Snowy 2.0 Rehabilitation Management Plan – Stage 1



Version: S2-SHL-ENV-PLN-0010 - Rev 3.3

Date: 16 May 2024

Department of Planning, Housing & Infrastructure

Our ref: SSI-9687-PA-187

Ben Croome
Senior Environmental Advisor
Snowy Hydro Limited
via email

24/10/2024

Subject: Snowy 2.0 - Main Works – Rehabilitation Management Plan

Dear Mr Croome

I refer to your submission requesting review and approval of the Rehabilitation Management Plan for Snowy 2.0 Main Works (SSI-9687).

I note the Rehabilitaion Management Plan:

- has been prepared in consultation with NPWS, BCD, EPA and TfNSW; and
- contains the information required by the conditions of approval.

Accordingly, as nominee of the Planning Secretary, I approve the Rehabilitation Management Plan (Rev 3.3, dated 16 May 2024) in accordance with Schedule 3, Condition 10 of the Infrastructure Approval for Snowy 2.0 - Main Works (SSI-9687).

The Department notes that Appendix K to Appendix P are subplans for site specific areas which will be individually prepared, reviewed, and approved separate to this Rehabilitation Management Plan document.

Please ensure you make the document publicly available on the project website at the earliest convenience.

If you wish to discuss the matter further, please contact Wayne Jones on (02) 6575 3406.

Yours sincerely

Nicole Brewer
Director
Energy Assessments

As nominee of the Planning Secretary

Certificate of Approval

Title: Snowy 2.0 Main works rehabilitation management plan

Version: S2-SHL-ENV-PLN-0010 - Rev 3.3

Date of issue: 16 May 2024

Approval Record

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Document Revision Table

Rev.	Date	Description of modifications
630.30128.00000 -R01-v1.0	21 April 2022	Draft version
630.30128.00000 -R01-v2.0	23 November 2022	Updated with comments from NPWS
630.30128.00000 -R01-v3.0	23 April 2023	Updated with comments from NPWS
Rev AV 3.1	17 July 2023	Reformatted into SHL template, responses to NPWS /BCD comments tracked.
V 3.1	21 August 2023	Resolve comments on previous versions
V3.2	5 October 2023	Resolve comments from revision 3.1 primarily section 8 monitoring and reporting
V3.3	16 May 2024	Update of TARP responses to include bogs and fens and address update timing, addition of Acronyms and definitions

Acronyms and Definitions

Acronym	Definition
AfL	Agreement for lease
AHD	Australian Height Datum
Approval	Infrastructure Approval for Snowy 2.0 Main Works issued under Section 5.19 of the *Environmental Planning and Assessment Act 1979* (Dated: 20th May 2020) (SSI 9687)
ALARP	As low as reasonably practicable
APZ	Asset Protection Zone
BAM	Biodiversity Assessment Method
BC Act	Biodiversity Conversation Act
BMP	Biodiversity Management Plan
Completion criteria	Agreed standard or level of performance that indicate the success of rehabilitation and enable an operator to determine when its liability for an area will cease
Contractor	Reference to contractor in this Rehabilitation Management Plan refers to any organisation including sub-contractors conducting work for Snowy Hydro
Construction Envelope	The envelope within which the disturbance area of the development may be located.
CSSI	Critical State significant infrastructure
DAWE	The Commonwealth Department of Agriculture, Water and the Environment which is responsible for administering the Environment Protection and Biodiversity Conservation Act 1999.
DBH	Diameter at Breast Height
DEC	Department of Environment and Conservation
Development	The development of the Exploratory Works and Main Works as modified by the conditions of this approval
Disturbance area	The area within the construction envelope where the development may be carried out.
Domain	Land management units characterised by similar final land use objectives
DPHI or Department	Department of Planning, Housing and Infrastructure
DPI Fisheries	Department of Primary Industries – Fisheries
Drone	Type of unmanned aerial vehicle
ECVT	Emergency egress Cable Ventilation Tunnel
EIS	Snowy 2.0 Main Works - Environmental Impact Statement
EMS	Environmental Management Strategy
EP&A Act	Environmental Planning and Assessment Act 1979
EPA	Environment Protection Authority
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EPL	Environment Protection Licence
ESCP	Erosion and Sediment Control Plan
Exploratory Works	The development of an exploratory tunnel and associated infrastructure described in the Environmental Impact Statement for the Snowy 2.0 Exploratory Works (CSSI 9208) dated July 2018,
FSL	Full Supply Level
FGJV	Future Generation Joint Venture
GIS	Geographic Information Systems
HDD	Horizontal Directional Drilling
Hydromulching	A process involving spraying a slurry of water, cellulosic mulch , seed, and a binder . tackifier on soil to provide cover and aid in revegetation
KNP	Kosciuszko National Park
LEM	Landform Evolution Modelling
LGA	Local Government Area
LTRS	Long Term Road Strategy

Main Works	The development of an underground power station and associated infrastructure described in the Environmental Impact Statement for the Snowy 2.0 Main Works (CSSI 9687) dated September 2019,
Main Works EIS	Snowy 2.0 Main Works - Environmental Impact Statement
MAT	Main Access Tunnel
MOL	Minimum Operating Level
NATA	National Association of Testing Authorities
NPWS	National Parks and Wildlife Service
NSW	New South Wales
OEH	Office of Environment and Heritage
PCT	Plant Community Type
PoM	KNP Plan of Management
Planning Secretary	Planning Secretary under the EP&A Act, or nominee
RMP	Rehabilitation Management Plan
RQAP	Rehabilitation Quality Assurance Process
SHL	Snowy Hydro Limited
Snowy 2.0	A pumped hydro-electric expansion of the Snowy Scheme that will link the two existing reservoirs of Tantangara and Talbingo through underground tunnels, and include a new underground power station with pumping capabilities
Snowy Hydro	Snowy Hydro Limited
SSI	State significant infrastructure
SMP	Spoil Management Plan
SPAs	Seed Production Areas
TARP	Trigger Action Response Plan
TEC	Threatened Ecological Community
Tubestock	Young plants grown to a point ready for planting in small pots
WAL	Works Access Licence
UAV	Unmanned Aerial Vehicle
VIMP	Visual Impact Management Plan

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1. Introduction

1.1. Background

Snowy Hydro Limited (Snowy Hydro) is constructing a pumped hydro-electric expansion of the Snowy Mountains Hydro-electric Scheme (Snowy Scheme), called Snowy 2.0. .

This Rehabilitation Management Plan (RMP, the Plan) has been prepared to describe the proposed rehabilitation activities associated with the construction and operation of the Snowy 2.0 Main Works Project (the project). Upon finalisation this plan supersedes the Exploratory Works RMP (FGJV, 2020).

The RMP has been prepared to satisfy the relevant requirements for a Rehabilitation Management Plan in accordance with Schedule 3 Condition 10 of Development Consent CSSI-9687 and Conditions 24 and 25 of EPBC Approval 2018/8322.

The structure of this Plan has been guided by the NSW Department of Regional NSW Mining Exploration and Geoscience – Resources Regulator's (RR) Form and Way: Rehabilitation Management Plan for Large Mines (RR, 2021) and associated guidelines (refer Section 1.3.6). Whilst it is noted that these guidelines have been developed by the RR for mining operations, they are considered applicable to a project of the extractive nature, scale, and significance of Snowy 2.0.

This RMP has been prepared to provide the overarching rehabilitation strategy and methodologies to be implemented across the entire Main Works project. As per Schedule 4 Condition 3 of CSSI-9687, this RMP will be prepared and updated on a staged basis to include rehabilitation requirements as the project progresses and additional areas become available for rehabilitation. Staging is also required to ensure consistency with the Recreation management plan, Long Term Road Strategy and the Spoil management plan. As per Schedule 3 condition 10(g), site specific rehabilitation management plans will be prepared. Table 1.1 details the site specific rehabilitation management plans by location and the appropriate staging.

Table 1-1 RMP - Site specific plan staging

Area	Stage	Staging comments	Location in the RMP
Talbingo Reservoir	Stage 2	Updated Plan to be provided following spoil management plan , Long term Road Strategy and recreation management plan approval,	Appendix L
Lobs Hole	Stage 2	Plan to be provided following Spoil Management plan, recreation management plan and long term roads strategy approval	Appendix M
Marica	Stage 1	Plan included in this version	Appendix N
Plateau	Stage 1	Plan included in this version	Appendix K
Tantangara	Stage 2	Plan to be provided following spoil management ,recreation management plan and long term roads strategy approval	Appendix O
Rock Forest	Stage 2	Plan to be included after finalisation of landform design in spoil management plan	Appendix P

Additional site-specific management plans will be prepared for other areas as the required details for completion become available. Site specific rehabilitation management plans will be appended to this RMP as they are

completed. Consultation will be conducted for each of the site-specific plans, due to incomplete works or potential design changes.

1.2. Project Overview

1.2.1. History of Operations

The Snowy Scheme was designed to collect and store water, divert it through trans-mountain tunnels and power stations and then release it west of the Snowy Mountains into the catchments of the Murray and Murrumbidgee rivers. This long-term water regulation was designed to counteract the effects of severe drought sequences and increase agricultural productivity in the Murray Darling Basin (Snowy Hydro 2017). While the diversion of water for irrigation was always part of the original vision of the Snowy Scheme, the engineers were well aware of the potential for the generation of hydroelectricity.

The Snowy Scheme plays a critical role in the National Electricity Market (NEM) today and has been modernised and well maintained over the decades since its construction. Its quick-start dispatchable generation provides energy security and reliability across the NEM in times of high energy demand. It is expected that as the economy continues to decarbonise, the demand for the energy products that Snowy Hydro produce today (such as energy storage, capacity, firming and ancillary services) will increase.

The Snowy Scheme operates predominantly within the Kosciuszko National Park (KNP) under a lease (the Snowy Park Lease) from the NSW Minister for the Environment. The Snowy Scheme consists of:

- sixteen major reservoirs with a total storage capacity of 7,000 gigalitres (GL);
- nine power stations;
- one pumping station and one pump storage capability at Tumut 3 power station; and
- 145 km of tunnels and pipelines and 80 km of aqueducts.

The Snowy Scheme has 4,100 megawatts (MW) of existing hydro-electric generating capacity and produces 4,000 (gigawatt hours (GWh) on average each year for households and businesses across the NEM. The Snowy Scheme comprises two major developments: the northern Snowy-Tumut Development and the southern Snowy-Murray Development.

The existing Snowy Scheme operates within the KNP in accordance with the NSW Snowy Hydro Corporatisation Act 1997 (SHC Act). Part 6, Section 37(2) of the SHC Act entitles Snowy Hydro to the grant of a lease, licence, easement or right of way over KNP, for the purposes of the existing Snowy Scheme development. The Snowy Park Lease was granted to Snowy Hydro by the NSW Minister for Environment in 2002 and has a term of 75 years. Snowy Hydro operates the Snowy Scheme under a stringent water licence administered by the NSW Department of Industry - Lands & Water (DoI Water) that allows for water collection, storage, diversion and release in order to generate electricity.

Tantangara and Talbingo reservoirs are water storages within the northern Snowy-Tumut Development of the Snowy Scheme. Snowy Hydro controls the water levels within these reservoirs. The maximum and minimum water levels for reservoirs within the Snowy Scheme are stated in the Snowy Water Licence and referred to as Full Supply Level (FSL) and Minimum Operating Level (MOL), respectively.

1.2.2. Snowy 2.0

Snowy 2.0 is a pumped hydro-electric project that will link the existing Tantangara and Talbingo reservoirs through a series of new underground tunnels and a hydro-electric power station. Most of the project's facilities will be built underground, with approximately 27 kilometres of concrete-lined tunnels constructed to link the two reservoirs and a further 20 kilometres of tunnels required to support the facility. Intake and outlet structures will be built at both Tantangara and Talbingo Reservoirs.

Snowy 2.0 will increase the generation capacity of the Snowy Scheme by an additional 2,000 MW, and at full capacity will provide approximately 350,000 MWh of large-scale energy storage to the NEM. This will be enough to ensure the stability and reliability of the NEM, even during prolonged periods of adverse weather conditions.

The pumped hydro-electric scheme elements of Snowy 2.0 Main Works are mostly underground between the southern ends of Tantangara and Talbingo reservoirs, a straight-line distance of 27 km. Surface works will also occur at locations on and between the two reservoirs. Key locations for surface works include:

- **Tantangara Reservoir -** at an FSL of about 1,229 metres (m) to Australian Height Datum (AHD), Tantangara Reservoir will be the upper reservoir for Snowy 2.0 and includes the headrace tunnel and

intake structure. The site will also be used for a temporary construction compound, accommodation camp and other temporary ancillary activities as well as an emplacement area for excavated rock and surplus cut materials;

- **Marica** - this site will be used primarily for construction including construction of vertical shafts to the underground power station (ventilation shaft) and headrace tunnel (surge shaft), and a small accommodation camp;
- **Plateau** - the area (predominantly within an existing track) will be used for construction and operation of buried communications and power supply cables to operational infrastructure between Talbingo and Tantangara reservoirs. At depth, the headrace tunnel will be excavated across the plateau;
- **Lobs Hole** - this site will be used primarily for construction but will also become the main entrance to the power station during operation. Lobs Hole will provide access to the Exploratory Works tunnel, which will be refitted to become the main access tunnel (MAT), as well as the location of the emergency egress, cable and ventilation tunnel (ECVT), portal, associated services and accommodation camp;
- **Talbingo Reservoir** - at an FSL of about 546 m AHD, Talbingo Reservoir will be the lower reservoir for Snowy 2.0 and will include the tailrace tunnel and water intake structure. The site will also be used for temporary construction compounds and other temporary ancillary activities as well as an emplacement area for excavated rock and surplus cut materials; and
- **Rock Forest** – this area comprises private property under lease to Snowy Hydro for use as a logistics site during construction.

Supporting infrastructure will include establishing or upgrading access tracks and roads and electricity connections to construction sites as well as GIP and water bore monitoring sites.

Most of the proposed pumped hydro-electric and temporary construction elements and most of the supporting infrastructure for Snowy 2.0 Main Works are located within the boundaries of KNP. The maximum disturbance footprint for the project during construction is about 1,680 ha which is approximately 0.25% of the total KNP area. Some of the supporting infrastructure and construction sites and activities (including sections of road upgrade, power and communications infrastructure) extends beyond the national park boundaries. These sections of infrastructure are primarily located to the east and south of Tantangara Reservoir.

1.3. Development Consents, Leases and Licences and EPBC Approval

1.3.1. Development Approval CSSI 9687

Snowy 2.0 is classified as Critical State Significant Infrastructure (CSSI) under Part 5 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). It is defined as CSSI in clause 9 of Schedule 5 of the *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP) on the basis that it is critical to the State for environmental, economic or social reasons.

Following extensive environmental assessment and consultation, Infrastructure Approval CSSI 9687 was granted by the Minister for Planning and Public Spaces on 20 May 2020. Under Section 5.19 of the NSW *Environmental Planning and Assessment Act 1979*, CSSI 9687 is subject to consent conditions required to:

- Prevent, minimise and/or offset adverse environmental impacts.
- Set standards and performance measures for acceptable environmental performance.
- Require regular monitoring and reporting.
- Provide for the ongoing environmental management of the development.

To comply with the Schedule 3 Condition 10 of CSSI 9687, an RMP must be prepared by Snowy Hydro and approved by the Planning Secretary of the NSW Department of Planning, Industry and Environment (DPIE). The requirements Schedule 3 Condition 10 of CSSI 9687 have been summarised in Table 1-1 along with where each condition has been addressed within this document.

Table 1-2. **CSSI 9687 Requirements for the Preparation of an RMP**

Condition	Requirement	Where addressed
Infrastructure Approval for Snowy 2.0 Main Works (CSSI 9687)		
Condition 10	Within 18 months of the commencement of construction, the Proponent must prepare a Rehabilitation Management Plan for the development to the satisfaction of the Planning Secretary. This plan must:	This document.
Condition 10 (a)	Be prepared by a suitably qualified and experienced person in consultation with the NPWS, BCD, EPA, NSW DPI and TfNSW;	Section 1.5 Section 1.7
Condition 10 (b)	Be consistent with the Spoil Management Plan, Recreation Management Plan, Long-Term Road Strategy and Visual Mitigation Management Plan;	Section 1.6
Condition 10 (c)	Include a conceptual plan for the rehabilitation of the whole site	This document Section 5 Section 6
Condition 10 (d)	Include the detailed program for the rehabilitation of roads in the Kosciuszko National Park in accordance with the approved Long-Term Road Strategy;	Section 6.2 It is noted that the Long-Term Road Strategy (LTRS) is currently being prepared. On completion of the LTRS, this RMP will be reviewed and revised where required
Condition 10 (e)	Include a topsoil balance for the site, which includes a strategy for: - maximising the reuse of topsoil on site (provided it is suitable for reuse); - using other suitable growth media; and - importing additional topsoil to the site (if necessary); Monitor, treat, weeds in stockpile topsoil	Section 6.3.1.4 Appendix H
Condition 10 (f)	Include a native seed collection and propagation program in accordance with Florabank (www.florabank.org.au) and/or NPWS guidelines for the site, which includes a strategy for: - maximising the collection and use of native seed resources from the site prior to disturbance; - collecting seed from the surrounding area, including other parts of the Kosciuszko National Park (with the approval of the NPWS); and prioritising the use of local sources of seed for the ecological rehabilitation of the site;	Section 6.3.1.1 See appendix G Snowy 2.0 Rehabilitation Species List

Condition	Requirement	Where addressed
Condition 10 (g)	Include detailed plans for the rehabilitation of the disturbance area at each of the following sites, describing the measures that would be implemented to comply with the rehabilitation objectives in Table 3 or 5: - Talbingo Reservoir; - Lobs Hole; - Marica; - Plateau; - Tantangara Reservoir; and Rock Forest;	Section 1.1.2 Section 5 Site specific RMPs in Appendices K to P (to be included as they are progressively developed).Plans will be developed in order of priority and availability of long term land use confirmation
Condition 10 (h)	Include a detailed ecological rehabilitation management plan for the development that: - provides an overarching description of the proposed ecological rehabilitation works, identifying the: - plant community types to be established; and - area of land to be established for each plant community type; - provides maps showing the proposed location of each plant community type; describes the detailed measures that would be implemented to comply with the ecological rehabilitation objectives in Table 4;	Section 5 Section 6.3. Additional detail will be included as required in the Site Specific RMPs (Appendices K to P). Appendix J PCT Target Species List
Condition 10 (i)	Identify the key risks to the successful completion of the rehabilitation and describe the contingency measures that would be implemented to address these risks;	Section 3 Section 10
Condition 10 (j)	Include detailed completion criteria and performance indicators for the rehabilitation of the development (having regard) to the criteria and indicators in Table 4, including criteria for triggering remedial action (if necessary); and	Section 4
Condition 10 (k)	Include a program to monitor and publicly report on: - the rehabilitation of the site; - the implementation of the each of the detailed plans, including the effectiveness of the proposed mitigation and contingency measures; and progress against the detailed completion criteria and performance indicators.	Section 8

1.3.2. EPBC Act Approval 2018/8322

In addition to the State approval, a referral (EPBC 2018/8322) was prepared and lodged with the Commonwealth Department of Agriculture, Water and the Environment (DAWE) under the *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act). The Commonwealth Minister's delegate determined on 5 December 2018 that Snowy 2.0 Main Works is a "controlled action" under the EPBC Act. The EPBC Act referral decision determined that the project will be assessed by accredited assessment under Part 5, Division 5.2 of the NSW Environmental Planning and Assessment Act 1979. The referral was approved by DAWE on 29 June 2020.

Commonwealth approval under section 130(1), 133(1) and 143(1A) of the EPBC Act specified the NSW consent conditions must be adhered to and was subject to the following consent conditions:

- ***Condition 24*** *- Minimise impacts to the environment and comply with conditions 4-7 of the NSW approval relating to spoil management and site rehabilitation.*
- ***Condition 25*** *- The Rehabilitation Management Plan required by condition 10 of the NSW approval must include provisions to make monitoring data (excluding sensitive ecological data) available as part of the monitoring, evaluation and reporting program required under 10k of the NSW approval.*

This RMP has been prepared to ensure the Commonwealth and NSW consent conditions are adhered to and there is a defined plan to achieve the objectives of these conditions.

1.3.3. Revised Environmental Management Measures

Environmental safeguards and management measures are included in the Main Works EIS in Section 6.3.5. During preparation of the Submissions Report, revised environmental management measures were developed and are included in Appendix C of the Submissions Report. The environmental management measures relevant to rehabilitation are listed in Table 1-2.

Table 1-3 Revised Environmental Management Measures

Impact	Reference	Environmental Management Measures	Timing	Implementation Responsibility	Section
Rehabilitation	REHAB01	A Rehabilitation Management Plan will be prepared for the new landforms at Tantangara Reservoir, Lobs Hole and Talbingo Reservoir. The plan will: - include a detailed plan for rehabilitation of the site; - include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the sites, and triggering any remedial action (if necessary); - describe the measures that would be implemented to: – comply with the rehabilitation objectives and associated performance and completion criteria; – progressively rehabilitate the site; – include a program to monitor and report the effectiveness of these measures.	Construction	Contractor	This RMP
Creation of new landforms	REHAB02	New landforms will: - Be safe, stable and non-polluting - Maximise surface drainage to the natural environment	Construction	Contractor	Section 6.3.2
Alpine humus soils and peat bogs/fens	SOIL01	Mitigations will be included in the Rehabilitation Management Plan to minimise impacts to Alpine humus soils and peat bogs/fens.	Construction	Contractor	See Section 6.3.6.1 for additional rehabilitation specific measures

Impact	Reference	Environmental Management Measures	Timing	Implementation Responsibility	Section
Loss of soil resource	SOIL02	Development and implementation of soil management measures to assist in the preservation of the quantity and quality of the soil resource including: - An inventory of soils to be stripped, including depths and volumes; and Topsoil management measures including stripping and stockpiling procedures	Construction and operation	Contractor	Section 6.3.1.4 Appendix H
Soil capability	SOIL04	The Rehabilitation Management Plan (refer to REHAB01) will be implemented and will include measures to minimise: - loss of soil; - loss of organic matter and nutrient decline; - soil structural decline; and - compaction. Regular rehabilitation monitoring will be undertaken to identify any defects, such as slumping, erosion or poor vegetation establishment. Identified defects will be rectified.	Construction and operation	Contractor	Section 6.3

Impact	Reference	Environmental Management Measures	Timing	Implementation Responsibility	Section
Visual and landscape impacts resulting from permanent placement of excavated material	LCV01	The placement of excavated material in Talbingo, Lobs Hole and Tantangara Reservoir will be rehabilitated as guided by the this document and in consultation with NPWS.	Detailed design	Contractor Snowy Hydro	Section 2.2.2 Section 5 of S2-FGJV-ENV-PLN-0259 – H | Main Works – Visual Impact Management Plan (Draft) Site specific plans
Visual and landscape impacts resulting from permanent infrastructure	LCV02	Detailed design is to consider: - materials and finishes that complement or where possible recede into the surrounding landscape; - the use of vegetation to screen project elements and re- vegetation of disturbed areas in line with the Rehabilitation Strategy; and lighting to avoid spill that might affect sensitive areas or receivers.	Detailed design	Contractor	Section 2.2.2 Section 5 of S2-FGJV-ENV-PLN-0259 – H | Main Works – Visual Impact Management Plan (Draft) Site specific plans

1.3.4. Works Access Licence & Construction Lease

Snowy Hydro has a Deed of Agreement for Lease (AfL) with NPWS for Snowy 2.0, which is the governing agreement for Snowy 2.0 tenure within the KNP. Tenure arrangements for Snowy 2.0 for Main Works construction include one Main Works Construction Lease (CL) for all areas where Snowy Hydro has exclusive access for during construction of Snowy 2.0, and one Works Access Licence (WAL) for all areas where Snowy Hydro has shared access for during construction of Snowy 2.0. The Main Works CL and WAL are varied as there are changes to the project including addition of new areas or decommissioning and rehabilitation of new areas. Prior to operation of Snowy 2.0, these tenure arrangements will be modified to reflect access during operations.

The AfL includes requirements around the completion of the works covered under the CL and WAL and the standard for remediation. Clause 20.1 requires that upon completion of particular works, Snowy Hydro (the Tenant) must obtain an updated environmental condition report in respect of the land that:

(a) describes the nature and extent of any Contamination on the relevant Land and the impact of the Works on the Land;
(b) describes the investigation undertaken to identify the nature and extent of the Contamination;
(c) sets out the recommendations to achieve the standard of remediation required by clause 20.4;
(d) is addressed to and can be relied upon by both the Landlord and the Tenant; and
(e) any other environmental reports that the Landlord considers, acting reasonably, may be relevant in determining the extent of remediation required.

As can be seen above, the focus of AfL Clause 20.1 is on addressing any contamination impacts on the land subject to the Tenant's activities. This aspect is not dealt with by this RMP and will be dealt with separately under the AfL.

Potential contamination risks resulting from geochemical aspects of construction spoil is addressed under CSSI 9687 Schedule 3 SPOIL MANAGEMENT Conditions 4, 5, 6, 7 and 8.

As per AfL clause 20.4, Snowy Hydro must Remediate and restore all areas of the Land accessed by the Tenant for the purposes of the Works so that:

(a) the nature and extent of any Contamination on the relevant Land is no greater than the nature and extent of the Contamination that was detailed in the relevant EIS reports in respect to the relevant Land on or prior to the commencement of any Works on that Land;
(b) all recommendations outlined in the report under clause 20.1 that are required to Remediate and restore all areas of the Land accessed by the Tenant for the purpose of the Works, are implemented to the satisfaction of the Landlord (acting reasonably); and
(c) each of those areas accessed by the Tenant are, on completion of the Remediation and restoration works, to a standard equivalent to the assessment established under the Biodiversity Assessment Methodology report.

As can be seen above, the focus of AfL Clause 20.4 requires the remediation and restoration of land accessed by the Tenant, however Clause 20.4 a) refers to contaminated land and levels of contamination, which are not addressed by this RMP. Similarly AfL Clause 20.4 b) refers to recommendations of the report to be prepared in Clause 20.1, which is also focussed on addressing contamination, which is not addressed by this RMP. Clause 20.4 c) requires the standard of remediation and restoration to be to a standard equivalent to the assessment established under the BAM report. This requirement is addressed by rehabilitation objectives and completion criteria set out in Section 4 of this RMP.

1.3.5. Environment Protection Licence 21266

Snowy 2.0 is regulated by Environment Protection Licence (EPL) 21266 issued under the *Protection of the Environment Operations Act 1997* (POEO Act). EPL 21266 allows for the generation of electrical power otherwise than from coal, diesel or gas. EPL 21266 applies to all ancillary activities carried out on the site including:

- Chemical Storage;

- Concrete Batching;
- Extractive Activities;
- Process Water Treatment;
- Road Construction and Maintenance; and
- Sewage Treatment.

EPL 21266 nominates required environmental monitoring and concentration limits for surface and groundwater quality, which apply during construction and up until completion of rehabilitation. EPL 21266 is renewed annually on 9 May.

1.3.6. KNP Plan of Management

The KNP Plan of Management (PoM) (DEC, 2006) provides a framework to guide the long-term management of the broad range of values contained in the KNP. It contains a suite of actions to be undertaken by the National Parks and Wildlife Service (NPWS) and other organisations to protect and conserve the values of the park.

Various references are made to the Snowy Scheme in the PoM including within the Park Zoning provisions. The Park Zoning covers the whole of the KNP and is intended to:

- protect the values of the park, as set out in the PoM under the headings of Natural Values, Cultural Values and Recreational Values;
- optimise opportunities for a wide range of recreational activities and visitor experiences; and
- minimise conflict between participants in different recreational activities, and between visitors, management operations and other authorised uses.

The KNP PoM was consulted and reviewed in the preparation of the Main Works EIS (EMM, 2018a) and the design of the project. As outlined in the EIS Section 2.3.2, the challenges for the design team included the need to develop solutions that balance the need for ensuring a safe working environment for the construction of Snowy 2.0 Main Works, including the safe movement of plant, equipment, materials and personnel across the sites, with the need to preserve and protect the values of the KNP and the environmental constraints of the location. Throughout the design process, the objective was to identify and avoid sensitive locations, to minimise the construction footprint and maintain as much of the existing natural environment as is reasonable and feasible.

1.3.7. Policies and Guidelines

In addition to the regulatory requirements identified above, this RMP has been prepared with consideration to the following legislation, guidelines and standards:

- *National Parks and Wildlife Act 1974*
- *Soil Conservation Act 1938*
- *Protection of the Environment Operations Act 1997*
- *Native Vegetation Act 2003*
- *Biodiversity Conservation Act 2017*
- *Australian Alps Rehabilitation Manual* (NSW DECC for NPWS, 2007);
- *Rehabilitation Guidelines for the Resort Areas of Kosciuszko National Park* (Good, R. [Australian Alps Liaison Committee], 2006);
- *Kosciuszko National Park Plan of Management* (NPWS, 2006)*;*
- *Managing Urban Stormwater – Soils and Construction, Volume 1, 4th edition* (Landcom, 2004);
- *Managing Urban Stormwater – Soils and Construction, Volume 2A Installation of Services* (DECC, 2008a)*;*
- *Managing Urban Stormwater – Soils and Construction, Volume 2C Unsealed Roads* (DECC, 2008b)*;*
- *Global Acid Rock Drainage Guide* (INAP, 2009)*;*
- *Form and way: Rehabilitation Management Plan (large mines)* (RR, 2021)*;*
- *Form and way: Rehabilitation objectives, rehabilitation completion criteria and final landform and rehabilitation plan for large mines* (RR, 2021)*;*
- *Guideline: Rehabilitation risk assessment* (RR, 2021); and
- *Guideline: Rehabilitation objectives and rehabilitation completion criteria* (RR, 2021).

1.4. Land Ownership and Land Use

1.4.1. Current Land Use and Land Ownership

The overall Snowy 2.0 project is within both the Snowy Valleys and Snowy Monaro Regional local government areas (LGAs).

Most of the project area is located within the KNP with the predominant land use being a conservation area. Within the project area, KNP is characterised by two key zones:

- upper slopes and inverted treelines in the west of the project area (referred to as the 'ravine') and
- associated subalpine treeless flats and valleys in the east of the project area (referred to as the 'plateau').

The project area is interspersed with built infrastructure including recreational sites and facilities, main roads as well as unsealed access tracks, hiking trails, farmland, electricity infrastructure, and infrastructure associated with the Snowy Scheme.

Lobs Hole is no longer accessible to the public during construction. The area was previously used as a remote campground (known as Ravine campground) within KNP and provides space for recreational activities including camping, fishing, and 4WD. Following completion of construction non,-operational areas will again be accessible to the public at the discretion of NPWS.

Main Works construction is also being undertaken at the Tantangara and Talbingo Reservoirs, previously popular boating, camping and fishing destinations. The Tantangara and Talbingo reservoirs cover areas of 19.4 square kilometres (km^2) and 21.2 km^2 respectively. Major watercourses in the project area include the Yarrangobilly, Eucumbene and Murrumbidgee rivers and some of their tributaries (such as Nungar, Gooandra and Tantangara creeks).

The only elements of the project occurring outside the KNP are:

- Rock Forest which comprises farmland on a private property under lease to Snowy Hydro for use as a logistics site during construction.
- Polo Flat Segment factory (not part of the Main Works Approval)

Access to the major project work sites is via the following roads; Snowy Mountains Highway (Marica & Plateau sites), Link Road (Lobs Hole / Talbingo) and Tantangara Road (Tantangara).

1.4.2. Existing Native Vegetation and Plant Community Types

Plant Community Types (PCTs) are a NSW classification used to identify native vegetation plant communities. As reported in the Biodiversity Management Plan, site surveys identified 20 PCTs comprising 1,281 ha of native vegetation within the construction envelope. The three most abundant PCTs, which constitute 63% of the native vegetation mapped within the construction envelope, include:

- **PCT 1196** - Snow Gum - Mountain Gum shrubby open forest of montane areas, South Eastern Highlands Bioregion and Australian Alps Bioregion (372.42 ha);
- **PCT 644** – Alpine Snow Gum - Snow Gum shrubby woodland at intermediate altitudes in northern KNP, South Eastern Highlands Bioregion and Australian Alps Bioregion (222.75 ha); and
- **PCT 1224** – Sub-alpine dry grasslands and heathlands of valley slopes, southern South Eastern Highlands Bioregion and Australian Alps Bioregion (212.91 ha).

A complete list of the PCTs mapped within the construction envelope is presented in Appendix A. The extents of the mapped PCTs are shown in Appendix B.

One threatened ecological community (TEC), listed as an Endangered Ecological Community under both NSW and Commonwealth legislation, has been confirmed within the construction envelope:

- NSW Biodiversity Conservation Act 2016 (BC Act):

PCT 637 – Montane Peatlands and Swamps of the New England Tableland, NSW North Coast, Sydney Basin, South East Corner, South Eastern Highlands and Australian Alps bioregions; and

- Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act):

Alpine Sphagnum Bogs and Associated Fens.

1.4.3. January 2020 Bushfire

On 4 January 2020, the Snowy 2.0 project site and overall northern section of KNP was impacted by a significant bushfire. The project site at Lobs Hole was severely impacted with much of the groundcover and trees burned, leaving the catchment area with bare soil and no ground protection. Other parts of the Main Works project area including the Plateau, Marica and Tantangara were also impacted by the bushfire to varying degrees. The post-bushfire recovery of the surrounding areas is of key concern to KNP stakeholders.

Following the bushfire, the vegetated areas within and adjacent to the project had exposed soil which is susceptible to introduced weed invasion and a reduction in habitat features which makes native fauna more vulnerable to feral animal predation. Monitoring of reference sites in the bushfire affected area as part of the rehabilitation monitoring program will track the recovery of areas following the bushfire. Monitoring of reference sites as a baseline for the achievement of rehabilitation criteria will occur in relevant target PCT's, preferably where seed collection is undertaken to further understanding of the impact of fire on seed availability.

If possible, seed collection and reference site monitoring will be undertaken in close proximity to the construction site. However, the recent bushfire events have impacted upon the available areas for seed collection within the KNP. The seed collection program developed as part of this RMP will consider appropriate areas for seed collection within the KNP and if necessary, areas of appropriate PCT's found at similar altitude outside of the KNP. This approach is a scientifically accepted approach for the mitigation of climate change impacts such as bushfire impacts on the pre-construction area and will increase the genetic diversity within a genotype to provide a greater chance of survival in extreme weather conditions.

Seed availability of herbaceous species (grasses and forbs) has increased since the 2019/20 fires in KNP. This is due to a release of nutrients post fire and the El Nino event which has facilitated ecological recovery. However, trees and shrubs will take up to 5 to 10 years to have the seed loads they supported before the latest fire.

Climate Change needs to be included in all revegetation/rehabilitation projects as it has already started to affect ecological processes. The following reference can be used as a guide: Climate-ready revegetation A guide for natural resource managers. Version 2,: https://www.mq.edu.au/__data/assets/pdf_file/0006/807666/Climate-Reveg-Guide-v2-2018.pdf

1.5. Preparation of the Plan

In accordance with Schedule 3 Condition 10(a) of CSSI-9687, a suitably qualified and experienced project team was engaged by Snowy Hydro for the development of the RMP. The project team included:

- Dedicated in-house specialists to manage the development of the RMP and delivery of the project.
- External specialists to provide technical inputs and advice to inform the development of the RMP.

Key members of the project team are presented in Table 1-3.

Table 1-4 Key Project Team Members and Technical Specialists

Name	Company	Role/Speciality
Chris Buscall	Snowy Hydro	Project Director
Ben Croome	Snowy Hydro	Project Manager
Joshua Chikan	Snowy Hydro	Procurement
Paul Smith	Snowy Hydro	Engineering Lead
Rod Masters	SLR	Specialist - Growth media, landform, rehabilitation specialist
Elizabeth MacPhee	Alpine Flora	Specialist - Sub-alpine ecology, seed collection / propagation, rehabilitation
Dennis Garside	GSS	Specialist - Seed collection / propagation, rehabilitation
Chris Waygood	Golder	Specialist – Landform

1.6. Integration with Other Plans

As required by Schedule 3 Condition 10(b) of CSSI-9687, the RMP has been developed to be consistent with other management plans which are being developed separately for the project. These management plans include but are not limited to the:

- Spoil Management Plan - S2-FGJV-ENV-PLN-0019 – P | Snowy 2.0 Main Works - Spoil Management Plan ;
- Recreation Management Plan;
- Long-Term Road Strategy; and
- Visual Mitigation Management Plan.

Appendix C Final Land Use Domains provides details of integration and consistency between these plans. (Note: because of the staging required of the forementioned management plans, Appendix C will be updated in parallel to incorporate any additional requirements.

1.7. Consultation

This RMP is to be prepared in accordance with Schedule 3 Condition 10(a) of CSSI-9687, which notes:

Within 18 months of the commencement of construction, the Proponent must prepare a Rehabilitation Management Plan for the development to the satisfaction of the Planning Secretary. This plan must:

(a) be prepared by a suitably qualified and experienced person in consultation with the NPWS, BCD, EPA, NSW DPI and TfNSW;

Ongoing consultation has been undertaken with NPWS for this RMP as summarised in Table 1-5. A copy of this Plan will be provided to the relevant agencies listed above, along with DPIE for review and comment. Any feedback will be considered and if appropriate, included in future revisions of this plan.

Table 1-5 Summary of Consultation

Stakeholder	Date	Consultation
NPWS	8/09/2021	Rehab lessons learnt from NPWS including monitoring results. Discussion regarding the use of both fire impacted and non-impacted control sites to give valid representation
NPWS	2021/ 2022	Ongoing consultation regarding the seed collection program and individual site-specific rehabilitation plans.
NPWS , BCD, EPA	22/04/2022	SHL Draft RMP submission
NPWS	12/07/2022	NPWS comments
NPWS	28/07/2022	RMP comments clarification session
NPWS ,BCD, EPA	24/11/2022	SHL RMP Submission revision 2 Addressed Rev 1 comments
NPWS	3/02/2023	NPWS comments received
NPWS,EPA, BCD	T28/04/2023	Address Rev 2 comments and circulation of RMP Rev 3
NPWS, BCD	12/07/2023	Meeting to discuss monitoring program use of UAV
BCD	13/07/2023	Follow up discussion with AJ to discuss use of UAV and monitoring program
TfNSW	15/08/2023	TfNSW consultation meeting
BCD, EPA, NSW DPI and TfNSW	21/08/2023	Circulation of Rev 3.1 to all other agencies
NPWS/ BCD/	14/09/2023	NPWS Rev 3.1 remaining comments meeting
NPWS, BCD	21/09/2023	Submission of section 8 Monitoring for review
NPWS	06/10/2023	Resubmission of Rev 3.2 for final review prior to submission to DPE after addressing all comments (including section 8)
NPWS / BCD	16/01/2024	NPWS comments received RMP Main body
NPWS / BCD	28/01/2024	NPWS comments received for Site Specific Plans
NPWS / BC	15/02/2024	Meeting to discuss Site Specific Plans
NPWS	22/04-2024	NPWS comments received after review of site specific plans
NPWS	15/05/2024	Submission of Rev 3.3 for final review prior to submitting to DPHI

2. Final Land Use

2.1. Regulatory Requirements for Rehabilitation

A summary of all known regulatory requirements for post mining land use and rehabilitation for Snowy 2.0 are listed in Table 2-1. Regulatory requirements have included consideration of the consents and Environmental Protection licences and leases listed in Section 1.3.

Table 2-1 Regulatory Requirements for Decommissioning and Rehabilitation

Condition	Requirement	Section Addressed
Schedule 2 Condition 1	**Demolition** The Proponent must ensure that all demolition work is carried out in accordance with AS 2601-2001: The Demolition of Structures, or its latest version.	Section 6.2.2
Schedule 2 Condition 12	**Protection of Infrastructure** Unless the Proponent and the applicable authority agree otherwise, the Proponent must: (a) repair, or pay the full cost associated with repairing, any public infrastructure that is damaged by the development; and (b) relocate, or pay the full cost associated with relocating, any public infrastructure that needs to be relocated as a result of the development. *Note: This condition does not apply to any damage to roads caused by the development.*	Section 6.2.2
Schedule 3 Condition 9	**Rehabilitation Requirements** The Proponent must: (a) rehabilitate all parts of the site within the Kosciuszko National Park to comply with the rehabilitation objectives in Table 3 and the ecological rehabilitation objectives in Table 4; (b) rehabilitate the Rock Forest site to comply with the rehabilitation objectives in Table 5; (c) complete the initial rehabilitation of the site - including the removal of all temporary infrastructure, creation of landforms, narrowing of roads - within 3 years of completing construction; (d) complete the ecological rehabilitation of the site, apart from the areas used for operations, within 20 years of completing construction; (e) complete the final rehabilitation of the site, including the removal of all remaining infrastructure, within 3 years of decommissioning the development; and (f) complete the ecological rehabilitation of the areas used for operations within 20 years of decommissioning the development.	Section 4 Section 6.1

<table>
<tr><th>Condition</th><th>Requirement</th><th>Section Addressed</th></tr>
<tr><td></td><td>
Table 3: Rehabilitation Objectives – Kosciuszko National Park
<table>
<tr><th>Feature</th><th>Objective</th></tr>
<tr><td>Land use</td><td>• Enhance the recreational use of the site in accordance with the approved Recreation Management Plan</td></tr>
<tr><td>Land</td><td>• Safe, stable and non-polluting
• Ensure the creation of all new landforms complies with the design criteria in Table 2
• Minimise surface disturbance of site during construction
• Progressively rehabilitate the site as soon as possible following disturbance
• Employ interim rehabilitation strategies to areas that can't be permanently rehabilitated yet to minimise dust generation, erosion, uncontrolled discharges of sediment, and the spread of weeds to other parts of the Kosciuszko National Park</td></tr>
<tr><td>Infrastructure</td><td>• Decommission and remove infrastructure, unless NPWS agrees otherwise
• Restore all roads on site in accordance with the Long-Term Road Strategy</td></tr>
<tr><td>Community</td><td>• Ensure public safety</td></tr>
</table>
</td><td></td></tr>
<tr><td></td><td>
Table 5: Rehabilitation Objectives – Rock Forest Site
<table>
<tr><th>Feature</th><th>Objective</th></tr>
<tr><td>Land use</td><td>• Return the site to its previous use in consultation with the landowner</td></tr>
<tr><td>Land</td><td>• Safe, stable and non-polluting
• Ensure the creation of all new landforms complies with the design criteria in Table 2
• Minimise surface disturbance on site during construction
• Progressively rehabilitate the site as soon as possible following disturbance
• Employ interim rehabilitation strategies to areas that can't be permanently rehabilitated yet to minimise dust generation, erosion, uncontrolled discharges of sediment, and the spread of weeds</td></tr>
<tr><td>Infrastructure</td><td>• Decommission and remove development-related infrastructure, unless the Planning Secretary agrees otherwise</td></tr>
</table>
</td><td></td></tr>
</table>

Schedule 3 Condition 10	ehabilitation Management Plan Within 18 months of the commencement of construction, the Proponent must prepare a Rehabilitation Management Plan for the development to the satisfaction of the Planning Secretary. This plan must: (a) be prepared by a suitably qualified and experienced person in consultation with the NPWS, BCD, EPA, NSW DPI and TfNSW; (b) be consistent with the Spoil Management Plan, Recreation Management Plan, Long-Term Road Strategy and Visual Mitigation Management Plan; (c) include a conceptual plan for the rehabilitation of the whole site; (d) include the detailed program for the rehabilitation of roads in the Kosciuszko National Park in accordance with the approved Long-Term Road Strategy; € include a topsoil balance for the site, which includes a strategy for: • maximising the reuse of topsoil on site (provided it is suitable for reuse); • using other suitable growth media; and • importing additional topsoil to the site (if necessary); (f) include a native seed collection and propagation program in accordance with Florabank (www.florabank.org.au) and/or NPWS guidelines for the site, which includes a strategy for: • maximising the collection and use of native seed resources from the site prior to disturbance; • collecting seed from the surrounding area, including other parts of the Kosciuszko National Park (with the approval of the NPWS); and • prioritising the use of local sources of seed for the ecological rehabilitation of the site; (g) include detailed plans for the rehabilitation of the disturbance area at each of the following sites, describing the measures that would be implemented to comply with the rehabilitation objectives in Table 3 or 5: • Talbingo Reservoir; • Lobs Hole; • Marica; • Plateau; • Tantangara Reservoir; and • Rock Forest; (h) include a detailed ecological rehabilitation management plan for the development that: • provides an overarching description of the proposed ecological rehabilitation works, identifying the: - plant community types to be established; and - area of land to be established for each plant community type; • provides maps showing the proposed location of each plant community type; • describes the	See table 1-2.

Condition	Requirement	Section Addressed
	detailed measures that would be implemented to comply with the ecological rehabilitation objectives in Table 4; (i) identify the key risks to the successful completion of the rehabilitation and describe the contingency measures that would be implemented to address these risks; (j) include detailed completion criteria and performance indicators for the rehabilitation of the development (having regard) to the criteria and indicators in Table 4, including criteria for triggering remedial action (if necessary); and (k) include a program to monitor and publicly report on: • the rehabilitation of the site; • the implementation of the each of the detailed plans, including the effectiveness of the proposed mitigation and contingency measures; and • progress against the detailed completion criteria and performance indicators.	
EPBC 2018/8322 Conditions		
24	**Amenity and Landscape** To minimise impacts to the environment in Kosciuszko National Park, the approval holder must comply with conditions 4—11 of the NSW approval relating to spoil management and site rehabilitation.	This document
25	The Rehabilitation Management Plan required by condition 10 of the NSW approval must include provisions to make monitoring data (excluding sensitive ecological data) available as part of the monitoring, evaluation and reporting program required by condition 10k of the NSW approval.	Section 11
NPWS Agreement for Lease (AfL)		
Clauses 20.1	Clause 20.1 requires that upon completion of particular works, Snowy Hydro (the Tenant) must obtain an updated environmental condition report in respect of the land. the focus of AfL Clause 20.1 is on addressing any contamination impacts on the land subject to the Tenant's activities	Section 1.3.4

Condition	Requirement	Section Addressed
Clauses 20.4	AfL clause 20.4, Snowy Hydro must Remediate and restore all areas of the Land accessed by the Tenant for the purposes of the Works so that: (a) the nature and extent of any Contamination on the relevant Land is no greater than the nature and extent of the Contamination that was detailed in the relevant EIS reports in respect to the relevant Land on or prior to the commencement of any Works on that Land; (b) all recommendations outlined in the report under clause 20.1 that are required to Remediate and restore all areas of the Land accessed by the Tenant for the purpose of the Works, are implemented to the satisfaction of the Landlord (acting reasonably); and (c) each of those areas accessed by the Tenant are, on completion of the Remediation and restoration works, to a standard equivalent to the assessment established under the Biodiversity Assessment Methodology report.	Section 1.3.4

2.2. Final Land Use Statement

2.2.1. Final Land Use

All areas not retained for permanent infrastructure will be revegetated and rehabilitated to be suitable for land uses outlined in Appendix C Final Land Use Domains (Including Recreation and roads). Suitability for final land uses will be attained by achieving the rehabilitation completion criteria for Snowy 2.0 Main Works set out in Table 4.4

The following surface infrastructure areas will be required and retained for the operation of Snowy 2.0:

- Water intake structures and gate houses at the Tantangara and Talbingo reservoirs;
- Permanent access tunnel portals and associated infrastructure including:
    - Main access tunnel (MAT);
    - Emergency Cable and Ventilation Tunnel (ECVT) portal;
- Ventilation shaft and head race tunnel surge shaft at Marica area;
- Permanent access roads;
- Tantangara and Talbingo barge launch areas;
- Transmission cableyard at the ECVT portal
- Lobs Hole Substation;
- Fish barriers;
- Water monitoring bores (extent of network to be confirmed); and
- Other ancillary permanent infrastructure.

Following the completion of construction, temporary construction pads, accommodation camps, rock emplacements and some access roads will be rehabilitated to be suitable for agreed final land uses as outlined in Appendix C. Final Land Use Domains (Including Recreation and roads) by achieving Table 4-4 Rehabilitation completion criteria for Snowy 2.0 Main Works

The Talbingo and Tantangara Reservoirs will continue to be used for boating and fishing; however permanent safety exclusion zones will be put in place in the vicinity of the intakes. Remote camping areas will be retained in the Lobs Hole and Tantangara areas for recreational use. These areas will either be retained or will be recreated during rehabilitation if they are disturbed during construction activities. Recreational areas will be restored and landscaped as agreed with NPWS and specified in the Recreation Management Plan and /or future master plans.

GF01 and Main Yard in Lobs Hole will be land formed mounds sympathetic with the surrounding topography and appropriate vegetation of the target PCT. All other temporary construction pad areas will be rehabilitated to native vegetation using the target PCT species, or an agreed recreational user camping area as agreed with NPWS.

The primary aim of rehabilitation works undertaken will be to leave a legacy that enables the Project to co-exist within KNP and maintain its values.

2.2.2. Final Landform Design

Final landform design and planning has been undertaken to identify opportunities for the reuse of excavated material in rehabilitation and in the construction of final landforms which complement the surrounding topography in the KNP. The final landform will be constructed from excavated material to create a safe and stable landform, commensurate with the surrounding topography of the area.

Reuse of the excavated material in the final landform will be subject to geochemical testing to confirm it is suitable to remain in situ. Any unsuitable materials will be remediated and removed from the areas to be rehabilitated and treated in accordance with the spoil management plan.

Detailed plans for the design (objectives, risks and completion criteria) for each emplacement area will be progressively developed and included in the Spoil Management Plan once prepared. The detailed plans will be approved prior to any construction occurring in the relevant emplacement area.

Geomorphic and ecological characterisation of construction areas will be undertaken prior to disturbance to record the existing conditions and values and the placement and rehabilitation approach will be progressive.

2.3. Final Land Use

2.3.1. Final Land Use Domains

Final land use domains are defined as land management units characterised by similar final land use objectives. Each final land use domain will require specific decommissioning and rehabilitation methods. The final land use domains for Snowy 2.0 are presented in Table 2-2 and shown in Appendix C.

Table 2-2 Final Land Use Domains

Code	Final Land Use Domain	Description

A	Retained Infrastructure	The following infrastructure areas will be retained as a final land use:
		- Water intake structures and gate houses at the Tantangara and Talbingo reservoirs;
		- Permanent access tunnel portals and associated infrastructure including:
		  ○ Main access tunnel (MAT);
		  ○ Emergency Cable and Ventilation Tunnel (ECVT) portal;
		- Ventilation shaft and head race tunnel surge shaft at Marica area;;
		- Permanent access roads;
		- Tantangara and Talbingo barge launch areas;
		- Transmission cableyard
		- Lobs Hole substation
		- Fish barriers
		- Water monitoring bores (Extent to be confirmed)
		- Other ancillary permanent infrastructure

B	Roads	Some new access roads or those which are upgraded, widened and sealed will be retained with agreement from NPWS in accordance with the Long Term Road Strategy. Some retained roads will remain open to the public post-construction and will enable access to locations previously only accessible by four-wheel drive; however, some will be utilised exclusively by Snowy Hydro for access to operational areas. (refer **Appendix C** Final Land Use Domains) This is to be determined through a Long Term Roads strategy.
C	Recreation Sites	It is intended that Lobs Hole and Tantangara areas will be retained as remote campsites. Recreational areas will be rehabilitated and landscaped in accordance with the Recreational Management Plan (to be completed). (refer **Appendix C** 2.0 Final Land Use Domains)
D	Native Vegetation	Areas in this final land use domain will be revegetated and returned to a native vegetation final land use. The species used for each area will be commensurate with that present prior to disturbance as per the Plant Community Type (PCT) mapped for the area (refer **Appendix C** Final Land Use Domains). Areas to be rehabilitated to native vegetation will include rehabilitated access roads.
E	Water Management	The Talbingo and Tantangara dams will remain as water storages that may permit fishing and boating as controlled by NPWS. Appropriate safety exclusion zones will be put in place in the vicinity of the intake structures.

2.3.2. Active Domains

Active domains identify the footprint of areas disturbed for project related activities. Active domains are defined as the set of discrete areas that have a particular operational or functional purpose and characteristics, such as similar geophysical and geochemical characteristics, or different built or temporary features such roads, culverts, pipes, power lines etc that will have similar decommissioning and rehabilitation requirements. Active domains were determined based on the EIS project disturbance area and project design. The indicative footprint of each active domain is shown in Appendix D and described in Table 2-3.

Table 2-3 Active Domains

Code	Active Domain	Description
1	Infrastructure	Infrastructure will be split into sub-domains 1.1 and 1.2 as follows:
1.1	Accommodation Camps	This domain will include the accommodation camps at Lobs Hole, Marica and Tantangara. Accommodation camps will provide accommodation and supporting services for the construction workforce.
1.2	Construction Portals and pads	This will include the construction pads on which construction facilities will be placed. Construction pads will typically be in the vicinity of construction portals where tunnelling is taking place.
2	Access Roads	This will include all access roads associated with the project. The number of utilised and upgraded access roads will increase as the project progresses. Stabilisation of disturbance associated with access roads will occur as soon as possible following disturbance.
3	Intakes	This domain will include the proposed permanent intake structures situated on the banks of the reservoirs. The following intake structures are proposed: - Talbingo intake and gatehouse; and - Tantangara intake and gatehouse.
4	Stockpiles	This domain includes the on-land emplacement areas (stockpiles) utilised for excavated material management.
5	Utilities	This domain will include disturbance corridors associated with the installation of the supporting utilities to service the project. This will include: - Power; - Water; - Sewage and process water treatment facilities; and - Communications. - GIP monitoring sites It is noted that a number of utilities will be installed within existing access road corridors; in this case these areas are included in Domain 2.

Code	Active Domain	Description
6	Water Management	This domain will include the disturbance areas for the Talbingo and Middle Bay barge ramps and associated Middle Bay navigation channel. Works in these areas will include the construction of barge infrastructure and dredging to establish the navigation channel.

3. Rehabilitation Risk Assessment

3.1. Rehabilitation Risk Assessment Workshop

In accordance with Condition 10(i) of CSSI 9687, the RMP must identify the key risks to the successful completion of rehabilitation and identify appropriate contingency measures to address the risks.

An initial rehabilitation risk assessment workshop was completed on Friday 3 September 2021 and included key Snowy Hydro personnel, consultants and rehabilitation specialists from the project team as shown in Table 3-1.

Table 3-1 Risk Assessment Participants

Name	Company	Position	Role
Rod Masters	SLR	Consultant Coordinator	Facilitator, Growth media, landform, rehabilitation specialist
Nathan Archer	SLR	Principal	Facilitator, rehabilitation specialist
Chris Buscall	Snowy Hydro	Project Director	Participant
Ben Croome	Snowy Hydro	Project Manager	Participant
Joshua Chikan	Snowy Hydro	Procurement	Participant
Paul Smith	Snowy Hydro	Engineering Lead	Participant
Russell Griffiths	Snowy Hydro	GIS	Participant, GIS specialist
Elizabeth MacPhee	Alpine Flora	Specialist	Participant, Sub-alpine ecology, seed collection / propagation, rehabilitation specialist

The workshop was guided by the *Guideline - Rehabilitation Risk Assessment* (RR 2021) and with consideration to ISO 31000:2009 *Risk Management Principles and Guidelines*. The risk assessment considered previous risk assessments including the Snowy 2.0 Exploratory Works Risk Assessment and was completed with the Snowy 2.0 Risk Matrix.

The risk assessment has been used to inform the preparation of this Plan. The objectives of the risk assessment were to:

- Identify the risks associated with rehabilitation of disturbance associated with the construction of the Snowy 2.0 to achieve the agreed final land use(s);
- Identify knowledge gaps in Snowy Hydro's current understanding of the risks to rehabilitation;
- Identify the investigations/controls/action plans necessary to effectively mitigate risks and/or realise opportunities and to close any identified knowledge gaps;
- Inform the development of this RMP, to provide a basis to determine additional investigations and/or project works to be undertaken; and

- Provide the framework to satisfy relevant internal and government guidelines, requiring implementation of a risk-based approach to closure.

The risk assessment workshop assessed a total of 42 key rehabilitation risks, which are summarised as:

- 8 risks were ranked as low;
- 22 risks were ranked as moderate;
- 12 risks were ranked as high; and
- 0 risks were ranked as extreme.

Following the initial risk assessment, a number of specialist project workshops were undertaken to address high risks and identify actions to fill the knowledge gaps. The workshops included key project team members and relevant technical specialists. A summary of the RMP workshops and key topics is included in Table 3-2.

Table 3-2 Rehabilitation Management Plan Specialist Workshops

Workshop	Content
Seed collection and propagation	• Species selection • Seed collection areas • Seed supply • Seed management • Cleaning and storage • Certification Tubestock propagation
Whole of site conceptual rehabilitation plan	• Rehabilitation objectives • Rehabilitation phases • Active domains • Final land use domains • Landform design • Revegetation strategy • Erosion and sediment control • Weed management Rehabilitation maintenance
Roads rehabilitation	• Roads' configuration (cut / fill batters) • Drainage • Erosion and sediment control • Temporary revegetation • Permanent revegetation • Maintenance
Topsoil management	• Soils inventory • Progressive soil testing • Stripping depths • Soil balance • Stripping, handling, stockpiling, respreading • Amelioration • Weeds and pathogens • Seed bank

Workshop	Content
Detailed site rehabilitation plans	• Talbingo Reservoir • Lobs Hole • Marica • Plateau • Tantangara Reservoir • Rock Forest
Detailed Ecological RMP	• Ecological values • Rare vegetation • Habitat restoration • Ecology and landscape integration • Incorporation of cultural values • Mitigation • Awareness training • Adaptive management
Progressive rehabilitation implementation	• Rehabilitation schedule • Interim rehabilitation • Rehabilitation phases

Following the completion of the rehabilitation workshops, the risk assessment was reviewed to close out actions and re-assess the residual risk based on the completion of actions and filling of knowledge gaps. The risk assessment review assessed the residual risks as follows:

- 14 risks were ranked as low;
- 20 risks were ranked as moderate;
- 8 risks were ranked as high; and
- 0 risks were ranked as extreme.

A summary of the residual high risks is provided in Table 3-3. The rehabilitation risk assessment is attached as Appendix E.

Table 3-3 Summary of High and Extreme Risks

Risk to Rehabilitation	Risk Control	Current Risk Rating	Proposed New Control
Insufficient funding for rehabilitation activities	Budget preparation Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. Preliminary Rehabilitation works proposed as a guide for major rehabilitation works. Contract administrator allocated to rehabilitation	**High**	Use early rehabilitation to inform budget decisions Dedicated contract administrator allocated to rehabilitation Forecast based on price per HA

Risk to Rehabilitation	Risk Control	Current Risk Rating	Proposed New Control
Budget creep and inadequate budget management	Budget preparation Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. Early rehabilitation to provide guide for cost of different techniques	**High**	Use initial rehabilitation to inform budget decisions using traditional and alternative techniques Continued engagement with the market and revisitation of implementation strategy to ensure value for money.
Poorly defined, or unachievable ecological rehabilitation objectives	EIS approved Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. Rehab trials. Review of rehabilitation objectives. Regular reporting of rehabilitation progress throughout the project to identify issues. NPWS engagement through the steering committee. S HL to have dedicated personnel to manage rehabilitation program and quality aspects	**High**	SMART completion criteria, appropriate ecological function criteria. S - Smart M - Measurable A - Assignable R - Realistic T - Time related

Risk to Rehabilitation	Risk Control	Current Risk Rating	Proposed New Control
Inadequate seed collection/supply	Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. Rehab trials. GIS and spatial mapping of required rehab areas (understanding seed requirements), Seed collection undertaken last 3 years	**High**	Investigating what is appropriate provenance for seeding to get sufficient seed equivalent altitudes out of the KNP. Determine seed requirements per species. Literature review of seed collection-> seed success (mining examples) Establish Production Areas (SPAs) for hard to collect species where large quantities are required Include a TARP in RMP for issues with seed availability
Poor topsoil management.	Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. BMP Spoil management plan controls Testing of soil parameters to be include in RMP	**High**	Communication of stripping and stockpiling procedures with contractors Compliance with procedures set out in Snowy 2.0 Main Works - Spoil Management Plan - Appendix B and C Topsoil substitutes such as development of growth medium and amelioration of subsoils included in RMP. Scheduled audits of topsoil storage Include TARP in RMP for poor topsoil quality or inadequate quantity
Weed infestations in subsoil and topsoil resources	'Weed management plan measures in RMP Implemented by FG and Snowy Topsoil management plan Weed monitoring and spraying Consultation with NPWS on weed management	**High**	Inspect and use weed status of individual sites prior to topsoil stripping to help inform rehabilitation techniques Defer use of weed laden topsoil for 2 years where possible. Reference sites to inform weed management criteria. Include TARP in RMP for weed infestations

Risk to Rehabilitation	Risk Control	Current Risk Rating	Proposed New Control
Damage from fauna (e.g. kangaroos, feral pigs, horses, deer etc.)	y Management Plan includes some feral animal controls: ● Monitoring ● NPWS culling program ● NPWS baiting	**High**	Fencing to be considered for rehabilitation areas. Engagement with NPWS if surrounding areas have high levels of pest animals that are having an effect on site control measure
Failure to obtain signoff for works from DPIE / not achieving satisfaction of NPWS	Engagement with NPWS throughout the process to ensure no surprises Experienced team to prepare RMP, Rehab Management Plan to include rehab maintenance program Scheduled workshops for preparation of RMP. Inclusion of NPWS in steering committees	**High**	Regular rehab progress inspections with key members of NPWS and supply of monitoring data (all sites at least every 2 years)

4. Rehabilitation Objectives and Rehabilitation Completion Criteria

4.1. Rehabilitation Objectives and Rehabilitation Completion Criteria

4.1.1. CSSI 9687 Requirements

In accordance with Schedule 3 Condition 9 of CSSI 9687 Snowy Hydro will:

a) rehabilitate all parts of the site within the KNP to comply with the rehabilitation objectives in Table 4-1 and the ecological rehabilitation objectives in Table 4-2;

b) rehabilitate the Rock Forest site to comply with the rehabilitation objectives in Table 4-3;

c) complete the initial rehabilitation of the site - including the removal of all temporary infrastructure, creation of landforms, narrowing of roads - within three years of completing construction;

d) complete the ecological rehabilitation of the site, apart from the areas used for operations, within 20 years of completing construction;

e) complete the final rehabilitation of the site, including the removal of all remaining infrastructure, within three years of decommissioning the development; and

f) complete the ecological rehabilitation of the areas used for operations within 20 years of decommissioning the development.

Table 4-1 Rehabilitation Objectives – Kosciuszko National Park

Feature	Objective
Land use	- Enhance the recreational use of the site in accordance with the approved Recreation Management Plan
Land	- Safe, stable and non-polluting - Ensure the creation of all new landforms complies with the design criteria in Table 2[1] - Minimise surface disturbance of site during construction - Progressively rehabilitate the site as soon as possible following disturbance - Employ interim rehabilitation strategies to areas that can't be permanently rehabilitated yet to minimise dust generation, erosion, uncontrolled discharges of sediment, and the spread of weeds to other parts of the Kosciuszko National Park
Infrastructure	- Decommission and remove infrastructure, unless NPWS agrees otherwise - Restore all roads on site in accordance with the Long-Term Road Strategy
Community	- Ensure public safety

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Table 4-2 Ecological rehabilitation objectives, including indicative completion criteria and performance indicator

Ecological Rehabilitation Objective	Completion Criteria	Performance Indicators
Ecological rehabilitation objective 1: The vegetation composition of the rehabilitation is recognisable as the target vegetation community contained within the BioNet Vegetation Classification and which was present on site prior to the project's temporary disturbance.	(a) Native plant species composition is characteristic of the target PCT based on suitable analysis against a reference data set using the PCT Assignment Tool (b) The target PCT BAM composition score is within or greater than the inter-quartile range of local reference site values for the assigned PCT.	All native vascular plant species are monitored to species level from fixed 0.04 ha monitoring plots in accordance with the BAM, transect intercept method, and/or other method approved by the Planning Secretary. Monitoring should include appropriate reference sites outside the disturbance area, ideally capturing the range of variation of the 2003 and 2019/20 fires.
Ecological rehabilitation objective 2: The vegetation structure of the rehabilitation is recognisable as, or shows a substantial trend towards, a PCT contained within the BioNet Vegetation Classification, and which was present on site prior to the project's temporary disturbance.	Cover, abundance and height range of native plant growth forms are characteristic of the target PCTs and within or greater than the inter-quartile range of local reference site values for the assigned PCT.	The cover, abundance and height range of all native vascular plant species are monitored from fixed 0.04 ha monitoring plots in accordance with the BAM, transect intercept method, and/or other method approved by the Planning Secretary.
Ecological rehabilitation objective 3: Levels of ecosystem function have been established that demonstrate the rehabilitation is self-sustainable or shows a substantial trend towards a self-sustaining state.	Growth medium, including topsoil, is suitable for target PCTs establishment, and indicators of nutrient cycling are suitable for sustaining the target PCTs. All priority attributes of nutrient cycling, soil processes and both subsoil and topsoil properties should be within or greater than the interquartile range of local reference site values for the assigned PCT.	Growth medium, covering both subsoil and topsoil properties, and soil processes are monitored using methods approved by the Planning Secretary.
	Rehabilitation vegetation communities are maturing, and natural recruitment is occurring for species within each growth form at rates within or greater than the interquartile range of local reference site values for the assigned PCT.	All species are monitored for establishment of second-generation juveniles /immatures and capacity for recruitment from fixed 0.04 ha monitoring plots in accordance with the BAM, transect intercept method, and/or other method approved by the Planning Secretary

Ecological Rehabilitation Objective	Completion Criteria	Performance Indicators
	The number and ground cover of weed species is comparable to, or less than, the interquartile range of local reference site values for the assigned PCT.	Number and ground cover of weed species are monitored from fixed 0.04 ha monitoring plots in accordance with the BAM, transect intercept method, and/or other method approved by the Planning Secretary.
	Fauna habitat features and resources (food and shelter characteristics) within the rehabilitation vegetation communities are present and within or greater than the interquartile range of local reference site values for the assigned PCT.	Presence/absence of some fauna habitat features (e.g. flowering plant, decorticating bark, stags with hollows and/or nest boxes) and quantitative assessment of other features (e.g. leaf litter cover, bare ground, wood debris) are monitored from fixed 0.04 ha monitoring plots in accordance with the BAM, transect intercept method and/or other method approved by the Planning Secretary.

Table 4-3 Rehabilitation Objectives – Rock Forest Site

Feature	Objective
Land Use	- Return the site to its previous use in consultation with the landowner
Land	- Safe, stable and non-polluting - Ensure the creation of all new landforms complies with the design criteria in Table 2 - Minimise surface disturbance on site during construction - Progressively rehabilitate the site as soon as possible following disturbance - Employ interim rehabilitation strategies to areas that can't be permanently rehabilitated yet to minimise dust generation, erosion, uncontrolled discharges of sediment, and the spread of weeds
Infrastructure	- Decommission and remove development-related infrastructure, unless the Planning Secretary agrees otherwise

4.1.2. Snowy 2.0 Main Works Rehabilitation Strategy EIS Commitments

The following overarching rehabilitation objectives are as reported in the Snowy 2.0 Main Works Rehabilitation Strategy (SLR, 2019) submitted with the Environmental Impact Statement (EIS).

The primary rehabilitation objective for Snowy 2.0 is to provide a landform that is safe, hydraulically and geotechnically stable and non-polluting. The final landform will be designed and constructed to be similar to the pre-development landform and topography and commensurate with the surrounding ecosystems.

In consideration of the proposed final land use, Snowy Hydro have established key rehabilitation principles to restore the park following impacts of the Project and potential changes to parts of the park's character and habitats. Rehabilitation objectives for the project include:

- Preserve the KNP's natural assets and values;
- Agree on future land use and consider long-term site management;
- Establish processes prior to construction works to enable organic matter to be used in revegetation and ongoing rehabilitation during the construction works phase;
- Establish appropriate treatments for minimisation of runoff into waterways;
- Protect existing native fauna and their habitats including the Smoky Mouse and Booroolong Frog, critically endangered under Commonwealth legislation, respectively;
- Where reasonable and feasible, rehabilitate disturbed areas to their pre-existing or improved state at completion of construction activity in consultation with NPWS; and
- Minimise visual impact of construction works from significant public viewpoints.

4.2. Rehabilitation Completion Criteria

Completion criteria are objective target levels or values assigned to a variety of indicators (e.g. slope, species diversity, percent groundcover), which can be measured to demonstrate progress and ultimate success of rehabilitation. As such, they provide a defined end point, at which point in time rehabilitation can be deemed successful and the lease relinquishment process can proceed. The rehabilitation completion criteria for all areas of Snowy 2.0 are listed in Table 4-4 (derived from COA schedule 3 condition 9 (table 4).

These completion criteria will be utilised to demonstrate achievement of rehabilitation objectives. It is noted that the completion criteria may be subject to refinement as rehabilitation progresses, including as a result of ongoing consultation with the relevant stakeholders, studies yet to be completed and continuous improvement process informed by rehabilitation monitoring results. The achievement (or otherwise) of the completion criteria will be monitored and reported as required.

Rehabilitation completion criteria have been informed by the following information:

- Relevant conditions of CSSI 9687;
- The RR rehabilitation guideline documents including:
- Form and way: Rehabilitation objectives, rehabilitation completion criteria and final landform and rehabilitation plan for large mines. (NSW Resources Regulator, 2021a)
- Guideline: Rehabilitation objectives and rehabilitation completion criteria. (NSW Resources Regulator, 2021)
- Completion criteria from the previously prepared rehabilitation strategies for the Snowy 2.0 Exploratory Works and Main Works Environmental Assessments;
- Similar rehabilitation projects; and
- Specific information collected to date during detailed planning investigations.

Table 4-4 Rehabilitation completion criteria for Snowy 2.0 Main Works

Final Land Use Domain	Active Domain	Rehabilitation Objective (desired feature and/or characteristics of the final land use domain)	Indicator (specific attribute associated with the objective)	Rehabilitation Completion Criteria (benchmark for the indicator, based on reference data where appropriate) Derived from COA schedule 3 condition 9 (table 4)	Record/Justification/Validation Method (evidence that the benchmark has been achieved)
Phase 1 - Active					
All domains	All domains	Minimise risk of injury to people and animals	Appropriate security measures implemented (where required) prior to commencing works.	Appropriate security measures in place.	Risk assessment completed and actioned
		Minimise the impact of vegetation clearance activities on flora and fauna	Appropriate measures have been implemented (where required) to minimise the impact on flora and fauna	Pre-clearance surveys undertaken and disturbance / no go areas demarcated.	Pre-clearance records
		Erosion will be managed	Erosion and sediment controls	Erosion and sediment control structures have been progressively installed and maintained during disturbance in accordance with the site Erosion and Sediment Control Plans.	Site records and reports Erosion and Sediment Control Plans
		Topsoil and subsoil will be appropriately stripped and managed for use in rehabilitation	Soil resource available for rehabilitation	Topsoil and subsoil stripped and stockpiled in accordance with requirements stipulated in the Rehabilitation Management Plan and Topsoil Strategy.	Site records and reports Soil inventory
		Seeds, sods or cuttings have been collected from appropriate PCTs for use in final rehabilitation	Appropriate seed is available for rehabilitation.	Appropriate seeds, sods or cuttings have been collected from appropriate PCTs for use in final rehabilitation and established for use as required.	Site records and reports Seed inventory

Final Land Use Domain	Active Domain	Rehabilitation Objective (desired feature and/or characteristics of the final land use domain)	Indicator (specific attribute associated with the objective)	Rehabilitation Completion Criteria (benchmark for the indicator, based on reference data where appropriate) Derived from COA schedule 3 condition 9 (table 4)	Record/Justification/Validation Method (evidence that the benchmark has been achieved)
		Employ interim rehabilitation strategies to areas that can't be permanently rehabilitated yet to minimise dust generation, erosion, uncontrolled discharges of sediment, minimise visual impact where appropriate and the spread of weeds to other parts of the Kosciuszko National Park	Installation of interim rehabilitation measures	Appropriate interim rehabilitation measures including erosion and sediment controls have been progressively installed and maintained during disturbance. This may include weed control, mulching, hydromulching seeding , planting	Site records, inspections and reports
Phase 2 – Decommissioning and Demolition					
All domains	1 - Infrastructure	Decommission and remove infrastructure, unless NPWS agrees otherwise	All services, including power, water, data and telephone, that are not required for final land use have been safely isolated, disconnected and terminated.	All utility infrastructure removed.	Site records and reports
			All surface and subsurface infrastructure that is not required for the final land use dismantled and removed from the site. Unless approved by NPWS to remain	All redundant infrastructure removed.	Statement provided and before/after photos.

Final Land Use Domain	Active Domain	Rehabilitation Objective (desired feature and/or characteristics of the final land use domain)	Indicator (specific attribute associated with the objective)	Rehabilitation Completion Criteria (benchmark for the indicator, based on reference data where appropriate) Derived from COA schedule 3 condition 9 (table 4)	Record/Justification/Validation Method (evidence that the benchmark has been achieved)
			All surface entries and tunnels have been closed and sealed	All surface entries and tunnels not required for operational access have been closed and sealed to prevent public access.	Engineered design and final construction reports, closure records
			Infrastructure to be retained is agreed with NPWS	The infrastructure proposed for retention is acknowledged by NPWS.	Written agreement for retained infrastructure from NPWS
B - Roads	2 – Access Roads	Restore all roads onsite in accordance with the Long-Term Road Strategy	Retained roads and access tracks are stabilised and restored.	Stabilisation of roads and access tracks complete.	As-constructed final landform plan, photos etc. Plans for all non-exclusive SHL roads to be provided to NPWS
A – Retained Infrastructure B – Roads C – Recreation Sites	1 – Infrastructure 2 – Access Roads	Unless the Proponent and the applicable authority agree otherwise, the Proponent must: (a) repair, or pay the full cost associated with repairing, any public infrastructure that is damaged by the development; and (b) relocate, or pay the full cost associated with relocating, any public infrastructure that needs to be relocated as a result of the development.	All public infrastructure damaged by the project is repaired/relocated and is safe and stable for use.	Repair / relocation works complete.	Post construction survey Applicable authority agency agreement

Final Land Use Domain	Active Domain	Rehabilitation Objective (desired feature and/or characteristics of the final land use domain)	Indicator (specific attribute associated with the objective)	Rehabilitation Completion Criteria (benchmark for the indicator, based on reference data where appropriate) Derived from COA schedule 3 condition 9 (table 4)	Record/Justification/Validation Method (evidence that the benchmark has been achieved)
All domains	All domains	Land and Water Contamination: There is no residual soil contamination on site that is incompatible with the final land use or that poses a threat of environmental harm.	Waste material systematically removed from site during construction and/or visible contamination areas on site surface are removed.	There are no visible signs of contamination following the removal of plant, equipment and materials. No inadvertent burial of contaminated materials All rubbish/ waste materials removed from site.	Contamination reports. Written statement. Photographic records Waste facility receipts.
		Contaminated areas are identified and remediated, removed or otherwise managed	Contaminated soils presenting constraints to final land use have been identified and remediated or removed from the areas to be rehabilitated or appropriately managed (in accordance with legislation and EPL).	Contamination reports. Written statement. Photographic records Waste facility receipts.	Contaminated areas are identified and remediated, removed or otherwise managed Contamination reports provided to appropriate agencies
A – Retained Infrastructure B – Roads C – Recreation Sites D – Native Vegetation	4 - Stockpiles	All Potential Acid Forming (PAF) materials are identified and remediated, removed or otherwise managed	PAF materials areas are identified and remediated, removed or otherwise managed	PAF material tested to confirm it is suitable to remain in situ and any hostile materials remediated, removed from the areas to be rehabilitated, or appropriately managed. Subject to testing indicating it is non PAF and meets all requirement of the spoil management plan the material may be disposed of sub-aqueously. Materials managed in accordance with EPL	Geochemical test results and/or remediation and verification, rehabilitation, or disposal records

Final Land Use Domain	Active Domain	Rehabilitation Objective (desired feature and/or characteristics of the final land use domain)	Indicator (specific attribute associated with the objective)	Rehabilitation Completion Criteria (benchmark for the indicator, based on reference data where appropriate) Derived from COA schedule 3 condition 9 (table 4)	Record/Justification/Validation Method (evidence that the benchmark has been achieved)
Phase 3 – Landform Establishment					
C – Recreation Sites D – Native Vegetation	1 - Infrastructure 2 - Roads 4 - Stockpiles	The final landform is stable for the long-term and does not present a risk of environmental harm downstream/downslope of the site or a safety risk to the public/stock/native fauna. Landform is commensurate with surrounding natural landform.	Landform constructed to design	Landform survey verifies constructed landform safe and stable and is generally in accordance with the approved landform detailed design.	Detailed design - use of heat map to compare as-built levels with design levels. "Significant" deviations from the design gradient assessed using static erosion risk assessments and adjustments made to the final capping layer if required. Visual inspection including photographic documentation of any rills or gullies of concern. As constructed survey to verify features such as drainage lines.
			Indicators of erosion and land instability. Indicators that surface water management structures are functioning as designed.	Rehabilitated slopes are free draining with appropriate drainage in place so that water will not undermine the structure in the long term. No visual signs of land instability such as mass movement. No gullies, tunnel erosion features or rills > 300mm deep or wide.	
			Drainage structures are constructed to design and specification	Final landform drainage structures including drains, banks, drop structures and dams constructed in accordance with best practice site specific erosion and sediment control requirements where required .	
C – Recreation Sites D – Native Vegetation	4 - Stockpiles	Landform has been constructed in accordance with the Design Objectives for Permanent Spoil Emplacement Areas (Table 2 of CSSI 9687)	Slope, aspect, height, geomorphic design indicators (static erosional assessment) as calibrated against the LEM modelling	Landform survey verifies constructed landform safe and stable and is generally in accordance with the approved landform detailed design.	Use of high-density LiDAR (minimum 20points/m2) on an annual or bi-annual basis to verify erosion rates and overall stability. Frequency to be reduced as acceptable trends are established.
				Landform meets the Emplacement Area Completion Criteria specified in the relevant Spoil Management Plan	

Final Land Use Domain	Active Domain	Rehabilitation Objective (desired feature and/or characteristics of the final land use domain)	Indicator (specific attribute associated with the objective)	Rehabilitation Completion Criteria (benchmark for the indicator, based on reference data where appropriate) Derived from COA schedule 3 condition 9 (table 4)	Record/Justification/Validation Method (evidence that the benchmark has been achieved)
		Landform that is commensurate with surrounding natural landform.	Slope, aspect, height, geomorphic design indicators	Landform survey verifies constructed landform is generally in accordance with the approved landform detailed design.	Assessment records, including Wolman counts on the rock drain after construction to demonstrate adequacy of rock grading. Verification of level of basal cover achieved by the vegetation where relevant
Phase 4 – Growth Medium Development					
C – Recreation Sites D – Native Vegetation	All domains	Growth media appropriate for the intended final land use is reinstated at all rehabilitation areas.	Growth media application and depth	Topsoil or suitable alternative is spread in designated areas at the specified depth appropriate to the final land use.	Rehabilitation records Landform survey
	4 – Stockpiles	Growth media characterised and ameliorated for final land use as required	Soil/spoil quality parameters	Areas of benign excavated material utilised for targeted native vegetation are characterised as suitable for vegetation establishment	Soil testing results Rehabilitation records
				Soil ameliorants (e.g. gypsum, mulch, biosolids, composts) are applied where necessary at the recommended application rate based on soil analysis.	Soil testing results Rehabilitation records
Phase 5 – Ecosystem and Land Use Development					
D – Native Vegetation	All domains	Ground cover comparable to reference vegetation communities.	Direct seeding rate	Direct seeding has been undertaken at the specified rate (t/ha) to provide sufficient ground coverage once established.	Planting records
			Plant density and ground cover	Rehabilitation plantings have been planted at the specified density (plants/ha) to provide sufficient ground coverage once established.	Planting records Meeting completion criteria

Final Land Use Domain	Active Domain	Rehabilitation Objective (desired feature and/or characteristics of the final land use domain)	Indicator (specific attribute associated with the objective)	Rehabilitation Completion Criteria (benchmark for the indicator, based on reference data where appropriate) Derived from COA schedule 3 condition 9 (table 4)	Record/Justification/Validation Method (evidence that the benchmark has been achieved)
		Community structure/species composition is comparable to reference vegetation communities	Community composition	A mixture of native trees, shrubs and grasses generally commensurate with that in the appropriate PCT(s) has been seeded/planted in accordance with specifications.	Planting records Meeting completion criteria
C – Recreation Sites	All domains	Recreational sites have been seeded / landscaped as agreed with NPWS and specified in the Recreation Management Plan and /or future master plans	Ground cover	Landform survey assessment confirms recreational sites have been seeded / landscaped in accordance with the agreed master plan.	Planting and rehabilitation records NPWS Agreement that works have been completed as per agreed criteria
All domains	All domains	Erosion does not present a safety hazard or compromise the post construction land capability.	Indicators of erosion and land instability.	No erosion features (greater than 500 mm depth) that compromise land capability or the final post construction land use.	Rehabilitation monitoring records
		Weeds and animals do not present a risk to rehabilitation	Weed density	Weed density in rehabilitation areas is comparable with reference sites.	Weed presence in rehabilitation monitoring and site inspection records
			Grazing animal impacts	Plantings have been installed with appropriate vegetation protection implemented.	Site specific rehabilitation plans Planting records Site inspection reports
Phase 6 – Ecosystem and Land Use Sustainability					

Final Land Use Domain	Active Domain	Rehabilitation Objective (desired feature and/or characteristics of the final land use domain)	Indicator (specific attribute associated with the objective)	Rehabilitation Completion Criteria (benchmark for the indicator, based on reference data where appropriate) Derived from COA schedule 3 condition 9 (table 4)	Record/Justification/Validation Method (evidence that the benchmark has been achieved)
D - Native Vegetation	All domains	Ecological rehabilitation objective 1: The vegetation composition of the rehabilitation is recognisable as the target vegetation community contained within the BioNet Vegetation Classification and which was present on site prior to the project's temporary disturbance. (As per CSSI 9687 Schedule 3 Condition 9)	All native vascular plant species are monitored to species level from fixed 0.04 ha monitoring plots in accordance with the BAM, transect intercept method, and/or other method approved by the Planning Secretary. Monitoring should include appropriate reference sites outside the disturbance area, ideally capturing the range of variation of the 2003 and 2019/20 fires.	(a) Native plant species composition is characteristic of the target PCT based on suitable analysis against a reference data set using the PCT Assignment Tool (b) The target PCT BAM composition score is within or greater than the inter-quartile range of local reference site values for the assigned PCT. Site specific rehabilitation plans include species list for either direct seeding or tube stock planting of key species identified for the relevant PCTs based on both the Biodiversity Development Assessment Report (BDAR) and specialist input	Rehabilitation monitoring reports Final Independent ecological reports) that validate rehabilitation completion criteria have been met Site specific rehabilitation plans

Final Land Use Domain	Active Domain	Rehabilitation Objective (desired feature and/or characteristics of the final land use domain)	Indicator (specific attribute associated with the objective)	Rehabilitation Completion Criteria (benchmark for the indicator, based on reference data where appropriate) Derived from COA schedule 3 condition 9 (table 4)	Record/Justification/Validation Method (evidence that the benchmark has been achieved)
D - Native Vegetation	All domains	Ecological rehabilitation objective 2: The vegetation structure of the rehabilitation is recognisable as, or shows a substantial trend towards, a PCT contained within the BioNet Vegetation Classification and which was present on site prior to the project's temporary disturbance.	The cover, abundance and height range of all native vascular plant species are monitored from fixed 0.04 ha monitoring plots in accordance with the BAM, transect intercept method, and/or other method approved by the Planning Secretary.	Cover, abundance and height range of native plant growth forms are characteristic of the target PCTs and within or greater than the inter-quartile range of local reference site values for the assigned PCT.	Rehabilitation monitoring reports Final Independent ecological reports that validate rehabilitation completion criteria have been met
D - Native Vegetation	All domains	Ecological rehabilitation objective 3: Levels of ecosystem function have been established that demonstrate the rehabilitation is self-sustainable or shows a substantial trend towards a self-sustaining state.	Growth medium, covering both subsoil and topsoil properties, and soil processes are monitored using methods approved by the Planning Secretary.	Growth medium, including topsoil, is suitable for target PCTs establishment, and indicators of nutrient cycling are suitable for sustaining the target PCTs. All priority attributes of nutrient cycling, soil processes and both subsoil and topsoil properties should be within or greater than the interquartile range of local reference site values for the assigned PCT. Attributes include; depth of leaf litter, cryptograms Total Carbon and total Nitrogen	Rehabilitation monitoring reports Final Independent ecological reports that validate rehabilitation completion criteria have been met

Final Land Use Domain	Active Domain	Rehabilitation Objective (desired feature and/or characteristics of the final land use domain)	Indicator (specific attribute associated with the objective)	Rehabilitation Completion Criteria (benchmark for the indicator, based on reference data where appropriate) Derived from COA schedule 3 condition 9 (table 4)	Record/Justification/Validation Method (evidence that the benchmark has been achieved)
			All species are monitored for establishment of second-generation juveniles /immatures and capacity for recruitment from fixed 0.04 ha monitoring plots in accordance with the BAM, transect intercept method, and/or other method approved by the Planning Secretary	Rehabilitation vegetation communities are maturing, and natural recruitment is occurring for species within each growth form at rates within or greater than the interquartile range of local reference site values for the assigned PCT.	Rehabilitation monitoring reports Final Independent ecological reports that validate rehabilitation completion criteria have been met
			Number and ground cover of weed species are monitored from fixed 0.04 ha monitoring plots in accordance with the BAM, transect intercept method, and/or other method approved by the Planning Secretary.	The number and ground cover of weed species is comparable to, or less than, the interquartile range of local reference site values for the assigned PCT. Monitoring program to feed into annual weed control program	Rehabilitation monitoring reports Weed control program records

Final Land Use Domain	Active Domain	Rehabilitation Objective (desired feature and/or characteristics of the final land use domain)	Indicator (specific attribute associated with the objective)	Rehabilitation Completion Criteria (benchmark for the indicator, based on reference data where appropriate) Derived from COA schedule 3 condition 9 (table 4)	Record/Justification/Validation Method (evidence that the benchmark has been achieved)
			Presence/absence of some fauna habitat features (e.g. flowering plant, decorticating bark, stags with hollows and/or nest boxes) and quantitative assessment of other features (e.g. leaf litter cover, bare ground, wood debris) are monitored from fixed 0.04 ha monitoring plots in accordance with the BAM, transect intercept method and/or other method approved by the Planning Secretary.	Fauna habitat features and resources (food and shelter characteristics) within the rehabilitation vegetation communities are present and within or greater than the interquartile range of local reference site values for the assigned PCT. Site specific rehabilitation plans include target quantities of stags and hollows based on the interquartile range of appropriate PCTs based on the BDAR survey	Rehabilitation monitoring reports Site specific rehabilitation plans Final Independent ecological reports that validate rehabilitation completion criteria have been met
D - Native Vegetation	All domains	Rehabilitation areas are healthy, sustainable and comparable with surrounding vegetation community	Resilience demonstrated by the effects of drought and fire on composition, structure and other function attributes.	Resilience to drought and fire.	Rehabilitation monitoring reports

Final Land Use Domain	Active Domain	Rehabilitation Objective (desired feature and/or characteristics of the final land use domain)	Indicator (specific attribute associated with the objective)	Rehabilitation Completion Criteria (benchmark for the indicator, based on reference data where appropriate) Derived from COA schedule 3 condition 9 (table 4)	Record/Justification/Validation Method (evidence that the benchmark has been achieved)
			Animal impacts	Vertebrate pest species – presence and damage is recorded and controlled. Domesticated stock - presence and damage is recorded and controlled.	Rehabilitation monitoring reports Site Inspections
All domains	All domains	Bushfire: The risk of bushfire and impacts to the community, environment and infrastructure has been addressed as part of rehabilitation.	Appropriate relevant controls demonstrated in accordance with Bushfire management plan	Bushfire controls including Asset Protection Zones (APZs) implemented.	Statement provided and before/after photos.
E - Water Management	6 - Water Management	Surface Water: Runoff water quality from project site is similar to, or better than the pre-disturbance runoff water quality.	Water quality parameters as specified in the EPL	Water quality discharged from rehabilitated area meet specifications in EPL	Water quality monitoring reports. Independent hydrological assessment report.

5. Final Landform and Rehabilitation Plan

5.1. Final Landform and Rehabilitation Plan – electronic copy

In accordance with the requirements of the Form and Way: Rehabilitation Management Plan for Large Mines (RR, 2021a) Final Landform and Rehabilitation Plans have been prepared to show the proposed final land use and final landform of the Snowy 2.0 Project Area.

Given the geographic extent of the Snowy 2.0 project area, the final land use plans have been presented as a number of plans over the project area. The final land use plans are as presented in Appendix C.

Detailed final landform plans are presented in the approved S2-FGJV-ENV-PLN-0019- P] Snowy 2.0 Main Works - Spoil Management Plan and associated agreed site-specific spoil management plans (currently in draft)..

6. Rehabilitation Implementation

6.1. Progressive Rehabilitation

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Rehabilitation will be carried out in several phases through the construction period as outlined in Section 6.3 to achieve the desired outcome for KNP and also for Rock Forest which is outside KNP. Preparatory activities during (or prior to) construction to achieve improved rehabilitation outcomes will be performed, such as salvaging habitat resources and native seed collection, collection of seeds, sods or cuttings from appropriate plant community types (PCTs) for use in final rehabilitation. .

Disturbed areas and areas of completed final earthworks will be rehabilitated in progressive sequence as soon as practicable following the completion of earthworks, or when disturbed areas (such as lay-down areas or access tracks) are no longer required for construction purposes. The sequence of progressive rehabilitation will be undertaken in accordance with the rehabilitation schedule discussed in Section 6.2.

6.2. Proposed Rehabilitation Schedule

The currently scheduled progressive rehabilitation is presented in Table 6-1. The rehabilitation schedule will be regularly reviewed during the project with additional areas added as they become available for rehabilitation. Updates to the rehabilitation schedule will be included in future revisions of this RMP. The general rehabilitation sequencing for the project is shown in Figure 6-1.

Table 6-1 Rehabilitation Program (as of May 2024**)**

Activity ID	Start	Finish
MCA0 - Ravine Road Stage II - Ch. 0 to Ch. 7+000 - Topsoil and mulch application	Commenced	Ongoing
MCA0 - Ravine Road Stage II - Ch. 7+000 to Ch. 14+900 - Topsoil and hydromulch application	Commenced	Ongoing
Trunk Services Plateau section – Reinstatement of natural surface level, topsoil and hydromulching including native seed	Commenced	Ongoing
Access tracks and drill sites – Topsoil and mulch application	Commenced	Ongoing
Marica Trail Ch. 0 to Ch 1+200 - Topsoil and hydromulch application including native seed	Commenced	Ongoing
Lobs Hole Site Entrance	Spring 2024	Ongoing
Tantangara Quarry Trail – Topsoil, mulching and native seed application	Commenced	Ongoing
Mine Trail Cut batter -	Autumn 2024	Ongoing
Completed Permanent Infrastructure APZs and surrounds	Autumn 2024	Ongoing
GF01 Spoil emplacement	Spring 2024	Ongoing
Tantangara spoil emplacement	Spring 2024	Ongoing

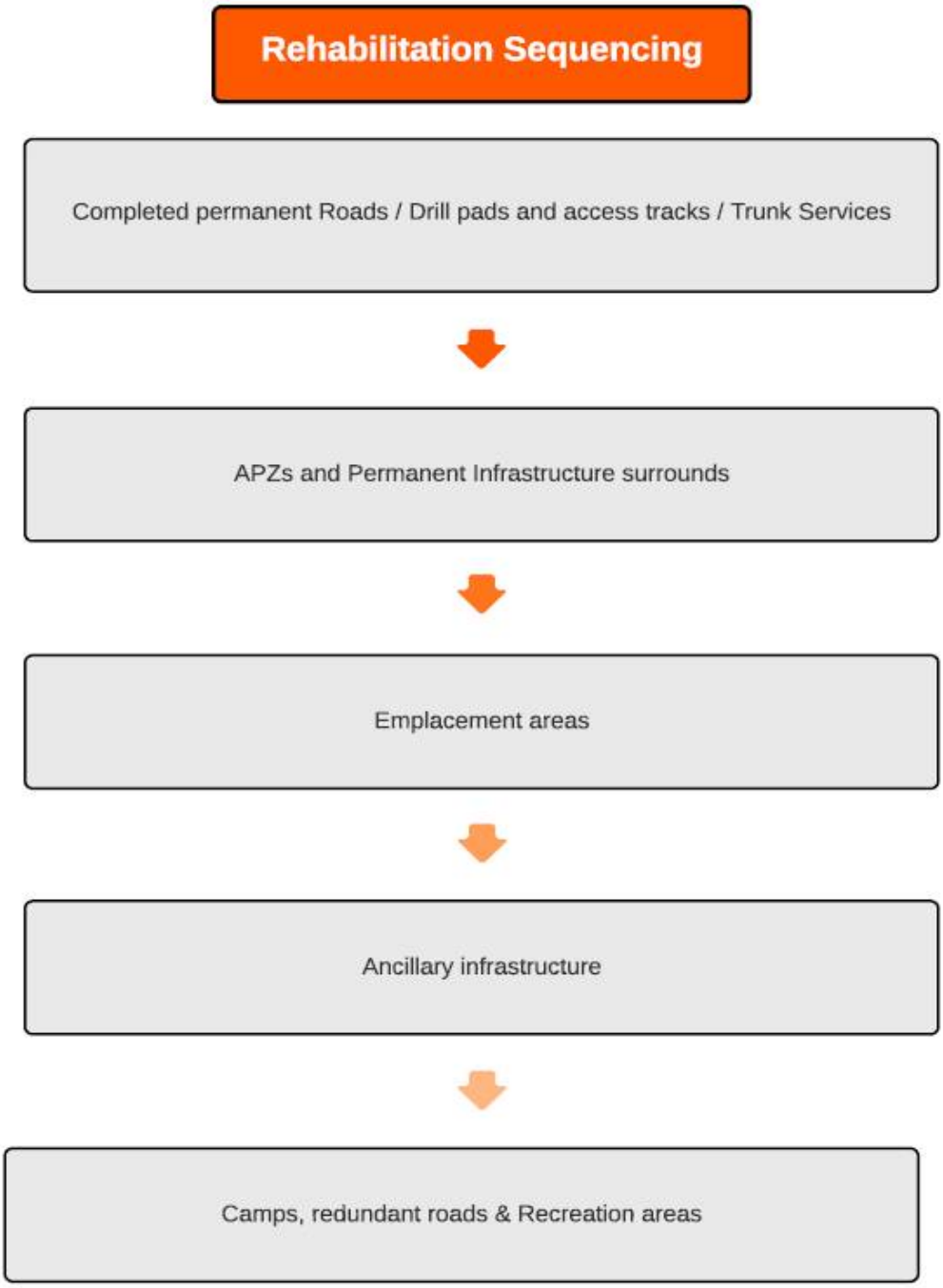


Figure 6-1 Rehabilitation Sequencing

6.3. Phases of Rehabilitation and General Methodologies

Achievement of the agreed post land use will be reached through a series of conceptual rehabilitation phases. Consistent with the Resource Regulator (2021) the rehabilitation phases are presented in Table 6-2.

Table 6-2 Rehabilitation Phases

Rehabilitation Phase	Description
Active	Activities undertaken during (or prior to) construction and operations to enhance rehabilitation, such as salvaging and managing soil resources, salvaging habitat resources and native seed collection. Temporary stabilisation of batters and construction of appropriate erosion and sediment control devices. Topsoil application , mulching and seeding where appropriate
Decommissioning	This phase of rehabilitation includes activities associated with the removal of infrastructure, unless agreed to be retained, and the removal, remediation or management of contaminated and hazardous materials.
Landform Establishment	This phase of rehabilitation consists of the processes and activities required to construct the approved final landform. In addition to profiling the surface of rehabilitation areas to the approved final landform profile this phase may include works to construct or remove surface water drainage features, encapsulate problematic materials and preparation of a substrate with the desired physical and chemical characteristics (that is, rock raking or ameliorating sodic materials).
Growth Medium Development	This phase of rehabilitation consists of activities required to establish the physical, chemical and biological components of the substrate required to establish the desired vegetation community (including short-lived pioneer species) to ensure achievement of the rehabilitation objectives and completion criteria. This phase will include spreading the prepared landform with topsoil and/or subsoil and/or soil substitutes, applying soil ameliorants to enhance the physical, chemical and biological characteristics of the growth media, and actions to minimise loss of growth media due to erosion. Production of growth medium replacements will also be produced where required.
Ecosystem and Land Use Establishment	This phase of rehabilitation consists of the processes to establish the final land use following construction of the final landform. For vegetated land uses this rehabilitation phase includes planting and seeding of species that form the desired Plant community and implementing land management activities such as weed control and the additional of thatch and logs. Techniques for establishing adequate conditions for affected bogs and fens within the project footprint to function will also be implemented
Ecosystem and Land Use Development and sustainability	This phase of rehabilitation consists of the activities to manage maturing rehabilitation areas on a trajectory to achieving the rehabilitation objectives and completion criteria. For vegetated land uses this phase may include processes to develop characteristics of functional self-sustaining ecosystems, such as nutrient recycling, vegetation flowering and reproduction, and increasing habitat complexity, and development of a productive, self-sustaining soil profile. This phase of rehabilitation will include specific vegetation management strategies and maintenance such as tree thinning, supplementary plantings and weed management.

6.3.1. Active Phase

A number of activities will be undertaken during or prior to active works associated with the project to enhance rehabilitation outcomes. Activities undertaken in this regard are summarised below for context.

6.3.1.1. Seed Collection and Propagation

Species Selection

Seed collection and establishment of a propagation program is a key component of the successful completion of rehabilitation for the Snowy 2.0 project.

Snowy Hydro has engaged Alpine Flora to review the species list for the project to determine the viability of the various species for use in rehabilitation of the different community types. Alpine Flora has specialist knowledge of rehabilitation in KNP both in seed collection and rehabilitation works.

The review determined that not all native species are viable for collection and/or use in rehabilitation due to the following reasons:

- Species is semi parasitic and there is no contemporary knowledge of how to grow it;
- Species is very hard to grow with limited chance of success;
- Species too small with limited viability (will not be able to compete);
- Species will re-establish naturally; and/or
- Species is currently under stress or not seeding because of the 2020 bushfire.

As such, Snowy Hydro has elected not to collect seed or cuttings from a number of species to focus time and effort on collection of species with greater chances of rehabilitation success.

Snowy Hydro has developed a species list for species to be targeted for seed collection, the list excludes inappropriate species for use in active rehabilitation for the reasons dot pointed above. The rehabilitation species list is attached as Appendix G. The species list will be reviewed annually by SHL rehabilitation manager and an appropriately qualified and experienced specialist, based on new information / changes to the above-mentioned limitations (particularly fire recovery) and results from monitoring undertaken as part of the project.

Seed Collection Program

Seed collection will be undertaken by approved seed collection contractors in accordance with the *Florabank Model Code of Practice for community-based collectors and suppliers of native seed* (www.florabank.org.au) and/or NPWS regulations and guidelines.

Seed collection is undertaken in consultation/ approval with NPWS, with appropriate notifications provided prior to commencing works.

The Snowy 2.0 seed collection program commenced in the 2020/21 season and targeted the dominant overstorey species that have moderate to long term viability in regard to seed longevity, given that the majority of the Main Works rehabilitation is a few years away.

Species from the Myrtaceae, Mimosceae, Proteaceae and Fabaceae were the target collection Families for seed for the Snowy 2.0 project. Seed collection areas for the 2020/21 season included:

- The Blowering Foreshore where 300,000 trees and shrubs, which have many of the target species for collection, were planted as carbon offsets by Greenfleet. This area extends from Log Bridge to the Blowering NPWS depot predominately on the upslope side of Snowy Mountain Highway.
- Southern areas of KNP that were not burnt in the 2019/20 bushfires, which have many of the target species for collection. This is a large area; however, no alpine areas were accessed for seed collection. Areas such as the Thredbo Valley Track corridor /Alpine Way, the foreshore of the Jindabyne Lake and Guthega Road (lower reaches) were the focus collection areas.

Given the severe fire damage of January 2020, no seed was collected from the Lobs Hole or any other burnt area within the KNP that season.

Cutting collection also occurs within the proposed areas for seed collection.

Seed collection in the 2021/22 season continued in the above listed areas with addition of other areas around the project where particularly the grass and forbs species had recovered. The seed collection program will be reviewed annually to focus on appropriate areas within the KNP.

Seed Inventory, Storage and Propagation

The current seed inventory (as of September 2023) is presented in Appendix F Snowy 2.0 Seed Inventory - September 2023. The seed inventory will be updated following each seed collection campaign to ensure volumes of seed are maintained (note there is a lag from collection from collection to drying processing and being included in the inventory.

All collected seed will be stored in accordance with Florabank guidelines and independent seed viability testing will be undertaken on a regular /as needed basis . Seed is currently stored in 3 locations by appropriate third party providers

As tubestock will also be needed to achieve suitable vegetation community composition, engagement and / or establishment of a local nursery will be undertaken to produce projected numbers of suitable species. Collected seed and cuttings will be supplied to the nursery to propagate tubestock, together with a proposed schedule for rehabilitation. Seed will be provided for propagation through the seed collection program managed by SHL as authorised as part of the SSI project approval.

6.3.1.2. Site Preparation and Establishment

All temporary construction pads and accommodation camps will be temporary and will be decommissioned and rehabilitated at the completion of construction (within 3 years). As such, these areas will be planned, established and managed with consideration of the final decommissioning and rehabilitation of the site. Key activities which will be undertaken in this regard are as follows:

- reviewing detailed design and construction methodologies to minimise clearing then conducting pre-clearance surveys to minimise the impact of vegetation clearance activities on flora and fauna;
- minimising access to, and disturbance of, watercourses and aquatic habitats by construction plant;
- establishing stockpiles and construction material compounds in locations where they will not impact watercourses;
- progressively installing appropriate best practice erosion and sediment control devices. Erosion and sediment control devices should be designed and installed in accordance with the specifications contained in *Managing Urban Stormwater – Soils and Construction, Volume 1, 4th edition* (Landcom, 2004), *Volume 2A Installation of Services* (DECC, 2008a) and *Volume 2C Unsealed Roads* (DECC, 2008b) or equivalent.
- collecting and stockpiling organic matter from construction cuts and clearances, including topsoil, woodchip and mulch for use in rehabilitation;
- installing appropriate hazardous materials controls prior to any hazardous materials being brought to the site to minimise the risk of contamination during the project. This may include temporary bunding, sealed and bunded storage facilities and spill kits; and
- implementing appropriate waste management protocols to ensure that construction materials are removed from the site once they are no longer required.

6.3.1.3. Erosion and Sediment Control

Site specific Erosion and Sediment Control Plans (ESCPs) will be prepared throughout the project to address the individual requirements of the various construction areas.

Erosion and sediment controls will be designed and installed in accordance with the specifications contained in *Managing Urban Stormwater – Soils and Construction, Volume 1, 4th edition* (Landcom, 2004), *Volume 2A Installation of*

Services (DECC, 2008a) and *Volume 2C Unsealed Roads* (DECC, 2008b) or equivalent. Local alpine conditions and guidelines will be considered where applicable.

6.3.1.4. Vegetation Removal and Topsoil Stripping

Stripping and stockpiling of topsoil and mulching vegetation has been conducted project wide, both of these resources have been stockpiled to allow the reconstruction of growth media and is a key rehabilitation management measure.

Vegetation Removal

Native trees and other features (e.g. trunks, logs, large rocks, branches, small stumps and roots) for the most part have been salvaged during vegetation clearance activities and stockpiled for relocation to areas undergoing rehabilitation. These features may be used to assist with erosion and sediment control measures and will potentially provide habitat resources for a range of invertebrate and ground dwelling fauna. However it should be noted that materials stockpiled during exploratory works were lost during the 2019/2020 fires. Also following the fires a hazardous tree removal program was undertaken by the project with a significant volume of trees stockpiled that could be utilised for rehabilitation activities if required.

Other native trees removed during vegetation clearance activities will be mulched and stockpiled for use during landscape planting. The ground-layer vegetation and low shrubs can be incorporated into the topsoil when it is stripped. This will enhance the soil seed bank on the rehabilitation.

Topsoil Stripping and Handling

Topsoil will be stripped progressively and in a staged manner. Suitable topsoil will be identified through the following steps:

- identification of usable soil resources and stripping guidelines;

The following steps will be undertaken during topsoil stripping:

- Environmental avoidance areas will be marked and fenced;
- Undertake preparation of the site and installation of control measures as required by the EMS and other sub-plans. In particular, erosion and sediment control measures will be installed and further planned for where progressive installation is required;
- The area to be stripped will be clearly identified on the ground to avoid over stripping and / or entering areas beyond the disturbance footprint. The target depths of topsoil and subsoil to be stripped for each location will be clearly communicated to machinery operators and supervisors;
- Subsoil stockpile locations will be identified during planning and will be stripped of topsoil before they are used for stockpiling of subsoils. Topsoil stockpile locations will not require stripping of topsoil;
- Collect vegetative matter for future use a seed source from which indigenous plants can be propagated;
- To minimise soil exposure duration, stripping will commence as soon as practicable prior to bulk earthworks;
- All plant and machinery involved in topsoil stripping will be inspected and certified to be free of weed seed and pest plant material prior to mobilisation. Machinery and vehicles working in areas of known weed infestation will be washed down before moving to “clean areas”;
- Any trees present will be cleared and grubbed before topsoil salvage;
- Machinery haulage circuits will be located to minimise the compaction of the stockpiled soil;
- Topsoil and subsoil will be stripped to the required depths and then stockpiled where not immediately required in the works. Subsoil will be stripped and stockpiled separately to topsoil where identified as suitable for reuse. Depending on compaction and recovery rates, deep ripping may be required to maximise topsoil recovery. Where soils are shallower, topsoil and subsoils will be stripped and stockpiled together;

- Handling and rehandling of stripped topsoil will be minimised as far as practicable by progressively stripping vegetation and soil only as needed for development activities;
- An inventory of soils to be stripped, including depths and volumes will be developed and updated; (See Appendix H)
- Topsoil from contaminated areas, or areas of immense weeds (such as thick blackberry) will not be recovered for rehabilitation works. These materials will be appropriately managed on-site or if there is a potential to spread contamination then the material will be sent off-site to a disposal facility that is lawfully permitted to receive it; and
- To avoid dust hazards, soil will not be stripped during particularly dry conditions. Alternatively, water trucks can be used as a control mechanism during dry conditions.

Topsoil and Subsoil Maintenance

Topsoils will be maintained following stripping as follows:

- Topsoil will be stockpiled, signposted and separated from other materials, and tracked;
- Stripped topsoil will be stockpiled separately from woody material and subsoil stockpiles; within the disturbance footprint
- Topsoil stockpile heights will not exceed 2.5 m, to minimise the risk of compaction and to maintain the viability of the soil seed bank;
- Topsoils will be stockpiled using methods and machinery that limit the amount of compaction so as to minimise soil structural decline;
- Topsoil stockpiles will be placed away from water discharge zones and flow paths; topsoil should not be stockpiled against fences or vegetation and should be retained separately from mulch (apart from a surface layer);
- Topsoil stockpiles will have control measures installed to prevent erosion, sedimentation and dust emissions. Stockpiles in place for extended period shall be suitably stabilised;
- Topsoils to be maintained for an extended period of time should have the surface left in a rough state and monitored for weed management; and
- The stockpiles should be accessible to enable weed control to be carried out. Weed management shall be implemented on a routine basis;
- Topsoil stockpiles may be subject to application of weed-free mulch, from clearing activities on the project in the locality from which the topsoil was sourced (where possible), to manage nutrient decline;
- Topsoil stockpiles to be covered with weed-free mulch, jute mesh, geofabric or similar to assist with reducing temperature extremes and reducing weeds and helps to maintain its integrity for future use.

Subsoils will be maintained following stripping as follows:

- Subsoil should be removed and stockpiled separately from topsoil;
- Areas will be compacted to an appropriate density following backfilling with subsoil;
- Excess displaced subsoil (e.g. on trenches) will be prevented from mixing with topsoil;
- Excess subsoil will be stockpiled separately for disposal/re-use by appropriate methods. This may include burial in voids, or, if tested and found suitable, as fill; and
- Inspections for dispersion and erosion of subsoil stockpiles will be undertaken, particularly on moderately dispersive soils. Suitable measures will be applied to reduce erosion potential as required.

Soil Inventory

As required by Schedule 3 Condition 10(e), Snowy Hydro will maintain a soil balance/inventory throughout the project. The soil balance will be maintained to determine:

- Current soil stockpile locations, including estimate volumes;
- Projected soil clearing and future estimated soil volumes and rehabilitation volume requirements; and
- Soil quality testing results and recommended amelioration requirements.

The current topsoil stockpile inventory is presented in Appendix H.

Where the soil balance indicates that there is a deficit of soil resources for the required rehabilitation areas, alternative growth media options will be utilised as required.

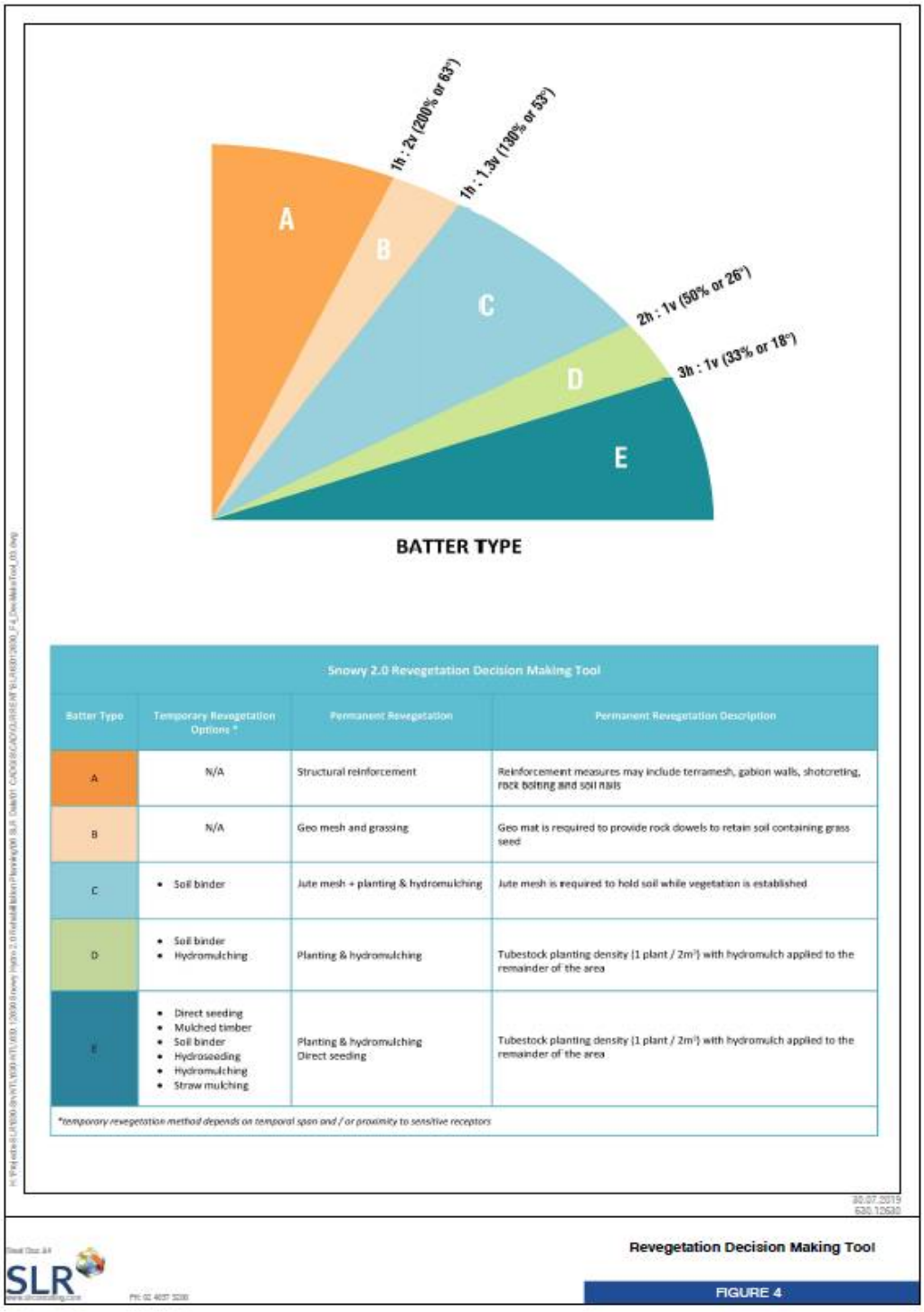
6.3.1.5. Slope Stabilisation

Areas disturbed as part of the project will be temporarily stabilised and vegetated as soon as practicable following construction works to minimise dust generation, soil erosion and weed incursion until the area can be permanently rehabilitated(. Temporary stabilisation to be undertaken within 2 weeks of completion of construction or prior to rainfall, these works will include:

- Stabilisation of slopes and preparation of sites for revegetation including placement of organic matter and jute matting if required;
- Mitigation of sediment runoff from rock emplacement areas, soil/mulch stockpiles and construction works including planting within swales and use of coir logs for sediment traps;
- Hydroseeding/hydromulching of slopes to assist stabilisation;
- Planting of higher risk slopes (i.e. steeper slopes) during appropriate planting seasons for plant survival; and
- Erosion and sediment control structures will remain in place and be maintained until the new vegetation is established and provides sufficient ground cover.

Stabilisation works will particularly focus on road batters with required temporary stabilisation and permanent revegetation methodology determined based on the batter slope as presented in Figure 6-2. Batter Types A to E in Figure 6-2 are categorised according to slope gradient. The accompanying table in Figure 6-2 provides temporary and permanent revegetation options for each Batter Type. Additional measures to break up slopes will be implemented on a case by case basis

Permanent rehabilitation will be undertaken when it is confirmed that no more works are required in a given location. Where it is confirmed no further works are required, rehabilitation will occur within 3 months subject to the time of year. No rehabilitation will occur during June – September.



Snowy 2.0 Revegetation Decision Making Tool

Batter Type	Temporary Revegetation Options *	Permanent Revegetation	Permanent Revegetation Description
A	N/A	Structural reinforcement	Reinforcement measures may include terramesh, gabion walls, shotcreting, rock bolting and soil nails
B	N/A	Geo mesh and grassing	Geo mat is required to provide rock dowels to retain soil containing grass seed
C	• Soil binder	Jute mesh + planting & hydromulching	Jute mesh is required to hold soil while vegetation is established
D	• Soil binder • Hydromulching	Planting & hydromulching	Tubestock planting density (1 plant / 2m²) with hydromulch applied to the remainder of the area
E	• Direct seeding • Mulched timber • Soil binder • Hydroseeding • Hydromulching • Straw mulching	Planting & hydromulching Direct seeding	Tubestock planting density (1 plant / 2m²) with hydromulch applied to the remainder of the area

*temporary revegetation method depends on temporal span and / or proximity to sensitive receptors

Figure 6-2 Revegetation Decision Making Tool

6.3.1.6. Excavated Material Management

Excavated material management will be undertaken in accordance with the approved Snowy 2.0 Main Works – Spoil Management Plan (revision I dated 6 September 2022). All spoil material will be appropriately classified prior to placement or disposal. Spoil material will be assessed and characterised as follows:

- **Non-reactive** spoil suitable for use or placement within the project, or elsewhere within KNP.
- **Reactive** spoil suitable for use or placement within the project with appropriate treatment (if required) and engineering and environmental controls.
- **Naturally Occurring Asbestos (NOA)** (both reactive or non-reactive) spoil to be placed within designated encapsulation cells at the Tantangara Peninsula emplacement area with appropriate engineering and environmental controls.
- **Unsuitable** spoil to be disposed of off-site to facilities lawfully permitted to receive it (waste).

Further detail on the proposed spoil uses and destinations is provided in Section 6 of the Spoil Management Plan. Detailed plans for each emplacement area will be progressively developed and included in Appendixes F – J of the Spoil Management Plan. Key activities undertaken during rehabilitation on excavated material sites include:

- Final shaping of landform and erosion and sediment control features
- Growth media application
- Seeding and tube stock planting

Detailed rehabilitation plans for each of these areas will be included as appendices of this plan in future revisions

6.3.2. Decommissioning Phase

At the completion of the construction of Snowy 2.0, all infrastructure not required for the final land use will be decommissioned and removed unless retained with the agreement of NPWS. In general, decommissioning and demolition activities will involve the following key activities:

- Disconnecting and terminating services including power and water;
- Removal of all accommodation facilities;
- Removal of all construction infrastructure;
- Removal of road surface gravel from any temporary access roads not to be retained;
- Identifying and removing (or remediating in situ) all hazardous and contaminated materials;
- Identifying and removing any remaining temporary stockpile materials not used in the construction of the final landform;
- Demolishing and removing all fixed plant and buildings from the site;
- Removing all mobile equipment from the site;
- Removal of all construction fencing;
- Breaking up and removing any concrete footings, pads and pavements; and
- Closure, backfilling and sealing of construction portals.
- Monitoring of soil stabilisation , potential erosion / subsidence)

In accordance with Schedule 2 Condition 10 of CSSI 9687, any demolition work will be undertaken in accordance with *AS 2601-2001: The Demolition of Structures*, or its latest version.

In accordance with Schedule 2 Condition 12 of CSSI 9687, any public infrastructure (excluding roads) that is damaged by the development will be repaired unless agreed otherwise with the relevant public authority.

6.3.3. Landform Establishment

Landform establishment incorporates shaping the final landform to a safe, stable and non-polluting landform that is appropriate for the desired final land use and consistent with the surrounding landscape. During the landform establishment phase, activities will include slope stabilisation and the construction of long-term water management and erosion and sediment controls.

6.3.3.1. Slope Stabilisation

The design of all slope batters will consider long-term stabilisation with minimal monitoring and maintenance requirements. As outlined in Section 6.2.1.5 and Figure 6-2, slope stabilisation techniques will depend upon the grade of the batter. Final slopes will be permanently stabilised according to slope gradient based on the methodology in Figure 6-2. Slopes not suitable for revegetation will be detailed in the site specific rehabilitation plans.

6.3.3.2. Erosion and Sediment Control

Long-term erosion and sediment controls will be designed and installed in accordance with best practice and the specifications contained in *Managing Urban Stormwater – Soils and Construction, Volume 1, 4th edition* (Landcom, 2004), *Volume 2A Installation of Services* (DECC, 2008a) and *Volume 2C Unsealed Roads* (DECC, 2008b) or equivalent where applicable.

6.3.3.3. Excavated Rock Management

As outlined in Section 6.3.1.6, excavated material may be reused to form the agreed final landform. Where excavated materials are used in the final landform they will be shaped to merge into the natural topography of the area. The final landform will be designed to incorporate micro-relief and undulations to create a natural looking landform similar to the pre-development landform.

To ensure long term stability and sustainability, reshaping will ensure that final slopes are stabilised as outlined in Section 6.3.1.5. Appropriate water management and erosion and sediment control structures will be constructed to ensure effective surface drainage to the natural environment.

The placement and shaping of excavated rock to the final landform will be detailed in the site-specific Spoil Management Plans included as Appendices to the Snowy 2.0 Main Works – Spoil Management Plan (FGJV, 2020) which will be developed progressively as construction commences in different areas. Site Specific Spoil Management Plans include:

- Lobs Hole Main Yard Emplacement Area (Appendix F of the SMP);
- GF01 Emplacement Area (Appendix G of the SMP);
- Ravine Bay Emplacement Area (Appendix H of the SMP) ;
- Tantangara Emplacement Area (Appendix I of the SMP) ; and
- Rock Forest Emplacement Area (Appendix J of the SMP) (not yet approved).

6.3.3.4. Roads Rehabilitation

It is anticipated that new access roads or those which are upgraded, widened and sealed will be retained with agreement from NPWS. Some of the retained access roads will remain open to the public post construction and will enable access to locations previously only accessible by four-wheel drive; however, some will be utilised exclusively by Snowy Hydro for access to operational areas and some roads will be closed and rehabilitated.

Snowy Hydro is currently preparing a Long-Term Road Strategy (LTRS) for the project. The LTRS will provide a detailed program for the rehabilitation of roads in the KNP. Within 6 weeks of completion of the LTRS, this RMP will be updated to include key rehabilitation methodologies for the KNP road network.

The LTRS is being prepared in accordance with the KNP Plan of Management (PoM) (DEC, 2006), *Managing Urban Stormwater – Soils and Construction, Volume 1, 4th edition* (Landcom, 2004) *and Volume 2C Unsealed Roads* (DECC, 2008b) and best practice for local environment.

6.3.4. Growth Medium Development

Growth Medium Development will incorporate the processes involved to achieve growing media which are capable of supporting a sustainable vegetation community. It includes consideration of the chemical, physical and biological properties of the media. Where required, the growth medium will be developed similarly to the NPWS medium or commercial varieties that meet appropriate nutrient and pathogen standards. Other potential sources include surplus topsoil and subsoil from the shallow works.

It is likely there will be a deficit in quality topsoil for rehabilitation in Lobs hole. To ensure progressive rehabilitation is not impacted a Growth medium development and storage procedure will be developed and enacted within 12 months of approval of this plan. Note the majority growth of medium will be required for application near completion of the project. Use of a propriety compost blanket may also be used where topsoil is not available prior to growth medium development, (material will be certified pathogen free).

6.3.4.1. Characterisation of Materials

Soil Sampling

Sampling and analysis of topsoil and subsoil resources, whether stockpiled or in-situ, will be conducted prior to respreading to appropriately characterise the materials. This will assist in ensuring that soil quality is consistent with proposed land use objectives. Understanding soil characteristics will also assist in estimating required rates of fertiliser or ameliorants (e.g. gypsum or lime) and may also assist in blending specific soil types to achieve enhanced outcomes.

At a minimum, soil sampling will be undertaken to analyse the following parameters:

- pH
- Electrical Conductivity (EC)
- Particle Size Distribution (PSD)
- Exchangeable Sodium Percentage (ESP)
- Total Organic Carbon
- Total Nitrogen
- Available Phosphorus

During February 2022, Snowy Hydro sampled soil, subsoil and spoil from Tantangara, Rock Forest, Marica and Lobs Hole to provide some preliminary baseline data for assessment of these growth media's suitability to establish and sustain vegetative growth. All samples were subsequently tested by ALS's NATA accredited laboratories at Scoresby, VIC and Mayfield West, NSW.

A summary of the results for key parameters (pH, EC, PSD and ESP) is provided in Table 6-3.

Table 6-3 Soil Testing Results

SLR Sample	Project Area	Media	Snowy Hydro Sample ID	Soil Texture	pH	pH H_2O		Exchangeable Na (ESP) %		Saturated electrical conductivity (FCe) dS/m
				Not limiting		6.0-8.0		<6		<2.0
				Possibly limiting		4.5-6 or 8.0-8.5		6-12		2-8
				Limiting		<4.5 or >8.5		≥12		>8.0
1	Tantangara	Subsoil	TAN-TSK-SS-001	Silty Clay Loam	6.0	Moderately Acidic	0.4	Non sodic	0.0	Non-saline
2		Topsoil	TAN-TSK-SS-0021	Silty Clay Loam	6.0	Moderately Acidic	0.3	Non sodic	0.1	Non-saline
3		Topsoil	TAN-TSK-SS-0022	Clay Loam	5.6	Moderately Acidic	0.4	Non sodic	0..2	Non-saline
4		Topsoil	TAN-TSK-SS-003	Silty Clay	5.6	Moderately Acidic	0.2	Non sodic	0.2	Non-saline
5		Topsoil	TAN-TSK-SS-004	Silty Clay	6.5	Slightly Acidic	0.6	Non sodic	0.4	Non-saline
6	Rock Forest	Topsoil	ROCK-TSK-001	Silty Clay Loam	5.8	Moderately Acidic	0.2	Non sodic	0.1	Non-saline
7		Topsoil	ROCK-TSK-002	Silty Clay Loam	5.8	Moderately Acidic	0.2	Non sodic	0.1	Non-saline

SLR Sample	Project Area	Media	Snowy Hydro Sample ID	Soil Texture	pH	pH H_2O		Exchangeable Na (ESP) %		Saturated electrical conductivity (FCe) dS/m
				Not limiting		6.0-8.0		<6		<2.0
				Possibly limiting		4.5-6 or 8.0-8.5		6-12		2-8
				Limiting		<4.5 or >8.5		≥12		>8.0
8		Topsoil	ROCK-TSK-003	Silty Clay Loam	6.0	Moderately Acidic	0.3	Non sodic	0.2	Non-saline
9	Marica	Topsoil	MAR-TSK-001	Silty Clay Loam	5.7	Moderately Acidic	0.3	Non sodic	0.1	Non-saline
10		Topsoil	MAR-TSK-002	Silty Loam	5.2	Strongly Acidic	0.5	Non sodic	0.2	Non-saline
11		Topsoil	MAR-TSK-003	Silty Clay Loam	5.6	Moderately Acidic	0.2	Non sodic	0.1	Non-saline
12		Topsoil	MAR-TSK-004	Silty Clay Loam	5.6	Moderately Acidic	0.3	Non sodic	0.1	Non-saline
13	Lobs Hole	Topsoil	LOB-TSK-001	Silty Clay Loam	6.7	Neutral	0.2	Non sodic	0.1	Non-saline
14		Topsoil	LOB-TSK-003	Silty Clay Loam	6.1	Slightly Acidic	0.4	Non sodic	0.2	Non-saline
15		Topsoil	F10-F13 Pipe Cover	Silty Clay Loam	6.7	Neutral	2.5	Non sodic	0.2	Non-saline

SLR Sample	Project Area	Media	Snowy Hydro Sample ID	Soil Texture	pH	pH H_2O		Exchangeable Na (ESP) %		Saturated electrical conductivity (FCe) dS/m
				Not limiting		6.0-8.0		<6		<2.0
				Possibly limiting		4.5-6 or 8.0-8.5		6-12		2-8
				Limiting		<4.5 or >8.5		≥12		>8.0
16		Subsoil	LH-Sub-001	Silty Clay Loam	7.7	Mildly Alkaline	1.1	Non sodic	8.8	Highly saline
17		Spoil	MAT-Soil-001	Silty Loam	8.7	Strongly Alkaline	12.0	Sodic	19.3	Extremely saline
18		Spoil	ECVT-Soil-001	Silty Loam	9.7	Very Strongly Alkaline	8.2	Marginally Sodic	28.8	Extremely saline

Textural characteristics of all samples are desirable for the establishment of vegetation. Textures range from clay loam to silty clay loams to silty loams which have an adequate mix of fine and coarse particles to ensure sufficient porosity for moisture infiltration / percolation and good water holding capacity.

Soil reaction levels for topsoil and subsoil samples range from strongly acidic (pH 5.2) to mildly alkaline (pH 7.7), with most samples being moderately acidic. These pH recordings are optimal for most native species. All soil samples are non-sodic and non-saline, with the exception of the subsoil sample from Lobs Hole (sample 16), which has an elevated salinity level.

The Lobs Hole spoil (samples 17 & 18) is unsuitable as a growth medium due to high alkalinity, sodicity and salinity recordings. This spoil will require deeper burial in the emplacement area and / or have sufficient depth of cover of subsoil and / or topsoil to ensure successful germination and establishment of native vegetation. Maximum cover will be prioritised with available resources.

Weed Assessment

Prior to re-spreading stockpiled topsoil, an assessment of weed infestation on stockpiles will be undertaken to determine if stockpiles require herbicide application and / or “scalping” of weed species prior to topsoil spreading. Stockpiles will be regularly monitored for weed and controlled as necessary

6.3.4.2. Topsoil Re-spreading

Where available, topsoil will be respread to designated areas at a depth to be specified in the final design following determination of available volumes.

Topsoil will be spread and seeded in an integrated operation wherever possible. This strategy will allow mitigation of the potential for topsoil loss to wind and water erosion. Appropriate earthmoving equipment will be used to avoid the compaction of the growth media.

Thorough seedbed preparation will be undertaken to ensure optimum establishment and growth of vegetation. Topsoiled areas will be contour ripped, where practicable, to create a “key” between the topsoil and the subsoil. All topsoiled areas will, as far as practical, maintain surface roughness to reduce run-off, increase infiltration and support seed establishment.

Where topsoil is limited, an appropriate topsoil substitute material may be used (e.g. ameliorated subsoil), and in some areas, where excavated material is benign and favourable for the establishment of native trees and shrubs, direct vegetation establishment may be utilised. Where alternate growth mediums are utilised, they may be treated with fertiliser where seeding is being undertaken. Required growth medium will be developed similarly to the NPWS medium or commercial varieties that meet appropriate nutrient and pathogen standards. Other potential sources include surplus topsoil and subsoil from the shallow works. Use of a propriety compost blanket may also be used where topsoil is not available and before growth medium development has occurred, (material will be certified pathogen free) this material will be applied in conjunction with traditional hydromulching as the foundation layer.

6.3.5. Ecosystem and Land Use Establishment

The Ecosystem and Land Use Establishment phase constitutes activities associated with establishing the desired post disturbance PCTs including seeding / planting and land management activities such as weed control and browsing animal control. Ecosystem and land use establishment strategies are summarised below.

6.3.5.1. Revegetation

Revegetation will be undertaken in the correct season to optimise plant growth. Revegetation will generally be undertaken from mid-October to mid-April. Revegetation will, as far as practicable, be scheduled to occur promptly following the completion of topsoil placement, or if required, growth medium development activities. Where rehabilitated areas become available out of season the use of mulch cover will be prioritised. In areas with that are unstable / highly erodible with high weed potential, temporary sterile cover crops such as sterile rye corm will be sown to stabilize the site until the native vegetation cover can be established. For similar areas with lower potential weed

loads alternative native cover crops such as *Anthosachne Scabra* will be used. The construction, rehabilitation and monitoring schedule will be developed with consideration to the required timing of revegetation.

Species selection for areas to be rehabilitated to native vegetation will be undertaken using species specific to the Plant Community Type (PCT) commensurate with the surrounding native vegetation of the disturbed area. Data obtained from the BDAR will also be used to inform the makeup of the community being established in concert with specialist advice.

Revegetation techniques will include direct seeding, tubestock planting and hydromulching. The preferred rehabilitation approach will be to create a suitable landform to integrate each site into the surrounding landform, spread topsoil, mulch the soil with an organic mulch, plant trees and shrubs as tubestock at equivalent densities and spacing of the target PCT's and then after 1 to 2 years, after weed control measures to direct sow grass and forb species of the target PCT.

The final revegetation methodology for each site specific plan will be informed by the outcomes of the initial revegetation campaigns, however, will generally be undertaken using the following known current best practices. Establishment of shrubs and trees as a primary method of rehabilitation will be utilised using tubestock and in some cases this may be supplemented with direct seeding.

6.3.5.2. Direct Seeding

Deep Ripping

All rehabilitation areas will be deep ripped after landforming. The long-term success of native vegetation is dependent on the ability of tree and shrub roots to penetrate deeply into the soil and spoil. Deeper ripping increases the ability of planted tree roots to access deeper moisture and nutrients and allows for greater storage of infiltrated water. This also increases plant stability and the ability to withstand high winds and storms due to deeper root structures.

Depending on the site, deep ripping can often bring rock of various sizes to the surface. While not preferable for pasture rehabilitation, excellent results have been observed across a range of sites outside of KNP.

For any form of revegetation, a rough de-compacted surface (either topsoil or overburden), which encourages infiltration and reduces runoff and erosion will result in superior germination and establishment of sown species. This is particularly true in times of drought.

Deep ripping will constitute the main form of decompaction and will be undertaken as follows:

- With machinery capable of ripping to an approximate depth 400mm. This is generally achieved with a mid-size dozer.
- Ripping will be undertaken along (parallel) to the contour. Even small grades can result in erosion and subsequent soil loss.
- Ripping will be undertaken to address compaction and specified spacing given for individual sites.

Seed Spreading

Native forb and grass seed will be spread (outside of drainage lines and access tracks) using a variety of methods, (pozi track, tractor or tracked challenger or hand sown). Where timber debris has been respread, or where slopes are too steep, hand or aerial spreading may be necessary. For large areas, aerial seeding using a drone will be considered taking into account known issues regarding small seeds A trial will be conducted prior to large scale implementation.

Native grass and forb seed will be sown when soils are warmest, and preferably between late September and May. Sown native seed will mostly be applied to the soil surface and never buried. In most cases sowing will be undertaken immediately after site preparation and before rain and surface crusting can occur. Where weeds are being actively suppressed within and overstorey species are planted first additional site prep may be required.

Seed viability testing will be undertaken to inform sowing rates with known dormancies included in the seed sowing schedule.

6.3.5.3. Tubestock Planting

Site Preparation

Site preparation via deep ripping will be conducted well in advance of actual tubestock planting, allowing time for the rip lines (to be located outside of drainage lines and access tracks) to settle and take advantage of any rain received before planting, building up soil moisture.

Planting

Most trees and shrubs for each PCT will be planted as tubestock. At the time of planting, each plant will receive a mix of native fertilizer and water crystals (where water holding capacity of soils is not adequate) which will be placed in the hole and assist in providing the required nutrients for plant establishment and growth as well as assist in water retention around the root structure. Use of water crystals is to be assessed on a site-to-site basis, depending on soil types and aspect. Where crystals are utilised, they will be pre-wet before use.

Upon completion of the tubestock planting program, regular monitoring and maintenance will be required as described in section 8.2.

Watering may be required until plants become established or sufficient rain is received to eliminate the need for watering. It is envisaged that additional watering of tubestock will only be done in periods of drought. Best practice is to allow planted tubestock to establish with only the available soil moisture as this promotes deep roots and aids in the evolutionary biology of planted seedlings.

6.3.5.4. Hydromulching

Hydromulching is a hydraulic technique to efficiently apply a mixture of wood fibre pulp (mulch), a binding chemical (tackifier), fertilisers, and seed as a slurry in water, onto open or disturbed ground to prevent erosion while supporting revegetation. It is commonly used to rehabilitate land disturbed by road and infrastructure construction amongst many other reasons. Disturbed land can result in accelerated erosion attributed to loss of vegetative cover and soil fertility, alteration of the natural topsoil and changes in topography.

Hydromulch mixtures typically include a soil stabilizer in a liquid slurry that is sprayed with a specialized water truck that incorporates a tank, agitators, and spraying equipment such as hoses and cannons. Hydromulching promotes seed growth by trapping moisture and increasing soil and seed stability.

Hydromulching will be utilised as required on Batter Types D and E described in Figure 6-2 (Section 6.2.1.5).

6.3.5.5. Vegetation Protection

Browsing animals can have significant detrimental impacts on emerging vegetation in rehabilitated areas and reduce the likelihood of revegetation success due to damage to juvenile vegetation from grazing, spreading weed seeds and erosion.

A vegetation protection programme will be developed and implemented during planting, if required. Alternatively, protection measures may be implemented in response to the TARP process.

Examples of vegetation protection tools include; fences to deter wild horses and wild deer, tree guards for rabbits, hares, wallabies and kangaroos, potentially Blood and Bone and wood thatch for wombats and other small native mammals.

6.3.5.6. Weed Control

A program for the control of weeds on the site will be developed and implemented in consultation with NPWS and in accordance with the KNP Plan of Management (NPWS, 2006). Early control of weeds will minimise competition and maximise early growth and survival of desired rehabilitation species. This can be achieved by physical removal or by chemical control where appropriate. Weed management will be a component of rehabilitation and management activities and will comprise:

- Regular inspections of the site are conducted as part of the compliance assurance program) that includes identification of potential weed infestations; and
- Identifying, removing and/or spraying weed populations, where appropriate.

The spread of declared noxious weeds will be prevented by using the measures above. Weed control, if required, will be undertaken in a manner that will minimise soil disturbance. Herbicides will be used in accordance with regulatory requirements. Records will be maintained of identified weed infestations and control programs will be implemented according to best management practices for the weed species of concern.

6.3.6. Ecosystem and Land Use Development and Sustainability

Activities associated with the ecosystem sustainability phase of rehabilitation are generally ongoing maintenance and land management activities and rehabilitation monitoring. Maintenance of rehabilitated areas will include, but not be limited to:

- Weeds and pest animal control;
- Managing bushfire risks;
- Minor earthworks to remediate any significant erosion features, including contour banks and diversion channels;
- Infill planting and/or seeding to meet vegetation community requirements; and
- Maintaining erosion and sediment controls.

Required rehabilitation maintenance activities will be informed by rehabilitation inspections and monitoring. Rehabilitation inspections and monitoring will be undertaken in accordance with the Rehabilitation Quality Assurance Process detailed in Section 7, until it can be demonstrated that rehabilitation areas have met all conditions for Rehabilitation Completion. Rehabilitation monitoring is discussed in Section 8.

6.3.6.1. Bogs and Fens

Bogs and fens are Commonwealth TECS that require specific rehabilitation techniques above normal soil erosion and revegetation practices. Disturbance (veg removal, roads, drainage) can interrupt normal hydrological processes and the impact will expand if unchecked. Cutting off sphagnum patches from water can result in death even if otherwise appearing undisturbed. Small water channels formed by peat/sphagnum veg removal can start an incising process that will increase down slope as water velocity increases if not managed correctly.

Rehabilitation techniques such as the use of coir logs and straw bales to slow flow, fill in incisions, leak water into newly isolated patches, and act as a temporary organic replacement will be implemented where active disturbance is observed requiring intervention. Sods and sphagnum plugs are acknowledged to be more effective than nursery grown plants and significantly reduce risk of importing pathogens and will be prioritised. Additional techniques described in *The Australian Alps rehabilitation manual 2006 & Restoration of Mires (bogs and fens) in the Australian Alps following domestic stock grazing and the impacts of the 2003 wildfires* may be implemented under the guidance of a suitable Alpine rehabilitation specialist.

Locations of bogs and fens are included in the site specific rehabilitation plans allowing for monitoring of hydrological processes and intervention where required.

7. Rehabilitation Quality Assurance Process

A Rehabilitation Quality Assurance Process (RQAP) will be implemented throughout the rehabilitation process. The RAQP will ensure that:

- Rehabilitation is being implemented in accordance with the required methodologies outlined in Section 6.3, or site specific methodologies identified in site specific RMPs; and
- Identified risks to rehabilitation are being adequately addressed at each phase of rehabilitation.

Snowy Hydro will implement the RQAP through every phase of rehabilitation to confirm that the rehabilitation strategies outlined in this RMP, and associated management plans, have been completed in accordance with the required methodologies.

The RQAP will include inspections, monitoring and documentation to ensure that each phase of decommissioning and rehabilitation has been completed in accordance with the required methodology prior to proceeding to the next phase of rehabilitation. Formal rehabilitation monitoring and reporting will occur annually, with quarterly monitoring undertaken to ensure any emerging threats are identified and actioned Observational monitoring may also be required following significant events such as storms or bushfires. Below table 7.1 outlines minimum monitoring requirements for each phase

Table 7-1 Rehab Phase monitoring requirements

Stage	**Rehabilitation phase**	**Monitoring requirement**
1	Active	Weed and erosion
2	Decommissioning	Completion of demobilisation checklist (waste removal, appropriate soil testing, agreed infrastructure removal where applicable)
3	Landform Establishment	Weeds and erosion – applicable observational monitoring
4	Growth Medium Establishment	Implementation of observational and annual monitoring as described in section 8.2 including soil testing
5	Ecosystem and Land Use Establishment	Implementation of all components of section 8.2
6	Ecosystem and Land Use Development	Implementation of all components of section 8.2

Specific validation methodologies are nominated for each rehabilitation completion criteria listed in Table 4-4 and will include:

- **Active**
  - Documentation of pre-clearance surveys;
  - Maintenance of a topsoil inventory to document stripped, stockpiled and re-spread resources and estimated volumes available for rehabilitation activities;
  - Regular inspections of temporary and permanent erosion and sediment controls;
  - Maintenance of a seed inventory and documentation of seed collection;

- Regular inspections to identify potential weed infestations; and
- Documentation of all weed management and eradication programs and follow-up inspections.

- **Decommissioning**
  - Inspections and demolition reports to confirm all infrastructure not to be retained has been removed, services disconnected and terminated;
  - Documentation to confirm any infrastructure to be retained is agreed with NPWS;
  - Validation testing to ensure any contamination and hazardous materials have been appropriately remediated and/or removed.
- **Landform Establishment**
  - Survey and preparation of as constructed drawings of final constructed slopes, landforms and water drainage structures;
  - Relevant assessment records to verify the stability of the final landforms;
- **Growth Medium Establishment**
  - Site records of re-spread topsoil, ameliorants, fertiliser etc; and
  - Soil testing results to confirm appropriate soil geochemical parameters for plant establishment.
- **Ecosystem and Land Use Establishment**

Documentation of reseeding or planting activities undertaken including:

- Target PCT
- list of species planted
- date of planting;
- weather conditions;
- seeding rate (kg/ha) and/or planting rate (tubestock/ha) for each species; and
- fertiliser / gypsum / soil amendment rate (kg/ha); and
- Regular site inspections of rehabilitated areas to allow early identification of any emerging threats to rehabilitation;
- Rehabilitation monitoring records Quarterly Observational Monitoring Form

- **Ecosystem and Land Use Development**
  - Inspections of temporary and permanent erosion and sediment controls;
  - Inspections to identify potential weed infestations;
  - Documentation of Rehabilitation Monitoring; and
  - Documentation of weed and feral animal management and eradication programs and follow-up inspections.

8. Rehabilitation Monitoring Program

A dedicated monitoring program is critical to assessing the effectiveness of rehabilitation implementation measures as well as to identify the need for corrective action as soon as required. A rehabilitation monitoring program has been established to track the progress of rehabilitated areas towards completion. The program incorporates the most appropriate indicators and methods that:

- Provide a measure of completion criteria to be assessed in accordance with the defined rehabilitation objectives;
- Are reproducible;
- Utilise scientific recognised techniques; and
- Are cost-effective.

The rehabilitation monitoring program outlined in Section 8.2 has been developed to reflect the nature of disturbance and rehabilitation and will be implemented progressively during works to cover new areas of disturbance and rehabilitation.

8.1. Reference Site Selection & Monitoring Methodology

8.1.1. Initial Reference site selection

As part of the monitoring program, reference sites will be established to allow for a comparison of the development and success of the rehabilitation against a control. Data from both reference and rehabilitation sites is an integral part of the monitoring procedure throughout the monitoring process, so that varying seasonal conditions ultimately result in a "band" of values that act as the long-term target for rehabilitation.

Reference sites have been identified for establishment based on PCTs that have been cleared for construction of the project. Sites been selected to encompass varying degrees of fire intensities / impact. However, given the broad impact of the 2019 /2020 bushfires some this was not always possible. Establishment of reference sites that provide the most accurate representation of the current and past condition of target PCTs have prioritised.

Reference sites will be selected based on the following general criteria, and in consultation with NPWS and BCD:

- Contains the same PCTs / vegetation types as the rehabilitation sites;
- Secure from future disturbance;
- Proximity to rehabilitation areas
- Including appropriate consideration of the impacts of the 2020 bushfire, previous land use and PCT variability
- Creation of acceptable range of spatial and temporal variation
- Accessibility to ensure the program can be completed when required. (If accessibility of selected sites is found to be prohibitive, alternate sites within mapped PCTs and with proximity to rehabilitation monitoring sites may be utilised).

Table 8.1 below details the number of reference sites to be monitored in the initial monitoring period (November / December 2023) as well as detailing their corresponding plot numbers from the BDAR. These sites are included in Appendix I Rehabilitation monitoring

To provide greater range of variation plots from similar PCTs have also been grouped together for the measurement of non-species specific measures groupings are as per below ecosystem type

Table 8-1 Year 1 (November / December 2024 baseline) reference sites

PCTs	Predicted impact Area (Ha)	Number of reference site	BDAR plot references
285	14	3	5, 144,2265
296	12	4	190,42,3076,79
299	0.7	1	1036
300	30	5	3300,192,87,3179,2024
302	8	3	198, 197,198, 2267
303	15	4	2145,2097,2228,2145
311	4	2	1029,3151
637	0.4	3	205 /204,99
639	5	3	1041, 2030,114, 105
643	0.1	1	173
644	23	4	77, 102,3165,38,212,2150
679	0.07	1	2273,333
729	46	7	165,1033,2084,2091,3078,3177,3060
953	3	3	5206, 112,5205
999	10	3	146, 1037,2272
1191	8	3	185,2269,
1196	36	5	3302,3229,2013,3189,90, 157
1224	58	8	35,2248,3229,2013, 3036,224,3096,199, 2044
1225	2	2	2030,33,123, 120

To provide additional rigour plots from similar PCTs will be used for the measurement of non PCT specific measures - groupings are as per below ecosystem type

Subalpine grasslands (Tantangara, Nungar and parts of Gooandra) – 1224 / 1225Black Sallee grass/sedge woodlands in wetter zones (Sub-alpine) – 285,679,302

Ribbony Gum/Peppermints and Brittle Gum forests (montane to temperate forests) – 296,299,311,999

Snow Gum/Candlebark forests – 303, 1191, 1196

Ribbony Gum, Mountain Gum, Peppermint dry forest – 300,729,953

8.1.2. Reference site Monitoring

Reference site monitoring will be undertaken commencing November / December 2023 then every 3 years. Monitoring will be undertaken in accordance with table 8.2 below

Table 8-2 Monitoring methods for reference sites

Method number	Monitoring method
1	Permanent, full floristic plots (i.e., 20x20m; cover and abundance estimate for all species present). Sites will have a GPS point recorded and 2 permanent corner posts for plots. Data to be collected is: full scientific name, estimated % foliage cover. If less than 1% cover then decimals to be used (0.1, 0.2, 0.3…). Estimated abundance of each species to be recorded from 1 to 10, 10 to 100 with intervals of 10 and 100 to 1000 in intervals of 100 and so on. Species type, i.e., native, exotic or high threat exotic to be recorded. Threatened species will be recorded per plot.
2	Permanent 50m midline transect located through the middle of the 20m x20m plot. A way point recorded at 0m and 50m and posts used to mark the points. **See Figure 1**. See section 5.1 page 29 of Biodiversity Conservation Trust Ecological Monitoring Module Operational Manual | February 2022) for further detail
3	Measurement of all trees for Diameter at Breast Height (DBH) per plot.
4	Recording of all hollow bearing trees per plot.
5	Habitat resources (coarse woody debris, ponds, rocks) per plot. Type and size of coarse woody debris to be recorded.
6	Evidence of vertebrate pests and native species (scats, digging, chewing) per plot to be recorded.
7	Soil surface characteristics will be recorded along the 50m line transect at 5m intervals. Characteristics recorded will be: Native vascular plant (living), Exotic vascular plant (living), Litter (type, depth and origin), Cryptograms, Logs (standing or dead), Rock, Water, Bare ground
8	Soil characteristics - field tests - pH, EC, texture (Samples taken in accordance with steps 1-6 of Section 5.4.1 of Biodiversity Conservation Trust Ecological Monitoring Module Operational Manual | February 2022)
9	Soil characteristics - Laboratory tests - Nitrogen, Total Carbon, Available Phosphorus, pH, EC

	(Samples taken in accordance with steps 1-6 of Section 5.4.1 of Biodiversity Conservation Trust Ecological Monitoring Module Operational Manual | February 2022)

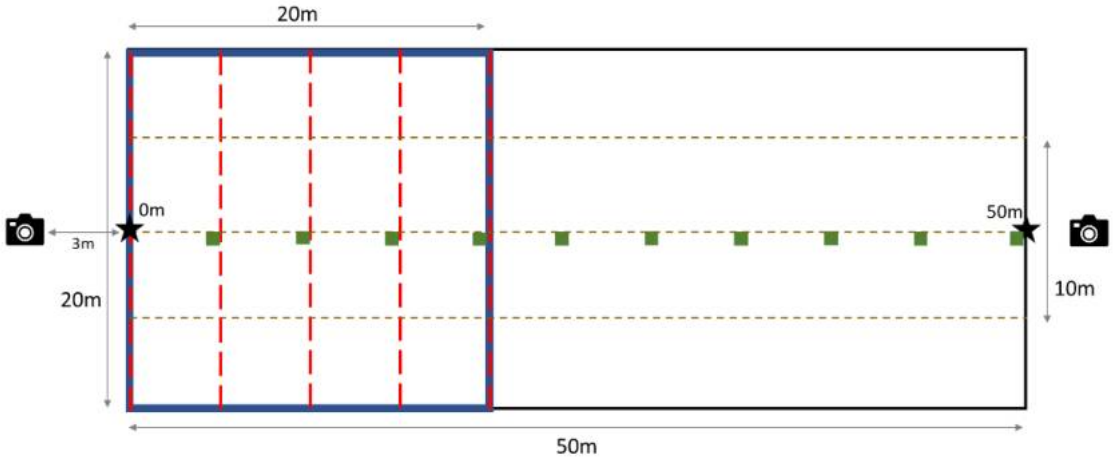


Figure 1: Monitoring plot style – Snowy 2.0 Reference Sites.

Blue box = floristics plot.
Small green box = soil surface condition points, every 5m.
Black star = Permanent transect markers.
Camera = photo point.

Monitoring styles, plot replication and data collection methodology has been sourced from: Biodiversity Conservation Trust Ecological Monitoring Module Operational Manual | February 2022:

https://www.bct.nsw.gov.au/sites/default/files/2021-02/EMM%20Operational%20Manual%20-%20Final%20Feb%202021.pdf

Monitoring sites will be physically demarcated in the field using a combination of large stainless steel tent pegs and star pickets. Plot ID will also be visible.

8.1.3. Reference Site selection validation

In conjunction with the monitoring conducted described in section 8.1.2 and its subsequent data analyses to determine replication sufficiency, Snowy Hydro's will also survey the relevant PCTs / vegetation adjoining the project site to establish general variation in the PCT condition in proximity to the project.

The survey will be conducted using a UAV with species identification capabilities that will be trained to identify PCT characteristic species and weeds of the region. The aim is to use the data collected to provide additional information regarding variability of the representative PCTs to help assess reference site selection. Ground truthing will be undertaken at the time of survey by qualified and experienced ecologists to confirm PCT characteristic species and weed identification.

Variation of the condition of the reference sites will be interpreted by the species recorded and abundance of native and pest species within each reference plot for each PCT (1 digital quadrat per hectare) This will aid the review of the adequacy of the selected sites by providing a measure of uniformity of the PCTs surveyed.

PCT characteristic species are outlined in Appendix G of the Snowy 2.0 Main Works -Biodiversity Development Assessment Report (Revised) February 2020.

In addition to the monitoring conducted of reference sites described in table 8.1 a minimum of 10 digital reference sites per PCT will be monitored using digital quadrats from UAV collected data this information will be made available during the post monitoring consultation to determine inclusion in annual reporting.

Upon completion of the initial baseline monitoring SHL will consult NPWS to determine the suitability of both the number and suitability of the initial reference sites selected in accordance with below timeline.

1. November / December / January 2024 / 2025 – Baseline monitoring of reference sites conducted
2. April 2025 – Monitoring data and analysis provided to NPWS
3. April 2025 - Consultation
4. June 2025 – Update monitoring plan if required

8.1.4. Final Reference site selection process

Final reference site selection for measurement against completion criteria will be determined in conjunction with the NPWS following initial data collection and analysis. The initial analysis will be provided to all stakeholders by April 2025 for consultation.

Note: Analysis of the UAV data from the initial survey seeking to provide insight on the variation and condition of the relevant PCTs will be presented separately to the ecological monitoring undertaken as per table 8.2.

8.2. Rehabilitation Monitoring Methodology

8.2.1. Monitoring techniques

Monitoring of rehabilitation will be conducted using 3 different types of monitoring techniques

1- Observational
2- Formal ecological field survey and
3- UAV monitoring

These difference methods will be used inform both maintenance required during the establishment phase and the trajectory towards the desired rehabilitation state. The following describes each of the monitoring types and its application.

Observational monitoring of rehabilitation sites to be done quarterly (4 times per year). A checklist will be used and will generate maintenance programs and further rehabilitation works (if required). This checklist will include the measures linked to the TARPs outlined in section 10.2. See link to a digital checklist that will form the basis for the quarterly observational monitoring:

Quarterly Observational Monitoring Form

Information from observational monitoring to be provided in Snowy 2.0 Annual Reports.

UAV monitoring - Will primarily be used to provide whole of site monitoring of elements such as erosion, bare ground, plant growth and weed cover that enable accurate tracking of rehabilitation trajectory year on year. **Table 8.3** outlines the details of the UAV monitoring program).

Table 8-3 UAV Annual rehabilitation monitoring

Monitoring parameter	Description
PCT variation	(1 digital 20m x 20 quadrat per Ha) Identification of 5 PCT characteristic species and weeds with species planted as tube stock added over time with machine learning
Weeds	Weed abundance and species
Native species	species composition, cover, structure and health
Bare ground	% Area and location
Erosion	Depth, width, length, change over time
Habitat features	Logs and rock
Pest species	Track and individual at time of survey
Human Disturbance	Wheel tracks, waste
Legacy Items	Infrastructure for removal

The application of UAV monitoring for completion criteria measurement will be reviewed following processing of survey results and discussed with NPWS and BCD to determine the suitability for potential use in the future it is understood at this point in time it is not an acceptable measure of completion

Formal ecological monitoring - To monitor the vegetative and ecological function of the rehabilitation sites and compare this data with reference site data over time. This will provide data on the ecological recovery of the rehabilitation sites for each PCT. Conducted ever every 3 years, this interval of monitoring will assess the changes and deficiencies within the rehabilitation zones and how the rehabilitation sites are tracking as compared to reference sites. Formal ecological monitoring to be undertaken in accordance with the reference site monitoring in **table 8.2**.

Quarterly observational monitoring and the annual UAV monitoring will be used as the primary management tool for rehabilitation assessment / progress in the initial phases of rehabilitation in addition to guiding the maintenance program. Formal ecological monitoring will be increasingly important as the rehabilitation sites develop.

8.2.2. Rehabilitation Monitoring plot establishment

- The number of monitoring plots for each PCT to align with reference site selection numbers outlined in **table 8.1**. Heterogeneity of rehabilitation sites will be considered, and plot numbers increased where differences in aspect, topography and site characteristics are recognised.

- Rehabilitation monitoring points will be specified in the individual site rehabilitation plans.
- All monitoring sites identified in the site-specific rehabilitation plans will be added to the project GIS platform and included on the figures presented in Appendix I Rehabilitation Monitoring - Reference sites as they are established.
- Monitoring sites will be physically demarcated in the field using a combination of large stainless steel tent pegs and star pickets. Plot ID will also be visible.

8.2.3. Rehabilitation Monitoring frequency

Table 8.4 below outlines the required frequency and timing of the different monitoring types

Table 8-4 Rehabilitation monitoring frequency

	Monitoring Type	Frequency	Timing
1	Observational / Event based	After 100mm rainfall event (within 48 hours)	As required
2	Observational Routine	Quarterly	March, June, September, Dec
3	UAV	Annually	November / December
4	Ecological (reference and rehabilitation)	Every 3 years	November / December / January 2024 , 2027 , 2030 etc

8.3. Reporting

As required by Schedule 3 Condition 10(k) of CSSI-9687 and condition 25 of EPBC 2018/8322, Snowy Hydro will publicly report via the SHL website on the rehabilitation monitoring undertaken for the project including details of the:

- rehabilitation of individual sites;
- implementation of the each of the detailed plans, including the effectiveness of the proposed mitigation and contingency measures; and
- progress against the detailed completion criteria and performance indicators.

Reporting will include an Annual Rehabilitation Report which will:

- report on the rehabilitation (both quantity and quality) undertaken over the previous 12-month (June – May) period to demonstrate adequate progress through the phases of rehabilitation; and
- establish whether rehabilitation is on a trajectory towards meeting the Rehabilitation Objectives and Completion Criteria outlined in Section 4.
- Be provided to NPWS and BCD by July 31st each year

Annual Reporting to NPWS and BCD will also include:

- Identification of TARPs that have been activated and actions taken in response
- Drone summary data captured as per table 8.3
- Quarterly monitoring reports
- Draft rehabilitation program for the following monitoring period

9. Rehabilitation Research

9.1. Current Rehabilitation Research

No targeted rehabilitation trials have been undertaken as part of the Snowy 2.0 project. However, monitoring has been undertaken in areas of Lobs Hole which were cleared for infrastructure development and/or burnt in the 2019-20 bushfire have shown some native colonising species germinating and establishing. A Flora Monitoring Report (Alpine Flora, 2021) https://drive.google.com/file/d/1d_VcUKcx7SKU-7U7Kt7AR5abqgWXfnvP/view?usp=drive_link has been prepared to identify the floral species occurring on three different areas within Lobs Hole. The monitoring report concluded the following:

- Most species recorded are from the Myrtaceae, Fabaceae, Mimosaceae, Asteraceae and Poaceae families and consist of the dominant colonising species of the Kosciuszko National Park at this altitude.
- There is little natural colonisation of native species where rye-corn was sown as an erosion control method. This is most likely because rye-corn is allelopathic, which means it exudes a phyto-chemical from its roots that inhibits the germination of other species. This chemical leaches away over time.
- Overall, there are some species common to the sites, such as Acacia pravissima, Cassinia longifolia and Kunzea parvifolia. All the species listed provide a good indication of what species are good for rehabilitating the Lobs Hole area.
- .

It is acknowledged that between NPWS and consultants such as Alpine Flora that a significant amount of rehabilitation has been undertaken in KNP and this plan hopes to incorporate these practical learnings from this work. Proven rehabilitation techniques of reshaping, decompacting soils, mulching with rice straw or woodchips and tubestock planting has been used successfully and has been incorporated into the rehabilitation planning to the project.

Effective rehabilitation is based on frequent site visits and adaptive management to address any issues. However, multiple techniques have been used in effective rehabilitation projects in the Australian Alps. The Rehabilitation Field Guide of the Australian Alps - The Green Book: E.MacPhee 2013 will be referenced for proven rehabilitation techniques in these ecosystems.

9.2. Future Rehabilitation Research

Snowy Hydro focus is on conducting detailed monitoring of early rehabilitation works to further inform preferred techniques for the Main Works rehabilitation particularly where they may vary from traditional methods. However it is noted that these techniques will likely only build on the methodologies already described in *The Rehabilitation Field Guide of the Australian Alps - The Green Book: E.MacPhee 2013.*

As the rehabilitation program commences Snowy Hydro will also look to foster further research opportunities to gain additional knowledge that can be applied to both improve ecological outcomes both within the project and regionally.

As outlined in section 8 SHL will look to determine the suitability of UAV monitoring data in measurement of completions criteria in the future in conjunction with key stakeholders.

10. Intervention and Adaptive Management

10.1. Threats to Rehabilitation

Unpredictable events such as bushfires, droughts and floods/ heavy rainfall events may present risks to rehabilitation. These events generally have significant consequences for rehabilitation quality and are likely to require adaptive management in order to mitigate risks and achieve relinquishment of affected rehabilitation areas within a satisfactory timeframe. Although these events may have a high degree of unpredictability, monitoring the status of contributing factors enables an assessment of the likelihood of a major impact to rehabilitation occurring.

Other major risks to rehabilitation may not present as sudden events, but as an increasing impact over an extended period of time. For example, increasing feral pest numbers may increase pressure on native fauna and vegetation communities. Threats to rehabilitation have been assessed as part of the rehabilitation risk assessment detailed in Section 3 along with current and proposed controls to mitigate the risks.

Table 10-1 summarises the key threats to rehabilitation for the project as identified during the rehabilitation risk assessment. Where the RQAP or monitoring indicates that there is a significant threat to rehabilitation, adaptive management will be undertaken in accordance with the Rehabilitation Trigger Action Response Plan (TARP) described in Section 10.2.

Threats to rehabilitation such as insufficient or timeliness of tubestock production,planting success or direct seeding germination rates will be reduced by engagement of personnel and creation of partnerships with people with extensive experience in plant production and seed germination requirements. All seed will be tested prior to providing it to nurseries or application for direct seeding. No species will be sown or planted in a PCT where it has not been recorded in corresponding reference sites.

Table 10-1 Key Threats to Rehabilitation

Threat	Caused by
Erosion and Sediment Control	- Rainfall events. - Lack of appropriate vegetation cover. - Failure of water management structures.
Soil Type(s) and Suitability	- Inadequate growth media available. - Poor growth media quality. - Weed infested growth media. - Poor recovery of topsoil/subsoil from disturbed areas.
Spontaneous Combustion	- Poor management of stockpiled materials with propensity for spontaneous combustion.
Flora	- Not considering requirements in rehabilitation planning. - Not collecting and propagating sufficient native seed stock. - Failure to manage weeds. - Pest species / grazing pressures (kangaroos, rabbits deer etc.).
Geotechnical	- Geotechnical slope failure.
Geology and Geochemistry	- Poor knowledge of material and its geochemistry. - Poor management of potentially acid forming material (PAF) - Inappropriate placement of materials. - Inappropriate compaction - Inappropriate material unsuitable for target plant growth

Threat	Caused by
Bushfire	- Location within KNP - Regional fire. - Lightning strike. - Spontaneous combustion / construction activity

10.2. Trigger Action Response Plan

The following TARP for rehabilitation has been developed to identify required management actions in the event of impacts to rehabilitation, or where rehabilitation outcomes are not achieved in an acceptable time frame. Where necessary, rehabilitation procedures will be amended accordingly with the aim of continually improving rehabilitation standards to achieve the objectives outlined in this RMP.

The TARP is provided as Table 10-2 and may be revised as conditions change, new information becomes available from supporting specialist assessments/monitoring or new risks to rehabilitation are identified. Revised TARPs will be circulated to RMP stakeholders for consultation and included in RMP revisions.

The Rehabilitation Manager is responsible for implementation of the TARP.

Table 10-2 Trigger Action Response Plan

Aspect/Category	Key	Element	Trigger	First-Level Trigger	Second-Level Trigger
Landform stability	Erosion	1	Trigger	a)Minor erosion present. (less than 300 mm) b)Incision noted in bogs and fens	Major erosion present which is compromising landform stability.
			Response	a) An inspection of the site will be undertaken by a suitably trained person. Investigate opportunities to install (or augment existing) water management infrastructure or erosion control measures to address erosion. Remediate as appropriate.(Within 3 months) b) implement appropriate remediation guided by alpine specialist (within 1 month) –	Engage a consultant / appropriately qualified persons to assist with the management of erosion and sedimentation at the site and provide recommendations to appropriately remediate the erosion. Remediate as soon as practicable. (within 3 months)
Growth media	Topsoil	2	Trigger	Topsoil balance indicates a deficiency in topsoil available for rehabilitation through comparison of stockpiled material against areas to be rehabilitated at notional cover of ~50mm following completion of all stripping and consolidation of topsoil inventory.	Deficiency significant and alternate not available such that it will delay rehabilitation progression and the likelihood of rehabilitation success is low.
			Response	Investigate options and alternatives to be able to meet future topsoil requirements. Choose an alternative for implementation.	Source and budget for topsoil alternative for use in rehabilitation, investigate use of alternatives such as organic material. Develop plan / procedure for implementation within 12 months

Aspect/Category	Key	Element	Trigger	First-Level Trigger	Second-Level Trigger
		3	Trigger	a)Properties of soil are inconsistent with reference sites but are capable of sustaining selected vegetation species. b) Drying out of bogs fens intersecting project area / not consistent with surrounding conditions	Properties of soil are inconsistent with reference sites and the area is not able to sustain selected vegetation species.
			Response	a)Investigate application of additional soil, and/or use of appropriate soil ameliorants or management options to address soil quality if deemed unlikely to meet completion criteria / support growth and implement . b) implement appropriate remediation guided by alpine specialist (within 3 months)	Consultant to be engaged to assist with recommendations to appropriately remediate soil quality and depth. Remediate as soon as practicable, within 12 months.
Vegetation	Ground	4	Trigger	Bare patches are > 15% and < 30 % (excluding rocks and logs).	Bare patches are > 30% (excluding rocks and logs).
			Response	Investigate likely causes of unsatisfactory germination rates and treat accordingly. Treatments may include: ● Replanting of expired planted tubestock with the equivalent species for the PCT. ● Reseeding areas with unsatisfactory cover . ● Review seeding procedures including seasonal mixes, timing and seed rate per hectare. ● Application of mulch The response program is to target reseeding/replanting within 12 months or in the next available planting season, subject to suitable weather conditions.	Revisit revegetation methodology (i.e.. substitute seeding for tubestock) Undertake analytical soil testing and evaluation, where appropriate implement recommendations for amelioration. Implement appropriate management actions including revising rehabilitation procedures if required.

Aspect/Category	Key	Element	Trigger	First-Level Trigger	Second-Level Trigger
	Vegetation	5	Trigger	Vegetation health not in the range of reference sites. 5 -20% mortality rate	Long term declining trend in vegetation health Greater than 20% mortality rate
			Response	Investigate likely causes of vegetation sickness and / or mortality rates. Reseed or replant areas with high sickness or mortality rates. Review seeding and / or planting procedures. Prepare and Implement plan for treatment for weeds and pathogens e.g. phytophthora The response program is to target treatment/reseeding/replanting within 12 months or in the next available planting season, subject to suitable weather conditions.	Engage a suitably qualified specialist to investigate causes for vegetation sickness and mortality. Implement appropriate management actions including revising rehabilitation procedures if required.
	Species	6	Trigger	Species composition is not consistent with the sewn seed mix, target PCT and or, reference sites.	Ongoing decline in species composition away from reference site and target PCT composition.

Aspect/Category	Key	Element	Trigger	First-Level Trigger	Second-Level Trigger
			Response	Investigate the likely causes of unsatisfactory germination and or, growth rates. Reseed / replant areas with unsatisfactory cover. Review seeding procedures including seasonal mixes, timing and seed rate per hectare. The response program is to target reseeding/replanting within 12 months /in the next available planting season, subject to suitable weather conditions.	Undertake analytical soil testing and evaluation. Where appropriate implement recommendations for amelioration. Revisit revegetation methodology (i.e.. substitute seeding for tubestock) Implement appropriate management actions including revising rehabilitation procedures if required.
	Weeds	7	Trigger	Monitoring indicates the density of weeds in rehabilitation areas exceeds reference sites.	Monitoring indicates substantial weed infestations.
			Response	Undertake weed management to remove / spray introduced weed species. Treatment of infestations as appropriate to the species with all registered noxious weeds to be removed/sprayed.	Undertake weed management to remove introduced weed species. Investigate management measures to reduce weeds including additional soil amelioration, establishment and retention of cover crops until weed presence is at acceptable levels. Implement recommendations as appropriate.

Aspect/Category	Key	Element	Trigger	First-Level Trigger	Second-Level Trigger
	Pest	8	Trigger	Pest animal species are causing damage to rehabilitation.	Continued damage to rehabilitation from pests after tree guards and fencing has been installed.
			Response	Consult with relevant government agencies to recommend and implement appropriate pest animal control campaign. This may be run by the project or if agreed as part of a joint program. Fence select areas of rehabilitation where appropriate after consultation with NPWS	Liaise with government agencies and consider appropriate options in accordance with NPWS guidelines regulations.

11. Review, Revision and Implementation

11.1. Review and Revision of the RMP

In accordance with Schedule 4 Condition 4 of CSSI 9687, unless agreed otherwise by the Secretary this RMP will be reviewed, and if necessary updated, within three months of

a) the submission of an incident report;
b) the submission of an independent environmental audit report under condition 10 below;
c) any modification to the conditions of this approval; or
d) a direction of the Planning Secretary under condition 4 of schedule 2.

This is to ensure the strategies, plans and programs are updated on a regular basis, and incorporate any recommended measures to improve the environmental performance of the development.

This RMP will also be regularly reviewed and, if necessary, updated to incorporate the site-specific plans which will be prepared in consultation with key stakeholders progressively throughout the project.

Any major amendments to the project that affect its application will be undertaken in consultation with the appropriate regulatory authorities and stakeholders.

11.2. Implementation

The role and responsibilities for each team position is summarised in Table 11-1.

Table 11-1 Roles and Responsibility

Position	Role	Responsibility
Project Director	Oversee the delivery of the project rehabilitation.	Sponsor and provide high level input to the project. Provide resources required to support implementation of this plan Ensure delivery of the project.
Environmental Manager	Manage the delivery of this plan	Manage the costs and schedule performance of the project. Provide project updates to the Project Director. Evaluation of potential subcontractors. Report on rehabilitation progress and success
Decommissioning and Rehabilitation Advisor	Manage day to day implementation of this plan	Provide advice on decommissioning and rehabilitation strategies and approaches Facilitate and manage engagement of subcontractors to complete works to meet schedule Undertake progress reviews Participate in internal meetings, as well as with SHL and regulators. Prepare reports on rehabilitation progress and success Coordinate works with wider project Ensure linkages are made and are consistent with other management plans

Position	Role	Responsibility
Rehabilitation specialists	Provide specialist advice and input where required.	Provide input into site specific rehabilitation plans Undertake specialist activities such as rehabilitation implementation and monitoring
Engineering Lead	Provide engineering support associated with the design and construction of the spoil dumps and civil works.	Provide required engineering details to project manager and technical specialists.
Procurement	Provide finance and administrative support for the project	Provide a range of financial and administrative support to the Environmental manager. Support the procurement process for the tenders and engagement of sub-contractors.

APPENDIX A

PCTs within the Construction Envelope (Source: BMP)

Table 3-1: Plant community Types mapped within the construction envelope (Main Works RTS, EMM 2020)

Plant community type	Vegetation formation	Vegetation class
PCT 285 – Broad-leaved Sally grass – sedge woodland on valley flats and swamps in the NSW South Western Slopes Bioregion and adjoining South Eastern Highlands Bioregion**	Dry Sclerophyll Forests (Shrub/grass sub- formation)	Upper Riverina Dry Sclerophyll Forests
PCT 296 – Brittle Gum – Peppermint open forest of the Woomargama to Tumut region, NSW South Western Slopes Bioregion	Dry Sclerophyll Forest (Shrubby sub-formation)	Southern Tableland Dry Sclerophyll Forests
PCT 299 – Riparian Ribbon Gum - Robertsons Peppermint - Apple Box riverine very tall open forest of the NSW South Western Slopes Bioregion and South Eastern Highlands**	Dry Sclerophyll Forest (Shrubby sub-formation)	Southern Tableland Dry Sclerophyll Forests
PCT 300 – Ribbon Gum - Narrow-leaved (Robertsons) Peppermint montane fern - grass tall open forest on deep clay loam soils in the upper NSW South Western Slopes Bioregion and western Kosciuszko escarpment**	Wet Sclerophyll Forests (Grassy sub-formation)	Southern Tableland Wet Sclerophyll Forests
PCT 302 - Riparian Blakely's Red Gum - Broad- leaved Sally woodland - tea-tree - bottlebrush − wattle shrubland wetland of the NSW South Western Slopes Bioregion and South Eastern Highlands Bioregion**	Dry Sclerophyll Forests (Shrub/grass sub- formation)	Upper Riverina Dry Sclerophyll Forests
PCT 303 – Black Sally grassy low woodland in valleys in the upper slopes sub-region of the NSW South Western Slopes Bioregion and western South Eastern Highlands Bioregion**	Grassy Woodlands	Southern Tableland Grassy Woodland
PCT 311 – Red Stringybark - Broad-leaved Peppermint - Nortons Box heath open forest of the upper slopes subregion in the NSW South Western Slopes Bioregion and adjoining South Eastern Highlands Bioregion	Dry Sclerophyll Forests (Shrub/grass sub- formation)	Upper Riverina Dry Sclerophyll Forests
PCT 637 – Alpine and sub-alpine peatlands, damp herbfields and fens, South Eastern Highlands Bioregion and Australian Alps Bioregion^{T} **	Alpine Complex	Alpine Bogs and Fens
PCT 639 – Alpine Ash - Snow Gum shrubby tall open forest of montane areas, South Eastern Highlands Bioregion and Australian Alps Bioregion	Wet Sclerophyll Forests (Grassy sub-formation)	Montane Wet Sclerophyll Forests
PCT 643 - Alpine shrubland on scree, blockstreams and rocky sites of high altitude areas of Kosciuszko National Park, Australian Alps Bioregion	Alpine Complex	Alpine Heaths
PCT 644 – Alpine Snow Gum - Snow Gum shrubby woodland at intermediate altitudes in northern Kosciuszko NP, South Eastern Highlands Bioregion and Australian Alps Bioregion	Grassy Woodlands	Subalpine Woodlands
PCT 679 – Black Sallee - Snow Gum low woodland of montane valleys, South Eastern Highlands Bioregion and Australian Alps Bioregion**	Grassy Woodlands	Subalpine Woodlands
PCT 729 - Broad-leaved Peppermint - Candlebark shrubby open forest of montane areas, southern South Eastern Highlands Bioregion and South East Corner Bioregion	Dry Sclerophyll Forests (Shrubby sub-formation)	Southern Tableland Dry Sclerophyll Forests
PCT 952 – Mountain Gum - Narrow-leaved Peppermint - Snow Gum dry shrubby open forest on undulating tablelands, southern South Eastern Highlands Bioregion	Grassy Woodlands	Subalpine Woodlands
PCT 953 – Mountain Gum - Snow Gum - Broad-leaved Peppermint shrubby open forest of montane ranges, South Eastern Highlands Bioregion and Australian Alps Bioregion	Dry Sclerophyll Forests (Shrubby sub-formation)	Southern Tableland Dry Sclerophyll Forests
PCT 999 - Norton's Box - Broad-leaved Peppermint open forest on footslopes, central and southern South Eastern Highlands Bioregion	Dry Sclerophyll Forests (Shrubby sub-formation)	Southern Tableland Dry Sclerophyll Forests

Plant community type	Vegetation formation	Vegetation class
PCT 1191 – Snow Gum - Candle Bark woodland on broad valley flats of the tablelands and slopes, South Eastern Highlands Bioregion	Grassy Woodlands	Subalpine Woodlands
PCT 1196 - Snow Gum - Mountain Gum shrubby open forest of montane areas, South Eastern Highlands Bioregion and Australian Alps Bioregion	Grassy Woodlands	Subalpine Woodlands
PCT 1224 – Sub-alpine dry grasslands and heathlands of valley slopes, southern South Eastern Highlands Bioregion and Australian Alps Bioregion	Grasslands	Temperate Montane Grasslands
PCT 1225 – Sub-alpine grasslands of valley floors, southern South Eastern Highlands Bioregion and Australian Alps Bioregion**	Grasslands	Temperate Montane Grasslands

[T] Threatened Ecological Community (EPBC Act and BC Act)

*** Groundwater Dependent Ecosystem (GDE) see Section 3.2*

APPENDIX B

Mapped PCTs within the Construction Envelope (Source: BMP)

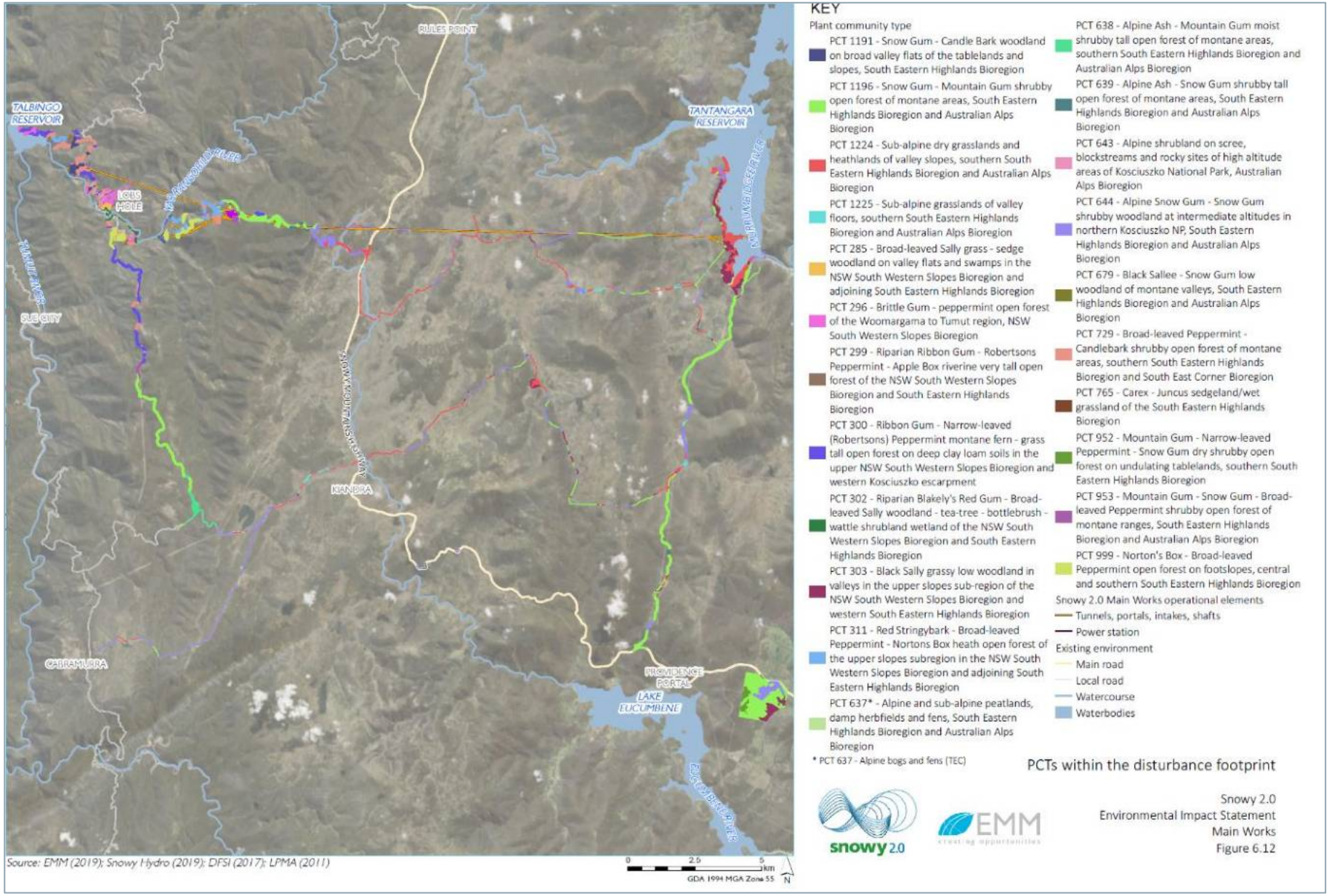
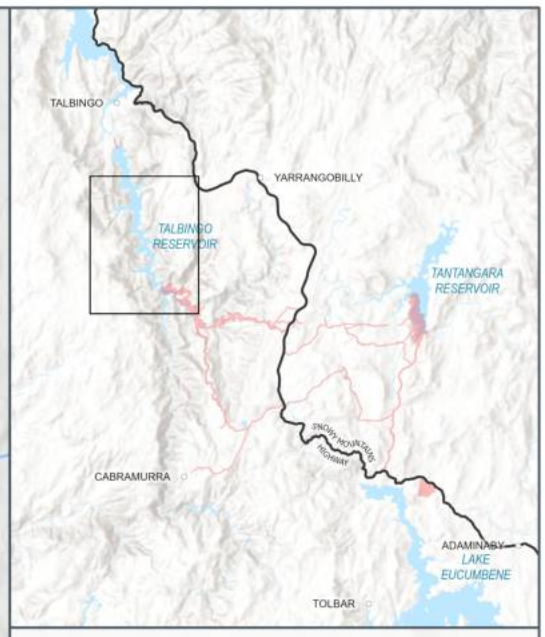


Figure 3-1: PCTs within the construction envelope (EIS, EMM)

APPENDIX C

Final Land Use Domains (Including Recreation and roads)

(To be updated following approval of Recreation management plan and Long Term Roads Strategy)



NOTE

- GIP Boreholes
- Comms Cable - Talbingo Dam (Indicative)
- Opeational Road
- Public Access Road
- Drainage
- Full Supply Level (FSL)

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

285 300 729
296 302 1191
299 311

TALBINGO RESERVOIR

296 300
299
311
729
1191
300 296
729
302 285

snowy hydro

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Lobs Hole - Talbingo Dam

N

Prepared by: RG14442
Date: 5/10/2023

0 590 1,180 1,770 Meters

Spatial Reference: GDA2020 MGA Zone 55

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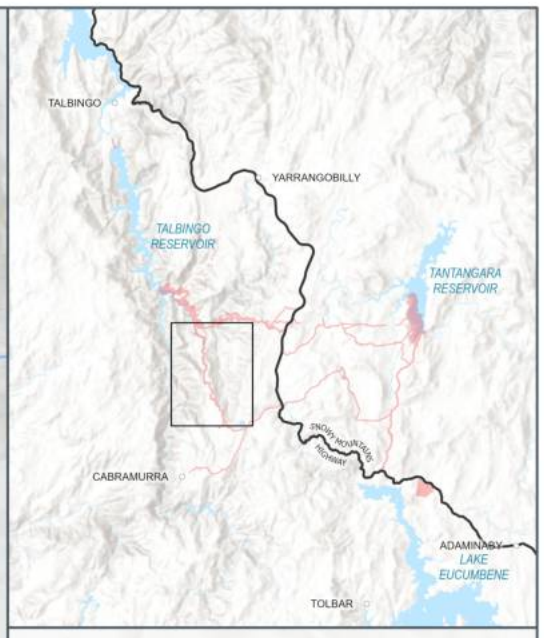

NOTE

- GIP Boreholes
- Public Access Road
- Park Management Road
- Drainage
- Full Supply Level (FSL)

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

285	303	938
296	311	953
299	639	999
300	643	1196
302	729	

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Ravine Road - Overview

N

Prepared by: RG14442
Date: 5/10/2023

0 440 880 1,320 Meters

Spatial Reference: GDA2020 MGA Zone 55

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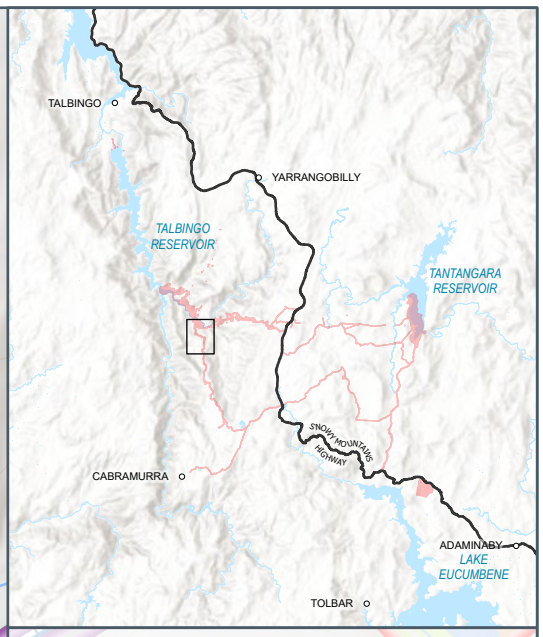

NOTE

- GIP Boreholes
- Public Access Road
- Drainage

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

285 | 300 | 999
296 | 302
299 | 729

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Ravine Road - 1

N

Prepared by: RG14442
Date: 5/10/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55

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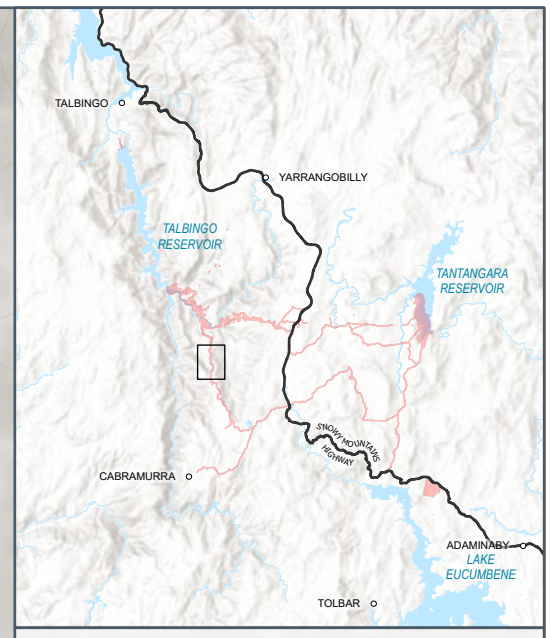

NOTE

- GIP Boreholes
- Public Access Road
- Drainage

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

300	729	1196
303	938	
643	953	

729
300
300
729
300
643
953
1196
938
303

snowy hydro

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Ravine Road - 2

N

Prepared by: RG14442
Date: 5/10/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55

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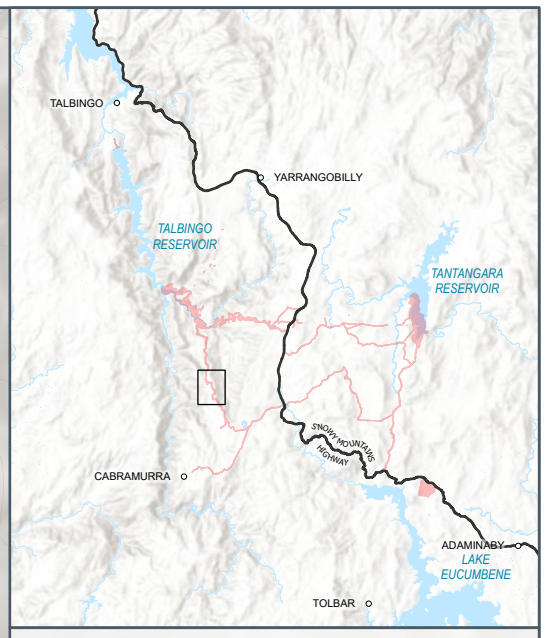

NOTE

- GIP Boreholes
- Public Access Road
- Drainage

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

300 938 1196
303 953

300
953
1196
938
303
953
1196
1196
1196

snowy hydro

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Ravine Road - 3

N

Prepared by: RG14442
Date: 5/10/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55

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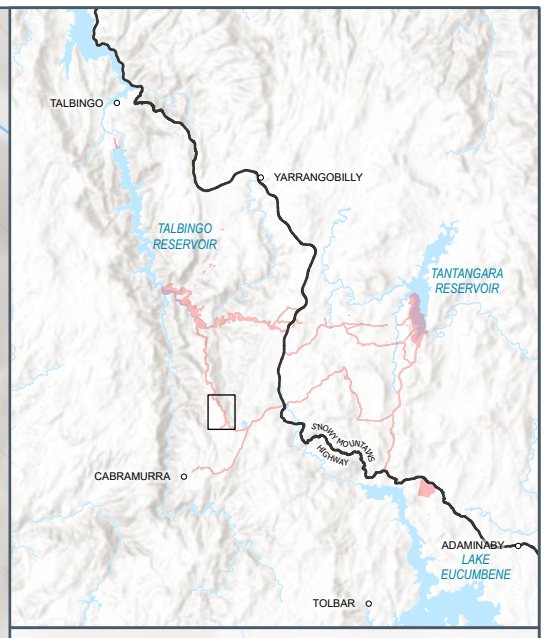

NOTE

- GIP Boreholes
- Public Access Road
- Drainage

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

639 1196

1196

1196

639

1196

639

LINK ROAD

LINK ROAD

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Ravine Road - 4

N

Prepared by: RG14442
Date: 5/10/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55

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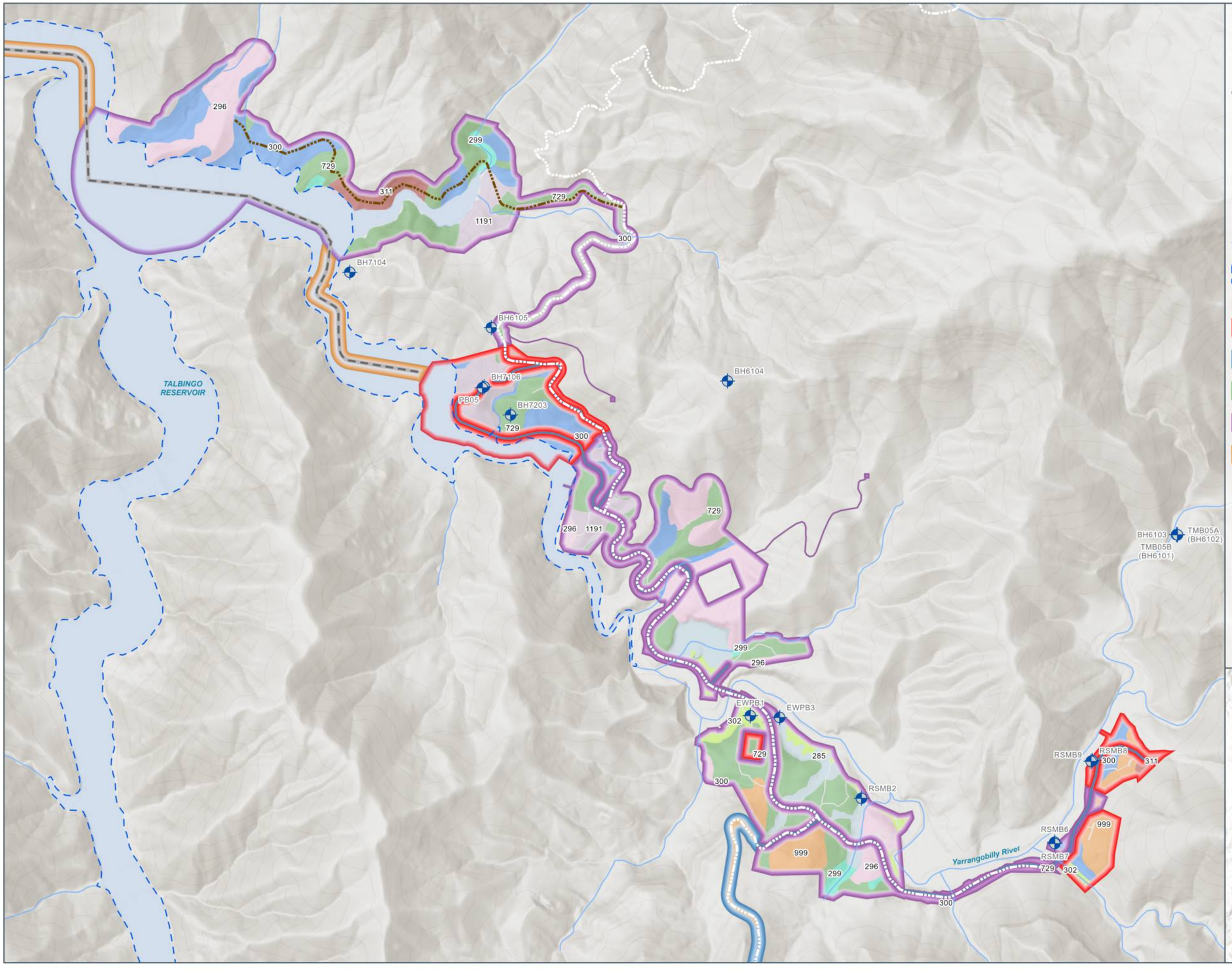


NOTE

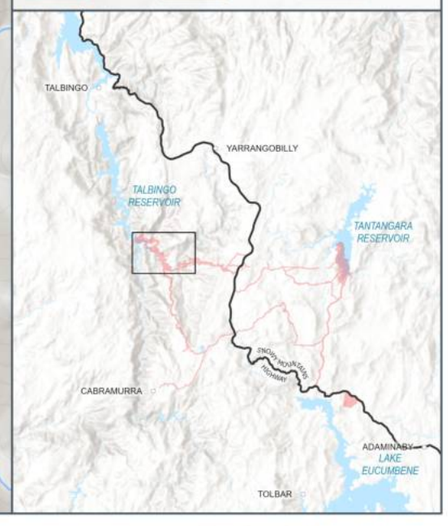
- GIP Boreholes
- Comms Cable - Talbingo Dam (Indicative)
- Comms Cable - Trunk Service (Indicative)
- Opeational Road
- Public Access Road
- Drainage
- Full Supply Level (FSL)

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

285	300	729
296	302	999
299	311	1191



snowyhydro

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Lobs Hole - Overview

Credits: Data used is owned by Snowy Hydro Limited except as follows:Esri, CGIAR, Esri, Geoscience Australia, NASA, NGA, USGS

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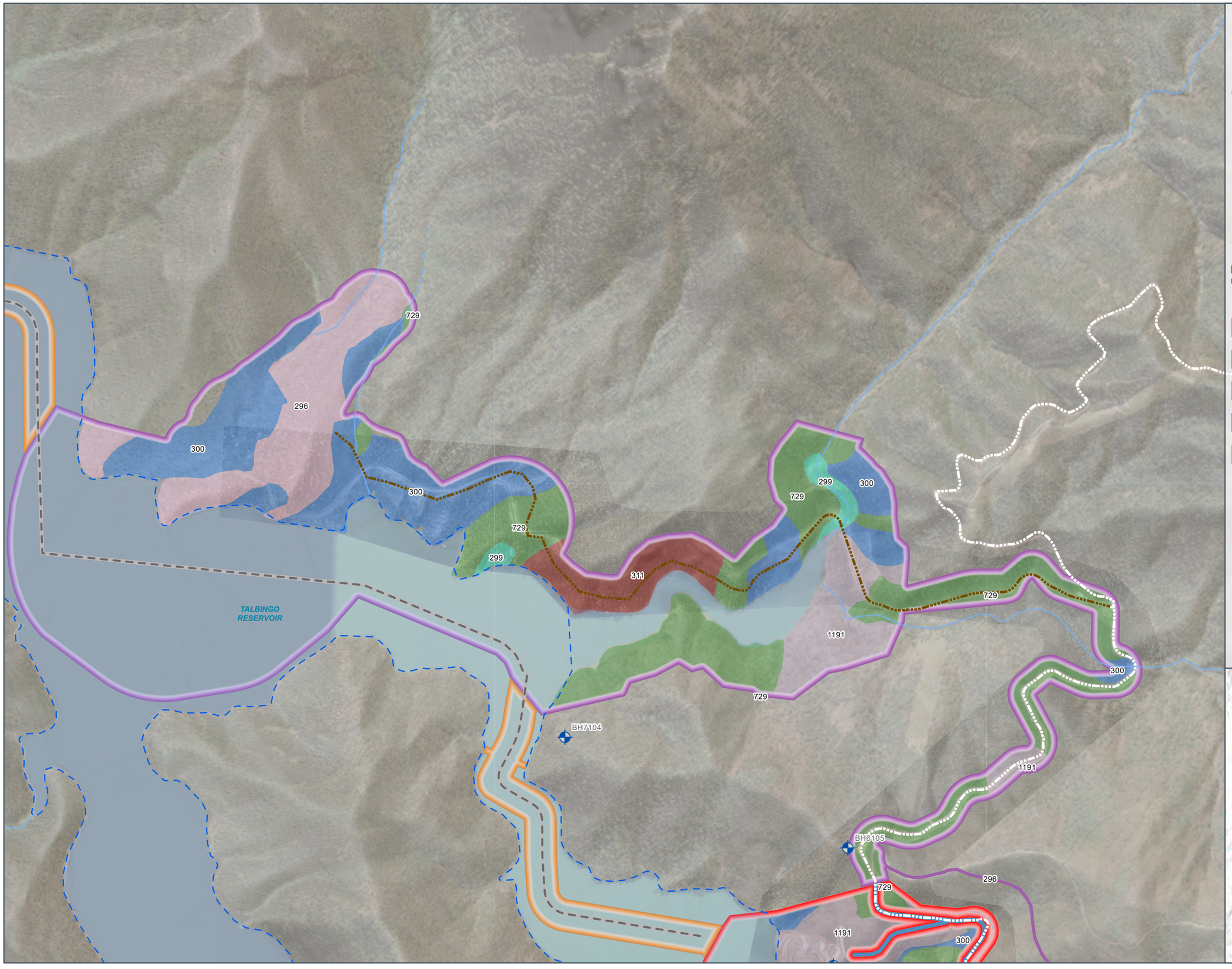
N

Prepared by: Karen Zhu
Date: 5/10/2023

0 290 580 870 Meters

Spatial Reference: GDA2020 MGA Zone 55



NOTE

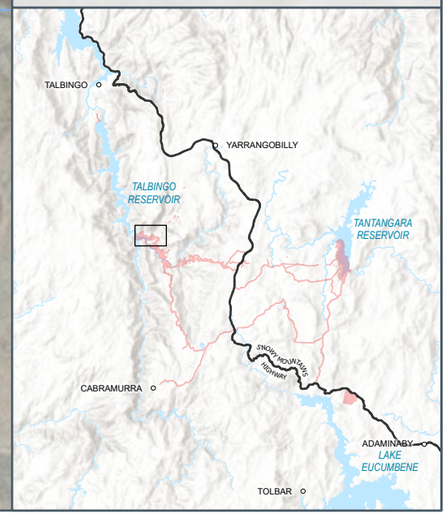
- GIP Boreholes
- Comms Cable - Talbingo Dam (Indicative)
- Comms Cable - Trunk Service (Indicative)
- Opeational Road
- Public Access Road
- Drainage
- Full Supply Level (FSL)

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

296 300 729
299 311 1191



snowyhydro

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Lobs Hole - 1

Credits: Data used is owned by Snowy Hydro Limited except as follows:Esri, CGIAR, Esri, Geoscience Australia, NASA, NGA, USGS, Maxar

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N

Prepared by: Karen Zhu
Date: 5/10/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55

NOTE

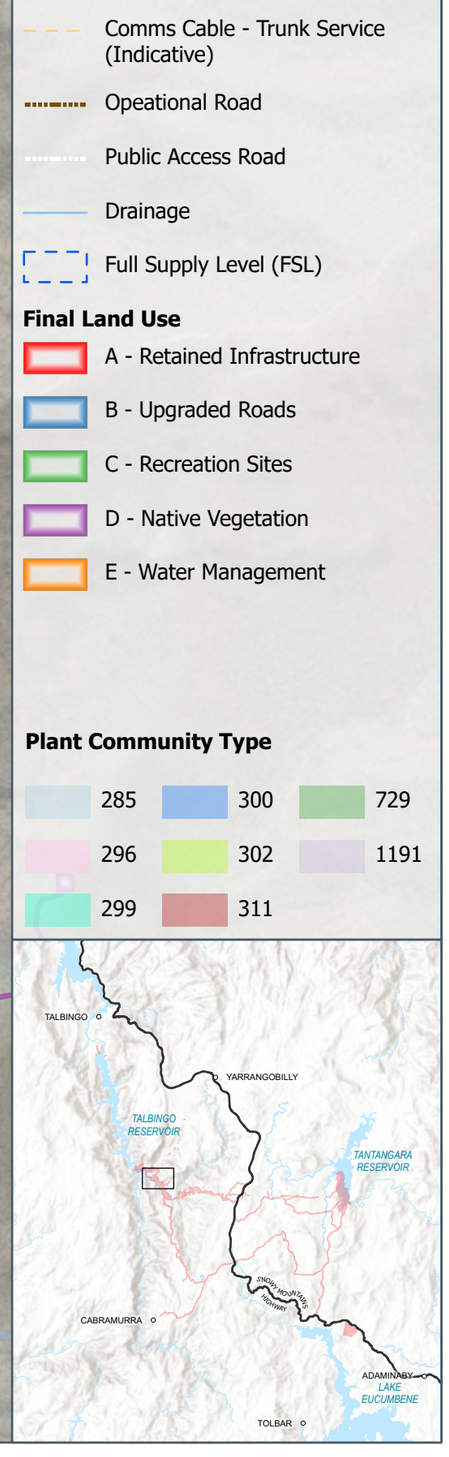
- GIP Boreholes
- Comms Cable - Talbingo Dam (Indicative)
- Comms Cable - Trunk Service (Indicative)
- Opeational Road
- Public Access Road
- Drainage
- Full Supply Level (FSL)

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

285 300 729
296 302 1191
299 311



snowyhydro

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Lobs Hole - 2

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N

Prepared by: Karen Zhu
Date: 5/10/2023

0 140 280 420
Meters

Spatial Reference: GDA2020 MGA Zone 55

NOTE

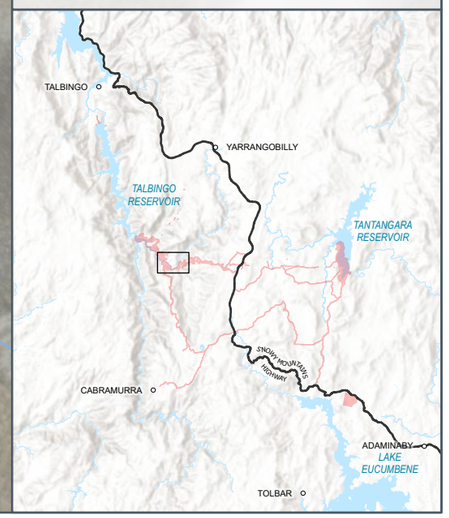
- GIP Boreholes
- Comms Cable - Talbingo Dam (Indicative)
- Comms Cable - Trunk Service (Indicative)
- Public Access Road
- Drainage
- Full Supply Level (FSL)

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

285	300	729
296	302	999
299	311	1191



Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Lobs Hole - 3

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N

Prepared by: Karen Zhu
Date: 5/10/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55

NOTE

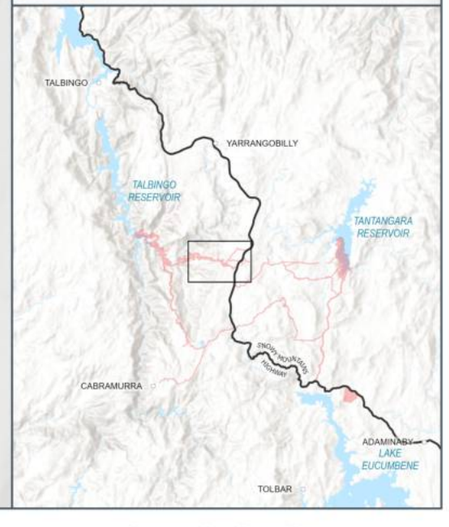
- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- SHL Exclusive Road
- Park Management Road
- Drainage

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

300	679	1224
637	729	1225
639	953	
644	1196	



snowyhydro

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Marica - Overview

Credits: Data used is owned by Snowy Hydro Limited except as follows:Esri, CGIAR, Esri, Geoscience Australia, NASA, NGA, USGS

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N

Prepared by: Karen Zhu
Date: 5/10/2023

0 290 580 870 Meters

Spatial Reference: GDA2020 MGA Zone 55



NOTE

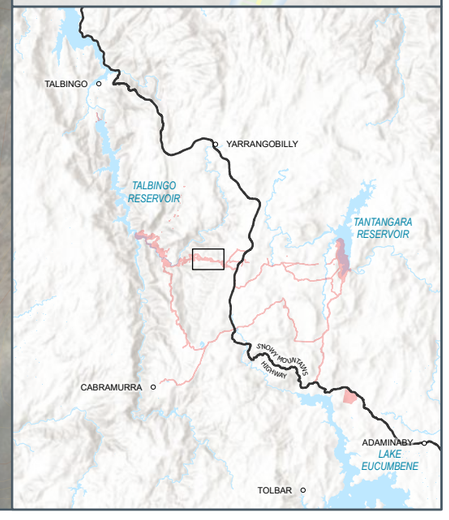
- GIP Boreholes
- SHL Exclusive Road
- Park Management Road
- Drainage

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

300 644 644 1196 639 953



snowyhydro

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Marica - 1

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N

Prepared by: Karen Zhu
Date: 5/10/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55



NOTE

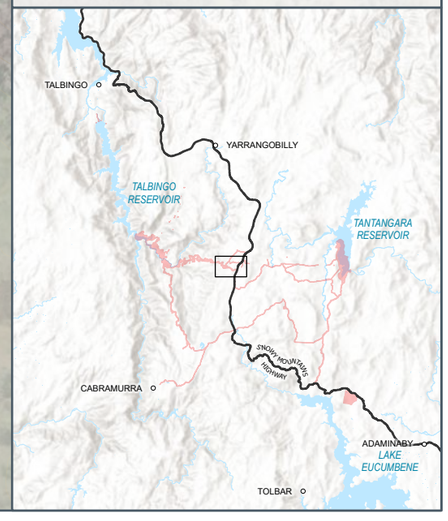
- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- SHL Exclusive Road
- Park Management Road
- Drainage

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

637 644 1224
639 1196 1225



Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Marica - 2

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N

Prepared by: Karen Zhu
Date: 5/10/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55

NOTE

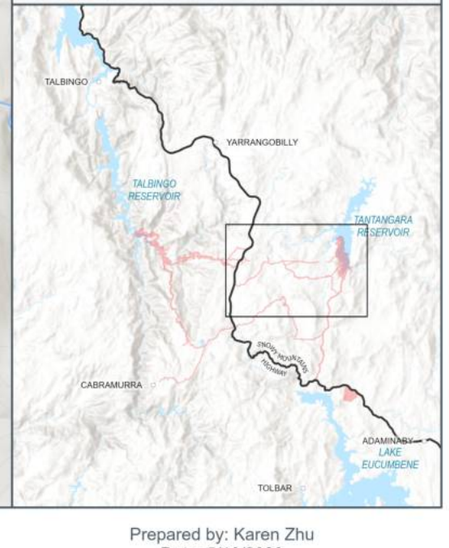
- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- Public Access Road
- SHL Exclusive Road
- Park Management Road
- Drainage
- Full Supply Level (FSL)

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

303	679	1225
637	1196	
644	1224	



Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Plateau (Trunk Service) - Overview

Credits: Data used is owned by Snowy Hydro Limited except as follows:Esri, CGIAR, Esri, Geoscience Australia, NASA, NGA, USGS

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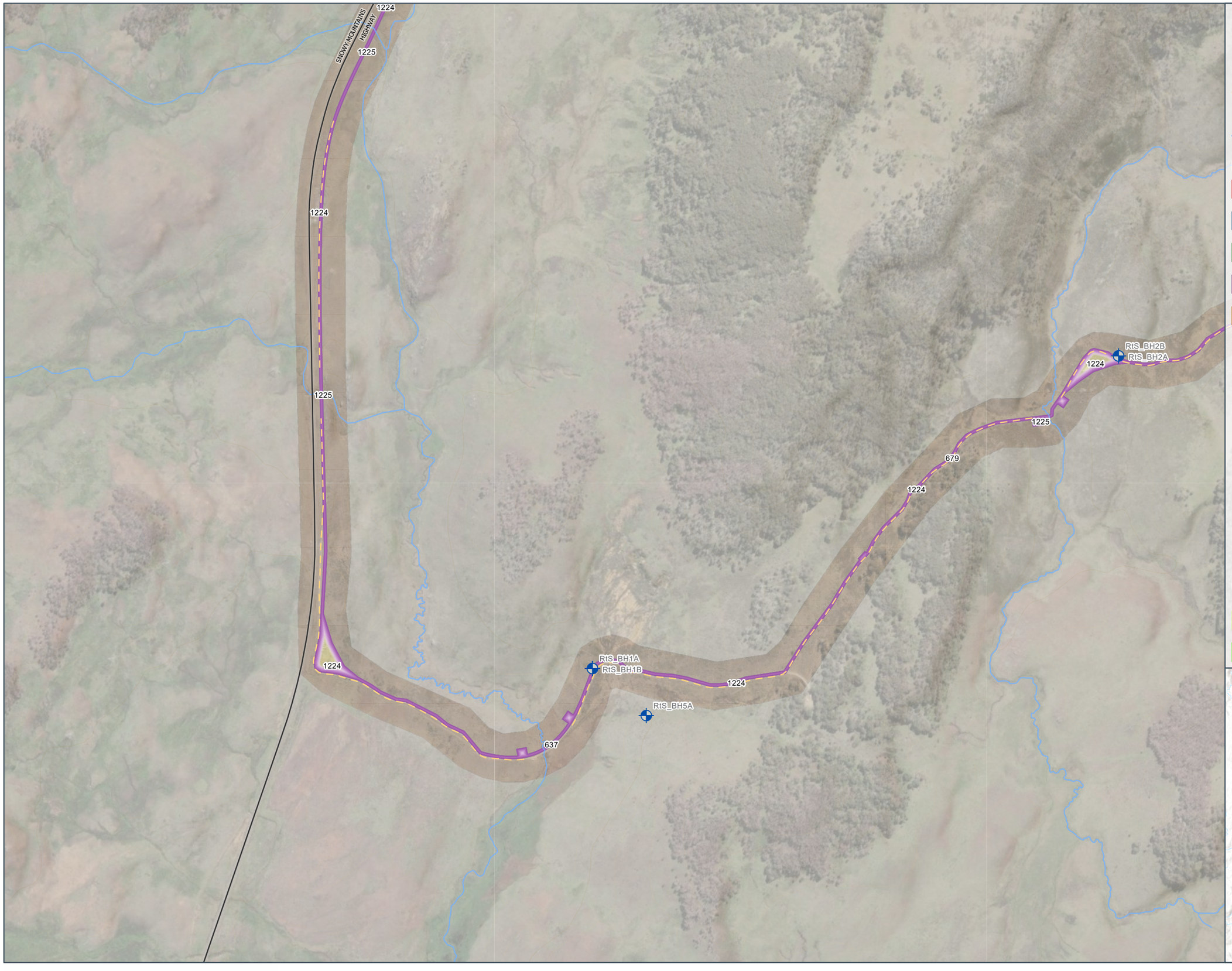
N

Prepared by: Karen Zhu
Date: 5/10/2023

0 650 1,300 1,950 Meters

Spatial Reference: GDA2020 MGA Zone 55



NOTE

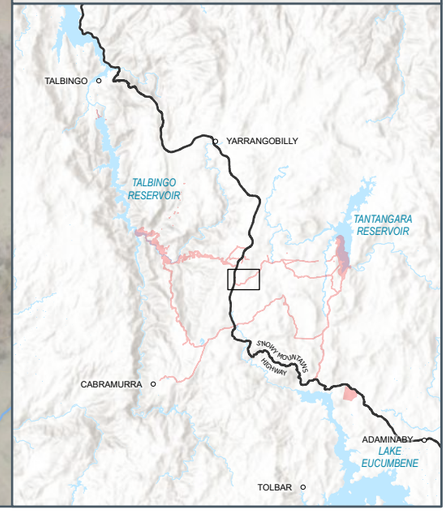
- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- Drainage

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

637 679 1225
644 1224



snowyhydro

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Plateau (Trunk Service) - 1

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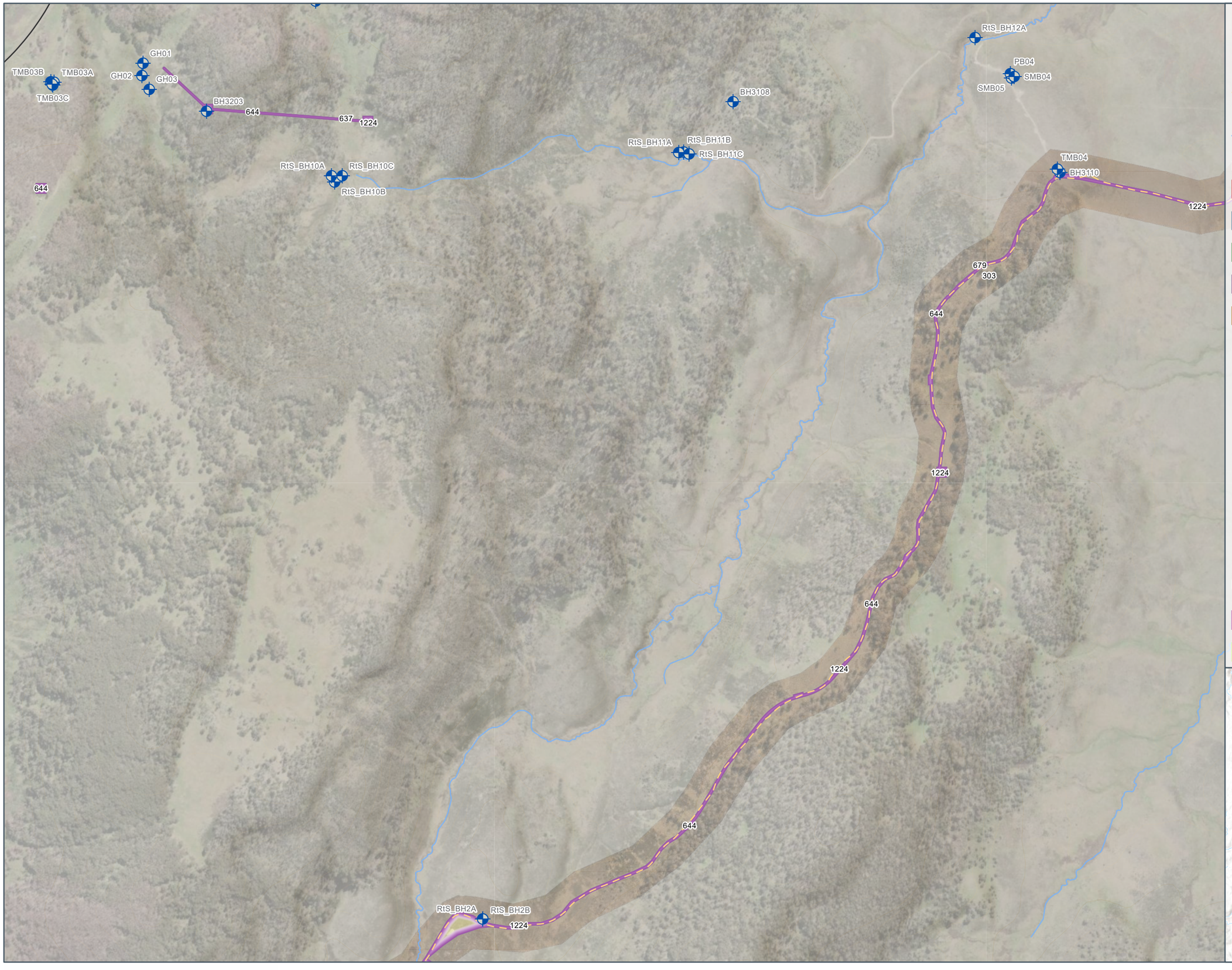
N

Prepared by: Karen Zhu
Date: 5/10/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55



NOTE

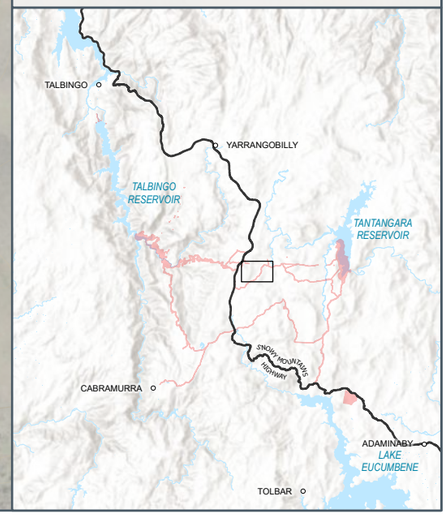
- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- Drainage

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

303 | 644 | 1224
637 | 679 | 1225



snowyhydro

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Plateau (Trunk Service) - 2

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N

Prepared by: Karen Zhu
Date: 5/10/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55

NOTE

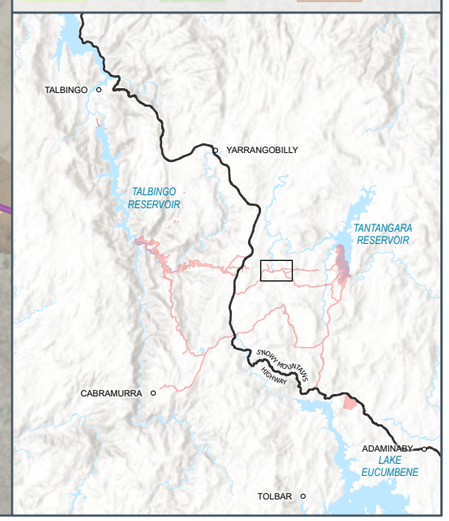
- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- Drainage

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

303 | 644 | 1224
637 | 679 | 1225



snowyhydro

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Plateau (Trunk Service) - 3

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N

Prepared by: Karen Zhu
Date: 5/10/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55

NOTE

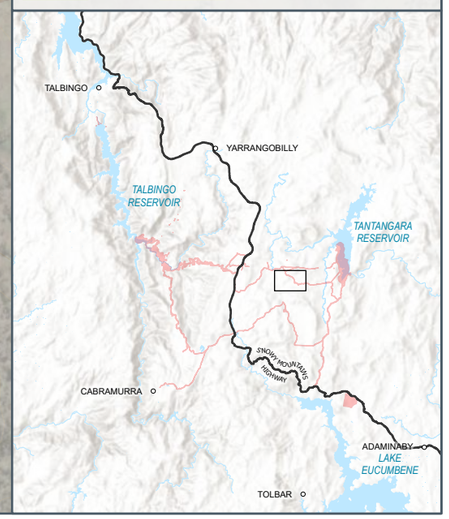
- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- Drainage

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

303 644 1225 637 1224



Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Plateau (Trunk Service) - 4

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N

Prepared by: Karen Zhu
Date: 5/10/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55



NOTE

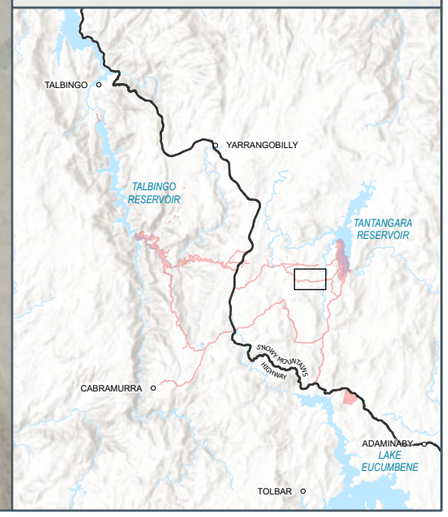
- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- Drainage

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

637 1196 1225
644 1224



snowyhydro

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Plateau (Trunk Service) - 5

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N

0 140 280 420 Meters

Prepared by: Karen Zhu
Date: 5/10/2023

Spatial Reference: GDA2020 MGA Zone 55



snowyhydro

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Plateau (Trunk Service) - 6

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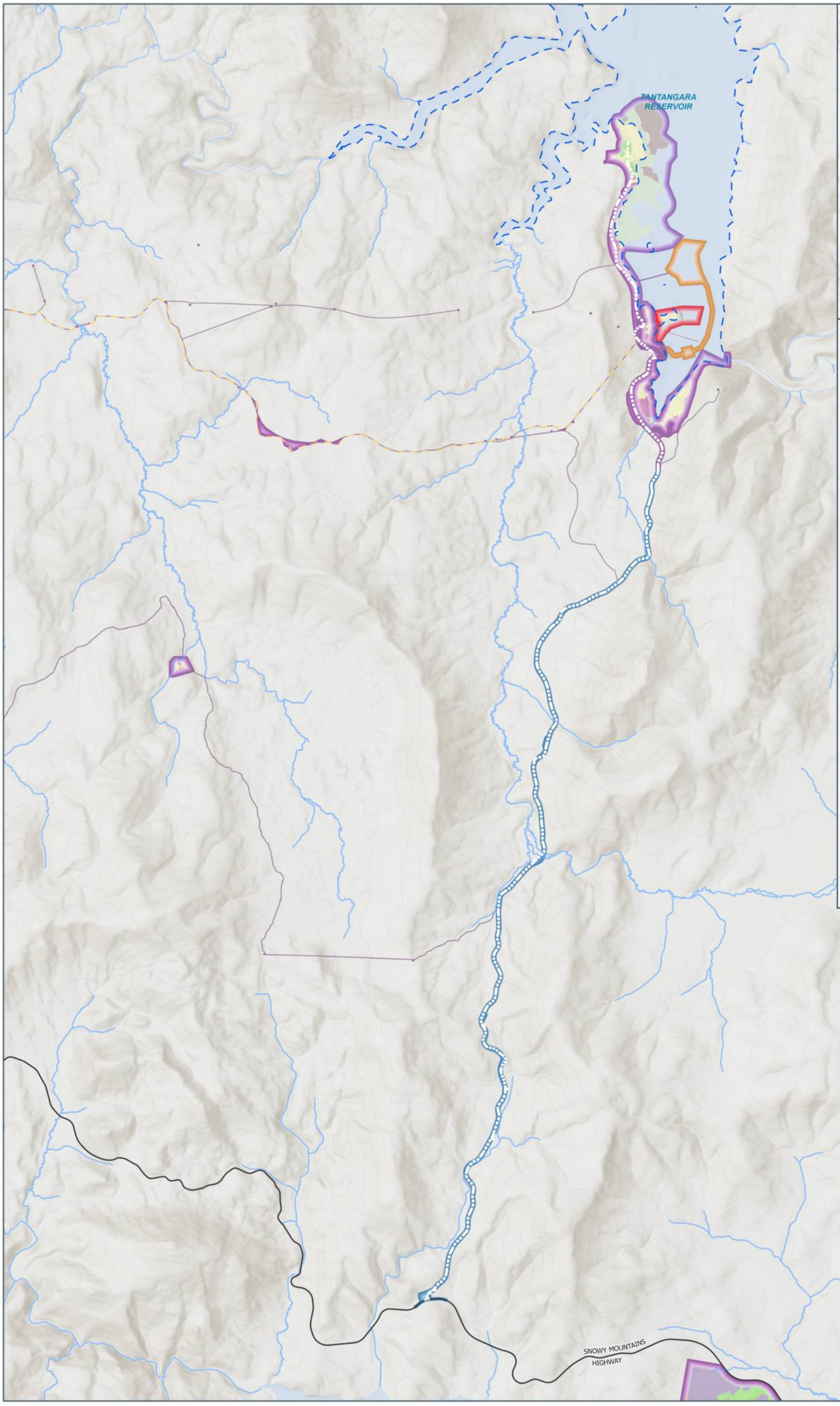
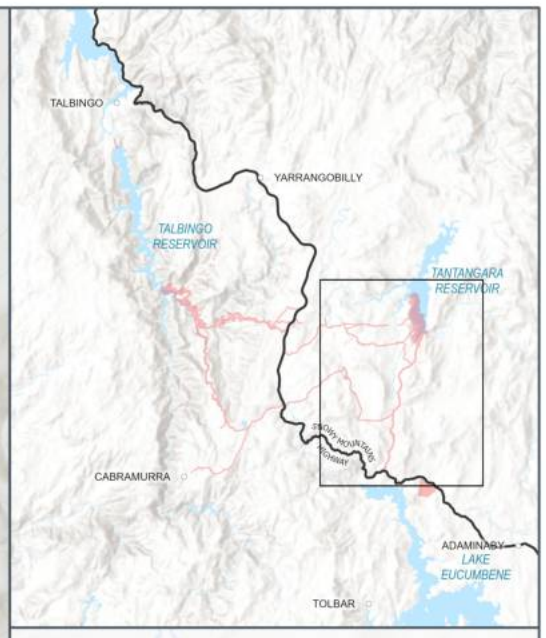
N

Prepared by: Karen Zhu
Date: 5/10/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55





NOTE

- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- Public Access Road
- Drainage
- Full Supply Level (FSL)

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

303 644 1196
637 679 1224
639 952 1225

snowyhydro

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Tantangara - Overview

N

Prepared by: RG14442
Date: 5/10/2023

0 880 1,760 2,640 Meters

Spatial Reference: GDA2020 MGA Zone 55

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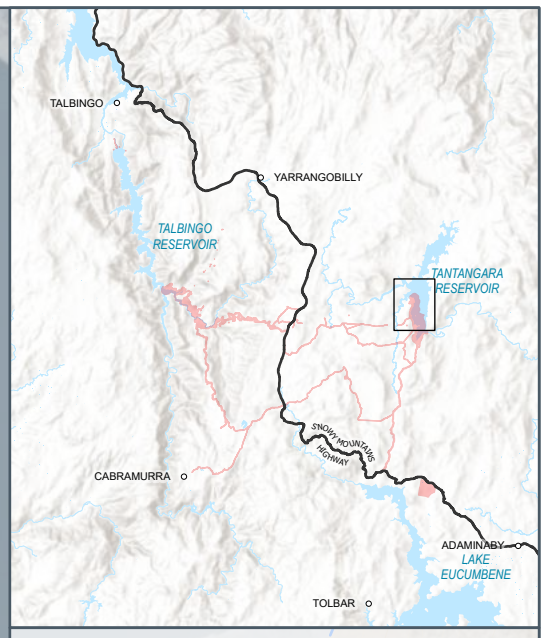

TANTANGARA RESERVOIR

1224
637
1196
644
303
1224
637
RtS_BH8B
1196
1225
644
303
1224
644
BH2103
NC03
NC02
NC01
BH2102
BH2101
BH1116
PB01
BH1115
1224
303
1196
RtS_BH13C
RtS_BH13A

NOTE

- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- Public Access Road
- Drainage
- Full Supply Level (FSL)

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

303 644 1224
637 1196 1225

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Tantangara - Tantangara Spoil

N

Prepared by: RG14442
Date: 5/10/2023

0 220 440 660 Meters

Spatial Reference: GDA2020 MGA Zone 55

Credits: Data used is owned by Snowy Hydro Limited except as follows: Esri, CGIAR, Esri, Geoscience Australia, NASA, NGA, USGS, Maxar

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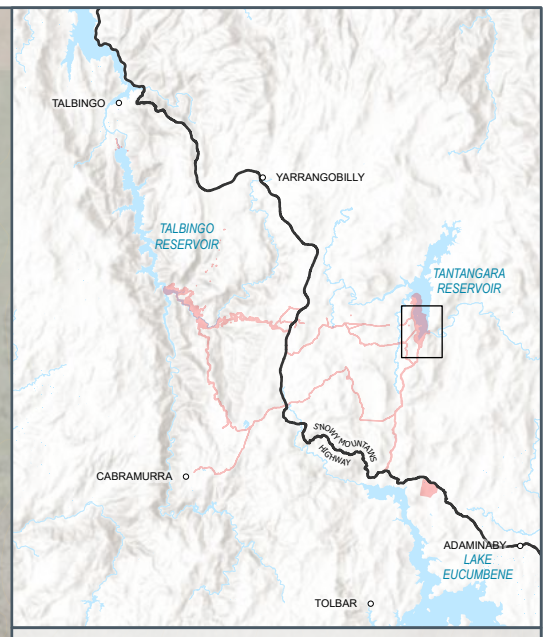

NOTE

- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- Public Access Road
- Drainage
- Full Supply Level (FSL)

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

303 644 1224
637 1196 1225

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Tantangara - Camp and Laydown Area

N

Prepared by: RG14442
Date: 5/10/2023

0 220 440 660 Meters

Spatial Reference: GDA2020 MGA Zone 55

Credits: Data used is owned by Snowy Hydro Limited except as follows: Esri, CGIAR, Esri, Geoscience Australia, NASA, NGA, USGS, Maxar

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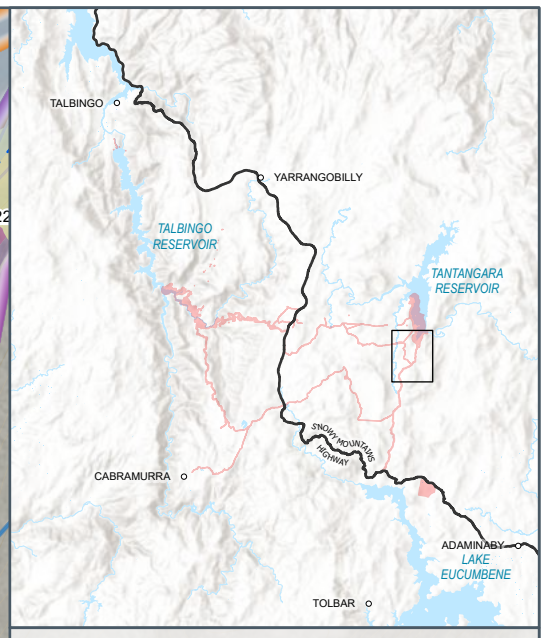

NOTE

- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- Public Access Road
- Drainage
- Full Supply Level (FSL)

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

303, 644, 1224, 637, 1196, 1225

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Tantangara Road - 1

N

Prepared by: RG14442
Date: 5/10/2023

0 220 440 660 Meters

Spatial Reference: GDA2020 MGA Zone 55

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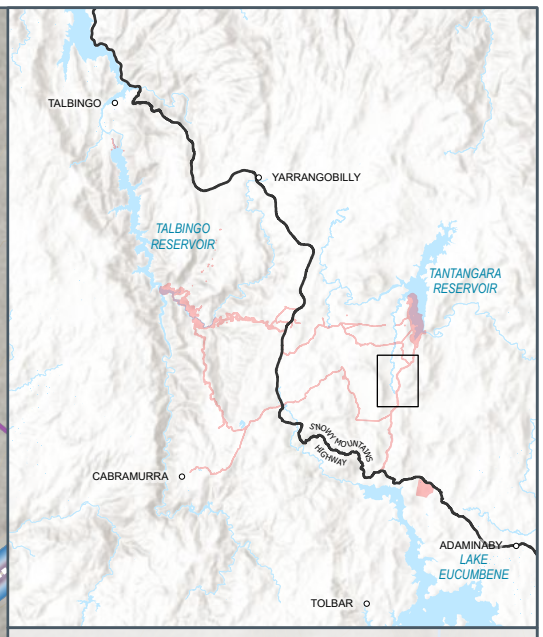

NOTE

- GIP Boreholes
- Public Access Road
- Drainage

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

303, 1196, 1225, 644, 1224

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Tantangara Road - 2

N

Prepared by: RG14442
Date: 5/10/2023

0 220 440 660 Meters

Spatial Reference: GDA2020 MGA Zone 55

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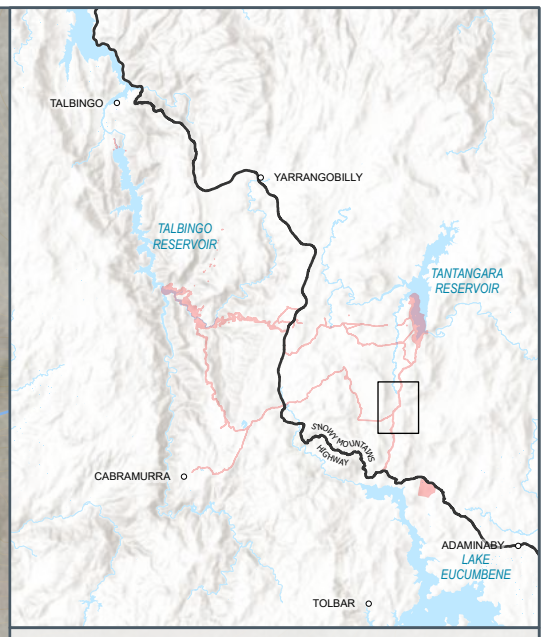

NOTE

- GIP Boreholes
- Public Access Road
- Drainage

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

303, 644, 1225, 637, 1196, 639, 1224

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Tantangara Road - 3

N

Prepared by: RG14442
Date: 5/10/2023

0 220 440 660 Meters

Spatial Reference: GDA2020 MGA Zone 55

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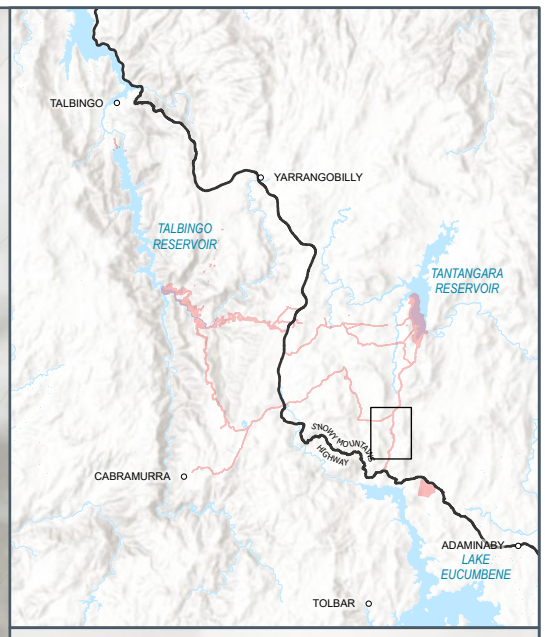

NOTE

- GIP Boreholes
- Public Access Road
- Drainage

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

303, 644, 1225, 637, 1196, 639, 1224

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Tantangara Road - 4

N

Prepared by: RG14442
Date: 5/10/2023

0 220 440 660 Meters

Spatial Reference: GDA2020 MGA Zone 55

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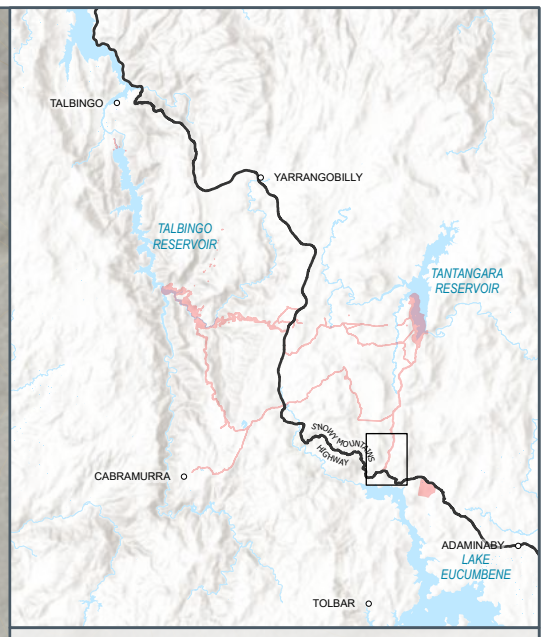

NOTE

- GIP Boreholes
- Public Access Road
- Drainage

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

303 639 1196
637 644 1224

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Tantangara Road - 5

N

Prepared by: RG14442
Date: 5/10/2023

0 220 440 660 Meters

Spatial Reference: GDA2020 MGA Zone 55

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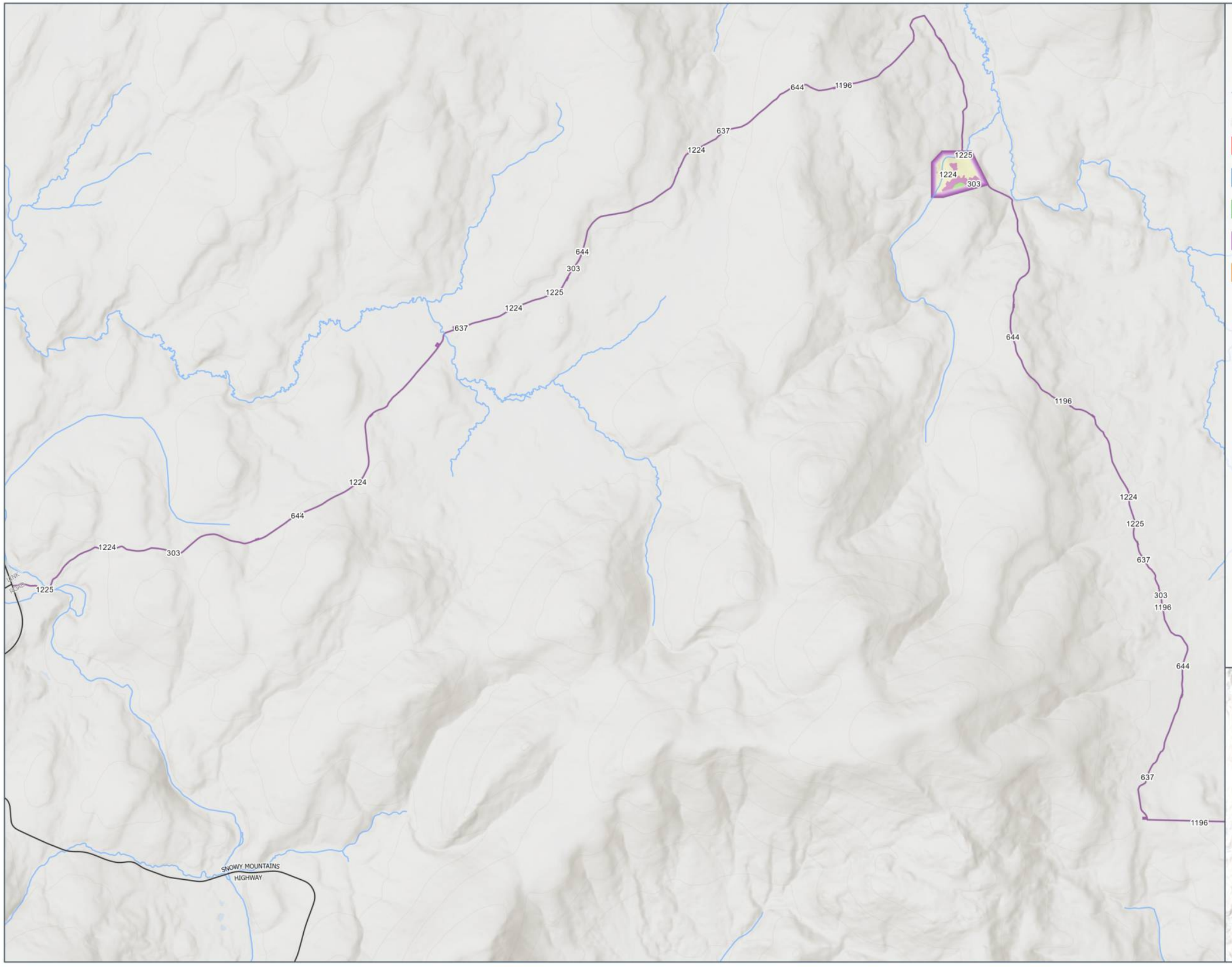


NOTE

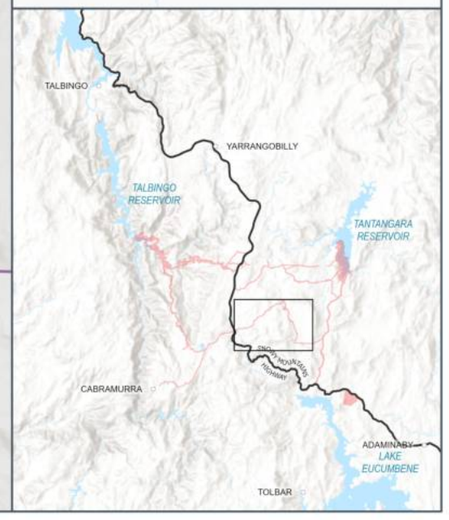
- GIP Boreholes
- Drainage

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

303 644 1224
637 1196 1225



snowyhydro

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Tantangara Creek Fish Weir - Overview

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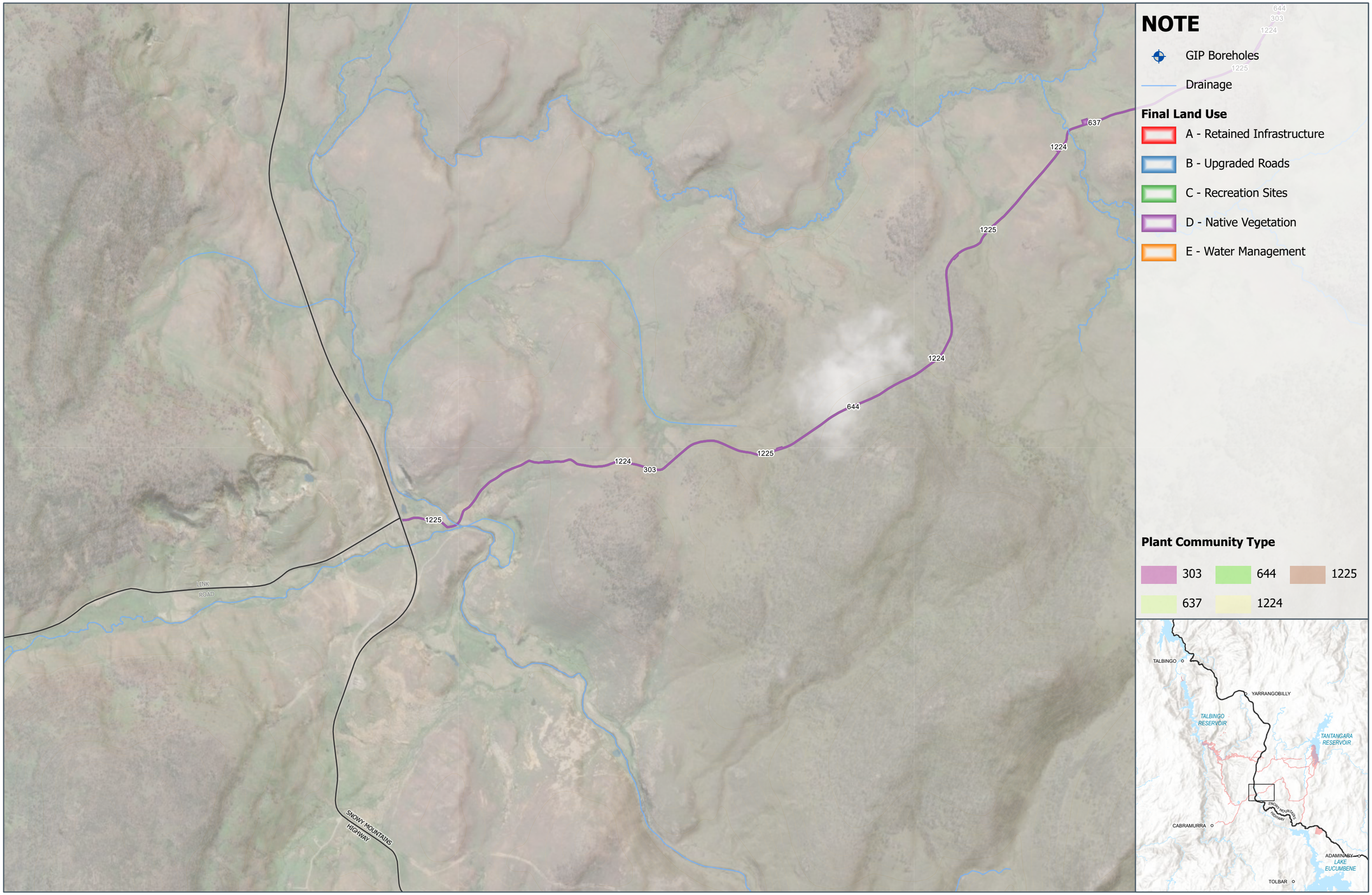
N

Prepared by: Karen Zhu
Date: 5/10/2023

0 360 720 1,080
Meters

Spatial Reference: GDA2020 MGA Zone 55



snowyhydro

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Tantangara Creek Fish Weir - 1

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N

Prepared by: Karen Zhu
Date: 5/10/2023

0 210 420 630 Meters

Spatial Reference: GDA2020 MGA Zone 55

NOTE

GIP Boreholes

Drainage

Final Land Use

A - Retained Infrastructure

B - Upgraded Roads

C - Recreation Sites

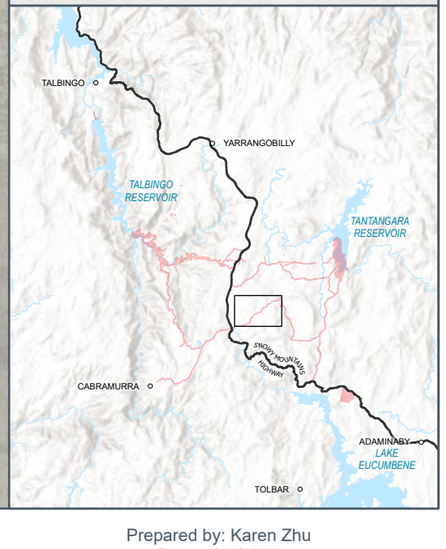
D - Native Vegetation

E - Water Management

Plant Community Type

303 644 1224

637 1196 1225



Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads

Tantangara Creek Fish Weir - 2

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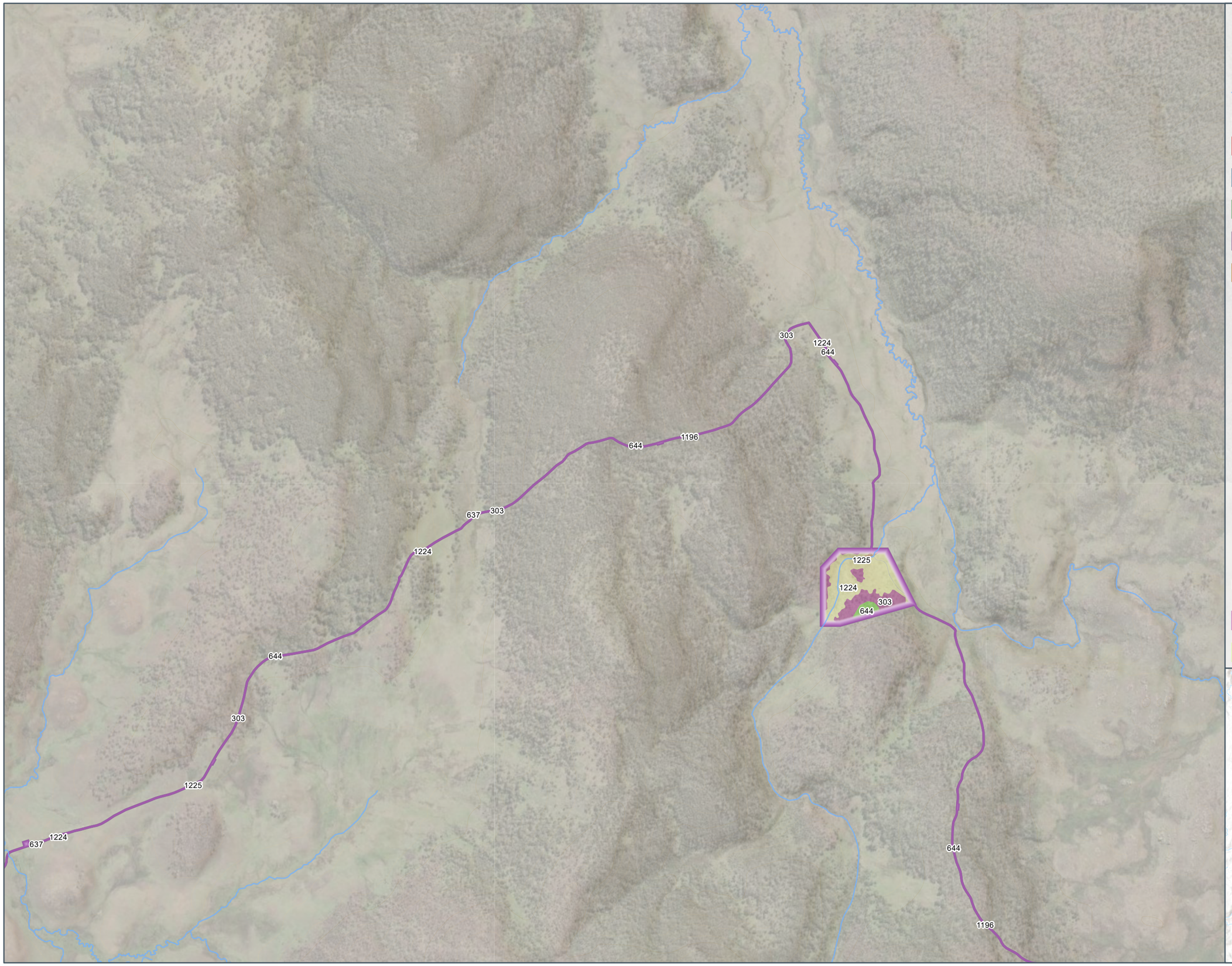
N

Prepared by: Karen Zhu

Date: 5/10/2023

0 210 420 630 Meters

Spatial Reference: GDA2020 MGA Zone 55



NOTE

GIP Boreholes

Drainage

Final Land Use

A - Retained Infrastructure

B - Upgraded Roads

C - Recreation Sites

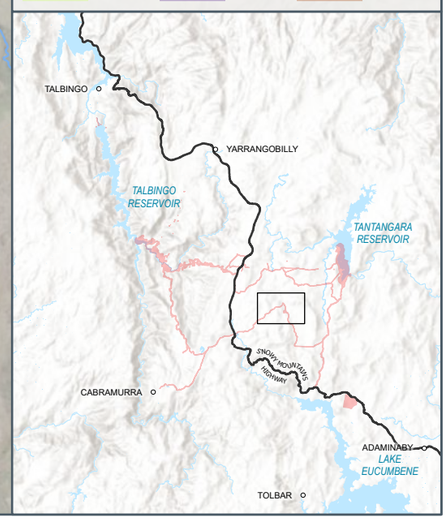
D - Native Vegetation

E - Water Management

Plant Community Type

303 | 644 | 1224

637 | 1196 | 1225



snowyhydro

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Tantangara Creek Fish Weir - 3

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N

Prepared by: Karen Zhu
Date: 5/10/2023

0 210 420 630 Meters

Spatial Reference: GDA2020 MGA Zone 55



NOTE

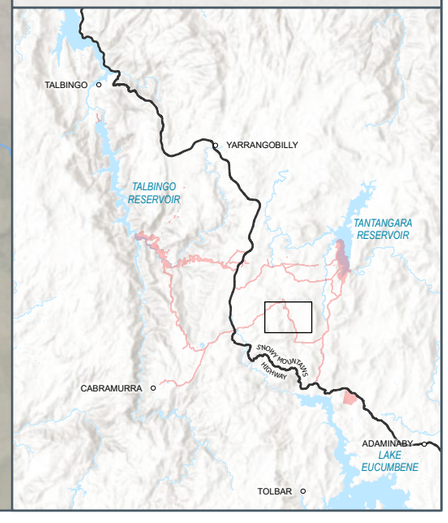
- GIP Boreholes
- Drainage

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

303 | 644 | 1224 | 637 | 1196 | 1225



snowyhydro

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Tantangara Creek Fish Weir - 4

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N

Prepared by: Karen Zhu
Date: 5/10/2023

0 210 420 630 Meters

Spatial Reference: GDA2020 MGA Zone 55

644
1196
303
1225
637
1224
644
1196
303
637
1225
303
644
637
303
1196
303
637
1224
644

NOTE

GIP Boreholes

Drainage

Final Land Use

A - Retained Infrastructure

B - Upgraded Roads

C - Recreation Sites

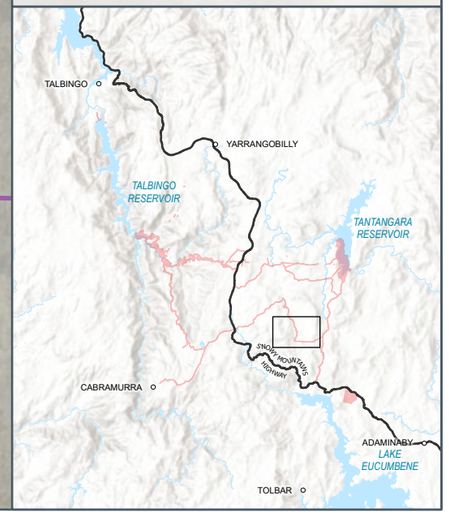
D - Native Vegetation

E - Water Management

Plant Community Type

303 644 1224

637 1196 1225



snowyhydro

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Tantangara Creek Fish Weir - 5

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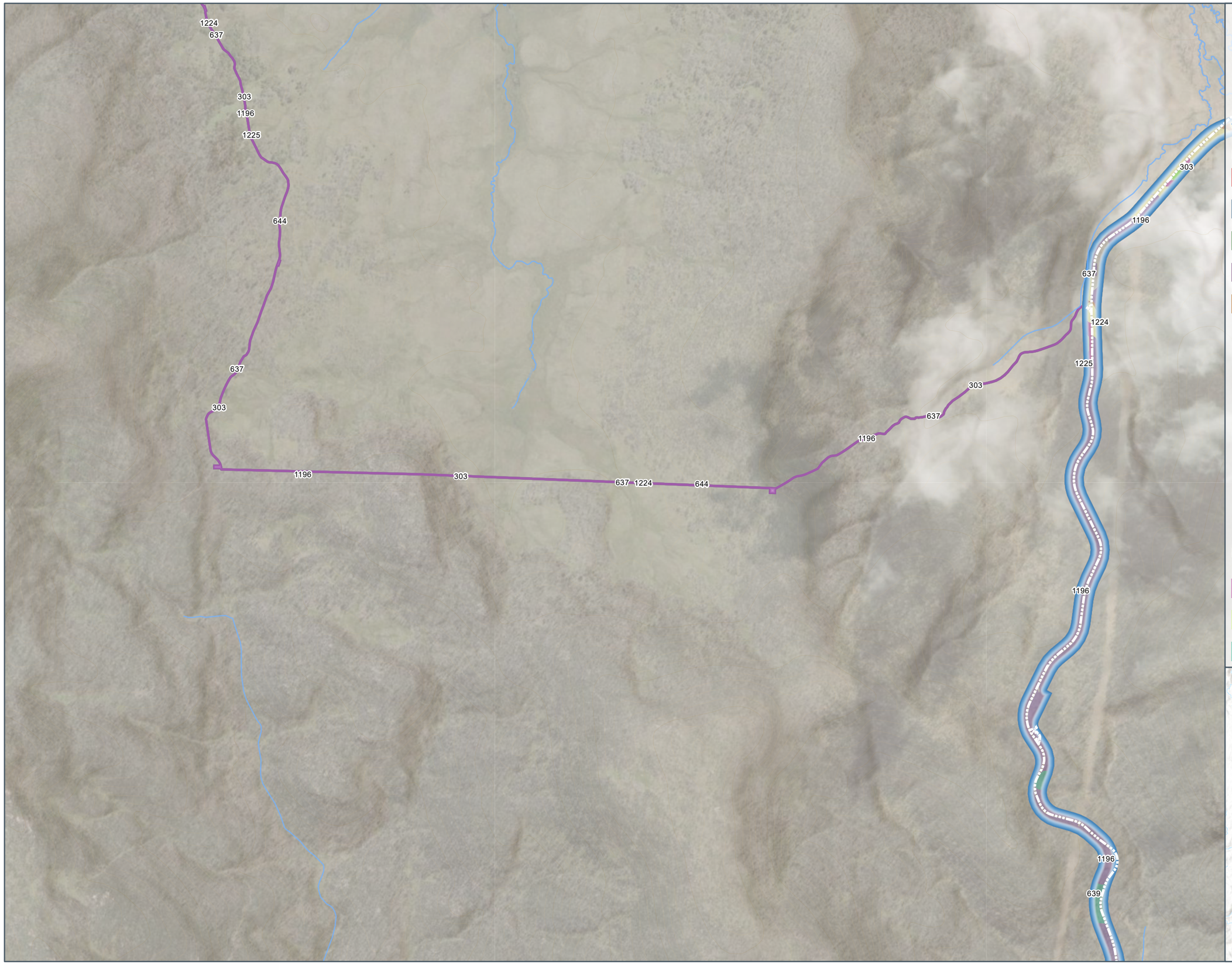
N

Prepared by: Karen Zhu
Date: 5/10/2023

0 210 420 630 Meters

Spatial Reference: GDA2020 MGA Zone 55



NOTE

GIP Boreholes

Public Access Road

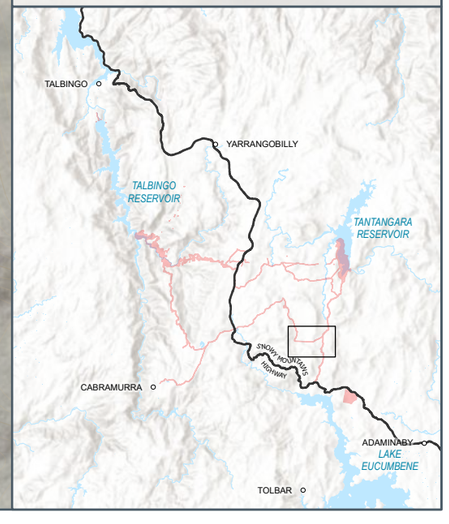
Drainage

Final Land Use

- A - Retained Infrastructure
- B - Upgraded Roads
- C - Recreation Sites
- D - Native Vegetation
- E - Water Management

Plant Community Type

303 | 644 | 1225
637 | 1196
639 | 1224



snowyhydro

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Tantangara Creek Fish Weir - 6

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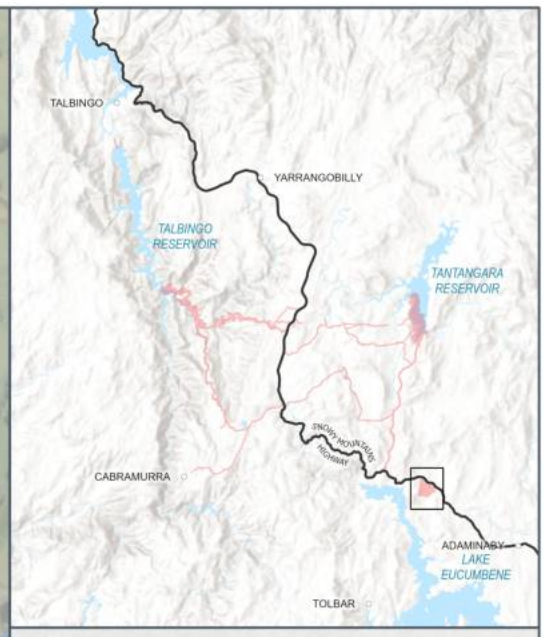
N

Prepared by: Karen Zhu
Date: 5/10/2023

0 210 420 630 Meters

Spatial Reference: GDA2020 MGA Zone 55



NOTE

GIP Boreholes

Drainage

Final Land Use

A - Retained Infrastructure

B - Upgraded Roads

C - Recreation Sites

D - Native Vegetation

E - Water Management

Plant Community Type

303 644 952

637 679 1196

679
SNOWY MOUNTAINS HIGHWAY
1196
644
1196
303
952
1196
303
637

Snowy 2.0 Final Land Use

Rehabilitation, Recreation and Roads
Rock Forest

N

Prepared by: RG14442
Date: 5/10/2023

0 175 350 525 Meters

Spatial Reference: GDA2020 MGA Zone 55

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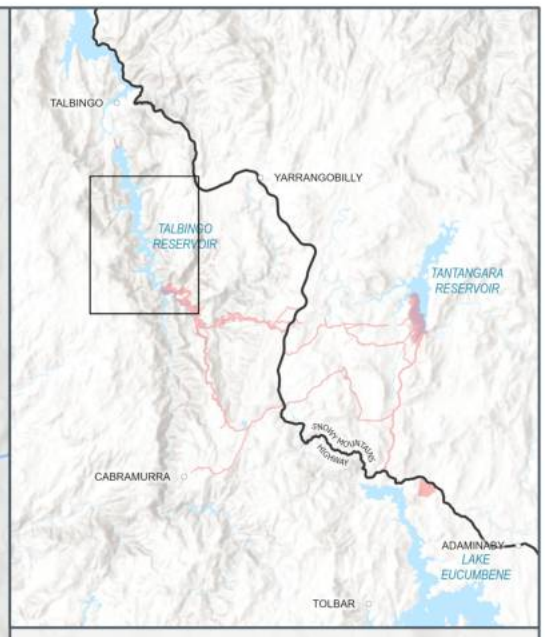
APPENDIX D

Active Domains



NOTE

- Comms Cable - Talbingo Dam (Indicative)
- Opeational Road
- Public Access Road
- Drainage
- Full Supply Level (FSL)

Active Domains

- 1.1 - Accommodation Camps
- 2 - Access Roads
- 3 - Intakes
- 4 - Designated Area for Stockpiles
- 6 - Water Management

TALBINGO RESERVOIR

snowy hydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Lobs Hole - Talbingo Dam

N

Prepared by: RG14442
Date: 27/09/2023

0 590 1,180 1,770 Meters

Spatial Reference: GDA2020 MGA Zone 55

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Yarrangobilly River

Tumut River

Tumut River

Tumut River

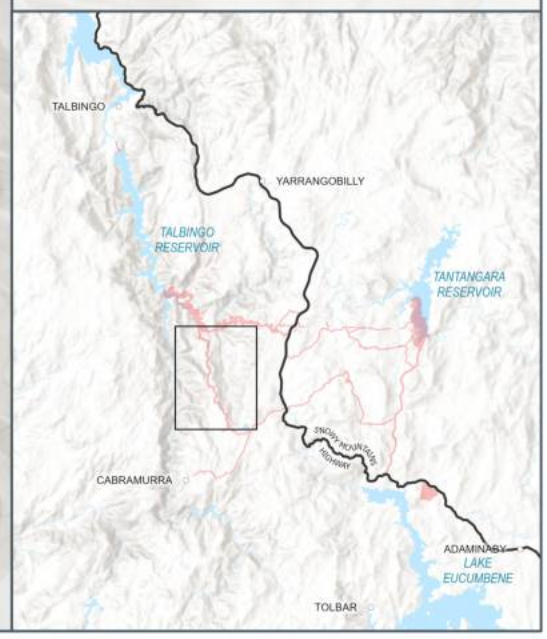
1NK ROAD

NOTE

- GIP Boreholes
- Public Access Road
- Park Management Road
- Permanent Road
- Drainage
- Full Supply Level (FSL)

Active Domains

- 1.2 - Construction Portals and Yards
- 2 - Access Roads
- 4 - Designated Area for Stockpiles



snowy hydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Ravine Road - Overview

N

Prepared by: RG14442
Date: 27/09/2023

0 440 880 1,320 Meters

Spatial Reference: GDA2020 MGA Zone 55

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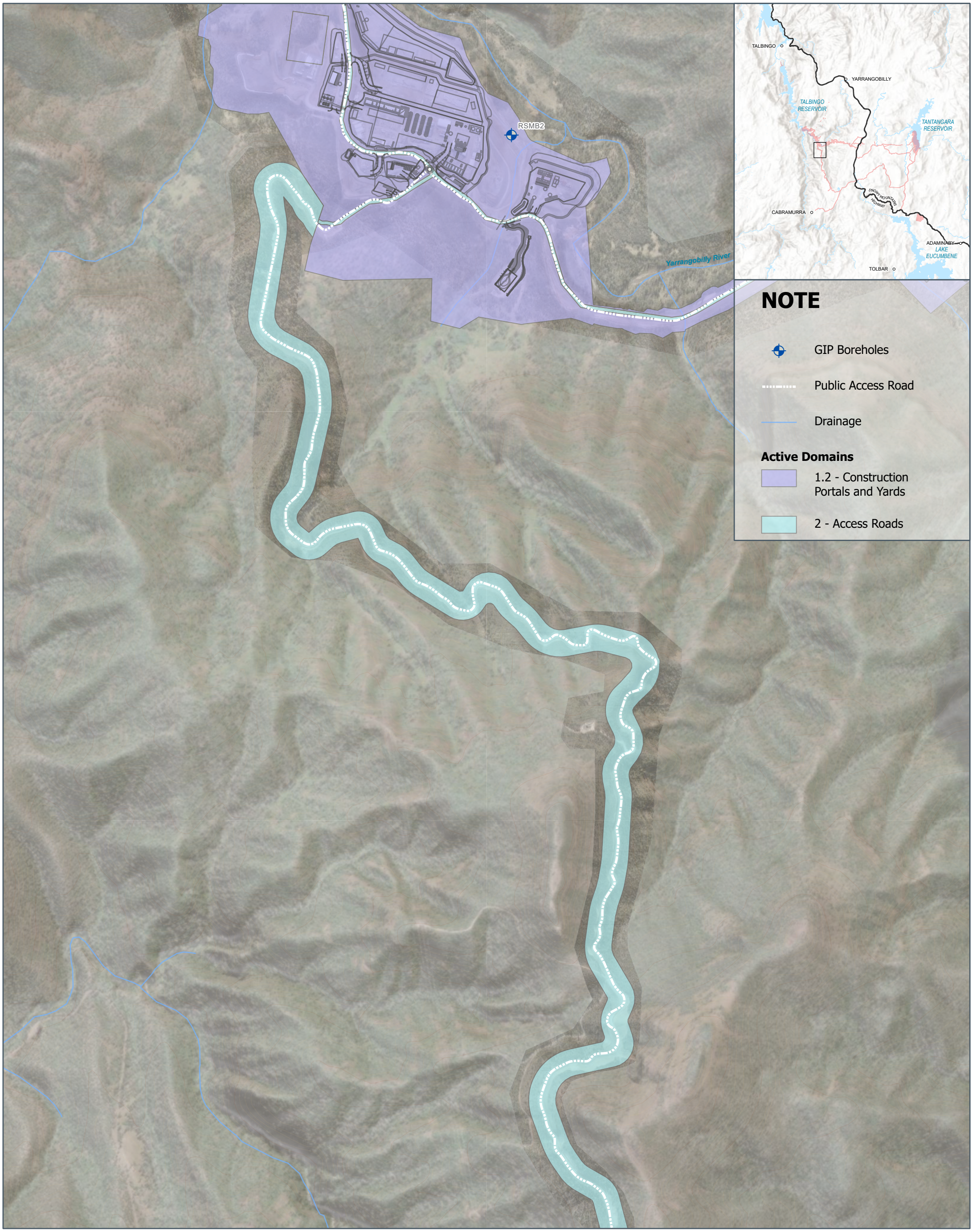

NOTE

- GIP Boreholes
- Public Access Road
- Drainage

Active Domains

- 1.2 - Construction Portals and Yards
- 2 - Access Roads

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Ravine Road - 1

N

Prepared by: RG14442
Date: 27/09/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55

Credits: Data used is owned by Snowy Hydro Limited except as follows: Esri, CGIAR, Esri, Geoscience Australia, NASA, NGA, USGS, Maxar

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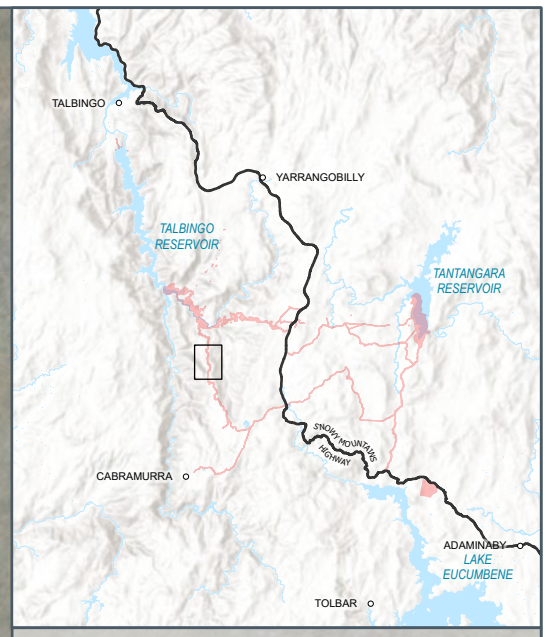

NOTE

- GIP Boreholes
- Public Access Road
- Drainage

Active Domains

- 2 - Access Roads

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Ravine Road - 2

N

Prepared by: RG14442
Date: 27/09/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55

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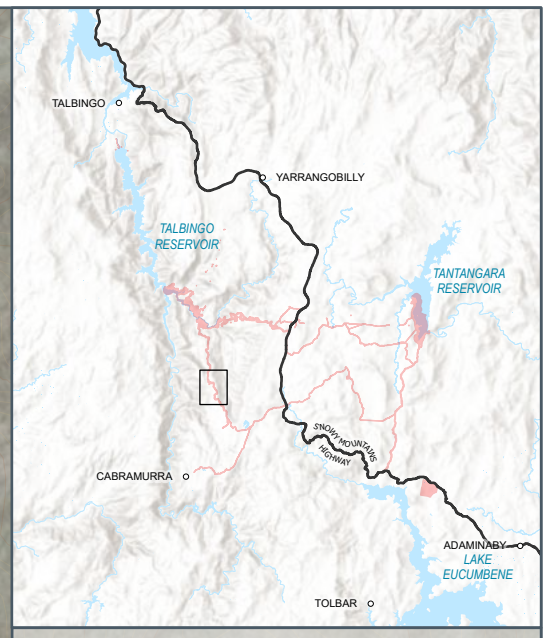

NOTE

- GIP Boreholes
- Public Access Road
- Drainage

Active Domains

- 2 - Access Roads
- 4 - Designated Area for Stockpiles

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Ravine Road - 3

N

Prepared by: RG14442
Date: 27/09/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55

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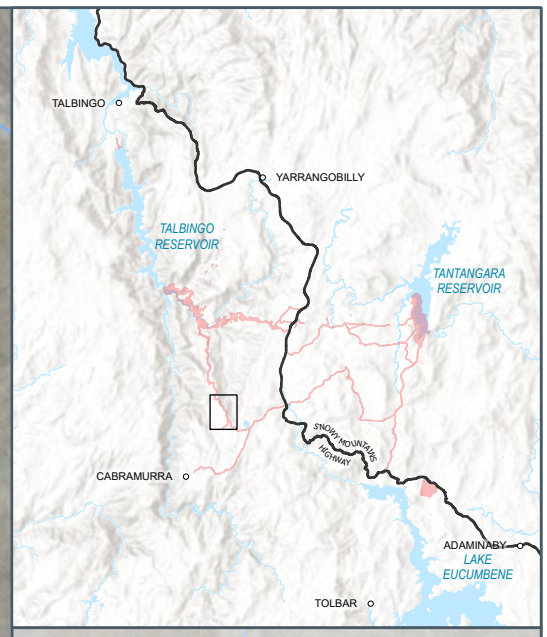

NOTE

- GIP Boreholes
- Public Access Road
- Drainage

Active Domains

- 2 - Access Roads

LINK ROAD

LINK ROAD

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Ravine Road - 4

N

Prepared by: RG14442
Date: 27/09/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55

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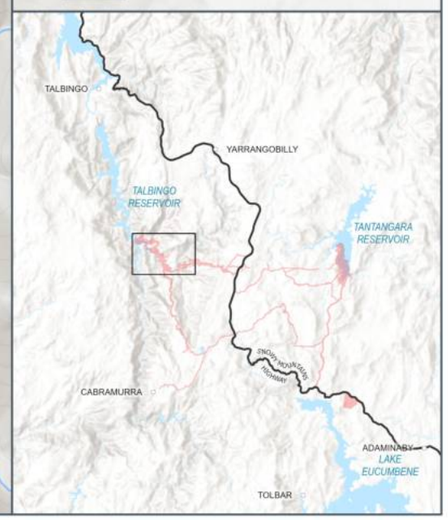
NOTE

- GIP Boreholes
- Comms Cable - Talbingo Dam (Indicative)
- Opeational Road
- Public Access Road
- Drainage
- Full Supply Level (FSL)

Active Domains

- 1.1 - Accommodation Camps
- 1.2 - Construction Portals and Yards
- 2 - Access Roads
- 3 - Intakes
- 4 - Designated Area for Stockpiles
- 5 - Utilities
- 6 - Water Management



BH7104
BH6105
BH7106
PB05
BH7203
BH6104
TALBINGO RESERVOIR
BH6103
TMB05A (BH6102)
TMB05B (BH6101)
EWPB1
EWPB3
RSMB2
RSMB9
RSMB8
RSMB6
RSMB7
Yarrangobilly River

snowyhydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Lobs Hole - Overview

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N

Prepared by: Karen Zhu
Date: 27/09/2023

0 290 580 870 Meters

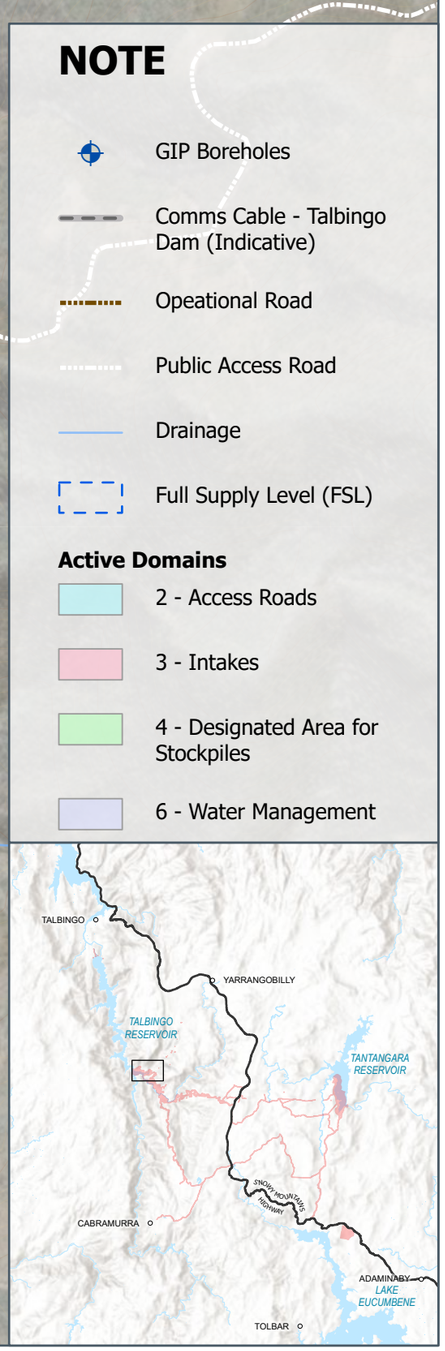
Spatial Reference: GDA2020 MGA Zone 55

NOTE

- GIP Boreholes
- Comms Cable - Talbingo Dam (Indicative)
- Opeational Road
- Public Access Road
- Drainage
- Full Supply Level (FSL)

Active Domains

- 2 - Access Roads
- 3 - Intakes
- 4 - Designated Area for Stockpiles
- 6 - Water Management



TALBINGO RESERVOIR

BH7104

BH6105

snowyhydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Lobs Hole - 1

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N

Prepared by: Karen Zhu
Date: 27/09/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55

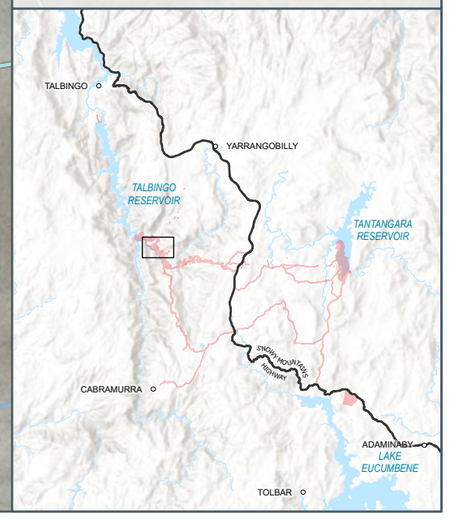
BH7104
BH6105
BH6104
BH7106
PB05
BH7203
TALBINGO RESERVOIR

NOTE

- GIP Boreholes
- Comms Cable - Talbingo Dam (Indicative)
- Opeational Road
- Public Access Road
- Drainage
- Full Supply Level (FSL)

Active Domains

- 1.1 - Accommodation Camps
- 2 - Access Roads
- 3 - Intakes
- 4 - Designated Area for Stockpiles
- 6 - Water Management



snowyhydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Lobs Hole - 2

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N

Prepared by: Karen Zhu
Date: 27/09/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55

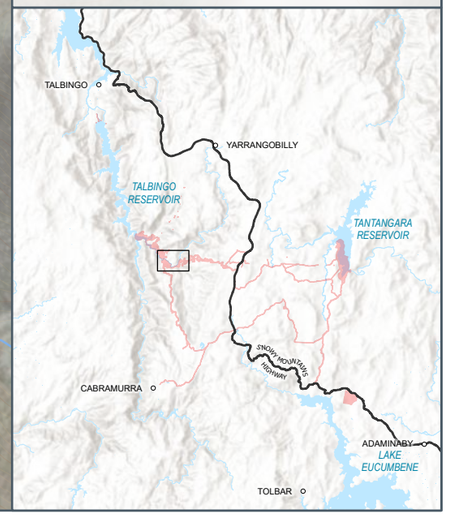
BH6103
TMB05A (BH6102)
TMB05B (BH6101)
EWPB1
EWPB3
RSMB2
RSMB8
RSMB9
RSMB6
RSMB7
Yarrangobilly River

NOTE

- GIP Boreholes
- Public Access Road
- Drainage
- Full Supply Level (FSL)

Active Domains

- 1.1 - Accommodation Camps
- 1.2 - Construction Portals and Yards
- 2 - Access Roads
- 4 - Designated Area for Stockpiles



snowyhydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Lobs Hole - 3

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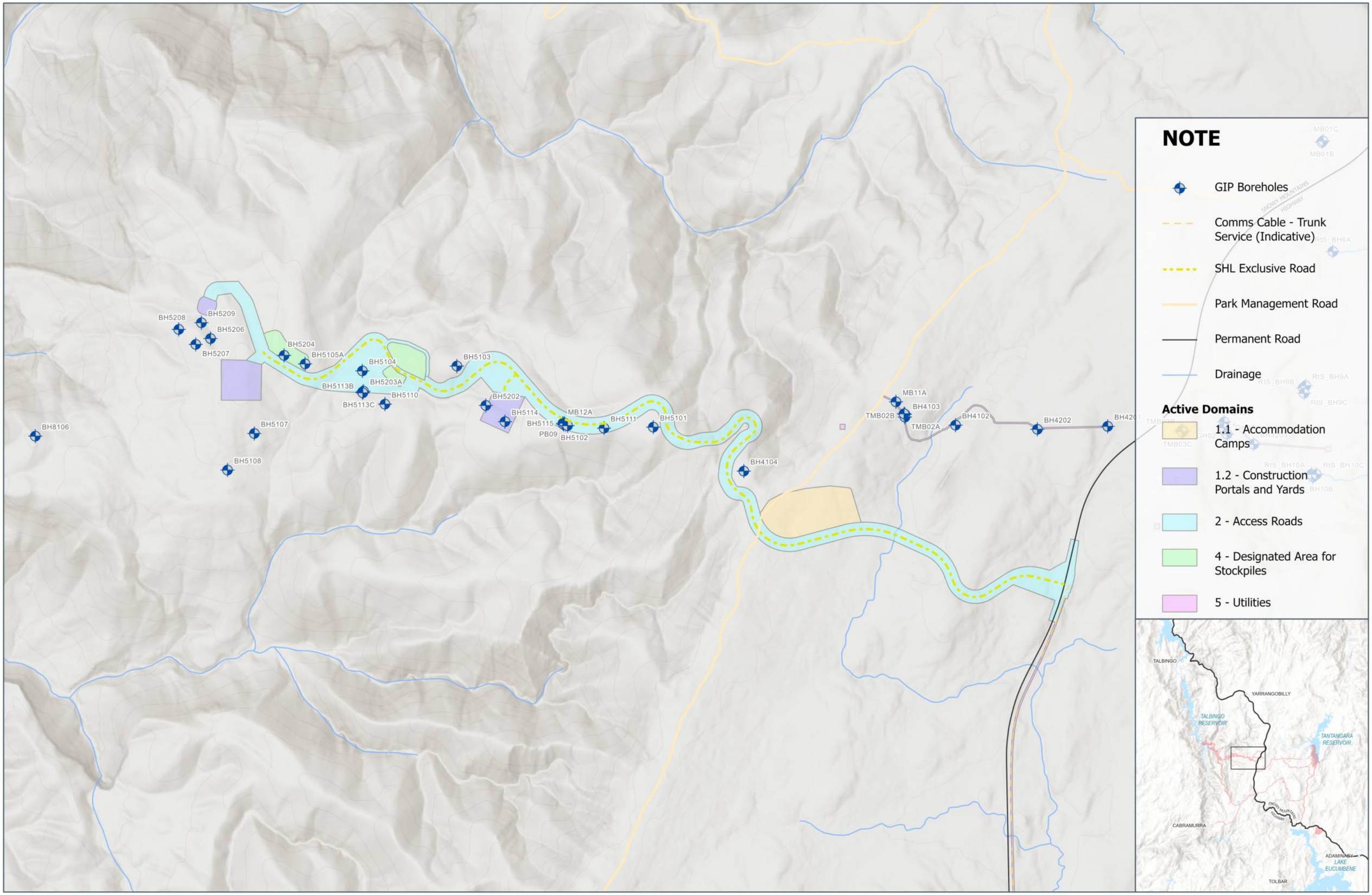
N

Prepared by: Karen Zhu
Date: 27/09/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55



snowyhydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Marica - Overview

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N

Prepared by: Karen Zhu
Date: 27/09/2023

0 290 580 870 Meters

Spatial Reference: GDA2020 MGA Zone 55

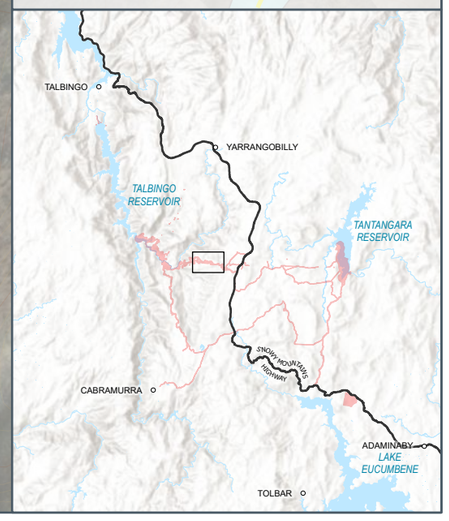
BH5209
BH5208
BH5206
BH5207
BH5204
BH5105A
BH5104
BH5103
BH5113B
BH5203A
BH5113C
BH5110
BH5202
BH5114
BH5115
MB12A
BH5102
BH5111
BH5101
PB09
BH5107
BH5108

NOTE

- GIP Boreholes
- SHL Exclusive Road
- Park Management Road
- Drainage

Active Domains

- 1.1 - Accommodation Camps
- 1.2 - Construction Portals and Yards
- 2 - Access Roads
- 4 - Designated Area for Stockpiles



snowyhydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Marica - 1

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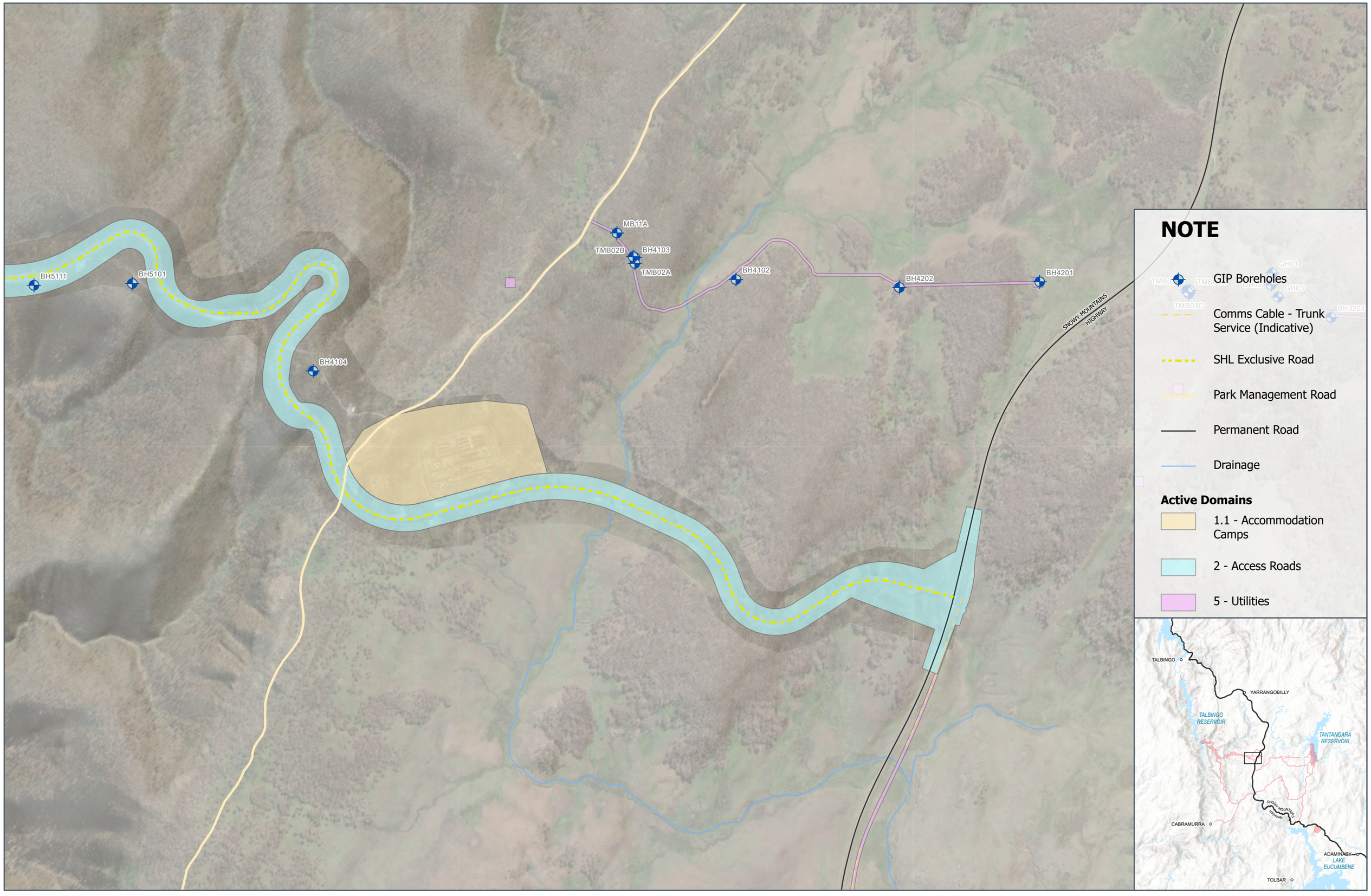
N

Prepared by: Karen Zhu
Date: 27/09/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55



snowyhydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Marica - 2

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N

Prepared by: Karen Zhu
Date: 27/09/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55

SNOWY MOUNTAINS HIGHWAY

TANTANGARA RESERVOIR

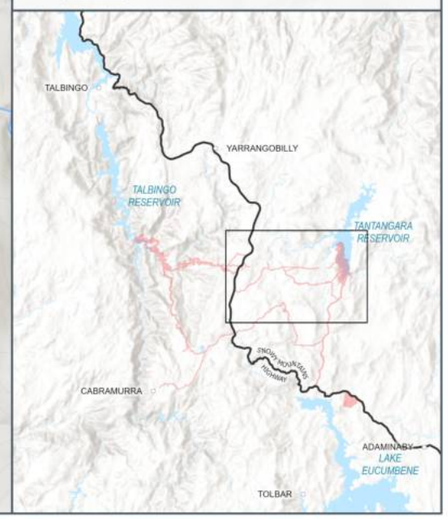
Murrumbidgee River

NOTE

- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- Public Access Road
- SHL Exclusive Road
- Park Management Road
- Permanent Road
- Drainage
- Full Supply Level (FSL)

Active Domains

- 1.1 - Accommodation Camps
- 2 - Access Roads
- 3 - Intakes
- 4 - Designated Area for Stockpiles
- 5 - Utilities
- 6 - Water Management



snowyhydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads Plateau (Trunk Service) - Overview

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N

Prepared by: Karen Zhu
Date: 27/09/2023

0 650 1,300 1,950 Meters

Spatial Reference: GDA2020 MGA Zone 55

SNOWY MOUNTAINS HIGHWAY

RtS_BH2B
RtS_BH2A

RtS_BH1A
RtS_BH1B

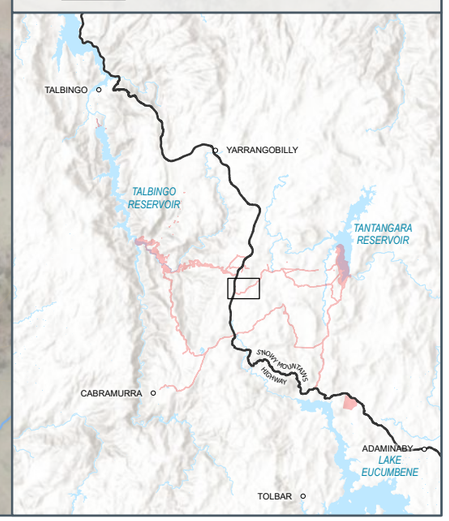
RtS_BH5A

NOTE

- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- Permanent Road
- Drainage

Active Domains

- 5 - Utilities



snowyhydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Plateau (Trunk Service) - 1

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N

Prepared by: Karen Zhu
Date: 27/09/2023

0 140 280 420
Meters

Spatial Reference: GDA2020 MGA Zone 55

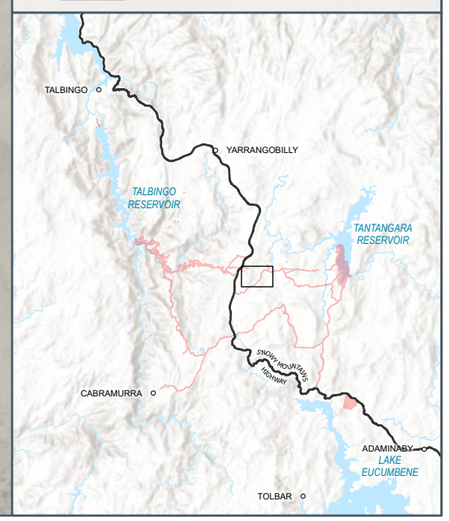
GH01
TMB03B
TMB03A
GH02
GH03
TMB03C
BH3203
BH3108
RtS_BH12A
PB04
SMB04
SMB05
BH3107A
RtS_BH11A
RtS_BH11B
RtS_BH11C
RtS_BH10A
RtS_BH10C
RtS_BH10B
TMB04
BH3110
RtS_BH2B
RtS_BH2A

NOTE

- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- Permanent Road
- Drainage

Active Domains

- 5 - Utilities



snowyhydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Plateau (Trunk Service) - 2

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N

Prepared by: Karen Zhu
Date: 27/09/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55

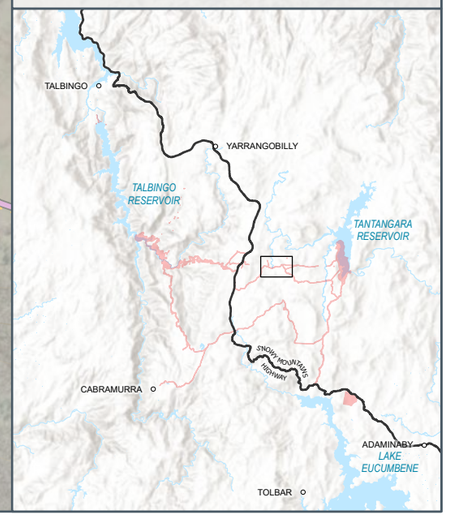
RtS_BH12C
RtS_BH12B
RtS_BH12A
PB04
SMB04
SMB05
BH3107A
TMB04
BH3110
PB03
SMB02
BH3106
SMB03
TC01
TC02
TC03
MB13A
MB13B
PB10
BH01
BH02
BH03
BP 4
BP 2
BP 1
BP 3

NOTE

- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- Drainage

Active Domains

- 5 - Utilities



snowyhydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Plateau (Trunk Service) - 3

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N

Prepared by: Karen Zhu
Date: 27/09/2023

0 140 280 420 Meters

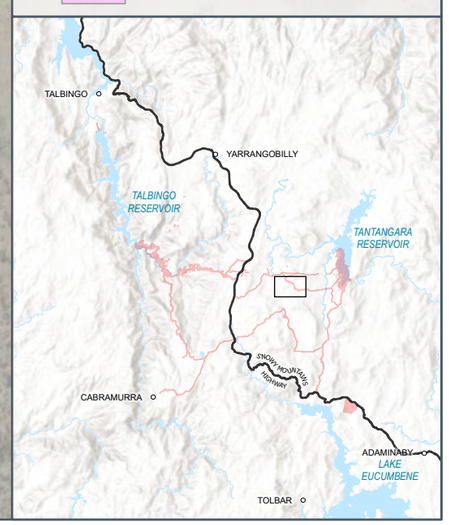
Spatial Reference: GDA2020 MGA Zone 55

NOTE

- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- Drainage

Active Domains

- 5 - Utilities



snowyhydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Plateau (Trunk Service) - 4

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N

0 140 280 420 Meters

Prepared by: Karen Zhu
Date: 27/09/2023

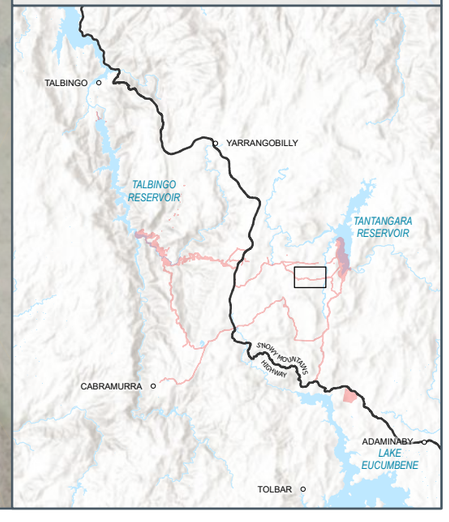
Spatial Reference: GDA2020 MGA Zone 55

NOTE

- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- Drainage

Active Domains

- 5 - Utilities



snowyhydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Plateau (Trunk Service) - 5

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N

Prepared by: Karen Zhu
Date: 27/09/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55

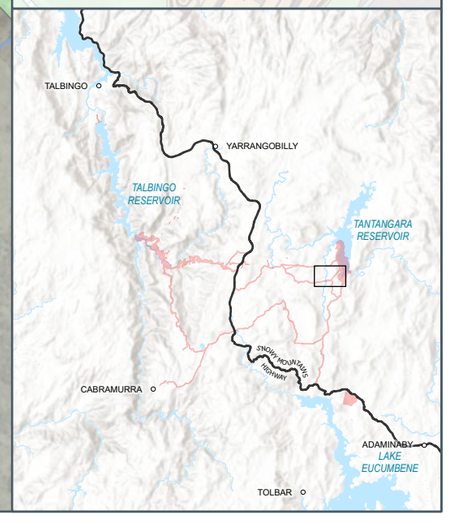
NC01
NC02
BH2102
BH2101
RtS_BH13C
RtS_BH13A
RtS_BH13B
BH1116
PB01
BH1115
RtS_BH7A
RtS_BH7B

NOTE

- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- Public Access Road
- Drainage
- Full Supply Level (FSL)

Active Domains

- 1.1 - Accommodation Camps
- 2 - Access Roads
- 3 - Intakes
- 4 - Designated Area for Stockpiles
- 5 - Utilities
- 6 - Water Management



snowyhydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Plateau (Trunk Service) - 6

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N

Prepared by: Karen Zhu
Date: 27/09/2023

0 140 280 420 Meters

Spatial Reference: GDA2020 MGA Zone 55

TANTANGARA RESERVOIR

Murrumbidgee River

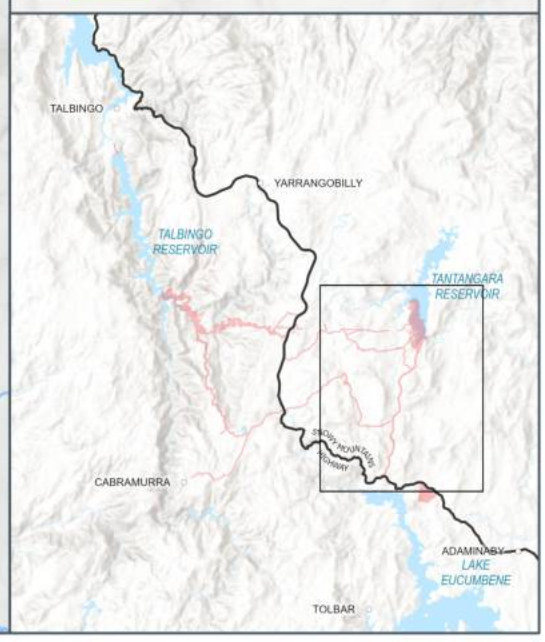
SNOWY MOUNTAINS HIGHWAY

NOTE

- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- Public Access Road
- Permanent Road
- Drainage
- Full Supply Level (FSL)

Active Domains

- 1.1 - Accommodation Camps
- 1.2 - Construction Portals and Yards
- 2 - Access Roads
- 3 - Intakes
- 4 - Designated Area for Stockpiles
- 5 - Utilities
- 6 - Water Management
- Current Stockpile



snowy hydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Tantangara - Overview

N

Prepared by: RG14442
Date: 27/09/2023

0 880 1,760 2,640 Meters

Spatial Reference: GDA2020 MGA Zone 55

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TANTANGARA RESERVOIR

RtS_BH8B

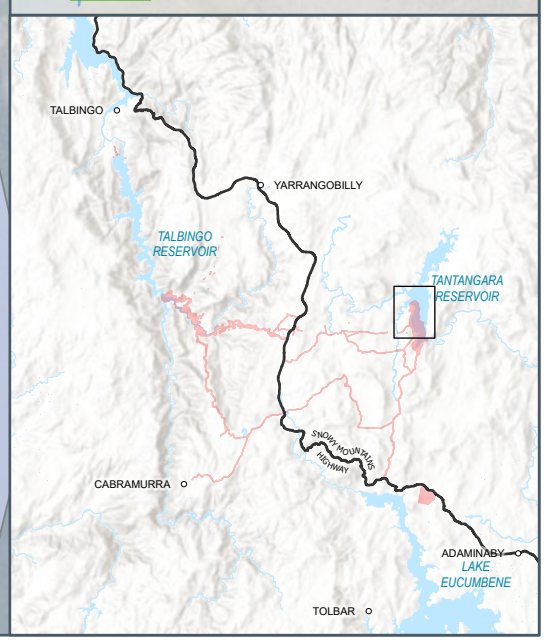
BH2103
NC03
NC02
NC01
BH2102
BH2101
BH1116
PB01
BH1115
RtS_BH13C
RtS_BH13A

NOTE

- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- Public Access Road
- Drainage
- Full Supply Level (FSL)

Active Domains

- 2 - Access Roads
- 3 - Intakes
- 4 - Designated Area for Stockpiles
- 5 - Utilities
- 6 - Water Management
- Current Stockpile



Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Tantangara - Tantangara Spoil

N

Prepared by: RG14442
Date: 27/09/2023

0 220 440 660 Meters

Spatial Reference: GDA2020 MGA Zone 55

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RtS_BH8B

TANTANGARA RESERVOIR

BH2101

BH1116

PB01

BH1115

RtS_BH13A

RtS_BH13B

RtS_BH7A

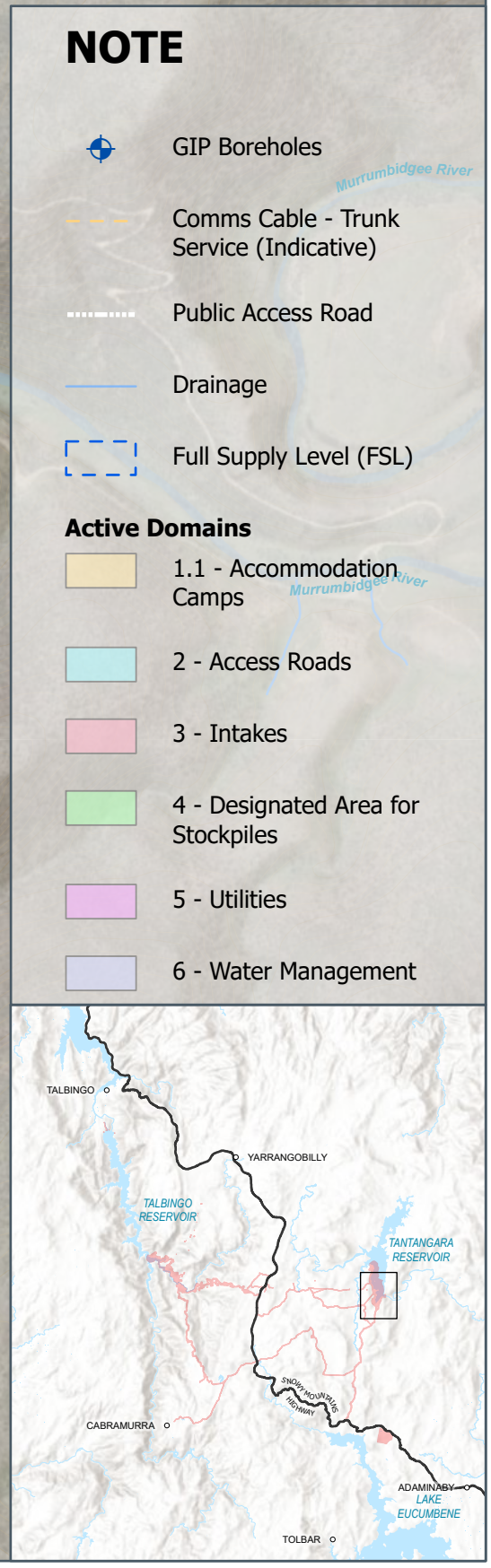
RtS_BH7B

NOTE

- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- Public Access Road
- Drainage
- Full Supply Level (FSL)

Active Domains

- 1.1 - Accommodation Camps
- 2 - Access Roads
- 3 - Intakes
- 4 - Designated Area for Stockpiles
- 5 - Utilities
- 6 - Water Management



snowy hydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Tantangara - Camp and Laydown Area

N

Prepared by: RG14442
Date: 27/09/2023

0 220 440 660 Meters

Spatial Reference: GDA2020 MGA Zone 55

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TANTANGARA RESERVOIR

Murrumbidgee River

RtS_BH7A

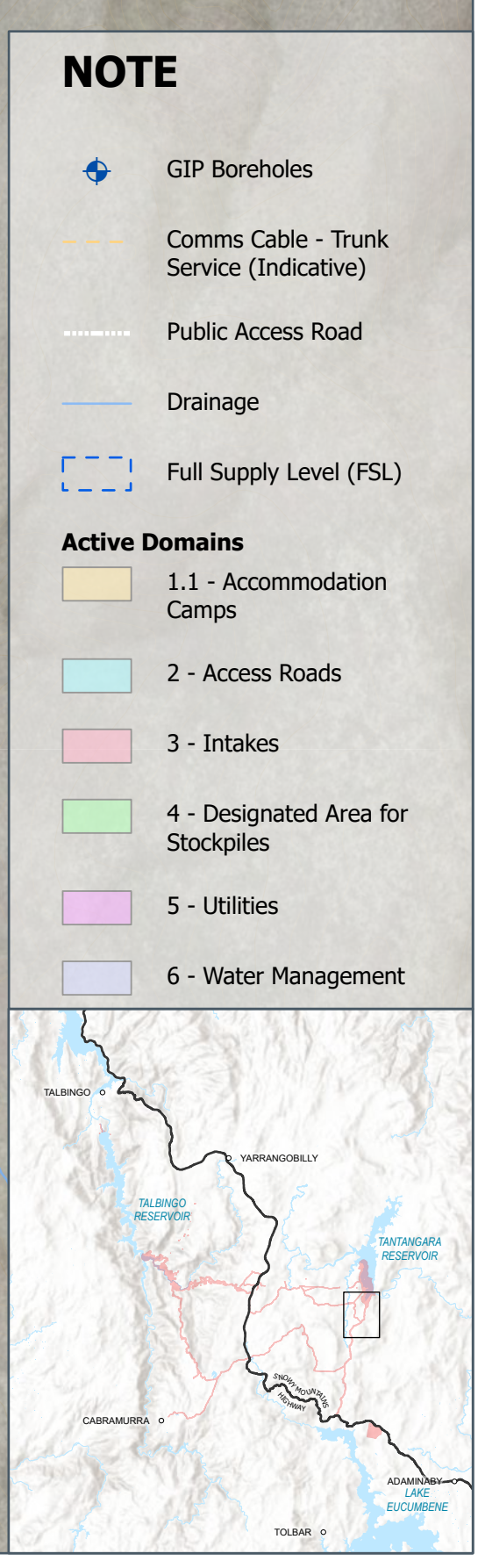
RtS_BH7B

NOTE

- GIP Boreholes
- Comms Cable - Trunk Service (Indicative)
- Public Access Road
- Drainage
- Full Supply Level (FSL)

Active Domains

- 1.1 - Accommodation Camps
- 2 - Access Roads
- 3 - Intakes
- 4 - Designated Area for Stockpiles
- 5 - Utilities
- 6 - Water Management



snowy hydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Tantangara Road - 1

N

Prepared by: RG14442
Date: 27/09/2023

0 220 440 660 Meters

Spatial Reference: GDA2020 MGA Zone 55

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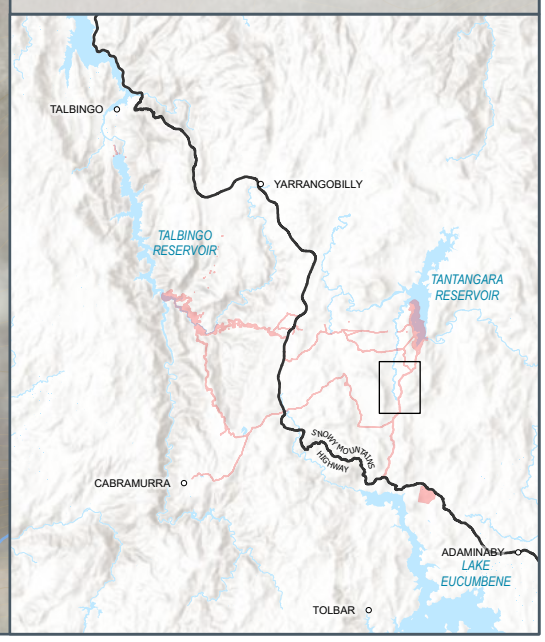
NOTE

- GIP Boreholes
- Public Access Road
- Drainage

Active Domains

- 2 - Access Roads
- 5 - Utilities



snowy hydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Tantangara Road - 2

N

Prepared by: RG14442
Date: 27/09/2023

0 220 440 660 Meters

Spatial Reference: GDA2020 MGA Zone 55

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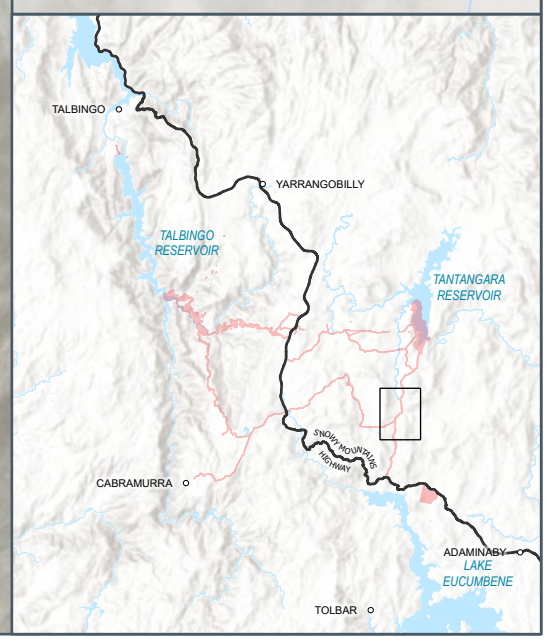
NOTE

- GIP Boreholes
- Public Access Road
- Drainage

Active Domains

- 2 - Access Roads
- 5 - Utilities



snowy hydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Tantangara Road - 3

N

Prepared by: RG14442
Date: 27/09/2023

0 220 440 660 Meters

Spatial Reference: GDA2020 MGA Zone 55

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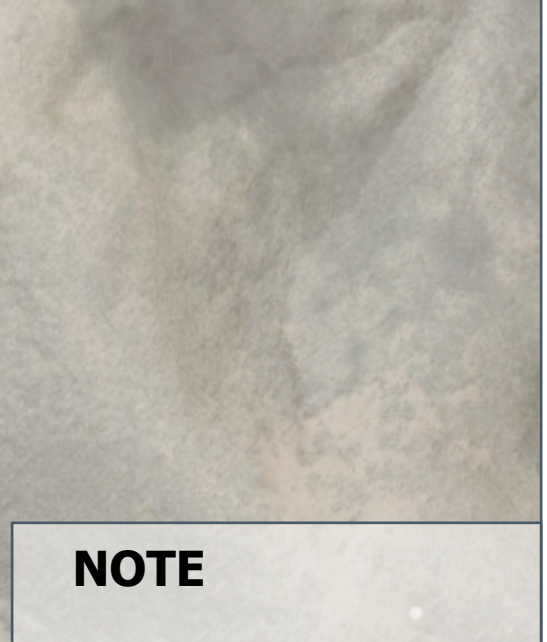
NOTE

- GIP Boreholes
- Public Access Road
- Drainage

Active Domains

- 2 - Access Roads
- 5 - Utilities



Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Tantangara Road - 4

N

Prepared by: RG14442
Date: 27/09/2023

0 220 440 660 Meters

Spatial Reference: GDA2020 MGA Zone 55

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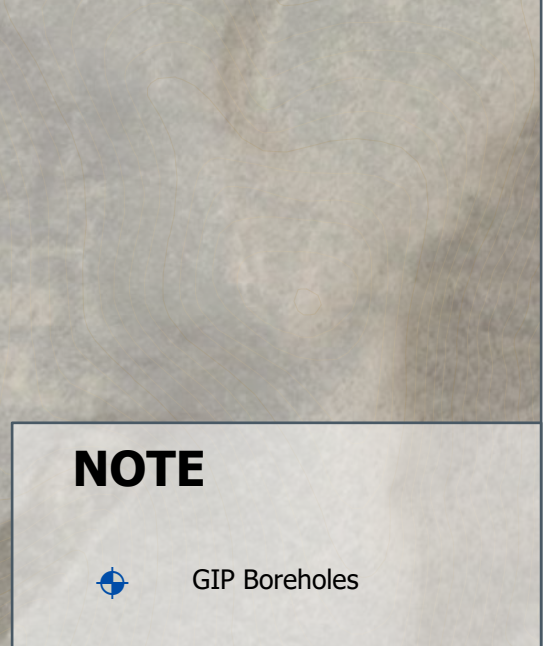
SNOWY MOUNTAINS
HIGHWAY

NOTE

- GIP Boreholes
- Public Access Road
- Permanent Road
- Drainage

Active Domains

- 2 - Access Roads



snowy hydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Tantangara Road - 5

N

Prepared by: RG14442
Date: 27/09/2023

0 220 440 660 Meters

Spatial Reference: GDA2020 MGA Zone 55

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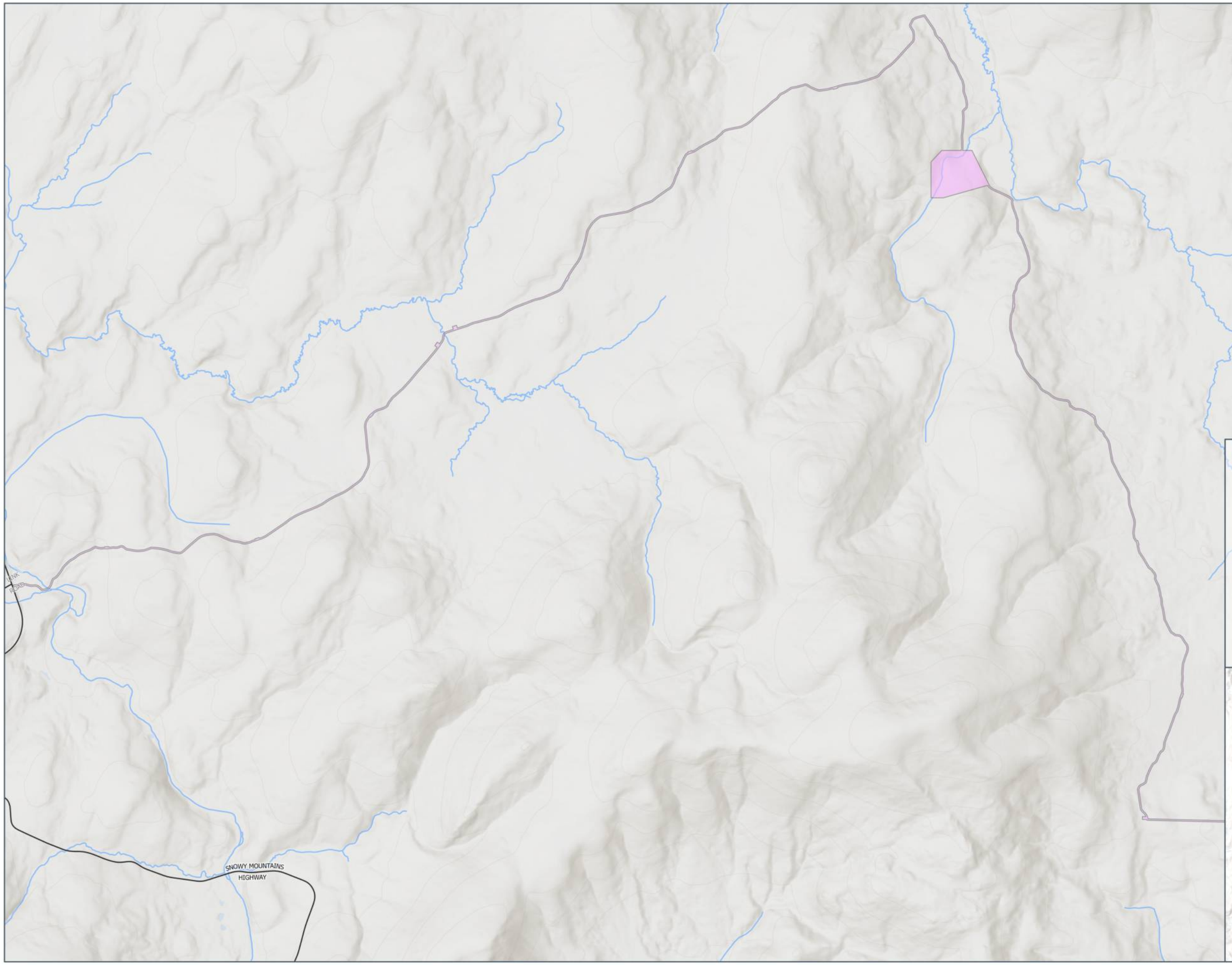


NOTE

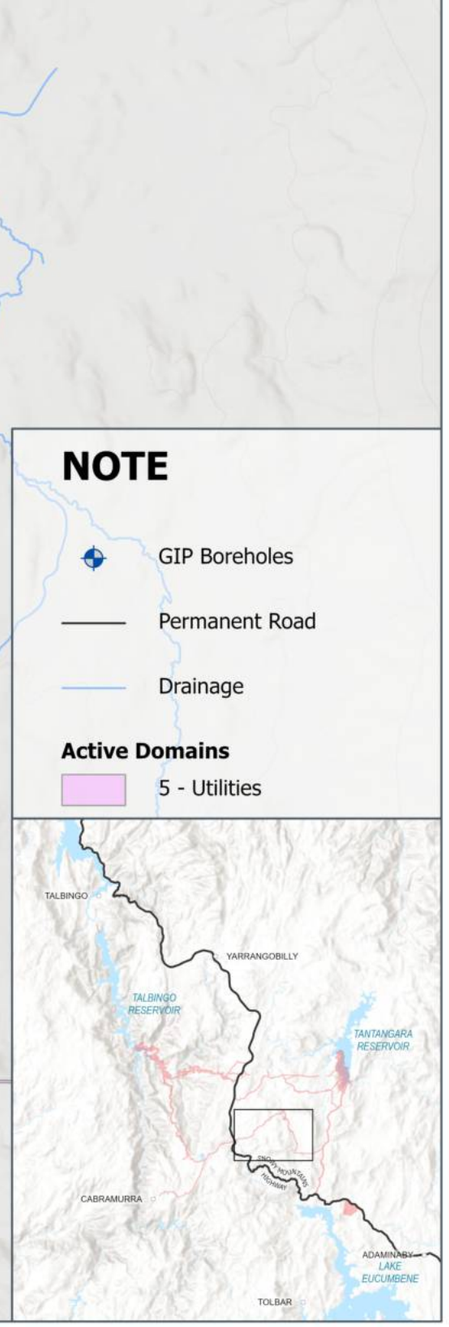
GIP Boreholes

Permanent Road

Drainage

Active Domains

5 - Utilities



snowyhydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Tantangara Creek Fish Weir - Overview

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N

Prepared by: Karen Zhu
Date: 27/09/2023

0 360 720 1,080 Meters

Spatial Reference: GDA2020 MGA Zone 55

SNOWY MOUNTAINS
HIGHWAY

NOTE

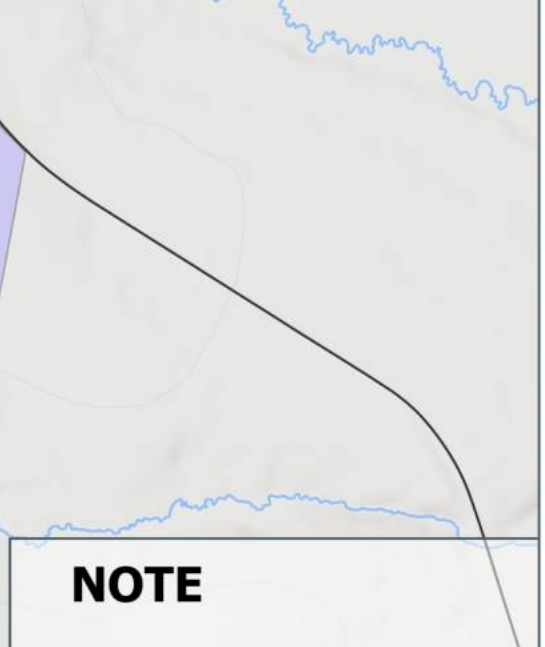
GIP Boreholes

Permanent Road

Drainage

Active Domains

1.2 - Construction Portals and Yards



snowy hydro

Snowy 2.0 Active Domains

Rehabilitation, Recreation and Roads
Rock Forest

N

Prepared by: RG14442
Date: 27/09/2023

0 175 350 525 Meters

Spatial Reference: GDA2020 MGA Zone 55

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APPENDIX E

Rehabilitation Risk Assessment

Phase / Activity	Description of Risk	Consequence	Potential	Existing Controls	Risk Control	Initial Risk			Proposed New Controls	Residual Risk		
						C	L	Risk Score		C	L	Risk Score
1. General	Insufficient skills and experience of rehab personnel.	Environmental	Poor quality rehabilitation. Requirement to rework rehabilitation. Financial impacts	Experienced team to prepare RMP, Rehab Management Plan Review of plan Prequalification process for suppliers	Satisfactory	3. Moderate	2. Unlikely	6. Medium	Higher contractor specifications Implementation of lessons learnt / continuous improvement process	3. Moderate	2. Unlikely	6. Medium
1. General	Lack of clearly defined responsibilities.	Financial (Snowy)	Poor quality rehabilitation. Requirement to rework rehabilitation. Financial impacts	Clearly defined Snowy team for Rehab planning. Project Execution Plan (PEP) in place.	Satisfactory	3. Moderate	2. Unlikely	6. Medium	Include responsibilities in RMP. Communication of rehabilitation requirements with contractors	3. Moderate	2. Unlikely	6. Medium
1. General	Prioritisation of rehabilitation activities	Financial (Snowy)	Poor quality rehabilitation. Requirement to rework rehabilitation. Financial impacts	Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. Project Execution Plan (PEP) in place.	Satisfactory	3. Moderate	4. Likely	12. High	Communication and implementation of RMP Communication with internal stakeholders and project team	3. Moderate	2. Unlikely	6. Medium
1. General	Insufficient funding for rehabilitation activities	Financial (Snowy)	Poor quality rehabilitation. Requirement to rework rehabilitation. Financial impacts	Budget preparation Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. Preliminary Rehabilitation works proposed as a guide for major rehabilitation works. Dedicated Contract administrator allocated to rehabilitation	Needs Improvement	4. Major	3. Possible	12. High	Use early rehabilitation to inform budget decisions Dedicated contract administrator allocated to rehabilitation Forecast based on HA rate	4. Major	3. Possible	12. High
1. General	Budget creep and inadequate budget management	Financial (Snowy)	Poor quality rehabilitation. Requirement to rework rehabilitation. Financial impacts	Budget preparation Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. Early rehabilitation to provide guide for cost of different techniques	Needs Improvement	4. Major	3. Possible	12. High	Use preliminary rehabilitation to inform budget decisions using traditional and alternative techniques	4. Major	3. Possible	12. High
1. General	Poorly defined, or unachievable ecological rehabilitation objectives	Financial (Snowy)	Requirement to rework rehabilitation. Financial impacts. Ongoing maintenance requirements. Inability to hand over rehab.	EIS approved Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. Rehab trials . Review of rehabilitation objectives. NPWS engagement through steering committee.	Satisfactory	4. Major	3. Possible	12. High	SMART completion criteria, appropriate ecological function criteria.	4. Major	3. Possible	12. High
2. Land Clearance / resource salvage	Loss of biological resources - eg. Subsoil, vegetation material, seedbank.	Environmental	Insufficient material for rehabilitation. Poor quality rehabilitation. Requirement for rework	Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. Rehab trials underway. GIS and spatial mapping of required rehab areas, Inventory Biodiversity management plan inc clearing protocols Topsoil strategy in spoil management plan Audit / compliance program	Satisfactory	3. Moderate	4. Likely	12. High	Investigate appropriate alternative / substitute plant growth medium in place of topsoil	3. Moderate	2. Unlikely	6. Medium

2. Active works	Inadequate seed collection/supply	Financial (Snowy)	Insufficient material for rehabilitation. Poor quality rehabilitation. Requirement for rework Need for tubestock in place of seed	Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. Rehab trials. GIS and spatial mapping of required rehab areas (understanding seed requirements), Seed collection undertaken last year. RFP out for seed collection underway	Satisfactory	4. Major	4. Likely	16. High	Investigating appropriate provinence for seeding to get sufficient seed. Determine seed requirements. Literature review of seed collection-> seed success (mining examples) Seed production areas Multple contracts for collection in place	4. Major	3. Possible	12. High
2. Active works	Inappropriate species selection for seed collection	Financial (Snowy)	Insufficient material for rehabilitation. Poor quality rehabilitation. Requirement for rework Need for tubestock in place of seed	Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. Rehab trials . GIS and spatial mapping of required rehab areas (understanding seed requirements), Seed collection undertaken last year. RFP out for seed collection underway	Satisfactory	2. Minor	2. Unlikely	4. Low		2. Minor	2. Unlikely	4. Low
2. Active works	Lack of available seed collection areas	Financial (Snowy)	Requirement to go further afield for seed Insufficient material for rehabilitation. Poor quality rehabilitation. Perception of not collecting seed of providence Financial impacts	Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. Rehab trials . GIS and spatial mapping of required rehab areas (understanding seed requirements), Seed collection undertaken last year. RFP out for seed collection underway	Satisfactory	2. Minor	2. Unlikely	4. Low		2. Minor	2. Unlikely	4. Low
2. Active works	Inadequate seed management, cleaning and storage	Financial (Snowy)	Inadequate viability of seed Insufficient material for rehabilitation. Poor quality rehabilitation.	Seed collection contracts in place. Engagement of professional seed collection contractors Seed quality control programs in RFP Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP.	Satisfactory	2. Minor	2. Unlikely	4. Low	Develop quality control program for independent audit of seed storage	2. Minor	2. Unlikely	4. Low
2. Active works	Inadequate tubestock propagation	Financial (Snowy)	Inadequate viability of seed Insufficient material for rehabilitation. Poor quality rehabilitation.	Already seed in the bank for tubestock Some propagation underway Local nurseries available to grow local species Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP.	Satisfactory	2. Minor	2. Unlikely	4. Low	Develop rehab schedule to allow sufficient time for tubestock propagation	2. Minor	2. Unlikely	4. Low
2. Active works	Clearing in inappropriate seasonal conditions to salvage biological resources	Financial (Snowy)	Insufficient material for rehabilitation. Damage to topsoil resources Insufficient native seed for rehabilitation Poor quality rehabilitation.	Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. BMP Spoil management plan Testing of soil parameters to be include in RMP	Needs Improvement	3. Moderate	4. Likely	12. High	Communication of stripping procedures with contractors Compliance with procedures	3. Moderate	3. Possible	9. Medium
2. Active works	Poor topsoil management.	Financial (Snowy)	Insufficient material for rehabilitation. Poor quality rehabilitation. Requirement for rework	Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. BMP Spoil management plan Testing of soil parameters to be include in RMP	Needs Improvement	3. Moderate	4. Likely	12. High	Communication of stripping procedures with contractors Compliance with procedures Monitoring of stockpiling through regular surveying	3. Moderate	4. Likely	12. High

2. Active Works	Adverse geochemical composition of excavated materials	Environmental	Poor quality rehabilitation. Acid drainage No biological activity/microbiology in soils Impacts to local/regional watercourses	Spoil management plan Material characterisation program Growth media quality control and testing Seed quality control programs in RFP Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. Seed treatment and inoculation to be included in RMP. Testing regime for spoil Planned rehab trials for seeding directly into spoil	Satisfactory	3. Moderate	3. Possible	9. Medium	Mapping of no go zones in terms of rehab areas	3. Moderate	3. Possible	9. Medium
2. Active Works	Material prone to spontaneous combustion	Environmental	Ignition of mulch stockpiles Bushfire Loss of rehabilitation Injury or death	Bushfire management plan Spoil management plan RMP	Satisfactory	4. Major	1. Rare	4. Medium	Check that stockpiles included in Bushfire Management Plan Consider inclusion of monitoring of stockpile heating in RMP	3. Moderate	1. Rare	3. Low
3. Decommissioning	Hazards associated with retained infrastructure	Financial (Snowy)	Visual impacts Fire impacts to infrastructure	Planned APZs around retained infrastructure Clearly defined APZ requirements Line of sight on roads Typical utility retention drawings and	Satisfactory	3. Moderate	3. Possible	9. Medium	Communication with relevant operations personnel	3. Moderate	3. Possible	9. Medium
4. Decommissioning	Generation of waste from demolition impacting on rehabilitation.	Financial (Snowy)	Less than adequate waste disposal. Contamination. Exposure to hazardous substances. Demolition waste in rehab areas impacting on rehabilitation success	Contracts for demolition of construction infrastructure Removal of concrete footings RMP stating demolition requirements	Satisfactory	3. Moderate	3. Possible	9. Medium	Need to clearly define with contractors demolition expectations with regard to infrastructure and concrete footing. Develop handover standard	2. Minor	2. Unlikely	4. Low
4. Landform Establishment 5. Growth Medium Development 6. Ecosystem Establishment	Use of inappropriate machinery in rehabilitation.	Financial (Snowy)	Poor quality rehabilitation. Damage to existing rehabilitation Rework Financial impacts	Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. Contracts included requirements. Engagement of suitably qualified contractors. Contractor engagement process	Satisfactory	2. Minor	2. Unlikely	4. Low	To be communicated with contractors	2. Minor	2. Unlikely	4. Low
4. Landform Establishment	Unstable landform due to erosion and/or mass movement issues associated with inappropriate design	Environmental	Failure to meet land capability requirements. Long-term environmental impacts. Rework to landform. Erosion repair	Detailed design being completed Experienced landform designer 'Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. Water management and erosion control in detailed design Microrelief hybrid landform design	Satisfactory	4. Major	2. Unlikely	8. Medium		4. Major	2. Unlikely	8. Medium
4. Landform Establishment	Unstable landform due to erosion and/or mass movement issues associated with quality assurance during landform construction.	Environmental	Failure to meet land capability requirements. Long-term environmental impacts. Rework to landform. Erosion repair	Contracts include quality assurance Quality assurance processes in place Hold points specified	Satisfactory	4. Major	2. Unlikely	8. Medium		4. Major	2. Unlikely	8. Medium
4. Landform Establishment	Final landform instability (including slopes) and erosion.	Environmental	Failure to meet land capability requirements. Long-term environmental impacts. Rework to landform. Erosion repair	Spoil management plan Rehabilitation management plan Surface water management plan inc Erosion and sediment control plan	Satisfactory	4. Major	2. Unlikely	8. Medium		4. Major	2. Unlikely	8. Medium

4. Landform Establishment	Instability of batters and steep slopes.	Safety	Safety concern to employees and contractors. Failure of rehabilitation.	Decision making protocol for treatments of slopes and batters. Appropriate stabilisation methods identified for slopes. Surface water plan inc ESCP Detailed design Slope stability modelling etc	Satisfactory	3. Moderate	2. Unlikely	6. Medium	Need to determine appropriate accesses to entirety of rehab areas including steep slopes to allow for rehab and stabilisation Communication with contractors creating batters to improve final form to aid in rehab	3. Moderate	2. Unlikely	6. Medium
4. Landform Establishment	Availability of suitable materials for capping of hazardous excavated materials (AMD)	Environmental	Long-term environmental impacts.	EIS approved Spoil Management Plan AMD management plan	Satisfactory	3. Moderate	2. Unlikely	6. Medium		3. Moderate	2. Unlikely	6. Medium
4. Landform Establishment	Final landform unsuitable for final land use	Legal, Regulatory and compliance	Failure to meet land capability requirements. Long-term environmental impacts.	Recreational management plan 'Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. Consultation with stakeholders	Satisfactory	2. Minor	2. Unlikely	4. Low		2. Minor	2. Unlikely	4. Low
4. Landform Establishment	Landform aspect not suitable for intended plant species	Environmental	Failure to meet land capability requirements. Long-term environmental impacts.	Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. Consideration of aspect and slope in rehab strategy. EIS Decision making tool	Satisfactory	2. Minor	3. Possible	6. Medium		2. Minor	3. Possible	6. Medium
4. Landform Establishment	Inappropriate surface water management on rehabilitated landforms ie diversion of surface water runoff away from catchments.	Environmental	Long-term environmental impacts. Erosion Failure of landform Reworks required	Surface water management plan Rehabilitation management plan Spoil management plan Detailed design Micro relief	Satisfactory	3. Moderate	3. Possible	9. Medium		3. Moderate	3. Possible	9. Medium
4. Landform Establishment	Watercourse bank instability and rehabilitation.	Environmental	Long-term environmental impacts. Erosion Failure of landform Reworks required	Surface water management plan Rehabilitation management plan Spoil management plan Detailed design Micro relief	Needs Improvement	3. Moderate	3. Possible	9. Medium	Include riparian / watercourse rehabilitation strategy in individual RMP	3. Moderate	3. Possible	9. Medium
5. Growth Medium Development	Weed infestations in subsoil and topsoil resources	Financial (Snowy)	Loss topsoil resource Failure of rehab Requirement for rework Increased maintenance requirements and costs Financial implications Failure to obtain signoff	Weed Management Plan in BMP Implemented by FG and Snowy Topsoil management plan Weed monitoring and spraying Consultation with NPWS on weed management	Needs Improvement	4. Major	3. Possible	12. High	Approaches to weed management and controls to be discussed during workshops Absence of topsoil on direct seeding areas to be considered as rehab strategy	4. Major	3. Possible	12. High
6. Ecosystem Establishment	Lack of resources for rehabilitation maintenance.	Financial (Snowy)	Poor quality rehabilitation. Requirement for rework Feral animal and weed infestation Increased costs	Experienced team to prepare RMP, Rehab Management Plan to include rehab maintenance program Scheduled workshops for preparation of RMP.	Satisfactory	3. Moderate	3. Possible	9. Medium	Define and budget rehabilitation maintenance requirements	2. Minor	2. Unlikely	4. Low
6. Ecosystem Establishment	Lack of available areas for rehabilitation during appropriate / optimal revegetation seasons	Financial (Snowy)	Poor quality rehabilitation. Rework and reeding/tubestocking	Decision making protocol for treatments of slopes and batters. Appropriate stabilisation methods identified for slopes. Temporary rehab treatments identified for slopes becoming available out of season Rehabilitation management plan Scheduled workshops for preparation of RMP.	Satisfactory	2. Minor	3. Possible	6. Medium	Tidy up contractual arrangements and communications, hand over process	2. Minor	2. Unlikely	4. Low
6. Ecosystem Establishment	Unavailability of water for tubestock planting and/or hydromulching	Financial (Snowy)	Poor quality rehabilitation. Reworks	Significant local water sources available Licences in place for water use Access to water sources	Satisfactory	2. Minor	2. Unlikely	4. Low		2. Minor	2. Unlikely	4. Low
6. Ecosystem Establishment	Damage from fauna (e.g. kangaroos, feral goats, horses, deer etc.)	Financial (Snowy)	Poor quality rehabilitation. Rework and reeding/tubestocking Failure of rehab	Biodiversity Management Plan includes some feral animal controls Monitoring NPWS culling program NPWS baiting	Needs Improvement	4. Major	4. Likely	16. High	Fencing to be considered for rehabilitation areas. Further consideration in workshops Engagement with NPWS	4. Major	4. Likely	16. High

6. Ecosystem Establishment 7. Ecosystem and Land Use Development	Weather and climatic influences (e.g. drought; intense rainfall events; bushfire etc.).	Financial (Snowy)	Poor quality rehabilitation. Failure of rehab Requirement for rework	Experienced team to prepare RMP, Rehab Management Plan to include rehab maintenance program Scheduled workshops for preparation of RMP. Landform design Micro relief Surface water management plan inc ESCP Bushfire management plan	Satisfactory	3. Moderate	3. Possible	9. Medium	Engagement with NPWS over hazard reduction burns to protect assets and rehabilitation areas	3. Moderate	3. Possible	9. Medium
6. Ecosystem Establishment 7. Ecosystem and Land Use Development	Insects and plant disease.	Financial (Snowy)	Poor quality rehabilitation Requirement for rework	Seed collection contracts in place. Engagement of professional seed collection contractors Species variation in seed mix Seed quality control programs in RFP Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP.	Satisfactory	2. Minor	3. Possible	6. Medium		2. Minor	3. Possible	6. Medium
7. Ecosystem and Land Use Development	Insufficient establishment of target species and limited species diversity.	Environmental	Poor quality rehabilitation Completion criteria not met Requirement for rework	Seed collection contracts in place. Species variation in seed mix Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. Supplementary planting to increase diversity to be included in maintenance program	Satisfactory	3. Moderate	3. Possible	9. Medium		3. Moderate	3. Possible	9. Medium
7. Ecosystem and Land Use Development	Limited vegetation structural development and habitat for targeted fauna species.	Environmental	Long-term environmental impacts.	Experienced team to prepare RMP, Rehab Management Plan Scheduled workshops for preparation of RMP. Inclusion of habitat features in RMP. Significant resources (logs) available for use as habitat features	Satisfactory	2. Minor	2. Unlikely	Low		2. Minor	2. Unlikely	4. Low
7. Ecosystem and Land Use Development	Poor water quality and discharges.	Environmental	Long-term environmental impacts. Not operating in accordance with Water Management Plan.	Experienced team to prepare RMP, Rehab Management Plan to include rehab maintenance program Scheduled workshops for preparation of RMP. Landform design Micro relief Surface water management plan inc ESC	Satisfactory	3. Moderate	3. Possible	9. Medium		3. Moderate	3. Possible	9. Medium
7. Ecosystem and Land Use Development	Vandalism and unauthorised access to rehabilitation areas.	Environmental	Impact to rehabilitation. Safety concerns relating to unauthorised site access.	Security in place Controlled access	Satisfactory	2. Minor	3. Possible	6. Medium	Fencing to be considered for rehabilitation areas. Further consideration in workshops Engagement with NPWS Consideration of strategic placement of natural barriers (ie logs and rocks)	2. Minor	3. Possible	6. Medium
7. Ecosystem and Land Use Development	Poor post closure water quality issues (ie acid drainage, high salinity etc)	Financial (Snowy)	Long-term environmental impacts. Seepage from dumps	EIS Water management plan Spoil management plan ARD management plan 'Experienced team to prepare RMP, Rehab Management Plan to include rehab maintenance program Scheduled workshops for preparation of RMP.	Satisfactory	4. Major	3. Possible	12. High	Clarification required on status of other management plans. Align RMP with spoil management plan	3. Moderate	3. Possible	9. Medium
7. Ecosystem and Land Use Development	Redisturbance of established rehabilitation areas.	Financial (Snowy)	Impact to rehabilitation. Rework to rehabilitation Financial impacts	Security in place Controlled access	Satisfactory	3. Moderate	3. Possible	12. High	Implement no go zones for rehab areas	2. Minor	3. Possible	6. Medium

8. Relinquishment	Failure to obtain signoff for works from NPWS	Financial (Snowy)	Perpetual maintenance requirements Financial impacts	Engagement with NPWS 'Experienced team to prepare RMP, Rehab Management Plan to include rehab maintenance program Scheduled workshops for preparation of RMP. Inclusion of NPWS in steering committees	Needs Improvement	4. Major	3. Possible	12- High	Regular rehab progress inspections with key members of NPWS and supply of monitoring data	4. Major	3. Possible	12. High

Consequence Table								
Band	**Environmental**	**Legal, Regulatory and Compliance**	**Reputation**	**Financial (Snowy)**	**Financial (FGJV)**	**Project Outcome**	**Safety**	**JV) Project Schedule**
1 - Negligible	Promptly reversible/trivial impact on air, water, soil, flora, fauna, habitat or heritage.	Not Applicable	Incident or issue causes local inconvenience. Negative comment about the operations at regional level. Formal complaints made by public.	< $1M	< $200 K	The event would have no impact on the achievement of the stated outcomes of the project.	Nil to first aid injury, low level short term inconvenience or symptoms for an employee, contractor or member of the public.	Some delay but not not on project critical path
2 - Minor	Short term (1- 3 year) impact on population of native flora or fauna. Short term impacts on soil, air, water quality or habitat. Impact mostly confined to work area but potential short term off site impacts. Adverse impact to significant (eg category A and B) heritage items. Visual, noise or airborne dust impacts with potential for credible stakeholder/public complaint.	Compliance breach: Breach of legislative provision (Act or Regulation) resulting in a potential sanction involving a monetary penalty Conformance breach: Breach of contractual obligation resulting in potential criticism by SHL.	Incident or issue causes local concern with no potential for escalation. Short term negative regional media attention around a minor localised issues. Minor damage to reputation with regulator.	$1M - $10M	$200K - $1 M	The event would have a negligible impact on the achievement or achievability of the stated outcomes of the project.	Injury or illness requiring medical treatment of an employee, contractor or member of the public.	1-2 days delay not on project critical path
3 - Moderate	Medium term (3-10 year) impact on population of native flora or fauna. Medium term impacts on soil, air, water quality or habitat. Potential for medium term off- site impacts. Loss of a significant (eg Category A and B) heritage items. Visual, noise or airborne dust impacts with potential for regular response.	Compliance breach: Breach of legislative provision (Act or Regulation) resulting in a potential sanction involving a monetary penalty Conformance breach: Breach of contractual obligation resulting in potential criticism by SHL	Incident or issue causes local concern with potential for escalation to state media and/or to generate regular interest. State or Federal regulator conducts formal inquiry into broader industry issues which encompass feasibility study operations. Significant local community impacts	$10M - $50M	$1M - $5M	The event would mean the achievement or achievability of one or more of the stated project outcomes is temporarily compromised, but recoverable.	Hospitalisation with medical intervention of an employee, contractor or member of the public.	3 days to 1 week delay on project critical path
4 - Major	Long term (>10 years) impact on population of significant (eg threatened) flora or fauna. Long term impacts on soil, air, water quality. Potential for long term offsite impacts. Loss of numerous significant heritage items.	Compliance breach: Breach of legislative provision (Act or Regulation) resulting in a potential sanction involving penalty exceeding $100,000 or potential suspension to work Conformance breach: Breach of contractual obligation resulting in potential suspension of project involvement	Incident or issue causes negative state wide media attention and regulatory intervention. Government inquiry into project's actions or operations in regard to conduct, pricing, etc. Project operations result in one in one or more Executives or senior managers being terminated.	$50M - $300M	$5M - $20M	The event would mean the achievement of achievability of one or more of the stated project outcomes are compromised and not recoverable.	Long term or permanent disability, impairment or illness not significantly affecting the quality of life for an employee, contractor or member of the public.	1 week to 1 month delay on project critical path
5 - Severe	Permanent impact on the populations of the significant (eg threatened) flora or fauna. Permanent unconfined impact on previously undisturbed ecosystem.	Project environmental plans and culture and leadership are not effective in controlling risk of breach of environmental permits and approvals	Incident or issue causes prolonged, negative national media coverage. Court, regulator or Government inquiry alleges improper, corrupt or grossly negligent conduct. Other actions result in shareholders dismissing one or more directors.	>$300M	>$20M	The event would mean project outcomes are impossible to achieve.	Fatality or permanent significant disability, long term impairment or illness significantly affecting the quality of life for an employee, contractor or member of the public.	more than 1 month delay on project critical path

Likelihood table	
Band	**Description**
1 - Rare	Historically, the event has occurred very infrequently, based on comparisons with similar projects conducted under similar conditions. Based upon current project circumstances, were the event to occur over the course of the project, the event would be considered exceptional .
2 - Unlikely	Historically, the event has been known to occur infrequently, based on comparisons with similar projects conducted under similar conditions. Based upon current project circumstances, were it to occur over the course of this project, the event would be considered remarkable.
3 - Possible	Historically, the event has been known to occur occasionally, based on comparisons with similar projects conducted under similar conditions. Based upon current project circumstances, the event may occur over the course of this project.
4 - Likely	Historically, the event has been known to occur frequently, based on comparisons with similar projects conducted under similar conditions. Based upon current project circumstances, were it to occur over the course of this project, the event would be considered unremarkable.
5 - Almost Certain	Historically, the event has been known to occur very frequently, based on comparisons with similar projects conducted under similar conditions. Based on current project circumstances, the event is expected to occur over the course of this project.

	Likelihood					
		1 - Rare	**2 - Unlikely**	**3 - Possible**	**4 - Likely**	**5 - Almost Certain**
Consequence	**5 - Severe**	**5 - Medium**	**10 - High**	**15 - High**	**20 - Extreme**	**25 - Extreme**
	4 - Major	**4 - Medium**	**8 - Medium**	**12 - High**	**16 - High**	**20 - Extreme**
	3 - Moderate	**3 - Low**	**6 - Medium**	**9 - Medium**	**12 - High**	**15 - High**
	2 - Minor	**2 - Low**	**4 - Low**	**6 - Medium**	**8 - Medium**	**10 - Medium**
	1 - Negligible	**1 - Low**	**2 - Low**	**3 - Low**	**4 - Low**	**5 - Low**

APPENDIX F

Snowy 2.0 Seed Inventory - November 2023

Snowy 2.0 Seed Inventory 2023 (To be updated following final processing of the 2022/ 2023 collection)

Inventory also including in Appendix G

Botanical Name	Quantity kg's
Acaena novae-zelandiae	0.909
Acaena ovina	0.335
Aciphylla glacialis	0.48
Aciphylla simplicifolia	0.06
Arthropodium milleflorum	0.865
Brachyscome scapigera	0.05
Bulbine bulbosa	0.645
Chrysocephalum apiculatum	0.005
Chrysocephalum semipapposum	0.206
Craspedia coolaminica	0.1
Dianella longifolia	0.1
Dianella revoluta	0.341
Dianella tasmanica	0.8
Goodenia hederacea	0.035
Leptorhynchos squamatus	0.005
Leucochrysum albicans subsp. albicans	0.08
Microseris lanceolata	0.1
Oreomyrrhis eriopoda	0.04
Podolepis jaceoides	0.25
Podolepis robusta	0.759
Ranunculus collinus	0.02
Ranunculus inundatus	0.8
Ranunculus pimpinellifolius	0.08
Stylidium graminifolium	0.29
Viola betonicifolia	0.05
Xerochrysum subundulatum	0.604
Richea continentis	0.078
Eucalyptus niphophila	0.12
Baloskion spp	0.02

Carex appressa	0.9
Carex breviculmis	0.05
Carex gaudichaudiana	0.05
Juncus australis	0.1
Juncus falcatus	0.4
Juncus filicaulis	0.2
Juncus phaeanthus	0.2
Juncus sarophorus	0.2
Juncus usitatus	0.02
Lomandra filiformis	0.05
Lomandra filiformis subsp. filiformis	0.15
Lomandra longifolia	0.49
Lomandra multiflora subsp. Multiflora	0.02
Luzula densiflora	0.003
Luzula flaccida	0.02
Luzula modesta	0.003
Luzula novae-cambriae	0.08
Acacia dealbata	0.7
Acacia falciformis	0.28
Acacia melanoxylon	7.228
Acacia obliquinervia	0.5
Acacia pravissima	0.72
Acacia rubida	6
Acacia ulicifolia	0.05
Banksia canei	0.053
Bossiaea foliosa	0.2
Bursaria spinosa	3.764
Callistemon pityoides	0.304
Cassinia aculeata	0.86

Cassinia longifolia	8.076
Cassinia monticola	1.135
Daviesia latifolia	0.15
Daviesia mimosoides	0.08
Daviesia ulicifolia	0.037
Dodonaea viscosa subsp. angustifolia	2.653
Hakea lissosperma	0.097
Hakea microcarpa	2.451
Indigofera australis	1.365
Leptospermum brevipes	0.704
Leptospermum continentale	0.52
Leptospermum grandifolium	0.14
Leptospermum myrtifolium	0.513
Leptospermum polygalifolium subsp. polygalifolium	0.331
Mirbelia oxylobioides	0.198
Olearia erubescens	0.061
Oxylobium ellipticum	0.061
Ozothamnus cupressoides	0.035
Ozothamnus secundiflorus	0.77
Ozothamnus thyrsoideus	0.2
Pimelea ligustrina subsp. ciliata	0.02
Podolobium alpestre	0.143
Polyscias sambucifolia	0.038
Prostanthera lasianthos	0.17
Tasmannia lanceolata	0.882
Eucalyptus dalrympleana	0.464
Eucalyptus delegatensis subsp. Delegatensis	0.045
Eucalyptus dives	0.01
Eucalyptus lacrimans	0.09
Eucalyptus macrorhyncha	0.069
Eucalyptus mannifera	0.5
Eucalyptus pauciflora	3.768
Eucalyptus radiata	0.008
Eucalyptus stellulata	6.263
Eucalyptus viminalis	0.05

Austrostipa scabra	0.345
Microlaena stipoides	15.095
Poa clivicola	0.2
Poa fawcettiae	1.29
Poa helmsii	0.97
Poa labillardierei	12.85
Poa phillipsiana	0.8
Poa sieberiana	2.75
Rytidosperma laeve	0.02
Rytidosperma pallidum	0.01
Rytidosperma penicillatum	0.07
Rytidosperma pilosum	0.65
Rytidosperma racemosum var. racemosum	0.5
Themeda triandra	34.9
Hardenbergia violacea	0.27

APPENDIX G

Snowy 2.0 Rehabilitation Species List

Appendix G - Rehabilitation Species List

Growth Form	Botanical Name	Comment on suitability for active use in initial rehabilitation	Material collected (April 2023) Y/N	Total in seed in stock (kgs)	Collection Type	Quantity Required TBC	PCT,s
Forbs	*Aciphylla glacialis*		**Y**	0.48	Wild Harvest		637 1224 1225
	Aciphylla simplicifolia		**Y**	0.06	Wild Harvest		303 644 679 1224 1225
	Arthropodium milleflorum		**Y**	0.865	SPA		300 637 639 644 729 952 953 1191 1196
	Brachyscome aculeata		**N**		SPA		303 639 644 953 1196 1224
	Brachyscome ciliaris		**N**		Wild Harvest		1224
	Brachyscome decipiens		**N**		SPA		300 303 637 644 679 1196 1224 1225
	Brachyscome obovata		**N**		Wild Harvest		637
	Brachyscome scapigera		**N**	0.05	Wild Harvest		303 644 1224 1225
	Brachyscome spathulata		**Y**		SPA		296 300 303 637 638 639 644 729 952
	Brachyscome tenuiscapa		**N**		Wild Harvest		644 1196 1224
	Bulbine bulbosa		**Y**	0.645	SPA		285 302 303 637 638 639 644 679 1196
	Celmisia pugioniformis		**N**		Wild Harvest		637 1224 1225
	Celmisia tomentella	High altitude riparian areas	**N**		Wild Harvest		644
	Chrysocephalum apiculatum		**Y**	0	Wild Harvest		320 679 953 1196 1225
	Chrysocephalum semipapposum		**Y**	0	SPA		296 299 300 302 303 644 729 953 999
	Coronidium monticola		**N**		SPA		303 637 638 639 644 953 1224 1225
	Coronidium scorpioides		**Y**		SPA		303 637 644 952 953 1196 1224
	Craspedia aurantia		**N**		Wild Harvest		1224 1225
	Craspedia canens		**N**		Wild Harvest		303 644
	Craspedia coolaminica		**Y**	0.1	Wild Harvest		303 1224
	Craspedia costiniana		**N**		Wild Harvest		303 644 1196 1225
	Craspedia crocata		**N**		Wild Harvest		1224
	Craspedia jamesii		**N**		Wild Harvest		300 303 644 953 1196 1224
	Craspedia paludicola		**N**		Wild Harvest		952
	Craspedia variabilis		**N**		Wild Harvest		644 1196 1224
	Dianella longifolia		**Y**	0.1	Wild Harvest		300 311 953 999 1196
	Dianella nervosa		**Y**		Wild Harvest		311
	Dianella revoluta		**Y**	0.341	Wild Harvest		285 302 311 729 953 999 1196
	Dianella revoluta var. revoluta		**Y**		Wild Harvest		302 311 729
	Dianella tasmanica		**Y**	0.8	Wild Harvest		639 1196
	Erigeron bellidioides		**N**		Wild Harvest		1224 1225
	Erigeron conyzoides		**N**		Wild Harvest		300 311 729
	Goodenia hederacea		**Y**	0.035	T/S Divison		638 639 644 679 952 1196
	Helichrysum rutidolepis		**N**		Wild Harvest		639 644 1196
	Leptorhynchos squamatus		**Y**	0.005	Wild Harvest		303 644 679 729 953 1196 1224 1225
	Leptorhynchos squamatus subsp. Alpinus		**N**		Wild Harvest		303 644 1196 1224 1225
	Leptorhynchos squamatus subsp. squamatus		**N**		Wild Harvest		644
	Leucochrysum albicans		**N**		Wild Harvest		644 1196 1225
	Leucochrysum albicans subsp. albicans		**Y**	0.08	Wild Harvest		311 999
	Microseris lanceolata		**Y**	0.1	SPA		303 638 639 644 679 1196 1224 1225
	Myriophyllum alpinum	Bogs - can cope with being	**N**		T/S Divison		1225
	Myriophyllum pedunculatum	Bogs - can cope with being	**N**		T/S Divison		637 765
	Neopaxia australasica	High altitude riparian areas	**N**		T/S Divison		637 1224 1225
	Oreomyrrhis argentea		**N**		Wild Harvest		303 679 1196 1224 1225
	Oreomyrrhis brevipes		**N**		Wild Harvest		644
	Oreomyrrhis ciliata		**N**		Wild Harvest		303 637 644 1224
	Oreomyrrhis eriopoda		**Y**	0.04	Wild Harvest		285 303 637 638 639 644 679 729 1196
	Picris angustifolia		**N**		Wild Harvest		300 638 639 644 953 1196
	Picris angustifolia subsp. merxmuelleri		**N**		Wild Harvest		639 644 1196
	Plantago antarctica		**N**		Wild Harvest		303 637 644 1224
	Plantago euryphylla		**N**		Wild Harvest		303 679 1224
	Plantago gaudichaudii		**N**		Wild Harvest		296 300 729 953 1224
	Plantago hispida		**N**		Wild Harvest		999
	Plantago varia		**N**		Wild Harvest		300 644 952 1224
	Platylobium formosum				SPA		296 299 300 302 311 638 639 729 953
	Podolepis hieracioides		**N**		Wild Harvest		303 644
	Podolepis jaceoides		**N**	0.25	SPA		300 303 644 953 1196 1224
	Podolepis laciniata		**N**		Wild Harvest		303 1196 1224
	Podolepis robusta		**N**	0.759	Wild Harvest		300 644
	Pratia surrepens	Used in wetter areas	**N**		T/S Divison		639
	Ranunculus collinus		**Y**	0.02	SPA		300 311 729 1196 1224
	Ranunculus graniticola		**Y**		SPA		303 637 644 1196 1224 1225
	Ranunculus inundatus		**N**	0.8	Wild Harvest		1225
	Ranunculus lappaceus		**N**		SPA		285 300 303 637 679 644 729 952 953
	Ranunculus millanii		**N**		Wild Harvest		637 1224 1225
	Ranunculus pimpinellifolius		**Y**	0.08	Wild Harvest		303 637 765 1225
	Rhodanthe anthemoides		**Y**		Wild Harvest		303 1196 1224
	Scleranthus biflorus	Used in wetter areas	**N**		T/S Divison		296 303 644 952 1196 1224 1225
	Senecio diaschides		**N**		Wild Harvest		729
	Senecio gunnii		**N**		SPA		300 303 637 638 639 644 679 952 1196
	Senecio lageniformis		**N**		Wild Harvest		303 1196 1224
	Senecio linearifolius		**N**		Wild Harvest		644
	Senecio longipilus		**N**		Wild Harvest		303 644
	Senecio phelleus		**N**		Wild Harvest		1196
	Senecio pinnatifolius var. alpinus		**N**		Wild Harvest		303
	Senecio pinnatifolius var. pinnatifolius		**N**		Wild Harvest		644
	Senecio prenanthoides		**N**		Wild Harvest		300 639 952 953 1191 1196 1224
	Senecio quadridentatus		**N**		SPA		285 296 300 302 639 644 679 953 999
	Stackhousia monogyna		**N**		SPA		300 303 639 644 729 952 953 999 1096
	Stellaria angustifolia		**N**		T/S Cutting		637 1225
	Stellaria palustris		**N**		T/S Cutting		639
	Stellaria pungens		**N**		T/S Cutting		644 679 729 952 953 999 1096 1191 1196 1224 1225
	Stylidium graminifolium		**Y**	0.29	SPA		285 296 300 303 637 638 639 644 679
	Stylidium lineare		**N**		Wild Harvest		644
	Viola betonicifolia		**Y**	0.05	SPA		300 303 637 638 639 644 679 729 952
	Xerochrysum bracteatum		**N**		Wild Harvest		296 303 644 1196
	Xerochrysum subundulatum		**Y**	0.604	Wild Harvest		1224
	Xerochrysum viscosum		**N**		Wild Harvest		644 999
							1196
Heath Shrubs							
	Brachyloma daphnoides		**N**		T/S Cutting		285 296 299 300 302 311 638 639 644
	Epacris breviflora	Ephemeral wet sites	**N**		T/S Cutting		285 303 637 729 952 953 1196 1224 1225
	Epacris celata	Ephemeral wet sites	**N**		T/S Cutting		296 300 637
	Epacris glacialis	Ephemeral wet sites	**N**		T/S Cutting		637
	Epacris gunnii	Ephemeral wet sites	**N**		T/S Cutting		1224 1225
	Epacris impressa	Ephemeral wet sites	**N**		T/S Cutting		303
	Epacris microphylla	Ephemeral wet sites	**N**		T/S Cutting		637 765 1224 1225
	Epacris paludosa	Ephemeral wet sites	**N**		T/S Cutting		303 637 765 1196 1224
	Melichrus urceolatus		**N**		T/S Cutting		311 729 999 1191
	Monotoca scoparia		**N**		T/S Cutting		296 299 302 303 311 637 729 953 999
	Richea continentis	Ephemeral wet sites	**Y**	0	T/S Cutting		1225
			N				
Mallee Tree							
	Eucalyptus niphophila		**Y**	0.12	Wild Harvest		644
Sedges and Rushes	*0*		**Y**	0.02	Wild Harvest		637 1225

	Carex appressa	Ephemeral wet sites	Y	0.9	SPA		285 296 300 302 303 311 637 644 729
	Carex breviculmis		Y	0.05	SPA		285 300 302 311 638 639 644 729 953
	Carex gaudichaudiana	In subalpine/alpine bogs	Y	0.05	T/S Division		285 637 765 1224 1225
	Carex hebes		N		Wild Harvest		303 637 644 1196
	Carex incomitata		N		Wild Harvest		300 302 303 311 953 1191 1224
	Carex jackiana	Fens			Wild Harvest		637
	Isolepis inundata	Bogs and fens	N		T/S Division		1224
	Juncus australis	Ephemeral wet sites	Y	0.1	T/S Wild Harvest		285 637
	Juncus falcatus	Ephemeral wet sites	Y	0.4	T/S Wild Harvest		303 1224
	Juncus filicaulis	Ephemeral wet sites	Y	0.2	T/S Wild Harvest		285
	Juncus phaeanthus	Ephemeral wet sites	Y	0.2	T/S Wild Harvest		637
	Juncus sarophorus	Ephemeral wet sites	Y	0.2	T/S Wild Harvest		302 637 1224
	Juncus usitatus	Ephemeral wet sites	Y	0.02	T/S Wild Harvest		296 637 765
	Lomandra bracteata		N		T/S Wild Harvest		300 679 729 952 953 999 1196
	Lomandra confertifolia		N		T/S Wild Harvest		729 1196
	Lomandra filiformis		Y	0.05	SPA		285 296 300 302 311 638 639 644 729
	Lomandra filiformis subsp. coriacea		Y		SPA		296 300 302 311 639 644 729 952 953
	Lomandra filiformis subsp. filiformis		Y	0.15	SPA		296 300 639 644 729 952 952 1191
	Lomandra longifolia		Y	0.49	SPA		285 296 299 300 302 311 638 639 644
	Lomandra multiflora subsp. Multiflora		Y	0.02	T/S Wild Harvest		285 299 300 302 311 729 953 999 1096
	Luzula densiflora		Y	0	T/S Wild Harvest		285 300 303 638 639 644 679 729 1196
	Luzula flaccida		Y	0	T/S Wild Harvest		296 300 302 303 638 639 644 729 952
	Luzula modesta		Y	0	T/S Wild Harvest		285 637 644 765 1224
	Luzula novae-cambriae		Y	0	T/S Wild Harvest		639 644 1224
Shrubs	*Acacia alpina*		N		T/S Wild Harvest		644 679
	Acacia amoena		N		T/S Wild Harvest		311
	Acacia buxifolia		N		T/S Wild Harvest		999
	Acacia buxifolia subsp. buxifolia		N		T/S Wild Harvest		999
	Acacia dealbata		Y	0.7	T/S Wild Harvest		285 296 299 300 302 311 639 729 952
	Acacia dealbata subsp. subalpina		N		T/S Wild Harvest		285 300 302 639 729 953 999
	Acacia falciformis		Y	0.28	T/S Wild Harvest		953 1196
	Acacia floribunda		N		T/S Wild Harvest		300 311
	Acacia gunnii		N		T/S Wild Harvest		296 311 729 953 999 1191
	Acacia melanoxylon		Y	7.228	T/S Wild Harvest		285 296 299 300 302 311 953 999 1191
	Acacia obliquinervia		Y	0.5	T/S Wild Harvest		296 299 300 302 311 638 639 644 679
	Acacia obtusifolia		N		T/S Wild Harvest		311
	Acacia penninervis var. penninervis		N		T/S Wild Harvest		999
	Acacia pravissima		Y	0.72	T/S Wild Harvest		285 296 299 300 302 311 729 953 999
	Acacia rubida		N	6	T/S Wild Harvest		285 729
	Acacia saliciformis		N		T/S Wild Harvest		296 729
	Acacia siculiformis		N		T/S Wild Harvest		296 299 302 311 639 729 999 1196
	Acacia ulicifolia		Y	0.05	T/S Wild Harvest		953
	Acacia verniciflua		N		T/S Wild Harvest		639
	Asterolasia trymalioides		N		T/S Cutting		644 679 1224
	Baeckea gunniana	Wet areas	N		T/S Cutting		637
	Baeckea utilis	Wet areas	N		T/S Cutting		296 637 644 1196 1224
	Banksia canei		Y	0.053	T/S Wild Harvest		285 296 300 302 311 729 953 999 1096
	Banksia spinulosa var. collina		N		T/S Wild Harvest		302
	Bossiaea foliosa		N	0.2	Wild Harvest - may		303 637 639 644 729 952 953 1196 1224
	Bursaria spinosa		Y	3.764	T/S Wild Harvest		299 300 302 311 729 999 1191
	Bursaria spinosa subsp. spinosa		N		T/S Wild Harvest		296
	Callistemon pityoides		Y	0.304	T/S Wild Harvest		637 1196
	Cassinia aculeata		N	0.86	T/S Wild Harvest		285 296 299 300 302 303 311 638 639
	Cassinia aculeata subsp. aculeata		N		T/S Wild Harvest		302
	Cassinia arcuata		N		T/S Wild Harvest		285
	Cassinia longifolia		Y	8.076	T/S Wild Harvest		285 296 299 300 302 311 638 639 729
	Cassinia monticola		Y	1.135	T/S Wild Harvest		637 1224 1225
	Comesperma retusum		N		T/S Wild Harvest		1224
	Coprosma hirtella		N		T/S Wild Harvest		638 639 644 953 1196
	Coprosma quadrifida		N		T/S Wild Harvest		300
	Correa lawrenceana var. rosea		N		T/S Wild Harvest		311
	Daviesia latifolia		Y	0.15	T/S Wild Harvest		296 300 639 729 952 953 1096 1196
	Daviesia leptophylla		N		T/S Wild Harvest		296 299 729
	Daviesia mimosoides		Y	0.08	T/S Wild Harvest		300 311 638 639 644 952 1196
	Daviesia mimosoides subsp. mimosoides		N		T/S Wild Harvest		639 952
	Daviesia ulicifolia		Y	0.037	T/S Wild Harvest		296 300 303 638 639 644 679 952 953
	Derwentia perfoliata		N		T/S Wild Harvest		303
	Dillwynia phylicoides		N		T/S Wild Harvest		296 311 729 953 999
	Dillwynia sericea		N		T/S Wild Harvest		729 1224
	Dodonaea viscosa		N		T/S Wild Harvest		299 311 999
	Dodonaea viscosa subsp. angustifolia		Y	2.653	T/S Wild Harvest		729 1191
	Dodonaea viscosa subsp. angustissima		N		T/S Wild Harvest		296 300 302
	Grevillea arenaria		N		T/S Wild Harvest		299 300 302 311 729 999 1191
	Grevillea arenaria subsp. canescens		N		T/S Wild Harvest		300 302 311 729 1191
	Grevillea australis		N		T/S Wild Harvest		637 644 1196 1224
	Grevillea lanigera		N		T/S Wild Harvest		303 637 729 1096 1196 1224
	Grevillea neurophylla		N		T/S Wild Harvest		311 953 999 1196
	Grevillea neurophylla subsp. neurophylla		N		T/S Wild Harvest		999
	Grevillea parviflora		N		T/S Wild Harvest		1224
	Grevillea rosmarinifolia		N		T/S Wild Harvest		300 302 729 1191
	Grevillea rosmarinifolia subsp. rosmarinifolia		N		T/S Wild Harvest		300 302 729 1191
	Hakea lissosperma		Y	0.097	T/S Wild Harvest		639
	Hakea microcarpa		Y	2.451	T/S Wild Harvest		303 637 638 679 953 1196 1224 1225
	Indigofera australis		Y	1.365	T/S Wild Harvest		296 299 300 302 311 729 999 1191
	Kunzea ericoides		N		T/S Wild Harvest		311
	Kunzea muelleri		N		T/S Wild Harvest		303 1224
	Kunzea parvifolia		N		T/S Wild Harvest		999
	Leptospermum brevipes	Wet sites - riparian	Y	0.704	T/S Wild Harvest		296 300 311 1196
	Leptospermum continentale		Y	0.52	T/S Wild Harvest		296
	Leptospermum grandifolium	Wet sites - riparian	Y	0.14	T/S Wild Harvest		302 637 1196
	Leptospermum lanigerum		Y		T/S Wild Harvest		639
	Leptospermum myrtifolium	Wet sites - riparian	N	0.513	T/S Wild Harvest		285 303 637 639 679 952 953 1196 1224
	Leptospermum obovatum	Wet sites - riparian	Y		T/S Wild Harvest		285 303 1196
	Leptospermum polygalifolium subsp.	Wet sites - riparian	Y	0.331	T/S Wild Harvest		302
	Lomatia fraseri		N		T/S Wild Harvest		1196
	Lomatia myricoides		N		T/S Wild Harvest		300 302 638 639 644 1196
	Melaleuca armillaris subsp. Armillaris		N		T/S Wild Harvest		311
	Mirbelia oxylobioides		Y	0.198	T/S Wild Harvest		285 296 299 300 302 303 311 644 729
	Mirbelia platylobioides		N		T/S Wild Harvest		953
	Olearia alpicola		N		T/S Wild Harvest		1225
	Olearia brevipedunculata		N		T/S Wild Harvest		644
	Olearia erubescens		Y	0.061	T/S Wild Harvest		639 644 729 953 1096 1196
	Olearia megalophylla		Y		T/S Wild Harvest		1196
	Olearia myrsinoides		N		T/S Wild Harvest		296 299 300 302 303 644 999 1191 1224
	Olearia phlogopappa		N		T/S Wild Harvest		300 302 639 644 952 1196 1224
	Olearia phlogopappa var. flavescens		N		T/S Wild Harvest		300 644
	Oxylobium ellipticum		N	0.061	T/S Wild Harvest		644 1196
	Ozothamnus cupressoides		Y	0.035	T/S Wild Harvest		1224 1225
	Ozothamnus secundiflorus		Y	0.77	T/S Wild Harvest		303 637 644 1224
	Ozothamnus thyrsoideus		Y	0.2	T/S Wild Harvest		300 637 644 1196
	Phebalium squamulosum		N		T/S Wild Harvest		644
	Pimelea ligustrina subsp. ciliata		Y	0.02	T/S Wild Harvest		644

	Pimelea ligustrina subsp. ligustrina		N		T/S Wild Harvest		644
	Pimelea linifolia		N		T/S Wild Harvest		285 296 300 303 311 638 639 644 679
	Pimelea linifolia subsp. caesia		N		T/S Wild Harvest		302
	Podocarpus lawrencei		N		T/S Wild Harvest		644
	Podolobium alpestre		Y	0.143	T/S Wild Harvest		638 639 644 679 729 999 1196 1224
	Polyscias sambucifolia		Y	0.038	T/S Wild Harvest		300 639 644 679 953 1196
	Prostanthera lasianthos		Y	0.17	T/S Wild Harvest		302
	Rubus parvifolius		N		T/S Wild Harvest		285 296 299 300 302 303 637 638 639
	Tasmannia lanceolata		Y	0.882	T/S Wild Harvest		644 1196
	Tasmannia xerophila		N		T/S Wild Harvest		644 679
Trees	*Brachychiton populneus*		N		T/S Wild Harvest		311
	Callitris endlicheri		N		T/S Wild Harvest		729
	Eucalyptus camphora		N		T/S Wild Harvest		285 296 302 729 952
	Eucalyptus camphora subsp. humeana		N		T/S Wild Harvest		285 302 729
	Eucalyptus dalrympleana		Y	0.464	T/S Wild Harvest		300 303 637 638 639 644 729 952 953
	Eucalyptus dalrympleana subsp.		N		T/S Wild Harvest		644 953 1196
	Eucalyptus delegatensis subsp. Delegatensis		Y	0.045	T/S Wild Harvest		300 638 639 644 1196
	Eucalyptus dives		N	0.01	T/S Wild Harvest		285 296 299 300 302 311 729 952 953
	Eucalyptus lacrimans		Y	0.09	T/S Wild Harvest		644 1224
	Eucalyptus macrorhyncha		Y	0.069	T/S Wild Harvest		296 299 302 311 729 953 999
	Eucalyptus mannifera		Y	0.5	T/S Wild Harvest		285 296 300 302 1191
	Eucalyptus mannifera subsp. mannifera		N		T/S Wild Harvest		300
	Eucalyptus nortonii		N		T/S Wild Harvest		299 302 311 729 999
	Eucalyptus paniculata		N		T/S Wild Harvest		1196
	Eucalyptus pauciflora		Y	3.768	T/S Wild Harvest		296 300 303 637 638 639 644 679 729
	Eucalyptus radiata		Y	0.008	T/S Wild Harvest		300 952 1196
	Eucalyptus radiata subsp. radiata		Y		T/S Wild Harvest		952
	Eucalyptus robertsonii		N		T/S Wild Harvest		296 299 300 302 311 729 952 953 999
	Eucalyptus robertsonii subsp. robertsonii		N		T/S Wild Harvest		302 729
	Eucalyptus rubida		Y		T/S Wild Harvest		285 296 299 300 302 303 311 637 644
	Eucalyptus rubida x dalrympleana		N		T/S Wild Harvest		953
	Eucalyptus rubida x viminalis		N		T/S Wild Harvest		300
	Eucalyptus stellulata	Riparian tree - likes the wet	Y	6.263	T/S Wild Harvest		302 303 637 644 679 729 952 1191 1196
	Eucalyptus viminalis	Can cope with ephemeral	Y	0.05	T/S Wild Harvest		285 299 300 302 729 953 999 1196
Tussock Grass							
	Anthosachne scabra		Y		SPA		285 296 299 300 302 303 311 320 637
	Austrostipa scabra		Y	0.345	SPA		296 302 320 729 999 1191
	Bothriochloa macra		Y		Wild Harvest		311 320
	Deyeuxia brachyathera		N		Wild Harvest		637
	Deyeuxia monticola		N		Wild Harvest		638 639 1196 1224
	Dichelachne micrantha		N		Wild Harvest		300 729
	Dichelachne rara		N		Wild Harvest		303 729 999
	Microlaena stipoides		Y	15.095	SPA		285 296 300 302 303 639 644 679 729
	Microlaena stipoides var. stipoides		Y		SPA		300 302
	Poa clivicola		N	0.2	Wild Harvest		285 303 644 679 1196 1224 1225
	Poa costiniana	Riparian grass - subalpine	Y		Wild Harvest		303 637 644 765 1191 1196 1224 1225
	Poa ensiformis		Y		SPA		637 638 639 1196
	Poa fawcettiae		Y	1.29	Wild Harvest		644
	Poa helmsii		Y	0.97	SPA		285 300 302 637 638 639 644 679 729
	Poa labillardierei		Y	12.85	SPA		303 637 638 644 729 1225
	Poa labillardierei var. labillardierei		N		SPA		285 300 302 637 639 644 679 729 999
	Poa petrophila		N		Wild Harvest		644
	Poa phillipsiana		Y	0.8	SPA		300 303 311 644 679 729 1224 1225
	Poa sieberiana		Y	2.75	SPA		285 296 299 300 302 303 311 320 637
	Poa sieberiana var. cyanophylla		Y		SPA		296 300 302 303 639 644 729 952 953
	Poa sieberiana var. hirtella		Y		SPA		300 302 311 644 1191 1196
	Poa sieberiana var. sieberiana		Y		SPA		296 300 302 303 311 637 639 644 679
	Poa sieberiana var. sieberiana (fine leaf		Y		SPA		303 1196 1224
	Rytidosperma caespitosum		Y		Wild Harvest		285 296 300 303 644 999 1196 1224
	Rytidosperma erianthum		N		Wild Harvest		296 300 311 729 999 1191 1224
	Rytidosperma fulvum		N		Wild Harvest		1224
	Rytidosperma laeve		Y	0.02	Wild Harvest		302 729 952 1224
	Rytidosperma monticola		N		Wild Harvest		644
	Rytidosperma nudiflorum		N		Wild Harvest		1224
	Rytidosperma oreophilum		N		Wild Harvest		1196
	Rytidosperma pallidum		Y	0.01	Wild Harvest		296 300 311 639 729 953 999 1196
	Rytidosperma penicillatum		Y	0.07	SPA		285 296 299 300 302 303 311 638 639
	Rytidosperma pilosum		Y	0.65	SPA		285 300 302 303 644 729 999 1196 1224
	Rytidosperma racemosum var. racemosum		Y	0.5	Wild Harvest		303 320
	Themeda triandra		Y	34.9	SPA		285 296 299 300 302 303 311 320 639
Vines	*Clematis aristata*		N		T/S Wild Harvest		299 300 311 639 953 999 1096
	Hardenbergia violacea		Y	0.27	T/S Wild Harvest		296 299 300 311 729 953 999

SPA - Seed Production Areas
T/S - Tube Stock production

Priority focus has been given to plants that are known to readily establish themselves in the early to mid phases of rehabilitation, given the size of the program, collecting and trying to actively establish all species is not practical.

The list will be revisited where species are identified at reference sites to ensure completion criteria is met.

There also remains potential for collaborative research in particular regarding PCT characteristic, pollinator and fungi/ bacteria network species.

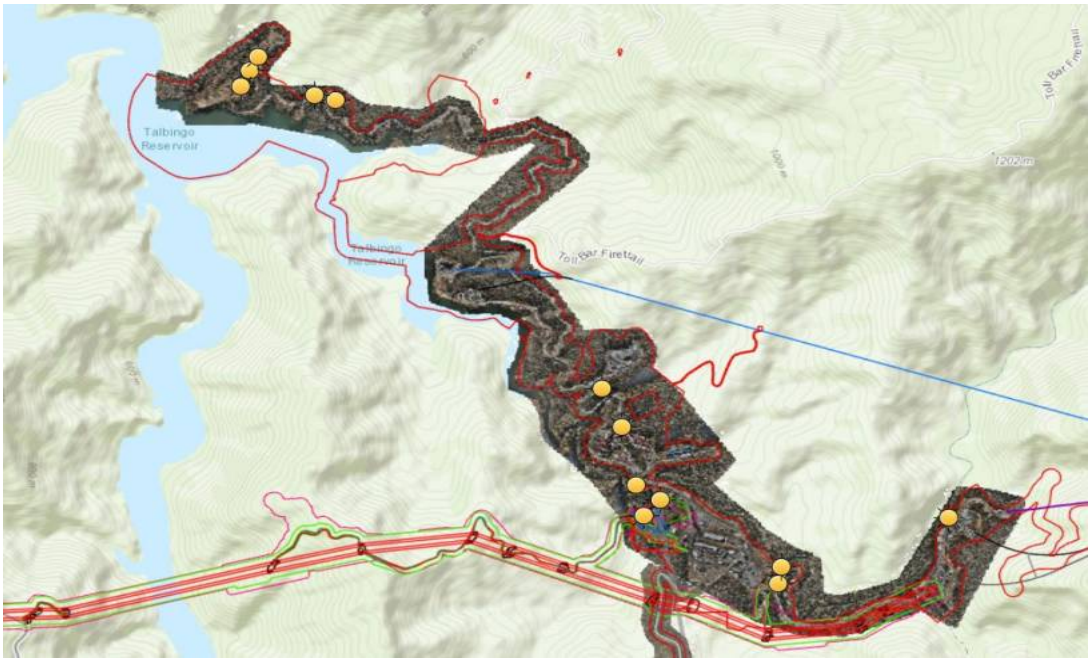
APPENDIX H

Topsoil Inventory May 2024

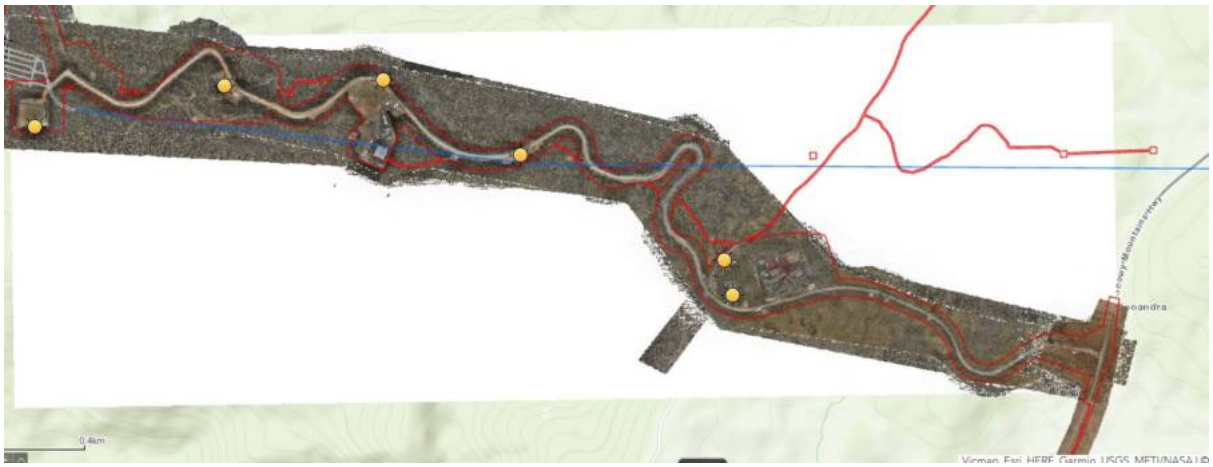
Snowy 2.0 - Topsoil Inventory - May 2024

Lobs Hole		
Topsoil Location	Volume m3	Comments
Camp - Pad F	8,000	
(F9)	8,833	
Office (Main Yard)	2,400	
Ravine Substation	1,500	
GF01	3,400	Subsoil / topsoil
Washington (Pad 2)	2,167	
Windrow bottom MAT	1,000	
*Lobs hole Trans grid shallow work material	*205,000	Topsoil / subsoil Not stockpiled
Ravine bay spoil road x 2	1,007	
Ravine Bay Stockpile 1	16,404	
Ravine Bay Stockpile 2	6,814	
Ravine Bay Stockpile 3	3,489	
TOTAL	260,014	260 Ha @ 100mm

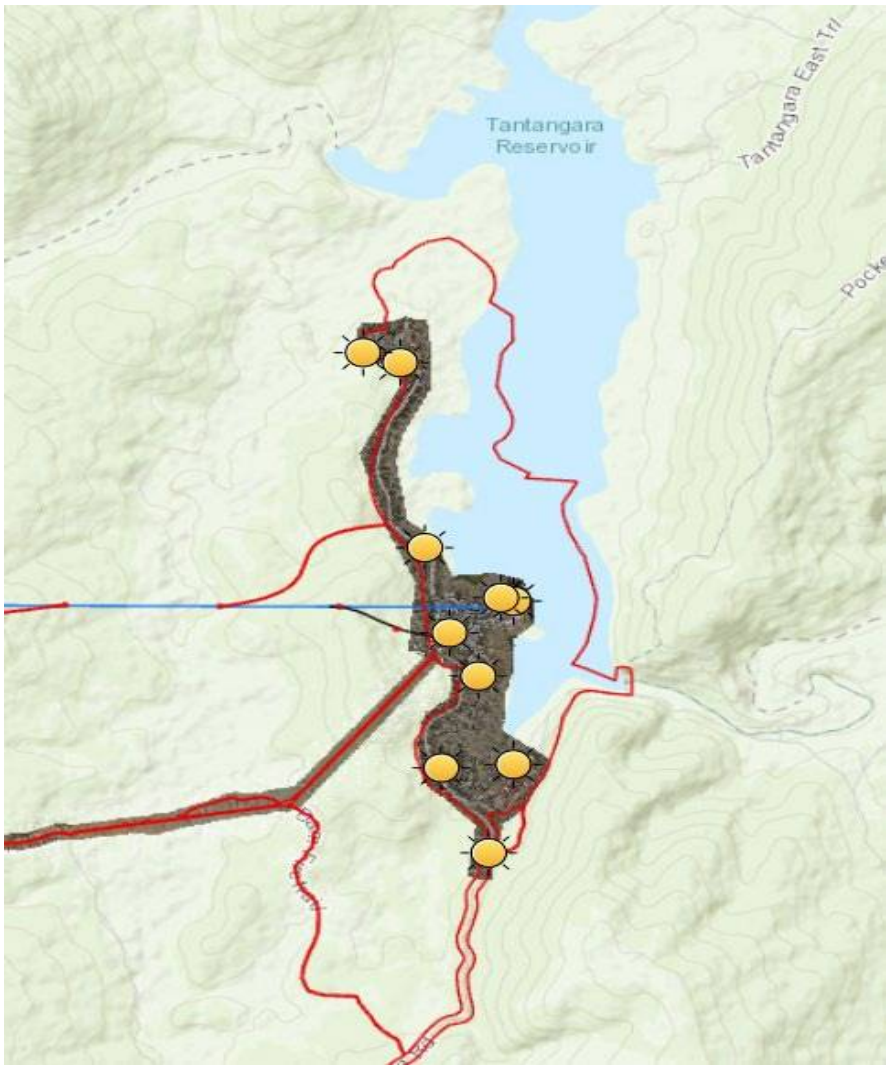
* Not currently stockpiled



Marica Topsoil		
Topsoil Location	Volume	Comments
Marica camp (offices)	3,771	Some spread - Marica Trail
Marica stockpile 1 (above camp)	30,683	Topsoil / Subsoil
Marica topsoil stockpile 2 (between camp and surge)	7,592	Topsoil / Subsoil
Marica topsoil stockpile 3 (entrance to surge)	359	Topsoil / subsoil
Marica topsoil stockpile 4 (between surge and HDD)	2,358	Topsoil and mulch
Marica topsoil stockpile 4 (between surge and HDD)	12,207	Subsoil
HDD	415	Topsoil / subsoil
TOTAL	57,385	57 Ha @100mm



Tantangara Topsoil		
Topsoil Location	Volume	Comments
Tantangara Adit	35,547	
Tantangara Workshop / Pioneer office	689	
Stockpile area above quarry	2105	
Intake	7674	
Camp batters	3,327	
Temp stockpile - spoil rd.	2,335	
CWTP	2,115	
Access road windrow	1,443	
TOTAL	55,235	55.2 Ha @100mm



Rock forest Topsoil		
Topsoil Location	Volume	Comments
Rock Forest 1	3,274	Phase 1
Rock Forest 2	10, 139	Phase 2
TOTAL	13,313	13.3 Ha @100mm



Note:

- Assumed application rates approximately 50 - 100mm
- Majority of topsoil stripping has been undertaken at this time

APPENDIX I

Rehabilitation Monitoring - Reference Sites

(To be updated following initial UAV survey to identify PCT variability for reference site selection and review of initial reference site monitoring undertaken – (Survey completed Jan 2024 – review of data not yet finalised)

.

Plot ID 42

Plot ID 185

TALBINGO RESERVOIR

Plot ID 2269

Plot ID 3177

Plot ID 3078

G:\Shared drives\Snowy 2.0\3000 - Engineering\90 CADD\10 GIS_data\ENV\2_Outgoing\20230421_BC_Rehab_AddOns\20231004_BC_ReferenceSites\RefSites.aprx

snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 1 - 1
Ravine Bay Road and Emplacement

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

Legend

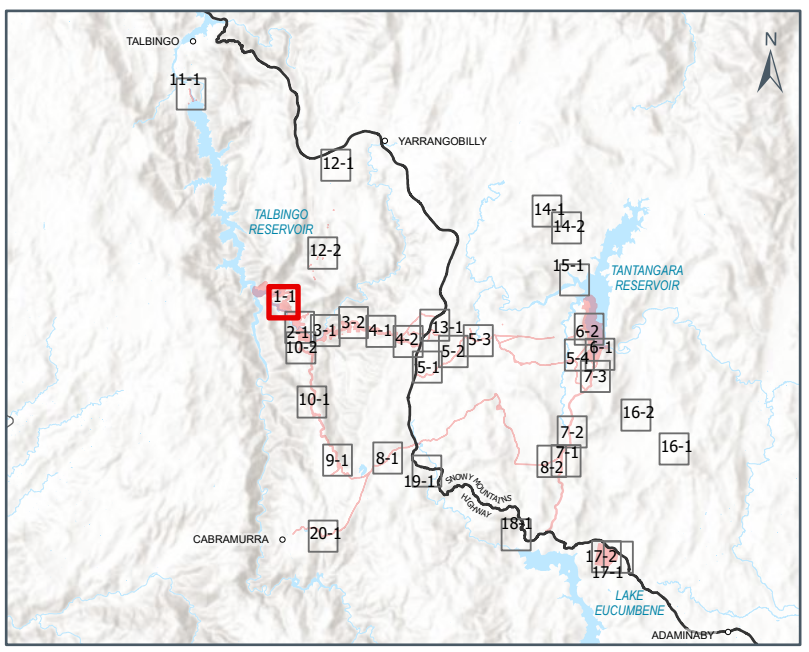
- Construction Envelope
- Opeational Road
- Public Access Road
- Full Supply Level (FSL)

Bushfire Overlay (2019/2020)

- Low
- Medium
- High
- Very High

Reference Site (PCT)

- 296
- 729
- 1191



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Plot ID 3177
Plot ID 3078
TALBINGO RESERVOIR
Plot ID 79
Plot ID 2084
Plot ID 2267
Yarrangobilly River
Plot ID 3076
Plot ID 198
Plot ID 3060
Plot ID 144
Plot ID 2265
Plot ID 146
Plot ID 1036
Plot ID 1033
Plot ID 2091

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 2 - 1
Camps and GFO1

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

Legend

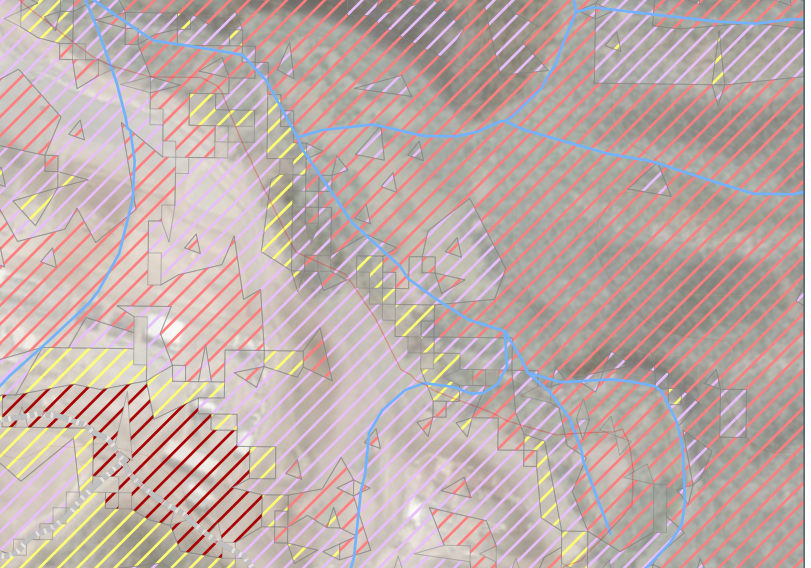
- Construction Envelope
- Public Access Road
- Full Supply Level (FSL)

Bushfire Overlay (2019/2020)

- Low
- Medium
- High
- Very High

Reference Site (PCT)

- 285
- 296
- 299
- 302
- 729
- 999



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Plot ID 2272
Plot ID 197
Plot ID 3151
Plot ID 1037
Yarrangobilly River
Plot ID 144
Yarrangobilly River
Plot ID 2091

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 3 - 1
ECVT, MAT, Marica West 1

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

Legend

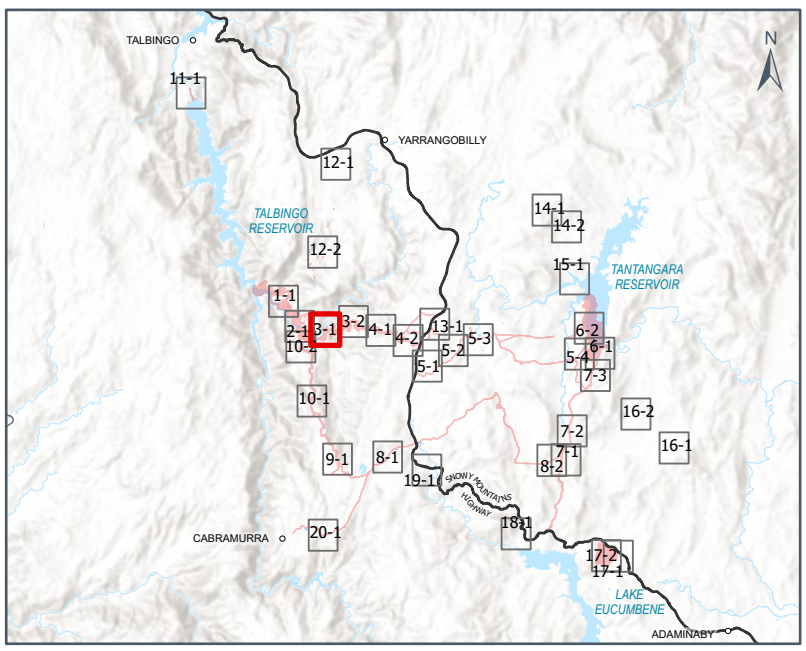
- Construction Envelope
- Public Access Road

Bushfire Overlay (2019/2020)

- Low
- Medium
- High
- Very High

Reference Site (PCT)

- 285
- 302
- 311
- 729
- 999



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Plot ID 5206

Plot ID 5205

Plot ID 112

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Rehabilitation Monitoring and Reference Sites

Map Ref : 3 - 2
Marica West 2

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

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Legend

Construction Envelope

SHL Exclusive Road

Bushfire Overlay (2019/2020)

Low

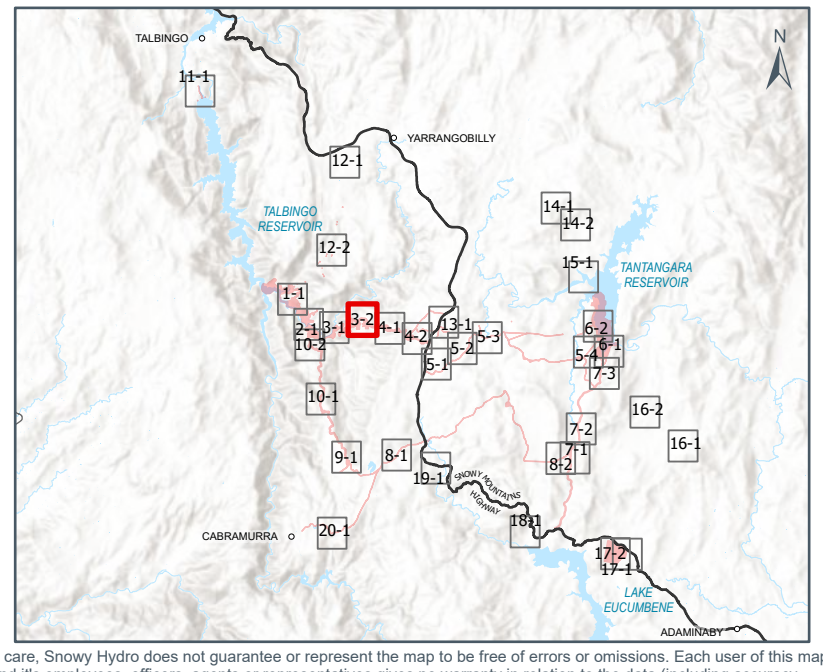
Medium

High

Very High

Reference Site (PCT)

953



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Plot ID 87

Plot ID 90

Plot ID 114

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Rehabilitation Monitoring and Reference Sites

Map Ref : 4 - 1
Marica Trail and Surge

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

Legend

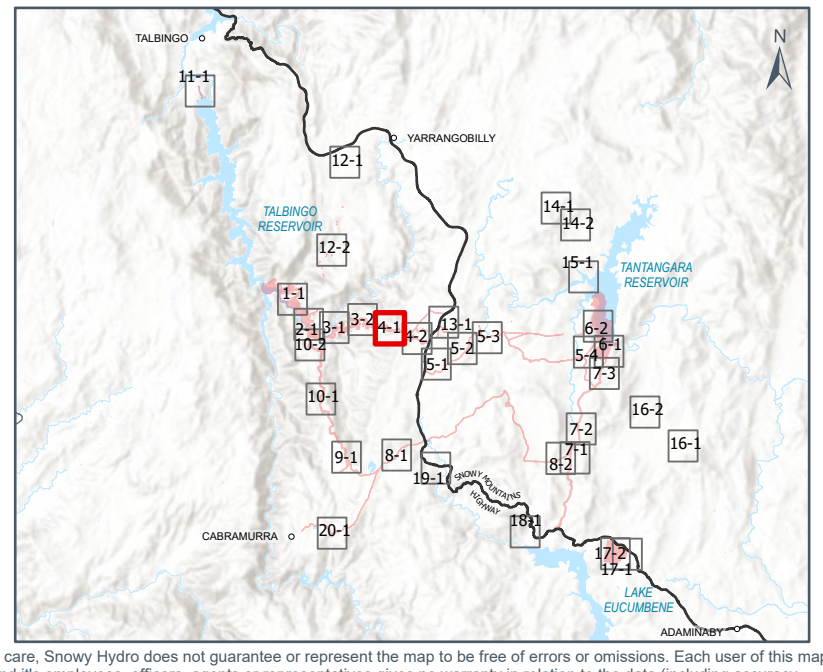
- Construction Envelope
- SHL Exclusive Road

Bushfire Overlay (2019/2020)

- Low
- Medium
- High
- Very High

Reference Site (PCT)

- 300
- 639
- 1196



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Plot ID 2150

Plot ID 3096

SNOWY MOUNTAINS HIGHWAY

Rehabilitation Monitoring and Reference Sites

Map Ref : 4 - 2

Marica Trail, Camp and Trunk Services

N

Prepared by: RG14442

Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

Legend

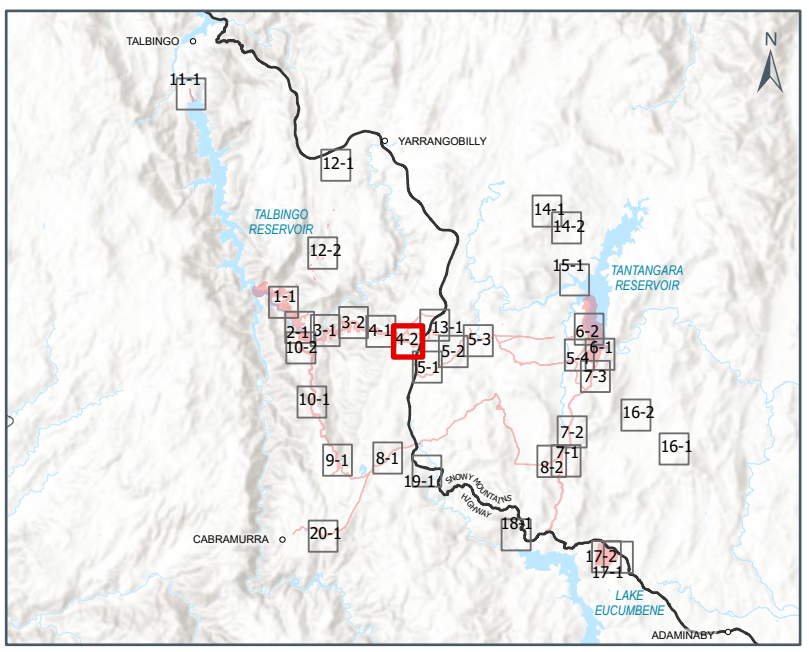
- Construction Envelope
- SHL Exclusive Road
- Park Management Road

Bushfire Overlay (2019/2020)

- Low
- Medium
- High
- Very High

Reference Site (PCT)

- 644
- 1224



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SNOWY MOUNTAINS HIGHWAY

Plot ID 333

Plot ID 204

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 5 - 1
Trunk Services

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

Legend

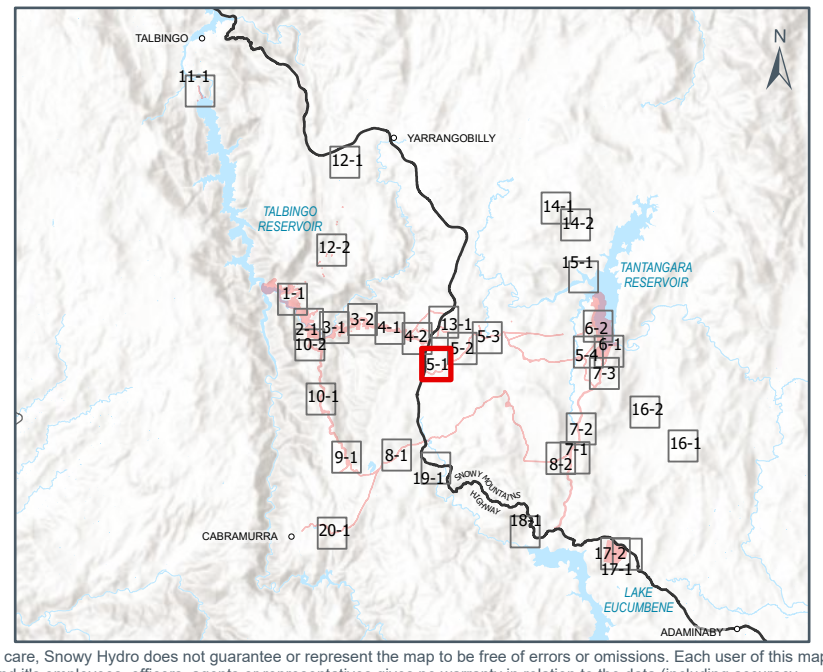
Construction Envelope

Bushfire Overlay (2019/2020)

- Low
- Medium
- High
- Very High

Reference Site (PCT)

- 637
- 679



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Plot ID 3036

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Rehabilitation Monitoring and Reference Sites

Map Ref : 5 - 2
Trunk Services

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

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Legend

Construction Envelope

Reference Site (PCT)

Bushfire Overlay (2019/2020)

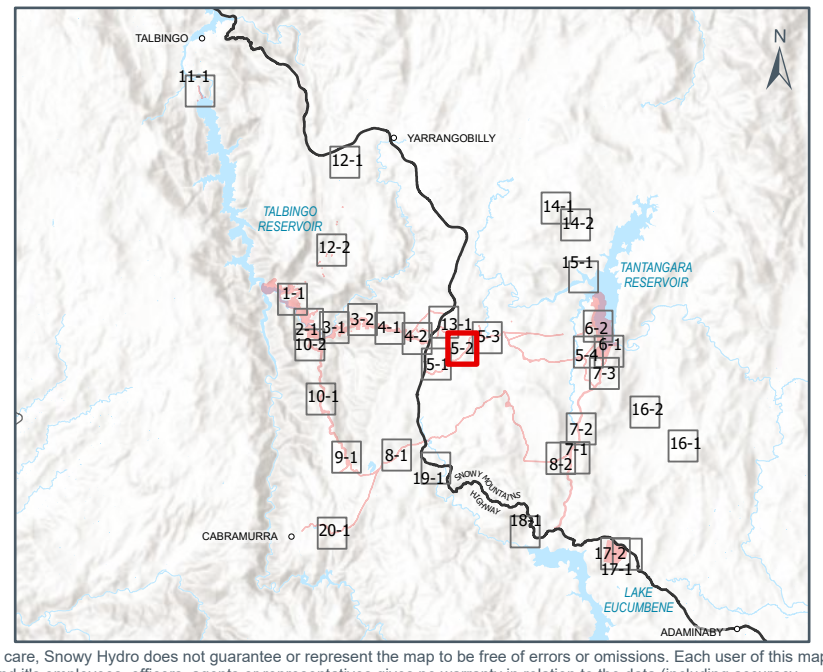
1224

Low

Medium

High

Very High



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Plot ID 123

Plot ID 205

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 5 - 3
Trunk Services

N

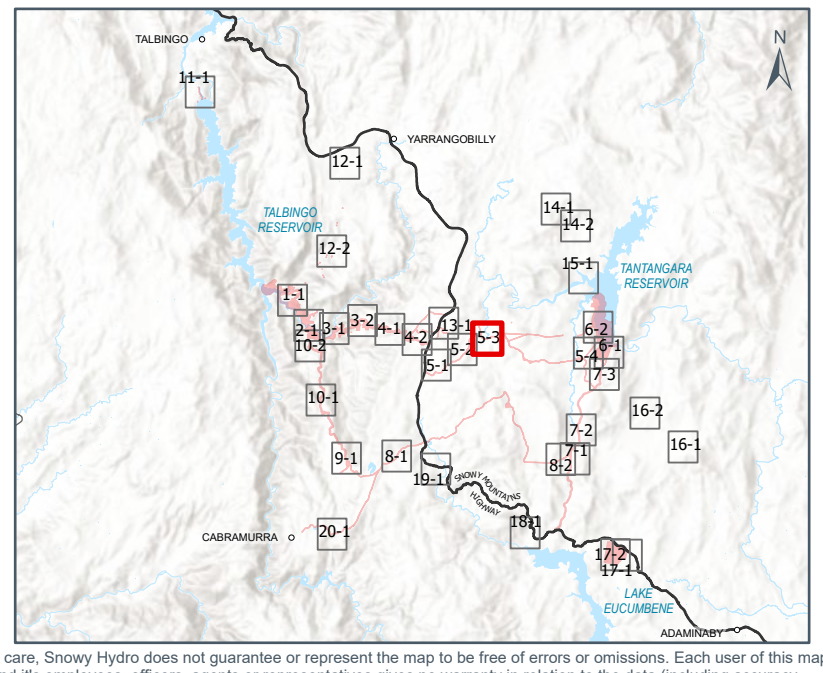
Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

Legend

- Construction Envelope
- Bushfire Overlay (2019/2020)
  - Low
  - Medium
  - High
  - Very High
- Reference Site (PCT)
  - 637
  - 1225



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TANTANGARA RESERVOIR

Plot ID 2013

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Rehabilitation Monitoring and Reference Sites

Map Ref : 5 - 4
Trunk Services

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

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Legend

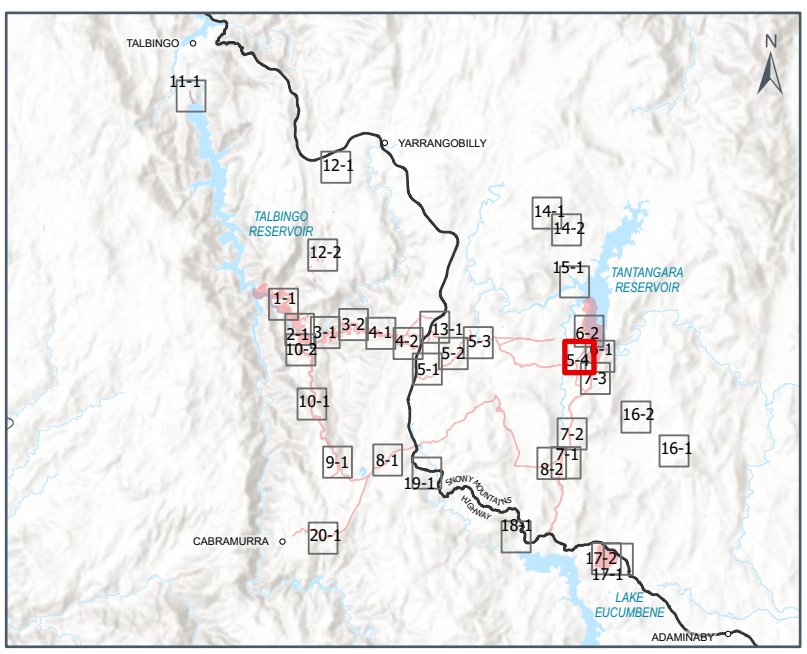
- Construction Envelope
- Public Access Road
- Full Supply Level (FSL)

Bushfire Overlay (2019/2020)

- Low
- Medium
- High
- Very High

Reference Site (PCT)

- 1196



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TANTANGARA RESERVOIR

Murrumbidgee River

Plot ID 2013

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 6 - 1
Tantangara Area

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

Legend

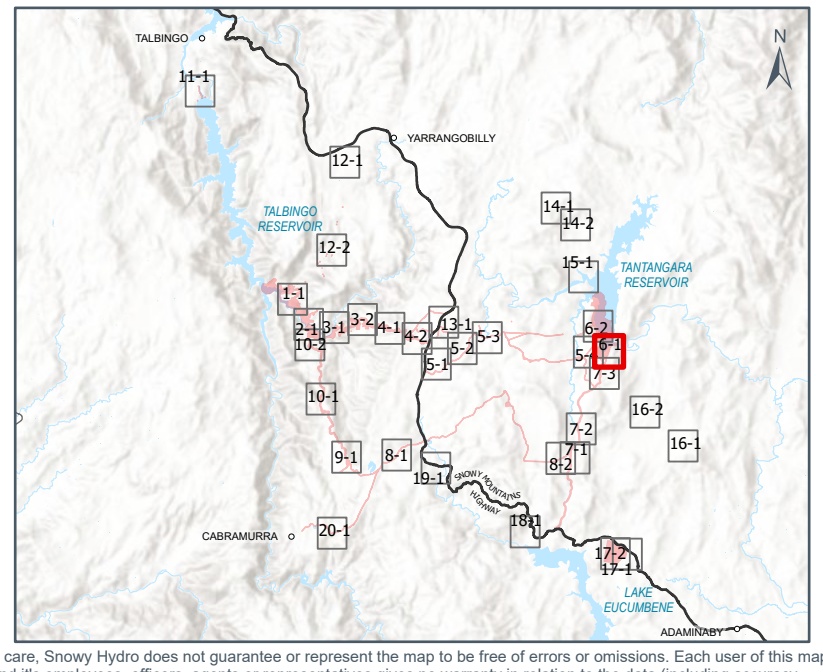
- Construction Envelope
- Public Access Road
- Full Supply Level (FSL)

Bushfire Overlay (2019/2020)

- Low
- Medium
- High
- Very High

Reference Site (PCT)

- 1196



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TANTANGARA RESERVOIR

Plot ID 212

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 6 - 2
Tantangara Area

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

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Legend

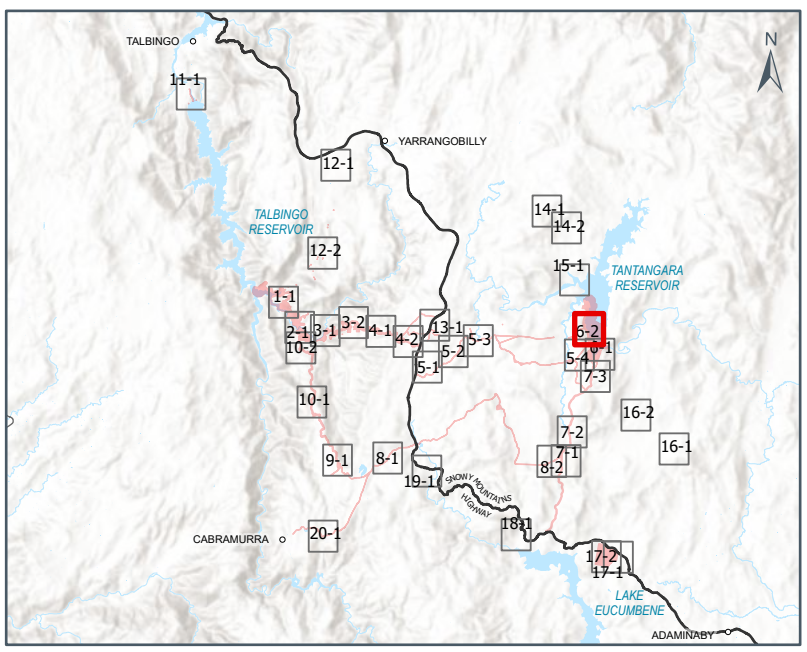
- Construction Envelope
- Public Access Road
- Full Supply Level (FSL)

Bushfire Overlay (2019/2020)

- Low
- Medium
- High
- Very High

Reference Site (PCT)

- 644



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Plot ID 2248

Plot ID 2237

Plot ID 2145

Plot ID 3229

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 7 - 1
Tantangara Road

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

Legend

Construction Envelope

Public Access Road

Bushfire Overlay (2019/2020)

Low

Medium

High

Very High

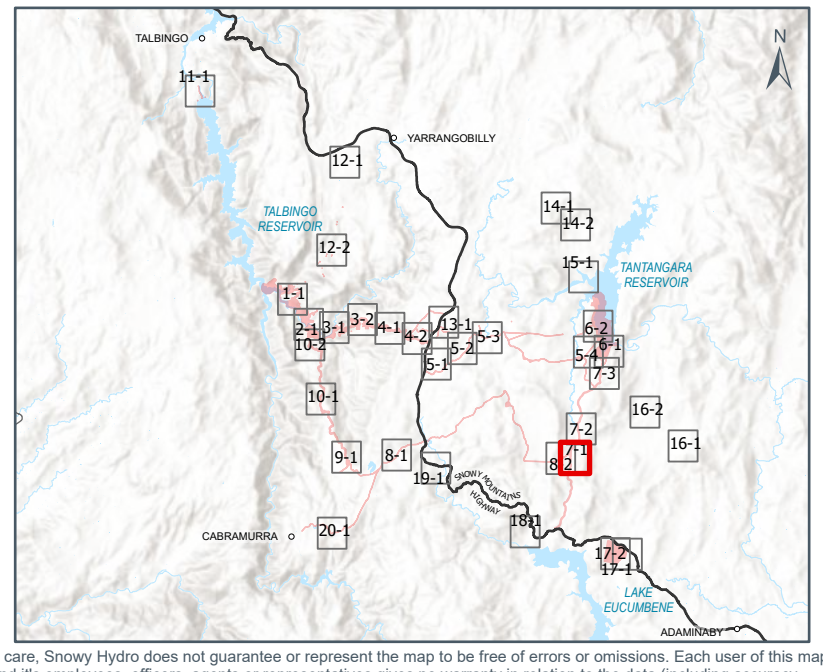
Reference Site (PCT)

303

637

1196

1224



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Plot ID 2248

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 7 - 2
Tantangara Road

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

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Legend

Construction Envelope
Public Access Road

Bushfire Overlay (2019/2020)

Low
Medium
High
Very High

Reference Site (PCT)

1224



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Plot ID 2013

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 7 - 3
Tantangara Road

N

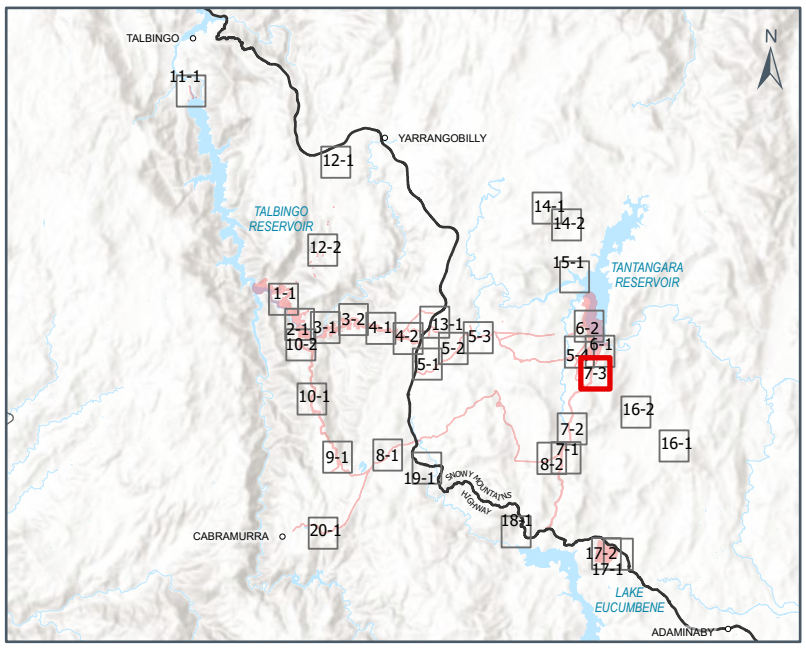
Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

Legend

- Construction Envelope
- Public Access Road
- Reference Site (PCT)
  - 1196
- Bushfire Overlay (2019/2020)
  - Low
  - Medium
  - High
  - Very High



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Plot ID 2030

Plot ID 2211

LINK ROAD

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 8 - 1
Link Road

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

Legend

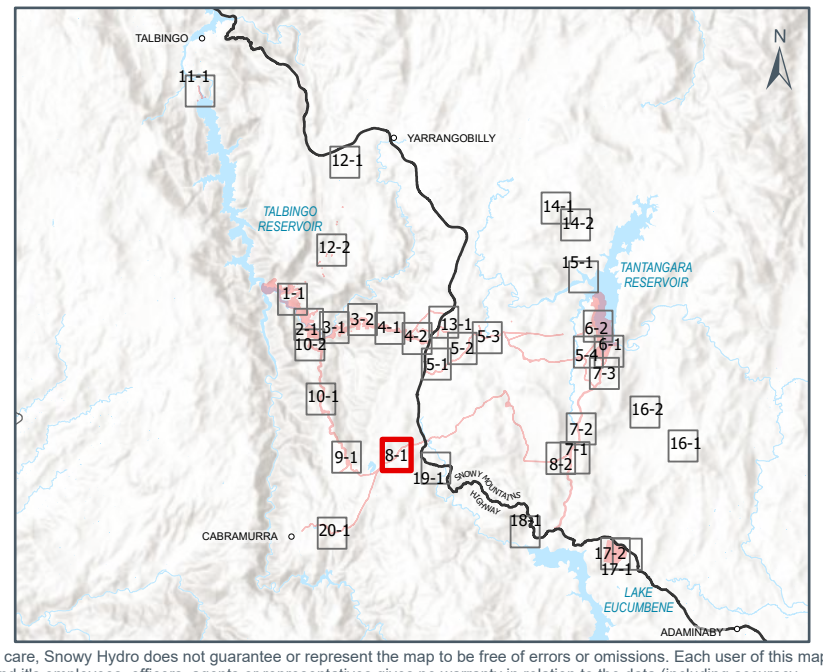
Construction Envelope

Bushfire Overlay (2019/2020)

- Low
- Medium
- High
- Very High

Reference Site (PCT)

- 1224
- 1225



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Plot ID 2248

Plot ID 2237

Plot ID 2145

Plot ID 3229

snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 8 - 2
Link Road

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

Legend

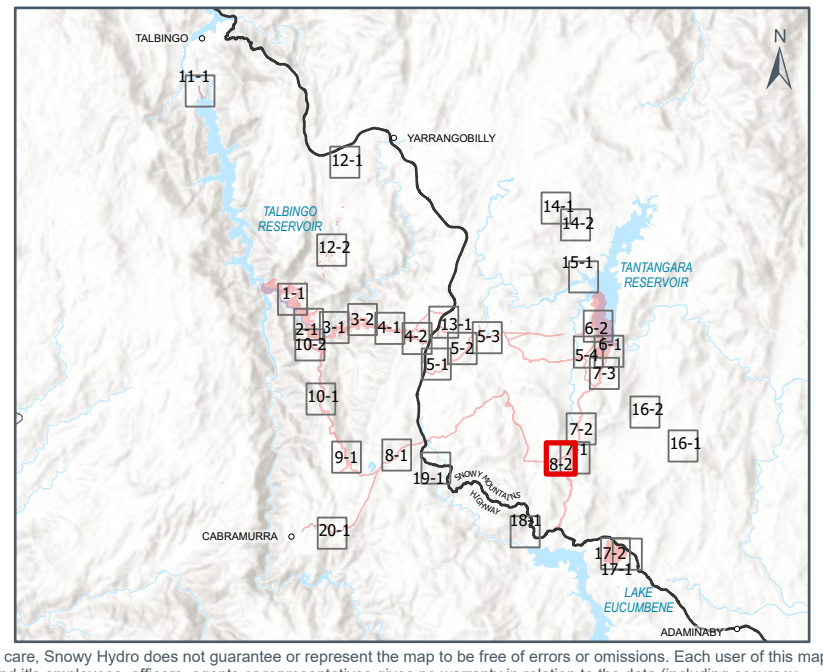
- Construction Envelope
- Public Access Road

Bushfire Overlay (2019/2020)

- Low
- Medium
- High
- Very High

Reference Site (PCT)

- 303
- 637
- 1196
- 1224



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LINK ROAD

Plot ID 1041

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 9 - 1
Upper Ravine Road and Link Road Laydown

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

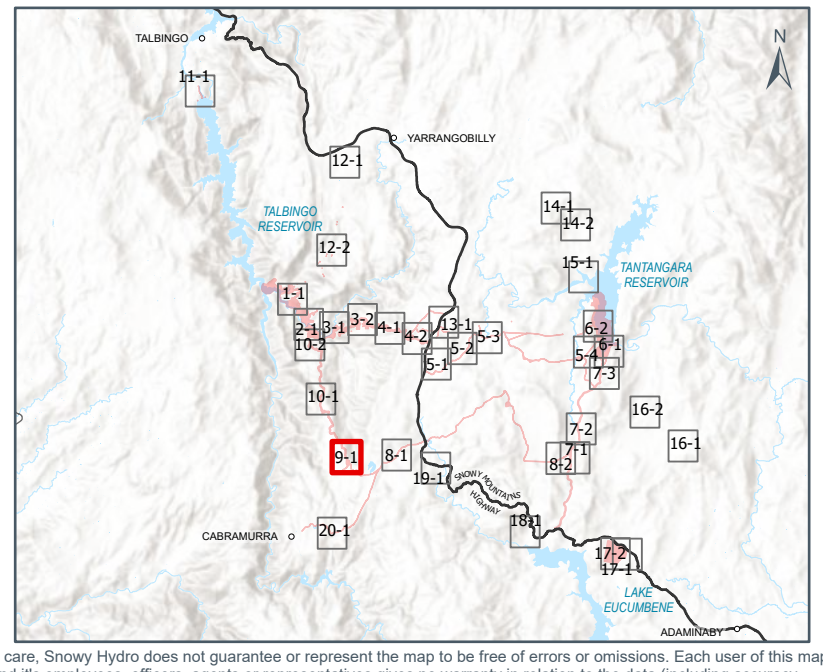
Spatial Reference: GDA2020 MGA Zone 55

Legend

- Construction Envelope
- Public Access Road
- Reference Site (PCT): 639

Bushfire Overlay (2019/2020)

- Low
- Medium
- High
- Very High



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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 10 - 1
Lower Ravine Road

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

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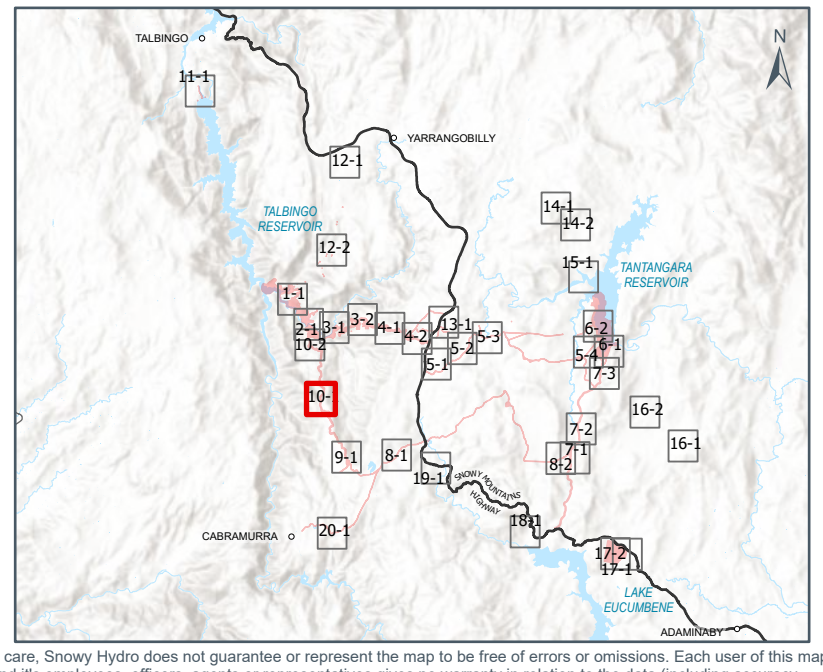
Legend

- Construction Envelope
- Public Access Road

Bushfire Overlay (2019/2020)

- Low
- Medium
- High
- Very High



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Plot ID 3060
Plot ID 144
Plot ID 2265
Yarrangobilly River
Plot ID 146
Plot ID 1036
Plot ID 1033
Plot ID 2091
Plot ID 1021
Plot ID 165
Plot ID 2024
Plot ID 3179

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 10 - 2
Lower Ravine Road

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

Legend

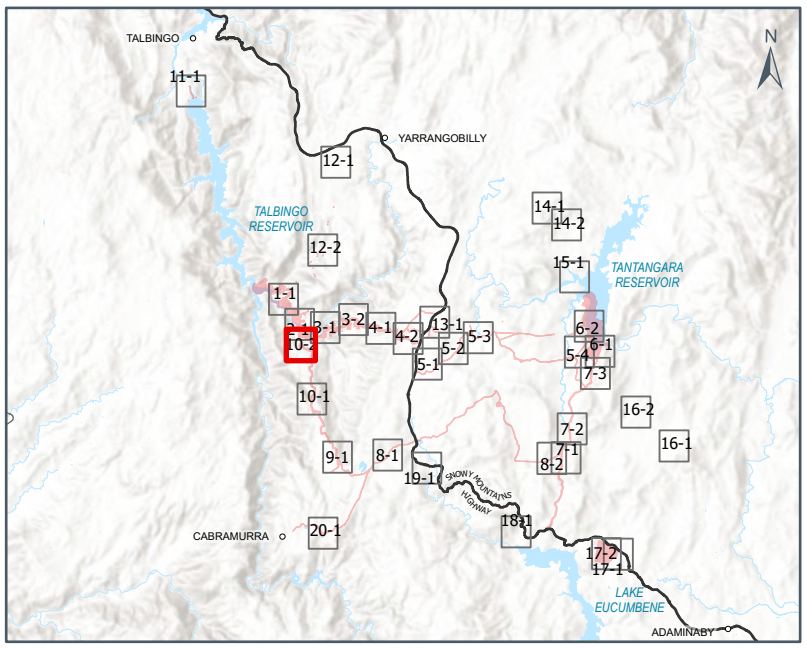
- Construction Envelope
- Public Access Road

Bushfire Overlay (2019/2020)

- Low
- Medium
- High
- Very High

Reference Site (PCT)

- 285
- 299
- 300
- 729
- 999



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Tumut River

Tumut River

Plot ID 1030

Plot ID 1029

TALBINGO RESERVOIR

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 11 - 1
Talbingo Park

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

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Legend

Construction Envelope

Full Supply Level (FSL)

Bushfire Overlay (2019/2020)

Low

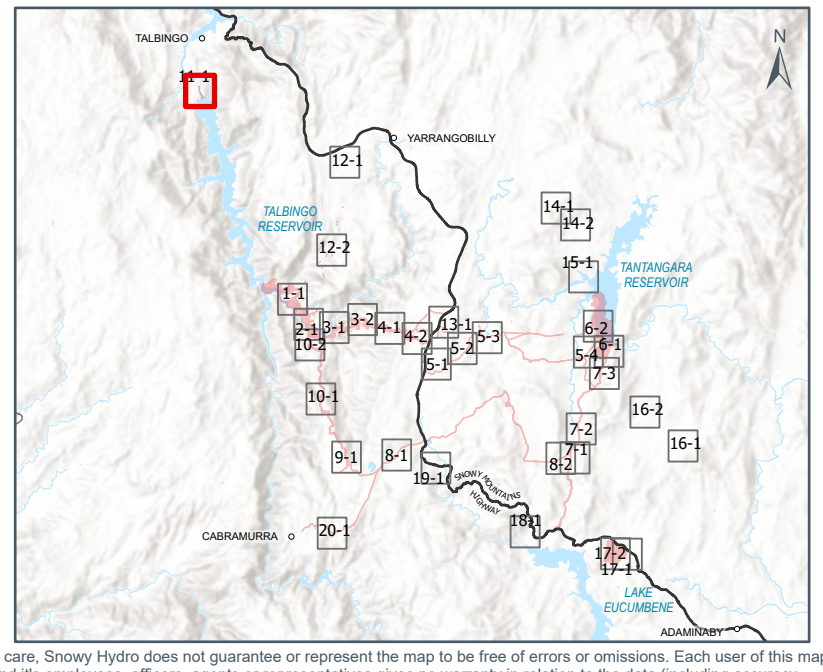
Medium

High

Very High

Reference Site (PCT)

311



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SNOWY MOUNTAINS HIGHWAY

Plot ID 5

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 12 - 1
Ravine Road North

N

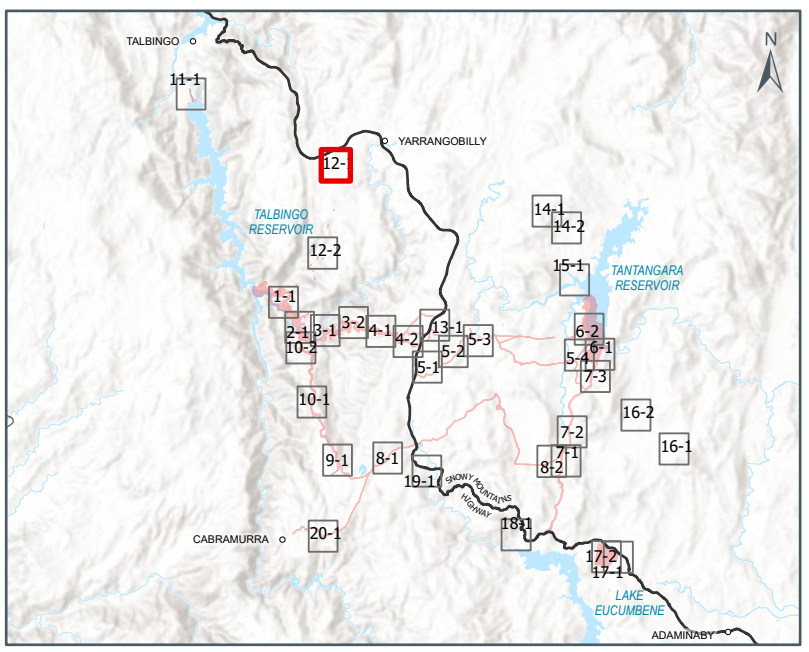
Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

Legend

- Construction Envelope
- Reference Site (PCT)
- Bushfire Overlay (2019/2020)
- 285
- Low
- Medium
- High
- Very High



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Plot ID 192

Plot ID 190

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 12 - 2
Ravine Bay Road and Emplacement

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

Legend

- Construction Envelope
- Public Access Road

Bushfire Overlay (2019/2020)

- Low
- Medium
- High
- Very High

Reference Site (PCT)

- 296
- 300



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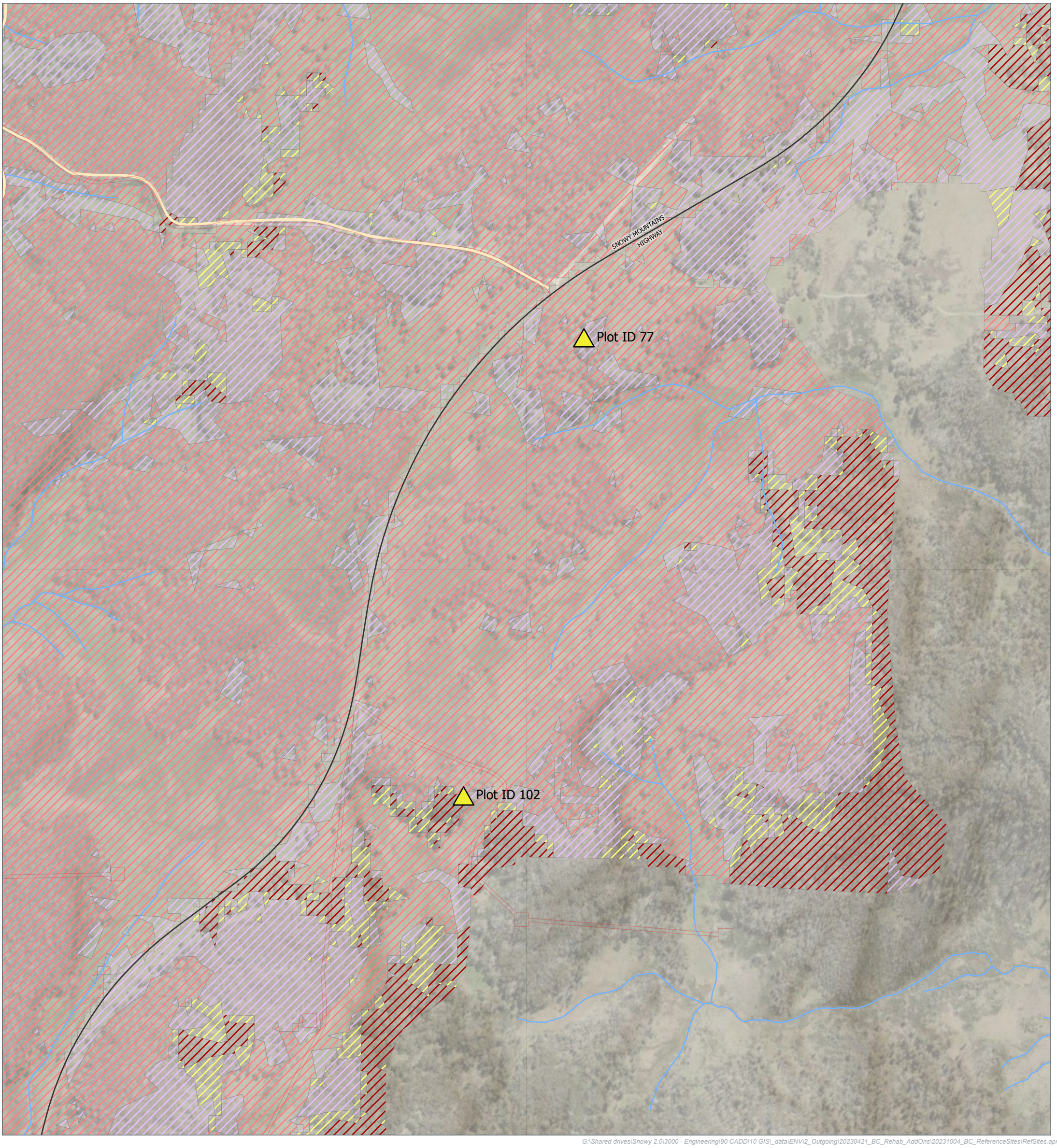

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 13 - 1
Coppermine

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

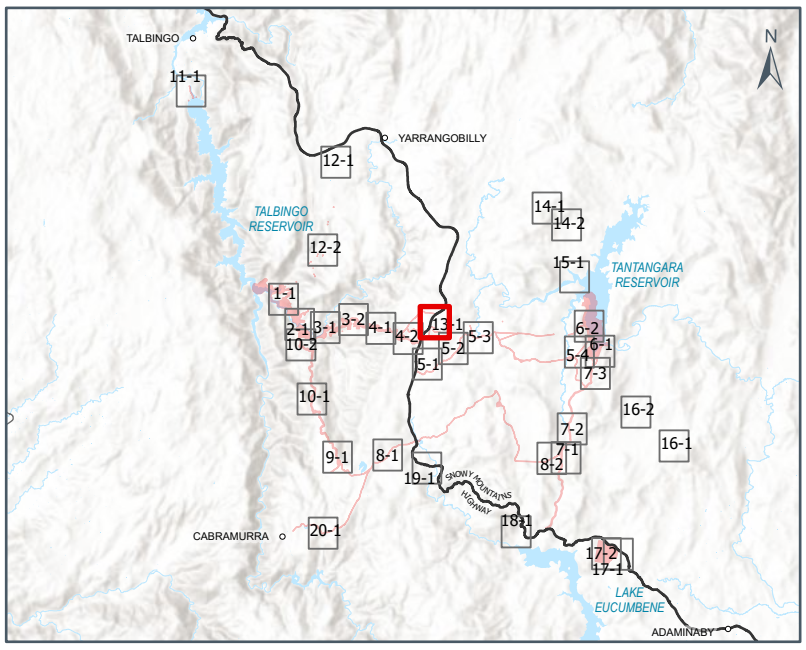
Spatial Reference: GDA2020 MGA Zone 55

Legend

- Construction Envelope
- Park Management Road
- Reference Site (PCT)
  - 644

Bushfire Overlay (2019/2020)

- Low
- Medium
- High
- Very High



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Rehabilitation Monitoring and Reference Sites

Map Ref : 14 - 1
Port Phillip Firetrail

N

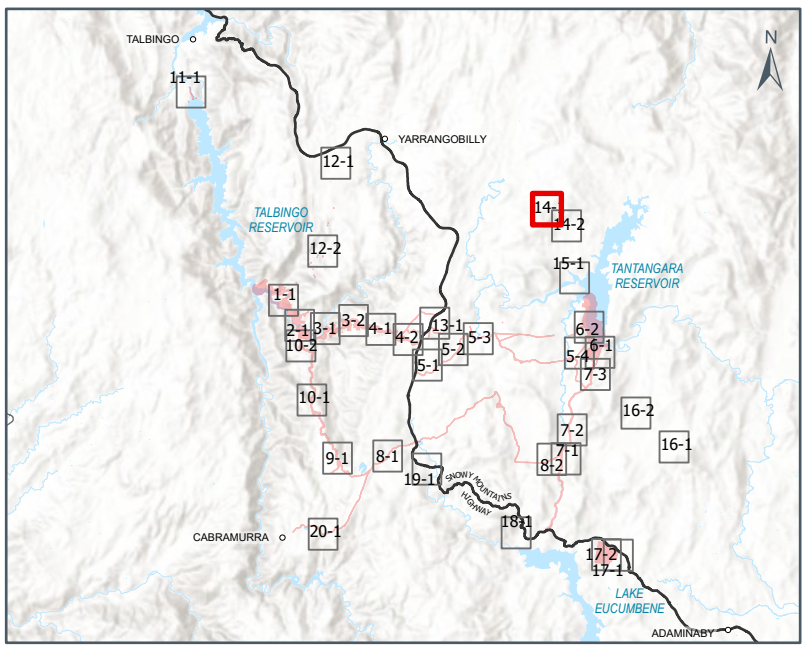
Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

Legend

- Construction Envelope
- Reference Site (PCT)
- Bushfire Overlay (2019/2020)
- 1196
- Low
- Medium
- High
- Very High



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Plot ID 220

Plot ID 12

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 14 - 2
Port Phillip Firetrail

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

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Legend

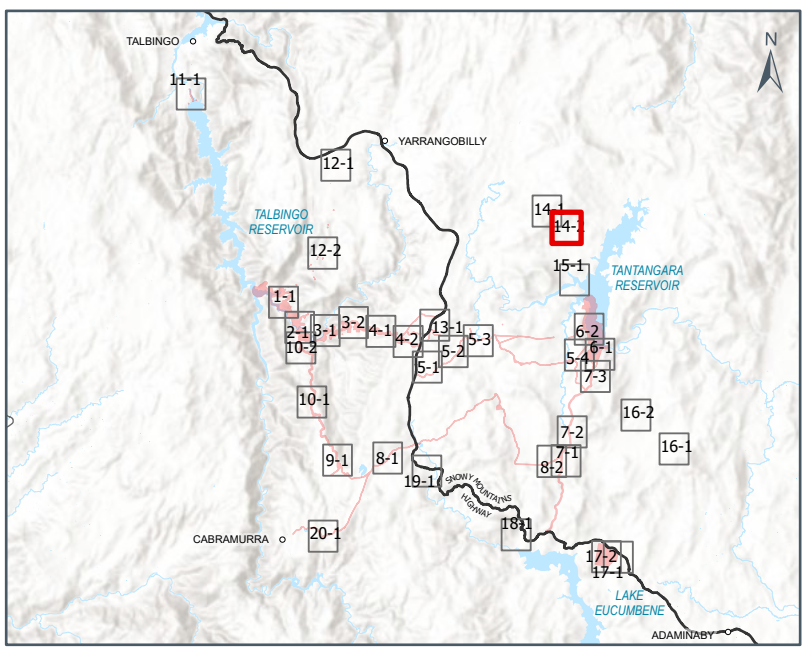
Construction Envelope

Bushfire Overlay (2019/2020)

- Low
- Medium
- High
- Very High

Reference Site (PCT)

- 303
- 1196



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Plot ID 35

Plot ID 38

TANTANGARA RESERVOIR

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 15 - 1
Murrumbidgie River

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

Legend

- Construction Envelope
- Full Supply Level (FSL)

Bushfire Overlay (2019/2020)

- Low
- Medium
- High
- Very High

Reference Site (PCT)

- 644
- 1224
- 1225



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Plot ID 3189

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 16 - 1
Circuits Trail

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

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Legend

Construction Envelope

Reference Site (PCT)

1196

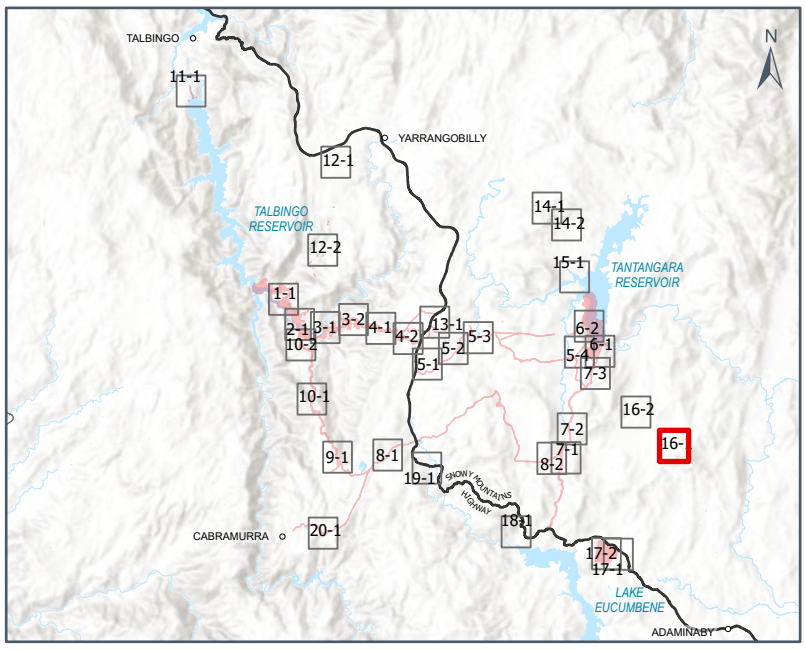
Bushfire Overlay (2019/2020)

Low

Medium

High

Very High



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Plot ID 2228

Plot ID 3165

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 16 - 2
Circuits Trail

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

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Legend

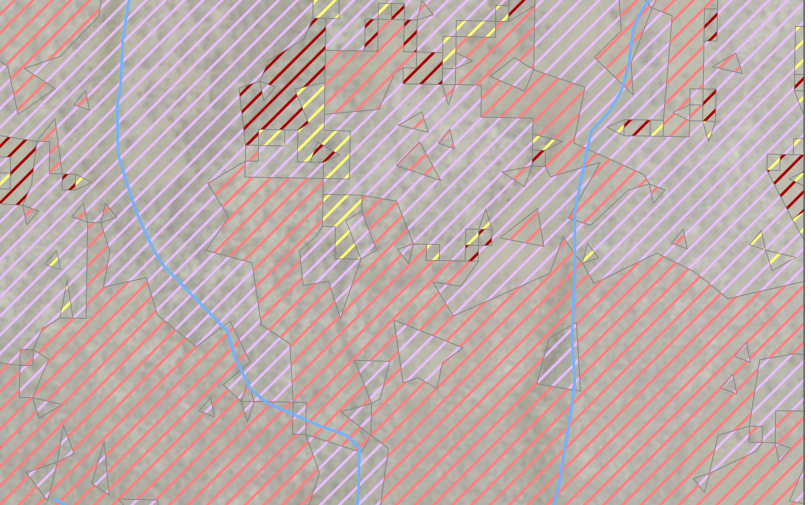
Construction Envelope

Bushfire Overlay (2019/2020)

- Low
- Medium
- High
- Very High

Reference Site (PCT)

- 303
- 644



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SNOWY MOUNTAINS HIGHWAY

Plot ID 2273

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 17 - 1
Rock Forest

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

Legend

- Construction Envelope
- Reference Site (PCT)
- Bushfire Overlay (2019/2020)
- 679
- Low
- Medium
- High
- Very High



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SNOWY MOUNTAINS
HIGHWAY

Plot ID 2273

G:\Shared drives\Snowy 2.0\3000 - Engineering\90 CADD\10 GIS_data\ENV\2_Outgoing\20230421_BC_Rehab_AddOns\20231004_BC_ReferenceSites\RefSites.aprx

snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 17 - 2
Rock Forest

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

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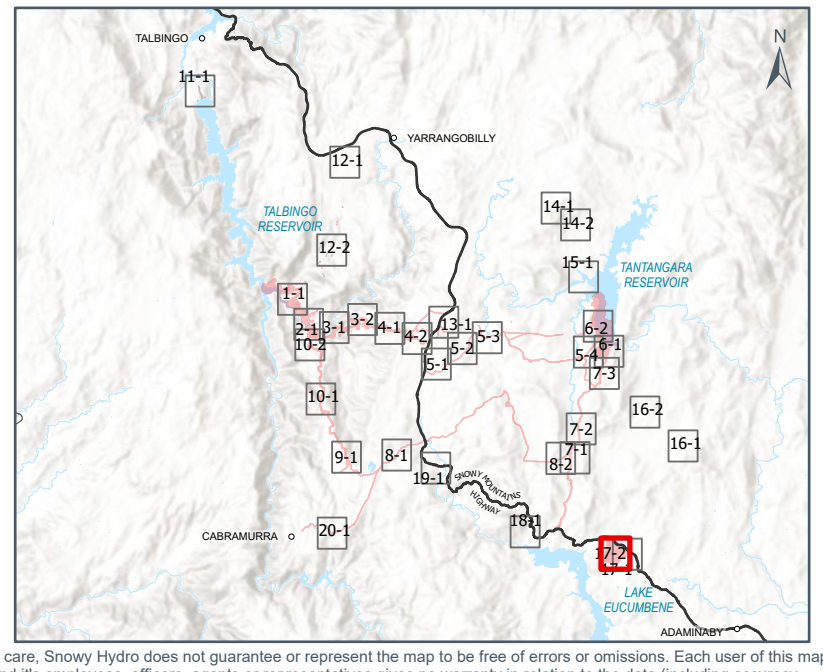
Legend

- Construction Envelope
- Reference Site (PCT)
- Bushfire Overlay (2019/2020)
- 679
- Low
- Medium
- High
- Very High



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Plot ID 2130

Plot ID 2097

SNOWY MOUNTAINS HIGHWAY

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 18 - 1
Alpine Sawmill

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

Legend

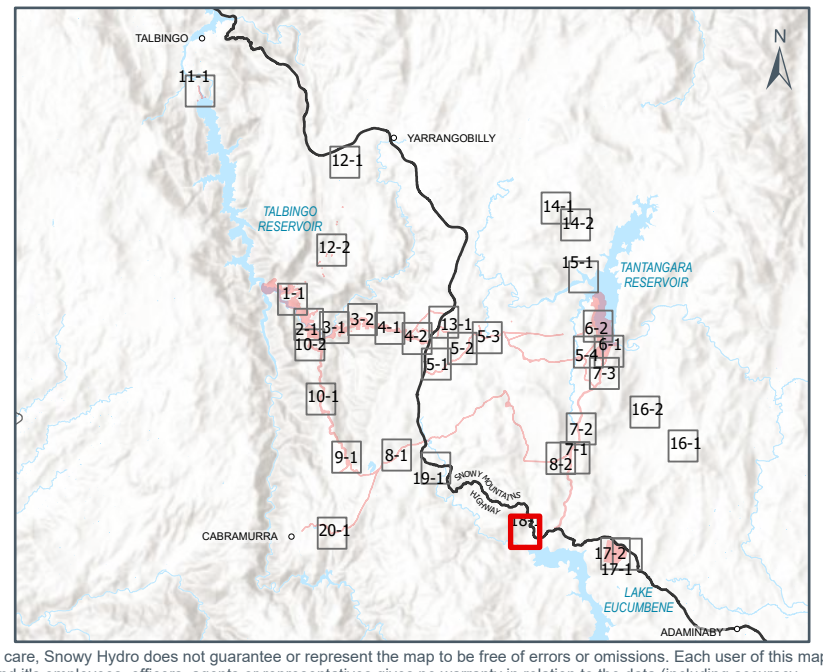
Construction Envelope

Bushfire Overlay (2019/2020)

- Low
- Medium
- High
- Very High

Reference Site (PCT)

- 303
- 639



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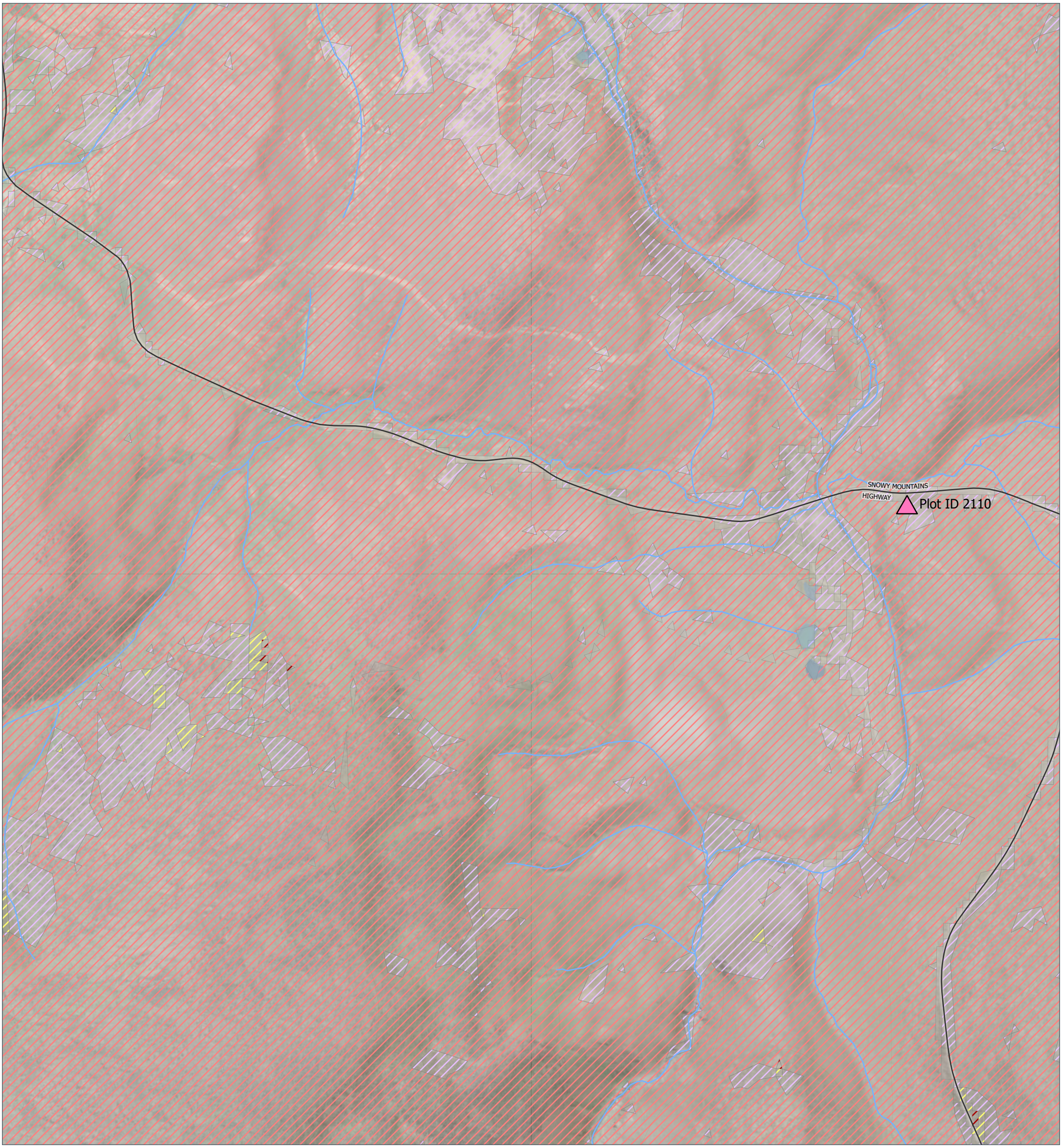

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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 19 - 1
Eucumbene River

N

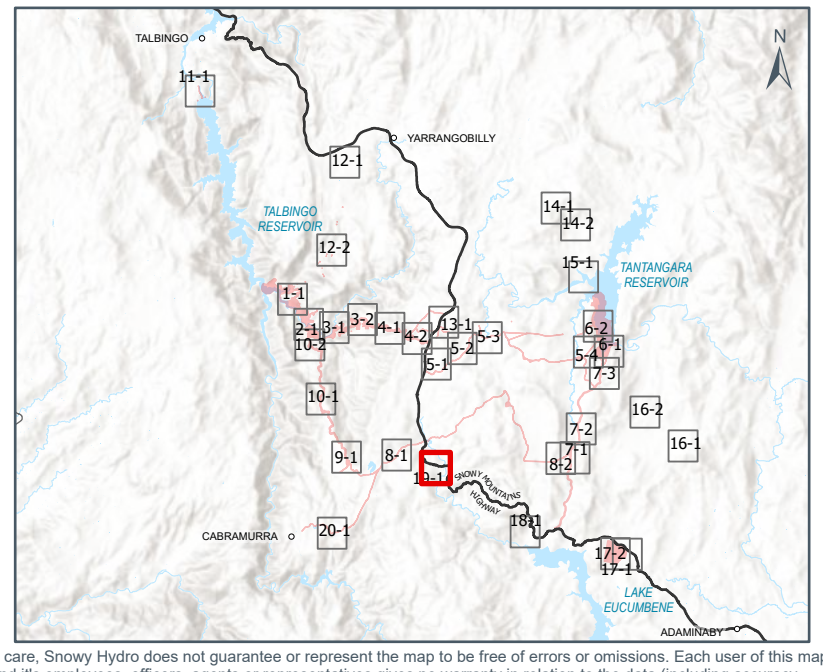
Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

Legend

- Construction Envelope
- Reference Site (PCT)
- Bushfire Overlay (2019/2020)
- 1224
- Low
- Medium
- High
- Very High



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snowy 2.0

Rehabilitation Monitoring and Reference Sites

Map Ref : 20 - 1
Kings Cross Road

N

Prepared by: RG14442
Date: 5/10/2023

0 0.1 0.2 0.3 km

Spatial Reference: GDA2020 MGA Zone 55

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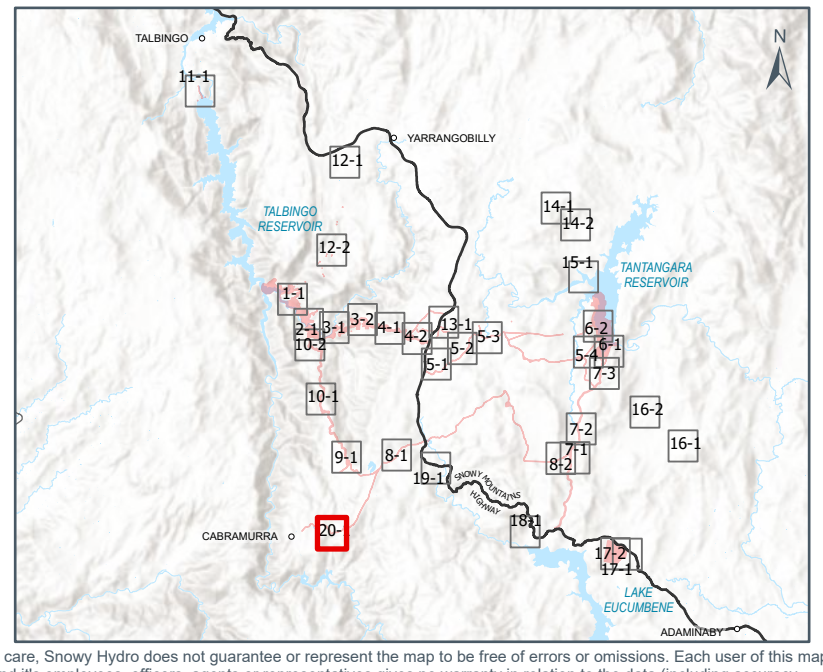
Legend

Construction Envelope

Bushfire Overlay (2019/2020)

- Low
- Medium
- High
- Very High



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APPENDIX J

PCT Target Species List

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Note: Primary species have been selected due to their ease of propagation, size and function in an ecological community, dominance in a PCT, growth rate and provision of ecological services (colonising species, nitrogen/phosphorus fixing, shade, litter and microniches).

Secondary species will still be used in each PCT and will be used to augment biodiversity and strata layers. Secondary species commonly require some level of ecological function, such as shade or microbia that need to grow symbiotically with colonising species.

*Denotes seed in stock – September 2023.

PCT 285	kgs per ha	Stems per ha	Reference site presence Y/N	Primary (p) or Secondary (s) Rehab Species
Forbs & Grasses				***Seed available C = cutting grown**
Bulbine bulbosa	0.08			*p
Dianella longifolia		125		*p
Dianella revoluta		625		*p
Dianella revoluta var. revoluta		125		s
Oreomyrrhis eriopoda	0.02			*s
Ranunculus lappaceus	0.03			s
Senecio quadridentatus	0.02			s
Stylidium graminifolium	0.02			*s
Juncus australis		1250		*s
Juncus filicaulis		375		*s
Lomandra filiformis	0.06			*p
Lomandra longifolia	0.07			*p
Lomandra multiflora subsp. Multiflora	0.01			*s
Luzula densiflora		250		s
Luzula modesta		1250		s
Carex appressa	0.02			*p
Carex breviculmis	0.42			*p
Carex gaudichaudiana		275		s - C
Carex incomitata	0.02			s
Carex inversa	0.02			s
Anthosachne scabra	0.08			*p
Dichelachne micrantha	1.2			s
Microlaena stipoides	0.53			*p
Poa clivicola	0.33			*p
Poa helmsii	0.03			*p
Poa labillardierei var. labillardierei	0.02			s
Poa sieberiana	0.02			*p
Rytidosperma caespitosum	0.83			*p

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Rytidosperma penicillatum	0.08			*s
Rytidosperma pilosum	0.66			*s
Themeda triandra	2			*p
Total	**6.49**			
Shrubs				
Brachyloma daphnoides		100		s - C
Epacris breviflora		55		s - C
Acacia pravissima		160		*p
Acacia rubida		215		*p
Banksia canei		50		*p
Bursaria spinosa		50		*p
Cassinia aculeata		55		*p
Cassinia arcuata		200		s
Cassinia longifolia		50		*p
Leptospermum myrtifolium		275		*p
Leptospermum obovatum		50		s
Mirbelia oxylobioides		30		*p
Pimelea linifolia		275		s - C
Rubus parvifolius		40		s – C
Trees				
Acacia dealbata		250		*p
Acacia dealbata subsp. subalpina		50		s
Acacia melanoxylon		125		*p
Eucalyptus camphora		400		p
Eucalyptus camphora subsp. humeana		750		s
Eucalyptus dives		170		*p
Eucalyptus mannifera		300		*p
Eucalyptus rubida		125		p
Eucalyptus viminalis		10		*p
	Total	**8,060**		

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

PCT 296	kgs per ha	Stems per ha	Reference site presence Y/N	Primary (p) or Secondary (s) Rehab Species
Forbs & Grasses				***Seed available C = cutting grown**
Chrysocephalum semipapposum	0.01			p
Plantago gaudichaudii	0.005			s
Senecio quadridentatus	0.01			s
Stellaria pungens		4725		p - C
Stylidium graminifolium	0.03			*s
Xerochrysum bracteatum	0.005			s
Juncus usitatus		150		*s
Lomandra filiformis	0.025			*p
Lomandra filiformis subsp. coriacea	0.155			s
Lomandra filiformis subsp. filiformis	0.02			*p
Lomandra longifolia	0.015			*p
Carex appressa	0.055			*p
Anthosachne scabra	0.415			*p
Microlaena stipoides	1.85			*p
Poa sieberiana	0.05			*p
Poa sieberiana var. cyanophylla	0.015			s
Poa sieberiana var. sieberiana	0.01			s
Rytidosperma caespitosum	0.05			*p
Rytidosperma erianthum	0.31			s
Rytidosperma pallidum	0.005			*s
Rytidosperma penicillatum	0.05			*s
Themeda triandra	0.2			*p
Total	**3.285**			
Shrubs				
Platylobium formosum		100		p
Brachyloma daphnoides		27.5		s - C
Epacris celata		25		s - C
Monotoca scoparia		10		s - C
Acacia dealbata		5		*p
Acacia gunnii		5		p
Acacia obliquinervia		50		*p
Acacia pravissima		70		*p
Acacia saliciformis		10		p
Acacia siculiformis		7.5		p

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Baeckea utilis		5		s - C
Banksia canei		40		*p
Bursaria spinosa subsp. spinosa		25		s
Cassinia aculeata		2.5		*p
Cassinia longifolia		30		*p
Daviesia latifolia		7.5		*p
Daviesia leptophylla		12.5		s
Daviesia ulicifolia		25		*p
Dillwynia phylicoides		50		s
Hardenbergia violacea		50		*p
Indigofera australis		10		*p
Leptospermum brevipes		10		*p
Leptospermum continentale		100		*p
Mirbelia oxylobioides		20		*p
Pimelea linifolia		25		s - C
Rubus parvifolius		125		s – C
Trees				
Acacia dealbata		375		*p
Acacia melanoxylon		50		*p
Eucalyptus camphora		50		p
Eucalyptus dives		500		*p
Eucalyptus macrorhyncha		50		*p
Eucalyptus mannifera		600		*p
Eucalyptus robertsonii		150		p
Eucalyptus rubida		750		p
	Total	**8,235**		

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

PCT 299	kgs per ha	Stems per ha	Reference site presence Y/N	Primary (p) or Secondary (s) Rehab Species
Forbs & Grasses				***Seed available C = cutting grown**
Chrysocephalum semipapposum	0.01			p
Stellaria pungens		1250		p - C
Lomandra longifolia	0.035			*p
Lomandra multiflora subsp. Multiflora	0.005			s
Anthosachne scabra	3			*p
Poa sieberiana	1			*p
Rytidosperma penicillatum	0.55			*s
Themeda triandra	0.01			*p
Total	**4.6**			
Shrubs				
Brachyloma daphnoides		150		s - C
Monotoca scoparia		100		s - C
Acacia obliquinervia		100		*p
Acacia pravissima		600		*p
Acacia siculiformis		50		p
Bursaria spinosa		275		*p
Cassinia aculeata		50		*p
Cassinia longifolia		150		*p
Daviesia leptophylla		25		s
Grevillea arenaria		100		p - C
Indigofera australis		75		*p
Mirbelia oxylobioides		75		*p
Olearia myrsinoides		225		s
Platylobium formosum		175		s
Rubus parvifolius		100		s – C
Trees				
Acacia dealbata		475		*p
Acacia melanoxylon		185		*p
Eucalyptus dives		250		*p
Eucalyptus macrorhyncha		425		*p
Eucalyptus nortonii		50		p
Eucalyptus robertsonii		625		p
Eucalyptus rubida		475		p
Eucalyptus viminalis		625		*p
	Total	**6,610**		

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

PCT 300	kgs per ha	Stems per ha	Reference site presence Y/N	Primary (p) or Secondary (s) Rehab Species
Forbs & Grasses				***Seed available C = cutting grown**
Arthropodium milleflorum	0.04			*s
Brachyscome decipiens	0.06			s
Brachyscome spathulata	0.02			s
Bulbine bulbosa	0.02			*p
Chrysocephalum semipapposum	0.06			p
Craspedia jamesii	0.12			s
Dianella longifolia		25		*p
Erigeron conyzoides	0.02			s
Picris angustifolia	0.58			s
Plantago gaudichaudii	0.02			s
Plantago varia	0.1			s
Podolepis jaceoides	0.32			*p
Ranunculus collinus	0.04			s
Ranunculus lappaceus	0.3			s
Senecio gunnii	0			p
Senecio prenanthoides	0.18			s
Senecio quadridentatus	0.02			s
Stackhousia monogyna	0.02			s
Stellaria pungens		375		p - C
Stylidium graminifolium	0.02			*s
Viola betonicifolia	0.1			*s
Lomandra bracteata	0.04			p
Lomandra filiformis subsp. coriacea	0.06			s
Lomandra filiformis	0.04			p
Lomandra filiformis subsp. filiformis	0.12			*p
Lomandra longifolia	0.1			*p
Lomandra multiflora subsp. Multiflora	0.02			s
Luzula densiflora		25		s
Luzula flaccida		25		s
Carex appressa	0.02			*p
Carex breviculmis	0.04			*p
Carex incomitata	0			s
Anthosachne scabra	0.26			*p
Austrostipa scabra	0.06			*p
Dichelachne micrantha	0.3			s
Microlaena stipoides	0.42			*p

Microlaena stipoides var. stipoides	0.6			p
Poa helmsii	0.04			*p
Poa labillardierei var. labillardierei	0.62			p
Poa phillipsiana	0.04			*p
Poa sieberiana	0.98			*p
Poa sieberiana var. cyanophylla	3.46			s
Poa sieberiana var. hirtella	0.18			s
Poa sieberiana var. sieberiana	1.9			s
Rytidosperma caespitosum	0.24			p
Rytidosperma erianthum	1.22			s
Rytidosperma pallidum	1.16			*s
Rytidosperma penicillatum	0.26			*s
Rytidosperma pilosum	0.86			*s
Themeda triandra	0.16			*p
Total	**15.24**			
Shrubs				
Brachyloma daphnoides		2.5		s - C
Epacris celata		205		s - C
Monotoca scoparia		5		s - C
Acacia floribunda		10		p
Acacia melanoxylon		5		*p
Acacia obliquinervia		5		*p
Acacia pravissima		35		*p
Banksia canei		10		*p
Bursaria spinosa		25		*p
Cassinia aculeata		10		*p
Cassinia arcuata		5		s
Cassinia longifolia		25		*p
Clematis aristata		5		s
Coprosma quadrifida		25		s - C
Daviesia latifolia		80		*p
Daviesia mimosoides		75		*p
Grevillea arenaria subsp. canescens		5		p - C
Grevillea rosmarinifolia		20		p - C
Grevillea rosmarinifolia subsp. rosmarinifolia		5		s - C
Indigofera australis		50		*p
Leptospermum brevipes		10		*p
Lomatia myricoides		5		s

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Mirbelia oxylobioides		25		*p
Olearia myrsinoides		75		s
Olearia phlogopappa		25		s
Olearia phlogopappa var. flavescens		25		s
Ozothamnus thyrsoideus		25		*s
Pimelea linifolia		25		s - C
Platylobium formosum		20		p
Polyscias sambucifolia		50		s - C
Rubus parvifolius		50		s - C
Trees				
Acacia dealbata		800		*p
Acacia dealbata subsp. dealbata		1500		s
Acacia melanoxylon		300		*p
Eucalyptus dalrympleana		200		*p
Eucalyptus delegatensis subsp. Delegatensis		75		*p
Eucalyptus dives		200		*p
Eucalyptus mannifera		75		*p
Eucalyptus mannifera subsp. mannifera		75		s
Eucalyptus pauciflora		250		*p
Eucalyptus radiata		75		*p
Eucalyptus robertsonii		600		p
Eucalyptus robertsonii subsp. robertsonii		300		s
Eucalyptus rubida		175		p
Eucalyptus rubida x viminalis		375		s
Eucalyptus viminalis		225		*p
	Total	**6,620**		

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

PCT 302	kgs per ha	Stems per ha	Reference site presence Y/N	Primary (p) or Secondary (s) Rehab Species
Forbs & Grasses				***Seed available C = cutting grown**
Bulbine bulbosa	0.01			*p
Chrysocephalum semipapposum	0.08			p
Dianella revoluta var. revoluta				s
Senecio quadridentatus	0.03			s
Stellaria pungens		150		p - C
Juncus sarophorus				*s
Lomandra filiformis	0.03			*p
Lomandra filiformis subsp. coriacea	0.02			s
Lomandra longifolia	0.02			*p
Lomandra multiflora subsp. Multiflora	0.01			s
Luzula flaccida				s
Carex appressa	0.03			*p
Carex breviculmis	0.06			*p
Carex incomitata	0.13			s
Carex inversa	0.62			s
Anthosachne scabra	0.4			*p
Austrostipa scabra	0.07			*p
Microlaena stipoides	0.07			*p
Microlaena stipoides var. stipoides	0.29			s
Poa helmsii	0.32			*p
Poa labillardierei var. labillardierei	0.1			p
Poa sieberiana	0.03			*p
Poa sieberiana var. cyanophylla	0.66			s
Poa sieberiana var. hirtella	0.77			s
Poa sieberiana var. sieberiana	0.1			s
Rytidosperma laeve	0.33			s
Rytidosperma penicillatum	0.23			*s
Rytidosperma pilosum	0.16			*s
Themeda triandra	1			*p
Total	**6.03**			
Shrubs				
Platylobium formosum		50		p
Brachyloma daphnoides		50		s - C
Monotoca scoparia		25		s - C

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Acacia obliquinervia		375		*p
Acacia pravissima		1250		*p
Acacia siculiformis		225		p
Banksia canei		100		*p
Banksia spinulosa var. collina		25		s
Bursaria spinosa		175		*p
Cassinia aculeata		250		*p
Cassinia aculeata subsp. aculeata		125		s
Cassinia longifolia		350		*p
Grevillea arenaria subsp. canescens		175		p - C
Grevillea rosmarinifolia		275		p - C
Grevillea rosmarinifolia subsp. rosmarinifolia		325		s - C
Indigofera australis		100		*p
Leptospermum grandifolium		25		*p
Leptospermum polygalifolium subsp. polygalifolium		250		*p
Lomatia myricoides		50		s - C
Mirbelia oxylobioides		200		*p
Olearia myrsinoides		75		s
Olearia phlogopappa		75		s
Prostanthera lasianthos		75		*s
Rubus parvifolius		250		s - C
Trees				
Acacia dealbata		75		*p
Acacia dealbata subsp. subalpina		50		s
Acacia melanoxylon		125		*p
Eucalyptus camphora		150		p
Eucalyptus camphora subsp. humeana		100		s
Eucalyptus dives		75		*p
Eucalyptus macrorhyncha		225		*p
Eucalyptus mannifera		375		*p
Eucalyptus nortonii		50		p
Eucalyptus robertsonii		150		p
Eucalyptus robertsonii subsp. robertsonii		50		p
Eucalyptus rubida		50		p
Eucalyptus stellulata		225		*p
Eucalyptus viminalis		250		*p
	Total	**9,500**		

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

PCT 303	kgs per ha	Stems per ha	Reference site presence Y/N	Primary (p) or Secondary (s) Rehab Species
Forbs & Grasses				***Seed available C = cutting grown**
Brachyscome aculeata	0.1			s
Brachyscome decipiens	0.05			s
Bulbine bulbosa	0.15			*p
Chrysocephalum semipapposum	0.15			p
Coronidium monticola	3.05			s
Coronidium scorpioides	0.05			s
Craspedia canens	0.45			s
Craspedia coolaminica	0.4			*s
Craspedia costiniana	0.1			s
Craspedia jamesii	0.05			s
Leptorhynchos squamatus subsp. Alpinus	0.2			s
Microseris lanceolata	0.25			*p
Oreomyrrhis argentea	0.05			s
Oreomyrrhis ciliata	0.15			s
Oreomyrrhis eriopoda	0.25			*s
Plantago antarctica	0.05			s
Plantago euryphylla	0.05			s
Podolepis hieracioides	0.05			s
Podolepis jaceoides	0.5			*p
Podolepis laciniata	0.05			s
Podolepis robusta	0.05			*s
Ranunculus lappaceus	0.05			s
Ranunculus pimpinellifolius	0.1			s
Rhodanthe anthemoides	0.05			p
Scleranthus biflorus		625		s - C
Senecio gunnii	0.05			p
Senecio lageniformis	0.2			s
Senecio longipilus	0.1			s
Stellaria pungens		750		p - C
Stylidium graminifolium	0.05			*s
Xerochrysum bracteatum	0.45			s
Luzula densiflora		625		s
Luzula flaccida		625		s
Carex breviculmis	0.15			*p

Carex hebes	0.05			s
Carex incomitata	0.45			s
Anthosachne scabra	0.05			*p
Microlaena stipoides	0.05			*p
Poa clivicola	0.65			*s
Poa costiniana	0.05			p
Poa labillardierei	0.05			*p
Poa phillipsiana	0.05			*p
Poa sieberiana	0.25			*p
Poa sieberiana var. cyanophylla	0.2			s
Poa sieberiana var. sieberiana	0.55			s
Poa sieberiana var. sieberiana (fine leaf form)	0.3			s
Rytidosperma caespitosum	0.95			p
Rytidosperma penicillatum	0.1			*s
Rytidosperma pilosum	0.05			*s
Rytidosperma racemosum var. racemosum	3.8			*s
Themeda triandra	0.2			*p
Total	**14.75**			
Shrubs				
Epacris breviflora		50		s - C
Epacris impressa		25		s - C
Epacris paludosa		25		s - C
Monotoca scoparia		25		s - C
Bossiaea foliosa		375		*s
Cassinia aculeata		175		*p
Daviesia ulicifolia		50		*p
Derwentia perfoliata		250		p
Grevillea lanigera		500		p - C
Hakea microcarpa		500		*p
Kunzea muelleri		375		p
Leptospermum myrtifolium		200		*p
Leptospermum obovatum		150		p
Mirbelia oxylobioides		25		*p
Olearia myrsinoides		125		s
Ozothamnus secundiflorus		25		*p
Pimelea linifolia		250		s - C
Rubus parvifolius		125		s - C

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Trees				
Eucalyptus dalrympleana		50		*p
Eucalyptus pauciflora		75		*p
Eucalyptus rubida		250		p
Eucalyptus stellulata		75		*p
	Total	**6,325**		

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

PCT 311	kgs per ha	Stems per ha	Reference site presence Y/N	Primary (p) or Secondary (s) Rehab Species
Forbs & Grasses				***Seed available C = cutting grown**
Dianella longifolia		375		*p
Dianella nervosa		250		s
Dianella revoluta var. revoluta		375		s
Erigeron conyzoides	0.01			s
Leucochrysum albicans subsp. albicans	0.02			*s
Ranunculus collinus	0.1			s
Stellaria pungens		500		p - C
Lomandra filiformis	0.04			*p
Lomandra filiformis subsp. coriacea	0.11			s
Lomandra longifolia	0.07			*p
Lomandra multiflora subsp. Multiflora	0.03			s
Carex appressa	0.06			*p
Carex breviculmis	0.26			*p
Carex incomitata	0.01			s
Anthosachne scabra	0.11			*p
Bothriochloa macra	0.39			s
Poa phillipsiana	0.44			*p
Poa sieberiana	1.1			*p
Poa sieberiana var. hirtella	0.22			s
Poa sieberiana var. sieberiana	0.02			s
Rytidosperma erianthum	0.15			s
Rytidosperma pallidum	0.21			s
Rytidosperma penicillatum	0.22			s
Themeda triandra	0.76			*p
Total	**5**			
Shrubs				
Brachyloma daphnoides		300		s - C
Melichrus urceolatus		75		s - C
Monotoca scoparia		125		s - C
Acacia amoena		175		s
Acacia floribunda		125		p
Acacia gunnii		25		p
Acacia obliquinervia		75		*p

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Acacia obtusifolia		250		p
Acacia pravissima		625		*p
Acacia siculiformis		25		p
Banksia canei		250		*p
Bursaria spinosa		625		*p
Cassinia aculeata		75		*p
Cassinia longifolia		425		*p
Correa lawrenceana var. rosea		125		s - C
Daviesia mimosoides		150		*p
Dillwynia phylicoides		375		s
Grevillea arenaria subsp. canescens		250		p - C
Grevillea neurophylla		75		s - C
Indigofera australis		125		*p
Kunzea ericoides		150		p
Leptospermum brevipes		875		*p
Melaleuca armillaris subsp. Armillaris		50		s
Mirbelia oxylobioides		875		*p
Pimelea linifolia		125		s - C
Platylobium formosum		75		p
Trees				
Acacia dealbata		75		*p
Acacia melanoxylon		125		*p
Brachychiton populneus		50		s
Eucalyptus dives		475		*p
Eucalyptus macrorhyncha		125		*p
Eucalyptus nortonii		125		p
Eucalyptus robertsonii		75		p
Eucalyptus rubida		50		p
	Total	**9,025**		

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

PCT 637	kgs per ha	Stems per ha	Reference site presence Y/N	Primary (p) or Secondary (s) Rehab Species
Forbs & Grasses				***Seed available C = cutting grown**
Aciphylla glacialis	0.05			*s
Arthropodium milleflorum	0.05			*s
Brachyscome decipiens	0.05			s
Brachyscome obovata	0.05			s
Brachyscome spathulata	0.1			s
Bulbine bulbosa	0.05			*p
Celmisia pugioniformis	0.05			s
Coronidium monticola	0.15			s
Coronidium scorpioides	0.1			s
Myriophyllum pedunculatum	0.2			s – C (division)
Neopaxia australasica	0.25			s
Oreomyrrhis ciliata	0.15			s
Oreomyrrhis eriopoda	0.05			*s
Plantago antarctica	0.15			s
Ranunculus graniticola	0.1			s
Ranunculus lappaceus	0.05			s
Ranunculus millanii	0.35			s
Ranunculus pimpinellifolius	0.4			s
Senecio gunnii	0.05			p
Stellaria angustifolia		1250		s
Stellaria pungens		250		p - C
Stylidium graminifolium	0.15			*s
Viola betonicifolia	0.15			*s
Juncus australis		250		s
Juncus phaeanthus		250		*s
Juncus sarophorus		500		*s
Juncus usitatus		375		*s
Luzula modesta		300		s
Carex appressa	0.4			*p
Carex gaudichaudiana	0.5			s
Carex hebes	0.35			s
Anthosachne scabra	0.1			*p
Deyeuxia brachyathera	0.05			s
Poa costiniana	0.8			p
Poa ensiformis	0.25			p
Poa labillardierei	0.1			*p
Poa labillardierei var. labillardierei	0.9			s

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Poa sieberiana	2			*p
Poa sieberiana var. sieberiana	0.1			s
Total	**8.25**			
Shrubs				
Epacris breviflora		625		s - C
Epacris celata		250		s - C
Epacris glacialis		25		s - C
Epacris microphylla		375		s - C
Epacris paludosa		1250		s - C
Monotoca scoparia		100		s - C
Baeckea gunniana		175		s - C
Baeckea utilis		750		s - C
Bossiaea foliosa		25		*s
Callistemon pityoides		250		*p
Cassinia monticola		250		*p
Grevillea australis		50		p - C
Grevillea lanigera		100		p - C
Hakea microcarpa		300		*p
Leptospermum grandifolium		550		*p
Leptospermum myrtifolium		25		*p
Olearia algida		75		s
Ozothamnus secundiflorus		25		*p
Ozothamnus thyrsoideus		25		*s
Rubus parvifolius		50		s - C
Trees				
Eucalyptus dalrympleana		100		*p
Eucalyptus pauciflora		75		*p
Eucalyptus rubida		275		p
Eucalyptus stellulata		75		*p
	Total	**9,725**		

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

PCT 639	kgs per ha	Stems per ha	Reference site presence Y/N	Primary (p) or Secondary (s) Rehab Species
Forbs & Grasses				***Seed available C = cutting grown**
Arthropodium milleflorum	0.15			*s
Brachyscome aculeata	0.01			s
Brachyscome spathulata	0.04			s
Bulbine bulbosa	0.01			*p
Coronidium monticola	1.8			s
Helichrysum rutidolepis	0.59			s
Dianella tasmanica		75		*p
Goodenia hederacea		625		s – C (division)
Microseris lanceolata	0.01			*p
Oreomyrrhis eriopoda	0.02			*s
Picris angustifolia	0.04			s
Picris angustifolia subsp. merxmuelleri	0.01			s
Pratia surrepens		100		s – C (division)
Ranunculus lappaceus	0.02			s
Senecio gunnii	0.04			p
Senecio prenanthoides	0.02			s
Senecio quadridentatus	0.01			s
Stackhousia monogyna	0.02			s
Stellaria palustris		2500		s
Stellaria pungens		1325		p - C
Stylidium graminifolium	0.1			*s
Viola betonicifolia	0.25			*s
Lomandra filiformis	0.01			*p
Lomandra filiformis subsp. coriacea	0.02			s
Lomandra filiformis subsp. filiformis	0.05			p
Lomandra longifolia	0.05			*p
Luzula densiflora		125		s
Luzula flaccida		250		s
Luzula novae-cambriae		300		s
Carex breviculmis	0.07			*p
Anthosachne scabra	0.28			*p
Deyeuxia monticola	0.11			s
Microlaena stipoides	0.44			*p
Poa ensiformis	0.02			p
Poa helmsii	0.35			*p

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Poa labillardierei var. labillardierei	0.09			p
Poa sieberiana	0.31			*p
Poa sieberiana var. cyanophylla	0.24			s
Poa sieberiana var. sieberiana	0.65			s
Rytidosperma pallidum	0.04			*s
Rytidosperma penicillatum	0.11			*s
Themeda triandra	0.02			*p
Total	**6**			
Shrubs				
Brachyloma daphnoides		5		s - C
Acacia dealbata subsp. subalpina		50		s
Acacia obliquinervia		35		*p
Acacia siculiformis		125		p
Bossiaea foliosa		200		*s
Cassinia aculeata		100		*p
Cassinia longifolia		150		*p
Coprosma hirtella		450		s - C
Daviesia latifolia		375		*p
Daviesia mimosoides		50		*p
Daviesia mimosoides subsp. mimosoides		50		s
Daviesia ulicifolia		45		*p
Hakea lissosperma		25		*p
Hakea microcarpa		50		*p
Leptospermum lanigerum		125		p
Leptospermum myrtifolium		125		*p
Lomatia myricoides		200		s - C
Olearia erubescens		175		*p
Olearia phlogopappa		75		s
Pimelea linifolia		105		s - C
Platylobium formosum		105		p
Podolobium alpestre		325		p
Polyscias sambucifolia		300		s - C
Rubus parvifolius		25		s - C
Trees				
Acacia dealbata		300		*p
Eucalyptus dalrympleana		325		*p

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Eucalyptus delegatensis subsp. Delegatensis -		675		*p
Eucalyptus pauciflora		275		*p
	Total	**9,345**		

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

PCT 643	kgs per ha	Stems per ha	Reference site presence Y/N	Primary (p) or Secondary (s) Rehab Species
Forbs & Grasses				***Seed available C = cutting grown**
Stellaria pungens		125		p - C
Shrubs				
Cassinia longifolia		250		*p
Indigofera australis		75		*p
Polyscias sambucifolia subsp. leptophylla		25		s - C
Trees				
Acacia dealbata subsp. subalpina		125		s
Acacia melanoxylon		75		*p
Eucalyptus viminalis		25		*p
	Total	**700**		

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

PCT 644	kgs per ha	Stems per ha	Reference site presence Y/N	Primary (p) or Secondary (s) Rehab Species
Forbs & Grasses				***Seed available C = cutting grown**
Aciphylla simplicifolia	0.005			*s
Arthropodium milleflorum	0.09			*s
Brachyscome aculeata	0.045			s
Brachyscome decipiens	0.01			s
Brachyscome scapigera	0			s
Brachyscome tenuiscapa	0.02			s
Bulbine bulbosa	0.02			*p
Celmisia tomentella	0.01			s
Chrysocephalum semipapposum	0.045			p
Coronidium scorpioides	0.035			s
Coronidium monticola	0.095			s
Helichrysum rutidolepis	0.035			s
Craspedia canens	0.02			s
Craspedia costiniana	0.005			s
Craspedia jamesii	0.005			s
Craspedia variabilis	0.005			s
Goodenia hederacea				s – C (division)
Leptorhynchos squamatus	0.03			*s
Leptorhynchos squamatus subsp. Alpinus	0.015			s
Leptorhynchos squamatus subsp. squamatus	0.01			s
Leucochrysum albicans	0.035			s
Leucochrysum albicans subsp. albicans	0.02			*s
Microseris lanceolata	0.015			*p
Oreomyrrhis argentea	0.005			s
Oreomyrrhis brevipes	0.055			s
Oreomyrrhis ciliata	0.01			s
Oreomyrrhis eriopoda	0.005			*s
Picris angustifolia	0.005			s
Picris angustifolia subsp. merxmuelleri	0.005			s
Plantago antarctica	0.02			s
Plantago euryphylla	0.025			s
Plantago gaudichaudii	0.01			s
Plantago varia	0.005			s
Podolepis hieracioides	0.005			s

Podolepis jaceoides	0.035			*p
Podolepis robusta	0.01			*p
Ranunculus graniticola				s
Ranunculus lappaceus	0.01			s
Scleranthus biflorus	0.035			s
Senecio gunnii	0.005			p
Senecio linearifolius	0.005			p
Senecio longipilus	0.005			s
Senecio pinnatifolius var. alpinus	0.03			s
Senecio prenanthoides	0.02			s
Senecio quadridentatus	0.04			s
Stackhousia monogyna	0.005			s
Stellaria pungens				p - C
Stylidium graminifolium	0.06			*s
Stylidium lineare	0.045			s
Viola betonicifolia	0.02			*s
Xerochrysum bracteatum	0.005			s
Xerochrysum subundulatum	0.005			*s
Lomandra filiformis	0.005			*p
Lomandra filiformis subsp. coriacea	0.005			s
Lomandra filiformis subsp. filiformis	0.005			*p
Lomandra longifolia	0.005			*p
Luzula densiflora				s
Luzula flaccida				s
Luzula modesta				s
Luzula novae-cambriae				s
Carex appressa	0.005			*p
Carex breviculmis	0.03			*p
Carex hebes	0.005			s
Anthosachne scabra	0.025			*p
Microlaena stipoides	0.005			*p
Poa clivicola	0.01			*s
Poa costiniana	0.005			p
Poa fawcettiae	0.1			*p
Poa helmsii	0.135			*p
Poa labillardierei	0.005			*p
Poa labillardierei var. labillardierei	0.11			p
Poa petrophila	0.09			s
Poa phillipsiana	0.185			*s

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Poa sieberiana	0.05			*p
Poa sieberiana var. cyanophylla	0.5			s
Poa sieberiana var. sieberiana	0.05			s
Poa sieberiana var. hirtella	0.065			s
Poa sieberiana var. sieberiana	0.135			s
Rytidosperma caespitosum	0.055			p
Rytidosperma erianthum	0.02			s
Rytidosperma monticola	0.005			s
Rytidosperma penicillatum	0.02			*s
Rytidosperma pilosum	0.05			*s
Themeda triandra	0.03			*p
Total	**2.76**			
Shrubs				
Brachyloma daphnoides		15		s - C
Acacia alpina		50		s
Acacia obliquinervia		50		*p
Asterolasia trymalioides		25		s - C
Baeckea utilis		15		s - C
Bossiaea foliosa		50		*s
Cassinia aculeata		75		*p
Cassinia monticola		500		s
Coprosma hirtella		250		s - C
Daviesia latifolia		300		*p
Daviesia mimosoides		350		*p
Daviesia ulicifolia		300		*p
Grevillea australis		25		p - C
Grevillea lanigera		15		p - C
Grevillea parviflora		300		s - C
Hakea microcarpa		650		*p
Leptospermum myrtifolium		75		*p
Lomatia myricoides		350		s - C
Mirbelia oxylobioides		150		*p
Olearia brevipedunculata		150		s
Olearia erubescens		150		*p
Olearia myrsinoides		275		s
Olearia phlogopappa		25		s
Olearia phlogopappa var. flavescens		55		s
Oxylobium ellipticum		150		*p
Ozothamnus secundiflorus		150		*p

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Ozothamnus thyrsoideus		150		*p
Phebalium squamulosum		225		s - C
Pimelea ligustrina subsp. ciliata		250		s - C
Pimelea ligustrina subsp. ligustrina		25		s - C
Pimelea linifolia		35		s - C
Podocarpus lawrencei		5		s - C
Podolobium alpestre		50		*p
Polyscias sambucifolia		5		s - C
Rubus parvifolius		50		s - C
Tasmannia lanceolata		5		s - C
Tasmannia xerophila		10		s - C
Trees				
Eucalyptus niphophila		750		p
Eucalyptus dalrympleana		275		*p
Eucalyptus dalrympleana subsp. dalrympleana		100		p
Eucalyptus delegatensis subsp. Delegatensis		300		*p
Eucalyptus lacrimans		150		*p
Eucalyptus pauciflora		375		*p
Eucalyptus rubida		75		p
Eucalyptus stellulata		100		*p
	Total	**9,560**		

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

PCT 679	kgs per ha	Stems per ha	Reference site presence Y/N	Primary (p) or Secondary (s) Rehab Species
Forbs & Grasses				***Seed available C = cutting grown**
Aciphylla simplicifolia	0.09			*s
Arthropodium milleflorum	0.03			*s
Brachyscome decipiens	0.18			s
Bulbine bulbosa	0.06			*p
Chrysocephalum apiculatum	0.03			p
Craspedia costiniana	0.21			s
Goodenia hederacea		250		s - C
Leptorhynchos squamatus	0.42			*s
Microseris lanceolata	6.6			*p
Oreomyrrhis argentea	0.06			s
Oreomyrrhis eriopoda	0.03			*s
Plantago euryphylla	0.18			s
Ranunculus lappaceus	0.09			s
Senecio gunnii	0.18			p
Senecio quadridentatus	0.06			s
Stellaria pungens		125		p - C
Stylidium graminifolium	0.06			*s
Viola betonicifolia	0.03			*s
Lomandra bracteata	0.03			*p
Luzula densiflora		250		s
Anthosachne scabra	0.36			*p
Microlaena stipoides	0.51			*p
Poa clivicola	1.32			*p
Poa helmsii	0.06			*p
Poa labillardierei var. labillardierei	0.03			p
Poa phillipsiana	3.3			*p
Poa sieberiana	3.3			*p
Poa sieberiana var. sieberiana	1.23			s
Rytidosperma penicillatum	0.03			*s
Themeda triandra	0.69			*p
Total	**19.17**			
Shrubs				
Brachyloma daphnoides		125		s - C
Acacia alpina		750		s
Acacia obliquinervia		75		*p
Daviesia latifolia		100		*p

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Daviesia ulicifolia		375		*p
Hakea microcarpa		50		*p
Leptospermum myrtifolium		500		*p
Pimelea linifolia		50		s - C
Podolobium alpestre		625		*p
Rubus parvifolius		50		s - C
Tasmannia xerophila		125		s - C
Trees				
Eucalyptus pauciflora		50		*p
Eucalyptus rubida		150		p
Eucalyptus stellulata		2500		*p
	Total	**6,150**		

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

PCT 729	kgs per ha	Stems per ha	Reference site presence Y/N	Primary (p) or Secondary (s) Rehab Species
Forbs & Grasses				***Seed available C = cutting grown**
Arthropodium milleflorum	0.06			*s
Brachyscome spathulata	0.03			s
Chrysocephalum semipapposum	0.15			p
Dianella revoluta		25		*p
Dianella revoluta var. revoluta		50		s
Erigeron conyzoides	0.03			s
Leptorhynchos squamatus	0.12			*s
Oreomyrrhis eriopoda	0.06			*s
Plantago gaudichaudii	0.09			s
Ranunculus collinus	0.27			s
Ranunculus lappaceus	0.12			s
Senecio diaschides	0.03			s
Stackhousia monogyna	0.03			s
Stellaria pungens		500		p - C
Stylidium graminifolium	0.06			*s
Viola betonicifolia	0.03			*s
Lomandra bracteata	0.12			*p
Lomandra confertifolia	0.12			s
Lomandra filiformis	0.33			*p
Lomandra filiformis subsp. coriacea	0.18			s
Lomandra filiformis subsp. filiformis	0.12			*p
Lomandra longifolia	0.06			*p
Lomandra multiflora subsp. Multiflora	0.15			s
Luzula densiflora		100		s
Luzula flaccida		200		s
Carex appressa	0.09			*p
Carex breviculmis	0.09			*p
Anthosachne scabra	1.29			*p
Austrostipa scabra	0.15			*p
Dichelachne micrantha	0.21			s
Microlaena stipoides	0.33			*p
Poa helmsii	0.03			*p
Poa labillardierei	0.18			*p

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Poa labillardierei var. labillardierei	0.06			s
Poa phillipsiana	1.29			*p
Poa sieberiana	0.75			*p
Poa sieberiana var. cyanophylla	1.41			s
Poa sieberiana var. sieberiana	0.18			s
Rytidosperma caespitosum	0.18			p
Rytidosperma erianthum	0.96			s
Rytidosperma laeve	0.12			*s
Rytidosperma pallidum	0.03			*s
Rytidosperma penicillatum	1.35			*s
Rytidosperma pilosum	0.39			*s
Themeda triandra	3			*p
Total	**14.25**			
Shrubs				
Brachyloma daphnoides		50		s - C
Epacris celata		500		s - C
Melichrus urceolatus		25		s - C
Monotoca scoparia		50		s - C
Acacia gunnii		50		p
Acacia obliquinervia		25		*p
Acacia pravissima		40		*p
Acacia rubida		25		*p
Acacia saliciformis		475		p
Acacia siculiformis		25		p
Banksia canei		25		*p
Bossiaea foliosa		75		*s
Bursaria spinosa		25		*p
Cassinia aculeata		10		*p
Cassinia longifolia		400		*p
Daviesia latifolia		200		*p
Daviesia leptophylla		100		s
Dillwynia phylicoides		75		s
Dillwynia sericea		50		s
Grevillea arenaria subsp. canescens		50		p - C
Grevillea neurophylla		75		p - C
Grevillea rosmarinifolia		50		p - C
Grevillea rosmarinifolia subsp. rosmarinifolia		25		s - C
Indigofera australis		25		*p

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Kunzea muelleri		475		s
Leptospermum brevipes		150		*p
Leptospermum micromyrtus		50		p
Lomatia myricoides		2.5		s - C
Mirbelia oxylobioides		120		*p
Olearia erubescens		25		*p
Pimelea linifolia		40		s - C
Platylobium formosum		10		p
Podolobium alpestre		50		*p
Rubus parvifolius		50		s - C
Trees				
Acacia dealbata		1475		*p
Acacia dealbata subsp. subalpina		200		s
Callitris endlicheri		25		s
Eucalyptus camphora		100		p
Eucalyptus camphora subsp. humeana		25		s
Eucalyptus dalrympleana		25		*p
Eucalyptus dives		375		*p
Eucalyptus macrorhyncha		750		*p
Eucalyptus mannifera		50		*p
Eucalyptus nortonii		500		p
Eucalyptus pauciflora		75		*p
Eucalyptus robertsonii		150		p
Eucalyptus rubida		200		p
Eucalyptus stellulata		400		*p
Eucalyptus viminalis		125		*p
	Total	**8,095**		

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

PCT 952	kgs per ha	Stems per ha	Reference site presence Y/N	Primary (p) or Secondary (s) Rehab Species
Forbs & Grasses				***Seed available C = cutting grown**
Arthropodium milleflorum	0.21			*s
Brachyscome spathulata	0.03			s
Coronidium scorpioides	0.06			s
Craspedia paludicola	0.03			s
Goodenia hederacea		100		s - C
Plantago varia	0.18			s
Ranunculus lappaceus	0.15			s
Scleranthus biflorus	3.6	1300		s – C (division)
Senecio gunnii	0.15			p
Senecio prenanthoides	0.39			s
Senecio quadridentatus	0.09			s
Stackhousia monogyna	0.03			s
Stellaria pungens	0.09	100		p - C
Stylidium graminifolium				*s
Viola betonicifolia	0.15			*s
Lomandra bracteata	0.06			p
Lomandra filiformis	0.06			*p
Lomandra filiformis subsp. coriacea	0.09			s
Lomandra filiformis subsp. filiformis	0.06			*p
Lomandra longifolia	0.15			*p
Lomandra multiflora subsp. Multiflora	0.03			s
Luzula flaccida		500		s
Carex appressa	0.03			*p
Anthosachne scabra	0.15			*p
Microlaena stipoides	0.42			*p
Poa sieberiana	3.6			*p
Poa sieberiana var. cyanophylla	0.51			s
Poa sieberiana var. sieberiana	2.4			s
Rytidosperma laeve	0.15			*s
Rytidosperma penicillatum	0.99			*s
Themeda triandra	2.1			*p
Total	**12.27**			
Shrubs				

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Brachyloma daphnoides		50		s - C
Epacris breviflora		25		s - C
Bossiaea foliosa		825		*s
Cassinia aculeata		50		*p
Daviesia latifolia		1250		*p
Daviesia mimosoides		225		*p
Daviesia mimosoides subsp. mimosoides		50		s
Daviesia ulicifolia		250		*p
Leptospermum myrtifolium		325		*p
Lomatia myricoides		500		s - C
Olearia phlogopappa		150		s
Pimelea linifolia		75		s - C
Platylobium formosum		300		p
Trees				
Acacia dealbata		325		*p
Eucalyptus camphora		50		p
Eucalyptus dalrympleana		250		*p
Eucalyptus dives		250		*p
Eucalyptus pauciflora		450		*p
Eucalyptus radiata		625		*p
Eucalyptus radiata subsp. radiata		275		s
Eucalyptus robertsonii		875		p
Eucalyptus rubida		50		p
Eucalyptus stellulata		50		*p
	Total	**9,275**		

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

PCT 953	kgs per ha	Stems per ha	Reference site presence Y/N	Primary (p) or Secondary (s) Rehab Species
Forbs & Grasses				***Seed available C = cutting grown**
Arthropodium milleflorum	0.06			*s
Brachyscome aculeata	0.045			s
Brachyscome spathulata	0.015			s
Chrysocephalum apiculatum	0.015			p
Chrysocephalum semipapposum	0.03			p
Coronidium monticola	0.15			s
Coronidium scorpioides	0.105			s
Craspedia jamesii	0.015			s
Dianella longifolia		250		*p
Dianella revoluta		500		*p
Leptorhynchos squamatus	0.06			*s
Picris angustifolia	0.015			s
Plantago gaudichaudii	0.435			s
Podolepis jaceoides	0.015			*p
Ranunculus lappaceus	0.06			s
Senecio prenanthoides	0.015			s
Senecio quadridentatus	0.03			s
Stackhousia monogyna	0.03			s
Stellaria pungens		275		p - C
Stylidium graminifolium	0.06			*s
Viola betonicifolia	0.075			*s
Lomandra bracteata	0.03			p
Lomandra filiformis	0.165			*p
Lomandra filiformis subsp. coriacea	0.57			s
Lomandra filiformis subsp. filiformis	0.03			*p
Lomandra longifolia	0.045			*p
Lomandra multiflora subsp. Multiflora	0.075			s
Carex breviculmis	0.075			*p
Carex incomitata	0.09			s
Anthosachne scabra	0.075			*p
Microlaena stipoides	0.045			*p
Poa helmsii	0.015			*p
Poa sieberiana	2.1			*p
Poa sieberiana var. cyanophylla	0.405			s

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Poa sieberiana var. sieberiana	1.65			s
Rytidosperma pallidum	0.03			*s
Rytidosperma penicillatum	0.195			*s
Themeda triandra	0.48			*p
Total	**7.305**			
Shrubs				
Epacris breviflora		125		s - C
Monotoca scoparia		375		s - C
Acacia falciformis		250		*p
Acacia gunnii		150		p
Acacia obliquinervia		300		*p
Acacia pravissima		325		*p
Acacia ulicifolia		350		*p
Banksia canei		100		*p
Bossiaea foliosa		25		*s
Cassinia aculeata		550		*p
Cassinia longifolia		750		*p
Coprosma hirtella		25		s - C
Daviesia latifolia		375		*p
Daviesia ulicifolia		250		*p
Derwentia perfoliata		50		p
Dillwynia phylicoides		25		s
Grevillea neurophylla		675		p - C
Hakea microcarpa		25		*p
Leptospermum myrtifolium		125		*p
Mirbelia oxylobioides		750		*p
Mirbelia platylobioides		750		s
Olearia erubescens		25		*p
Pimelea linifolia		125		s - C
Platylobium formosum		375		p
Platylobium montanum		300		s
Polyscias sambucifolia		250		s - C
Rubus parvifolius		200		s - C
Trees				
Acacia dealbata		50		*p
Acacia dealbata subsp. subalpina		75		s
Acacia melanoxylon		300		*p
Eucalyptus dalrympleana		75		*p

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Eucalyptus dalrympleana subsp. dalrympleana		50		s
Eucalyptus dives		550		*p
Eucalyptus macrorhyncha		175		*p
Eucalyptus pauciflora		275		*p
Eucalyptus robertsonii		125		p
Eucalyptus rubida		50		p
Eucalyptus rubida x dalrympleana		125		s
Eucalyptus viminalis		50		*p
	Total	**10,550**		

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

PCT 999	kgs per ha	Stems per ha	Reference site presence Y/N	Primary (p) or Secondary (s) Rehab Species
Forbs & Grasses				***Seed available C = cutting grown**
Chrysocephalum semipapposum	0.09			p
Dianella longifolia	0.005			*p
Dianella revoluta	0.005			*p
Leucochrysum albicans subsp. albicans	0.015			*s
Plantago hispida	0.09			s
Senecio quadridentatus	0.03			s
Stackhousia monogyna	0.015			s
Stellaria pungens		250		p - C
Stylidium graminifolium	0.24			*s
Xerochrysum viscosum	0.03			s
Lomandra bracteata	0.09			p
Lomandra filiformis	0.15			*p
Lomandra filiformis subsp. coriacea	0.075			s
Lomandra longifolia	0.15			*p
Lomandra multiflora subsp. Multiflora	0.12			s
Carex appressa	0.03			*p
Carex breviculmis	0.15			*p
Anthosachne scabra	0.15			*p
Austrostipa scabra	0.06			*p
Poa labillardierei var. labillardierei	0.195			s
Poa sieberiana	1.335			*p
Poa sieberiana var. sieberiana	1.185			s
Rytidosperma caespitosum	0.615			*p
Rytidosperma erianthum	0.48			s
Rytidosperma pallidum	0.36			*s
Rytidosperma pilosum	0.09			*s
Themeda triandra	0.87			*p
Total	**6.625**			
Shrubs				
Brachyloma daphnoides		625		s - C
Melichrus urceolatus		150		s - C

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Monotoca scoparia		200		s - C
Acacia buxifolia		400		s
Acacia buxifolia subsp. buxifolia		175		s
Acacia gunnii		275		p
Acacia obliquinervia		175		*p
Acacia penninervis var. penninervis		400		p
Acacia pravissima		500		*p
Acacia siculiformis		350		p
Banksia canei		750		*p
Bursaria spinosa		325		*p
Cassinia aculeata		275		*p
Cassinia longifolia		425		*p
Daviesia ulicifolia		50		*p
Dillwynia phylicoides		500		s
Grevillea arenaria		275		p - C
Grevillea neurophylla		450		p - C
Grevillea neurophylla subsp. neurophylla		750		s - C
Indigofera australis		200		*p
Kunzea parvifolia		375		p
Mirbelia oxylobioides		550		*p
Olearia myrsinoides		125		s
Pimelea linifolia		250		s - C
Platylobium formosum		25		p
Podolobium alpestre		25		*p
Rubus parvifolius		100		s - C
Trees				
Acacia dealbata		150		*p
Acacia dealbata subsp. subalpina		75		s
Acacia melanoxylon		250		*p
Eucalyptus dives		350		*p
Eucalyptus macrorhyncha		275		*p
Eucalyptus nortonii		250		p
Eucalyptus robertsonii		250		p
Eucalyptus viminalis		125		*p
	Total	**10,675**		

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

PCT 1191	kgs per ha	Stems per ha	Reference site presence Y/N	Primary (p) or Secondary (s) Rehab Species
Forbs & Grasses				***Seed available C = cutting grown**
Arthropodium milleflorum	0.05			*s
Chrysocephalum semipapposum	1.275			p
Senecio prenanthoides	0.075			s
Senecio quadridentatus	0.025			s
Stellaria pungens		625		p - C
Stylidium graminifolium	0.175			*s
Viola betonicifolia	0.025			*s
Lomandra filiformis	0.1			*p
Lomandra filiformis subsp. coriacea	0.175			s
Lomandra filiformis subsp. filiformis	0.075			*p
Lomandra multiflora subsp. Multiflora	0.125			s
Luzula flaccida		250		s
Carex appressa	0.05			*p
Carex breviculmis	0.175			*p
Carex incomitata	0.075			s
Anthosachne scabra	1.075			*p
Austrostipa scabra	0.25			*p
Poa costiniana	0.425			*p
Poa helmsii	0.025			*p
Poa sieberiana	0.225			*p
Poa sieberiana var. cyanophylla	0.9			s
Poa sieberiana var. hirtella	0.175			s
Poa sieberiana var. sieberiana	3			s
Rytidosperma erianthum	0.65			s
Rytidosperma penicillatum	8			*s
Themeda triandra	2.125			*p
Total	**19.25**			
Shrubs				
Brachyloma daphnoides		875		s - C
Melichrus urceolatus		100		s - C
Acacia gunnii		125		p

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Acacia pravissima		1375		*p
Banksia canei		225		*p
Bursaria spinosa		175		*p
Cassinia longifolia		75		*p
Grevillea arenaria		100		p - C
Grevillea arenaria subsp. canescens		625		s - C
Grevillea rosmarinifolia subsp. rosmarinifolia		500		p - C
Indigofera australis		100		*p
Mirbelia oxylobioides		625		*p
Olearia myrsinoides		500		s
Pimelea linifolia		625		s - C
Rubus parvifolius		250		s - C
Trees				
Acacia dealbata		250		*p
Acacia melanoxylon		75		*p
Eucalyptus dalrympleana		275		*p
Eucalyptus dives		75		*p
Eucalyptus mannifera		100		*p
Eucalyptus pauciflora		350		*p
Eucalyptus rubida		200		p
Eucalyptus stellulata		75		*p
	Total	**8,550**		

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

PCT 1196	kgs per ha	Stems per ha	Reference site presence Y/N	Primary (p) or Secondary (s) Rehab Species
Forbs & Grasses				***Seed available C = cutting grown**
Arthropodium milleflorum	0.39			*s
Brachyscome decipiens	0.03			s
Brachyscome spathulata	0.03			s
Brachyscome tenuiscapa	0.03			s
Bulbine bulbosa	0.06			*p
Chrysocephalum apiculatum	0.06			p
Coronidium scorpioides	0.06			s
Craspedia jamesii	0.06			s
Craspedia variabilis	0.03			s
Dianella longifolia		125		*p
Dianella revoluta		200		*p
Dianella tasmanica		75		*p
Goodenia hederacea		175		s – C (division)
Helichrysum rutidolepis	0.09			s
Leptorhynchos squamatus	0.06			*s
Leptorhynchos squamatus subsp. Alpinus	0.12			s
Leucochrysum albicans	0.03			s
Microseris lanceolata	0.03			*p
Oreomyrrhis argentea	0.24			s
Oreomyrrhis eriopoda	0.06			*s
Picris angustifolia	0.06			s
Picris angustifolia subsp. merxmuelleri	0.06			s
Podolepis laciniata	0.12			s
Ranunculus collinus	0.03			s
Ranunculus graniticola	0.06			s
Ranunculus lappaceus	0.03			s
Scleranthus biflorus		500		s – C (division)
Senecio gunnii	0.06			p
Senecio lageniformis	0.06			s
Senecio phelleus	0.03			s
Senecio prenanthoides	0.03			s
Senecio quadridentatus	0.03			s
Stackhousia monogyna	0.03			s
Stellaria pungens		1125		p - C
Stylidium graminifolium	0.06			*s
Viola betonicifolia	0.12			*s

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Xerochrysum bracteatum	0.09			s
Xerochrysum viscosum	0.15			s
Lomandra bracteata	0.03			p
Lomandra confertifolia	0.12			s
Lomandra filiformis	0.18			*p
Lomandra filiformis subsp. coriacea	0.03			s
Lomandra filiformis subsp. filiformis	0.42			p
Lomandra longifolia	0.12			*p
Lomandra multiflora subsp. Multiflora	0.03			s
Luzula densiflora		200		s
Luzula flaccida		25		s
Luzula novae-cambriae		300		s
Carex appressa	0.09			*p
Carex breviculmis	0.12			*p
Carex hebes	0.15			s
Carex incomitata	0.03			s
Carex inversa	0.15			s
Anthosachne scabra	0.39			*p
Deyeuxia monticola	0.03			s
Microlaena stipoides	0.21			p
Poa clivicola	1.23			*p
Poa costiniana	0.33			*p
Poa ensiformis	0.24			p
Poa helmsii	0.03			*p
Poa labillardierei var. labillardierei	0.27			p
Poa sieberiana	2.58			*p
Poa sieberiana var. cyanophylla	0.18			s
Poa sieberiana var. hirtella	1.26			s
Poa sieberiana var. sieberiana	0.81			s
Poa sieberiana var. sieberiana (fine leaf form)	0.09			s
Rytidosperma caespitosum	0.09			p
Rytidosperma pallidum	0.03			s
Rytidosperma penicillatum	0.09			*s
Rytidosperma pilosum	0.69			*s
Themeda triandra	0.18			*p
Total	**12.6**			
Shrubs				
Brachyloma daphnoides		10		s - C

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Epacris breviflora		40		s - C
Epacris paludosa		25		s - C
Monotoca scoparia		75		s - C
Acacia falciformis		25		*p
Acacia obliquinervia		25		*p
Acacia pravissima		25		*p
Acacia siculiformis		25		p
Baeckea utilis		100		s - C
Banksia canei		25		*p
Bossiaea foliosa		75		*s
Callistemon pityoides		50		*p
Cassinia aculeata		25		*p
Cassinia longifolia		50		*p
Coprosma hirtella		10		s - C
Daviesia latifolia		100		*p
Daviesia mimosoides		140		*p
Daviesia ulicifolia		25		*p
Grevillea australis		10		p - C
Grevillea lanigera		10		p - C
Grevillea neurophylla		175		p - C
Hakea microcarpa		50		*p
Leptospermum brevipes		50		*p
Leptospermum grandifolium		25		*p
Leptospermum myrtifolium		25		*p
Leptospermum obovatum		160		p
Lomatia myricoides		15		s - C
Mirbelia oxylobioides		20		*p
Olearia erubescens		10		*p
Olearia megalophylla		30		s
Olearia myrsinoides		50		s
Olearia phlogopappa		50		s
Oxylobium ellipticum		50		*p
Ozothamnus thyrsoideus		25		*p
Pimelea linifolia		75		s - C
Podolobium alpestre		40		*p
Polyscias sambucifolia		25		s - C
Rubus parvifolius		25		s - C
Tasmannia lanceolata		25		s - C
Trees				
Acacia dealbata		350		*p
Acacia melanoxylon		100		*p
Eucalyptus dalrympleana		425		*p

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Eucalyptus dalrympleana subsp. dalrympleana		200		s
Eucalyptus delegatensis subsp. Delegatensis		200		*p
Eucalyptus dives		500		*p
Eucalyptus paniculata		200		s
Eucalyptus pauciflora		800		*p
Eucalyptus radiata		700		*p
Eucalyptus robertsonii		300		p
Eucalyptus robertsonii subsp. robertsonii		850		s
Eucalyptus rubida		100		p
Eucalyptus stellulata		125		*p
Eucalyptus viminalis		550		*p
	Total	**7,720**		

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

PCT 1224	kgs per ha	Stems per ha	Reference site presence Y/N	Primary (p) or Secondary (s) Rehab Species
Forbs & Grasses				***Seed available C = cutting grown**
Aciphylla glacialis	0.05			*s
Aciphylla simplicifolia	0.05			*s
Arthropodium milleflorum	0.05			*s
Brachyscome aculeata	0.05			s
Brachyscome ciliaris	0.1			s
Brachyscome decipiens	0.05			s
Brachyscome scapigera	0.1			s
Brachyscome spathulata	0.1			s
Brachyscome tenuiscapa	0.25			s
Bulbine bulbosa	0.05			*p
Celmisia pugioniformis	0.05			s
Chrysocephalum semipapposum	0.15			p
Coronidium monticola	2			s
Coronidium scorpioides	0.05			s
Craspedia aurantia	0.65			s
Craspedia coolaminica	0.3			s
Craspedia crocata	2.3			s
Craspedia jamesii	0.1			s
Craspedia variabilis	0.05			s
Erigeron bellidioides	0.05			s
Leptorhynchos elongatus	0.05			s
Leptorhynchos squamatus	0.05			s
Leptorhynchos squamatus subsp. Alpinus	0.15			*s
Microseris lanceolata	0.15			*p
Myriophyllum alpinum		250		s– C (division)
Neopaxia spp.		500		s – C (division)
Oreomyrrhis argentea	0.15			s
Oreomyrrhis ciliata	0.05			s
Oreomyrrhis eriopoda	0.05			*s
Plantago antarctica	0.05			s
Plantago euryphylla	0.1			s
Plantago gaudichaudii	0.9			s
Plantago varia	0.25			s
Podolepis jaceoides	0.55			*p
Podolepis laciniata	0.05			s
Ranunculus collinus	0.05			s

Ranunculus graniticola	0.1			s
Ranunculus lappaceus	0.05			s
Ranunculus millanii	0.2			s
Rhodanthe anthemoides	0.2			p
Scleranthus biflorus		375		s – C (division)
Senecio lageniformis	0.05			s
Senecio prenanthoides	0.05			s
Senecio quadridentatus				s
Stellaria pungens	0.1	375		p – C
Stylidium graminifolium	0.05			*s
Viola betonicifolia	0.05			*s
Xerochrysum subundulatum	0.05			*s
Juncus falcatus		75		*s
Juncus sarophorus		500		*s
Lomandra filiformis subsp. coriacea	0.05			s
Luzula densiflora		750		s
Luzula flaccida		625		s
Luzula modesta		25		s
Luzula novae-cambriae		250		s
Carex breviculmis	0.15			*p
Carex gaudichaudiana		250		s – C (division)
Carex incomitata	0.05			s
Isolepis inundata		25		s – C (division)
Anthosachne scabra	0.1			*p
Deyeuxia monticola	0.1			s
Microlaena stipoides	0.05			*p
Poa clivicola	0.5			*p
Poa costiniana	0.2			p
Poa phillipsiana	0.5			*p
Poa sieberiana	0.8			*p
Poa sieberiana var. cyanophylla	0.15			s
Poa sieberiana var. sieberiana	0.35			s
Poa sieberiana var. sieberiana (fine leaf form)	0.9			s
Rytidosperma caespitosum	0.9			p
Rytidosperma erianthum	0.1			s
Rytidosperma fulvum	0.15			s
Rytidosperma laeve	0.25			s
Rytidosperma nudiflorum	0.25			s
Rytidosperma penicillatum	0.25			*s
Rytidosperma pilosum	0.45			*s

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

Themeda triandra	0.25			*p
Total	**16.45**			
Shrubs				
Epacris breviflora		70		s- C
Epacris gunnii		75		s- C
Epacris microphylla		25		s- C
Epacris paludosa		100		s- C
Asterolasia trymalioides		50		s- C
Baeckea utilis		210		s- C
Bossiaea foliosa		25		*s
Cassinia aculeata		25		*p
Cassinia monticola		100		s
Comesperma retusum		25		s- C
Daviesia ulicifolia		625		*p
Grevillea australis		800		p - C
Grevillea lanigera		500		p - C
Grevillea parviflora		750		s- C
Hakea microcarpa		300		*p
Kunzea muelleri		25		p - C
Leptospermum myrtifolium		100		*p
Mirbelia oxylobioides		200		*p
Olearia algida		150		s
Olearia myrsinoides		150		s
Olearia phlogopappa		25		s
Ozothamnus cupressoides		10		*p
Ozothamnus secundiflorus		15		*p
Pimelea linifolia		25		s - C
Podolobium alpestre		25		*p
Trees				
Eucalyptus lacrimans		125		*p
Eucalyptus pauciflora		25		*p
Eucalyptus stellulata		75		*p
	Total	**7,880**		

PCT TARGET SPECIES LIST (Species listed for active rehabilitation)

PCT 1225	kgs per ha	Stems per ha	Reference site presence Y/N	Primary (p) or Secondary (s) Rehab Species
Forbs & Grasses				***Seed available C = cutting grown**
Aciphylla glacialis	0.05			*s
Aciphylla simplicifolia	0.1			*s
Arthropodium milleflorum	0.95			*s
Brachyscome decipiens	0.15			s
Brachyscome scapigera	0.95			s
Bulbine bulbosa	0.05			*p
Celmisia pugioniformis	0.05			s
Chrysocephalum apiculatum	0.1			p
Coronidium monticola	1.25			s
Craspedia aurantia	0.45			s
Craspedia costiniana	0.25			s
Erigeron bellidioides	0.05			s
Leptorhynchos squamatus subsp. Alpinus	0.05			*s
Leucochrysum albicans	0.25			s
Microseris lanceolata	0.05			*p
Myriophyllum alpinum		550		s – C (division)
Neopaxia australasica		550		s – C (division)
Oreomyrrhis eriopoda	0.05			*s
Ranunculus graniticola	0.1			s
Ranunculus inundatus	0.1			s
Ranunculus lappaceus	0.1			s
Ranunculus millanii	0.25			s
Ranunculus pimpinellifolius	0.15			s
Scleranthus biflorus		300		s – C (division)
Senecio gunnii	0.05			p
Senecio quadridentatus	0.15			s
Stellaria angustifolia		250		s - C
Stellaria pungens		1250		p - C
Stylidium graminifolium	1.05			*s
Viola betonicifolia	0.15			*s
Carex appressa	0.65			*p
Carex breviculmis	0.9			*p
Carex gaudichaudiana	1			s – C (division)
Carex inversa	0.05			s
Poa clivicola	0.7			*p
Poa costiniana	1.4			p

Poa helmsii	0.05			*p
Poa labillardierei	1.8			*p
Poa labillardierei var. labillardierei	0.85			p
Poa phillipsiana	0.1			*p
Poa sieberiana	0.7			*p
Poa sieberiana var. cyanophylla	1			s
Poa sieberiana var. sieberiana	0.4			s
Themeda triandra	0.15			*p
Total	**16.65**			
Shrubs				
Epacris breviflora		250		s - C
Epacris gunnii		150		s - C
Epacris microphylla		45		s - C
Richea continentis		30		p - C
Bossiaea foliosa		25		*s
Cassinia monticola		55		s
Hakea microcarpa		25		*p
Olearia myrsinoides		35		s
Ozothamnus cupressoides		125		*p
	Total	**3,590**		

Note:

1. Tables to be updated following first round of rehabilitation monitoring to included species presence
2. Stems per hectare used as a guide, to be updated to reflect interquartile range from reference sites.

3. KG per Ha to be re-evaluated after monitoring.

APPENDIX K

Site Specific Rehabilitation Management Plan – Plateau

- **Inclusive of BH3203 & 3210**

APPENDIX L

Site Specific Rehabilitation Management Plan – Talbingo Reservoir

(To be completed after finalisation of all stages of the Ravine spoil emplacement management plan approval - Stage 2)

APPENDIX M

Site Specific Rehabilitation Management Plan – Lobs Hole

(Overarching plan to be developed including Main Yard emplacement subplan when recreation management plan finalised - Stage 2)

Sub plans included for Stage 1:

- GF01 Spoil emplacement
- Lobs Hole Site Entrance

APPENDIX N

Site Specific Rehabilitation Management Plan – Marica

- **Inclusive of BH4201 &4201**

APPENDIX O

Site Specific Rehabilitation Management Plan – Tantangara Reservoir

(Overarching plan to be updated when Recreation MP approved - Stage 2)

APPENDIX P

Site Specific Rehabilitation Management Plan – Rock Forest

(To be developed following Spoil management plan approval - Stage 2)