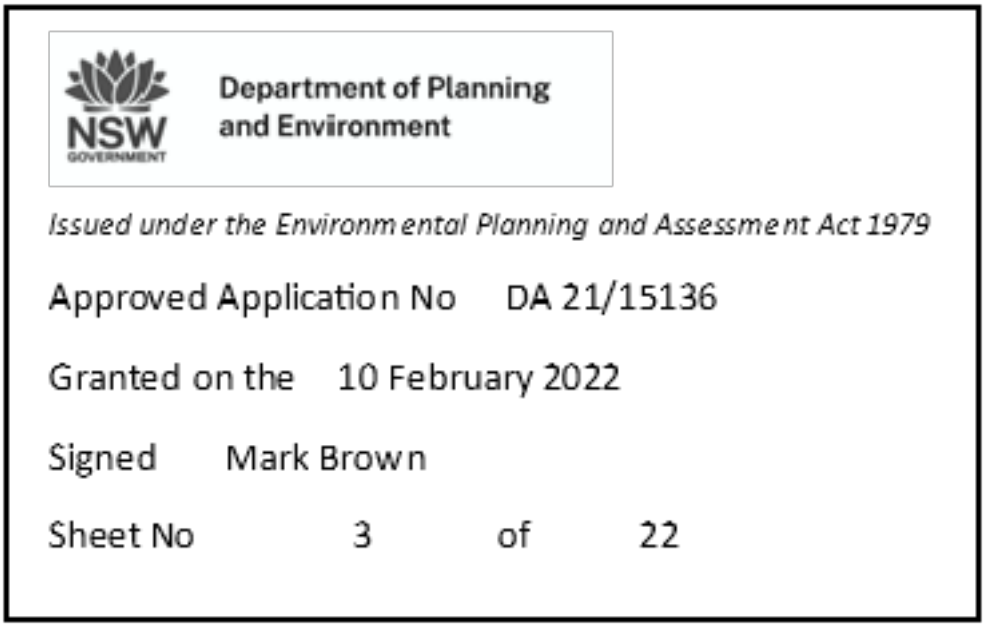
Site Environmental Management Plan (SEMP)

Sundowner Snowmaking Maintenance and Associated Works, Thredbo Alpine Resort, Kosciuszko National Park, NSW
September 2021



Sundowner Snowmaking Maintenance and Associated Works

Site Environmental Management Plan (SEMP)

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Document Control

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A	30.08.2021	Draft	C.Chalk	B.Bourke
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0	28.09.2021	Final	C.Chalk	P.Fleming

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1 Introduction

This Site Environmental Management Plan (SEMP) has been prepared for implementation by Kosciuszko Thredbo Pty Ltd (KT) (and its contractors) for the Sundowner snowmaking maintenance and associated works (the Project), comprising the replacement of snowmaking infrastructure on the Sundowner trail and installation of isolation valve pits at Antons bottom station and Gunbarrel top station.

KT requires a SEMP to support the Development Application (DA) for the Project, situated in Thredbo Alpine Resort (Thredbo), approximately 30 kilometres (km) south-west of Jindabyne, New South Wales.

1.1 Purpose

This SEMP has been developed to outline how construction processes for the Project are to be managed in order to maintain and protect the environmental values of the Project site and surrounds.

1.2 Objective

The objectives of this SEMP are to:

- Provide mitigation measures to minimise the potential for environmental harm and/or environmental nuisance;
- Provide guidance for the development of detailed construction environmental management plans;
- Ensure all Project Personnel understand individual roles and responsibilities;
- Provide corrective actions to be implemented in the event of environmental harm and/or environmental nuisance; and
- Ensure Project personnel understand incident and emergency response procedures.

1.3 Environmental and Social Sustainability Policy

All activities undertaken by KT will be in accordance with the organisations *Environmental and Social Sustainability Policy 2021.*

1.4 Applicable Legislation

The Project will be carried out in accordance with the applicable legislative requirements outlined in the following Acts and subordinate legislation:

- *Environment Protection and Biodiversity Conservation Act 1999 (Cwlth)*;
- *Biodiversity Conservation Act 2016*;
- *Environmental Planning and Assessment Act 1979*;
- *Environmentally Hazardous Chemicals Act 1985*;
- *Heritage Act 1977*;
- *National Parks and Wildlife Act 1974)*;
- *Protection of the Environment Operations Act 1997*;
- *Soil Conservation Act 1938;*
- *Waste Avoidance and Resource Recovery Act 2001;*
- *Water Management Act 2000;* and

- *Work Health and Safety Act 2011.*

1.5 Project Approvals and Licencing

1.5.1 Controlled Activity Approval

In addition to Development Consent being sought from the Department of Planning, Infrastructure and Environment (DPIE) for the Project, a Controlled Activity Approval under the *Water Management Act 2000* (WM Act) is also required where works will be carried out within 40 m of Merritts Creek (classified as waterfront land). Approval will be obtained from the NSW Office of Water before commencing these works.

2 Project Description

The Project will be a continuation of the snowmaking mains replacement at Friday Flat under DA 10637. The works will involve the replacement of the snowmaking infrastructure network at Sundowner (including installation of a new isolation valve pit) and the installation of isolation valve pits at Antons bottom station and Gunbarrel top station.

The infrastructure at Sundowner was installed in 1986 and comprises a network of underground piping and above ground hydrants and snow guns. The new mains will connect into the existing mains for Sundance and Milkrun uphill of the isolation valve to be installed on Sundowner.

2.1 Project Location

The Sundowner trail commences east of the cat shed and travels towards Friday Flat. The construction corridor on Sundowner trail is approximately 540 m by 20 m (refer **Appendix B** for site location and plan).

Antons bottom station is located at an elevation of 1,720 m Australian Height Datum (AHD), approximately 1 km north-north-west of the Sundowner trail within the existing access road footprint. The construction corridor is approximately 8 m by 6 m (refer **Appendix B** for site location and plan).

Gunbarrel top station is located at an elevation of 1,790 m AHD, approximately 420 m north-east of the Antons bottom station within the existing access road footprint. The construction corridor is approximately 8 m by 6 m (refer **Appendix B** for site location and plan).

2.2 Site Description

Sundowner trail is a highly modified environment due to the existing cleared trail and snowmaking system located within the trail. Merritts Creek, a minor perennial watercourse dissects the site (**Figure 1**) (NSW Government 2021a).

Antons bottom station is a highly modified environment due to the existing cleared area for the current infrastructure. A minor non-perennial tributary is mapped approximately 90 m south-west of the site (**Figure 1**) (NSW Government 2021a).

Gunbarrel top station is a highly modified environment due to the existing cleared area for the current infrastructure. A minor perennial watercourse is mapped approximately 50 m west of the site (**Figure 1**) (NSW Government 2021a).

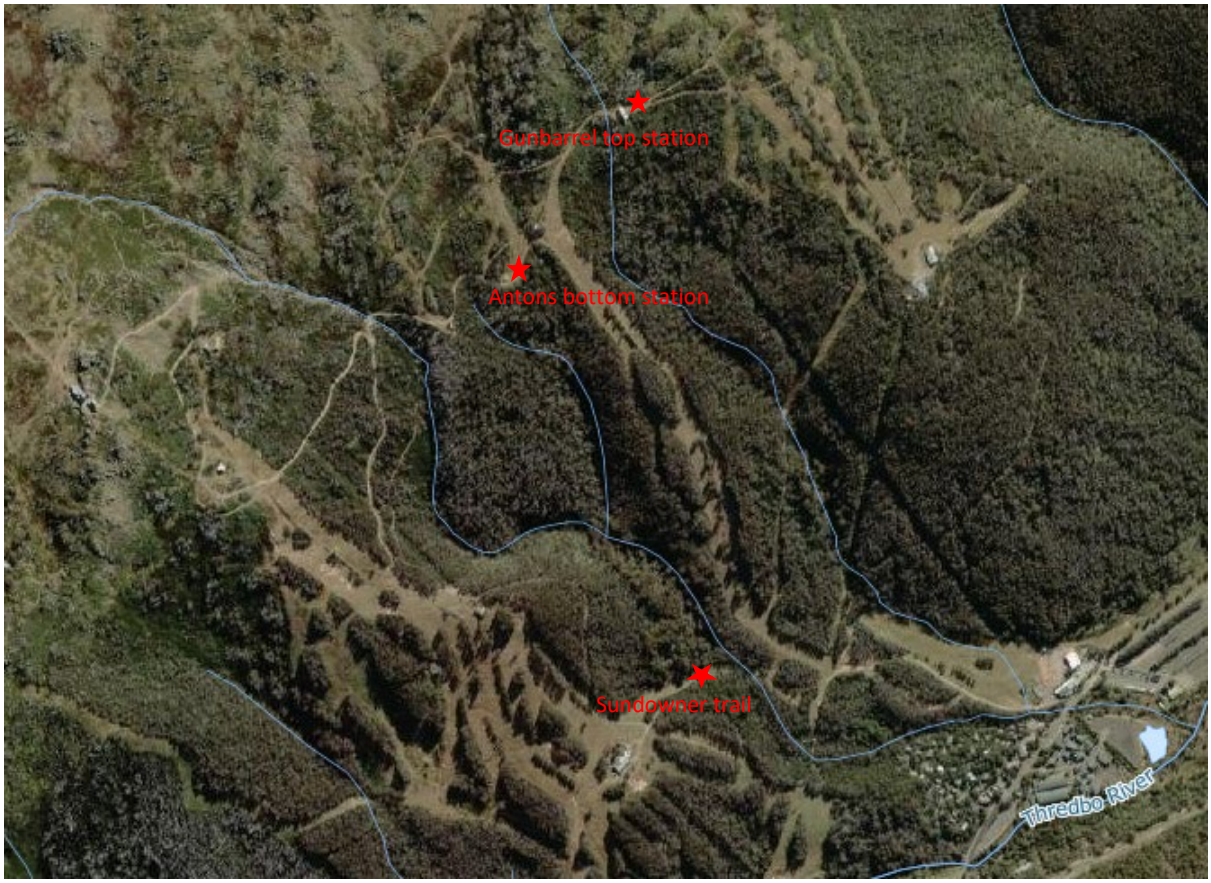

Figure 1: Project location within proximity to watercourses (NSW Government 2021a)

2.3 Construction Detail and Activities

A summary of the construction program and activities is provided in **Table 1**.

Table 1: Construction Detail and Activities

Aspect	Details
Site Access	The Project site is accessible via the mountain summer road network, as well as the ski slope for the Sundowner ski run works (refer **Appendix B**).
Construction Program and Activities	The proposed construction program will commence at the Sundowner trail. Once works are completed at Sundowner, the isolation valve pits will be installed at Antons bottom station, then Gunbarrel top station. The construction program will comprise the following: ***Sundowner trail*** *(replacement of snowmaking infrastructure and installation of isolation valve)* • Establishment of construction corridor; • Identification and marking out of proposed route for new pipe infrastructure; • Installation of isolation valve pit at the top of Sundowner trail; • Excavation and trenching to prepare ground for pipe laying. • Laying and welding of new pipe network and installation of services (e.g. communication cables); • Backfilling and compaction of trenches; • Trenching for electrical service (approx. 600-800 mm deep) from Lovers Leap station to the top of Sundowner to power the isolation valve; • Relocation of five hydrants on Sundowner trail from skiers right to skiers left side of the run (to allow for shorter laterals and less disturbance); • Installation of two new manual hydrants and two new snowmaking pits; and • Rehabilitation of the area in accordance with the Rehabilitation Plan.

	Antons bottom station *(installation of isolation valve)* • Establishment of construction corridor; • Excavation to expose existing pipe network; • Installation of new isolation valve pit (approx. 1500 mm deep), including trenching (approx. 1200-1500 mm deep) and connection of valve to existing pipe network; • Trenching for electrical service (approx. 600-800 mm deep) from Antons bottom station to power the isolation valve; • Backfilling and compaction of excavation; and • Rehabilitation of the area in accordance with the Rehabilitation Plan. ***Gunbarrel top station*** *(installation of isolation valve)* • Establishment of construction corridor; • Excavation to expose existing pipe network; • Installation of new isolation valve pit (approx. 1500 mm deep), including trenching (approx. 1200-1500 mm deep) and connection of valve to existing pipe network; • Trenching for electrical service (approx. 600-800 mm deep) from Gunbarrel top station to power the isolation valve; • Backfilling and compaction of excavation; and • Rehabilitation of the area in accordance with the Rehabilitation Plan. Refer to the site plans included in **Appendix B** for further detail.
Machinery, Plant and Equipment	Construction vehicles and plant will include (but not limited to): • 4WD vehicles and utilities; • Excavator; • Front-end / skid-steer loader; • Telehandler; • Snow groomer with summer tracks; • Utility Terrain Vehicles (UTV); • Tipper trucks; and • Delivery trucks.
Stockpile Sites	The main stockpile locations are identified on the site plan (**Appendix A**). Access to these locations will be restricted to KT staff and contractors. Temporary stockpiles may be required within the construction corridor to effectively manage materials during the works. Where required, these sites will be located on disturbed areas and avoid native vegetation. 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 ESCP (**Appendix C**).
Site Facilities and Temporary Structures	The site compound will be located at Friday Flat. Existing amenities (e.g. staff room and toilets) at Friday Flat and Gunbarrel will be available for construction staff. There will be no compound or temporary structures within the construction corridor.
Project Timing	The anticipated timing for the commencement of construction works is December 2021. Project completion is anticipated in April 2022.
Working Hours	The working hours for construction will be stipulated in the conditions of consent.

3 Environmental Management

3.1 Environmental Management Structure and Responsibility

3.1.1 Project Team Structure

The Project team structure is provided in **Figure 2**.

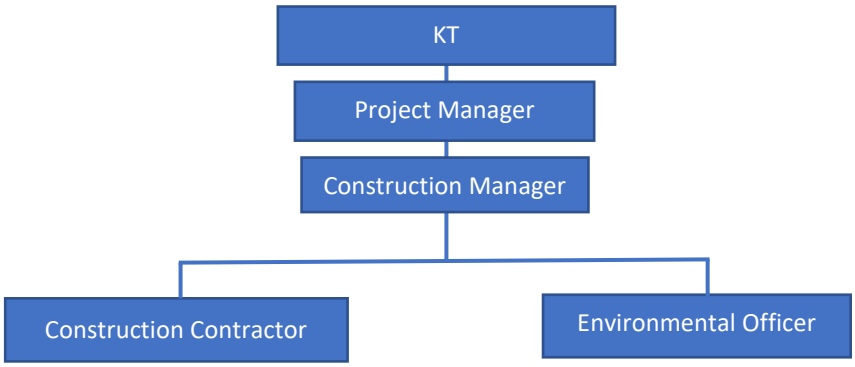

Figure 2: Project Team Structure

3.1.2 Roles and Responsibilities

The roles and responsibilities are outlined in **Table 2**.

Table 2: Roles and Responsibilities

Role	Responsibilities
Project Manager	• Ensure the SEMP is made available, communicated, maintained and understood by all Project staff; • Responsible for the overall management of the construction and operation of the Project; • Ensure the SEMP is updated with applicable conditions of approval following the provision of Development Consent from DPIE; • Ensure that the requirements of the SEMP and sub-plans have been addressed in all contractor environmental management documentation; • Review of incidents, non-conformances and non-compliance; and • Ensuring Project personnel and contractors are adequately trained and qualified to fulfil their roles.
Construction Manager	• Implement and maintain the SEMP; • Ensure all Project personnel comply with the requirements of the SEMP; and • Report any incidents, non-conformances to the Project Manager.
Environmental Officer	• Oversee all works which are part of the Project on behalf of KT; • Ensure compliance with all environmental protection measures detailed in the SEMP, supporting management plans and conditions of approval; • Ensure all environmental controls are in place and adequately functioning during construction; and • Conduct construction inspections and complete reporting requirements e.g. progress reports, environmental incidents, non-compliance, corrective action and auditing.
All Personnel	• Comply with requirements of this SEMP; • Report any actual or potential environmental incidents to the Construction Manager immediately; • Identify and report non-conforming or potentially hazardous work practices, equipment, machinery or products; • Only perform tasks for which they are trained and competent; • Assist with environmental incident investigations and applying corrective actions; and • Ensure all machinery, plant and equipment are in good working order and condition prior to use.
Construction Contractor	• Comply with SEMP and legislative requirements; and • Construction contractor to develop and implement management plans in accordance with this SEMP, conditions of approval and contractual obligations.

3.2 Key Contacts

Key contacts for the Project are provided in **Table 3**. Prior to commencement of works, contact details (name and contact number) will be provided for Project personnel.

Table 3: Key Project Personnel Contact Details

Company / Agency	Role / Reason	Name	Contact
Key Project Personnel			
KT	Project Manager	TBC	TBC
TBC	Construction Manager	TBC	TBC
KT	Environmental Officer	TBC	TBC
TBC	Construction Contractor	TBC	TBC
Government Agency Contacts			
DPIE (Alpine Resorts Team)	Development approval and compliance	-	(02) 6456 1733
National Parks and Wildlife Service (NPWS)	Flora, fauna, archaeology	-	(02) 6450 5600
Environment Protection Agency (EPA)	Water, noise, air pollution and regulation	-	131 555
NSW Soil Conservation Service	Soil erosion and sediment control	-	02 9842 8300
Thredbo Village Services			
Thredbo Medical Centre	General medical attention	-	(02) 6457 6254
Fire and Rescue Thredbo, NSW	Incident / emergency	-	(02) 6457 6144
Emergency Contacts			
NSW Police	In case of fire, medical or police emergency	-	000
NSW Fire and Rescue		-	
NSW Ambulance		-	

3.3 Communication

KT is committed to ensuring effective communication and consultation is undertaken to inform the development of this SEMP and ensure it is implemented on-site as per the Project roles and responsibilities in **Section 3.1.** Where required, communication with key external stakeholders such as DPIE and NPWS will be undertaken. A summary of the key consultation activities is provided in **Table 4**.

Table 4: Summary of Consultation Activities

Consultation Activity	Communication Method	Frequency
Internal	• Site inductions; • Pre-start meetings and toolbox talks; and • Reports to Project Manager identifying project progress, any environmental incidents, and review of any complaints or enquiries.	• Site induction – prior to construction; • Pre-starts and toolbox talks – daily; and • Project manager reporting – weekly.
External	• Face-to-face meetings, phone and email correspondence with relevant Government Departments / Agencies; and • In-writing notifications to Government Departments / Agencies and relevant parties.	• As required

3.3.1 Notification Protocols

A summary of the key notification protocols is provided in **Table 5.** Notification requirements will be updated as required.

Table 5: Regulatory Agency Notification Protocols

Party to Notify	What to Notify	When to Notify	Responsibility to Notify Regulatory Agency
DPIE	Commencement of construction	DPIE will be notified in writing at least 48 hours prior to the commencement of construction.	Project Manager
DPIE	Details of any non-compliance in accordance with the requirements detailed in **Section 7.5.**	Notify compliance@planning.nsw.gov.au and alpineresorts@planning.nsw.gov.au within 7 days after becoming aware of any non-compliance with the development conditions of approval.	Project Manager
NPWS	Details of any material suspected of being a European or Aboriginal culturally significant site, relic or artefact.	Immediately upon discovery of any archaeological/culturally significant site or relic that are encountered. NSW Police to also be notified immediately upon discovery of human remains.	Project Manager
NSW Environmental Protection Agency	Details of pollution incident – who, what, when, where, how, any other supporting information and evidence (e.g. photos)	Immediately upon identification of pollution incident causing or threatening material harm to the environment, in accordance with ***KT's Construction site Incident and Emergency Procedures Thredbo Village 2021/2022***.	KT Environmental Manager

3.4 Competence and Training

All Project staff will be made aware of the site-specific environmental controls through a site induction, and pre-start meetings / toolbox talks prior to the commencement of construction.

The site induction will cover the following key aspects:

- Roles and responsibilities;
- Overview of environmental risks and specific locations of environmental and/or cultural heritage significance;
- The scope of legislative requirements and other licences and approvals;
- Communication and notification requirements e.g. procedures for notifying and reporting incidents and complaints;
- Environmental management and controls stipulated in this SEMP;
- Workplace health and safety issues;
- Emergency preparedness and response; and
- Procedures for notifying and reporting incidents and complaints.

3.5 Environmental Incident and Emergency Response

All Project personnel are required to follow KT's ***Construction site Incident and Emergency Procedures Thredbo Village 2021/2022***. The procedure will be available on-site and all Project staff will be trained on their implementation through the site induction. The procedure classifies examples of emergencies and incidents and provides specific procedures for response to such events, such as:

- Serious injuries requirement urgent medical help;
- There are threats to property or life;
- Criminal activity e.g. you have witnessed a serious crime or accident;
- Sewer or water service breaks;
- Bushfire, building fire, spot fire on-site;
- Electricity service faults;
- Leaking gas;
- Fires and explosions; and
- Release of pollution e.g. release of sediment into watercourse, chemical spill.

The procedure also outlines general site management principles, incident reporting and notification requirements and provides an emergency contacts list.

In the event of an environmental incident, emergency or near-miss, the following steps should be taken:

1) **STOP** works in the area and if safe to do so ensure the safety of personnel within the vicinity;
2) **NOTIFY** relevant persons e.g. emergency services or Construction Manager;
3) **ISOLATE** the risk or hazard e.g. turn off machinery/plant, implement immediate site controls, set up exclusion zone; and
4) **REPORT** and notify relevant persons (e.g. Project Manager, regulatory agencies).

Environmental incident and near-miss reporting requirements are detailed in **Section 7.1**. Contact details for key Project personnel and emergency services are provided in **Table 3**.

External contractors are required to prepare and implement an emergency and incident response procedure. The contractor will be responsible for responding to any environmental emergency caused by any action (or inaction) of the contractor's staff, including notification requirements to external parties such as EPA and Fire, Fire and Rescue NSW.

3.6 Communicable Diseases

To minimise the risks associated with the potential spread of communicable disease such as Covid-19, the following mitigations are to be implemented:

- Implementation of hygiene protocols to minimise the risk of potential spread of communicable disease (i.e. Covid-19) during construction works, such as:
  - providing hand sanitiser, antibacterial hand wash, tissues within the toilets and lunch rooms within the site offices
  - clean down frequently touched surfaces within shared areas
  - if Project personnel are experiencing cold or flu-like symptoms, do not attend work until you have received a Covid-19 test which provides negative results

    - following the current health directions from the NSW Government at the time. Given the changing climate of NSW Government health directions, the latest heath directions should be communicated via pre-start meetings or similar; and
- All construction staff to be made aware of hygiene protocols during the site induction and the Construction Contractor is responsible for implementing appropriate controls in line with current health directions from the NSW Government.

4 Risk Assessment

To ensure that potential environmental risks are identified and managed, an environmental risk review has been included in **Table 6**. A risk matrix (**Appendix A**) was used to consider the likelihood and consequence of impacts identified in the SEE (Dabyne 2021).

Table 6: Environmental Risk Assessment

Aspect	Activity / Project Phase	Potential Impact	Inherent Risk			Controls	Residual Risk		
			Likelihood	Consequence	Risk Rating		Likelihood	Consequence	Risk Rating
Reduction in fauna habitat or injury/death to fauna as a result of earthworks	Earthworks; construction	Loss of potential breeding and/or foraging habitat, loss in population of fauna.	2	2	Low (4)	Flora and Fauna Management (**Section 5.3**)	2	1	Low (2)
Release of sediments and soils through disturbance of land	Earthworks; stockpiling	Loss of topsoil, reduction in water quality from the release of sediment laden water.	3	3	Mod (9)	Soil and Water Management (**Section 5.2**)	2	3	Mod (6)
Generation of dust through movement of vehicles and plant	Removal of topsoil, stockpiling, excavating and backfilling.	Nuisance or health impacts from the release of dust. The potential impacts on air quality from the works are considered to be low (closest sensitive receptor >1 km from site).	2	2	Low (4)	Air Quality Management (**Section 5.7**)	2	1	Low (2)
Leak or spill of fuel or oil from fuel storage, plant and vehicles.	Earthworks; removal / installation of infrastructure.	Land and water contamination caused by the release of hydrocarbons.	2	3	Mod (6)	Fuels, Chemicals and Hazardous Substance Management (**Section 5.8**)	2	2	Low (4)
Release of noise and/or vibrations through use of heavy/loud plant or equipment	Earthworks; construction activities	Noise and/or vibration nuisance caused through the use of heavy/loud plant or equipment considered low (closest sensitive receptor >1 km from site).	2	2	Low (4)	Noise and Vibration Management (**Section 5.6**)	2	1	Low (2)
Transport and loading/unloading of goods and materials and equipment and plant operation.	All Project phases	Potential noise impacts on sensitive land uses (e.g. tourist accommodation) considered low as closest receptor >1 km from site.	2	2	Low (4)	Noise and Vibration Management (**Section 5.6**)			Low (2)
Introduction and/or proliferation of weed/pest species in vehicles, plant, shoes and materials	All Project phases	Loss of biodiversity.	2	2	Low (4)	Biosecurity Management (**Section 5.4**)	2	1	Low (2)
Excavation works	Earthworks	Potential damage or destruction of unknown Aboriginal or European cultural heritage items or sites; loss of cultural heritage values.	2	2	Low (4)	Cultural Heritage Management (**Section 5.9**)	2	1	Low (2)

Storage and disposal of waste	All Project phases	Increase in pest numbers; impacts to road users and/or the environment from vehicles with unsecured loads.	3	2	Mod (6)	Waste Management (**Section 5.5**)	2	2	Low (4)
Construction vehicles and plants utilising existing road/trail network	All Project phases	Inconvenience to existing transport networks/potential traffic impacts from the works are considered to be low.	2	1	Low (2)	Traffic and Transport Management (**Section 5.10**)	1	1	Very low (1)
Rehabilitation of disturbed areas	Rehabilitation	Failure of rehabilitation and stabilisation works resulting in increased erosion.	2	3	Mod (6)	Flora and Fauna Management (**Section 5.3**)	2	2	Low (4)

5 Mitigation and Management Measures

To mitigate and manage potential Project impacts identified in the risk review (**Table 6**), the following environmental management activities and controls will be implemented.

A SEMP checklist is provided in **Appendix D** which specifies the timing/frequency for implementation of controls, responsibilities and verification/sign-off. The checklist comprises general environmental management controls and will be updated following the provision of development consent and conditions of approval to ensure all site-specific requirements are met.

The checklist should be completed prior to, during and post construction. Following the provision of development consent, the checklist will be updated to include any site-specific requirements stipulated in the conditions of consent.

5.1 General

The following measures will be implemented:

- Ensure works are conducted by suitably qualified and trained personnel;
- Ensure all site environmental management controls relevant to that stage of work are implemented in accordance with the approved plans and conditions of consent (refer **Appendix D** for controls checklist);
- Provide approved plans and relevant documentation in the site office or other suitable location so that they are easily assessible by all construction staff; and
- Prior to commencement of works, the construction corridor will be temporarily fenced, roped or flagged to clearly delineate the construction area and no-go zones.

5.2 Soil and Water Quality

Soil and Water Quality Management	
Objective	• Minimise potential impacts to receiving water sources; and • Reduce the potential for erosion and sediment moving offsite.
Mitigation Measures	• Implement Erosion and Sediment Control Plan (ESCP) (**Appendix C**); • Erosion and sediment controls (ESCs) to be inspected daily and maintained to ensure compliance with the ESCP; • All stockpiles will be managed in accordance with the Soil Stockpile Guidelines; • Temporary stockpile sites within the construction corridor will avoid impacts to native vegetation and be located on disturbed areas; • Implement control measures included in **Appendix D.**
Performance Criteria	No significant sediment deposition observed leaving the site.
Corrective Actions	If sediment is observed leaving the site, identify the source and amend the ESCs on-site to ensure appropriate controls are in place. If required, additional ESCs to be installed.

5.3 Flora and Fauna

Flora and Fauna Management	
Objective	• Minimise potential impacts to native flora; • Minimise potential impacts to native fauna, their breeding places and habitat; • Minimise the introduction or proliferation of invasive species; and • Rehabilitate the site as soon as possible following completion of works to restore the habitat.
Mitigation Measures	• The construction works will be confined to the approved construction corridor;

	• Reasonable and practicable native fauna management measures will be implemented during construction to avoid environmental harm and nuisance to native fauna, known habitats and breeding places; • Maintain a clean and tidy work area to ensure animals are not attracted to the site, including provision of covered bins during proposed works; and • Implement control measures included in **Appendix D.**
Performance Criteria	No death or injury to fauna as a result of on-site activities. No disturbance outside the approval disturbance area.
Corrective Actions	• Review and implement suitable strategies to dissuade fauna from coming to site; and • Contact NPWS / LAOKO if injured fauna is identified as a result of site activities.

5.4 Biosecurity

Biosecurity Management	
Objective	Reduce the risk of introducing invasive pest species
Mitigation Measures	• Prior to the commencement of construction works, all weed species identified within the construction corridor will be treated in accordance with best practice methods to ensure these weeks are not spread further within the site or throughout KNP; • Project machinery and vehicles to arrive/depart from KNP and the Project site in a clean condition, free of mud and vegetative propagules and pathogens; • All vehicles and machinery entering Thredbo must adhere to the ***Standard Operating Procedure: Use and Maintenance of Wash Down Bay (March 2019)*** which requires all vehicles and machinery to utilise the weed wash-down bay prior to entering site to ensure no new weed seeds are introduced to the site and KNP; • Machinery to be regularly maintained and manoeuvred to prevent the spread of weeds and pathogens; • Storage of plant and machinery is to be restricted to the designated disturbed areas within the construction corridor; and • Implement control measures included in **Appendix D.**
Performance Criteria	No introduction of invasive species as a result of construction activities.
Corrective Actions	Review existing biosecurity procedures (e.g. clean down procedure) and implement additional controls if required.

5.5 Waste

The following waste streams will be generated during the Project:

- General solid waste (putrescible) – e.g. waste from litter bins, food waste; and
- General solid waste (non-putrescible) – e.g. steel, plastic, paper, cardboard, building waste, wood waste.

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

- General litter bins for waste such as food waste and non-recyclable plastic;
- Recyclable bins for waste such as carboard packaging, paper, plastic; and
- KT's waste transfer facility.

Waste Management	
Objective	• Minimise construction waste as much as practicable; and • Reduce the impact of waste on-site and beyond the site boundary.
Mitigation Measures	• All waste will be managed and disposed of in accordance with the KT's waste management procedures; • Where possible, construction materials will be salvaged for reuse to divert waste from landfill;

	• All waste will be separated into waste streams and contained within appropriate receptacles and/or disposed of in accordance with the EPA guidelines; • All receptacles will be in good condition; • All waste transportation vehicles will be covered appropriately to ensure waste cannot spill, leak or escape onto the road or wash into stormwater drains; and • Implement control measures included in **Appendix D**.
Performance Criteria	No litter or waste material to be released from site in an uncontrolled manner.
Corrective Actions	• Investigate cause of inappropriate waste disposal/management; • Review on-site waste handling facilities and implement corrective actions e.g. change in receptacle size and/or waste management signage; • If required, implement administrative controls e.g. additional waste management training for staff

5.6 Noise and Vibration

Noise and Vibration Management	
Objective	Minimise potential noise and vibration nuisance in the surrounding environment.
Mitigation Measures	• Project staff will take reasonable and practicable management measures to avoid and mitigate environmental nuisance from noise associated with the works; • Works will be undertaken during standard work hours as stipulated in the conditions of approval; and • Appropriate noise management strategies (refer **Appendix D** for controls) will be implemented for construction works and operation of plant in accordance with the Australian Standard AS 2436-2010 *Guide to noise and vibration control on construction, demolition and maintenance sites* and the *Interim Construction Noise Guideline* (DECC 2009) e.g. ensure plant is regularly maintained, and repair or replace equipment that becomes noisy, turn off plant that is not being used.
Performance Criteria	No construction related noise and vibration complaints received.
Corrective Actions	If complaints are received, the following steps will be taken: • Investigate specific cause of complaint; • Review site activities/processes and identify the source of the noise emissions; • Implement immediate corrective actions e.g. swap out noisy equipment; and • If required, implement administrative controls e.g. additional staff training or change work hours to minimise noise.

5.7 Air Quality

Air Quality Management	
Objective	Minimise potential impacts to the existing air quality in the surrounding environment.
Mitigation Measures	• Construction staff will take reasonable and practicable measure to prevent dirt and dust from affecting the amenity or the surrounding environment during construction e.g. minimise the area of soil disturbance; • Plant and equipment to be maintained and operated in an efficient manner to reduce air pollution; • All vehicles carrying spoil or rubble to/from site should be covered to prevent the escape of dust or other material; • When there is a risk of works creating dust nuisance, the Project site is to be watered; and • Implement control measures included in **Appendix D.**
Performance Criteria	No complaints received in relation to air pollution.
Corrective Actions	If complaints are received, the following steps will be taken: • Investigate specific cause of complaint; • Review site activities/processes and identify the source of air emissions; • Implement immediate corrective actions on-site e.g. water site, replace equipment deemed to be poorly maintained; and • If required, implement administrative controls e.g. additional staff training, alter construction methods or timing for undertaking dust generating activities.

5.8 Fuels, Chemicals and Hazardous Substances

Fuels, Chemicals and Hazardous Substances Management	
Objective	Eliminate the potential for release of fuels, chemicals and hazardous substances to the environment
Mitigation Measures	• In the event on an on-site spill, construction staff will follow KT's ***Construction Site Incident and Emergency Procedures Thredbo Village, 2021/2022***; • A copy of KT's ***Thredbo Spill Kit Map (June 2019)*** will be available on-site and all Project staff will be made aware of their locations in the site induction; • Hazardous substances, toxic materials or dangerous goods must not be stored or processed on-site at any time without prior approval from the DPIE Secretary or nominee; • Hazardous chemicals will be appropriately labelled in accordance with the *Code of Practice: Labelling of Workplace Hazardous Chemicals, August 2019* (NSW Government 2019); • Hazardous chemicals will be managed in accordance with the *Code of Practice: Managing risks of hazardous chemicals in the workplace, August 2019* (NSW Government 2019); • Appropriate controls will be implemented when re-fuelling Project vehicles and machinery e.g. re-fuelling of vehicles and machinery will be performed on hard-stand areas or with appropriate spill kit and temporary bunding in place; and • Implement control measures identified in **Appendix D.**
Performance Criteria	No fuel, chemical or hazardous substance spills.
Corrective Actions	Corrective actions will be taken in accordance with the ***Construction Site Incident and Emergency Procedures Thredbo Village, 2021/2022,*** including: immediate spill response, implementation of any necessary control measures as directed by authorities. Where required, an investigation will be undertaken to determine the root cause.

5.9 Cultural Heritage

Cultural Heritage Management (Indigenous and Non-indigenous)	
Objective	Minimise potential impacts on places and objects of cultural heritage significance
Mitigation Measures	• All Project personnel will be made aware of their obligations in relation to the management of cultural heritage via the site induction; • Project staff will take all reasonable and practicable measures to avoid harm to cultural heritage; • Implement control measures identified in **Appendix D**; and • Where unexpected items of potential archaeological, built or Aboriginal cultural heritage significance are discovered, Project personnel will follow the below procedure: – **STOP:** Stop work and leave the site or item where it is. – **NOTIFY:** Notify the Project Manager and NPWS to arrange for representatives to inspect the site. If human remains are found, the NSW Police must also be notified. – **MANAGE:** Management may involve securing the find by erecting a no-go zone. – **REPORT:** The Project Manager will complete any reporting requirements, as directed by NPWS.
Performance Criteria	No loss of cultural heritage values.
Corrective Actions	If a suspected item/artefact of Aboriginal, built or archaeological cultural heritage significance is encountered, follow procedure above – Stop, notify, manage and report. All Project personnel to be made aware of any additional management requirements e.g. no-go zones.

5.10 Traffic and Transport

Traffic and Transport Management	
Objective	Minimise potential impacts on existing road network
Mitigation Measures	• Traffic and construction vehicle access will be managed as per regular daily operation in the resort; • All construction vehicles to enter/exit site via dedicated access; • Mountain bike trail and pedestrian access within the construction corridor will be managed and redirected (if required) by KT or an authorised contractor through the use of signage and exclusion from the construction corridor; and • Implement control measures identified in **Appendix D.**
Performance Criteria	• No impacts to existing road network or users; and • No complaints in relation to traffic or vehicle operators.
Corrective Actions	If complaints are received, traffic management procedures will be reviewed and amended (if necessary).

6 Monitoring and Review

6.1 Environmental Monitoring

The Environmental Officer will conduct monitoring during all Project phases (pre-construction, during construction and post-construction) to ensure compliance with this SEMP, associated management plans and conditions of approval (refer **Appendix D** for SEMP checklist).

The Environmental Officer will also undertake weekly inspections utilising the **Weekly Inspection Report** (**Appendix E**).

6.2 SEMP Review

This SEMP is a live document and will undergo reviews and amendments as necessary. Reviews will generally be undertaken –

- If there is a change in the scope of the Project;
- Prior to commencement of construction to ensure any relevant conditions of consent and/or other approval, licence or permit requirements are incorporated;
- If there is a need to improve environmental controls to protect environmental values;
- If there is an increase or introduction of a new environmental risk or impacts; and
- At the end of a Project to allow for improvements in subsequent Projects.

The Environmental Officer will be responsible for reviewing the SEMP and the Project Manager is responsible for approving these changes.

7 Reporting

7.1 Weekly Environmental Reporting

The Environmental Officer will provide copies of the **Weekly Inspection Report** (**Appendix E**) to the Project Manager on a weekly basis. All records will be stored within KT's files and distributed to relevant persons / regulatory authorities as required.

7.2 Environmental Incident Reporting

All incidents and near misses will be managed in accordance with KT's ***Construction site Incident and Emergency Procedures Thredbo Village 2021/2022***. The document provides procedures for responding to incidents and emergences, reporting and notification requirements and emergency contacts.

The following information should be recorded:

- Time and date of the incident / near miss;
- A description of the incident / near miss;
- A sequence of events that led to the incident / near miss occurring;
- Person/s involved in the incident / near miss (including witnesses);
- Written statements from person/s involved (as applicable); and
- Details of corrective actions.

The **Environmental Incident Report Form** (**Appendix E**) should be completed for all environmental incidents. All parts of the **Environmental Incident Report Form** must be completed in accordance with KT's incident procedure and following the instructions within the form. The form must be signed by the person making the report and the Project Manager/person in charge of the site/activity.

7.3 Complaints Management

Should complaints be received from the public in relation to the Project they will be recorded using the **Complaints Form** (**Appendix E**). The Project Manager will be responsible for investigating, recording and closing out any complaints received. All records will be stored within KT's files and distributed to relevant persons / regulatory authorities as required.

7.4 Non-conformance

A non-conformance is the failure to comply with the requirements of this SEMP and supporting management plans. Non-conformances identified via site inspection or during day to day activities will be documented on the **Environmental Weekly Inspection Form** (**Appendix E**) and closed out in subsequent inspections. The Environmental Officer is responsible for investigation and managing corrective and preventative actions in the event of non-conformance or a situation likely to cause environmental harm.

7.5 Non-compliance

A non-compliance refers to the failure to comply with a condition of consent and requires notification to DPIE (refer notification protocols in **Section 3.3.1**). The Project Manager is responsible for investigation and management of corrective and preventive actions in the event of non-compliance.

DPIE will be notified in writing within seven days of becoming aware of a non-compliance with a condition of consent. The following information will be provided:

- Development application reference;
- The condition of consent that the Development is non-compliant with;
- The way in which it does not comply and the reasons for the non-compliance (if known); and
- What actions have been, or will be, undertaken to address the non-compliance.

7.6 Corrective Actions

Corrective actions should be prioritised on the following hierarchy of controls:

1. **Elimination** – can activities and processes be eliminated to reduce the risk of reoccurrence?
2. **Substitution** – Can activities be substituted with another activity of lesser risk?
3. **Isolation** – can you isolate the hazard from any person exposed to it?
4. **Engineering controls** – can you reduce the risk of reoccurrence through engineering changes?
5. **Administrative controls** – can a change in work practices, additional training or additional checks reduce the risk?
6. **Personal Protective Equipment (PPE)** – can PPE be worn to protect personnel from harm?

The Construction Manager will be responsible for managing the implementation of corrective actions on-site.

7.7 Document Control

All Project related documentation will be maintained within KT's Project file. Documents stored within the file include (but not limited to) the following:

- Copies of relevant planning approvals and documents, licences and permits;
- All completed induction forms and visitor sign-on register;
- Records of routine environmental inspections; and
- Records of any environmental incidents, complaints, non-conformances and no-compliances.

8 References

Dabyne Planning Pty Ltd (Dabyne) 2021, Statement of Environmental Effects for Replacement of Sundowner Snowmaking Infrastructure.

Department of Environment and Climate Change (DECC) 2007, Rehabilitation Guidelines for the Resort Areas of Kosciuszko National Park, NSW Government.

Department of Environment and Climate Change (DECC) 2009, Interim Construction Noise Guideline, July 2009, https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/noise/09265cng.pdf?la=en&hash=EF4576FD79DBB25D5AC22DFA1A883A2BADA1F77B

Department of Infrastructure, Planning and Natural Resources (DIPNR) 2004*, Guideline for the Preparation of Environmental Management Plans*, https://www.planning.nsw.gov.au/~/media/Files/DPE/Guidelines/guideline-for-the-preparation-of-environmental-management-plans-2004.ashx?la=en

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NSW Government 2021a, *Water Management (General) Regulation 2018 Hydro Line spatial data*, viewed 02 September 2021, https://trade.maps.arcgis.com/apps/webappviewer/index.html?id=07b967fd0bdc4b0099fc5be45b6d1392

NSW Government 2021b, Propose Aboriginal places and items for protection, Heritage NSW, viewed 4 August 2021, https://www.heritage.nsw.gov.au/protecting-our-heritage/nominating-an-aboriginal-place/

Office of Environment and Heritage (OEH) 2017, *Soil Stockpile Guidelines for the Resort Areas of Kosciuszko National Park, version 1.0, October 2017*, NSW National Parks and Wildlife Service.

9 Appendices

Appendix A Risk Matrix

Likelihood and consequence is defined as follows:

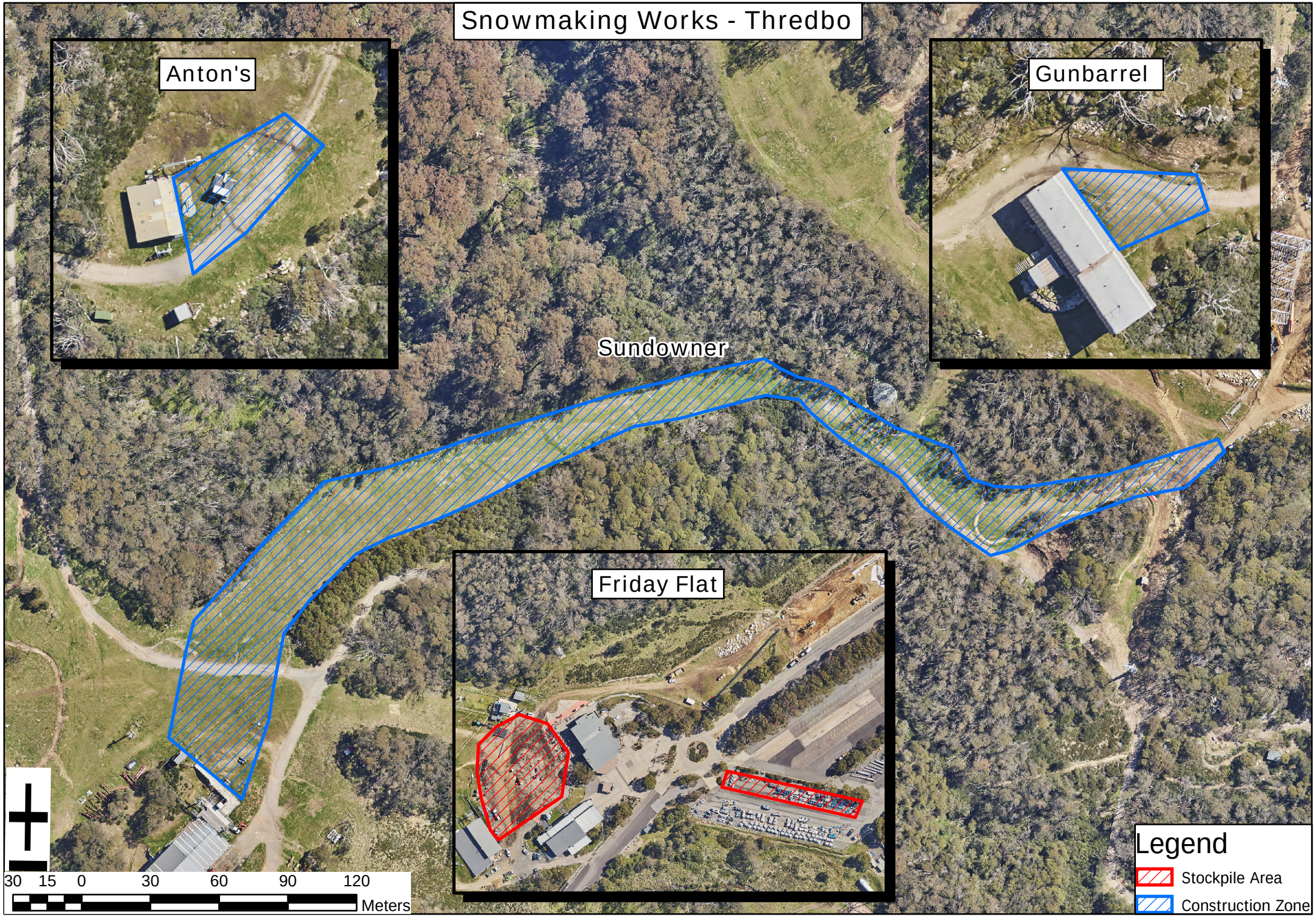
- **Likelihood**: the chance that something might happen; and
- **Consequence:** the outcome of an event which may have the potential to change the existing environmental values.

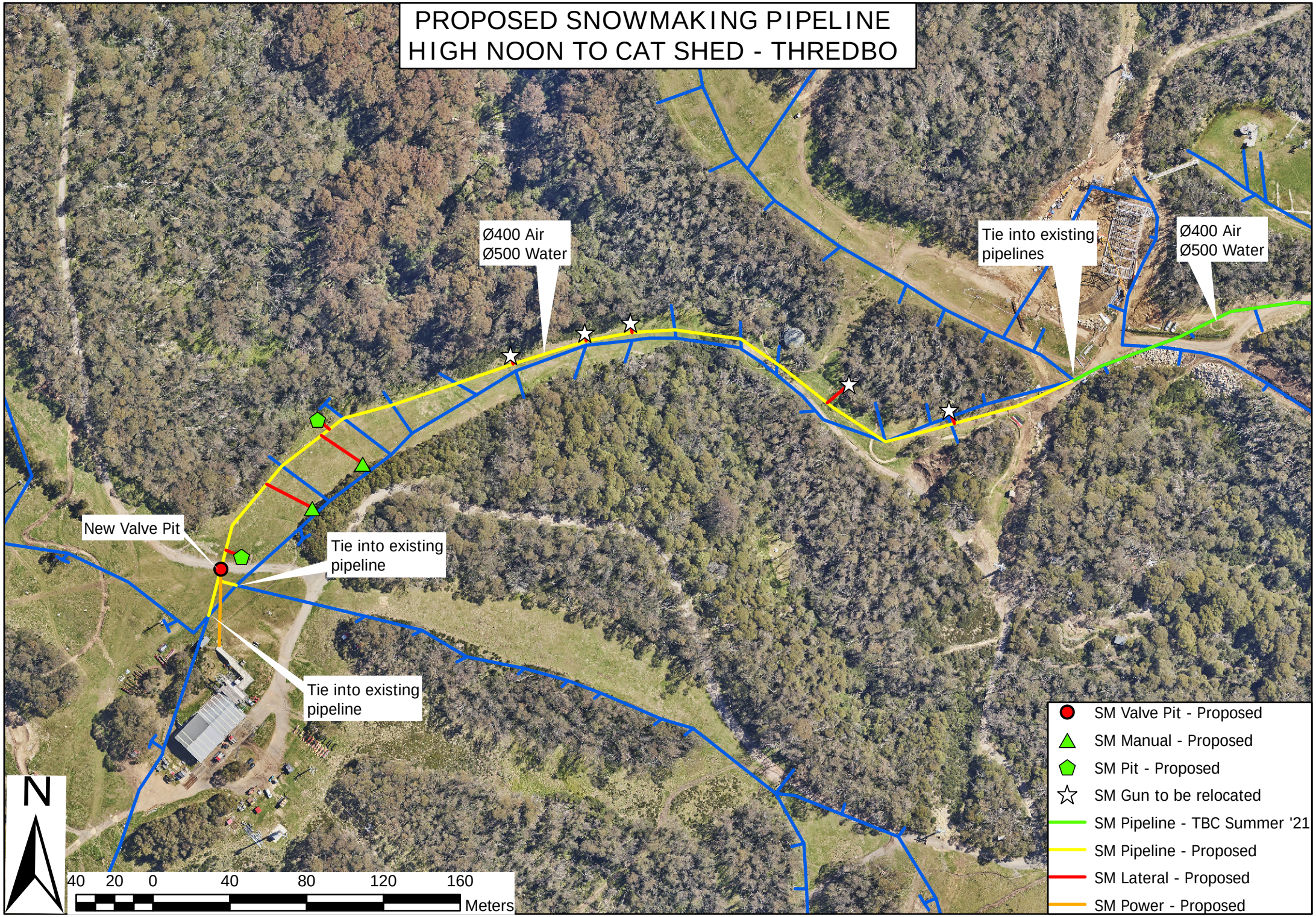
Likelihood	Consequence				
	Extreme (5)	**Major (4)**	**Moderate (3)**	**Minor (2)**	**Insignificant (1)**
Almost certain (5)	Extreme (25)	Extreme (20)	Extreme (15)	High (10)	Moderate (5)
Likely (4)	Extreme (20)	Extreme (16)	High (12)	Moderate (8)	Low (4)
Possible (3)	Extreme (15)	High (12)	Moderate (9)	Moderate (6)	Low (3)
Unlikely (2)	High (10)	Moderate (8)	Moderate (6)	Low (4)	Low (2)
Rare (1)	Moderate (5)	Low (4)	Low (3)	Low (2)	Very low (1)

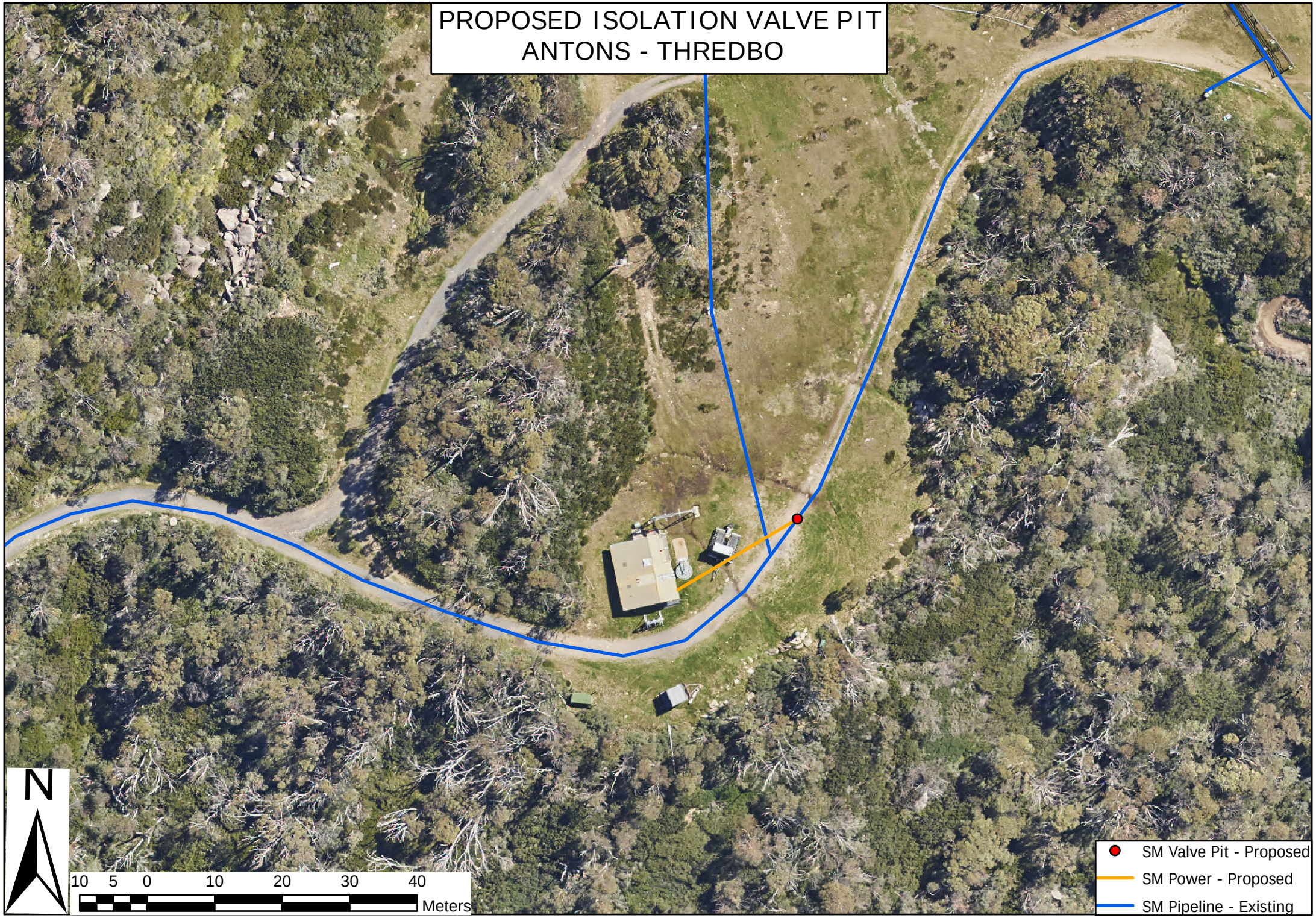
Likelihood Rating		Definitions
Rare	**1**	Unlikely to occur during a lifetime or very unlikely to occur
Unlikely	**2**	Could occur but considered unlikely
Possible	**3**	Might occur at some time
Likely	**4**	Will probably occur
Almost certain	**5**	Is expected to occur in most circumstances

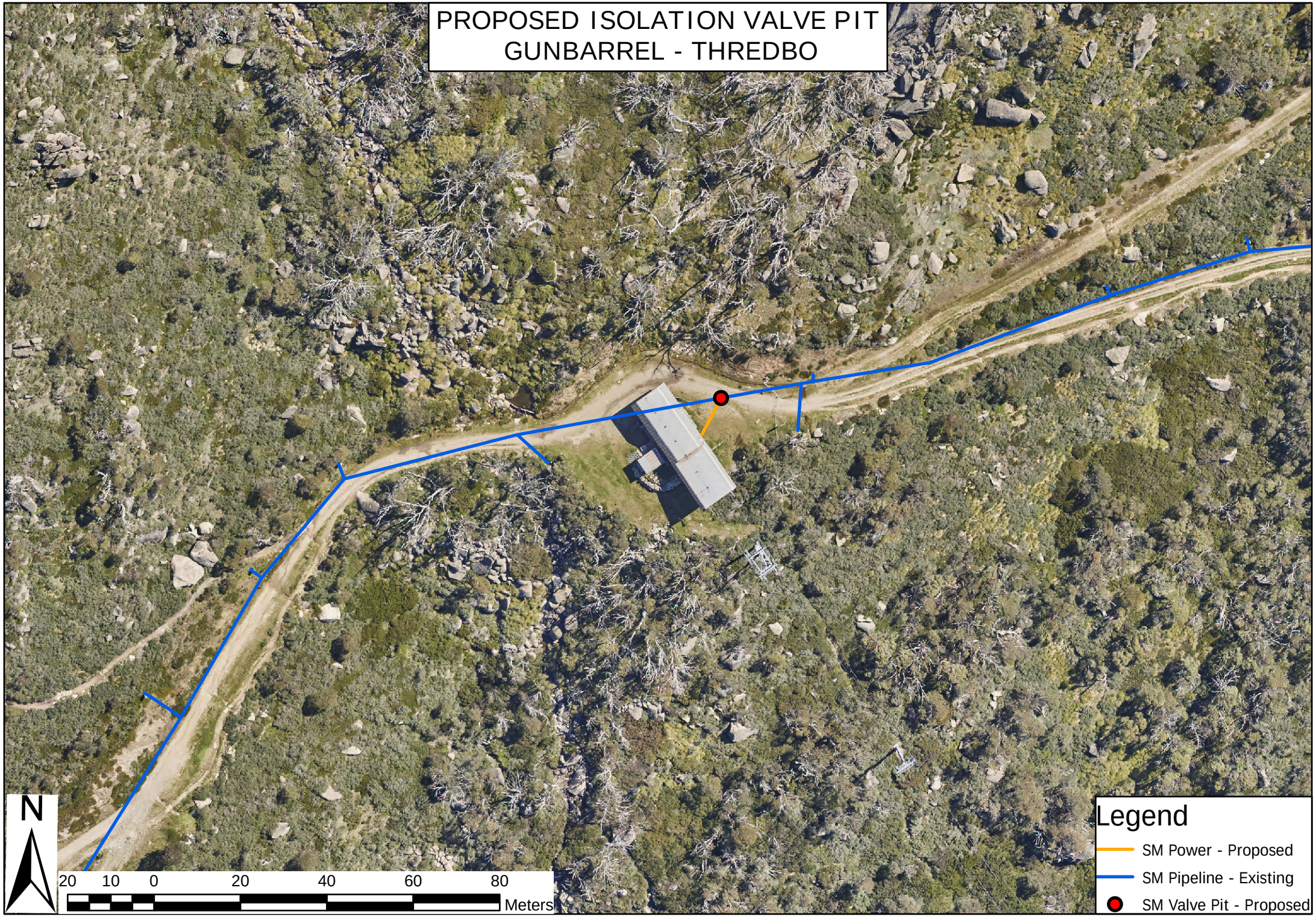
Consequence Rating		Definitions
Insignificant	**1**	Very low environmental impact confined to a small area within the Project area. Prompt (typically within a shift) clean-up.
Minor	**2**	Low environmental impact confined within the Project area. Short-term (typically within a week) clean-up.
Moderate	**3**	Reversible offsite environmental impact, requiring short-term clean-up (weeks). On-site medium term (weeks) clean-up.
Major	**4**	Major, offsite, environmental impact requiring medium-term clean-up (months). On-site impact requiring significant clean-up effort (months).
Extreme	**5**	Prolonged or severe, offsite or regional environmental impact requiring long-term clean-up (years) with irreversible residual damage. Extensive, Project area impact requiring long-term clean-up and recovery (years).

Appendix B Figures and Maps


Snowmaking Works - Thredbo
Anton's
Gunbarrel
Sundowner
Friday Flat
30 15 0 30 60 90 120
Meters
Legend
Stockpile Area
Construction Zone


PROPOSED SNOWMAKING PIPELINE
HIGH NOON TO CAT SHED - THREDBO
Ø400 Air
Ø500 Water
Tie into existing
pipelines
Ø400 Air
Ø500 Water
New Valve Pit
Tie into existing
pipeline
Tie into existing
pipeline
N
40 20 0 40 80 120 160
Meters
SM Valve Pit - Proposed
SM Manual - Proposed
SM Pit - Proposed
SM Gun to be relocated
SM Pipeline - TBC Summer '21
SM Pipeline - Proposed
SM Lateral - Proposed
SM Power - Proposed

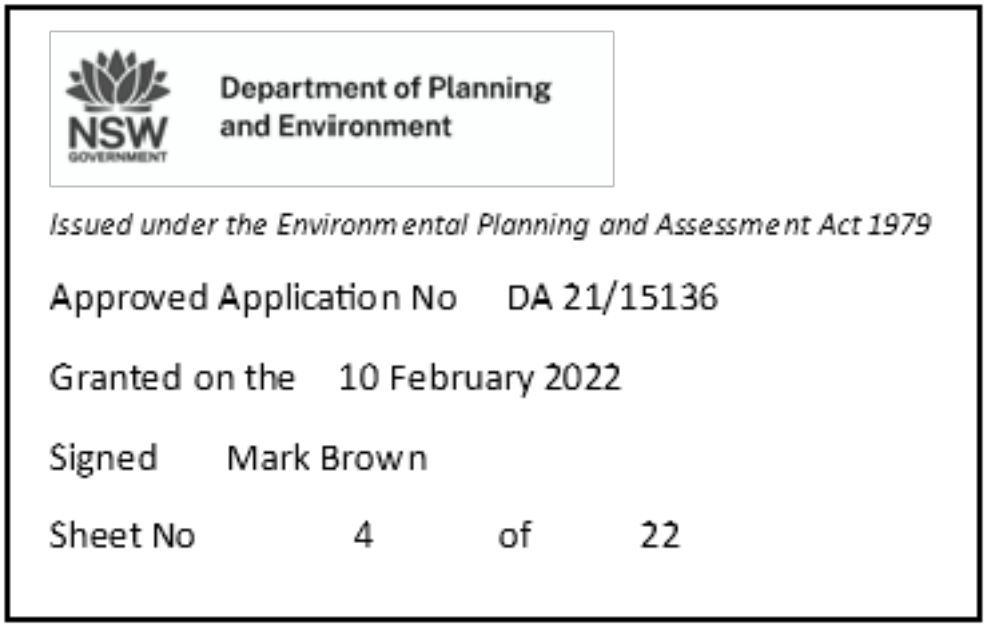

PROPOSED ISOLATION VALVE PIT
ANTONS - THREDBO
N
10 5 0 10 20 30 40
Meters
SM Valve Pit - Proposed
SM Power - Proposed
SM Pipeline - Existing


PROPOSED ISOLATION VALVE PIT
GUNBARREL - THREDBO
N
20 10 0 20 40 60 80
Meters
Legend
SM Power - Proposed
SM Pipeline - Existing
SM Valve Pit - Proposed

Appendix C Erosion and Sediment Control Plan

Erosion and Sediment Control Plan (ESCP)

Sundowner Snowmaking Maintenance and Associated Works, Thredbo Alpine Resort, Kosciuszko National Park, NSW
September 2021



Sundowner Snowmaking Maintenance and Associated Works

Erosion and Sediment Control Plan (ESCP)

Kosciuszko Thredbo Pty Ltd
1 Friday Drive, Thredbo, New South Wales 2625
www.thredbo.com.au

Document Control

REVISION	DATE	REVISION TYPE	AUTHOR	APPROVED BY
A	30.08.2021	Draft	C.Chalk	B.Bourke
B	27.09.2021	Internal review	-	P.Fleming
0	28.09.2021	Final	C.Chalk	P.Fleming

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Erosion and Sediment Control Plan (ESCP)

Sundowner Snowmaking Maintenance and Associated Works, Thredbo Alpine Resort, Kosciuszko National Park, NSW
September 2021

Sundowner Snowmaking Maintenance and Associated Works

Erosion and Sediment Control Plan (ESCP)

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Tables

1 Introduction

This Erosion and Sediment Control Plan (ESCP) has been prepared for the Sundowner snowmaking maintenance and associated works (the Project). The Project site is located on the Sundowner trail, Antons bottom station and Gunbarrel top station within Thredbo Alpine Resort (Thredbo). Thredbo is situated approximately 30 kilometres (km) south-west of Jindabyne, New South Wales (NSW).

2 Site Description

The Project site and activities are located on a pre-disturbed and highly modified environment. Merritts Creek, a minor perennial watercourse dissects the site on Sundowner trail. A minor non-perennial tributary is mapped approximately 90 m south-west of Antons bottom station. A minor perennial tributary is mapped approximately 50 m west of Gunbarrel top station (**Figure 1**) (NSW Government 2021a).

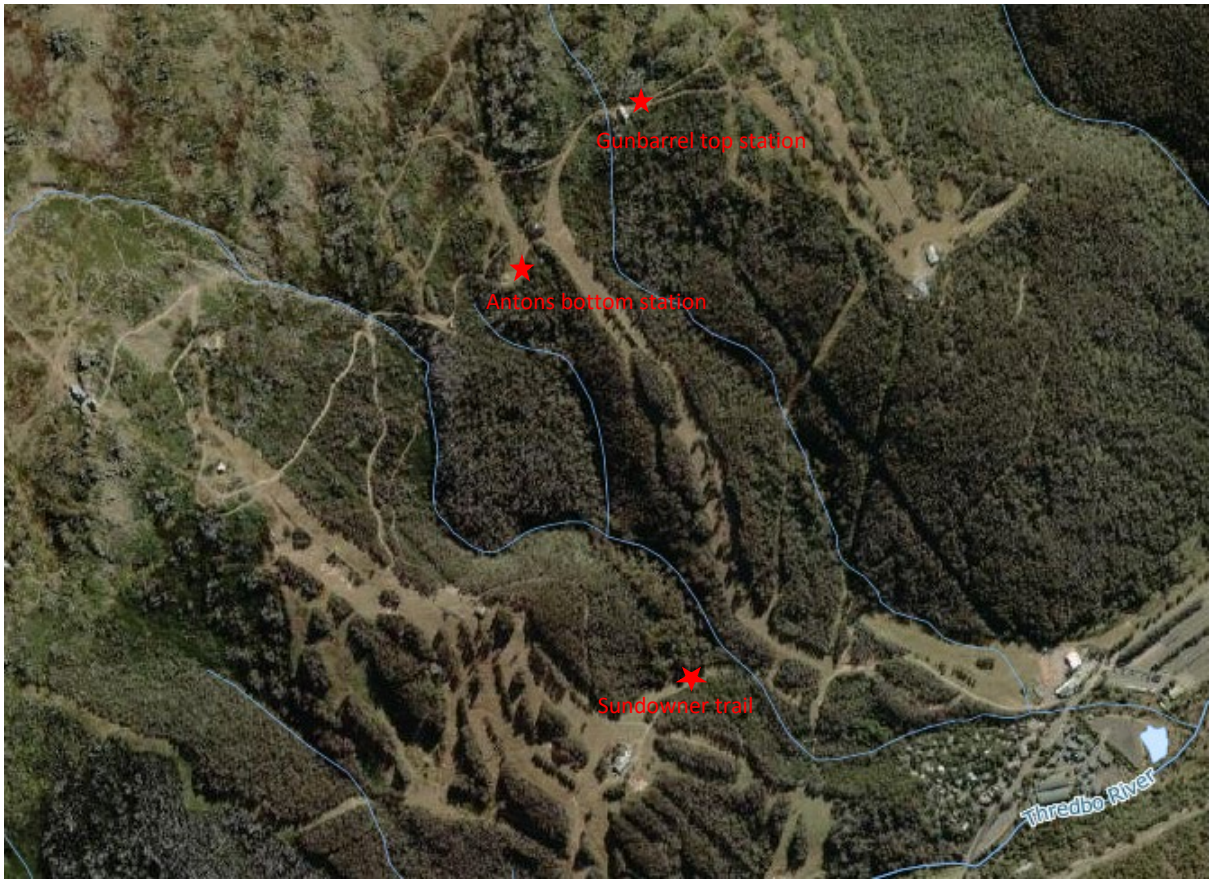

Figure 1: Project location within proximity to watercourses (NSW Government 2021)

3 Roles and Responsibilities

Role	Responsibilities
Project Manager	• Ensure the ESCP is made available, communicated, maintained and understood by all Construction Personnel; and • Ensure ESCP adheres to conditions of approval following the provision of Development Consent from DPI&E.
Environmental Officer	• Ensure implementation and compliance with the ESCP; • Ensure all ESCs are installed and adequately functioning in accordance with ESCP; and • Inspections and monitoring of all erosion and sediment control measures.
Construction Manager	• Establishment and removal of erosion and sediment control measures; and • Ongoing maintenance of erosion and sediment control measures.

4 Management Measures

4.1 General

- All erosion and sediment controls measures will be installed and maintained in accordance with **Sections 5** and **6** of this ESCP; and
- Works will cease during substantial rainfall events.

4.2 Vegetation

- No clearing of native vegetation is to occur;
- All reasonable and practicable efforts will be taken to delay the disturbance to existing ground cover (organic or inorganic) prior to land-disturbing activities; and
- All reasonable and practicable measures must be taken to minimise the disturbance to trees, shrubs and ground covers outside of the construction corridor.

4.3 Site Access Protection Measures

- Site access points will be appropriately managed to minimise the risk of sediment being tracked onto sealed, public roadways.

4.4 Soil and Stockpile Management

- All stockpiles will be constructed and managed in accordance with *Soil Stockpile Guidelines for the Resort Areas of Kosciuszko National Park* (OEH 2017). For stockpiles within the construction corridor, they will adhere to the following criteria:
  - Located directly adjacent to the works and in areas with sufficient room to accommodate the volume of material being stockpiled
  - Situated on relatively flat ground (where possible)
  - Not within 40 m of a watercourse; and
- Sediment controls to be installed down-slope of stockpiles, where required (refer **Section 5.7**).

4.5 Trenches

- The maximum length of pipeline to remain open overnight is approximately 100 metres (m);
- Erosion and sediment controls will be installed in accordance with **Sections 4.7** and **5**;
- Backfill will be placed at equivalent compaction of the surrounding soil with an excavator to minimise possibility of soil subsidence; and

- Where trenches are left open overnight, egress points for fauna (e.g. timber ramps) will be installed.

4.6 Waste Management

- All building and construction waste onsite to be minimise in the first instance;
- Designated waste collection areas will be established on-site with covered receptacles;
- Building and construction waste will be managed in accordance with KT's waste management procedures; and
- No material is to be swept or hosed into any waterways or waterbodies.

4.7 Drainage, Erosion and Sediment Control

The installation of effective drainage, erosion and sediment controls are essential to ensure soils and waterways are protected and the success of rehabilitation. A summary of the controls to be implemented onsite are provided in **Table 1**. Any additional or alternative controls must be approved by the Environmental Officer prior to use.

4.8 Site Rehabilitation

- All ESC measures will remain in place until all exposed areas of soil are stabilised and/or revegetated; and
- All rehabilitation will be undertaken in accordance with the *Rehabilitation Guidelines for the Resort Areas of Kosciuszko National Park* (DECC 2007). See Appendix 10 of Guideline for list of recommended species for rehabilitation.

Table 1: Drainage, Erosion and Sediment Controls

Activity	Control	Purpose	Timing	Location	Installation Requirements	Materials required
Excavations, trenching	Sediment fence	To prevent sediment run-off	Where required, installed prior to commencement of activity and retained in place until exposed areas of soil are stabilised / rehabilitated	Downslope side of any excavations; wetter areas of trenches	To be in accordance with construction notes in **Section 0**	Geotextile fabric (non-woven), star pickets/wooden stakes
Trenching	Straw bale filter fencing	To prevent sediment run-off	Where required, during excavation of trenches	Drier areas of trenches, across or at the toe of slope	To be in accordance with construction notes in **Section 5.5**	Straw bales; support posts/stakes; geofabric
	Trench breakers	Reduce erosive run-off velocities	Prior to forecast rain event, where required	Within open trenches	In accordance with construction notes in **Section 5.5**	Straw bales
Construction nearby drains	Silt fencing; Straw bales; Coir logs	Protect drains from heavy flows and sediment movement.	Prior to ground disturbance in these areas	Around the inlet of drains immediately down-slope of the construction activity / excavation	To be in accordance with the construction note in **Sections 0, 5.5** and **5.3.**	Coir logs; stakes; geotextile fabric; straw bales
Down-slope excavations	Straw bales	Divert water around and away from open excavation works	Installed once the trenches have been excavated and retained in place until excavations are stabilised/rehabilitated	To be placed at each end of the open trenches	To be in accordance with the construction notes in **Section 5.5**	Straw bales; stakes
Cross-slope excavations	Straw bales; Coir logs	Divert water around and away from excavation works	Installed once trenches have been excavated, where required	To be installed on the uphill side of excavations running cross-slope (where required)	To be in accordance with the construction notes in **Sections 5.2** and **5.3**	Straw bales; stakes; coir logs
Dewatering excavations	Geofabric filter dam	To capture sediment	In the event water enters an excavation and its required to be pumped out prior to recommencement of works	Equipment and pumping operation to be confined to construction corridor	To be in accordance with the construction notes in **Section 5.6**	Geotextile filter fabric (heavy duty non-woven); support posts/stakes; straw bales

**Straw bales to be certified weed-free*

5 Control Installation Notes

This section details the installation requirements for controls listed in **Table 1**.

5.1 Sediment Fence

Construction notes:

1) Construct sediment fences as close as possible to being parallel to the contours of the site, but with small returns to limit the catchment area of any one section. **The catchment area should be small enough to limit water flow if concentrated at one point to 50 L/s in the design storm event, usually the 10-year event.*
2) Dig a 150 mm deep trench along upslope line of fence for the bottom of the fabric to be entrenched.
3) Install 1.5 m long star pickets into ground at 2.5 m intervals (max) on the downslope edge of the trench. **Fit star pickets with safety caps.*
4) Fix geotextile to the upslope side of the posts ensuring it goes to the base of the trench.

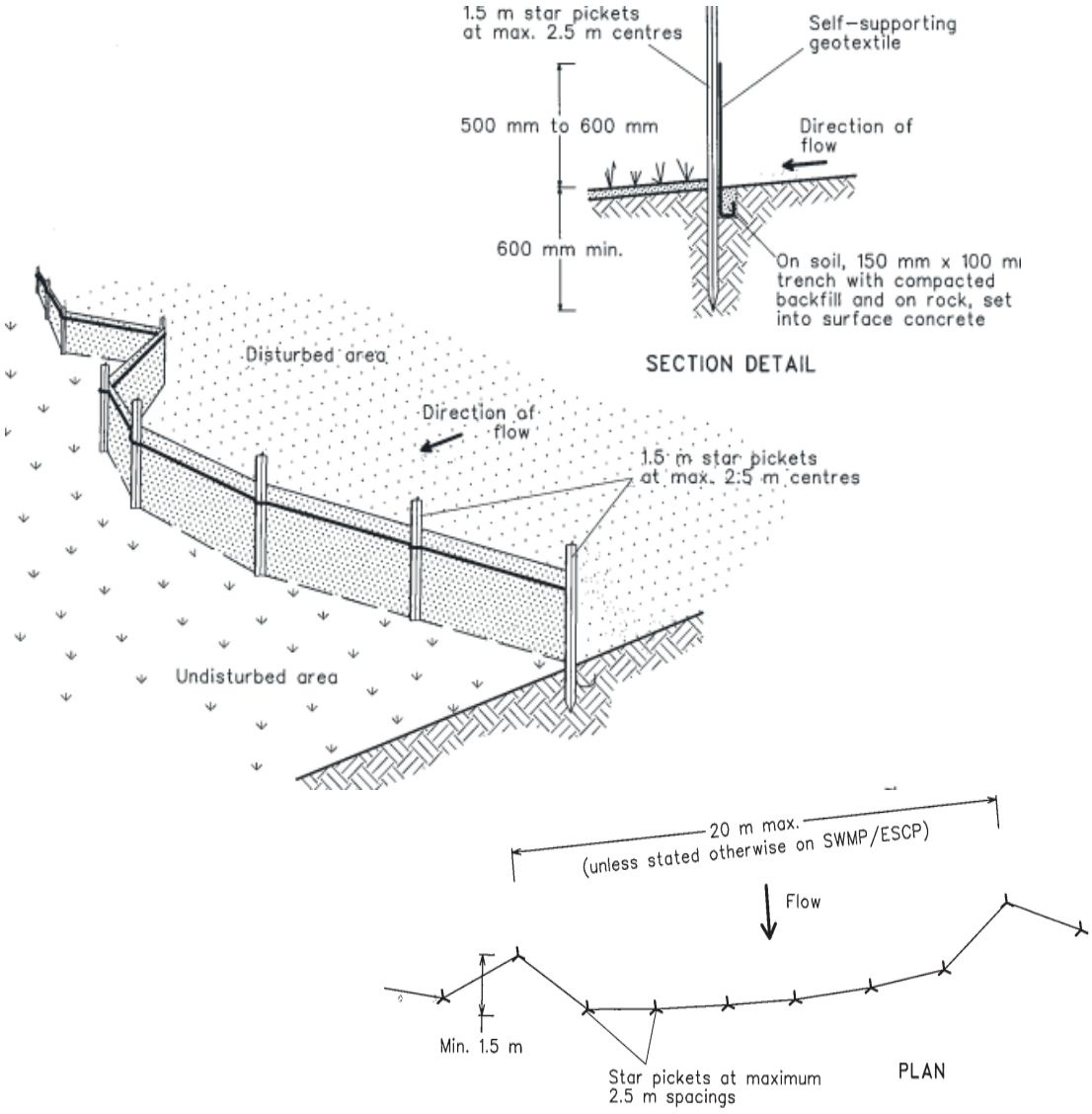

Figure 2: Standard Sediment Fence Installation (Source: Landcom 2004)

5.2 Cross Drainage and Sediment Barriers

The recommended spacing for cross drainage and sediment barriers is provided in **Table 2.**

Table 2: Recommended spacing for cross drains and sediment barriers

Slope Grade (%)	Cross Drain / Sediment Barrier (m)
5-10	15-20
10-15	10-15
15-25	8-10
>25	5-8

Source: NPWS 2007; Parr-Smith and Polley (1998)
Note: To calculate the grade of a slope: (rise/run) x 100 = slope grade

5.3 Coir Logs

Construction notes:

1) Secure logs by driving the stakes between the outer netting and the core material each side of the logs and secured into the ground (not through centre of log).
2) Ensure spacing of stakes does not exceed an interval of 1 m.
3) Once driven into ground, the stakes should sit at least two-thirds below the ground and one-third above.

5.4 Straw Bale Filter

Construction notes:

1) Construct the straw bale filter as close as possible to being parallel to the contours of the site.
2) Place bales lengthwise in a row with ends tightly abutting (1 bale = max height of filter). Fill gaps between bales with straw and wrap with geofabric where necessary.
3) Embed each bale in the ground 75-100 mm and anchor with two 1.2 m stakes/star picket. Angle the first stake in each bale towards the previously laid bale. Stakes should be driven 600 mm into ground, sitting flush with top of bale (if possible). **If using star pickets which protrude above bales, fit with safety caps.*
4) Where a straw bale filter is constructed downslope from a disturbed batter, ensure the bales are placed 1-2 m downslope from the toe.

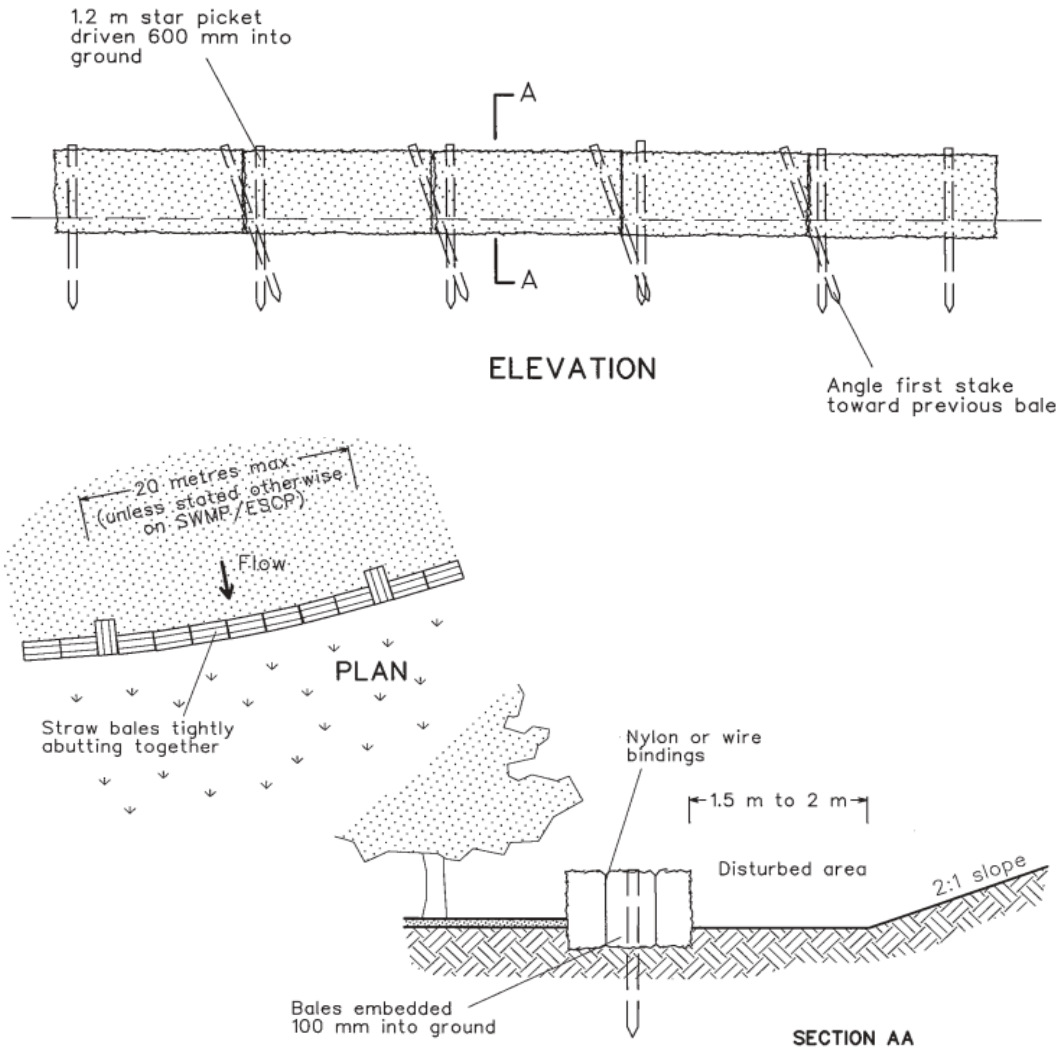

Figure 3: Standard Straw Bale Filter Installation (Source: Landcom 2004)

5.5 Trench Breakers

Construction notes:

- Trench breakers may comprise soil or straw bales (or a combination).
- The recommended spacing of trench breakers to be determined on-site according to the slope and potential for subsurface flow, refer **Table 2** for recommended spacing.

5.6 Geofabric Filter Dam Installation

Construction notes:

1) Where practicable, locate the filter dam at least 50 m from the edge of a waterbody.
2) Suitably clear and prepare the surface where the filter dam will be installed.
3) Arrange straw bales to form an enclosure and securely anchor each bale with at least one star picket or stake.
4) Securely attach the filter fabric to the straw bales and reinforce with stakes. If more than one sheet of fabric is used, then overlap within a minimum of 600 mm at all joints.

Figure 4: Standard Installation of Geofabric Filter Dam

5.7 Soil Stockpile Management

Construction notes:

1) Stockpiles should be located at least 2 m (preferably 5 m) from existing vegetation and waterbodies, concentrated water flows, roads and hazard areas. Recommended location within weed free, disturbed area if possible.
2) Construct stockpiles as low, flat mounds (<2 m high) with a slope <50% (26˚)
3) Install appropriate sediment controls (e.g. sediment barriers 1-2 m downslope) around stockpiles. **It is recommended to cover stockpiles (e.g. with anchored geofabric) during strong wind or high rainfall events.*

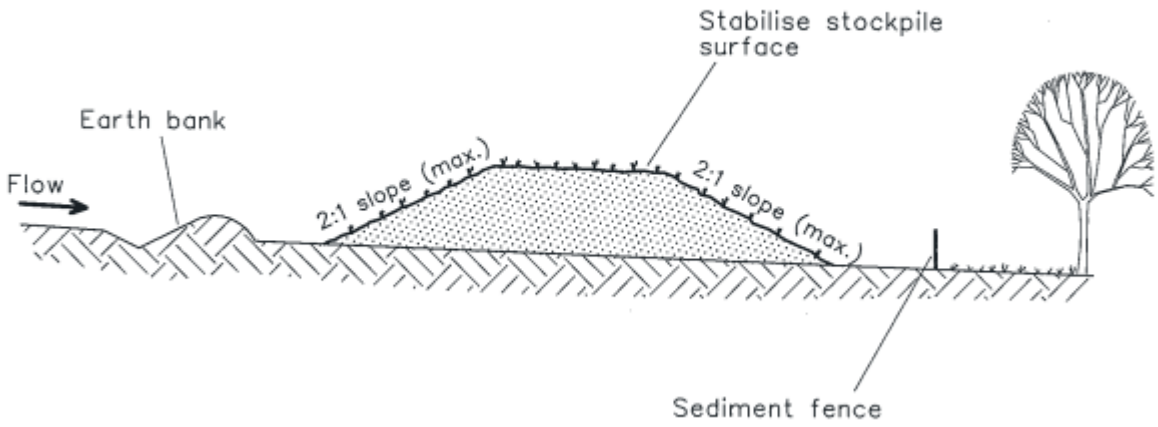

Figure 5: Stockpile Management (Source: Landcom 2004)

6 Monitoring and Maintenance

6.1 Inspections and Monitoring

The Environmental Officer appointed for the Project will be responsible for ensuring that all erosion and sediment controls are installed in accordance with this plan. Regular monitoring and maintenance will be the responsibility of all construction personnel. The Environmental Officer will undertake weekly inspections of all erosion and sediment controls for the duration of the works.

Table 3: Erosion and Sediment Control Inspections Summary

Control	Inspections
Sediment fence	• Ensure sediment fence will adequately pond water up-slope of the fence; • Ensure fabric is adequately buried; • Check the space of support stakes; • Check for excessive sediment deposition; • Check for damage to fabric; • Check for erosion down-slope of any spill through weirs; and • Ensure the fence is not concentrating or diverting flows in an undesirable manner.
Straw bale filter	• Check that water will either pass through or over the bale, but not around the bales.
Geofabric filter dam	• Inspect the filter medium for leaks resulting from holes, tears or joint failure; • Check for displacement of straw bales; • Check the clarity of the outflow; and • Inspect the dam at least daily during de-watering operations.
Coir logs	• Check for displacement of the logs; and • Check for soil erosion adjacent to the logs.

6.2 Maintenance Program

All erosion and sediment control measures will be checked regularly to ensure they remain in good working order at all times (e.g. prior to forecast rain, daily during extended periods of rainfall and after significant rainfall events).

Table 4: Erosion and Sediment Control Maintenance Measures

Control	Maintenance
Sediment fence	• Repair any torn sections; • If fencing is sagging between stakes, install additional support posts; and • Remove accumulated sediment if the sediment deposit exceeds a depth of 1/3 the height of the fence.
Straw bale filter	• Replace the straw bale filter if full or partial collapse of the bale occurs; and • Remove and suitably dispose of accumulated sediment prior to replacing the bales.
Geofabric filter dam	• Replace the filter fabric when it becomes blocked with sediment and/or the flow rate through the barrier becomes unacceptably low.
Coir logs	• Repair or replace displaced logs that are likely to cause erosion issues.

7 Reporting

The Environmental Officer will report on the effectiveness of controls and details on any non-conformance on the **Erosion and Sediment Control Inspection Report** (**Appendix A**). The report forms part of the weekly environmental inspections and will be provided to the Project Manager with weekly internal reporting requirements.

8 References

Dabyne Planning Pty Ltd (Dabyne 2021) Statement of Environmental Effects for the replacement of Sundowner Snowmaking Infrastructure.

Department of Environment and Climate Change (DECC) 2004, *Rehabilitation Guidelines for the Resort Areas of Kosciuszko National Park*, https://www.environment.nsw.gov.au/research-and-publications/publications-search/rehabilitation-guidelines-for-the-resort-areas-of-kosciuszko-national-park

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Office of Environment and Heritage (OEH) 2017, *Soil Stockpile Guidelines for the Resort Areas of Kosciuszko National Park, version 1.0, October 2017*, NSW National Parks and Wildlife Service.

Witheridge 2012, Erosion and Sediment Control – A Field Guide for Construction Site Managers. Catchment & Creeks Pty Ltd., Brisbane, Queensland.

Appendix A ESC Inspection Report

THREDBO ENVIRONMENTAL SERVICES

INSPECTION REPORT FOR TEMPORARY EROSION/SEDIMENTATION CONTROLS

Sheet _____of_____

Project: _____ Inspection Date: _____

Inspected by: _____ Inspect the site weekly or immediately after rain.

1. Are temporary drains effective in diverting all runoff from exposed areas to silt traps or other sediment structures before leaving site? If No, state location and action required:	Yes/No
2. Have new areas been disturbed which need temporary controls? If Yes, state where:	Yes/No
3. Are there any disturbed areas where work is sufficiently advanced for revegetation to be undertaken? If Yes, state where:	Yes/No
4. Is any dirty runoff water bypassing or overflowing existing silt traps/sediment control structures? Do existing traps need to be increased in capacity? Are any additional traps needed? If Yes, state location, action needed and priority:	Yes/No Yes/No Yes/No
5. Do any silt traps/sediment control structures need maintenance or repair to operate effectively? If Yes, state location, action needed and priority	Yes/No
6. Are any silt/sediment control structures more than 60% full or otherwise in need of cleaning out? If Yes, state location	Yes/No
7. Are actions taken after last inspection adequate and effective? If NO, list outstanding actions:	Yes/No
Signature:_____ _____Date:_____	

Appendix B ESC Non-conformance Report

Project:			
Date:	**Raised by:**		
Details of non-conformance:			
Details of specification / procedure not conforming to:			
Corrective Actions:			
Preventative Actions:			
Non-conformance resolved:	Yes: ☐ No: ☐ Date:		
Environmental Officer Signature		**Project Manager Signature**	

3 Roles and Responsibilities

Role	Responsibilities
Project Manager	• Ensure the ESCP is made available, communicated, maintained and understood by all Construction Personnel; and • Ensure ESCP adheres to conditions of approval following the provision of Development Consent from DPI&E.
Environmental Officer	• Ensure implementation and compliance with the ESCP; • Ensure all ESCs are installed and adequately functioning in accordance with ESCP; and • Inspections and monitoring of all erosion and sediment control measures.
Construction Manager	• Establishment and removal of erosion and sediment control measures; and • Ongoing maintenance of erosion and sediment control measures.

4 Management Measures

4.1 General

- All erosion and sediment controls measures will be installed and maintained in accordance with **Sections 5** and **6** of this ESCP; and
- Works will cease during substantial rainfall events.

4.2 Vegetation

- No clearing of native vegetation is to occur;
- All reasonable and practicable efforts will be taken to delay the disturbance to existing ground cover (organic or inorganic) prior to land-disturbing activities; and
- All reasonable and practicable measures must be taken to minimise the disturbance to trees, shrubs and ground covers outside of the construction corridor.

4.3 Site Access Protection Measures

- Site access points will be appropriately managed to minimise the risk of sediment being tracked onto sealed, public roadways.

4.4 Soil and Stockpile Management

- All stockpiles will be constructed and managed in accordance with *Soil Stockpile Guidelines for the Resort Areas of Kosciuszko National Park* (OEH 2017). For stockpiles within the construction corridor, they will adhere to the following criteria:
  - Located directly adjacent to the works and in areas with sufficient room to accommodate the volume of material being stockpiled
  - Situated on relatively flat ground (where possible)
  - Not within 40 m of a watercourse; and
- Sediment controls to be installed down-slope of stockpiles, where required (refer **Section 5.7**).

4.5 Trenches

- The maximum length of pipeline to remain open overnight is approximately 100 metres (m);
- Erosion and sediment controls will be installed in accordance with **Sections 4.7** and **5**;
- Backfill will be placed at equivalent compaction of the surrounding soil with an excavator to minimise possibility of soil subsidence; and

- Where trenches are left open overnight, egress points for fauna (e.g. timber ramps) will be installed.

4.6 Waste Management

- All building and construction waste onsite to be minimise in the first instance;
- Designated waste collection areas will be established on-site with covered receptacles;
- Building and construction waste will be managed in accordance with KT's waste management procedures; and
- No material is to be swept or hosed into any waterways or waterbodies.

4.7 Drainage, Erosion and Sediment Control

The installation of effective drainage, erosion and sediment controls are essential to ensure soils and waterways are protected and the success of rehabilitation. A summary of the controls to be implemented onsite are provided in **Table 1**. Any additional or alternative controls must be approved by the Environmental Officer prior to use.

4.8 Site Rehabilitation

- All ESC measures will remain in place until all exposed areas of soil are stabilised and/or revegetated; and
- All rehabilitation will be undertaken in accordance with the *Rehabilitation Guidelines for the Resort Areas of Kosciuszko National Park* (DECC 2007). See Appendix 10 of Guideline for list of recommended species for rehabilitation.

Table 1: Drainage, Erosion and Sediment Controls

Activity	Control	Purpose	Timing	Location	Installation Requirements	Materials required
Excavations, trenching	Sediment fence	To prevent sediment run-off	Where required, installed prior to commencement of activity and retained in place until exposed areas of soil are stabilised / rehabilitated	Downslope side of any excavations; wetter areas of trenches	To be in accordance with construction notes in **Section 0**	Geotextile fabric (non-woven), star pickets/wooden stakes
Trenching	Straw bale filter fencing	To prevent sediment run-off	Where required, during excavation of trenches	Drier areas of trenches, across or at the toe of slope	To be in accordance with construction notes in **Section 5.5**	Straw bales; support posts/stakes; geofabric
	Trench breakers	Reduce erosive run-off velocities	Prior to forecast rain event, where required	Within open trenches	In accordance with construction notes in **Section 5.5**	Straw bales
Construction nearby drains	Silt fencing; Straw bales; Coir logs	Protect drains from heavy flows and sediment movement.	Prior to ground disturbance in these areas	Around the inlet of drains immediately down-slope of the construction activity / excavation	To be in accordance with the construction note in **Sections 0, 5.5** and **5.3.**	Coir logs; stakes; geotextile fabric; straw bales
Down-slope excavations	Straw bales	Divert water around and away from open excavation works	Installed once the trenches have been excavated and retained in place until excavations are stabilised/rehabilitated	To be placed at each end of the open trenches	To be in accordance with the construction notes in **Section 5.5**	Straw bales; stakes
Cross-slope excavations	Straw bales; Coir logs	Divert water around and away from excavation works	Installed once trenches have been excavated, where required	To be installed on the uphill side of excavations running cross-slope (where required)	To be in accordance with the construction notes in **Sections 5.2** and **5.3**	Straw bales; stakes; coir logs
Dewatering excavations	Geofabric filter dam	To capture sediment	In the event water enters an excavation and its required to be pumped out prior to recommencement of works	Equipment and pumping operation to be confined to construction corridor	To be in accordance with the construction notes in **Section 5.6**	Geotextile filter fabric (heavy duty non-woven); support posts/stakes; straw bales

**Straw bales to be certified weed-free*

5 Control Installation Notes

This section details the installation requirements for controls listed in **Table 1**.

5.1 Sediment Fence

Construction notes:

1) Construct sediment fences as close as possible to being parallel to the contours of the site, but with small returns to limit the catchment area of any one section. **The catchment area should be small enough to limit water flow if concentrated at one point to 50 L/s in the design storm event, usually the 10-year event.*
2) Dig a 150 mm deep trench along upslope line of fence for the bottom of the fabric to be entrenched.
3) Install 1.5 m long star pickets into ground at 2.5 m intervals (max) on the downslope edge of the trench. **Fit star pickets with safety caps.*
4) Fix geotextile to the upslope side of the posts ensuring it goes to the base of the trench.

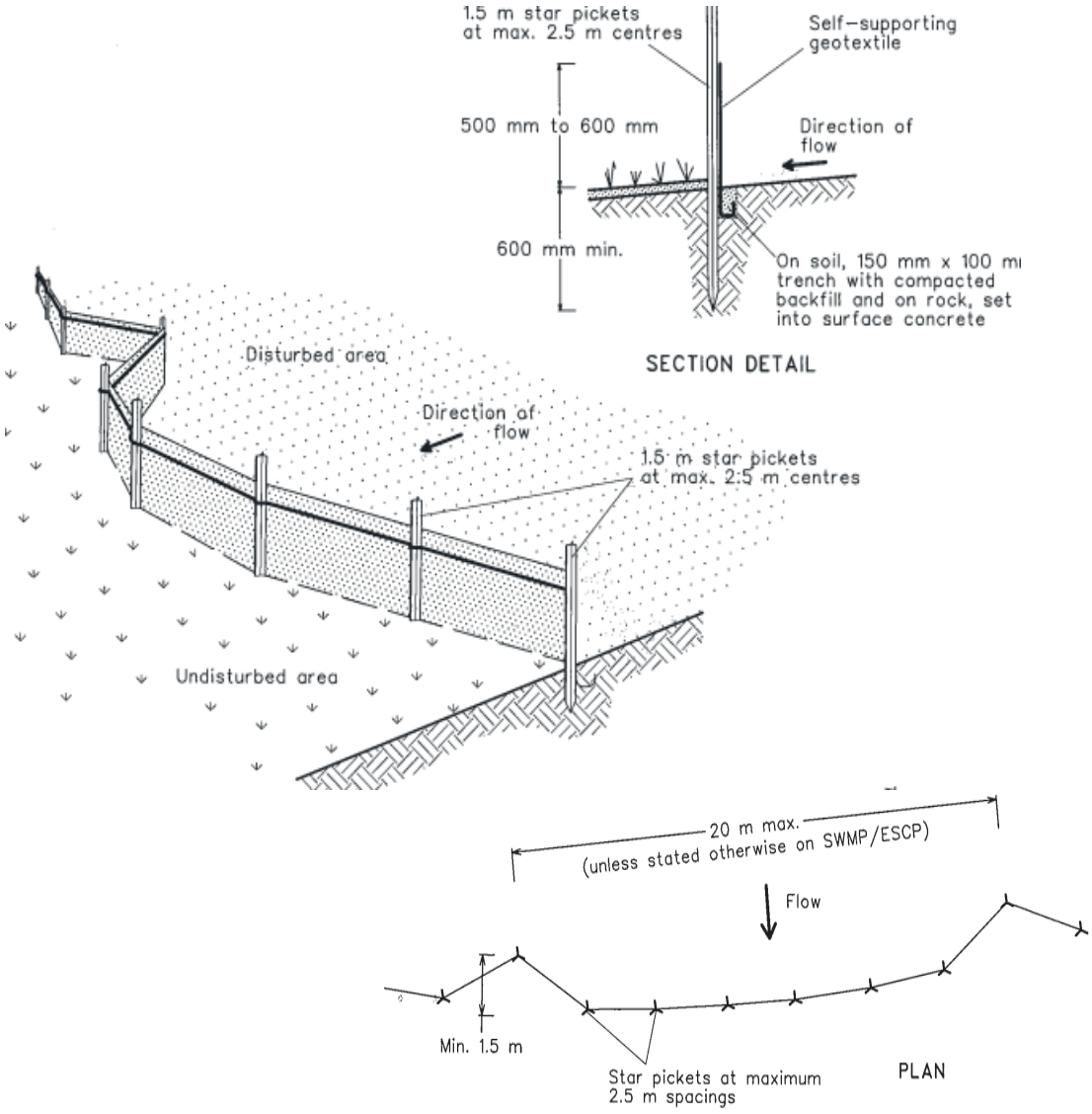

Figure 2: Standard Sediment Fence Installation (Source: Landcom 2004)

5.2 Cross Drainage and Sediment Barriers

The recommended spacing for cross drainage and sediment barriers is provided in **Table 2.**

Table 2: Recommended spacing for cross drains and sediment barriers

Slope Grade (%)	Cross Drain / Sediment Barrier (m)
5-10	15-20
10-15	10-15
15-25	8-10
>25	5-8

Source: NPWS 2007; Parr-Smith and Polley (1998)
Note: To calculate the grade of a slope: (rise/run) x 100 = slope grade

5.3 Coir Logs

Construction notes:

1) Secure logs by driving the stakes between the outer netting and the core material each side of the logs and secured into the ground (not through centre of log).
2) Ensure spacing of stakes does not exceed an interval of 1 m.
3) Once driven into ground, the stakes should sit at least two-thirds below the ground and one-third above.

5.4 Straw Bale Filter

Construction notes:

1) Construct the straw bale filter as close as possible to being parallel to the contours of the site.
2) Place bales lengthwise in a row with ends tightly abutting (1 bale = max height of filter). Fill gaps between bales with straw and wrap with geofabric where necessary.
3) Embed each bale in the ground 75-100 mm and anchor with two 1.2 m stakes/star picket. Angle the first stake in each bale towards the previously laid bale. Stakes should be driven 600 mm into ground, sitting flush with top of bale (if possible). **If using star pickets which protrude above bales, fit with safety caps.*
4) Where a straw bale filter is constructed downslope from a disturbed batter, ensure the bales are placed 1-2 m downslope from the toe.

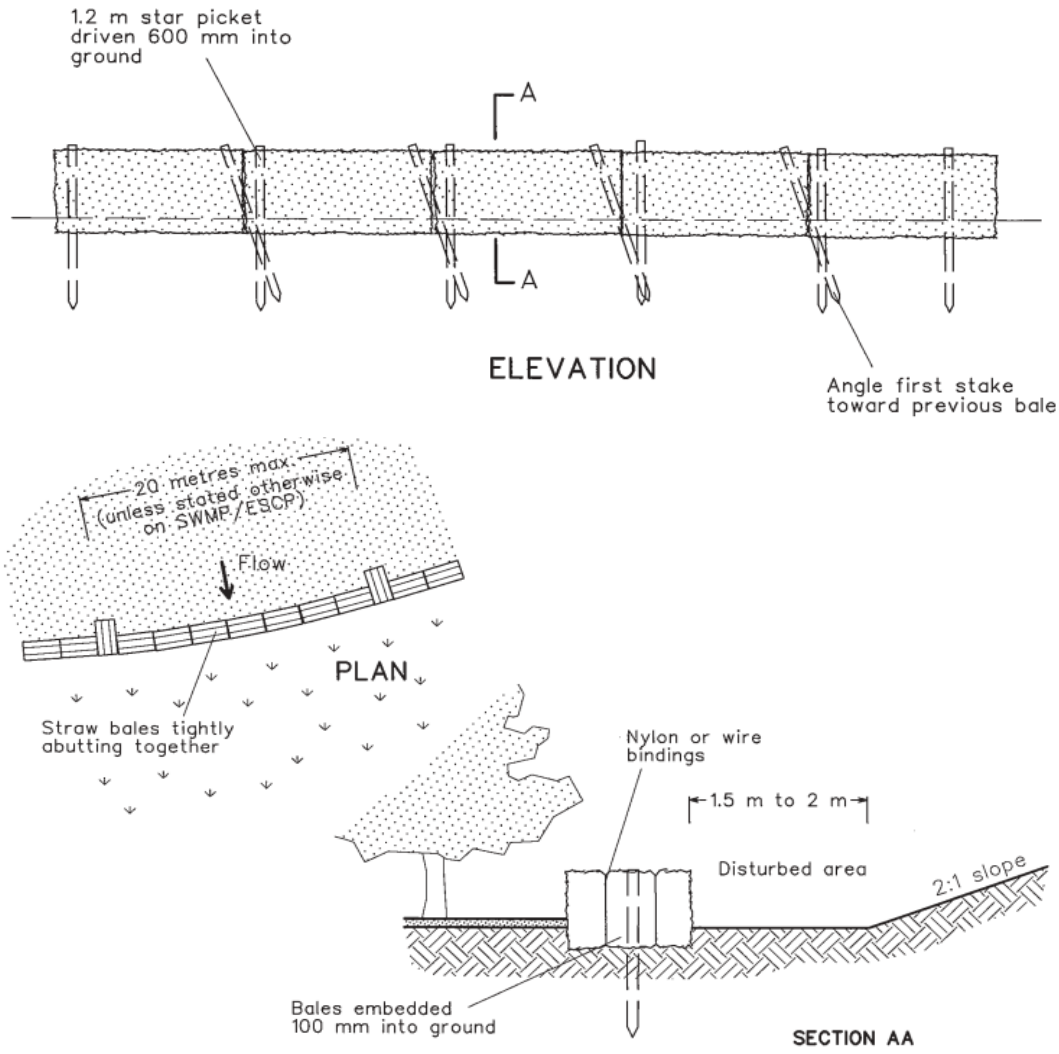

Figure 3: Standard Straw Bale Filter Installation (Source: Landcom 2004)

5.5 Trench Breakers

Construction notes:

- Trench breakers may comprise soil or straw bales (or a combination).
- The recommended spacing of trench breakers to be determined on-site according to the slope and potential for subsurface flow, refer **Table 2** for recommended spacing.

5.6 Geofabric Filter Dam Installation

Construction notes:

1) Where practicable, locate the filter dam at least 50 m from the edge of a waterbody.
2) Suitably clear and prepare the surface where the filter dam will be installed.
3) Arrange straw bales to form an enclosure and securely anchor each bale with at least one star picket or stake.
4) Securely attach the filter fabric to the straw bales and reinforce with stakes. If more than one sheet of fabric is used, then overlap within a minimum of 600 mm at all joints.

Figure 4: Standard Installation of Geofabric Filter Dam

5.7 Soil Stockpile Management

Construction notes:

1) Stockpiles should be located at least 2 m (preferably 5 m) from existing vegetation and waterbodies, concentrated water flows, roads and hazard areas. Recommended location within weed free, disturbed area if possible.
2) Construct stockpiles as low, flat mounds (<2 m high) with a slope <50% (26˚)
3) Install appropriate sediment controls (e.g. sediment barriers 1-2 m downslope) around stockpiles. **It is recommended to cover stockpiles (e.g. with anchored geofabric) during strong wind or high rainfall events.*

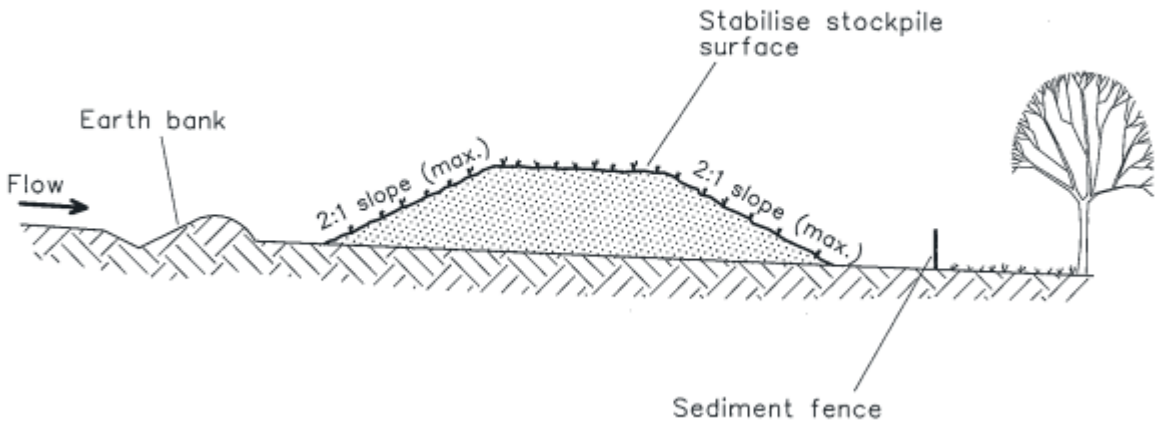

Figure 5: Stockpile Management (Source: Landcom 2004)

6 Monitoring and Maintenance

6.1 Inspections and Monitoring

The Environmental Officer appointed for the Project will be responsible for ensuring that all erosion and sediment controls are installed in accordance with this plan. Regular monitoring and maintenance will be the responsibility of all construction personnel. The Environmental Officer will undertake weekly inspections of all erosion and sediment controls for the duration of the works.

Table 3: Erosion and Sediment Control Inspections Summary

Control	Inspections
Sediment fence	• Ensure sediment fence will adequately pond water up-slope of the fence; • Ensure fabric is adequately buried; • Check the space of support stakes; • Check for excessive sediment deposition; • Check for damage to fabric; • Check for erosion down-slope of any spill through weirs; and • Ensure the fence is not concentrating or diverting flows in an undesirable manner.
Straw bale filter	• Check that water will either pass through or over the bale, but not around the bales.
Geofabric filter dam	• Inspect the filter medium for leaks resulting from holes, tears or joint failure; • Check for displacement of straw bales; • Check the clarity of the outflow; and • Inspect the dam at least daily during de-watering operations.
Coir logs	• Check for displacement of the logs; and • Check for soil erosion adjacent to the logs.

6.2 Maintenance Program

All erosion and sediment control measures will be checked regularly to ensure they remain in good working order at all times (e.g. prior to forecast rain, daily during extended periods of rainfall and after significant rainfall events).

Table 4: Erosion and Sediment Control Maintenance Measures

Control	Maintenance
Sediment fence	• Repair any torn sections; • If fencing is sagging between stakes, install additional support posts; and • Remove accumulated sediment if the sediment deposit exceeds a depth of 1/3 the height of the fence.
Straw bale filter	• Replace the straw bale filter if full or partial collapse of the bale occurs; and • Remove and suitably dispose of accumulated sediment prior to replacing the bales.
Geofabric filter dam	• Replace the filter fabric when it becomes blocked with sediment and/or the flow rate through the barrier becomes unacceptably low.
Coir logs	• Repair or replace displaced logs that are likely to cause erosion issues.

7 Reporting

The Environmental Officer will report on the effectiveness of controls and details on any non-conformance on the **Erosion and Sediment Control Inspection Report** (**Appendix A**). The report forms part of the weekly environmental inspections and will be provided to the Project Manager with weekly internal reporting requirements.

8 References

Dabyne Planning Pty Ltd (Dabyne 2021) Statement of Environmental Effects for the replacement of Sundowner Snowmaking Infrastructure.

Department of Environment and Climate Change (DECC) 2004, *Rehabilitation Guidelines for the Resort Areas of Kosciuszko National Park*, https://www.environment.nsw.gov.au/research-and-publications/publications-search/rehabilitation-guidelines-for-the-resort-areas-of-kosciuszko-national-park

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Witheridge 2012, Erosion and Sediment Control – A Field Guide for Construction Site Managers. Catchment & Creeks Pty Ltd., Brisbane, Queensland.

Appendix A ESC Inspection Report

THREDBO ENVIRONMENTAL SERVICES

INSPECTION REPORT FOR TEMPORARY EROSION/SEDIMENTATION CONTROLS

Sheet _____of_____

Project: _____ Inspection Date: _____

Inspected by: _____ Inspect the site weekly or immediately after rain.

1. Are temporary drains effective in diverting all runoff from exposed areas to silt traps or other sediment structures before leaving site? If No, state location and action required:	Yes/No
2. Have new areas been disturbed which need temporary controls? If Yes, state where:	Yes/No
3. Are there any disturbed areas where work is sufficiently advanced for revegetation to be undertaken? If Yes, state where:	Yes/No
4. Is any dirty runoff water bypassing or overflowing existing silt traps/sediment control structures? Do existing traps need to be increased in capacity? Are any additional traps needed? If Yes, state location, action needed and priority:	Yes/No Yes/No Yes/No
5. Do any silt traps/sediment control structures need maintenance or repair to operate effectively? If Yes, state location, action needed and priority	Yes/No
6. Are any silt/sediment control structures more than 60% full or otherwise in need of cleaning out? If Yes, state location	Yes/No
7. Are actions taken after last inspection adequate and effective? If NO, list outstanding actions:	Yes/No
Signature:_____ _____Date:_____	

Appendix B ESC Non-conformance Report

Project:			
Date:	**Raised by:**		
Details of non-conformance:			
Details of specification / procedure not conforming to:			
Corrective Actions:			
Preventative Actions:			
Non-conformance resolved:	Yes: ☐ No: ☐ Date:		
Environmental Officer Signature		**Project Manager Signature**	

Appendix D Environmental Management Activities and Controls Checklist

Environmental Management Activities and Controls Checklist						
Project Name:			**Location:**			
Environmental Management Control	**Responsibility**	**Timing / Frequency**	**Date of Completion**	**Sign Off**	**Reference**	**Comment /Observations**
General						
All approvals, licences and permits have been obtained for the Project and available on-site	Project Manager	Pre-construction				
Site inductions have been provided to all Project personnel on-site	Project Manager	Pre-construction				
All Project personnel have undergone relevant training / hold relevant permits and qualifications to perform their role	Project Manager	Pre-construction				
DPIE notified in writing of the commencement date of the Project	Project Manager	48 hours prior to commencement of works				
Construction site boundary and no-go zones have been clearly delineated	Construction Manager	Pre-construction				
Site access to be restricted to authorised personnel	Construction Manager	During construction				
All plant, materials and equipment to be located in existing disturbed corridors	Construction Manager	During construction				
Maintenance of equipment to be undertaken at the Valley Terminal maintenance shed	Construction Manager	During construction				
All plant and equipment to be removed off-site	Construction Manager	Upon completion				
Maintain incident and complaints register	Project Manager	During construction				
Maintain copies of inspection and monitoring reports	Environmental Officer	During construction				
Drainage, Erosion and Sediment Control						
Drainage, erosion and sediment controls designed and installed in accordance with the approved ESCP	Construction Manager	Pre- construction; during construction			ESCP (**Appendix C**)	
Drainage, erosion and sediment controls to be inspected each day and prior to, and immediately following a significant rainfall event to ensure controls are in good working condition.	Construction Manager	During construction (daily / following significant rainfall event)			ESCP (**Appendix C**)	
Stockpiles are managed appropriately e.g. erosion and sediment controls installed around stockpiles,	Construction Manager	During construction			ESCP (**Appendix C**)	

stockpiles shall not encroach within the dripline of trees, stabilise stockpiles to prevent weed infestation						
All exposed areas shall be progressively stabilised/rehabilitated in accordance with the Erosion and Sedimentation Control Plan (ESCP)	Construction Manager	During and post-construction			ESCP (**Appendix C**)	
Flora and Fauna						
Ensure equipment and construction materials are stored on previously disturbed areas to avoid impacts to native vegetation.	Construction Manager	All Project phases			**Section 5.3** of SEMP	
Reasonable and practicable native fauna management measures have been undertaken to avoid environmental harm and nuisance to native fauna, known habitats and breeding places	Construction Manager / Environmental Officer	Pre-construction, during construction			**Section 5.3** of SEMP	
Maintain a clean and tidy work area to ensure animals are not attracted to the site, including provision of covered bins during proposed works	Construction Manager	During construction			**Section 5.3** of SEMP	
Biosecurity						
All weed species that occur within the construction corridor and could spread through disturbance or seed dispersion are treated to ensure no further spread	Environmental Officer	Pre-construction, during construction			**Section 5.4** of SEMP	
Machinery and personnel to arrive at and depart from the site in a clean condition, free of mud and vegetative propagules	Construction Manager	Pre-construction, during construction			**Section 5.4** of SEMP	
Machinery to be regularly maintained and manoeuvred to prevent the spread of weeds and pathogens	Construction Manager	Pre-construction, during construction			**Section 5.4** of SEMP	
Follow up weed control to be carried out if deemed necessary	Environmental Officer	As required			**Section 5.4** of SEMP	
Rehabilitation						
All disturbed areas to be progressively stabilised and/or revegetated in accordance with the Rehabilitation Plan (and in consultation with the Environmental Officer) so that no areas remain exposed if works are completed in that area	Construction Manager	During construction			**Section 5.3** of SEMP	
Disturbance areas are to be rehabilitated immediately following the completion of works	Construction Manager	Post-construction			**Section 5.3** of SEMP	
Waste						
Site is free from litter and waste is contained within dedicated areas / appropriate receptacles e.g. building waste shall be separated from litter bins	Construction Manager	During construction			**Section 5.5** of SEMP	

Where possible, waste avoidance and resource recovery strategies for construction waste have been implemented	Construction Manager	During construction			**Section 5.5** of SEMP	
All waste that cannot be recycled shall be disposed of appropriately at a licenced landfill site	Construction Manager	During construction, upon completion			**Section 5.5** of SEMP	
No burning or burying of waste on-site	Construction Manager	During construction, upon completion			**Section 5.5** of SEMP	
The site shall be left in a tidy state with no evidence of waste left on-site	Construction Manager	Post-construction			**Section 5.5** of SEMP	
Noise and Vibration						
Works conducted during hours stipulated in conditions of consent	Construction Manager	During construction			**Section 5.6** of SEMP	
Machinery and equipment fitted with appropriate noise control devices	Construction Manager	During construction			**Section 5.6** of SEMP	
Machinery and equipment maintained and serviced in accordance with the manufacturer's specification	Construction Manager	During construction			**Section 5.6** of SEMP	
All justifiable noise complaints have been investigated, managed and reported	Environmental Officer	During construction			**Sections 5.6** and **7.3** SEMP	
Air Quality						
Areas of exposed soil restricted as much as practicable	Construction Manager	During construction			**Section 5.7** of SEMP	
No burning of materials on-site	Construction Manager	During construction			**Section 5.7** of SEMP	
Trucks carrying spoil/rubble/waste covered to reduce dust nuisance	Construction Manager	During construction			**Section 5.7** of SEMP	
All justifiable air quality-related complaints have been investigated, managed and reported	Environmental Officer	During construction			**Section 5.7** of SEMP	
Fuels, Chemicals and Hazardous Substances						
Emergency procedure developed and available on-site at all times	Project Manager	Pre-construction, during construction			**Section 5.8** of SEMP	
Spill response material is adequate for the type and quality of hazardous materials used / stored on-site	Construction Manager	Pre-construction, during construction			**Section 5.8** of SEMP	
Fuel and chemical storage in accordance with the relevant Australian Standards	Construction Manager	Pre-construction, during construction			**Section 5.8** of SEMP	
All construction plant and machinery shall be properly maintained and inspected to avoid spills / leaks	Construction Manager	Daily during construction			**Section 5.8** of SEMP	
Appropriate controls implemented when re-fuelling Project vehicles and machinery e.g. no refuelling within close proximity of a watercourse, re-fuelling of performed on hard-stand areas or with appropriate spill kit and temporary bunding in place	Construction Manager	During construction			**Section 5.8** of SEMP	

Cultural Heritage						
All Project personnel and contractors shall be made aware of the requirement to notify and cease works if cultural heritage (Aboriginal or archaeological) items are discovered during ground disturbance.	Project Manager	Site induction			**Section 5.9** of SEMP	
In the event of an unexpected discovery of Aboriginal or Historic Cultural Heritage items, works shall cease and NPWS notified.	All personnel	Earthworks; during construction			**Section 5.9** of SEMP	
Traffic and Transport						
All Project vehicles and machinery to adhere to speed limits and signage and stay within construction corridor	All personnel	All Project phases			**Section 5.10** of SEMP	
Appropriate traffic controls implemented to direct pedestrians and mountain bike trail users	Construction Manager	Earthworks; construction			**Section 5.10** of SEMP	

Appendix E Environmental Schedules

This Appendix includes the following environmental schedules:

- Weekly Inspection Report;
- Complaints Form template; and
- Environmental Incident Report Form.

THREDBO ENVIRONMENTAL SERVICES

SEMP WEEKLY INSPECTION REPORT

Sheet _____of_____

Project: _____ Inspection Date: _____

Inspected by: _____

Weather:	**Morning** Clear/Overcast/ Fine/Rain/Snow	**Afternoon** Clear/Overcast/Fine/Rain/Snow

Operation	Condition	Plant/Labour	Comments
Silt Fence			
Hay Bale retention ponds			
Hay Bale sediment protection			
Stormwater Pit protection			
Cyclone Fence (including gates)			
Para-web Fence			
Site Signage			
Paint Washout facility			
Vehicle Wash-down			
Waste Skips			
Tree Protection			

Verbal Discussion with Contractor:	Verbal discussion with others:
Materials Received / Required:	Site Instructions Issued:
Inspectors Report / Summary:	Action required:

Signature: _____ Date: _____

THREDBO ENVIRONMENTAL SERVICES

Record of complaint

Sheet _____of_____

Project: _____ Date / Time: _____

Received by: _____ Reference Number: _____

Complainant details:	Witness details:

Nature of complaint:

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..... Complainant sign:

Action taken:

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Kosciuszko Thredbo Pty Ltd

Environmental Incident Reporting Form

Confidential document after first entry

The purpose of this form is to report any incident that may have resulted in Environmental harm on Kosciuszko Thredbo Pty Ltd premises. Remember to be succinct, stick to the facts and do not make assumptions. Only record information you know to be correct.

The only persons authorised to contact external agencies eg EPA in relation to environmental incidents are the Kosciuszko Thredbo General Manager and Environmental Services Manager or their approved delegates.

Return completed form to the Environmental Services Manager as soon as practicle, on completion of the Environmental incident. It is important to capture photos at the time of the incident as part of this investigation.

Date of Incident:	**Time of incident:**
Reported by:	**Department:**

Location of Incident

EXACT location of the incident (include landmarks and features, nearest cross street etc to make it easier to identify later)		
Site:	Building:	Room:

Description of incident

Provide description and extent of incident: ……... ……... ……... ……... ……...
Have relevant photos been taken and attached? Yes □ No □
If 'No', provide sketch and attach to the rear of this document.
What was the estimated duration of the incident?

Type of incident

□ Spill (including fuel,oil,waste material or other polluting substance)	□ Erosion and sedimentation incident	□ Contaminated water discharge
□ Noise emission/complaint	□ Unauthorised/accidental damage to heritage item	□ Unauthorised/accidental vegetation removal or harm
□ Air Emission	□ Wildlife habitat/nesting area disturbed	□ Other (specify)

Environmental Incident Reporting Form

Level of incident

Level	Example
□ Minor	eg. No material has escaped the site or caused material harm to the environment – it is easy to clean up without additional assistance.
□ Major	eg. Material has escaped the site causing pollution downhill/downstream areas, which will require clean up involving other agencies and/or additional resources not available to local site management. Damage has occurred or is likely to occur to the environment.

Hazardous Material Spilt

□ Petroleum based products/ Hydrocarbons	□ Chemicals domestic or industrial grade
□ Biological waste / Clinical and related waste	□ PCB insulating liquids
□ CFC containing equipment	□ Paints or paint products
□ Radioactive waste	□ Other (specify)
Detail type/ingredient spilt: (UN, MSDS details)	
Detail concentration of material spilt:	
Detail quantity of material spilt:	

Type of Spill

□ Spilt onto ground	□ Spilt into stormwater drain
□ Spilt into waterway	□ Poured down sink
□ Poured down sewer	□ Released into atmosphere
□ Caused odour	□ Caused fire/explosion
□ Caused infectious contamination	□ Other (specify)

Immediate Actions

Was spill contained? Yes □ No □
Detail immediate actions/controls measures taken to rectify or contain the incident …… …… …… …… …… …… …… ……

Environmental Incident Reporting Form

Corrective Actions

Detail corrective clean up action taken

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……

……

……

Disposal

Detail disposal method/plans and location

……

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……

……

Recommended follow up and preventative actions

Detail recommendations

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……

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……

……

Persons present at Incident

Were there any witnesses to the accident? Yes ☐ No ☐ If 'Yes', please provide names

……

……

……

……

Spill Kit stock used – for restock purposes

Name Spill Kit(s) used: e.g. *'Waste Transfer Station 80Litre Spill Kit'*

……

……

Environmental Incident Reporting Form

Spill Kit Product	Quantity used
Enviropeat Oil Absorbent Material – 25L bag	
1.2m Absorbent sock	
3m Absorbent sock	
Absorbent pads	
Chemical resistant disposable gloves	
Disposable face masks	
Roll of plastic bin bags	
Cable ties	

Declaration

The information and answers given above are true in every detail and no information has been withheld.

Departmental Supervisors Name:	
Departmental Supervisors signature:	*Date:*

Departmental Managers Name:	
Departmental Managers signature:	*Date:*

Spill Kit Replenished

Staff Members Name and Role:	
Staff Members signature:	*Date:*

Created By: Paul Corcoran on 24 Mar 2009
Review Date: 16 Jan 2019