



Statement of Environmental Effects

Snowmaking Upgrades, Bunny Walk to Milk Run

Thredbo Alpine Resort
Kosciuszko National Park, NSW

August 2023



Department of Planning
and Environment

Issued under the Environmental Planning and Assessment Act 1979

Approved Application No 23/12343

Granted on the 21 November 2023

Signed Z Derbyshire

Sheet No 1 of 19

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Executive Summary

Details	
Development Proposal	<p>This DA is seeking approval for the following works:</p> <ul style="list-style-type: none"> • Vegetation clearing; • Earthworks; • Installation of snowmaking infrastructure; and • Rehabilitation works. <p>The Development forms part of the ongoing upgrades to the existing snowmaking system. The Development will incorporate fan guns into the existing snowmaking infrastructure which will allow KT to improve the efficiency of its snowmaking operation, as well as the quality and reliability of snow cover within these areas.</p>
Site Details	<p>Address: 2 Friday Drive, Thredbo NSW 2625</p> <p>Location within the resort: The Development is located between Bunny Walk station and the base of Milk Run. The site comprises:</p> <ul style="list-style-type: none"> • 100 Line (between Bunny Walk and Cat Shed); • Middle Slopes (section of Supertrail uphill of Cat Shed); • Trunk line-Cat Shed and Cat Shed-Milk Run split; and • Milk Run (west of Cat Shed to intersection with Lower Supertrail). <p>Lot Description: Lot 876/DP 1243112</p> <p>Zoning: Kosciuszko National Park, C1: National Parks and Reserves</p>
Applicant	Kosciuszko Thredbo Pty Ltd (KT)
Key Planning Considerations	<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&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>
Key Matters	<p>The Development is predominately located within the existing ski slopes and other highly disturbed areas. Direct impacts arising from the Development are expected to affect less than 30 m² of already disturbed native vegetation. The Development will not result in any substantial adverse impacts on native vegetation communities or associated fauna habitats, nor will there be any impacts on flora species of conservation significance, important fauna habitats, habitat connectivity or any other biodiversity values of conservation significance (ELA 2023).</p> <p>The Development is not located on waterfront land.</p>

	<p>The Geotechnical Assessment concluded the Development will have minimal or no geotechnical impact on the site, based on the relatively shallow depths of excavation required, the lack of obvious signs of hillside instability observed or expected, and anticipated subsurface conditions expected in the area (AssetGeoEnviro 2023).</p> <p>The Development has been designed to improve the operation of the snowmaking system whilst minimising impacts on the surrounding environment.</p> <p>In response to the challenges posed by the sustainability of natural snow fall within a changing climate, artificial snowmaking improves seasonal length and viability, which may allow the winter visitation period to be maintained or potentially extended. This will provide positive social and economic impacts through the provision of improved snow cover which will contribute to an enhanced guest experience, as well as direct investment into the resort, and generation of construction jobs. The Development is therefore considered critical infrastructure for the operation of the resort. The Development is within the public interest.</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 SE
1.1 Information requirements for development applications	
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	Lot 876/DP 1243112
d. an indication as to whether the land is, or is part of, critical habitat	The land is not part of critical habitat. Refer 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	Unlikely. Refer Section 6.2 .
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	Refer Table 1 .
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.	Refer Figure 2, Figure 3, Figure 4 and Figure 5 .
k. drawings of the development.	Refer Appendix A .
Table 1 – essential document requirements for a development application	
l. an A4 plan of the building that indicates its height and external configuration, as erected, in relation to its site	Not applicable.
Section 1.2 Requirements for a Statement of Environmental Effects	
a. the environmental impacts of the development	The environmental impacts of the Development are discussed in Section 6 .
b. how the environmental impacts of the development have been identified	Refer Section 5 .
c. the steps to be taken to protect the environment or to lessen the expected harm to the environment	Refer Section 7 .
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	Refer Figure 2, Figure 3, Figure 4 and Figure 5 .

f. development compliance with building heights, building height planes, setbacks and building envelope controls (if applicable) marked on plans, sections and elevations	Not applicable.
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	No landscaping proposed. All disturbed areas will be rehabilitated in accordance with the Rehabilitation Guidelines for the Resort Areas of Kosciuszko National Park (NGH 2007)
h. if the proposed development is within an area in which the built form is changing, statements of the existing and likely future contexts	Refer Section 6.5 .
i. photomontages of the proposed development in the context of surrounding development	Not applicable for nature and scale of Development. Refer to figures and plans provided as part of the application.
j. a sample board of the proposed materials and colours of the facade	Not applicable.
k. detailed sections of proposed facades	Not applicable.
l. if appropriate, a model that includes the context.	Not applicable.

1 Introduction

This Statement of Environmental Effects (SEE) has been prepared to support the Development Application (DA) for the upgrades and installation of snowmaking infrastructure between Bunny Walk and Milk Run ski runs, within Thredbo Alpine Resort (Thredbo) (hereinafter referred to as the Development). The Applicant for the DA is Kosciuszko Thredbo Pty Ltd (KT) (ABN 95 000 139 015).

The Development site is located within Thredbo, approximately 35 kilometres (km) south-west of Jindabyne, New South Wales (NSW). The DA is seeking approval for the following works:

- Vegetation clearing;
- Earthworks;
- Installation of snowmaking infrastructure; and
- Rehabilitation works.

Developments in NSW alpine resort areas are governed by the *State Environmental Planning Policy (Precincts – Regional) 2021* (Regional Precincts SEPP). The 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).

The Development is not integrated development.

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.

1.2 Supporting Documentation

Supporting documentation is listed in **Table 1**.

Table 1: Supporting Documentation

Document	Title / Description	Author / Prepared by	Date	Document Reference
Geotechnical Assessment	Geotechnical Assessment for Snowmaking Upgrades – Bunny Walk to Milk Run Thredbo NSW	AssetGeoEnviro	1 August 2023	7238-R1 Rev 1
Flora and Fauna Assessment	Snowmaking Upgrades, Bunny walk to Milk Run, Thredbo	Eco Logical Australia Pty Ltd	2 August 2023	6163
Site Environmental Management Plan	Site Environmental Management Plan, Snowmaking Upgrades, Bunny Walk to Milk Run	Kosciuszko Thredbo Pty Ltd	02 August 2023	Rev 0
Cost of Works	Estimated Cost of Works, Snowmaking Upgrades, Bunny Walk to Milk Run	Kosciuszko Thredbo Pty Ltd	08 June 2023	-
Plan	Long sections, SM-Bunny Walk to Milk Run Catshed Trunk Line	Kosciuszko Thredbo Pty Ltd	2/08/2023	Rev A
Plan	Long sections, SM-Bunny Walk to Milk Run, Sheets 1 to 5	Kosciuszko Thredbo Pty Ltd	2/08/2023	Rev A
Plan	Long Section Plan, Snowmaking Upgrades Bunny Walk to Milk Run	Kosciuszko Thredbo Pty Ltd	03/08/2023	Rev A
Plan	TT10 Fan Gun Dimensions	TechnoAlpin	2020	-
Plan	Snowmaking Trench Cross Section, Snowmaking Installation	Kosciuszko Thredbo Pty Ltd	04/08/2023	Rev 2
Plan	Snowmaking Laterals Connection	Kosciuszko Thredbo Pty Ltd	15/03/2023	Rev 1
Plan	Snowmaking Lateral Trench Cross Section to Fan Pit	Kosciuszko Thredbo Pty Ltd	06/07/2023	Rev 1
Plan	CHRC0057	TechnoAlpin	19.03.2021	A

2 Site Context and Analysis

2.1 Site Locality

2.1.1 Regional context

The Development is located in Thredbo, within the southern part of Kosciuszko National Park (KNP), approximately 30 km south-west of Jindabyne, NSW, within the Snowy Monaro Regional Council Local Government Area (LGA) (**Figure 1**).

2.1.2 Local context

The Development is located between Bunny Walk station and the base of Milk Run. The site comprises the following (**Figure 2**):

- 100 Line (between Bunny Walk and Cat Shed);
- Middle Slopes (section of Supertrail uphill of Cat Shed);
- Trunk line-Cat Shed and Cat Shed-Milk Run split; and
- Milk Run (west of Cat Shed to intersection with Lower Supertrail).

The Development site is located on land formally described as Lot 876/DP 1243112.

2.2 Site Description and Suitability

The Development site is located within a highly disturbed environment, comprising existing snowmaking infrastructure (i.e. underground pipes and aboveground hydrants and guns) within ski slopes. The surrounding environment comprises ski slopes, chairlifts, and associated infrastructure and buildings. There are no records of contamination within the site.

The site is considered suitable for the proposed development as the site and surrounds contains existing snowmaking infrastructure which forms part of the ski resort operation. This Development will contribute to the efficiency and effectiveness of artificial snowmaking.

2.3 Site History

The Development site comprises a mix of recreational and snowmaking infrastructure. The snowmaking infrastructure being replaced was originally installed in 1988.

2.4 Land Uses

Existing land uses within the Development site include: fences, infrastructure facilities, lifting facilities, public utility undertakings, recreational facilities (outdoor), recreation infrastructure; ski slope huts, ski slopes and snowmaking infrastructure.

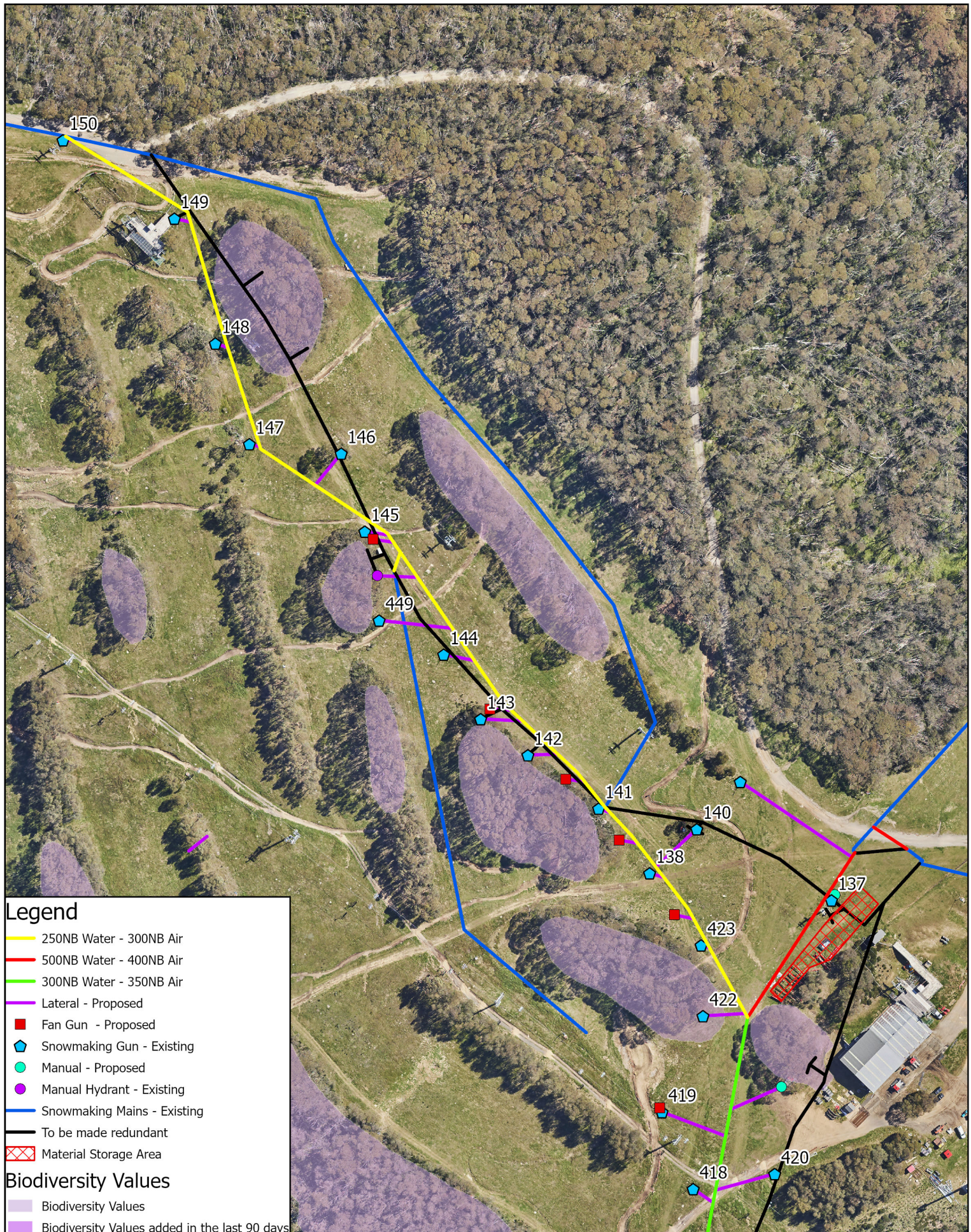
The Development is for the replacement of existing and installation of new snowmaking infrastructure which is consistent with the land uses permitted with consent under Section 4.7 of the Precincts – Regional SEPP.

2.5 Zoning

The Development site is zoned as C1 – National Parks and Nature Reserves.



<p>Scale: 1:305,832</p> <p>3 1.5 0 3 6 9 12 Kilometers</p> <p>Map Projection: Universal Transverse Mercator Horizontal Datum: GDA 2020 Grid: GDA 2020 MGA Zone 55</p>	 	<p>FIGURE 1: REGIONAL SITE CONTEXT</p>	<p>Revision: A</p> <p>Date: 7/06/2022</p> <p>Produced By: KO</p>
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Scale: 1:1,940

105 0 10 20 30 40
Meters

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



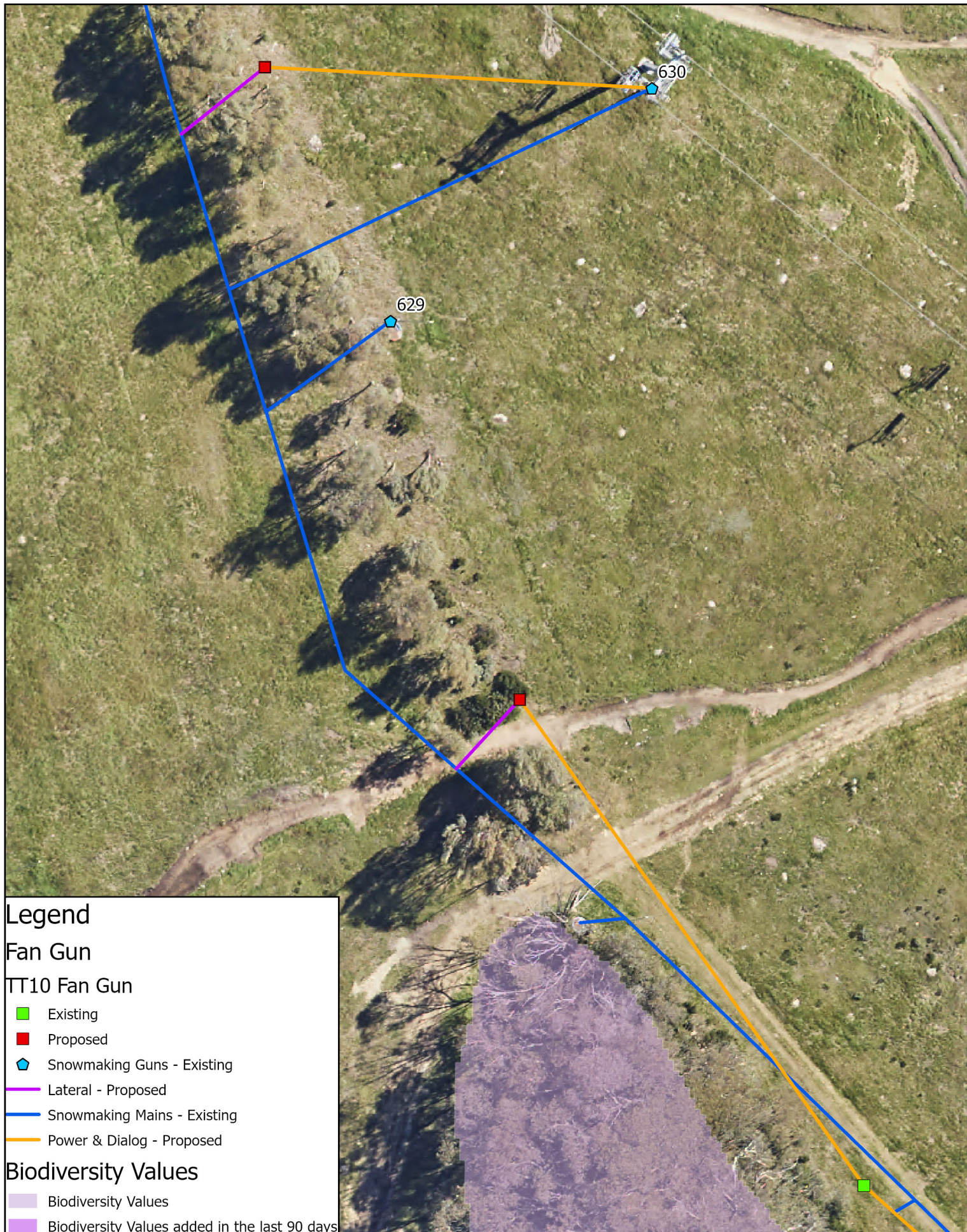
SITE PLAN 100 Line

Project: Snowmaking Upgrades
Bunnywalk to Milk Run

Revision: 5

Date: 13/07/2023

Produced By: BB



Legend

Fan Gun

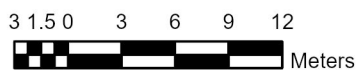
TT10 Fan Gun

- Existing
- Proposed
- Snowmaking Guns - Existing
- Lateral - Proposed
- Snowmaking Mains - Existing
- Power & Dialog - Proposed

Biodiversity Values

- Biodiversity Values
- Biodiversity Values added in the last 90 days

Scale: 1:424



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



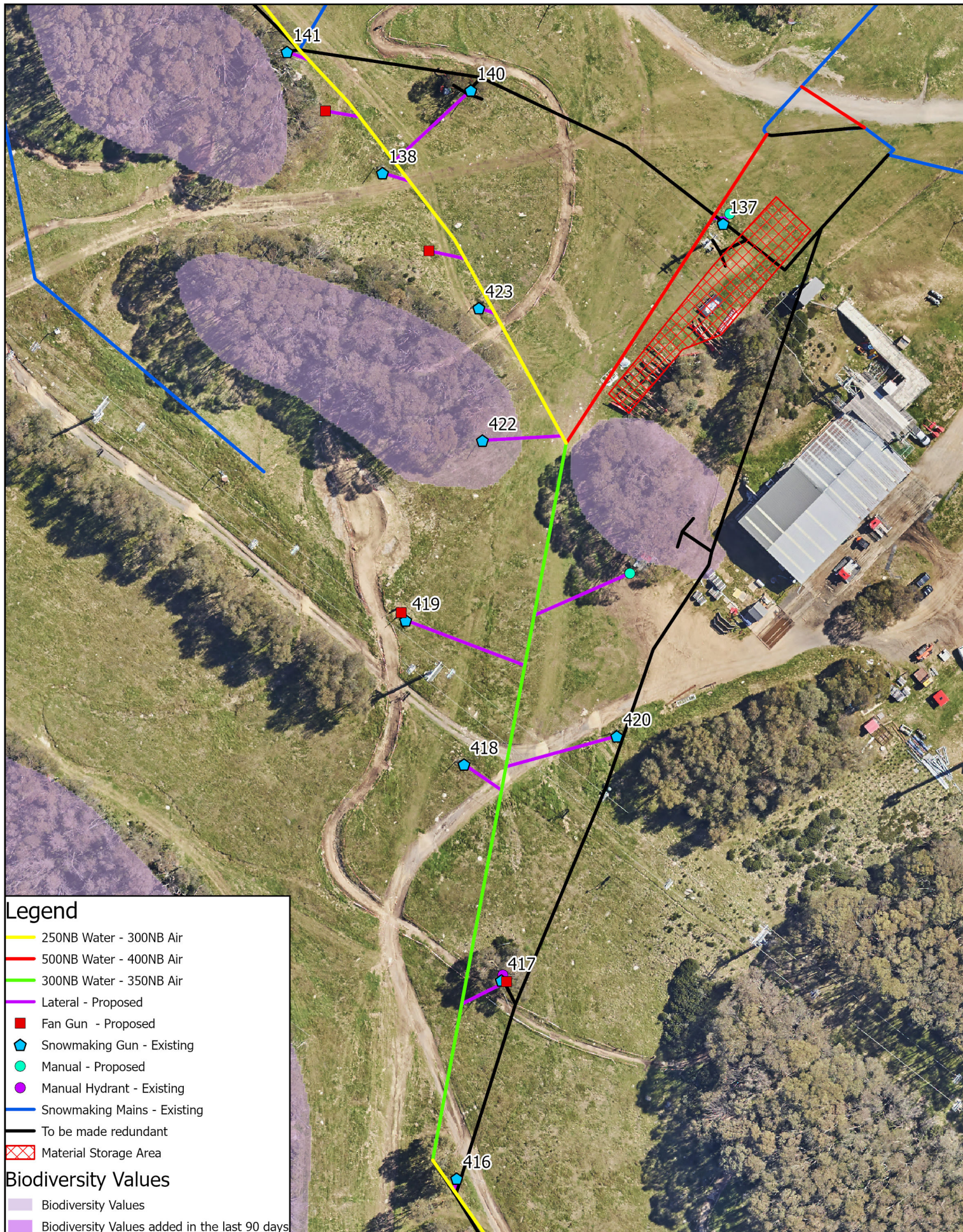
**SITE PLAN
Middle Slopes**

Project: Snowmaking Upgrades
Bunnywalk to Milk Run

Revision: 4

Date: 07/07/2023

Produced By: BB



Scale: 1:1,034



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



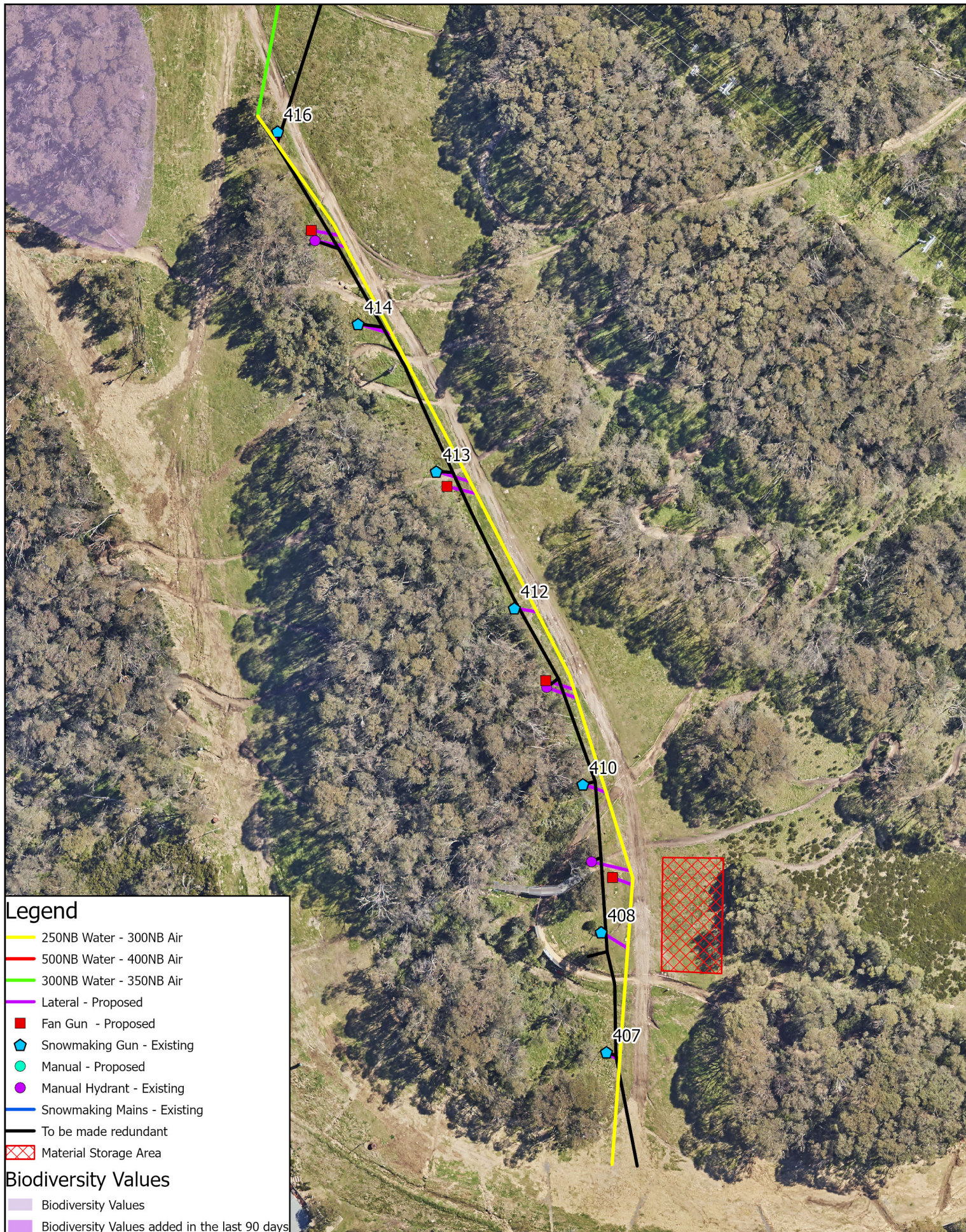
SITE PLAN Trunk Line - Cat Shed & Cat Shed - Milk Run Split

Project: Snowmaking Upgrades
Bunnywalk to Milk Run

Revision: 4

Date: 07/07/2023

Produced By: BB



Scale: 1:1,241



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



SITE PLAN Milk Run

Project: Snowmaking Upgrades
Bunnywalk to Milk Run

Revision: 4

Date: 07/07/2023

Produced By: BB

3 Project Description

3.1 Background

KT operate a snowmaking system which provides air and water via pipes to a network of snowmaking guns to produce snow across the resort. These guns are broadly grouped into the categories of lance or fan guns. Lance guns rely on the supply of air, water and electricity, whilst fan guns can be configured with onboard air compressors, relying only on water and electricity to operate.

The improved technology of fan guns to increase efficiencies and performance has been at the forefront of snowmaking companies research and development within recent years. The fan guns allow for a higher snow output, and optimum energy efficiency (TechnoAlpin 2021).

3.2 Purpose of Development

The purpose of the Development is to replace existing snowmaking infrastructure that is nearing the end of its design life. The installation of the fan guns will increase the efficiency of artificial snowmaking and enhance snow cover in these locations.

Achieving good snow cover in May / early June greatly enhances early season visitation, as well as KT's ability to still be skiing and snowboarding in late September / early October.

In response to the challenges posed by the sustainability of natural snow fall within a changing climate, artificial snowmaking improves seasonal length and viability and is considered critical infrastructure for the operation of the resort.

3.3 Scope of Works

3.3.1 Replacement of snowmaking mains

The replacement of snowmaking mains within a common trench will include air and water pipes, and power and dialog cable (refer Snowmaking Trench Cross Section in **Appendix A**).

To minimise environmental impacts, some sections of existing pipe will remain in situ and made redundant. Where this is required, deviations to the alignment will be required within the existing disturbed ski slope.

The common trench will be approximately 1.4 m wide and up to 1.2 m deep. The construction corridor for the common trench is 10 m wide from the edge of the ski slope.

Pipe specifications are outlined in **Table 2**.

Table 2: Snowmaking Mains Pipe Specifications

Location	Water	Air
100 line	250NB	300NB
Trunk Line-Cat Shed	500NB	400NB
Cat Shed-Milk Run Split	300NB	350NB
Milk Run	250NB	300NB

3.3.2 Replacement of snowmaking laterals

The installation of laterals off the new snowmaking mains will be required to tie into existing and new pits (refer Snowmaking Laterals Connection Plan in **Appendix A**).

Laterals to existing pits with lances and hydrants will include air and water pipe, and power and dialog cable. Laterals to new fan pits will include water pipe only, and power and dialog cable.

The lateral trench will be approximately 0.80 m wide and 1 m deep. The construction corridor for laterals is approximately 3 m wide.

3.3.3 Installation of fan pits and TT10 fan guns

In some locations existing pits (**Figure 6**) and lances will be removed and replaced with fan pits and TT10 fan guns. Fan pits and TT10 fan guns will also be installed in new locations along the ski runs to supplement the existing snowmaking infrastructure. Specifications for the fan pits and TT10 fan guns are provided in **Appendix A**.

The construction footprint for the fan pits is approximately 3 x 3 m wide and 1.6 m deep. The TT10 fan guns are located on top of the fan pits, therefore no additional ground disturbance (refer **Figure 7**).

3.3.4 Relocation of manual hydrant

The Development will also include the relocation of an existing manual hydrant west of the Cat Shed as shown on **Figure 4**. This will improve snow cover in the locality and subsequently better access for grooming machinery entering the Cat Shed.



Figure 6: Example of Steel Pit for Lance Guns



Figure 7: Example of TT10 Fan Gun and Fan Pit

3.4 Project Timing

It is proposed to commence construction in October 2023, with completion of the works by the end of April 2024. This is critical to the operation of the resort for the 2024 winter period.

3.5 Development Components

3.5.1 Site Access

The Development site is accessible via the summer mountain access road (authorised access only) via Friday Drive.

3.5.2 Machinery, plant and equipment

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; and
- Mobile crane.

3.5.3 Site compound

No site compound will be required within the construction corridor. Amenities will be available at Valley Terminal and the Cat Shed for construction staff.

3.5.4 Material storage areas

The following locations will be used for material storage within the construction corridor:

- Flat area uphill of the Cat Shed (**Figure 5**); and
- Flat area at the base of Milk Run ski slope (**Figure 6**).

Additional material storage locations will be required at the following locations:

- Friday Flat – between Gunbarrel bottom station and the clock tower;
- Friday Flat coach carpark; and
- Flat area west of Kosciuszko Express Chairlift bottom station.

Locations are identified in the SEMP (**Appendix D**).

3.5.5 Stockpile sites

Temporary stockpiles will be required within the construction corridor to effectively manage materials during the works. The main stockpile locations will be located within Thredbo's top carpark identified in the SEMP (**Appendix B**). Access to these locations will be restricted to KT staff and contractors. Soil 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.

3.5.6 Construction activities

3.5.6.1 Pre-construction activities

Pre-construction activities involve site preparation works, including:

- Site establishment, including erection of fencing and signage;
- Installation of erosion and sediment controls, where required; and
- Temporary diversions of mountain bike trails as required.

3.5.6.2 100 Line (under Snowgums)

Works within the 100 line will comprise:

- Removal of existing lance guns and pits, where being replaced with fan pits and TT10 fan guns;
- Trenching for replacement of snowmaking mains and laterals, including air and water pipe, and power and dialog cables;
- Excavation and installation of fan pits and TT10 fan guns;
- Backfilling of excavations; and
- Progressive rehabilitation of disturbed areas.

Table 3: Site Photos - 100 Line

Site Photo & Description of Works – 100 Line



Tie into snowmaking mains at the top of the 100 line. Existing snowmaking mains generally follows the mountain access road.



Snowmaking mains divert off mountain access road, past Bunny Walk station and down the skiers right of the ski run.

Site Photo & Description of Works – 100 Line



Snowmaking mains and laterals to all existing pits will be replaced.
All located within heavily disturbed ski slope.



New fan pit, TT10 fan gun and lateral from snowmaking mains on edge of ski run. Snowmaking mains generally follows the access road down the ski slope.

Site Photo & Description of Works – 100 Line



New fan pit, TT10 fan gun and lateral from snowmaking mains on edge of ski run.



The snowmaking mains are located within the disturbed ski slope.
Laterals to all existing pits along the ski run will be replaced.

Site Photo & Description of Works – 100 Line



New fan pit, TT10 fan gun and lateral from snowmaking mains on edge of vegetation island.



Replace lateral to existing pit located at the base of the tree island.

Site Photo & Description of Works – 100 Line



Snowmaking mains to follow ski run towards top of Milk Run.



Existing pit and lance gun to be replaced with new fan pit, TT10 fan gun and lateral from snowmaking mains.

3.5.6.3 Middle Slopes

Works within Middle Slopes will include:

- Excavation for installation of two (2) pits and two (2) TT10 fan guns;
- Trenching for laterals, including water pipe, power and dialogue cables to pit;
- Backfilling of excavations; and
- Progressive rehabilitation of disturbed areas.

Table 4: Site Photos - Middle Slopes



3.5.6.4 Trunk Line-Cat Shed and Cat Shed-Milk Run Split

Works within the Trunk Line-Cat Shed (red line on **Figure 3**) will include:

- Trenching for replacement of snowmaking mains, including air and water pipe, and power and dialog cables;
- Backfilling of excavations;
- Progressive rehabilitation of disturbed areas.

Works within the Cat Shed-Milk Run Split (green line on **Figure 3**) will include:

- Removal of existing lance guns and pits, where being replaced with fan pits and TT10 fan guns;
- Relocation of existing manual hydrant adjacent to the Cat Shed; and
- Trenching for replacement of snowmaking mains and laterals, including air and water pipe, and power and dialog cables;

- Excavation and installation of fan pits and TT10 fan guns;
- Backfilling of excavations; and
- Progressive rehabilitation of disturbed areas.

Table 5: Site Photos – Trunk Line-Cat Shed and Cat Shed-Milk Run Split

Site Photo – Trunk Line-Cat Shed and Cat Shed-Milk Run Split



Trunk Line -Cat Shed alignment for snowmaking mains replacement. Trenching within heavily disturbed area dominated by exotic grass species.



Trunk Line-Cat Shed alignment for snowmaking mains replacement within heavily disturbed ski slope.



Cat Shed-Milk Run split alignment for snowmaking mains and laterals replacement.
Trenching within heavily disturbed ski slope.

3.5.6.5 Milk Run

Works within Milk Run will include:

- Removal of existing lance guns and pits, where being replaced with fan pits and TT10 fan guns;
- Trenching for replacement of snowmaking mains and laterals, including air and water pipe, and power and dialog cables;
- Excavation and installation of fan pits and TT10 fan guns;
- Backfilling of excavations; and
- Progressive rehabilitation of disturbed areas.

Table 6: Site Photos - Milk Run



Site Photo – Milk Run



Tree island at top of Milk Run ski run. Fan pit and TT10 fan gun to be installed next to existing pit and lance gun. Lateral connection to new snowmaking mains line downslope.



Snowmaking mains generally follows access road on skiers right of Milk Run.

Site Photo – Milk Run



New fan pit, TT10 fan gun and lateral from snowmaking mains.



New fan pit, TT10 fan gun and lateral from snowmaking mains.

Site Photo – Milk Run



New fan pit, TT10 fan gun and lateral from snowmaking mains.



New fan pit, TT10 fan gun and lateral from snowmaking mains.

3.5.6.6 Post-construction activities

Post-construction activities will include:

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

3.5.7 Operational Activities

The snowmaking infrastructure will operate as required.

4 Legislation, Policies and Guidelines

A review of key legislation and the relevant environmental planning instrument applicable to the Development is provided in this section.

4.1 Legislative Review

A review of key legislation and planning instruments applicable to the Development is provided in **Table 7**.

Table 7: Legislative Review

Acts & Planning Instruments	Summary
Commonwealth Legislation	
<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. An assessment is provided in Section 6.9.</p>
State Legislation	
<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&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&A Act. Section 4.15 of the Act sets out matters a consent authority is to take into consideration when determining a DA (refer Section 4.2.1 for detail).</p> <p>This SEE has been prepared in accordance with the relevant requirements set out in the EP&A Regulation. Throughout the planning and design phases KT has considered the principles of ESD.</p>
<i>National Parks and Wildlife Act 1974</i> (NPW Act)	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><i>National Parks and Wildlife Regulation 2019</i></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><i>Aboriginal Heritage</i> 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. Refer to Section 6.4.1.1 for the due diligence assessment.</p>
<p><i>Biodiversity Conservation Act 2016 (BC Act)</i></p> <p><i>Biodiversity Conservation Regulation 2017 (BC Regulation)</i></p>	<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"> • whether the amount of native vegetation being cleared exceeds the area threshold; and • whether the impacts occur on an area mapped on the Biodiversity Values Map (BVM). <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"> • 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 • the works are carried out on a declared area of outstanding biodiversity value. <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 Section 6.1 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. No CAA is required, refer Section 6.3 for detail.</p>
<p>State Environmental Planning Instruments</p>	
<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 Alpine Region by ensuring development is managed with regard to the principles of ecologically sustainable development, including the conservation and restoration of ecological processes, natural systems and biodiversity.</p> <p>Refer Section 4.2.2 for an assessment of the Development against the key provisions of Chapter 4.</p>

4.2 Planning Framework

An assessment against the relevant matters of the EP&A Act and relevant environment planning instruments, policies and plans is provided in this section.

4.2.1 Environmental Planning and Assessment Act 1979

Pursuant to Section 4.15 of the EP&A Act, the consent authority is to consider the matters outlined below.

(1) Matters for consideration – General	Evaluation
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 Section 5.2 .
(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	Not applicable.
(iiia) 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	Not applicable.
(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 Section 6 .
(b) the suitability of the site for the development	The suitability of the site for the Development is described in Section 2.2 .
(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.	The Development is considered to be within the public interest for the following reasons: <ul style="list-style-type: none"> The Development is consistent with the aim and objectives of the Precincts – Regional SEPP.

- 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.

4.2.2 Precincts – Regional SEPP

The relevant sections of Chapter 4 (Kosciuszko National Park and alpine resorts) of the Precincts – Regional SEPP are addressed in this section.

4.2.2.1 Section 4.9 – Land Use Table (Thredbo Alpine Resort)

The Development is consistent with the 'snowmaking infrastructure' in the Land Use Table in Section 4.9 of the Precincts – Regional SEPP, as 'snowmaking infrastructure' is permissible development with consent in Thredbo Alpine Resort.

4.2.2.2 Section 4.28 – Consideration of master plans and other documents

In accordance with Section 4.28 of the Precincts – Regional SEPP, the consent authority is to consider the matters outlined below.

Matters for consideration	Evaluation
(1) In deciding whether to grant development consent to development in the Alpine Region, the consent authority must consider the following—	
(a) the aim and objectives of this Chapter set out in section 4.1,	The Development is consistent with the objectives of Chapter 4, as demonstrated in this report.
(b) a draft development control plan that is intended to apply to the land and has been published on the NSW planning portal,	Not applicable.
(c) a conservation agreement under the Environment Protection and Biodiversity Conservation Act 1999 of the Commonwealth that applies to the land,	Not applicable.
(d) the Geotechnical Policy —Kosciuszko Alpine Resorts published by the Department in November 2003,	Refer Appendix C .
(e) for development in the Perisher Range Alpine Resort—	Not applicable.
(i) the Perisher Range Resorts Master Plan, published by the National Parks and Wildlife Service in November 2001, and	
(ii) the Perisher Blue Ski Resort Ski Slope Master Plan adopted by the National Parks and Wildlife Service in May 2002.	
(2) In deciding whether to grant development consent to development in the Alpine Region, the consent authority must consider—	
(a) a master plan approved by the Minister under section 4.26 that applies to the land, or	The Development is consistent with the Snowy Mountains Master Plan.

(b) if a master plan has not been approved—a draft master plan prepared under section 4.26 that is intended to apply to the land and has been published on the NSW planning portal.	Not applicable.
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4.2.2.3 Section 4.23 Flood Planning

There is no defined flood planning area, flood planning level or reference to adopted mapping under the Precincts – Regional SEPP. No further consideration is required.

4.2.2.4 Section 4.25 Earthworks

In accordance with Section 4.25 of the Precincts – Regional SEPP, the consent authority is to consider the matters outlined below.

Section 4.25 Earthworks	Evaluation
(1) The objective of this section is to ensure that earthworks for which development consent is required will not have a detrimental impact on environmental functions and processes, neighbouring uses, cultural or heritage items or features of the surrounding land.	The Development is consistent with the objective.
(2) Development consent is required for earthworks in the Alpine Region unless— (a) the earthworks are exempt development under this Chapter or another environmental planning instrument, or (b) the earthworks are ancillary to— (i) development permitted without consent under this Chapter, or (ii) development for which development consent has been given.	This SEE forms part of the DA seeking development approval for the proposal.
(3) In deciding whether to grant development consent for earthworks, or for development involving ancillary earthworks, the consent authority must consider the following matters— (a) the likely disruption of, or adverse impact on, drainage patterns and soil stability in the locality of the development, (b) the effect of the development on the likely future use or redevelopment of the land, (c) the quality of the fill or the soil to be excavated, or both, (d) the effect of the development on the existing and likely amenity of adjoining properties, (e) the source of any fill material and the destination of any excavated material, (f) the likelihood of disturbing relics,	(a) Unlikely. (b) The effect of the Development is not anticipated to impact upon the future use or redevelopment of the land. (c) The quality of the soil required to be excavated is not likely to change as it will be temporarily stockpiled onsite and reused to backfill excavations. (d) Refer Section 6.5 . (e) Imported fill material will be sourced from NPWS approved locations. Any excess spoil from excavation works will be transported to an approved location, either within the resort or off-site to a licenced facility. (f) Unlikely, refer Section 6.4.2 . (g) Adverse impacts unlikely, the site is not located within waterfront land, refer Section 6.3 .

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| <p>(g) the proximity to, and potential for adverse impacts on, a waterway, drinking water catchment or environmentally sensitive area,</p> <p>(h) appropriate measures proposed to avoid, minimise or mitigate the impacts of the development.</p> | <p>(h) Refer Section 6.8.</p> |
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4.2.2.5 Section 4.28 – Consideration of mater plans and other documents

Pursuant to Section 4.28 of the Precincts – Regional SEPP, the consent authority is to consider the matters outlined below.

Section 4.28 Matters for consideration	Evaluation
(1) In deciding whether to grant development consent to development in the Alpine Region, the consent authority must consider the following—	
(a) the aim and objectives of this Chapter set out in section 4.1,	The Development is consistent with the objectives of Chapter 4, as demonstrated in this report.
(b) a draft development control plan that is intended to apply to the land and has been published on the NSW planning portal,	Not applicable.
(c) a conservation agreement under the Environment Protection and Biodiversity Conservation Act 1999 of the Commonwealth that applies to the land,	Not applicable.
(d) the Geotechnical Policy —Kosciuszko Alpine Resorts published by the Department in November 2003,	A Geotechnical Assessment (AssetGeoEnviro 2023) has been undertaken in accordance with the Geotechnical Policy, refer Appendix C .
(e) for development in the Perisher Range Alpine Resort—	Not applicable.
(i) the Perisher Range Resorts Master Plan, published by the National Parks and Wildlife Service in November 2001, and	
(ii) the Perisher Blue Ski Resort Ski Slope Master Plan adopted by the National Parks and Wildlife Service in May 2002.	
(2) In deciding whether to grant development consent to development in the Alpine Region, the consent authority must consider—	
(a) a master plan approved by the Minister under section 4.26 that applies to the land, or	The Development is consistent with the Master Plan, refer Section 4.4.2 .
(b) if a master plan has not been approved—a draft master plan prepared under section 4.26 that is intended to apply to the land and has been published on the NSW planning portal.	Master Plan has been approved.

4.2.2.6 Section 4.29 – Consideration of environmental, geotechnical and other matters

In accordance with Section 4.29 of the Precincts – Regional SEPP, the consent authority is to consider the matters outlined below.

Matters for consideration	Evaluation
(1) In deciding whether to grant development consent to development in the Alpine Region, the consent authority must consider the following—	
(a) measures proposed to address geotechnical issues relating to the development,	Refer Appendix D .
(b) the extent to which the development will achieve an appropriate balance between— (i) the conservation of the natural environment, and (ii) taking measures to mitigate environmental hazards, including geotechnical hazards, bush fires and flooding,	The geotechnical risks have been assessed in the Geotechnical Assessment (AssetGeoEnviro 2023). A completed Form 4 – Minimal Impact Certification is attached to Appendix C . The measures proposed are not anticipated to impact upon the conservation of the natural environment.
(c) the visual impact of the proposed development, particularly when viewed from the land identified as the Main Range Management Unit in the Kosciuszko National Park Plan of Management,	Visual impacts are considered acceptable. The site is not visible from the Main Range Management Unit.
(d) the cumulative impacts of development and resource use on the environment of the Alpine Subregion in which the development is carried out,	The impacts of the Development are described in Section 6 . The Development will result in minimal environmental impacts.
(e) the capacity of existing infrastructure and services for transport to and within the Alpine Region to deal with additional usage generated by the development, including in peak periods,	The Development will not impact upon the capacity of existing infrastructure and services for transport to deal with additional usage generated by the Development.
(f) the capacity of existing waste or resource management facilities to deal with additional waste generated by the development, including in peak periods.	The Development will not impact upon the capacity of existing waste or resource management facilities.
(2) For development involving earthworks or stormwater draining works, the consent authority must also consider measures to mitigate adverse impacts associated with the 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 (Appendix D).
(3) For development the consent authority considers will significantly alter the character of an Alpine Subregion, the consent authority must also consider—	
(a) the existing character of the site and immediate surroundings, and (b) how the development will relate to the Alpine Subregion.	The Development will not significantly alter the alpine resort character. The Development is for the replacement of existing and installation of new snowmaking infrastructure which is consistent with the existing land use. The Development will contribute to the alpine experience through the provision of enhanced snow cover.

4.3 Integrated Development Requirements

Integrated development requires development consent and one or more of the approvals outlined in Section 4.46 of the EP&A Act. A review of the *Development referrals guideline* (DPIE 2021) has been undertaken to inform this Application.

The Development is not integrated development.

4.4 Plans, Policies and Guidelines

4.4.1 South East and Tablelands Regional Plan 2036

The *South East and Tablelands Regional Plan 2036* (Regional Plan) provides directions for land use planning for the South-east and tablelands region for the next 20 years. The region comprises nine (9) local government areas including Bega Valley, Eurobodalla, Goulburn Malware, Hilltops, Queanbeyan-Palerang, Snowy Monaro, Upper Lachlan, Wingecarribee and Yass Valley.

The Regional Plan identifies the following goals for new development with the region:

- A connected and prosperous economy;
- A diverse environment interconnected by biodiversity corridors;
- Healthy and connected communities; and
- Environmentally sustainable housing choices.

Direction 3 of the Regional Plan is to develop the Snowy Mountains into Australia's premier year-round alpine destination. The Regional Plan recognises that an increase in year-round visitors requires better parking access, public facilities and housing/accommodation.

The Regional Plan promotes well planned, efficient and sustainable development that complements the area's natural and cultural values. The Development is consistent with the goals and objectives of the Regional Plan.

4.4.2 Snowy Mountains Special Activation Precinct Master Plan

The *Snowy Mountains Special Activation Precinct Master Plan* (DPE 2022) (Snowy SAP Master Plan) is a 40-year plan that sets out the vision, principles, and precinct-wide performance criteria to support the planning controls in three Environmental Planning Instruments (EPs).

The Snowy SAP Master Plan seeks to facilitate a safe and sustainable increase in the amount and range of year-round recreation and accommodation offerings.

The Development site is mapped as 'National park' in the Thredbo Village West structure plan (Figure 33 of the Snowy SAP Master Plan).

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 the natural environment, then minimise and mitigate impacts through a range of mitigation and management measures implemented in the design, construction and operational phases.

4.4.3 Kosciuszko National Park Plan of Management 2006 (KNP PoM)

The *Kosciuszko National Park Plan of Management 2006* (KNP POM) outlines objectives and management strategies to guide the long-term management of values within specific areas of KNP. Under the provisions of the Alpine SEPP, all development applications within KNP are referred to NPWS who are responsible for administering the KNP POM.

The KNP POM includes several management zones, which comprise of seven management units that contain places and values of exceptional significance. Thredbo is included in the Thredbo Management Unit, considered an area of exceptional recreational significance.

The Development will improve the quality of the resort experience for guests by improving the quality of snow cover. The potential impacts on key environmental values have been avoided, mitigated and/or managed appropriately through the implementation of appropriate controls. As demonstrated in this SEE and supporting documentation, the Development is consistent with the relevant management objectives of the KNP POM.

4.4.4 Geotechnical Policy Kosciuszko Alpine Resorts 2003

A portion of the Development site lies within an area designated as “G” as defined in the maps accompanying the *Geotechnical Policy Kosciuszko Alpine Resorts* (DIPNR 2003) (Geotechnical Policy). Refer to **Appendix C** for the Geotechnical Assessment.

4.4.5 DPE Community Participation Plan

The Development is located within 50 m of tourist accommodation at the base of Milk Run, therefore in accordance with the Community Participation Plan (DPE 2019) requires public exhibition.

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 surveys 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 below:

- Aboriginal Heritage Information Management System Web Services (NSW Government 2023e);
- Biodiversity Values Map and Threshold Tool (NSW Government 2023b);
- NSW BioNet (NSW Government 2023f);
- Water Management (General) Regulation 2018 hydroline spatial data 1.0 (NSW Government 2023c);
- NSW Planning Portal Spatial Viewer (NSW Government 2023a); and
- Bush fire prone land mapping tool (RFS 2023).

The relevant database search results are provided in **Appendix B**. Other resources were also investigated to inform the impact assessment, listed in **Section 9**.

5.2 Site Assessment

A site assessment was undertaken by KT project personnel and 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 site assessment included a review of the concept plans and design, followed by a site visit.

5.3 Technical Assessments

5.3.1 Geotechnical assessment

AssetGeoEnviro (2023) were engaged to prepare the Geotechnical Assessment for the Development. A copy of the report is provided in **Appendix C**.

5.3.2 Flora and fauna assessment

Eco Logical Australia Pty Ltd (ELA) were engaged to prepare a flora and fauna assessment for the Development, refer **Appendix D**.

6 Impact Assessment

6.1 Land

The Development is located within a highly disturbed environment comprising existing ski runs and associated snowmaking infrastructure. The majority of new infrastructure will be installed within the existing infrastructure footprint.

Temporary soil stockpiles within the construction corridor will be required to manage excavated soil material during trenching works. Temporary stockpiles will be located within disturbed areas, avoid adjacent native vegetation and managed in accordance with the SEMP (**Appendix G**).

6.1.1 Geotechnical

The Geotechnical Assessment (**Appendix C**) concluded the Development will have minimal or no geotechnical impact on the site, based on the relatively shallow depths of excavation required, the lack of obvious signs of hillside instability observed or expected, and anticipated subsurface conditions expected in the area (AssetGeoEnviro 2023). A completed Form 4 – Minimal Impact Certification is attached to **Appendix C**.

6.1.2 Land use

The Development is consistent with the land uses permitted under the Precincts-Regional SEPP, and is not anticipated to result in any significant adverse impacts to surrounding land uses.

6.2 Biodiversity

6.2.1 Impacts on vegetation communities

The vegetation within the Development footprint almost entirely comprises the exotic grassland of the ski runs, which is dominated by a range of exotic grasses such as *Festuca rubra* (Red Fescue) and *Agrostis capillaris* (Browntop Bent), and weeds such as *Acetosella vulgaris* (Sheep Sorrel), *Achillea millefolium* (Yarrow), and *Hypochaeris radicata* (Flatweed) (ELA 2023).

Where the minor vegetation clearing will occur on the Middle Slopes (**Figure 4**), a few shrubs of *Bossiaea foliosa* (Leafy Bossiaea), *Olearia phlogopappa* (Dusty Daisy-bush), a eucalypt (*Eucalyptus* sp.) planting, and a small area of common groundcovers such as *Poa ensiformis* (Purple-sheathed Tussock-grass), *Poa fawcettiae* (Smooth Blue Snowgrass), and *Asperula gunnii* (Mountain Woodruff) will be affected, as shown in Photos 3-4 in **Appendix D**.

6.2.2 Impacts on threatened ecological communities

The Development will not affect any threatened ecological communities (ELA 2023).

6.2.3 Impacts on flora species of conservation significance

The Development will not affect any threatened flora species (ELA 2023).

6.2.4 Impacts on fauna habitats

The small amount of vegetation to be affected by the Development does not support any fauna habitats that aren't widely available in the extensive areas of contiguous vegetation. The Development will not result in substantial modifications to the hydrological environment nor will it create barriers which prevent the movement and dispersal of fauna species.

Similar developments have been undertaken over the years within and in areas immediately adjacent to the development footprint, and elsewhere within the NSW Alps, with negligible impacts on the hydrological environment and associated ecosystems (ELA 2023).

The impacts of the proposal on fauna habitats are relatively minor and acceptable (ELA 2023). Refer to **Appendix D** for the test of significance and assessment against the EPBC Act Significant Impact Criteria for relevant species.

6.2.5 Summary of impacts

ELA (2023) concluded the Development will not result in any adverse impacts on threatened species, populations or ecological communities and will not have a significant impact on these entities pursuant to the NSW BC Act or the Commonwealth EPBC Act. The Development will not result in any substantial adverse impacts on native vegetation communities or associated fauna habitats, nor will there be any impacts on flora species of conservation significance, important fauna habitats, habitat connectivity or any other biodiversity values of conservation significance.

6.3 Water

A review of the Water Management (General) Regulation 2018 Hydro line spatial data and State Environmental Planning Policy (Kosciuszko National Park – Alpine Resort) 2007 Thredbo Alpine Resort Sheet 1 of 5 (NSW Government 2007) confirms the Development site is not located within 40 m of a mapped watercourse (waterfront land) (**Figure 8**).

During the site inspection no unmapped watercourses were identified within 40 m of the Development. The Development does not comprise waterfront land and no further assessment is required.



Figure 8: Mapped Watercourses (Source: Hydroline spatial data 2023; NSW Government 2007)

6.4 Heritage

6.4.1 European 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) concluded no heritage items are located within the Development site.

The site is located in KNP, forming part of the Australian Alps National Parks and Reserves (AANP). An assessment is provided below.

6.4.1.1 National Heritage Place (MNES)

The Development site is located within KNP, forming part of the Australian Alps National Parks and Reserves (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 8**.

Table 8: Significant Impact Assessment – Australian Alps National Parks and Reserves (AANP)

National Heritage Values of the AANP		Significant Impact Assessment
Criteria: 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: <ul style="list-style-type: none"> one or more of the National Heritage values to be lost, one or more of the National Heritage values to be degraded or damaged, or one or more of the National Heritage values to be notably altered, modified, obscured or diminished. 		
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.

The 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.

6.4.2 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) is provided below.

Due Diligence Process	Consideration
1. Will the activity disturb the ground surface or any culturally modified trees?	The Development will result in ground disturbance within a highly disturbed area. There are no culturally modified trees within the site.
2. Are there any:	A search of the Aboriginal Heritage Information Management System (AHIMS) was undertaken on 31 May 2023. The search results (Appendix E) show two (2) Aboriginal sites are recorded within the broader search area. However, <u>no recorded Aboriginal sites are located within the Development site.</u>
a) relevant confirmed site records or other associated landscape feature information on AHIMS? And/or	
b) any other sources of information of which a person is already aware? And/or	Several historical independent assessments have been undertaken within the resort including Middle Slopes and immediate surrounds by Past Traces Heritage Consultants (2017), NGH Environmental (2017), Iron Bark (2013), and URS Australia Pty Ltd (2004; 2005). All studies provide an indication that the ski slope areas have low archaeological potential due to the level of disturbance associated with the previous ski slope work.

	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, huts, fences, buildings and snowmaking infrastructure. Previous disturbance has comprised extensive earthworks, vegetation clearing and removal and disturbance to top soils and soil profiles, thus removing potential for Aboriginal sites to remain within these heavily disturbed areas. There are no landscape features within the Development site that would indicate the presence of Aboriginal objects due to the extensive disturbance that has occurred. As such, it is considered the Development has low potential to impact on unrecorded Aboriginal objects or sites.
	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 can the carrying out of the activity at the relevant landscape features be avoided?	Not applicable.
4. Does a desktop assessment and visual inspection confirm that there are Aboriginal objects or that they are likely?	Not applicable.

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

6.5 Built Environment and Amenity

The Development will replace existing snowmaking infrastructure and introduce new TT10 fan guns into the landscape which is consistent with the surrounding built form comprising ski runs and associated snowmaking infrastructure. The fan guns have the ability to provide greater snow cover and therefore considered to have a positive impact on the landscape through the provision of improved snow cover during the winter season. The impacts on the built environment and amenity considered acceptable.

6.6 Access and Traffic

6.6.1 Mountain bike trails

Kosciuszko Flow and Cannonball downhill mountain bike (MTB) trails traverse the Development site in various locations. Impacts to these trails during construction will be managed by the Mountain Bike Operations team through temporary closures or diversions as required. It is proposed to commence works on Milk Run in October and move uphill to minimise disruptions to mountain bike operations.

6.6.2 Walking tracks

The Meadows Nature Track traverse the construction corridor at Middle Slopes. As works in this location will be minimal (i.e. installation of short lateral, fan pit and TT10 fan gun) no adverse impacts to the walking track are proposed. Works in this area will be demarcated with temporary fencing or signage as required to warn pedestrians of construction works nearby.

6.6.3 Construction access

The Development site is accessible via the summer mountain access road to the Cat Shed (authorised access only). From the Cat Shed, there is a secondary mountain access road down Milk Run. Vehicles and machinery will utilise the existing disturbed ski runs for construction access. No adverse impacts to the local road network are anticipated from the Development.

6.7 Waste Management

The Project will generate the following waste streams:

- General solid waste (putrescible) – waste from litter bins, food waste; and
- General solid waste (non-putrescible) –plastic, paper, carboard, demolition and construction waste (e.g. existing electrical cables and lance guns).

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 carboard packaging, paper, recyclable plastic;
- Skip bins; and
- KT's waste transfer facility (materials to be segregated for re-use, recycling etc.).

Excess spoil from excavations will be taken off-site and placed within the resort's existing stockpile locations at the top carpark for re-use within the resort. Existing lance guns that are being replaced with TT10 fan guns will be reused within other areas of the resort.

6.8 Socio-Economic

The Development will improve snow cover in the locality, creating more reliable skiing and snowboarding conditions for guests. Without the replacement of older infrastructure and installation of more efficient snowmaking guns, KT's snowmaking operations would be compromised which could impact on the resort's ability to provide better snow conditions for guests early and later in the winter season, as well as quality snow throughout the season.

The economic impacts generated by the Development will be positive in terms direct investment into the resort and the generation of short-term construction jobs, however these are anticipated to be nominal given the scale and timing for construction works.

6.9 Matters of National Environmental Significance

A person must not take an action that has, will have or is likely to have a significant impact on any of the MNES without approval from the Australian Government Minister for the Environment.

A search of the EPBC Act Protected Matters Search Tool (PMST) (records within a 5 km buffer of the Development site) was undertaken to determine whether any MNES are likely to occur within the Development area. The Protected Matters Report (PMR) (**Appendix B**) identified the five (5) categories (as listed under the EPBC Act) of MNES that may be relevant to the Development area and surrounds. Refer to **Table 9** for a summary of MNES.

Table 9: MNES Summary

MNES Categories	Comment
National Heritage Places	The Development is located in KNP, part of the Australian Alps National Parks and Reserves (AANP), refer Section 6.4.1.1 for details. The Snowy Mountain Scheme is not relevant to the Development. No further assessment is required.
Wetlands of International Importance	The closest listed wetland is Blue Lake which is located more than 9 km northeast of the Development site. Blue Lake is not relevant to the Development. No further assessment is required.
Listed Threatened Ecological Communities (TECs)*	The flora and fauna assessment (Appendix D) concluded: <ul style="list-style-type: none"> • The Development will not impact any Commonwealth listed endangered ecological communities. • The Development will not impact any Commonwealth listed endangered species. • The Development site provides potential habitat for one Commonwealth listed vulnerable species: Broad-toothed rat. The assessment concluded the Development will not result in a significant impact to Broad-toothed rat. • The Development will not have any adverse impacts on any listed migratory species.
Listed Threatened Species*	
Listed Migratory Species*	

* 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.

In summary, the Development will not have a significant impact on any of the MNES identified in the PMR. Therefore, a referral to the Australian Government Minister for the Environment is not recommended.

6.10 Air Quality

There is potential for dust emissions to be generated from truck movements, and during earthworks. With the implementation of environmental controls outlined in the SEMP (**Appendix C**), no adverse impacts are anticipated.

6.11 Noise and Vibration

Construction will take place during off-peak visitation periods. Noise impacts during construction are expected to be negligible given works will be conducted during standard hours, the duration of works is short-term, and mitigation measures outlined in the SEMP (**Appendix C**) will be implemented during construction to control noise at the source.

7 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 outlined below.

Mitigation and Management Measures	
General	
1	Prepare and implement Site Environmental Management Plan (SEMP).
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.
3	Prior to commencement of works, the construction corridor is to be temporarily fenced, roped or flagged to clearly delineate the construction area and no-go zones.
Land & Water	
1	Prepare and implement Erosion and Sediment Control Plan (ESCP).
2	All stockpiles are to be managed accordance with the <i>Soil Stockpile Guidelines for the Resort Areas of Kosciuszko National Park, version 1.0</i> (OEH 2017) (Soil Stockpile Guidelines).
3	All storage of petroleum products, oils or chemicals to be in accordance with Australian Standards.
4	Refuelling procedures to be implemented to minimise spills of fuel products.
5	Appropriate sediment control measures should be implemented prior to any construction work for the proposal and retained in place until exposed areas of soil or vegetation are stabilised and/or revegetated (ELA 2023).
6	Sediment control measures are to have particular regard to the prevention of any sedimentation of watercourses or vegetation communities adjoining the study area (ELA 2023).
Flora and Fauna	
<i>Vegetation and habitat management</i>	
1	All disturbance should be kept to the minimum required to achieve the Development (ELA 2023).
2	The Development should be constructed and implemented in accordance with best practice design standards to ensure that there are no adverse modifications to the hydrological environment that may impact on surrounding vegetation and associated habitats (ELA 2023).
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).
<i>Rehabilitation</i>	
1	Progressive rehabilitation of disturbed areas is to be undertaken in accordance with the <i>Rehabilitation Guidelines for the Resort Areas of Kosciuszko National Park</i> (NGH 2007) (Rehabilitation Guidelines).
2	Only weed-free straw or natural thatch/litter should be used in sediment control activities.
Traffic and Access	
1	Traffic and construction vehicle access will be managed as per regular daily operation in the resort.

2	All vehicle and plant operators will be licensed and trained.
3	Appropriate signage will be installed to ensure the safety of road users, cyclists and pedestrians, and prevent unauthorised access to the construction site.
4	Temporary diversions or closures of MTB trails will be managed by the KT Mountain Bike Operations team.
Air Quality	
1	Reasonable and practicable measures (e.g. water sprays, vehicles carrying rubble must be covered) will be implemented to prevent dirt and dust from affecting the amenity or the surrounding environment during 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.
Noise and Vibration	
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.
2	Construction works and operation of plant will comply with Australian Standard <i>AS 2436-2010 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.
3	Construction works will be conducted during standard hours stipulated in the conditions of approval.
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.
Cultural Heritage	
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.
Waste	
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.
2	All construction waste and litter to be minimised and contained within appropriate receptacles. All receptacles will be in good condition.
3	All waste to be managed and disposed of in accordance with legislative requirements and relevant standards, for instance: <ul style="list-style-type: none"> • General litter will be segregated from recyclables; and • Excess spoil will be removed off-site and transported to KT's main soil stockpile locations and managed in accordance with the Soil Stockpile Guidelines.
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.

8 Conclusion

This application is seeking development approval for the replacement of existing and installation of new snowmaking infrastructure within Thredbo. The Development forms part of the ongoing upgrades to the existing snowmaking system, which aims to improve the efficiency of Thredbo's snowmaking operations, as well as the quality and reliability of snow cover within the site.

The Development is predominately located within the existing ski slopes and other highly disturbed areas. Direct impacts arising from the Development are expected to affect less than 30 m² of already disturbed native vegetation. The Development will not result in any substantial adverse impacts on native vegetation communities or associated fauna habitats, nor will there be any impacts on flora species of conservation significance, important fauna habitats, habitat connectivity or any other biodiversity values of conservation significance (ELA 2023).

As demonstrated in this SEE, the Development is consistent with the EP&A Act, BC Act, Precincts-Regional SEPP and Snowy SAP Master Plan.

This SEE has assessed the potential impacts of the Development on the human, built and natural environment of the Development site and surrounds. The Development has been designed to improve the operation of the snowmaking system whilst minimising impacts on the surrounding environment.

In response to the challenges posed by the sustainability of natural snow fall within a changing climate, artificial snowmaking improves seasonal length and viability, which may allow the winter visitation period to be maintained or potentially extended. This will provide positive social and economic impacts through the provision of improved snow cover which will contribute to an enhanced guest experience, as well as direct investment into the resort, and generation of construction jobs. The Development is therefore considered critical infrastructure for the operation of the resort.

9 References

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10 Appendices

Appendix A Plans

Appendix B Desktop Search Results

Appendix C Geotechnical Assessment

Appendix D Flora and Fauna Assessment

Appendix E Site Environmental Management Plan