



Site Environmental Management Plan

Kosciuszko Flow Mountain Bike Trail Diversion, Snowgums Top Station Area

Thredbo Alpine Resort
Kosciuszko National Park, NSW

August 2023

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Document Control

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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 Kosciuszko Flow mountain bike trail diversion (the Project).

KT requires a SEMP to support the Development Application (DA) for the Project, situated in Thredbo Alpine Resort (Thredbo), approximately 35 kilometres (km) south-west of Jindabyne, New South Wales.

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.

1.1 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.

1.2 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;*
- *Waste Avoidance and Resource Recovery Act 2001;*
- *Water Management Act 2000;* and
- *Work Health and Safety Act 2011.*

1.3 Supporting Documents

Document	Title	Prepared by	Document Reference
Approval	Development Consent	-	-
SEE	Statement of Environmental Effects, Kosciuszko Flow Trail Diversion, Snowgums Top Station, Thredbo Alpine Resort, Kosciuszko National Park	Dabyne Planning Pty Ltd	August 2023
BDAR	Proposed Flow Trail Realignment, Thredbo Alpine Resort, Biodiversity Development Assessment Report	Eco Logical Australia Pty Ltd	Version 2
Procedure	Construction Site Incident and Emergency Procedures Thredbo Village	Kosciuszko Thredbo Pty Ltd	2021/22
Procedure	Emergency Response Spill Procedure	Kosciuszko Thredbo Pty Ltd	1
Procedure	Standard Operating Procedure: Use and Maintenance of Wash Down Bay (KT055)	Kosciuszko Thredbo Pty Ltd	March 2019

2 Project Description

2.1 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	During construction, the site access will be via the Mountain access road.
Construction Corridor	A 20 m wide corridor is required to provide flexibility for the trail builders to respond to any unforeseen construction constraints.
Construction Program and Activities	<p>Pre-construction activities will comprise:</p> <ul style="list-style-type: none"> establishment of site boundary; marking significant vegetation to be retained and no-go zones; erection of site signage and traffic controls; flagging exact trail alignment using pin flags to mark the edges of the trail for construction; mobilisation of machinery, equipment and construction materials to site. <p>Construction activities will comprise the following:</p> <ul style="list-style-type: none"> vegetation clearing (50 m increments) within the trail corridor to expose bare earth <ul style="list-style-type: none"> excess cut vegetation to be spread into the surrounding heath and used for rehabilitation of exposed soil on the trail edges topsoil and vegetation sods are to be stockpiled close to the trail tread; cut into the slope using a mini excavator and excavate the soil to achieve the appropriate depth of bench; remove loose rocks, roots and compact the trail; back slope the batter, ensuring outslope and appropriate drainage; define the trail line using rocks, logs and other obstacles; and re-instate the verge areas, topsoil and preserved vegetation sods. <p>Post-construction activities will comprise:</p>

	<ul style="list-style-type: none"> • rehabilitation in accordance with the Rehabilitation Management Plan; • demobilisation of plant and machinery; and • site clean-up.
Machinery, Plant and Equipment	<p>Construction vehicles and plant will include (but not limited to):</p> <ul style="list-style-type: none"> • mini excavator; • motorised wheelbarrows; • quad bikes; • dump trucks (to and from stockpile sites); • 4WD vehicles; • side-by-side vehicles; and • handtools (i.e. chainsaws and brush-cutters).
Stockpile Sites	<p>Temporary stockpiles will be required along the trail alignment for the effective management of gravel, soil and vegetation. These stockpiles will be located within pre-disturbed areas, on relatively flat land, away from watercourses and avoid native vegetation.</p> <p>Excess materials from construction will be located within the main stockpile area within the resort (Appendix A). Access to these locations will be restricted to KT staff and contractors.</p> <p>Soil stockpiles will be managed in accordance with the <i>Soil Stockpile Guidelines for the Resort Areas of Kosciuszko National Park, version 1.0</i> (OEH 2017) (Soil Stockpile Guidelines).</p>
Site Facilities and Compound	There will be no site compound within the construction corridor.
Construction timing	Construction of the Project is anticipated to commence during the summer of 2023/24.
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 1**.

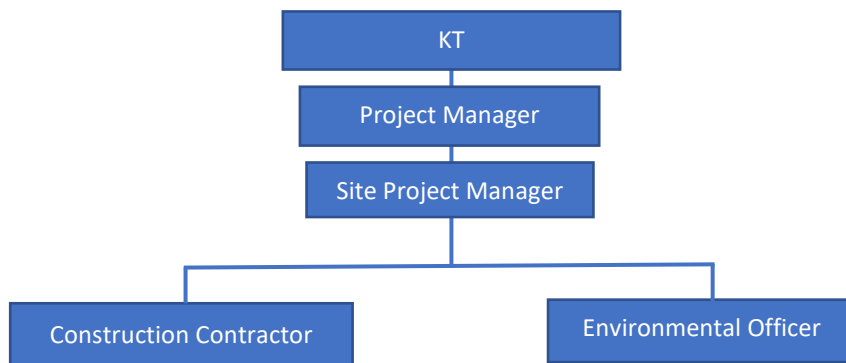


Figure 1: Project Team Structure

3.1.2 Roles and Responsibilities

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

Table 2: Roles and Responsibilities

Role	Responsibilities
Project Manager	<ul style="list-style-type: none"> • 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 DPE; • 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	<ul style="list-style-type: none"> • 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.
Construction Contractor	<ul style="list-style-type: none"> • 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.
Environmental Officer	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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.

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
Government Agency Contacts			
DPE (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 DPE 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	Prior to commencement of works
	Pre-start meetings and toolbox talks	Daily
	Reports to Project Manager identifying project progress, any environmental incidents, and review of any complaints or enquiries	Weekly
External	Face-to-face meetings, phone and email correspondence with relevant Government Departments / Agencies	As required
	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
DPE	Commencement of construction	DPE will be notified in writing at least 48 hours prior to the commencement of construction.	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	Details of pollution incident – who, what, when, where, how, any	Immediately upon identification of pollution incident causing or threatening material harm to the	KT Environmental Manager

Protection Agency	other supporting information and evidence (e.g. photos)	environment, in accordance with KT's Construction site Incident and Emergency Procedures Thredbo Village 2021/2022.	
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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 Error!**
Reference source not found.. 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.

4 Environmental Controls

4.1 General

- 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.
- Provide approved plans and relevant documentation in the site office or other suitable location so that they are easily accessible by all construction staff.
- Brief all workers as to limit of disturbance footprint and other environmental safeguards.

4.1.1 Site Establishment

- Establishment of site boundary with temporary fencing, rope or flagging to clearly delineate the construction corridor and "no-go" areas.
- Erection of site signage and pedestrian/traffic controls.
- Installation of erosion and sediment controls.

4.1.2 Machinery and Storage

- All equipment, machinery and vehicles used during construction of the Project must be cleaned prior to entry into the Park and prior to site mobilisation to ensure they are free of mud and vegetative propagules.
- Equipment, machinery, and vehicles must be regularly maintained and manoeuvred to prevent the spread of exotic vegetation.
- Storage of equipment, machinery, vehicles and material is to be restricted to existing disturbed areas (i.e. at the stockpile, formed roads and within the construction corridors) and avoid undisturbed areas.
- All vehicles and machinery entering Thredbo must adhere to the *Standard Operating Procedure: Use and Maintenance of Wash Down Bay, March 2019 (KT055)*.

4.2 Soil and Water Quality

	Soil and Water Quality
Objective	<ul style="list-style-type: none">• Minimise potential impacts to receiving water sources; and• Reduce the potential for erosion and sediment moving offsite.
Mitigation Measures	<i>General protocols</i> <ul style="list-style-type: none">• Where required, implement erosion and sediment controls;• Erosion and sediment controls must be regularly checked and maintained, particularly immediately following precipitation events;

	<ul style="list-style-type: none"> All straw bales used for sediment and erosion control or rehabilitation must be weed free; Construction works should not be undertaken in periods of significant rainfall; Progressive rehabilitation of disturbed areas should be undertaken in accordance with the <i>Rehabilitation Guidelines for the Resort Areas of Kosciuszko National Park</i> (DECC 2007) (Rehabilitation Guidelines); <p><i>On-ground machinery requirements</i></p> <ul style="list-style-type: none"> On-ground machinery used in vegetation removal and trail construction must adhere to the following: <ul style="list-style-type: none"> the tread width of on-ground machinery used in trail construction must not exceed 1500 mm disturbance/works must be entirely contained within the 3 m disturbance corridor.
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.

4.2.1 Erosion and Sediment Controls

Appropriate drainage, erosion and sediment controls will be required to manage soil and surface water during the construction of the development. A summary of proposed controls and associated requirements are outlined below. Controls are to be installed prior to works and retained in place until exposed areas of soil are stabilised.

Table 6: Erosion and Sediment Controls

Activity	Control	Purpose	Timing	Location	Installation
Excavations / trail construction; stockpiling	Sediment fence	To prevent sediment run-off	Install prior to, or in conjunction with earthworks. Retain in place until exposed areas of soil are stabilised.	Downslope side of any excavations; wetter areas; surrounding soil stockpiles	Refer to control installation notes below.
	Straw bale filter fencing	To prevent sediment run-off	Install prior to, or in conjunction with earthworks. Retain in place until exposed areas of soil are stabilised.	Drier areas of excavation, across or at the toe of slope	Refer to control installation notes below.
Cross-slope excavations during trail construction	Straw bales	Divert water around and away from excavation works	Install prior to, or in conjunction with earthworks. Retain in place until exposed areas of soil are stabilised.	To be installed on the uphill side of excavations running cross-slope (where required)	Refer to control installation notes below.

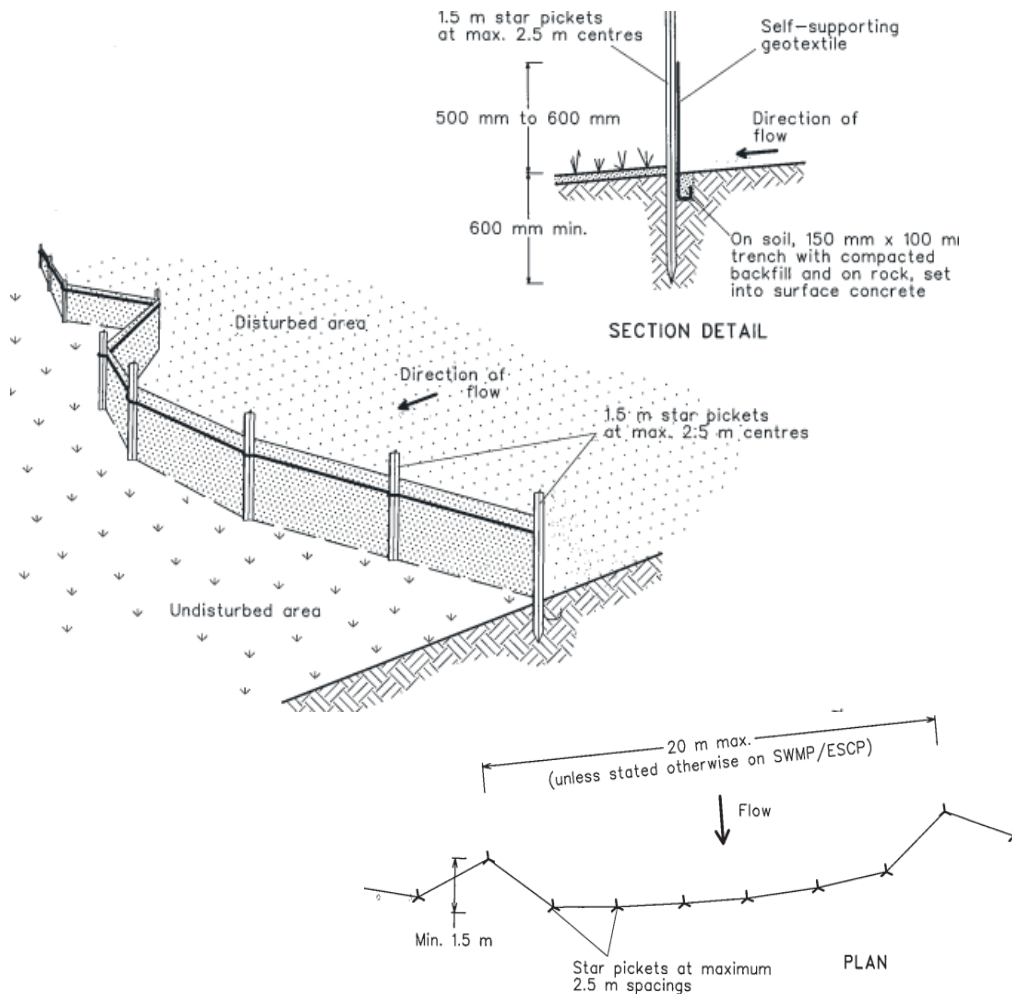
4.2.1.1 Sediment Fences

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.



Standard Sediment Fence Installation (Source: Landcom 2004)

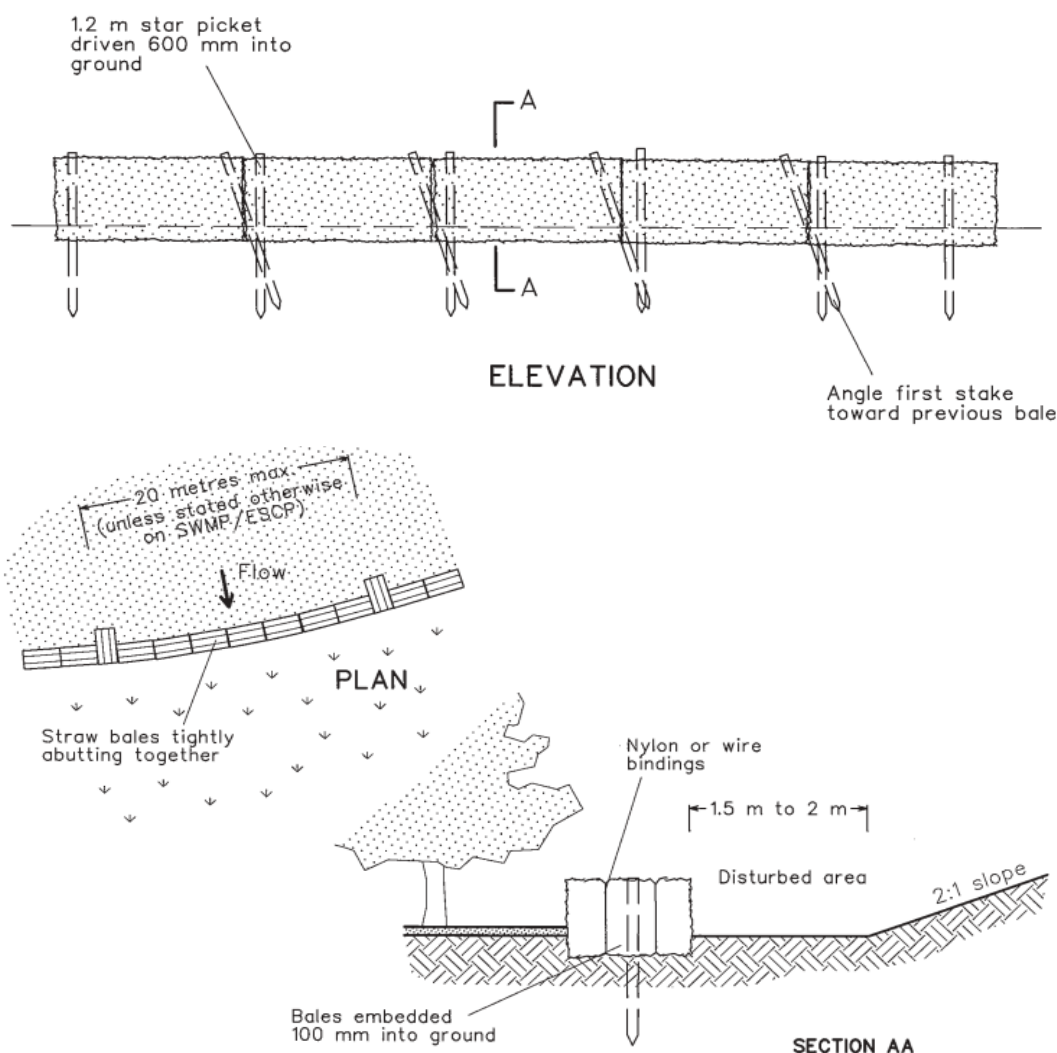
4.2.1.2 Straw Bales

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.



Standard Straw Bale Filter Installation (Source: Landcom 2004)

4.2.1.3 Cross Drainage and Sediment Barriers

The recommended spacing for cross drainage and sediment barriers is provided below:

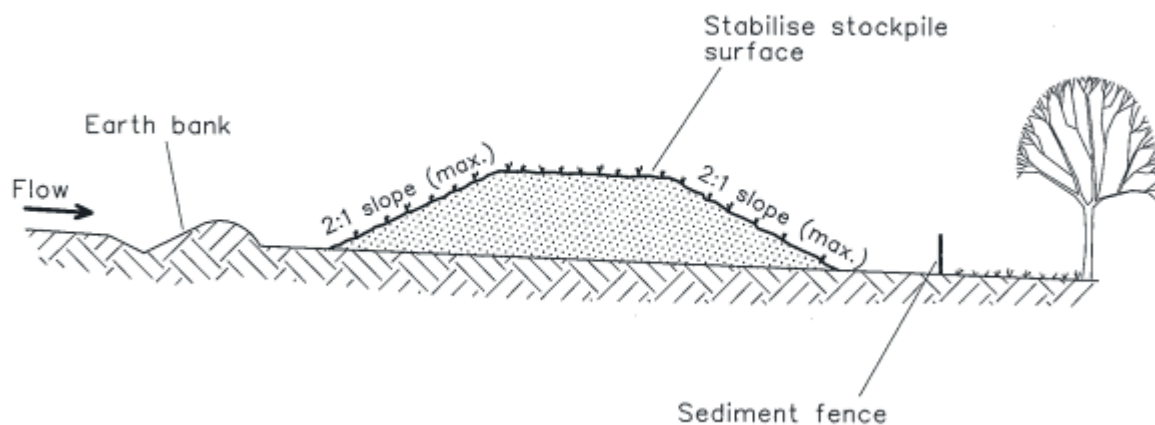
Slope Grade (%)	Cross Drain / Sediment Barrier (m)
5-10	15-20
10-15	10-15
15-25	8-10
>25	5-8

Source: NPWS 2007; Parr-Smith and Polley (1998)

Note: To calculate the grade of a slope: (rise/run) x 100 = slope grade

4.2.2 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).
- Temporary stockpile sites within the construction corridor should adhere to the following criteria (Landcom 2004; OEH 2007):
 - not exceed 2 m in height, have a slope <50% (26°)
 - be at least 2 m from vegetation, concentrated water flows, roads, publicly accessible areas or hazardous areas
 - avoid impacts to native vegetation and be located on disturbed areas
 - located directly adjacent to the works
 - located on relatively flat ground, where possible
 - in areas with sufficient room to accommodate the volume of material being stockpiled
 - be contained by appropriate erosion and sediment controls.
- Any excess excavated material will be removed from site and transported to the designated soil stockpiles sites.



Stockpile Management (Source: Landcom 2004)

4.2.3 Imported materials and stabilising agents

- NPWS requests that its authorisation is sought where it is proposed to utilise either of the following in construction or maintenance of the trail:
 - Imported gravel or fill material; or
 - soil stabilising or adhesive agents.
- KT staff (and its contractors) may obtain imported gravel or fill material from sources already assessed by NPWS as appropriate for use in KNP, being gravel or fill material from:
 - the McMahons Earthmoving quarry, located on Alpine Way, Crackenback NSW; or
 - the Kraft Earthmoving / Snowy Mountains Sand and Gravel quarry located on Kosciuszko Road, Jindabyne NSW.

4.3 Flora and Fauna

4.3.1 Vegetation and Habitat Management

Vegetation and Habitat Management		
Objective	To ensure compliance with legislative requirements and protect existing native vegetation. Minimise impacts to native vegetation.	
Mitigation Measures	Brief all workers as to limit of disturbance footprint and other environmental safeguards (ELA 2023).	Timing Prior to and during construction as required
	All clearing must occur solely within approved development corridors and to be clearly identified with flagging tape to mark no-go/no clearing zones prior to construction.	Vegetation clearing and construction
	The trail alignment should avoid the need to fell large or mature trees (e.g. > 200 mm in diameter).	Vegetation clearing
	Mature trees and rocks required to be removed are to be clearly marked.	Vegetation clearing
	Removal of native vegetation by chainsaw, rather than heavy machinery, is preferable in situations where partial clearing is proposed	Vegetation clearing
	Clearing should be undertaken in 50 m sections at a time to reduce the amount of soil exposed.	Vegetation clearing
	Clearing should remove habitats in stages to allow movement of fauna away from disturbed areas. All vegetation must be checked for fauna habitats and fauna by the Environmental Officer immediately prior to felling/removal. Vegetation with active nests must not be removed until the young have left the nest. If fauna is present, then the NPWS must be contacted to assist with mitigation actions.	Vegetation clearing
	All excess native vegetation to be dispersed on exposed soil along the trail edge, placed on batters and embankments for erosion control or carefully spread further into bushland to avoid smothering of understory vegetation communities	Vegetation clearing
	To the extent reasonably practicable, live tree roots are to be protected (and not removed) within the timbered areas of the trail corridor. This could occur through rock armouring, grade reversals or other construction methods.	Vegetation clearing, construction
	To the extent reasonably practicable, trail alignment must be adjusted to avoid the removal of mature trees, large boulders and rock outcrops. Mature trees and rocks required to be removed must be clearly marked.	Vegetation clearing
	Any trees required to be removed must not be felled in a manner which damages surrounding vegetation. All vegetation (trees and understory) removed must either be cut into smaller pieces to be used for rehabilitation, discreetly dispersed amongst adjoining native vegetation without damaging existing native vegetation or removed from site completely if it contains any exotic vegetation species.	Vegetation clearing
	All rocks removed during the works must be placed in the surrounding landscape without damaging existing native vegetation, used in the trail construction (e.g., rock armouring) or removed from site completely.	Rock removal

Performance Criteria	No damage to site fencing. No damage to native vegetation (including vehicle tracks) associated with unauthorised access.
Corrective Actions	Fencing to be repaired / reinstated by appointed contractor. Entry points for unauthorised access to be identified and access restricted through fencing or other appropriate barriers.

4.3.2 Native Fauna

Native Fauna Management		
Objective	To minimise potential impacts to native fauna, their breeding places and habitat.	
Mitigation Measures		Timing
	If any active wombat burrows are detected in close proximity to the trail alignment during the construction phase, then the trail should be realigned to avoid the burrow (ELA 2023).	During construction
	Restrict work to daylight hours	During construction
	Reasonable and practicable native fauna management measures will be implemented to avoid environmental harm and nuisance to native fauna.	Vegetation clearing, during construction
	Maintain a clean and tidy work area to ensure animals are not attracted to the site, including provision of covered bins during proposed works.	During construction
	Restrict work to daylight hours (ELA 2023).	During construction
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. Contact NPWS / LAOKO if injured fauna is identified as a result of site activities.	

4.3.3 Exotic Species

Exotic Species Management		
Objective	To reduce the risk of introducing invasive/pest species.	
Mitigation Measures		Timing
	All relevant weed species that occur within the construction corridor and associated staging and stockpile sites must be treated prior to works commencing to ensure these weeds are not spread further at the site or within KNP.	Prior to vegetation clearing, prior to construction
	If an area of vegetation proposed for removal includes any relevant weed species then the vegetation must be removed completely from site, not spread out within the existing vegetation or used in rehabilitation and stabilisation works.	Prior to vegetation clearing, prior to construction
	All machinery and equipment used during construction must be cleaned prior to entry into KNP and prior to site mobilisation to ensure the machinery is free of mud, vegetative propagules, and pathogens. This includes machinery that may have been working in an area of the resort that contains weeds and is preparing to be redeployed in the construction corridor and associated stockpile and staging areas.	During construction
	All vehicles and machinery entering Thredbo must adhere to the Standard Operating Procedure: Use and Maintenance of Wash Down Bay, March 2019 (KT055) . The wash down bay is located at the Thredbo Waste Transfer Station for use by KT staff and contractors.	During construction

	All machinery and equipment must be stored on existing disturbed areas (i.e. at the stockpile and staging areas proposed on the ski slopes) and should not be stored on native vegetation.	During construction
	All machinery to be regularly maintained and manoeuvred to prevent the spread of weeds and pathogens.	During construction
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.	

4.4 Air Quality

Air Quality Management		
Objective	To minimise potential impacts on sensitive receivers from dust and other air pollution from construction activities.	
Mitigation Measures		Timing
	Minimise the number and extent of disturbed areas at any given time. When there is a risk of works creating dust nuisance, dust suppression measures are to be implemented i.e. the site is to be watered.	Vegetation clearing; during construction
	Plant and equipment to be maintained and operated in an efficient manner to reduce air pollution.	During construction
	Vehicles are to adhere to speed limits to minimise dust general and potential spill of hauled materials.	During construction
	All vehicles carrying spoil or rubble to/from site should be covered to prevent the escape of dust or other material. Covers are to be adequately secured.	During construction
Performance Criteria	No complaints received in relation to air pollution.	
Corrective Actions	If complaints are received, the following steps should be taken: <ul style="list-style-type: none"> • 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. • If required, implement administrative controls e.g. additional staff training, alter construction methods or timing for undertaking dust generating activities. 	

4.5 Noise and Vibration

Noise and Vibration Management		
Objective	To ensure that noise and vibration from construction activities does not cause environmental nuisance in the locality.	
Mitigation Measures		Timing
	Selection of the most appropriate plant and equipment to minimise noise generation.	Prior to construction
	Construction works will be undertaken during standard work hours.	During construction
	Appropriate noise management strategies will be implemented for construction works and operation of plant and equipment in accordance with the Australian Standard AS 2436-2010 <i>Guide to noise and vibration control on construction, demolition and maintenance sites</i> .	During construction

	Regular checks are to be undertaken to ensure all equipment and vehicles are in good working order and are operated correctly.	During construction
	All machinery and equipment will be maintained in accordance with the manufacturer's requirements.	During construction
Performance Criteria	No construction related noise and vibration complaints received. No unreasonable noise or vibration.	
Corrective Actions	If complaints are received, the following steps should be taken: <ul style="list-style-type: none"> • 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. • If required, implement administrative controls e.g. additional staff training or change work hours to minimise noise. 	

4.6 Fuels and Chemicals

Fuels and Chemicals Management		
Objective	Eliminate the potential for release of fuels, chemicals and hazardous substances to the environment.	
Mitigation Measures		Timing
	Spill kits will be available onsite and all site personnel will be made aware of their locations in the site induction.	During construction
	In the event on an on-site spill, construction staff will follow KT's Construction Site Incident and Emergency Procedures Thredbo Village, 2021/2022 .	During construction
	Hazardous substances, toxic materials or dangerous goods must not be stored or processed on-site at any time without prior approval from the DPE Secretary or nominee.	During construction
	Fuel and chemicals will be appropriately stored and handled in accordance with relevant Australian Standards.	During construction
	Appropriate controls will be implemented when refuelling Project vehicles and machinery.	During construction
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.	

4.7 Traffic and Access

Traffic and Transport Management	
Objective	Minimise potential impacts on existing road network
Mitigation Measures	<ul style="list-style-type: none"> • 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; • Bike riders and pedestrian using trails within the construction corridor will be managed through the use of signage, and exclusion from the construction corridor.
Performance Criteria	<ul style="list-style-type: none"> • 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).

4.8 Waste

Incorporate the waste hierarchy to ensure the efficient use of resources (EPA 2017):

- **Avoidance** including action to reduce the amount of waste generated by the Development;
- **Resource recovery** including re-use, recycling, reprocessing and energy recovery, consistent with the most efficient use of the recovered resources; and
- **Disposal** including management of all disposal options in the most environmentally responsible manner.

Waste generation from construction is expected to be minimal. The Development will generate the following waste:

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

The following will be provided for the storage and disposal of waste:

- General litter bins for waste such as food waste and non-recyclable plastic.
- Recycling bins for waste such as cardboard packaging, paper, recyclable plastic.
- KT's waste transfer facility (materials to be segregated for re-use, recycling etc.).

All waste will be managed in accordance with KT's waste management procedures. All materials will be segregated and where possible reused and recycled within the resort. Materials being kept for re-use elsewhere in the resort will be loaded directly onto a truck to the Thredbo 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.	Timing During construction
	Where possible, construction materials will be salvaged for reuse to divert waste from landfill.	During construction
	All waste will be separated into waste streams and contained within appropriate receptacles and/or disposed of in accordance with the EPA guidelines.	During construction
	All receptacles will be in good condition.	During construction
	All waste transportation vehicles will be covered appropriately to ensure waste cannot spill, leak or escape onto the road or wash into stormwater drains.	During construction
Performance Criteria	No litter or waste material to be released from site in an uncontrolled manner.	
Corrective Actions	<ul style="list-style-type: none"> • 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. 	

4.9 Cultural Heritage

4.9.1 Unexpected Finds Procedure

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.

5 Monitoring and Reporting

5.1 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.

The Environmental Officer will undertake weekly inspections utilising the ***Site Environmental Management Measures Report***. The report includes a checklist on the following matters:

- Administration (weekly site inspections, sub-contractor environmental management, environmental monitoring, environment incidents, complaints handling, reporting and record keeping)
- Biosecurity management
- Chemical spills / emergency response
- Vegetation management and rehabilitation
- Waste management
- Native fauna management
- Material storage and sourcing
- Water quality
- Erosion and sediment controls
- Stockpile management
- Air quality and noise and vibration
- Cultural heritage
- Safety.

5.2 Weekly Environmental Reporting

The Environmental Officer will provide copies of the ***Site Environmental Management Measures Report*** 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.

5.3 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 emergencies, 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)
- Details of corrective actions.

The ***Environmental Incident Report Form*** should be completed for all environmental incidents. All parts of the 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.

5.4 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 ***Site Environmental Management Measures Report*** (or similar contractor's form) 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.

5.5 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.

5.6 Complaints Management

Should complaints be received from the public in relation to the Project they will be recorded using the ***Complaints Form*** (or similar contractor's form). 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.

6 Record Keeping and Review

6.1 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.
- Records of any environmental incidents, complaints, non-conformances and non-compliances.

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.
- At the end of a Project to allow for improvements in subsequent Projects.

7 References

Dabyne Planning 2023, Statement of Environmental Effects – Kosciuszko flow trail diversion, Snowgums top station, Thredbo Alpine Resort, Kosciuszko National Park. Prepared for Kosciuszko Thredbo Pty Ltd.

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

Eco Logical Australia Pty Ltd (ELA) 2023, Proposed Flow Trail Realignment, Thredbo Alpine Resort, Biodiversity Development Assessment Report. Prepared for Kosciuszko Thredbo Pty Ltd.

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

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.

8 Appendices

Appendix A Plans

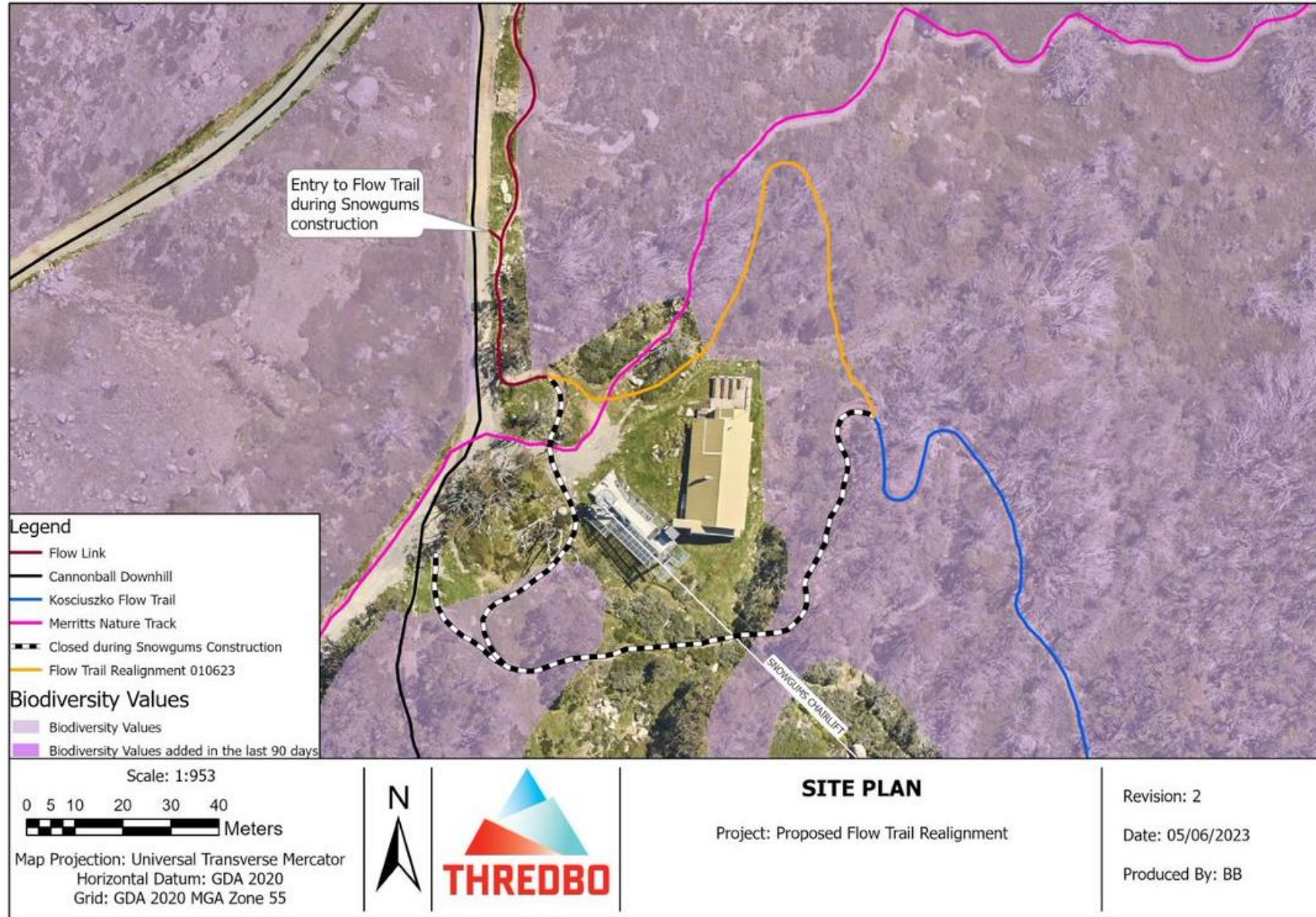




Figure B1: Main stockpile location within Thredbo’s Waste Transfer Station

THREDBO ENVIRONMENTAL SERVICES

Record of complaint

Sheet _____ of _____

Project: _____

Date / Time: _____

Received by: _____

Reference Number: _____

[illegible]