Site Environmental Management Plan

Bobsled Demolition and Mountain Bike Trail Works

Thredbo Alpine Resort
Kosciuszko National Park, NSW

March 2024

Document Control

Revision	Date	Revision Type	Author	Approved by
A	17.08.2023	Draft	C.Hobbs	J.Love
B	12.10.2023	Client review	C.Chalk	A.Harrigan
C	13.12.2023	Final	A.GIll	J.Love
D	13.03.2024	Inclusion of NPWS referral comments, Table 4-1 (project timing), Section 6.1, Section 6.1.2, Section 6.3 (fauna management measures), rehab details	J.Best	C.Chalk

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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 Alpine Bobsled Demolition and Mountain Bike Trail Works trail within the Thredbo Alpine Resort (the Project).

1.1 Purpose

This SEMP has been developed to outline how construction activities 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.

2 Reference Documentation

2.1 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*
- *Work Health and Safety Act 2011.*

2.2 Approvals

The Project requires Development Consent under the *Environmental Planning and Assessment Act 1979* (EP&A Act*).*

The Project is located within 40 metres (m) of the Thredbo River And therefore requires a controlled activity approval (CAA) in accordance with Section 91 of the W*ater Management Act 2000*. The CAA

would be sought prior to commencement of works and any imposed conditions would be implemented during the works.

2.3 Supporting Documents

Document	Title	Prepared by	Version
Approval	Development Consent	DPE	-
Statement of Environmental Effects	Statement of Environmental Effects – Bobsled Demolition and Mountain Bike Trail Works	NGH Consulting	2023
Procedure	Construction Site Incident and Emergency Procedures Thredbo Village	Kosciuszko Thredbo Pty Ltd	1.1
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

2.4 Guidelines

The Project will be carried out in accordance with the following documents:

- Guideline for the Preparation of Environmental Management Plans (DIPNR 2004).
- Managing Urban Stormwater: Soils and Construction, Volume 1, 4th Edition (Landcom 2004).
- Interim Construction Noise Guidelines (DECC 2009)
- NSW EPA Waste Classification Guidelines (NSW EPA 2014)

3 Project Description

The Project site is located within the Thredbo Head Lease area, 2 Friday Drive Thredbo 2625, legally identified as Lot 876 DP1243112. The bobsled is located on the northern side of the Thredbo River adjacent to the 'Sundance' ski run. The main construction access is via the summer mountain access road (authorised access only).

The site is sloped land with a fall from the north (next to the summer access road) down to the south (adjacent to Merritts Track parallel to the Thredbo River). The bobsled track starts at the bottom station connecting to an upslope straight track and then weaves down the hill through vegetation to the bottom station. The bobsled corridor is approximately 3 metres (m) wide.

The Project includes:

- The demolition of an existing bobsled located adjacent to the Valley Terminal (VT) precinct, off the footpath linking VT to Woodridge subdivision and Friday Flat (Figure 3-1 and Figure 3-2). The proposed demolition would include the removal of the existing bobsled infrastructure, including the track, bottom station, and associated infrastructure.
- Construction of a mountain bike trail, commencing at the junction with the existing Village Loop and Home Run mountain bike trails. The trail generally follows the downhill bobsled alignment and terminates when it links back onto the Village Loop trail. The proposed trail would be approximately 740m in length with rollers, hip, and table top jumps, drops, berms and a wall ride.
- Site stabilisation and revegetation works.

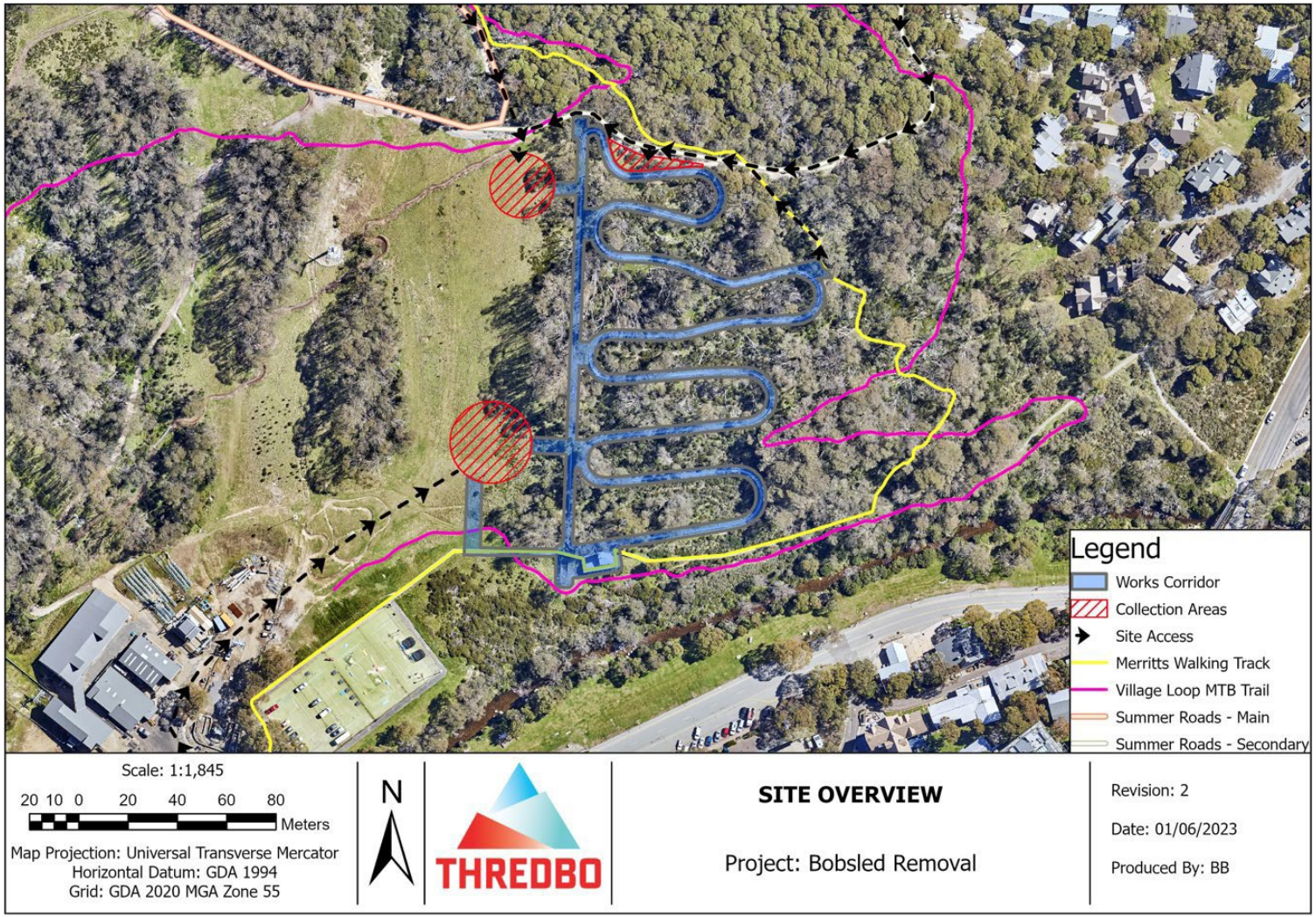


Figure 3-1 Bobsled demolition project location (Source: KT 2023)

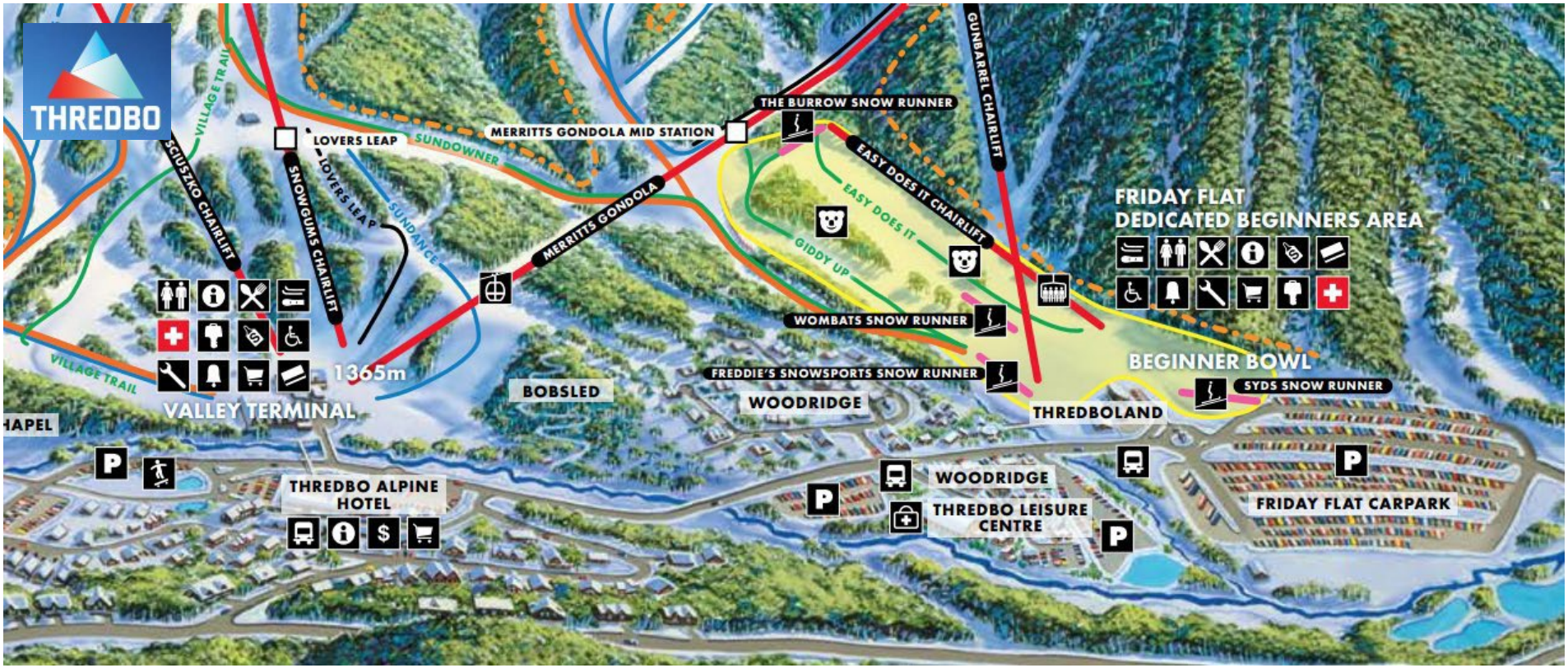


Figure 3-2 Thredbo Winter Trail Map (Source: KT Thredbo-Winter-Trail-Map.pdf, 2023)

4 Construction Management Details

A summary of the construction program and activities is provided in Table 4-1.

Table 4-1 Construction Detail and Activities

Aspect	Details
Site access	Site access will be via two locations off Friday Drive (refer Site Access shown Figure 3-1): • Via VT base station between Snowgums and Merritts Gondola base stations. • Via the summer mountain access road (authorised access only) via Mountain Drive. Project vehicles and machinery will be contained within the works corridor and limited to pre-disturbed areas as much as practicable. Public parking is available within the resort for construction workers.
Construction corridor	The construction corridor is shown on Figure 4-2. The current bobsled alignment comprises a cleared corridor of approximately 3m in width for the entire downhill alignment.
Construction program and activities	**Early works (site preparation)** • The site would be made safe as per WHS/SafeWork NSW requirements including defining the boundaries of the site (fenced appropriately) prior to any demolition works commencing. • Installation of site fencing and signage around the boundaries of the site, including the bottom station to exclude pedestrian access to the site. • Installation of temporary closures and diversions required for the Village Loop Mountain Bike (MTB) trail and Merritts Nature Track for when works are being carried out in proximity. Closures and diversions will be managed by the KT Mountain Bike Operations team. • Installation of signage on the boundary of the site along the summer mountain access road to warn vehicle and machinery operators of workers/machinery in proximity. • Temporary material collection areas will be demarcated with rope/flagging, as required. • If required, some sections of the fibreglass plank (FRP) decking that form part of the Merritts Nature Track may need to be temporarily removed to allow for machinery to access the bottom station. These sections will be re-instated post construction, if required.
	Bobsled Demolition Demolition of track • Demolition of track using a small excavator to lift the track sections from the ground, then walk them or use a side-by-side vehicle to the collection areas. Boblsed Track / Uphill line • Cut joins in track. • Removal of trafficable sections inclusive of structural footings. • Removal of concrete footings on uphill line. • Rehabilitation of the site. Bottom station (operators hut) • Disconnection of services – disconnection of electricity and telecommunications. Removal of camera and phone at top station. • Removal of roof sheets and wall cladding.

Aspect	Details
	• Removal of internal wall linings. • Demolition of structure /frame. • Removal of piers and footings. • Rehabilitation of site. • Footpath extension 25m to connect footpath towards Woodridge and Friday Flat. Drive station (bottom of uphill line) • Removal of fencing. • Disconnection of services. • Removal of drive and associated fittings. • Demolition of concrete base pad and footings. • Rehabilitation of site. Return station (top of uphill line) • Removal of fencing. • Removal of return bull wheel and associated fittings. • Demolition of concrete base pad and footings. • Removal of camera and phone. • Rehabilitation of site.

	Mountain bike trail construction
	The average disturbance corridor for mountain bike trails is 2.5m with an average 600mm trail width for intermediate trails.
	
	Construction activities would comprise the following:
	• Removal of ground cover to expose bare earth.
	  ○ Excess cut vegetation from the entry and exit points 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
	• Cut into the slope using a mini excavator and excavate the soil to achieve the appropriate 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.
	• Re-vegetate the verge areas, topsoil and preserved vegetation sods.

	Post works (site stabilisation and rehabilitation) • Ground will be graded back to remove small trough left where track has been sitting using small excavator and then rehabilitate. • All disturbed areas will be rehabilitated in accordance with the Rehabilitation Guidelines for the Resort Areas of Kosciuszko National Park (NGH 2007).
Machinery, plant and equipment	The Development will require (but not limited to) the following vehicles, machinery, and equipment for demolition works: • Small excavator. • Utility and side-by-side vehicles. • Telescopic handler. • Angle grinders. • Oxygen / acetylene gas torch. Equipment and machinery likely required for the mountain bike trail construction include:

Aspect	Details
	• Mini excavator. • Motorised wheelbarrows. • Quad bikes. • Dump trucks (to and from stockpile sites). • 4WD vehicles. • Side-by-side vehicles. • Hand tools (i.e., chainsaws and brush-cutters). The tread width of on-ground machinery used in trail construction must not exceed 1,500mm.
Stockpile sites and material storage	**Demolition** The Friday Flat Laydown area (shown in Figure 4-1) would be fenced or flagged as needed. Stockpiling of track parts would occur within designated collection areas as shown in Figure 3-1. Materials would then be relocated to the Friday Flat Laydown area and transported offsite. **Mountain bike trail** The existing lower overflow carpark stockpile site would be used for any construction or bulk materials needed to construct the bike trail. Materials would be moved to site stockpile areas as needed. Temporary stockpiles would be required along the trail alignment for the effective management of gravel, soil, and vegetation. These stockpiles would be located within pre-disturbed areas, on relatively flat land, away from watercourses and avoid native vegetation. Excess materials from construction would be located in the main stockpile area within the resort (lower overflow carpark area, refer to plans in Figure 4-1). Access to these locations would be restricted to KT staff and contractors. Soil stockpiles would be managed in accordance with *the Soil Stockpile Guidelines for the Resort Areas of Kosciuszko National Park*, version 1.0 (OEH 2017) (Soil Stockpile Guidelines).
Site facilities and compound	There would be no site facilities or temporary structures within the construction corridor. Staff would be able to access amenities at VT base station.
Construction materials	Construction materials would likely include: • Trail signs e.g., decision point signs. • Gravel / decomposed granite for the trail surface.
Recycling/waste disposal	All bobsled equipment would be sold-on or gifted or re-purpose at another site. Bottom station building and deck materials to be scrapped or taken away for recycling by a third party. Footings will be transported to Jindabyne Landfill.
Project timing	Excavation and construction works must cease by 30 April, with rehabilitation and stabilisation works able to continue until 31 May. If extension to this period is required, approval must be sought from DPHI.
Working hours	Work hours will be: • Monday to Friday: 7am-6pm • Saturday: 8am-1pm • Sundays or public holidays: No work

Figure 4-1 Friday Flat Laydown Area (Source: KT 2023)

Figure 4-2 Imagery of bobsled showing examples of works corridor (Source: KT, 2023 and NGH, 2023)

4.1 Adverse Weather Contingencies

Adverse weather events (e.g. high winds, thunderstorms, heavy rain, hail, snow, bushfire and high temperatures) have the potential to negatively impact upon construction activities. To ensure appropriate consideration of such events, the Project and Construction Manager will monitor weather conditions throughout the construction period. The Bureau of Meteorology (BoM) Thredbo AWS station provides daily weather observation data for the resort. The NSW Rural Fire Service

website ‘Fires Near Me’ includes information on current bush fires and other incidents, as well as warnings for fires which may affect your location.

If adverse weather events are anticipated and/or occur during construction, contingencies will be implemented and arrangements will be made to postpone construction activities.

The Construction Manager / Site Project Manager will be responsible for notifying construction staff of any impending adverse weather, and to implement appropriate controls onsite, such as:

- Erecting wind breaks or covering stockpiles to prevent materials being blown away.
- Evaluate temporary sediment and erosion controls to ensure they are adequately installed to withstand adverse weather events.
- Discontinue use of plant and machinery.
- Secure materials and equipment.
- Protect open excavations.

5 Environmental Management

5.1 Roles and Responsibilities

The Project team structure is provided in Figure 5-1.

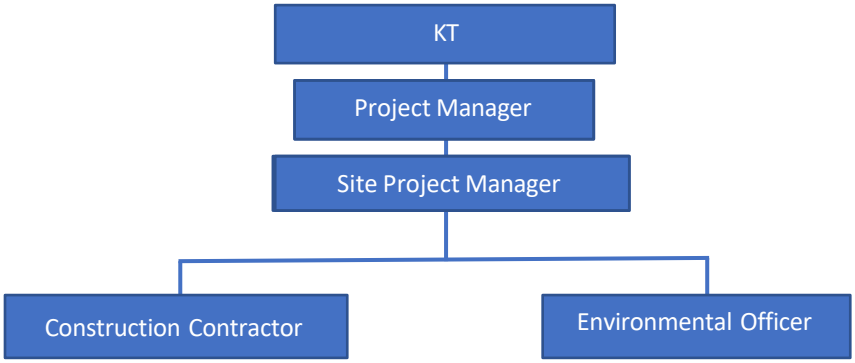


Figure 5-1: Project Team Structure

The roles and responsibilities are outlined in **Table 5-1**.

Table 5-1: 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 Department of Planning and Environment (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. • Ensuring Project personnel and contractors are adequately trained and qualified to fulfil their roles.
Site Project Manager	• Implement and maintain the SEMP. • Ensure all Project personnel comply with the requirements of the SEMP. • Report any incidents, non-conformances to the Project Manager.

Role	Responsibilities
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. • Ensure all machinery, plant and equipment are in good working order and condition prior to use.
Construction Contractor	• Comply with SEMP and legislative requirements. • Construction contractor to develop and implement management plans in accordance with this SEMP, conditions of approval and contractual obligations.

5.2 Communication and Consultation

5.2.1 Training and Awareness

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.
- Procedures for notifying and reporting incidents and complaints.

5.2.2 Key Contacts

Key contacts for the Project are provided in Table 5-2. Prior to commencement of works, contact details (name and contact number) will be provided for Project personnel.

Table 5-2 Key Project Personnel Contact Details

Company / Agency	Role / Reason	Name	Contact
Government Agency Contacts			
Department of Planning and Environment (DPE) (Alpine Resorts Team)	Development approval and compliance	-	(02) 6456 1733

Company / Agency	Role / Reason	Name	Contact
National Parks and Wildlife Service (NPWS)	Flora, fauna, archaeology	-	(02) 6450 5600
Environment Protection Agency (EPA)	Water, noise, air pollution and regulation	-	131 555
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		-	

5.2.3 Consultation

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 5.1. Communication with key external stakeholders such as RFS, DPE and NPWS will be undertaken as required.

A summary of the key consultation activities is provided in **Table 5-3**.

Table 5-3 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, phone or email correspondence with Government Departments / Agencies and relevant parties e.g. DPE notification of commencement of works or consultation with the RFS in the event of fire/emergency	As required

5.2.4 Notification Protocols

A summary of the key notification protocols is provided in Table 5-4. Notification requirements will be updated as required.

Table 5-4: 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.	Site Project Manager

Party to Notify	What to Notify	When to Notify	Responsibility to Notify Regulatory Agency
Heritage NSW and 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.	Site Project Manager
EPA	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, version 1.1***.	KT Environmental Manager

5.3 Environmental Incident and Emergency Response

All Project personnel are required to follow KT's **Construction site Incident and Emergency Procedures Thredbo Village, version 1.1**. 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.
- 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 7.3. Contact details for key Project personnel and emergency services are provided in Table 5-2.

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.

6 Environmental Controls

6.1 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.
- All demolition and construction works will be carried out in accordance with the Development Consent, CAA and mitigation measures outlined in this SEMP and ESCP.
- Contractor responsible for carrying out relevant searches (Kosciuszko Thredbo, DBYD, etc) as needed to confirm accuracy of plans.
- Work would be carried out in accordance with relevant management plans and/or Demolition work Code of Practice (SafeWork NSW, 2019), or as agreed with service providers/in accordance with relevant conditions/approvals.
- Services would be disconnected and made safe for reconnection with any future development. Any work on services would be carried out by a suitably qualified person.

6.1.1 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.

6.1.2 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 and native vegetation.
- All vehicles and machinery entering Thredbo must adhere to the ***Standard Operating Procedure: Use and Maintenance of Wash Down Bay, March 2019 (KT055).***

6.2 Soil and Water Quality

Soil and Water Quality	
Objective	• Minimise potential impacts to receiving water sources. • Reduce the potential for erosion and sediment moving offsite.
Mitigation Measures	**Timing**
• CAA to be sought prior to works commencing and conditions to be implemented during construction. • No works within waterfront land are to be carried out without a CAA	Pre- construction, construction

Soil and Water Quality	
• Implement erosion and sediment control plan provided in Appendix B. • Erosion and sediment controls (ESCs) to be inspected and maintained regularly, particularly immediately following rain events. • 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 Rehabilitation Guidelines for the Resort Areas of Kosciuszko National Park (DECC 2007) (Rehabilitation Guidelines). • 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 Project site 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 in Appendix A. • Authorisation from NPWS is to be sought where imported gravel or fill material is required, unless the material is sourced from the following NPWS approved locations: – McMahons Earthmoving quarry, located on Alpine Way, Crackenback NSW; or – Kraft Earthmoving / Snowy Mountains Sand and Gravel quarry located on Kosciuszko Road, Jindabyne NSW. • If potentially contaminated material or indications of contamination or any other hazardous substances are discovered, encountered or otherwise noted through visual or olfactory observations: – Work around the area must cease immediately. – The area made safe, barricaded or otherwise fenced off. – Notify NPWS immediately of the type of substance and its location. – Works in the area will only recommence once clearance has been obtained, and any excavated material from the area of suspected contamination should be covered wherever practicable.	Pre- construction, construction
Performance Criteria	No significant sediment deposition observed leaving the site.

Soil and Water Quality	
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.

6.3 Flora and Fauna

Flora and fauna		
Objective	• To ensure compliance with legislative requirements and protect existing native vegetation. • Minimise impacts to native vegetation. • To minimise potential impacts to native fauna, their breeding places and habitat. • To reduce the risk of introducing invasive/pest species.	
Mitigation Measures		**Timing**
Vegetation clearing and habitat management • All clearing must only occur within approved development corridor. • The construction corridor and approved clearing areas is to be clearly identified and delineated with temporary fencing or flagging tape to mark no-go/no clearing zones prior to construction. • Stockpiles areas are to be within the approved areas. • Mature trees and rocks required to be removed are to be clearly identified. • Relocate dead wood (e.g. logs, felled trees) on ground within nearby vegetation. • Clearing should remove habitats in stages to allow movement of fauna away from disturbed areas. • If any excavations are left open overnight, structures should be placed at regular intervals to enable fauna to exit. Excavations should be inspected in the morning and late afternoon and any animals that have fallen in removed. Excavations to be checked for animals immediately prior to back-filling. • A Wombat Management Plan should be developed to manage impacts on any active wombat burrows in close proximity to proposed works. The plan should be developed for the proposal in consultation with National Parks and Wildlife Service (NPWS). • Adhere to the Code of Practice for injured, sick and orphaned wombats if such wombats are encountered during works. • All disturbance should be kept to the minimum required to achieve the proposal. • All machinery to be used during the construction phase should where possible be limited to the existing disturbed areas and access tracks. • In the event a Broad-toothed Rat (or other unexpected ground-dwelling species) is found breeding on site during works, works would cease. Consultation with NPWS would be undertaken to relocate or otherwise protect the nest so that works may continue.		Vegetation clearing Demolition Construction

Flora and fauna	
Biosecurity controls • All relevant weed species that occur within the Project site must be treated prior to works commencing to ensure these weeds are not spread further at the site or within KNP. • Maintain a clean and tidy work area to ensure animals are not attracted to the site, including provision of covered bins during proposed works. • Any imported topsoil should be certified weed free. • Biosecurity protocols must be implemented to reduce the spread of High Threat Exotic (The) species within the proposal areas. • 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. • 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. • Works are to be undertaken during dry weather. • 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. • All machinery to be regularly maintained and maneuvered to prevent the spread of weeds and pathogens.	Vegetation clearing Demolition Construction
Rehabilitation • All rehabilitation works to be undertaken progressively in accordance with the ***Detailed Rehabilitation and Monitoring Plan – Bobsled Removal & Construction of Mountain Bike Trail***.	Clearing Post construction
Performance Criteria	• No damage to site fencing/flagging. • No unauthorised damage to native vegetation. • No death or injury to fauna as a result of on-site activities. • No disturbance outside the approval disturbance area. • No introduction of invasive species as a result of construction activities.
Corrective Actions	• Fencing/flagging to be repaired / reinstated by appointed contractor. • Entry points for unauthorised access to be identified and access restricted through fencing/flagging or other appropriate barriers. • 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. • Review existing biosecurity procedures (e.g. clean down procedure) and implement additional controls if required.

6.4 Air Quality

Air Quality		
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. • Plant and equipment to be maintained and operated in an efficient manner to reduce air pollution. • Vehicles are to adhere to speed limits to minimise dust general and potential spill of hauled materials. • 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 as required.		Construction
Performance Criteria	No complaints received in relation to air pollution.	
Corrective Actions	If complaints are received, the following steps should 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. • If required, implement administrative controls e.g. additional staff training, alter construction methods or timing for undertaking dust generating activities.	

6.5 Noise and Vibration

Noise and Vibration		
Objective	To ensure that noise and vibration from construction activities does not cause environmental nuisance in the locality.	
Mitigation Measures		**Timing**
• Awareness training and information will be provided to project personnel in relation to minimising noise pollution as much as practicable when in close proximity of sensitive receivers.		Site induction
• Selection of the most appropriate plant and equipment to minimise noise generation.		Prior to construction
• Construction works will be undertaken during standard work hours. • Noise from the works would be limited by the proposed construction hours (Monday to Friday: 7am-6pm; Saturday: 8am-1pm; Sundays or public holidays: No work) • Appropriate noise management strategies 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.* • Regular checks are to be undertaken to ensure all equipment and vehicles are in good working order and are operated correctly.		Construction

Noise and Vibration	
• All plant will be maintained in accordance with the manufacturer's requirements.	
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: • 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.

6.6 Fuels and Chemicals

Fuels and Chemicals		
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. • In the event on an on-site spill, construction staff will follow KT's Construction Site Incident and Emergency Procedures Thredbo Village, version 1.1. • Follow the Unexpected Finds Protocol for potential contamination (Appendix E) • 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. • Fuel and chemicals will be appropriately stored and handled in accordance with relevant Australian Standards. • Appropriate controls will be implemented when refuelling Project vehicles and machinery, including spill kits and temporary bunding where required.		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, version 1.1**, 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.	

6.7 Traffic and Access

Traffic and Access	
Objective	• Minimise potential impacts to existing to road network • Ensure safety of workers, pedestrians, and road users.

Traffic and Access	
Mitigation Measures	**Timing**
• All construction vehicles to enter/exit site via the summer mountain access road and VT (between Snowgums and Merritts bottom stations) • Traffic and construction vehicle access will be managed as per regular daily operation in the resort. • Temporary diversions or closures of the Village Loop MTB trail and Merritts Nature Track would be managed as per daily resort operations. • Parking for workers would be within the site compound to be established at Friday Flat or within other public parking areas within the resort. • All Project vehicles and machinery to adhere to speed limits and signage and stay within construction corridor.	Construction
Performance Criteria	• No significant impacts to existing road network or users. • 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).

6.8 Waste

The Project may generate the following waste streams:

- General solid waste (putrescible) – waste from litter bins, food waste from construction staff.
- General solid waste (non-putrescible) –plastic, paper, carboard, demolition and construction waste (e.g. concrete, excess steel, timber framing from the bottom station).

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

Excess spoil from excavations will be taken off-site and placed within the resort's existing stockpile area located at the carpark adjacent to the Thredbo Waste Transfer Station for re-use within the resort.

All bobsled equipment will be sold-on or gifted for re-purpose at another site. Bottom station building and deck materials will be scrapped or taken away for re-construction/recycling by a third party.

Waste Management	
Objective	Minimise construction and demolition waste as much as practicable. and Reduce the impact of waste on-site and beyond the site boundary.
Mitigation Measures	**Timing**
• All waste will be managed and disposed of in accordance with the KT's waste management procedures.	Construction

Waste Management	
• Where possible, construction and demolition 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. • All bobsled equipment will be sold-on or gifted for re-purpose at another site. Bottom station building and deck materials to be scrapped or taken away for re-construction by a third party.	
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.

6.8.1 Licenced Waste Facilities

There are two licenced waste facilities within proximity to Thredbo:

- Jindabyne Landfill, 6013 Kosciuszko Road, Jindabyne NSW
- Cooma Landfill, 8448 Monaro Highway, Cooma NSW.

6.9 Cultural Heritage

6.9.1 Historic heritage

Kosciuszko National Park forms part of the Australian Alps National Parks and Reserves (AANP) which is a National Heritage Place listed National Landscape under the EPBC Act. Although the Kosciusko National Park is of National Landscape significance, the bobsled site is not heritage listed and no heritage listed sites are adjacent.

6.9.2 Aboriginal Cultural heritage

On 8 June 2023, a search of the Aboriginal Heritage Information Management System (AHIMS) database was undertaken over an area measuring approximately 7km in length and 3km in width, centred on the proposal area. There were 22 Aboriginal sites recorded within this search area and zero declared Aboriginal Places. None of the archaeological sites currently recorded on AHIMS are located within or directly adjacent to the proposed development site, however, five sites occur within 600m. Historical texts and past studies were considered as well as a landscape assessment, consideration of Aboriginal site prediction, opportunities for impact avoidance and desktop assessment and concluded that the proposed activity is unlikely to harm Aboriginal objects and further archaeological assessment is not required.

The recommendations are as follows:

1. The proposed work can proceed with caution without further archaeological assessment.

2. Any activity proposed outside of the current proposal area should also be subject to an Aboriginal heritage assessment.
3. If any items suspected of being Aboriginal in origin are discovered during the work, all work in the immediate vicinity must stop and the NSW Environment Line (1300 361 967) notified. The find would need to be assessed and, if found to be an Aboriginal object, further detailed assessment, and an application for an Aboriginal Heritage Impact Permit (AHIP) may be required.
4. In the unlikely event that human remains are identified during development works, all work must cease in the immediate vicinity and the area must be cordoned off. The proponent must contact the local NSW Police who would make an initial assessment as to whether the remains are part of crime scene or possible Aboriginal remains. If the remains are thought to be Aboriginal, Heritage NSW must be notified by ringing the Enviroline (131 555).

6.9.3 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.

6.10 Bushfire protection

Bushfire protection	
Objective	• Eliminate the potential for fires or bushfires during construction • Ensure safety of workers, visitors to Thredbo and KNP
Mitigation Measures	**Timing**
• The construction contractor would be responsible for determining relevant requirements for the site and ensuring staff are aware of bushfire avoidance, evacuation, and management measures e.g. prior to undertaking works the construction contractor should confirm that there is no current total fire ban or Kosciuszko National Park fire ban as this may place restrictions of activities such as use of plant or machinery in grass/bush settings.	Site induction, prior to commencement of works
• The **Construction Site Incident and Emergency Procedure, version 1.1** outlines procedures for responding to fire and bushfire incidents or emergencies. This procedure is made available to all construction staff. In the event of a bushfire, Kosciuszko Thredbo (the head lessee) would implement the resort-wide Bushfire Evacuation Plan. The plan has been designed to assist management and emergency services to protect life and property in the event of a bush fire or other emergency.	Site induction, construction
• The subject land has a reticulated water connection. Water connection at the site would be maintained for the duration of the works.	During demolition and construction

Bushfire protection	
• A portable water source may need to be made available during the demolition depending on proximity to reticulated water connection.	
Consideration of the measures outlined in the Demolition work Code of Practice (SafeWork NSW, 2019) as they relate to fire should be considered during demolition of the existing infrastructure, such as: • Debris should be progressively removed to prevent build up that could affect the integrity of a suspended floor of the building or structure; affect workplace entry and exit; become a fire hazard; or cause a health and safety hazard. • Adequate fire prevention equipment should be provided and maintained at all times during the demolition of a structure**.** • Access to the fire protection service, including a booster fitting, should also be maintained. • If a sprinkler system is installed in a structure to be demolished, it should be maintained in an operable condition at each storey, so far as is reasonably practicable. • Portable fire extinguishers should be kept in working areas at all times and maintained in an operable condition. • In areas where the floor, walls or ground cover are combustible and required to be welded and cut, the area should be protected by spraying it with water, spreading damp sand, laying fireproof blankets or other suitable means of protection.	During demolition
Performance Criteria	No fires or bushfires to result due to the works.
Corrective Actions	• Investigate cause of fire. • Review protective measures and implement corrective actions.

7 Monitoring and Reporting

7.1 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.

7.2 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.

7.3 Environmental Incident Reporting

All incidents and near misses will be managed in accordance with KT's **Construction site Incident and Emergency Procedures Thredbo Village, version 1.1**. 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)
- Details of corrective actions.

The **Environmental Incident Report Form** should be completed for all environmental incidents (Appendix C). 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.

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 **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.

7.5 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.

7.6 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.

8 Record Keeping and Review

8.1 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 no-compliances.

8.2 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.

9 References

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

Department of Planning & Environment (DPE) (2017) *What to include with your development application*, version January 2017, https://www.planning.nsw.gov.au/Policy-and-Legislation/~/media/65E2BA89886F426991525FF25707A9A9.ashx

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.

Statement of Environmental Effects – Bobsled Demolition and Mountain Bike Trail Works (NGH) 2023 prepared for Kosciuszko Thredbo Pty Ltd

Appendix A Stockpile and Material Storage Areas

Legend

Staging Area

0 4.5 9 18 27 36

Meter

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

THREDBO

SITE COMPOUND / STAGING AREA

FRIDAY FLAT CAR PARK

Revision: A

Date: 14/09/2023

Produced By: KOS

0 4.5 9 18 27 36
Meters

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

THREDBO

STOCKPILE AND MATERIAL STORAGE LOCATION WASTE TRASFER FACILITY

Revision: A

Date: 14/09/2023

Produced By: KOS

Appendix B Erosion and Sediment Control Plan

Erosion and Sediment Control Plan

Alpine Bobsled Demolition

PURPOSE

The purpose of this Erosion and Sediment Control Plan is to outline the intentions and fundamental principles that will be followed in the planning and implementation of erosion and sediment control (ESC) measures for the duration of the project.

OBJECTIVES

To minimise potential impacts from construction works to receiving waters.

To reduce the potential for erosion and sediment moving offsite.

SCOPE OF THIS PLAN

This document identifies appropriate controls specific to project activities to prevent sedimentation and pollution of receiving waters and minimise potential impacts on vegetation communities with and adjacent to the site.

GUIDELINES

- Managing Urban Stormwater: Soils and Construction, Volume 1, 4th Edition (Landcom 2004)
- Best Practice Erosion and Sediment Control Guidelines (IECA, 2008)
- Erosion and Sediment Control: A field Guide for Construction Site Managers (Catchments & Creeks Pty Ltd, 2012)

EROSION AND SEDIMENT CONTROLS

Implementation of appropriate controls and locations will be the responsibility of the construction contractor. Controls to be installed prior to any construction work (where required) and retained in place until exposed areas of soil or vegetation are stabilised/rehabilitated.

SITE ESTABLISHMENT

- Implement sediment control measures prior to any construction work and retain in place until exposed areas of soil or vegetation are stabilised/rehabilitated.

STOCKPILES AND STORAGE OF MATERIALS

- Soil stockpiles to be managed in accordance with the Soil Stockpile Guidelines.
- Refer **Attachment A** for recommended controls, including installation notes and examples.

GENERAL

- Additional erosion and sediment control measures must be implemented and a revised ESCP must be prepared in the event that site conditions or project design change significantly from those considered within this plan.

- In the event that serious or material environmental harm may occur as a result of sediment leaving site, appropriate additional erosion and sediment control measures must be implemented such that all reasonable and practicable measures are being taken to prevent or minimise such harm.
- The construction schedule must aim to minimise the duration that all areas of soil are exposed to the erosive effects of wind, rain and surface water. Where possible, works will be undertaken during periods of no rainfall.
- Land-disturbing activities must not cause unnecessary soil disturbance if an alternative construction process is available that achieves the same or equivalent outcomes at an equivalent cost.
- Refer **Attachment A** for recommended controls, including installation notes and examples.

CLEARING AND GROUNDCOVER REMOVAL

- Any clearing required is to be delayed as long as possible prior to the commencement of works, particularly within proximity to watercourses.
- All reasonable and practicable efforts must be taken to delay the removal of, or disturbance to, existing groundcover (organic or inorganic) prior to the commencement of works.
- Sedimentation controls must be installed prior to the commencement of works.
- Refer **Attachment A** for recommended controls, including installation notes and examples.

EROSION CONTROL

- Prevention of erosion will be prioritised above sediment control wherever practicable during the work.
- Dust suppression will occur when visible dust is sighted. Sediment-laden runoff from dust suppression must not run off site, cause a traffic hazard or environmental issues.
- All temporary earth bunds and flow diversion systems must be machine-compacted and stabilised with polymer or landscaping techniques (seeding, hydromulch etc.).

PROGRESSIVE REHABILITATION AND STABILISATION

- All exposed areas shall be progressively stabilised/rehabilitated as soon as possible.
- Only weed-free or natural thatch/litter should be used in sediment control activities.
- All ESCs will remain in place until all exposed areas of soil are stabilised and/or revegetated.
- All landscaping and rehabilitation should be undertaken in accordance with the *Rehabilitation Guidelines for the Resort Areas of Kosciuszko National Park* (NGH 2007).

MONITORING

During construction, all ESCs are to 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). Regular monitoring and maintenance will be the responsibility of construction personnel. The Environmental Officer will undertake weekly inspections of controls for the duration of the works.

PERFORMANCE INDICATOR

No 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.

ATTACHMENT A – CONTROL INSTALLATION AND CONSTRUCTION NOTES

Control	Project Activity	Location	Purpose	Timing	Standard Drawing Reference[1]
Rock check	Demolition of bobsled infrastructure	Downslope of the outer curves of the bobsled track	To slow water movement as it runs downslope of the development footprint	Prior to commencement of works. Retain in place until exposed areas of soil are stabilised.	Rock Check Dam (SD 5-4)
Flow control berms (earthen bunds)	Demolition of bobsled infrastructure	Upslope of the development footprint	To divert clean water around the development footprint and into areas of established vegetation	Prior to commencement of works. Retain in place until exposed areas of soil are stabilised.	Flow Control Berms (CB-01)

[1]Landcom 2004; NSW DECC 2008 & IECA Best Practice Erosion and Sediment Control (BPESC) document

Erosion and Sediment Control Plan
Map 1 of 4

Legend

- Project
- Development footprint
- Laydown areas
- Site access tracks
- Contours (AHD, 20 m interval)
- Roads

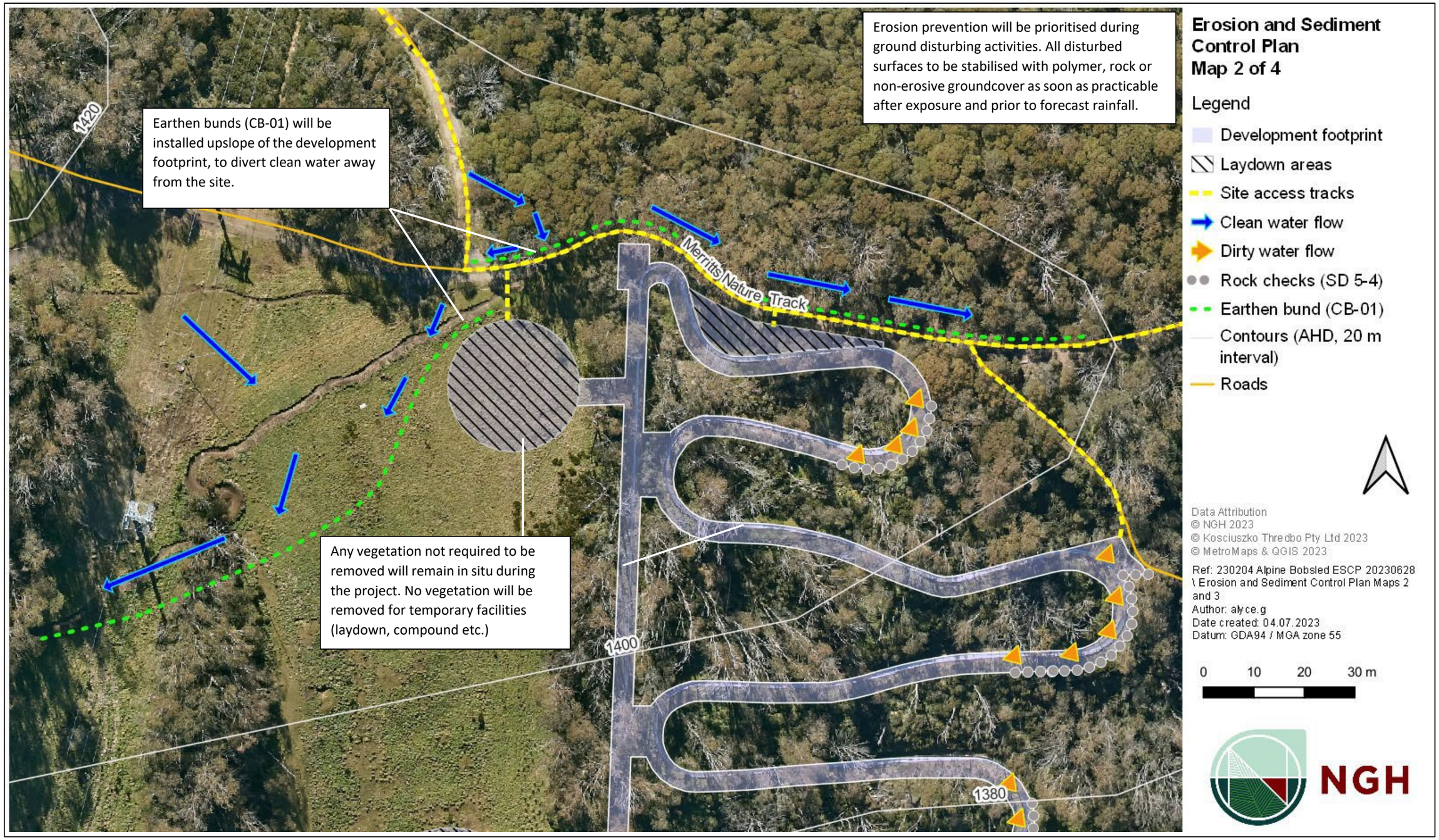
Watercourse

- 2nd order waterway
- Thredbo River

Ref: 230204 Alpine Bobsled ESCP 20230628 \ Erosion and Sediment Control Plan
Author: alyce.g
Date created: 04.07.2023
Datum: GDA94 / MGA zone 55

0 25 50 75 m

NGH


Erosion prevention will be prioritised during ground disturbing activities. All disturbed surfaces to be stabilised with polymer, rock or non-erosive groundcover as soon as practicable after exposure and prior to forecast rainfall.
Earthen bunds (CB-01) will be installed upslope of the development footprint, to divert clean water away from the site.
Any vegetation not required to be removed will remain in situ during the project. No vegetation will be removed for temporary facilities (laydown, compound etc.)
Merritts Nature Track
1420
1400
1380
Erosion and Sediment Control Plan
Map 2 of 4
Legend
Development footprint
Laydown areas
Site access tracks
Clean water flow
Dirty water flow
Rock checks (SD 5-4)
Earthen bund (CB-01)
Contours (AHD, 20 m interval)
Roads
Data Attribution
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Ref: 230204 Alpine Bobsled ESCP 20230628 \ Erosion and Sediment Control Plan Maps 2 and 3
Author: alyce.g
Date created: 04.07.2023
Datum: GDA94 / MGA zone 55
0 10 20 30 m
NGH

Erosion and Sediment Control Plan
Map 3 of 4

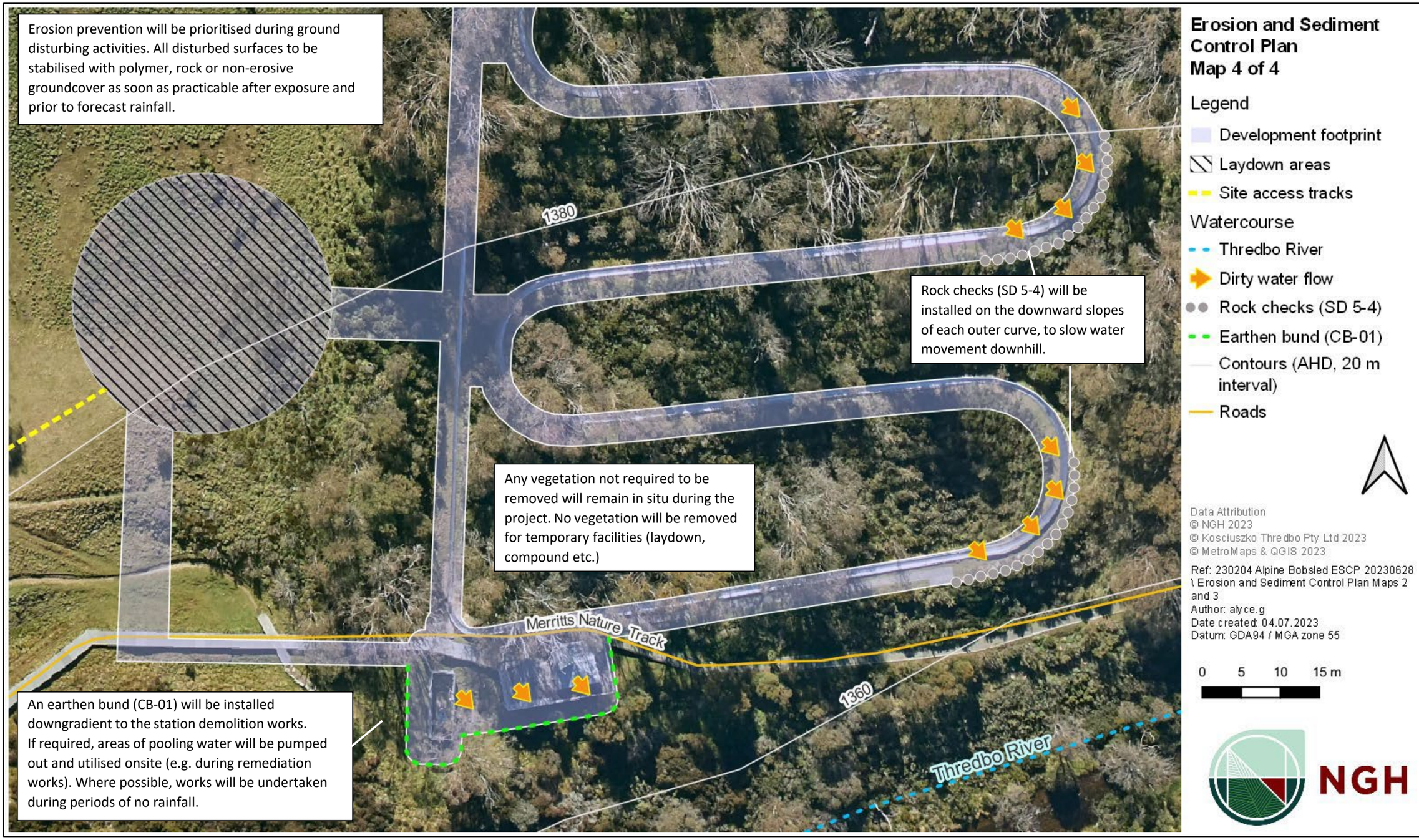
Legend

- Development footprint
- Laydown areas
- Site access tracks
- Clean water flow
- Dirty water flow
- Rock checks (SD 5-4)
- Earthen bund (CB-01)
- Contours (AHD, 20 m interval)
- Roads

Ref: 230204 Alpine Bobsled ESCP 20230628 \ Erosion and Sediment Control Plan Maps 2 and 3
Author: alyce.g
Date created: 04.07.2023
Datum: GDA94 / MGA zone 55

0 5 10 15 m

NGH


Erosion prevention will be prioritised during ground disturbing activities. All disturbed surfaces to be stabilised with polymer, rock or non-erosive groundcover as soon as practicable after exposure and prior to forecast rainfall.
1380
Rock checks (SD 5-4) will be installed on the downward slopes of each outer curve, to slow water movement downhill.
Any vegetation not required to be removed will remain in situ during the project. No vegetation will be removed for temporary facilities (laydown, compound etc.)
Merritts Nature Track
1360
Thredbo River
An earthen bund (CB-01) will be installed downgradient to the station demolition works. If required, areas of pooling water will be pumped out and utilised onsite (e.g. during remediation works). Where possible, works will be undertaken during periods of no rainfall.
Erosion and Sediment Control Plan
Map 4 of 4
Legend
Development footprint
Laydown areas
Site access tracks
Watercourse
Thredbo River
Dirty water flow
Rock checks (SD 5-4)
Earthen bund (CB-01)
Contours (AHD, 20 m interval)
Roads
Data Attribution
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Ref: 230204 Alpine Bobsled ESCP 20230628 \ Erosion and Sediment Control Plan Maps 2 and 3
Author: alyce.g
Date created: 04.07.2023
Datum: GDA94 / MGA zone 55
0 5 10 15 m
NGH

Rock check dam

Flow diversion bank

Source: Catchments & Creeks Pty Ltd, 2012

CONTROL INSTALLATION NOTES

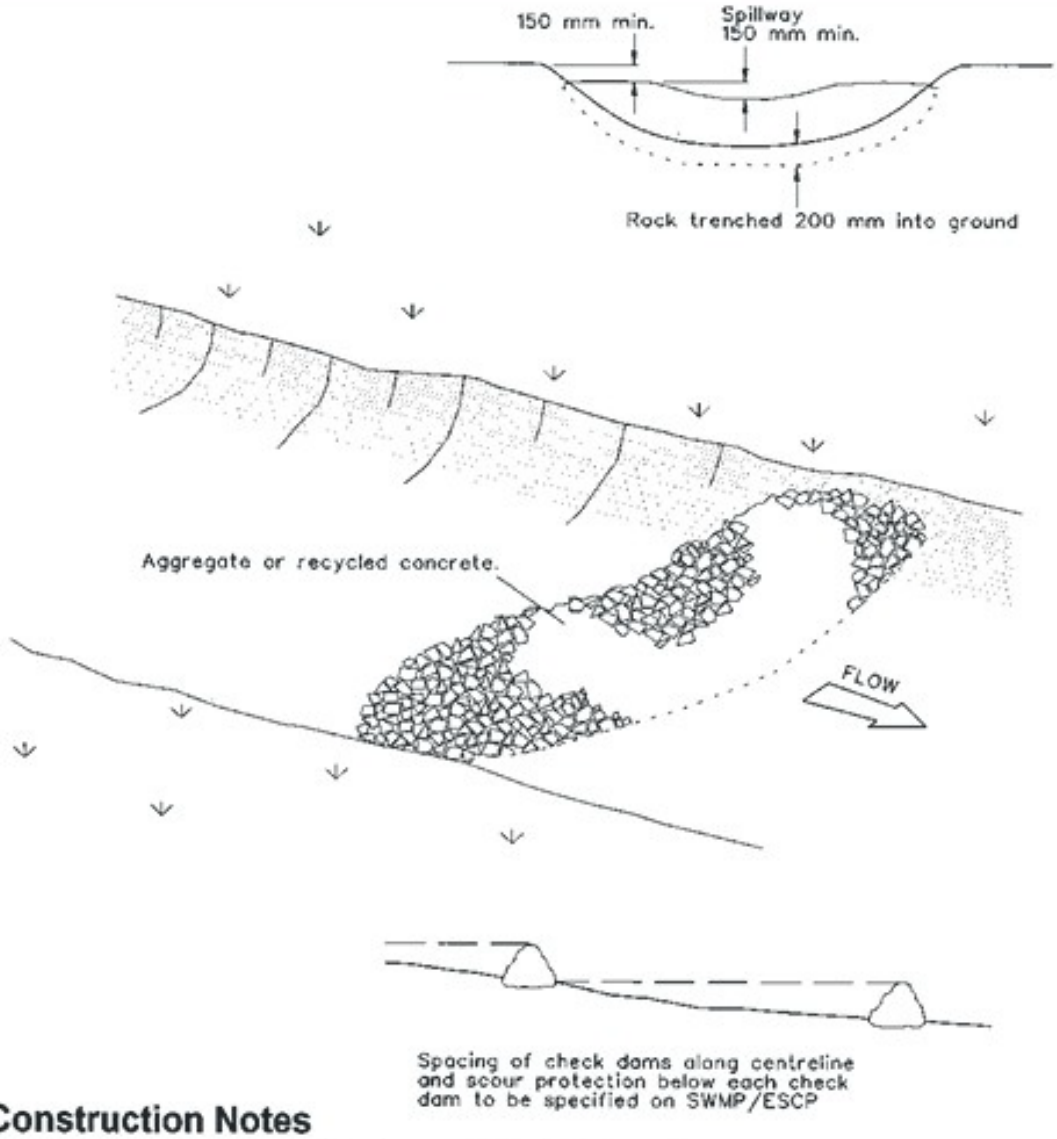
Cross Drainage and Sediment Barriers

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



Construction Notes

1. Check dams can be built with various materials, including rocks, logs, sandbags and straw bales. The maintenance program should ensure their integrity is retained, especially where constructed with straw bales. In the case of bales, this might require their replacement each two to four months.
2. Trench the check dam 200 mm into the ground across its whole width. Where rock is used, fill the trenches to at least 100 mm above the ground surface to reduce the risk of undercutting.
3. Normally, their maximum height should not exceed 600 mm above the gully floor. The centre should act as a spillway, being at least 150 mm lower than the outer edges.
4. Space the dams so the toe of the upstream dam is level with the spillway of the next downstream dam.

ROCK CHECK DAM **SD 5-4**

INSTALLATION

1. REFER TO APPROVED PLANS FOR LOCATION, EXTENT, AND CONSTRUCTION DETAILS. IF THERE ARE QUESTIONS OR PROBLEMS WITH THE LOCATION, EXTENT, OR METHOD OF INSTALLATION, CONTACT THE ENGINEER OR RESPONSIBLE ON-SITE OFFICER FOR ASSISTANCE.

2. CLEAR THE LOCATION FOR THE BERM, CLEARING ONLY THE AREA THAT IS NEEDED TO PROVIDE ACCESS FOR PERSONNEL AND EQUIPMENT.

3. REMOVE ROOTS, STUMPS, AND OTHER DEBRIS AND DISPOSE OF THEM PROPERLY.

4. FORM THE BERM FROM THE MATERIAL, AND TO THE DIMENSION SPECIFIED IN THE APPROVED PLANS.

5. IF FORMED FROM SANDBAGS, THEN ENSURE THE BAGS ARE TIGHTLY PACKED SUCH THAT WATER LEAKAGE THROUGH THE BAGS IS MINIMISED.

6. CHECK THE ALIGNMENT OF THE BERM TO ENSURE POSITIVE DRAINAGE IN THE DESIRED DIRECTION.

7. ENSURE THE BERM DISCHARGES TO A STABLE OUTLET.

8. ENSURE THE BERM DOES NOT DISCHARGE TO AN UNSTABLE FILL SLOPE.

MAINTENANCE

1. INSPECT FLOW CONTROL BERMS AT LEAST WEEKLY AND AFTER RUNOFF-PRODUCING RAINFALL.

2. INSPECT THE BERM FOR ANY SLUMPS, WHEEL TRACK DAMAGE OR LOSS OF FREEBOARD. MAKE REPAIRS AS NECESSARY.

3. CHECK THAT FILL MATERIAL OR SEDIMENT HAS NOT PARTIALLY BLOCKED THE DRAINAGE PATH UP-SLOPE OF THE EMBANKMENT. WHERE NECESSARY, REMOVE ANY DEPOSITED MATERIAL TO ALLOW FREE DRAINAGE.

4. DISPOSE OF ANY COLLECTED SEDIMENT OR FILL IN A MANNER THAT WILL NOT CREATE AN EROSION OR POLLUTION HAZARD.

5. REPAIR ANY PLACES IN THE BERM THAT ARE WEAKENED OR IN RISK OF FAILURE.

REMOVAL

1. WHEN THE SOIL DISTURBANCE ABOVE THE BANK IS FINISHED AND THE AREA IS STABILISED, THE FLOW CONTROL BERM SHOULD BE REMOVED, UNLESS IT IS TO REMAIN AS A PERMANENT DRAINAGE FEATURE.

2. DISPOSE OF ANY SEDIMENT OR EARTH IN A MANNER THAT WILL NOT CREATE AN EROSION OR POLLUTION HAZARD.
3. GRADE THE AREA AND SMOOTH IT OUT IN PREPARATION FOR STABILISATION.

4. STABILISE THE AREA BY GRASSING OR AS SPECIFIED IN THE APPROVED PLAN.

Table 1 - Recommended dimensions of flow control berms

Parameter	Earth banks	Vegetated banks	Compost berms	Sandbag berms
Height (min)	500 mm	500 mm	300 mm	N/A
Top width (min)	500 mm	500 mm	100 mm	N/A
Base width (min)	2500 mm	2500 mm	600 mm	N/A
Side slope (max)	2:1 (H:V)	2:1 (H:V)	1:1 (H:V)	N/A
Freeboard	300 mm	150 mm	100 mm	50 mm

Drawn:	Date:		
GMW	Dec-09	Flow Control Berms	CB-01

Catchments & Creeks Pty Ltd

Appendix C Unexpected Finds Procedure for contaminated soils

To prevent further disturbance, follow these measures:

- Stop works in the potentially hazardous area immediately, including excavations or drilling
- Isolate material or spill from further movement, where practicable
- Move to a designated meeting point or safe area
- Notify the Environmental Officer OR Construction Foreman OR Person in control of the workplace
- Make the area temporarily “safe”
- Use dust suppression to dampen the area for any suspected asbestos impacted soil
- Cover the unexpected finds if safe to do so (wearing PPE) and covering using geofabric or plastic
- Delineate an exclusion zone around the area using fencing and appropriate barriers and signage. The exclusion zone should be at least a 10-metre buffer from the unexpected find.

Examples of signage include:

Inspection and investigation

- Assess the potential risk to human health and the environment posed by the unexpected find and assess if evacuation or emergency services need to be contacted.
- A suitably experienced environmental consultant should undertake an assessment of any unexpected finds and determine any further actions required e.g., sampling and/or validation of material, potential for remediation and/or management.
- Construction Foreman to arrange inspection by the Environmental Officer and external environmental consultant to assess the unexpected find and provide advice as follows:
  - Preliminary assessment of the find and need for immediate management controls (if any)
  - What further assessment and / or remediation works are required and how such works are to be undertaken in accordance with contaminated site regulations and guidelines and management procedures
  - Preparation of a Remedial Action Plan for large scale contamination or specification for smaller or minor volumes of material (if necessary)
  - Remediation works required (where applicable)
  - Validation works required following remediation works (if applicable).

Remediation Action Plan

- If the Environmental Officer and external environmental consultant determine there is a risk to human and environmental health, remediation and validation is required. The site validation report must be forwarded to the EPA for review and endorsement prior to occupancy of the site.

- If required by the Environmental Officer / external environmental consultant, a Remedial Action Plan (RAP) will be prepared and implemented in accordance with the following endorsed guidelines as a minimum:
  - National Environmental Protection Measure, Assessment of Contaminated Sites, 2013 (NEPM 2013)
  - NSW EPA Consultants Reporting on Contaminated Land – Contaminated Land Guidelines 2020 (NSW EPA 2020)
  - NSW EPA Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme 2017 (3rd Edition) (NSW EPA 2017)
  - NSW EPA Duty to Report Contamination under the Contaminated Land Management Act 1997 (CLM Act 1997).
- Works are not to recommence in the affected area until appropriate advice has been obtained from the environmental consultant or suitably qualified person and they have provided clearance.
- Intrusive works (excavation and drilling) will not recommence until the extent of the contamination has been assessed and, if necessary, a RAP has been prepared and the site has been validated.

Validation

- Recommencement of development activities in an area requiring remediation and validation cannot take place until the EPA has reviewed and endorsed the consultant's validation report into the suitability if the area for its permitted uses.
- If it is deemed safe to do so, the environmental consultant will provide clearance for works to proceed in the affected area. If it is not considered to be safe, works must remain on hold until appropriate assessment, remediation and / or validation measures have been actioned.
- The material will be separated from other materials and stockpiled for assessment. Sampling of the materials will be undertaken in accordance with the relevant guidelines or professional judgement where justification is applied. Samples will be analysed for a range of analytes as required.
- Laboratory results will be assessed to determine the appropriate waste classification of the material in accordance with the NSW EPA Waste Classification Guidelines – Part 1: Classification of Waste (NSW EPA 2014).
- Depending on the classification, material already excavated and stockpiled will be transported to an appropriate waste facility that is licensed to accept waste of the relevant classification or beneficially reused if appropriate.
- A waste tracking system recording the volume of material, waste classification status, removal documentation and truck and receiving landfill facility details must be recorded to ensure all waste is accounted for and disposed of appropriately in accordance with NSW EPA requirements.
- Any unexpected finds must be documented in the validation report to be prepared at the completion of construction, if required. For 'ad-hoc' and minor volumes of materials identified (i.e., <10m3) records must be kept on file.

Keep a record of the unexpected find. Any validation reports or remedial works will also act as a record of works undertaken to minimise risks to human health and the environment. The record must include exact location / GPS coordinates of the find.

Appendix D Environmental Schedules

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.

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

……..

……..

……..

……..

Disposal

Detail disposal method/plans and location

……

……

……

Recommended follow up and preventative actions

Detail recommendations

……

……

……

Persons present at Incident

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

……..

……..

Declaration

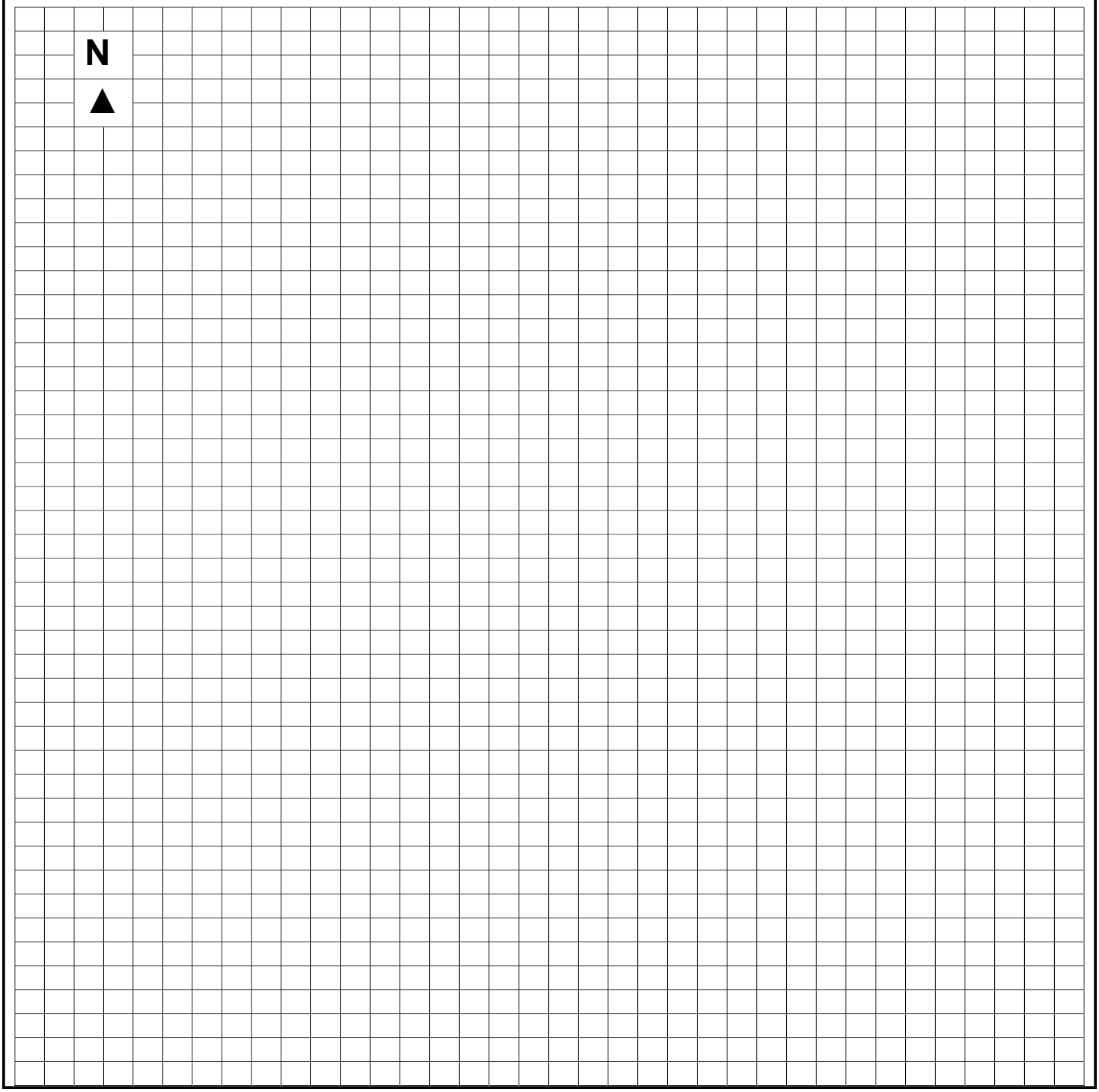
The information and answers given above are true in every detail and no information has been withheld.

Departmental Supervisors Name	
Departmental Supervisors signature	*Date*

Departmental Managers Name	
Departmental Managers signature	*Date*

Environmental Incident Reporting Form

Diagram: (do not scale)



Created By: Paul Corcoran
Created Date: 24 Mar 2009
Review Date: 24 Mar 2017
Reviewed Date: 7th January 2020, by E Diver

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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