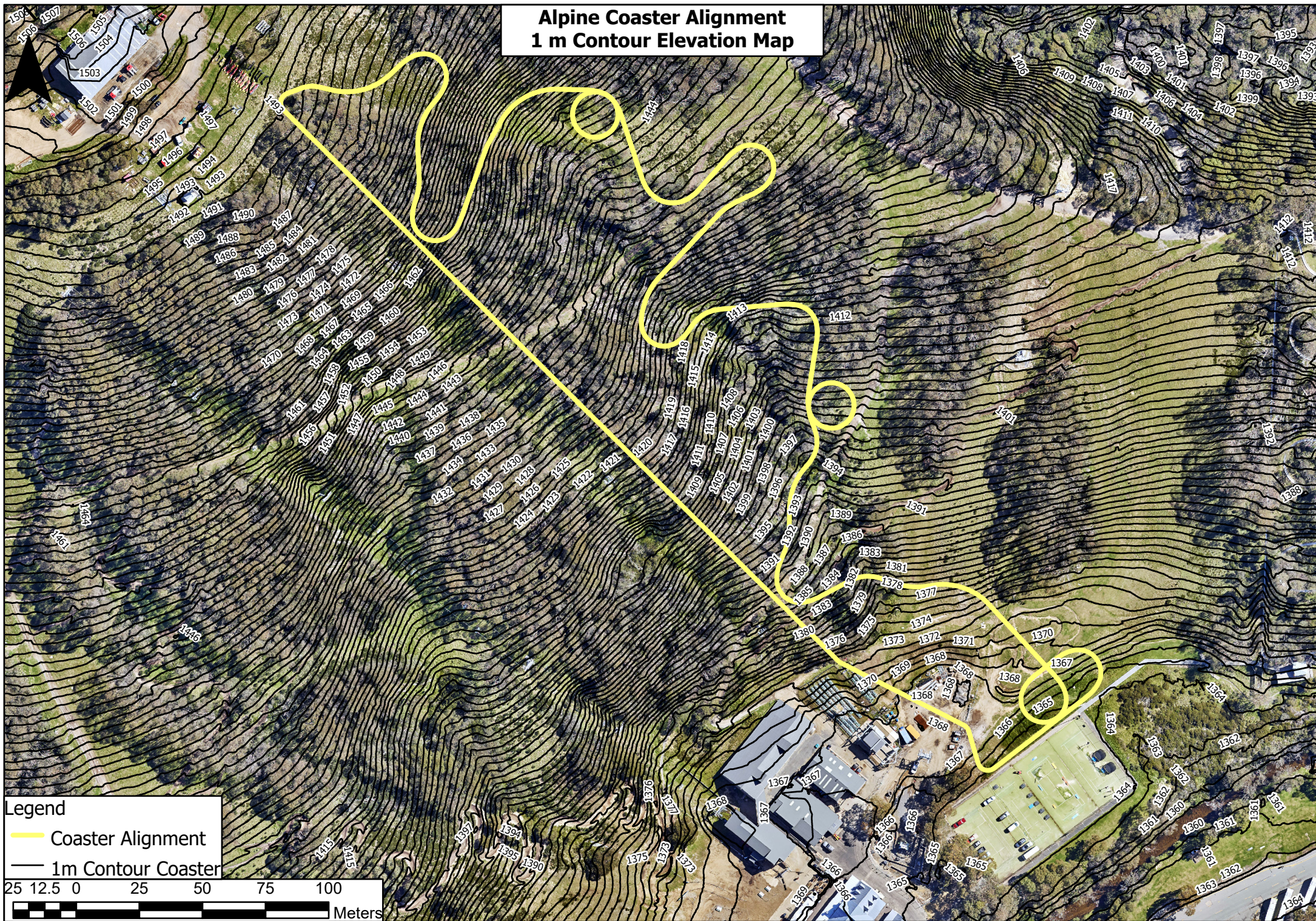
The Development site comprises the following land uses: recreational infrastructure, car parking, fences, lifting facilities, recreational infrastructure (mountain bike trails), ski slopes, snowmaking infrastructure and undisturbed native vegetation.

#### 6.1.4 Bush fire prone land

The Development site is located within a designated bush fire prone area (NSW RFS 2022).



# Alpine Coaster Alignment 1 m Contour Elevation Map



Legend  
— Coaster Alignment  
— 1m Contour Coaster

25 12.5 0 25 50 75 100  
Meters



## 6.1.5 Water

### 6.1.5.1 Watercourses

No mapped watercourses are located within the Development site as illustrated on **Figure 8** and **Figure 9**.



**Figure 8: Mapped watercourses within proximity of the Development site**  
(Source: NSW Government 2022c)



**Figure 9: Alpine SEPP Thredbo Alpine Resorts Riparian Corridor Land** (Source: DoP 2006)



#### 6.1.5.2 Waterfront Land

*Waterfront land* includes the bed and bank of any river, lake or estuary and all land within 40 m of the highest bank of the river, lake or estuary (DoI 2018). A *riparian corridor* forms a transition zone between the land, and the river or watercourse or aquatic environment. The *riparian corridor* consists of the channel (bed and banks) and the vegetated riparian zone (VRZ) adjoining the channel.

The Development (comprising minor works within the staff car park / disused tennis courts) is located within 40 m of the highest bank of Thredbo River (refer **Figure 9** and Drawing No. A1.225 provided in **Appendix B** for further detail).

#### 6.1.5.3 Wet Areas

The Development site and immediate surrounds comprises sections of seasonally wet areas as shown **Figure 10**.



Start of wet area, facing uphill – located towards top section of Lovers Leap ski run



Facing uphill – wet area within proximity of the coaster track alignment



Approx. 100 m facing downstream of wet area located on top section of Lovers Leap ski run – track alignment will be elevated over this seasonally wet area



Facing downhill towards bottom station – track alignment will traverse this general location

**Figure 10: Seasonally Wet Areas**

#### 6.1.5.4 Stormwater

A network of subsurface drainage and stormwater inlets/pits are located within the Development site and adjoining the works area (refer **Figure 11**). Generally, all stormwater within proximity of the works (nearby Merritts Gondola) flows into the gross pollutant trap and into outlet at Thredbo River (marked as existing rock headwall). Stormwater subsurface drainage east of tunnel works area flows into a wet area below raised footpath. Photos of the existing stormwater pits/inlets within / adjoining the site are provided in the SEMP (**Appendix F**).







## 6.2 Flora and Fauna

### 6.2.1 Biodiversity Values Map

The *Biodiversity Values Map (BVM) and Threshold Tool* (NSW Government 2022b) identifies land with high biodiversity value that is particularly sensitive to impacts from development and clearing. A small area of land mapped within the BVM is located within the Development site (refer Figure 4, **Appendix E**).

### 6.2.2 Area of Outstanding Biodiversity Value

The Development is not located within an area of outstanding biodiversity value.

### 6.2.3 Flora

The Development site comprises two native vegetation communities; Subalpine Woodland and Subalpine Riparian Scrub, with Exotic Grassland and Disturbed Vegetation on the ski slopes (refer Section 3.2, **Appendix E** for further detail).

### 6.2.4 Species of Significance

The Flora and Fauna Assessment (**Appendix E**) identifies the study area provides a small amount of known or potential habitat for a range of native fauna species. The following species are known, or considered likely or to have the potential to occur within the study area or surrounds (ELA 2023):

- *Mastacomys fuscus* (Broad-toothed Rat), listed Vulnerable under BC Act and EPBC Act) – likely occurrence;
- *Cercartetus nanus* (Eastern Pygmy-possum), listed Vulnerable under BC Act) – likely occurrence;
- *Callocephalon fimbriatum* (Gang-gang Cockatoo), listed Vulnerable under BC Act and Endangered under EPBC Act) – known occurrence;
- *Pachycephala olivacea* (Olive Whistler), listed Vulnerable under BC Act) – known occurrence;
- *Petroica rodinogaster* (Pink Robin), listed Vulnerable under BC Act – known occurrence;
- *Petroica phoenicea* (Flame Robin), listed Vulnerable under BC Act) – potential occurrence; and
- *Dasyurus maculatus* (Spotted-tailed Quoll), listed Vulnerable under BC Act and Endangered under EPBC Act – potential occurrence.

Similar habitats are widespread in adjacent areas, and elsewhere within the locality, and will continue to be available to these species (ELA 2023).

### 6.2.5 Introduced / Exotic Species

Nine (9) introduced / exotic species were identified during the flora surveys. These species are marked with an asterisk in Appendix B of the Flora and Fauna Assessment (**Appendix E**). The flora survey identified disturbed areas are generally dominated by introduced grasses such as *Festuca rubra* (Red Fescue) and *Agrostis capillaris* (Browntop Bent). Various exotic herbs were also identified within the site, including: *Acetosella vulgaris* (Sheep Sorrel), *Trifolium repens* (White Clover), *Taraxacum officinale* (Dandelion) and *Hypochaeris radicata* (Flatweed) (ELA 2023).

Minor occurrences of cosmopolitan exotic grasses and herbs and scattered occurrences of other weeds, particularly *Rubus spp.* (Blackberry) were identified within areas of remnant forest to be impacted by the Development (ELA 2023).

## 6.3 Social and Economic

### 6.3.1 Existing recreational infrastructure

Thredbo provides a range of existing recreational infrastructure, including:

- Alpine sports –lifts, trails and terrain parks for skiing, snowboarding and mountain biking;
- Golf course and disc golf (summer only);
- Village green – skate park, tennis courts, playground;
- Leisure centre; and
- Walking tracks.

The Development will provide an additional recreational activity within the resort.

### 6.3.2 Economic

Thredbo is one of the primary tourist destinations in the region. Since 2010 there has been strong growth within the resort in both winter and summer and this is expected to continue.

## 6.4 Landscape Characteristics and Built Environment

The landscape characteristics and built environment within the site and surrounds comprises the distinctive alpine environment, including alpine woodlands and subalpine vegetation, mountain vistas, Thredbo River, snowmaking infrastructure, recreational open spaces and associated recreational infrastructure including, ski lifts, Merritts Gondola, mountain bike trails, walking trails and base station facilities.

## 6.5 Air Quality and Noise

The following land uses have been identified within proximity of the Development site:

- KT offices within Valley Terminal - approximately 50 m from the Development site; and
- tourist accommodation (staff accommodation) within Valley Terminal – approximately 70 m from the Development site.

Existing air pollution (i.e. dust) within / adjacent to the Development site is generally associated with vehicle and machinery operation.

Potential noise sources within the vicinity of the site include vehicle traffic, operating ski lifts and guests utilising the ski slopes, mountain bike trails or walking trails.

## 6.6 Heritage

A review of the Precincts – Regional SEPP, NSW historic inventory and the Thredbo Alpine Village Conservation Plan, Vol.2 Inventory (Clive Lucas, Stapleton and Partners 1997) was undertaken on 4 August 2022. No heritage items are located within the Development site or within close proximity.

The Development site is located within KNP which forms part of the Australian Alps National Parks and Reserves (AANP). An impact assessment is provided in **Section 7.11.1**.

## 6.7 Aboriginal Cultural Heritage

A search of the Aboriginal Heritage Information and Management System (AHIMS) undertaken on 22 July identified there are no Aboriginal sites or places recorded or declared within the Development site or surrounds (Heritage NSW 2022) (**Appendix C**).

## 6.8 Matters of National Environmental Significance

A search of the EPBC Act Protected Matters Search Tool (PMST) (DAWE 2022) (records within a 1 km and 5 km buffer) was undertaken to determine whether any MNES are likely to occur within the Development area (refer **Appendix C** and **Appendix E**). The Protected Matters Report (PMR) identified the five (5) categories (as listed under the EPBC Act) of MNES (**Table 7**) that may be relevant to the Development area and surrounds.

**Table 7: Summary of MNES**

MNES Categories	Comment
<b>National Heritage Places</b>	One (1) National Heritage Place (Australian Alps National Parks and Reserves (AANP)) is considered relevant to the Development. Refer to Section 7.11.1 for an assessment against the relevant significant impact criteria.  No impacts to the Snow Mountains Scheme are anticipated, therefore no further assessment is required.
<b>Wetlands of International Importance</b>	Blue Lake is located more than 10 km from the site. No impacts to Blue Lake are anticipated, therefore no further assessment is required.
<b>Listed Threatened Ecological Communities (TECs)<sup>1</sup></b>	The likelihood of occurrence assessment provided in the Flora and Fauna Assessment (ELA 2023) (Appendix A of <b>Appendix E</b> ) concluded the habitat on site and in the vicinity is unsuitable for any listed TECs. No further assessment is required.
<b>Listed Threatened Species<sup>1</sup></b>	An assessment against the relevant significant impact criteria has been undertaken in the Flora and Fauna Assessment (ELA 2023) ( <b>Appendix E</b> ). A summary of the impact assessment is provided in <b>Section 7.3</b> .
<b>Listed Migratory Species<sup>1</sup></b>	The likelihood of occurrence assessment provided in the Flora and Fauna Assessment (ELA 2023) (Appendix A of <b>Appendix E</b> ) concluded: habitat on site and in the vicinity is unsuitable for six (6) of the listed migratory species; and there is a very low to low probability that a species uses the site for three (3) listed migratory species. No further assessment is required.

<sup>1</sup>While based on some species records, the PMST relies on predictive modelling of suitable habitats and does not necessarily reflect an actual record of the species/community for a particular location.

## 6.9 Transport and Access

The Development site comprises existing ski runs, mountain bike trails, vehicle access tracks and pedestrian footpaths / access. The main site access point is via the Valley Terminal base station area.

## 7 Impact Assessment

This section outlines the potential impacts of the Development on the natural, human and built environment of the site and surrounds.

### 7.1 Land

#### 7.1.1 Disturbance

The Development is predominately located within a heavily disturbed site with some minor disturbance to tracts of undisturbed native vegetation. The disturbance footprint (**Table 2**) for the Development is considered acceptable.

#### 7.1.2 Land Use

The Development is permissible and consistent with the land uses outlined in the Snowy Mountains SAP Master Plan, Precincts – Regional SEPP and KNP PoM as demonstrated in **Sections 4.4.1** and **4.3.1**. No significant adverse impacts to the existing or surrounding land uses are anticipated.

#### 7.1.3 Geotechnical Considerations

The Geotechnical Investigation (Asset 2022) has considered the potential geotechnical risks associated with the Development. The buildings and structures have been designed to accommodate the specific geotechnical risks identified for the site. The construction will incorporate good engineering practices in accordance with the recommendations outlined in Section 7 of the Geotechnical Investigation Report (Asset 2022).

### 7.2 Water

#### 7.2.1 Seasonally Wet Areas

The coaster alignment has been designed to first avoid disturbance within seasonally wet areas. Where the coaster alignment is required to traverse a disturbed wet area, impacts have been mitigated through the incorporation of a bridge or elevation track. Similar mitigation approaches are widely utilised across the mountain e.g. the use of platforms on mountain bike trails where the trail crosses wet areas.

#### 7.2.2 Water Quality

##### 7.2.2.1 Construction Impacts

Vegetation clearing and earthworks (trenching, cut and fill) will be required during construction. These activities have the potential to impact on water quality in the receiving environment (e.g. excavation works and soil stockpiling resulting in the release of sediment laden water into receiving waters).

The potential impacts to water quality during construction will be mitigated through the following:

- Implementation of appropriate drainage, erosion and sediment controls, including diversion of clean water around disturbance area and site stormwater detention / retention and treatment if required (in accordance with Geotechnical advice); and
- Stabilisation and rehabilitation of disturbed areas to be undertaken as soon as practicable.

A stormwater management plan will be prepared and implemented prior to commencement of construction works.

#### 7.2.2.2 Operational Impacts

As detailed in **Section 3.2.1.1**, the design incorporates stormwater infrastructure for the ongoing management of stormwater. Landscaped areas and revegetation of the existing bank will form part of the ongoing stormwater management and filtration. Trees, and to a lesser extent smaller vegetation, take large quantities of water out of the ground every day. This lowers the ground water table, which in turn helps to maintain the stability of the slope (Australian Geomechanics 2007).

### 7.2.3 Waterfront Land and Riparian Corridors

The Development is located within 40 m of Thredbo River. As highlighted in **Section 4.2.2.1** the Development comprises minor works within waterfront land and therefore does not require a CAA.

The Development is not anticipated to adversely impact on Thredbo River or its associated riparian corridor given the following:

- No clearing of native trees or shrubs is required within the riparian corridor;
- No ground disturbance is proposed within the riparian corridor;
- The works within 40 m of Thredbo river will not impact on fauna habitat connectivity;
- The carpark / hard stand and immediate surrounds comprises an existing stormwater network which aids in the effective management of stormwater run-off;
- During operation, the carpark / hardstand area will continue to act as a buffer between the riparian vegetation / Thredbo river and the development site;
- Appropriate drainage, erosion and sediment controls will be implemented during construction and operation to mitigate potential impacts to the receiving environment as detailed in the sEMP and preliminary stormwater management plan framework;
- All disturbed areas will be rehabilitated following completion of construction; and
- The operational design of the development comprises appropriate stormwater management infrastructure to aid in the management / treatment of stormwater prior to release into Thredbo river.

## 7.3 Flora and Fauna

### 7.3.1 Biodiversity Offset Scheme (BOS) Trigger

The Development will impact a small area of land mapped within the BVM (refer Figure 4, **Appendix E**). However, the design ensures that no vegetation clearing will be required within this mapped area. Further detail is provided in Section 1.4 of **Appendix E**.

The area of impacted native vegetation within the Development site will be approximately 0.29 ha, which does not exceed the 1 ha threshold which applies (refer Section 1.7.2 of **Appendix E**). As such, the Development will not trigger the BOS.



### 7.3.2 Direct and Indirect Impacts

The Development is expected to remove or further disturb approximately 0.29 ha of native vegetation (predominately Subalpine Woodland) and up to 10 m<sup>2</sup> of Subalpine Riparian Scrub (ELA 2023). The indirect impacts to flora and fauna associated with the Development are expected to be minor given the following (ELA 2023):

- The direct impact footprint is relatively small.
- The Development site is predominately located within existing disturbed areas, or on the edges of disturbed areas (e.g. edge of existing cleared corridor associated with Snowgums Chairlift).
- The Development incorporates low impact construction methods and the implementation of appropriate environmental controls and safeguards during construction and operation.

#### 7.3.2.1 *Changes in surface or subsurface hydrology affecting vegetation or habitats*

The Development is not anticipated to result in any substantial changes in surface or subsurface hydrology which may lead to the loss or adverse modification of vegetation communities or associated habitats (ELA 2023).

Similar impacts throughout the resort and elsewhere within KNP have had negligible impact on surface and subsurface hydrology, aquatic ecosystems or vegetation communities beyond the immediate Development footprint (ELA 2023).

#### 7.3.2.2 *Habitat connectivity*

The Development is not expected to have any substantial adverse impacts on habitat connectivity, as works will not sever any linkages between habitats or otherwise permanently restrict fauna movement (ELA 2023).

#### 7.3.2.3 *Threatened Flora Species and Potentially Important Habitats*

The Flora and Fauna Assessment (ELA 2023) concluded no threatened flora species were recorded within the study area during the survey period and none are considered likely to occur there given the general absence of suitable habitats. The study area does not support any endangered ecological communities, and the Development will not affect any potentially important habitats for threatened fauna species.

#### 7.3.2.4 *Threatened Fauna Species*

##### *Test of significance – BC Act*

An assessment against the Test of Significance (under the BC Act) for threatened species known within the study area and immediate surround or with potential to occur was undertaken by ELA (2022). The results concluded the Development is unlikely to have a significant effect on threatened species, populations or ecological communities or their habitat listed under the BC Act.

##### *Significant Impact Assessment – EPBC Act*

An assessment against the relevant Significant Impact Criteria for threatened species known within the study area and immediate surrounds or with potential to occur was undertaken by ELA (2022). The results concluded the Development is unlikely to have a significant impact on any listed species under the EPBC Act. Further detail regarding impacts to conservation significant species is provided in Section 4 of the Flora and Fauna Assessment (**Appendix E**).

### 7.3.3 Introduced / Exotic Species

Of the nine (9) species identified in **Section 6.2.5**, two (2) species (Dandelion and Blackberry) are identified within the *Regional Pest Management Strategy 2012-17: Southern Ranges Region* (OEH 2012). The invasive species currently occurring within the Development area are not expected to significantly proliferate in response to Project activities given appropriate biosecurity controls will be implemented (refer **Section 8**).

## 7.4 Social and Economic

### 7.4.1 Social

The Development will provide social benefits for the community through the provision of an additional year-round recreational activity that has the ability to operate in varying weather conditions (i.e. operable during snow and rain). The Development will supplement the existing recreational activities offered within the resort.

The design contributes to an activated public space providing equitable and safe pedestrian access and connections between different areas of the village hub. The inclusion of public seating, shelter and lighting will contribute to increased human activity within the locality and greater safety for guests.

### 7.4.2 Economic

Thredbo is one of the primary tourist destinations in the region, providing significant economic benefits to the local and regional economy. The Development will contribute to the local economy and is therefore considered to have a positive economic impact for the following reasons:

- The Development will support the diversification of the Snowy Mountains year-round tourism offering.
- The Development will generate construction and operation jobs.
- Local businesses may experience increased revenue from the Development in the form of purchase of goods and services.
- The Development will result in direct investment into the resort.
- The coaster's customer capacity is 500 people per hour (w.5 persons/vehicle) (Wiegand 2022).

## 7.5 Visual Impact Assessment

The coaster alignment has been designed to maximise the use of existing vegetation screening and topography to minimise visual impacts as much as practicable.

The Development will be visible from some ski slopes, mountain bike trails, walking trails, parts of the village and tourist accommodation (refer **Figure 12** for view from Keller Concourse). The Development is not visible from the Main Range.

The Development is located on the lower section of the mountain, as such it is not highly visible from the Alpine Way. The views from Alpine Way are generally fragmented by existing infrastructure and vegetation screening.

The visual impacts of the Development are not considered significant given the resort currently comprises similar infrastructure within the locality, such as the bobsled, snowmaking infrastructure,

Valley Terminal buildings, Catshed, Catshed Communications tower, Merritts Gondola base station and Snowgums Chairlift base station.

The design has mitigated the potential visual impacts as much as practicable through aligning to the topography, utilisation of exiting disturbed areas and tracts of vegetation which screen parts of the track. The design of the base station area (including carpark redesign, improved thoroughfare and landscaping) will contribute to improved amenity of the local area.



**Figure 12: View from Keller Concourse towards Development Location**

## 7.6 Built Environment

Components of the Development are anticipated to enhance the built form within the resort. The Development has been designed to fit in with the existing built form. This is demonstrated through the following design elements:

- The Development is predominately located within existing disturbed areas to limit native vegetation clearing and the expansion of new development areas.
- The design comprises similar built form and style to existing buildings and associated infrastructure in the vicinity, such as skillion roof form, corrugated metal Colorbond walls and roof on buildings, crushed granite gabion walls and FRP decking treadwell on footpaths.
- The buildings and associated infrastructure have been designed to withstand the alpine climate i.e. the bottom station provides adequate shelter over the waiting area to provide protection from snow in winter and shade during summer for guests.
- The design incorporates rehabilitation and native landscaping consistent with landscaped areas in the vicinity.

- The design contributes to an activated public space providing equitable and safe pedestrian access and connections between the western and eastern side of the village.
- The design incorporates public seating, shelter and lighting which will contribute to increased activity within the locality and safety for guests.

## 7.7 Air Quality

### 7.7.1 Construction

Dust can be a nuisance and decrease the amenity value of an area. Dust impacts are likely to be generated during construction from activities including vegetation clearing, truck movements and general construction activities (i.e. earthworks). Appropriate controls will be implemented during construction to mitigate potential impacts. As such there will be no significant adverse impact on the existing air quality from the Development.

### 7.7.2 Operation

During operation, no significant adverse impacts to the existing air quality are proposed.

## 7.8 Noise and Vibration

### 7.8.1 Construction

#### 7.8.1.1 Construction Hours and Duration of Works

It is proposed construction will be undertaken during standard working hours (i.e. 7:00 am – 6:00 pm, 7 days a week). Noise from construction sites within the resort is not uncommon during the general resort construction period (i.e. commencing after the October long weekend, and ending no later than 30 April the following year).

#### 7.8.1.2 Noise-making Equipment and Construction Processes

Potential noise impacts during construction include:

- Noise from machinery and equipment (i.e. Horns and reversing beepers); and
- Noise experience from general construction activities (i.e. Loading and unloading materials, earthworks).

The Development will generate construction noise however, this is expected during the general summer construction period within the resort. No significant adverse noise or vibration impacts are anticipated given the proposed mitigation measures in **Section 8**.

### 7.8.2 Operation

The Development will result in increased human activity within the locality during operation. However, the coaster is not dissimilar to the existing bobsled operation within close proximity of the Development site. The site and immediate surrounds are already subject to noise associated with lifting operations, skiing/snowboarding, mountain biking, hiking and general resort operations. The coaster manufacturer (Wiegand) highlights that the toboggans drive downhill noiseless (Wiegand 2022). As such, the proposed noise impacts associated with the Development are considered acceptable given the siting of the Development and the existing recreational activities currently permitted within the locality.



## 7.9 Heritage

The Development will not result in adverse heritage impacts (refer **Section 7.11.1** for the assessment of impacts to the AANP (National Heritage Place)).

## 7.10 Aboriginal Cultural Heritage

To establish due diligence for the development, an assessment against the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW 2010) has been provided in **Table 8**.

**Table 8: Aboriginal Cultural Heritage Due Diligence Process**

Due Diligence Process	Applicability (Yes/No)	Comment
1. Will the activity disturb the ground surface or any culturally modified trees?	Yes – refer Q2 No – AHIP application not necessary.	The Development will result in ground disturbance predominately within a highly disturbed area. Approximately 0.29 ha of native vegetation will be removed or modified. No culturally modified trees have been identified within the Development site.
2. Are there any: a) relevant confirmed site records or other associated landscape feature information on AHIMS? And/or	Yes, any or all, refer Q3 No, none – AHIP not necessary.	A search of the Aboriginal Heritage Information Management System (AHIMS) was undertaken on 22 July 2022. The search results ( <b>Appendix C</b> ) identified no Aboriginal sites are recorded in or near the Development site.
b) any other sources of information of which a person is already aware? And/or		Several historical independent assessments have been undertaken within the ski slopes and Valley Terminal base station area by various consultants, including Past Traces Heritage Consultants (2017 and 2018), NGH Environmental (2017), Iron Bark (2013), and URS Australia Pty Ltd (2004; 2005). All studies provide a general indication that the ski slope areas have low archaeological potential due to the level of disturbance associated with construction. The studies also concluded that given the steepness and exposed aspect/lack of sheltering tors, the ski slopes are unlikely to have been favourable campsite locations.
c) landscape features that are likely to indicate presence of Aboriginal objects?		The Development site is located in a highly disturbed environment, which has been subject to previous disturbance for the construction of existing ski slopes, associated buildings and snowmaking infrastructure. Previous disturbance has comprised vegetation clearing, extensive earthworks, and removal and disturbance to top soils and soil profiles, thus removing potential for Aboriginal sites to remain within these areas. As such, it is considered the Development site has low potential for unrecorded sites or Aboriginal objects.  There is no requirement to move onto Steps 3 and 4.
3. Can harm to Aboriginal objects listed on AHIMS or identified by other sources of information and/or	Yes – AHIP application not necessary No – refer Q4	Not applicable.

can the carrying out of the activity at the relevant landscape features be avoided?		
4. Does a desktop assessment and visual inspection confirm that there are Aboriginal objects or that they are likely?	Yes – further investigation and impact assessment required No – AHIP application not necessary	Not applicable.

As identified in **Table 8**, all reasonable steps have been undertaken to ensure the Development fulfils the requirements of the Aboriginal Cultural Heritage Due Diligence Process. Potential impacts from the Development on objects or sites of Aboriginal Cultural Heritage significance are considered unlikely. Therefore, an independent impact assessment is not required.

In the unlikely event that Aboriginal objects are discovered, management measures outlined in the SEMP (**Appendix F**) will be implemented.

## 7.11 Matters of National Environmental Significance

### 7.11.1 National Heritage Place

The Development site is located within KNP, forming part of the AANP which were included on the National Heritage List on 7 November 2008 for their –

- 1) Course or pattern of Australia's natural or cultural history;
- 2) Possession of uncommon, rare or endangered aspects of Australia's natural or cultural history;
- 3) Importance in demonstrating the principal characteristics of: (i) a class of Australia's natural or cultural places, or (ii) a class of Australia's natural or cultural environment
- 4) Importance in exhibiting particular aesthetic characteristics valued by a community or cultural group;
- 5) Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons; and
- 6) Special association with the life or works of a person, or group of persons, of importance in Australia's natural or cultural history.

In total, three reserves, seven national parks and one wilderness area comprise the National Heritage Place.

To determine whether a referral and formal assessment is required for the Development, an assessment against the significant impact criteria in the *Matters of National Environmental Significance: Significant Impact Guidelines 1.1* (DEE 2013) has been undertaken in **Table 9**.

**Table 9: Significant Impact Assessment – Australian Alps National Parks and Reserves (AANP)**

National Heritage Values of the AANP		Significant Impact Assessment
<p><b>Criteria:</b> An action is likely to have a significant impact on the National Heritage values of a National Heritage place if there is a real chance or possibility that it will cause:</p> <ul style="list-style-type: none"> <li>• one or more of the National Heritage values to be lost,</li> <li>• one or more of the National Heritage values to be degraded or damaged, or</li> <li>• one or more of the National Heritage values to be notably altered, modified, obscured or diminished.</li> </ul>		
1)	The AANP are of outstanding landscape value and are important in the pattern of Australia's natural history, containing glacial and periglacial features, fossils, karst, biological heritage, moth feasting, transhumant grazing, scientific research, water harvesting and recreation. The AANP have outstanding heritage value for the longevity and diversity of its recreational use (Commonwealth of Australia 2008).	The Development will not result in any adverse impacts on these values. The Development will contribute to the year-round recreational opportunities within KNP.
2)	The high altitude peaks and plateaus, glacial lakes and alpine and sub-alpine ecosystems of the alps are rare in Australia's mostly flat, dry and hot continent. The AANP contain a vast range of mountain environments and plant communities adapted to cold climates including tall, wet, fern-filled forests to snowgum woodlands and open expanses of alpine meadows. The alps also contains landforms created by glaciers, remarkable fish fossils and unique fauna including Mountain Pygmy Possum ( <i>Burramys parvus</i> ) and Bogong moth ( <i>Agrotis infusa</i> ) (Commonwealth of Australia 2008; DAWE 2021).	The Development will not result in any adverse impacts on these values.
3)	The AANP are listed for the north-east Kosciuszko pastoral landscape values which demonstrate the use of mountain resources, namely the summer grasses and herbfields. The landscape demonstrates the past grazing leases which convey the principal characteristics of transhumance and permanent pastoralism in a remote environment (Commonwealth of Australia 2008). The area contains stockman's huts, homestead complexes, stock yards and stock routes which reflect 150 years of summer grazing on the alpine high plains (DAWE 2021).	The Development is not located within the north-eastern area of KNP, therefore it will not impact on these landscape values.
4)	The AANP is a powerful, spectacular and distinctive landscape and natural beauty. The mountain vistas, alpine streams and rivers, lakes, snow-covered eucalypts, high plain grasslands, summer alpine wildflowers, forests and natural sounds are highly valued by community groups (Commonwealth of Australia 2008; DAWE 2021).	The Development will not result in any adverse impacts on these values.
5)	The AANP have a strong association with Australia's pioneering history, while the snowfields and national parks have long been popular recreation areas. Many community groups have a strong association with the alps for social and cultural reasons. The pioneering history of the high country is valued as an important part of the construction of the Australian identity featuring in myths, legends and literature. The mountain huts constructed for grazing, mining and recreation are valued by communities as physical expression of the cultural history of the region (Commonwealth of Australia 2008; DAWE 2021).	The Development will not result in any adverse impacts on these values.

6)	There is a long history of scientific research and endeavour in the AANP and its associated with the life or works of highly recognised persons such as Baron Ferdinand von Mueller (botanist), Eugen Von Guerard (artist), and writers/poets, Andrew Barton 'Banjo' Paterson, Elyne Mitchell and David Campbell (Commonwealth of Australia 2008; DAWE 2021).	The Development will not have any impact on the life or works of a person, or group of persons, of importance in Australia's natural or cultural history.
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As identified in **Table 9** the proposed development will not cause any of the heritage values of the AANP to be lost, degraded, damaged or to be notably altered, modified, obscured or diminished.

### 7.11.2 Summary of Impacts to MNES

As identified in **Sections 6.8, 7.11** and **Appendix E**, the Development will not have a significant impact on any of the MNES. Therefore, a referral to the Australian Government Minister for the Environment is not required.

## 7.12 Transport and Access

### 7.12.1 Construction

During construction, temporary closures of access tracks and mountain bike trails will be required. Impacts are expected to be negligible as closures will be short-term.

### 7.12.2 Operation

The Development has been designed with consideration of the year-round access requirements within and around the site. The following key elements have been incorporated into the design:

- The coaster track comprises sections elevated aboveground to minimise impacts on existing resort operations within the site and immediate surrounds.
- The uphill section of the coaster alignment comprises a tunnel within the lower section of the Sundance ski run to ensure there are no adverse impacts to the Merritts Gondola and Snowgums Chairlift bottom station access for skiers / snowboarders, mountain bike riders or snow groomers.
- The downhill sections of the track are elevated where the track traverses existing ski runs and trails to provide the necessary clearance for recreational activities and mountain operations (e.g. 3 m clearance for mountain bike trails and 4 m clearance for vehicle access tracks).
- The staff carpark adjacent to the bottom station building will be retained for staff only.
- Pedestrian networks and linkages will be retained and enhanced around the bottom station building (e.g. upgraded lighting and path resurfacing) to ensure safe access for guests.
- Fencing will be erected to divert public access from areas containing the bulk of the coaster track infrastructure (i.e. Snowgums Chairlift corridor and Lovers Leap ski run) (refer Site Analysis Plan, Drawing No. A1,218, **Appendix B**). The impacts of these exclusion areas are considered minor as these runs are not heavily utilised and skiers and snowboarders will still be able to access the Merritts Gondola and Snowgums Chairlift bases stations via the Sundance ski run.



## 7.13 Waste

### 7.13.1 Construction

The Development will generate the following waste streams:

- general solid waste (putrescible) e.g. waste from litter bins, food waste; and
- general solid waste (non-putrescible) e.g. plastic, paper, cardboard, demolition and construction waste (concrete, excess steel, redundant snowmaking infrastructure).

The following waste receptacles will be provided for the storage and disposal of waste associated with the construction of the Development:

- general litter bins for waste such as food waste and non-recyclable plastic;
- recycling bins for waste such as cardboard packaging, paper, recyclable plastic;
- skip bins (including wash-out bin for excess concrete); and
- KT's waste transfer facility (materials to be segregated for re-use, recycling etc.).

Any waste that cannot be re-used within the resort will be transported off-site by a licence contractor and disposed of at the Jindabyne Landfill.

Waste minimisation and management strategies that will be implemented for the Development are provided in **Section 8**.

### 7.13.2 Operation

Waste will be managed in accordance with the Thredbo Waste Management Strategy. Waste will be collected, and disposed of within the Thredbo Waste Transfer Station.

## 7.14 Climate

The design of the Development is compatible with year-round use within the resort. The top and bottom station buildings have been designed to withstand the extreme alpine climate and shed snow from the building entrance to protect occupants from falling snow and ice during winter.

The bottom station covered loading area will also provide guests protection from the elements whilst waiting in line. The magnetic braking system enables the coaster to operate safely in wet, snow and frosty conditions without wear (Wiegand 2022).

## 8 Mitigation and Management Measures

Recommended mitigation and management measures to reduce potential impacts on the key values of the natural, built and human environment within the site and surrounds are provided in **Table 10**.

**Table 10: Recommended Mitigation and Management Measures**

Mitigation and Management Measures		Timing
<b>General</b>		
1	Preparation and implementation of SEMP ( <b>Appendix F</b> ). The SEMP will address matters such as construction hours, vegetation management, waste management, complaints process and monitoring requirements.	Prior to commencement of works, construction
2	All Project staff and contractors should undergo a site-specific induction which will cover environmental awareness training, environmental obligations and compliance requirements, emergency and incident response, reporting, and relevant procedures.	Prior to commencement of works
3	Prior to commencement of works, the Development site will be temporarily fenced, roped or flagged to clearly delineate the construction area and no-go zones.	Prior to commencement of works
<b>Land and Rehabilitation</b>		
1	All storage of petroleum products, oils or chemicals to be in accordance with Australian Standards.	Construction
2	Refuelling procedures to be implemented to minimise spills of fuel products.	Construction
3	All stockpiles will be constructed and managed in accordance with <i>Soil Stockpile Guidelines for the Resort Areas of Kosciuszko National Park</i> (OEH 2017) and SEMP ( <b>Appendix F</b> ).	Construction
4	The recommendations outlined in the Geotechnical Investigation Report (Asset 2022) are to be incorporated into the detailed design and construction phase.	Detailed design, construction
5	Rehabilitation activities are to be undertaken in accordance with the Rehabilitation Guidelines. Rehabilitation details are outlined in the SEMP ( <b>Appendix F</b> ).	Construction, rehabilitation
6	Only weed-free straw or natural thatch/litter should be used in sediment control activities and rehabilitation.	Construction, rehabilitation
<b>Surface and Groundwater Management</b>		
1	Where required, drainage, erosion and sediment controls to be designed and installed in accordance with <i>Managing Urban Stormwater: Soils and Construction, Volume 1, 4th Edition</i> (Landcom 2004). Controls are to be implemented and managed in accordance with the SEMP and Stormwater Management Plan to ensure impacts to receiving environments are mitigated / minimised. Controls are to be retained in place until exposed areas of soil or vegetation are stabilised and/or revegetated (ELA 2023). Proposed controls are provided in the SEMP ( <b>Appendix F</b> ).	Construction
2	If groundwater seepage is encountered during construction, subsoil drainage is recommended to be installed (Asset 2022). If significant groundwater is encountered during construction that cannot be control using diversion drains, further geotechnical advice will be sought.	Construction
3	Preparation and implementation of a Stormwater Management Plan for construction and operation. A preliminary Stormwater Management Plan framework is provided in Appendix E of the SEMP ( <b>Appendix F</b> ).	Construction and operation
<b>Flora and Fauna / Biosecurity</b>		
1	All disturbance should be kept to the minimum required to achieve the proposal.	Construction
2	All machinery to be used during the construction phase should be limited to the existing disturbed areas and access tracks and the proposed coaster alignment as far as is possible.	Construction

3	Appropriate safeguards should be in place during the proposed works to limit the potential for invasive plants or pathogens, chemicals or any other pollutants to enter the environment in association with the Development (ELA 2023). Refer to SEMP ( <b>Appendix F</b> ) for detail.	Construction
4	If any wombat burrows need to be impacted by the proposal a wombat management plan should be developed for the proposal in consultation with NPWS.	Construction
5	Disposal and storage of putrescible wastes must be undertaken appropriately to ensure feral animals aren't attracted to the site.	Construction, operation
<b>Traffic and Access</b>		
1	Traffic and construction vehicle access will be managed as per regular daily operation in the resort.	Construction
2	All vehicle and plant operators will be licensed and trained.	Construction
3	Appropriate signage will be installed to ensure the safety of road users, cyclists and pedestrians, and prevent unauthorised access to the construction site. Signage will be erected to inform the public of temporary trail closures during construction.	Construction
<b>Air Quality</b>		
1	Reasonable and practicable measures will be implemented to prevent dust from affecting the amenity or the surrounding environment during construction. Measures are outlined in the SEMP ( <b>Appendix F</b> ).	Construction
2	In the event a complaint is received in relation to air quality/dust nuisance, the source of the complaint will be investigated, and if required corrective actions will be implemented to minimise or avoid impacts.	Construction
<b>Noise and Vibration</b>		
1	Project staff will take reasonable and practicable management measures to avoid and mitigate environmental nuisance from noise associated with the works e.g. avoid dropping materials from a height, turn off plant that is not being used. Measures are outlined in the SEMP ( <b>Appendix F</b> ).	Construction
2	Construction works and operation of plant will comply with Australian Standard AS 2436-2010 <i>Guide to noise and vibration control on construction, demolition and maintenance sites</i> and the <i>Interim Construction Noise Guideline</i> (DECC 2009) e.g. ensure plant is regularly maintained, and repair or replace equipment that becomes noisy, keep drivers informed of designated vehicle routes and parking locations.	Construction
3	Construction works will be conducted during standard hours stipulated in the conditions of approval.	Construction
4	In the event a noise complaint is received, the source of the complaint will be investigated, and if required corrective actions will be implemented to minimise or avoid noise impacts.	Construction
<b>Aboriginal Cultural Heritage</b>		
1	Where unexpected items of potential archaeological, built or Aboriginal cultural heritage significance are discovered, works will cease, relevant authorities (i.e. NPWS) will be notified and the site will be secured by erecting a no-go zone. If human remains are found, works will cease, the site will be secured and NSW Police will be notified immediately.	Construction
<b>Waste</b>		
1	Waste to be managed in accordance with the waste hierarchy – avoid and reduce → reuse waste → recycle waste → recover energy → treat waste → dispose of waste.	Construction, operation
2	All construction waste and litter to be minimised and contained within appropriate receptacles. All receptacles will be in good condition.	Construction
3	All waste to be managed and disposed of in accordance with legislative requirements and relevant standards.	Construction
4	All waste transportation vehicles should be covered appropriately to ensure waste cannot spill, leak or escape onto the road or wash into stormwater drains.	Construction



## 9 Conclusion

The purpose of the Development is to enhance and diversify KT's recreational activity offerings through the provision of a year-round rail-guided toboggan ride.

In accordance with the relevant legislative requirements, this SEE has assessed the potential impacts of the Development on the human, built and natural environment and surrounds. As demonstrated in this SEE, the Development is permissible and consistent with the land uses permitted in Snowy Mountains SAP Master Plan, Precincts – Regional SEPP and KNP PoM.

The Development has been designed to minimise impacts on the surrounding environment. The Development will require the clearing of approximately 0.29 ha of Subalpine Woodland and up to 10 m<sup>2</sup> of Subalpine Riparian Scrub. ELA (2022) concluded the Development is unlikely to have a significant effect on threatened species, populations or ecological communities (or their habitats) listed under the BC Act. Further, the Development is unlikely to have a significant impact on any MNES or Commonwealth land listed under the EPBC Act, therefore referral to the Australian Government Minister for the Environment is not required. With the implementation of the proposed environmental controls and safeguards, the impacts to the natural environment are considered acceptable.

No impacts to Aboriginal or European cultural heritage are proposed. The Development has been designed to fit in with the existing built form within the locality, as such no significant adverse impacts to the built environment are proposed.

The socio-economic impacts of the Development will be positive through the provision of a year-round recreational activity that will contribute to the diversification of activities offered within the Snowy Mountains region. The Development will also generate direct and indirect economic impacts (i.e. construction and operation jobs and local businesses may experience increased revenue from the Development in the form of purchase of goods and services).

The Development is considered to be within the public interest given –

- the Development is consistent with the aim and objectives of the Precincts – Regional SEPP;
- the Development is consistent with the planned land use outcome for the site within the Snowy Mountains SAP Master Plan;
- the Development is compatible with the site;
- the Development will not have any significant adverse environmental impacts;
- the Development is consistent with the principles of ESD.

In summary, the Development will largely provide a positive contribution to the resort and diversification of year-round tourism offerings within the Snowy Mountains.

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## 11 Acronyms and Abbreviations

Acronyms & Abbreviations	
AANP	Australian Alps National Parks and Reserves
AHD	Australian Height Datum
AHIP	Aboriginal heritage impact permit
BC Act	<i>Biodiversity Conservation Act 2016</i>
BC Regulation	Biodiversity Conservation Regulation 2017
BCA	Building Code of Australia
BFPL	Bush fire prone land
BFSA	Bush fire safety authority
BOS	Biodiversity Offset Scheme
BVM	Biodiversity Values Map
Cth	Commonwealth
DA	Development Application
DAWE	Commonwealth Department of Agriculture, Water and the Environment (now DCCEEW)
DCCEEW	Commonwealth Department of Climate Change, Energy, the Environment and Water (formerly DAWE)
DECC	NSW Department of Environment and Climate Change
DECCW	NSW Department of Environment, Climate Change and Water
DIPNR	NSW Department of Infrastructure, Planning and Natural Resources
DoP	NSW Department of Planning
DPE	NSW Department of Planning and Environment
DPE Water	NSW Department of Planning and Environment – Water
DPIE	NSW Department of Planning, Industry and Environment (now DPE)
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2021</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i>
ESCP	Erosion and Sediment Control Plan
ESD	Ecologically Sustainable Development
Ha	Hectare
KNP	Kosciuszko National Park
KNP POM	Kosciuszko National Park Plan of Management 2006
km	kilometres
LGA	Local Government Area
m	metres
m <sup>2</sup>	metres squares



MNES	Matters of National Environmental Significance
NPW Act	<i>National Parks and Wildlife Act 1974</i>
NPWS	National Parks and Wildlife Service
NRAR	Natural Resources Access Regulator
NSW	New South Wales
OEH	NSW Office of Environment and Heritage
PMR	Protected Matters Report
Precincts – Regional SEPP	<i>State Environmental Planning Policy (Precincts—Regional) 2021</i>
Rehabilitation Guidelines	<i>Rehabilitation Guidelines for the Resort Areas of Kosciuszko National Park (DECC 2007)</i>
RFS	NSW Rural Fire Service
SEE	Statement of Environmental Effects
SEMP	Site Environmental Management Plan
SFPP	Special Fire Protection Purpose
TEC	Threatened Ecological Community
Thredbo	Thredbo Alpine Resort
VRZ	Vegetated Riparian Zone
WM Act	<i>Water Management Act 2000</i>
WM (General) Regulation	<i>Water Management (General) Regulation 2018</i>

## 12 Appendices

## Appendix A Site Photos

### Bottom Station Area



Existing hardstand area – facing towards lower section of Sundance disturbed ski run where proposed bottom station will be located (Source: Smithers 2022).

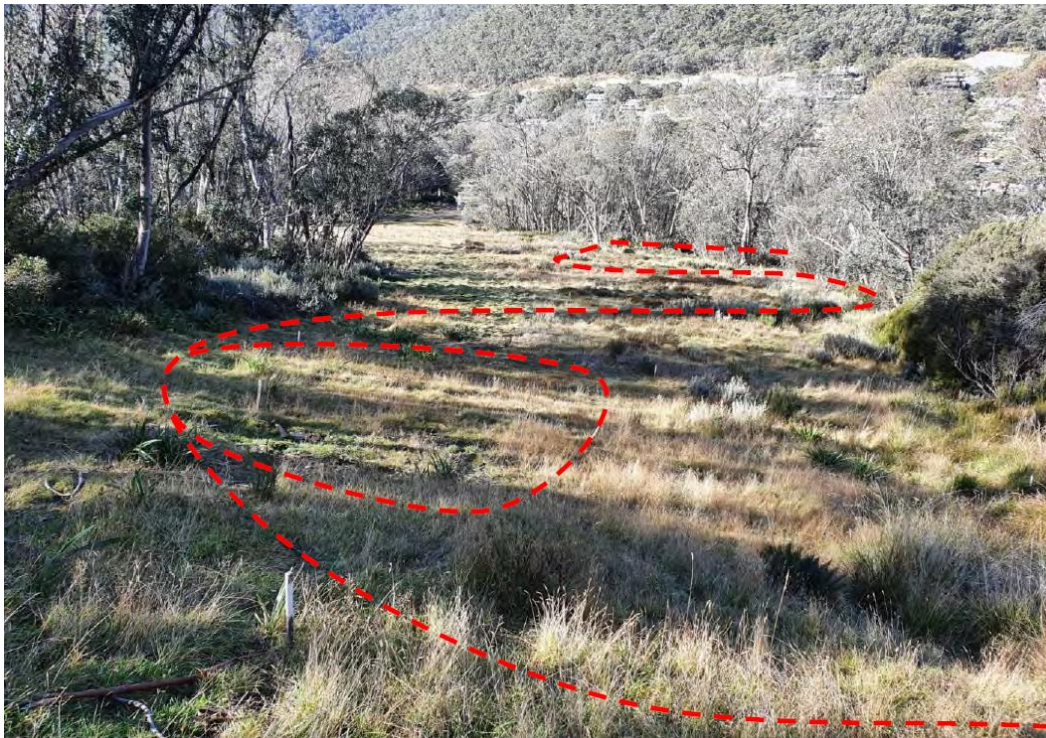
### Top Station Area



Facing uphill towards Cat shed – top station to be located below Cat shed (Source: Smithers 2022)



## Section of Track Alignment



The coaster alignment will be located within a mix of existing disturbed ski runs and adjoining Subalpine Woodland (Source: Smithers 2022)



The coaster alignment will be elevated at this section where it traverse this seasonally wet area





Looking uphill on Lovers Leap ski run where the coaster exits the vegetation mid photo left to enter the first circle which is contained wholly within the disturbed foot print of the ski run.

### Uphill Track Alignment Area



The uphill section of the coaster alignment will be located on the northern side of the Snowgums Chairlift corridor. This section will require clearing of Subalpine Woodland to ensure the necessary clearances are achieved for the safe operation of the coaster (Source: Smithers 2022).

## **Appendix B Site Plans and Design Drawings**

## Appendix C Desktop Search Results



## Appendix D Geotechnical Investigation Report

## Appendix E Flora and Fauna Assessment

## **Appendix F Site Environmental Management Plan**