PROJECT MANAGEMENT PLAN

MAIN WORKS –
ENVIRONMENTAL MANAGEMENT STRATEGY

S2-FGJV-ENV-PLN-0007

REV O

FEBRUARY 2025

ABSTRACT

The purpose of this EMS is to provide a structured approach to the management of environmental issues during the delivery of the project. This Strategy identifies the actions to be implemented and make certain that the project, meets the regulatory and approval requirements in a systematic manner.

Revision Record

Rev.	Date	Reason for Issue	Responsible	Accountable	Endorsed
O	20/02/2025	Updated due to SHL comments	S. McKenney	E. Porter	M. Franceschi

Department of Planning, Housing and Infrastructure

Our ref: SSI-9687-PA-251

Nicola Fraser
Post Approvals
Snowy Hydro Limited
By email

04/04/2025

Subject: Environmental Management Strategy Approval

Dear Ms Fraser

I refer to the Environmental Management Strategy, Revision O dated 20 February 2025, submitted in accordance with condition 1, Schedule 4 of the approval for the Snowy 2.0 - Main Works (SSI-9687).

I note the Environmental Management Strategy:

- has been updated to detail the scope of works approved as part of Modification 3;
- was reviewed by the proponent and no issues have been raised with the Department; and
- contains the information required by the conditions of approval.

The Department has carefully reviewed the document and is satisfied that it meets the requirements of the relevant conditions in approval SSI-9687.

You are reminded that if there are any inconsistencies between the Strategy and the conditions of approval, the conditions prevail.

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 David Way on David.Way@planning.nsw.gov.au.

Yours sincerely

Nicole Brewer
Director
Energy Assessments

As nominee of the Planning Secretary

Document Verification

RACIE Record

R esponsible:	Name: Steven McKenney Job Title: Environmental Approvals Coordinator Signed:  Date 20.02.2025
A ccountable:	Name: Ellen Porter Job Title: Environmental Manager Signed: PP  Date: 20/02/2025
C onsulted:	See distribution list on Page 3.
I nformed:	See distribution list on Page 3.
E ndorsed:	Name: Massimo Franceschi Job Title: Project Director Signed: DocuSigned by: F64E528E534C459... Date: 03 March 2025 Name: Dave Drummond Job Title: QHSE Director S igned: Signed by: Dave DRUMMOND 20030A67088E43C... Date: 03 March 2025

	RACIE Terms
R	**Responsible** The person who actually produces the document.
A	**Accountable** The person who has the answer for success or failure of the quality and timeliness of the document.
C	**Consulted** Those who must be consulted before the document is published.
I	**Informed** Those who must be informed after the document is published.
E	**Endorsed** Those who must approve the document before publication.

Document Distribution

Consulted Distribution List

Date	Format [1]	Addressee / Job Title	Company	Location [2]
20.02.2025	EC	Peter Cowper	SHL	Cooma
20.02.2025	EC	Nicola Fraser	SHL	Cooma
20.02.2025	EC	Emily Martin	SHL	Cooma

Informed Distribution List

Date	Format [1]	Addressee / Job Title	Company	Location [2]
20.02.2025	OHC	Central Archive	FGJV	Cooma
20.02.2025	EC	All FGJV Personnel	FGJV	All

NOTE: ***(1) OHC*** *– Original Hard Copy /* ***EC****–Electronic Copy /* ***HC*** *– Hard Copy /* ***Aconex*** *–Electronic Document Management System*

Revision Tracking

Rev.	Date	Description of Revision
A	25.11.2019	Initial draft for SHL review
B	30.03.2020	Revised to address RTS and SHL comments
C	25.05.2020	Revised to address the Infrastructure Approval
D	3.06.2020	Revised to address SHL comments. For issue to DPHI
E	10.07.2020	Revised to address DPHI comments
F	21.07.2020	Revised to address DPHI verbal comments. Issued to SHL
G	25.07.2020	Revised to address SHL comments
H	27.07.2020	Revised to address SHL comments. For issue to DPHI
I	11.08.2020	Revised to address DPHI comments
J	20.02.2023	Revised to include emergency works
K	14.03.2023	Revised to address NPWS comments
L	09.01.2024	Revised to address DPE, NPWS, EPA, and Independent Environmental Audit Comments
M	11.03.2024	Revised to address Reset
N	07.02.2025	Revised for Mod 3 and currency
O	20.02.2025	Revised for SHL Comment

CONTENTS

TABLE OF TABLES

TABLE OF FIGURES

ABBREVIATIONS AND DEFINITIONS

Acronym	Definition
ALARP	As low as reasonably practicable
ANZECC	Australian and New Zealand Environment and Conservation Council
APZ	Asset Protection Zone
AS/NZ	Australian Standard / New Zealand Standard
BC Act	*Biodiversity Conservation Act 2016*
BCD	Biodiversity and Conservation Division (part of Department of Planning, Industry and Environment)
BMP	Biodiversity Management Plan
BMS	FGJV Business Management System
CNMP	Construction Noise Management Plan – Rock Forest
Contractor	Salini Impregilo, Clough and Lane have formed the FGJV Joint Venture (FGJV). FGJV is the contractor who will be carrying out the Snowy 2.0 Main Works on behalf of SHL Limited. References to the Contractor in this Environmental Management Strategy refers to FGJV and includes all its sub-contractors.
Construction envelope	The envelope within which the disturbance area of the development may be located.
CSSI	Critical State significant infrastructure
Cth	Commonwealth
DCCEEW	The Commonwealth Department of Climate Change, Energy, the Environment and water.
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.
DPHI or Department	Department of Planning, Housing and Infrastructure
DPI Fisheries	Department of Primary Industries – Fisheries
EEC	Endangered Ecological Communities
EIS	*Snowy 2.0 Main Works - Environmental Impact Statement*
EMS	Environmental Management Strategy
Environmental aspect	Defined by AS/NZS ISO 14001:2004 as an element of an organisation's activities, products or services that can interact with the environment
Environmental impact	Defined by AS/NZS ISO 14001:2004 as any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organisation's environmental aspects
Environmental objective	Defined by AS/NZS ISO 14001:2004 as an overall environmental goal, consistent with the environmental policy, that an organisation sets itself to achieve
Environmental policy	Statement by an organisation of its intention and principles for environmental performance
Environmental target	Defined by AS/NZS ISO 14001:2004 as a detailed performance requirement, applicable to the organisation or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPA	Environment Protection Authority

Acronym	Definition
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPL	Environment Protection Licence
ERMP	Emergency Response Management Plan
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, and modified by the: • *Submissions Report* dated October 2018 and additional information provide to the Department on 17 October 2018, 19 November 2018 and 23 January 2019; • *Modification Report* dated 6 June 2019, associated *Submissions Report* dated 2 September 2019 and amendment letter dated 4 October 2019; and • Modification Report dated 17 October 2019 and associated *Submissions Report* dated 10 January 2020.
Exploratory Works EIS	*Environmental Impact Statement Exploratory Works for Snowy 2.0*
FMECA	Failure Mode Effects and Criticality Analysis
FRNSW	NSW Fire and Rescue
FGJV	FGJV Joint Venture
GIS	Geographical Information Systems
GWMP	Groundwater Management Plan
HAZID	Hazard Identification
HMP	Heritage Management Plan
HSSE	Health, Safety, Security and Environment
HSSE Manual	Health, Safety, Security and Environment Management Manual
ICNG	*Interim Construction Noise Guidelines*, DECC 2009
ISO	International Standards Organisation
JHA	Job Hazard Analysis
KNP	Kosciuszko National Park
LG Act	*Local Government Act 1993*
MAE	Major Accident Event
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, and modified by the: • *Preferred Infrastructure Report and Response to Submissions – Snowy 2.0 Main Works,* dated February 2020; and • Additional information provided to the Department by EMM on 24 March 2020 and 7 April 2020. • Modification 1: Main Access Tunnel to Marica Services Connection (SSI-9687-Mod-1) • Modification 2: Tantangara Sink Hole (SSI-9687-MOD-2) • Modification 3: TBM 4 Marica (SSI-9687-MOD-3)
Main Works EIS	*Snowy 2.0 Main Works - Environmental Impact Statement*
MNES	Matters of national environmental significance under the EPBC Act 1999
NATA	National Association of Testing Authorities

Acronym	Definition
NEM	National Electricity Market
NHMP	Natural Hazard Management Plan
NPW Act	*National Parks and Wildlife Act 1974*
NPWS	National Parks and Wildlife Service
NRAR	Natural Resources Access Regulator
NSW	New South Wales
NSW DPI	The NSW Department of Primary Industries within Regional NSW
OSOM	Oversize Overmass
PIRMP	Pollution Incident Response Management Plan
Planning Secretary	Planning Secretary under the EP&A Act, or nominee
Pre-construction MP	Pre-construction Minor Works Management Plan
POEO Act	*Protection of the Environment Operations Act 1997*
PoM	Plan of Management
Project, the	Snowy 2.0 Main Works
Project area	The broader region within which Snowy 2.0 will be built and operated, and the extent within which direct impacts from Snowy 2.0 Main Works are anticipated.
RAP	Registered Aboriginal Parties
REMMs	Revised environmental management measures
RFS	Rural Fire Services
RMP	Rehabilitation Management Plan
RMS	Roads and Maritime Services
RTS or Submissions Report	*Snowy 2.0 Main Works – Response to Submissions*
SAPs	Sensitive Area Plans
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
SHL	SHL Limited
SSI	State significant infrastructure
SMP	Spoil Management Plan
SWMP	Surface Water Management Plan
TARP	Trigger Action Response Plan
TBM	Tunnel Boring Machine
TfNSW	Transport for NSW
TMP	Transport Management Plan
Water Group	The Water Group within the Department
WAL	Water Access Licence
Waste MP	Waste Management Plan
WMP	Water Management Plan

1. INTRODUCTION

1.1. Background

SHL Limited (SHL) is constructing a pumped hydro-electric expansion of the Snowy Mountains Hydro-electric Scheme, called Snowy 2.0. Snowy 2.0 will be built by the delivery of two projects: Exploratory Works and Snowy 2.0 Main Works.

Snowy 2.0 is a pumped hydro-electric expansion of the existing Snowy Scheme that involves linking the existing Tantangara and Talbingo reservoirs through approximately 27 kilometres (km) of new underground tunnels and a hydro-electric power station.

Snowy 2.0 would provide an additional 2,000 megawatts of electricity and provide up to 350 gigawatt hours of energy storage for the National Electricity Market (NEM), enough to ensure the stability and reliability of the NEM. It is the largest committed renewable energy project in Australia and will underpin the nation's secure and stable transition to a low carbon emissions future.

On 7 March 2018, the NSW Minister for Planning declared Snowy 2.0 to be State significant infrastructure (SSI) and critical State significant infrastructure (CSSI) under the *Environmental Planning and Assessment Act 1979* (EP&A Act) on the basis that it is critical to the State for environmental, economic or social reasons.

In July 2018, the *Environmental Impact Statement for the Exploratory Works for Snowy 2.0* (Exploratory Work EIS) was submitted to the then Department of Planning and Environment. Following public exhibition, the response to submissions was prepared (*Response to Submissions Exploratory Works for Snowy 2.0*), and on 7 February 2019, approval of Snowy 2.0 Exploratory Works (Exploratory Works) was granted by the Minister for Planning.

The *Snowy 2.0 Main Works Environmental Impact Statement* (Main Works EIS) was submitted to Department of Planning, Industry and Environment in September 2019 and publicly exhibited between 26 September 2019 and 6 November 2019. A total of 222 submissions were received and in February 2020, the response to submissions was prepared (*Snowy 2.0 Main Works – Response to Submissions*).

Following consideration of this document and the Main Works EIS, approval was granted by the Minister for Planning and Public Spaces on 20 May 2020. The approval for Snowy 2.0 Main Works incorporated the Exploratory Works and Main Works project elements and required the surrender of the Exploratory Works approval within six months of the commencement of construction, which has since occurred. At the time of surrender, the conditions and requirements of the Main Works Infrastructure Approval would apply to any Exploratory Works activities which were still in construction at the time of the approval surrender.

In addition to the State approval, a referral (EPBC 2018/8322) was prepared and lodged with the Commonwealth Department of Climate Change, Energy, The Environment and Water (DCCEEW) 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 DCCEEW on 29 June 2020.

WeBuild (formerly Salini Impregilo), Clough and Lane have formed the FGJV Joint Venture (FGJV) and have been engaged to deliver both Stage 2 of the Exploratory Works project and Snowy 2.0 Main Works.

Given the Exploratory Works stage of works approval has been completed (SSI-9208) this document has been updated to address the pre-construction and construction stages of the Snowy 2.0 Main

Works project (SSI-9687), and supersedes the existing Stage 1 and Stage 2 Exploratory Works Environmental Management Strategy. It does not address the operational phase of the project.

The Stage 1 and Stage 2 Exploratory Works Environmental Management Strategy and management plans are superseded by the management plans for Main Works. Further detail is provided within Table 4-4.

1.2. Snowy 2.0

1.2.1. Snowy 2.0 Exploratory Works

The Snowy 2.0 Exploratory Works (Exploratory Works) project involves the construction of a tunnel approximately 2.5 km in length to obtain geological data and assist with informing detailed design for Snowy 2.0 Main Works. To support construction of the tunnel, the Exploratory Works project also involves construction of the tunnel portal, an accommodation camp, barge access infrastructure, road upgrades, excavated rock management and other ancillary construction activities. Further detail is provided in section 2.

The Exploratory Works project is being delivered in three stages.

- Stage 1a – Pre-construction Minor Works - Stage 1a commenced on 5 March 2019;
- Stage 1b - Exploratory Works Access Roads – Stage 1b commenced in the second quarter of 2019 and includes roadworks and upgrades to enable access during Exploratory Works.
- Stage 2 – Exploratory Works – Stage 2 commenced in quarter three of 2019. The scope for Stage 2 is the remainder of the Exploratory Works, including:
  - pre-construction minor activities including dilapidation studies, survey, investigations, access etc; and
  - construction works including exploratory tunnel, portal construction pad, accommodation camp, dredging, barge access infrastructure and excavated rock management and additional geotechnical investigation. This includes subaqueous emplacement within Talbingo Reservoir.

Stage 2 construction activities commenced on 29 October 2019.

The Exploratory Works project has undergone two modifications since approval.

Modification 1 was approved on 2 December 2019 and involved additional geotechnical investigation works, minor changes to the project boundary, removal of dangerous trees on Lobs Hole Ravine Road and a new electricity substation at Lobs Hole.

Modification 2 was approved on 27 March 2020 and included a change of construction methodology to excavate the exploratory tunnel. The original construction methodology of drill and blast was modified to occur predominantly through the use of a tunnel boring machine (TBM). Other changes included road upgrades for transport of the TBM, use of Lobs Hole Ravine Road (north) for light vehicles, relocation of the barge ramp and increasing the capacity of the accommodation camp.

1.2.2. Snowy 2.0 Main Works

Snowy 2.0 Main Works (the project) involves the connection of Talbingo Reservoir and Tantangara Reservoir through a network of tunnels approximately 27 kilometres in length. A new underground power station will be constructed, capable of generating 2,000 megawatts of electricity and up to 350 gigawatt hours of energy storage. The project will also involve the construction of water intakes at Talbingo Reservoir and Tantangara Reservoir, access tunnels, a surge shaft at Marica, a ventilation shaft, permanent road upgrades, and power, water and communications

infrastructure. Spoil emplacement sites are also required to be constructed for the permanent emplacement of the spoil produced from the tunnels.

Ancillary infrastructure would also be required to support construction of the project. This will include construction compounds, access tunnels and adits to support tunnelling activities, accommodation camps at Lobs Hole, Marica and Tantangara, a logistics site at Rock Forest, road upgrades, water supply and wastewater treatment facilities. A schematic of the project is provided in Figure 1-1.

The Main Work project has undergone 3 modifications

On 27 January 2022, a modification to SSI-9687 (SSI-9687-Mod-1) was granted under Section 2.22 and clause 20 of Schedule 1 of the EP&A Act, 1979. The scope of the modification included horizontal directional drilling (HDD) to establish water and electricity services between the Lobs Hole and Marica areas of the Project.

On 29 November 2023, a second modification to SSI-9687 (SSI-9687-MOD-2) was granted under Section 5.25 of the EP&A Act 1979, approving the undertaking of sinkhole rectification works near the Tantangara Adit Portal, inclusive of geotechnical investigations and remediation works.

A subsequent planning application (SSI-9687-MOD-3) was approved on 16 December 2024 to permit the construction of an additional adit and launching of a fourth tunnel boring machine at Marica West to facilitate excavation of a section of the headrace tunnel (HRT) through the long plain fault zone (LPFZ). The LPFZ is the most geologically complex section of the HRT and represented a significant risk to the overall project completion date. The application was approved in accordance with Section 5.25 of the EP&A Act, 1979.

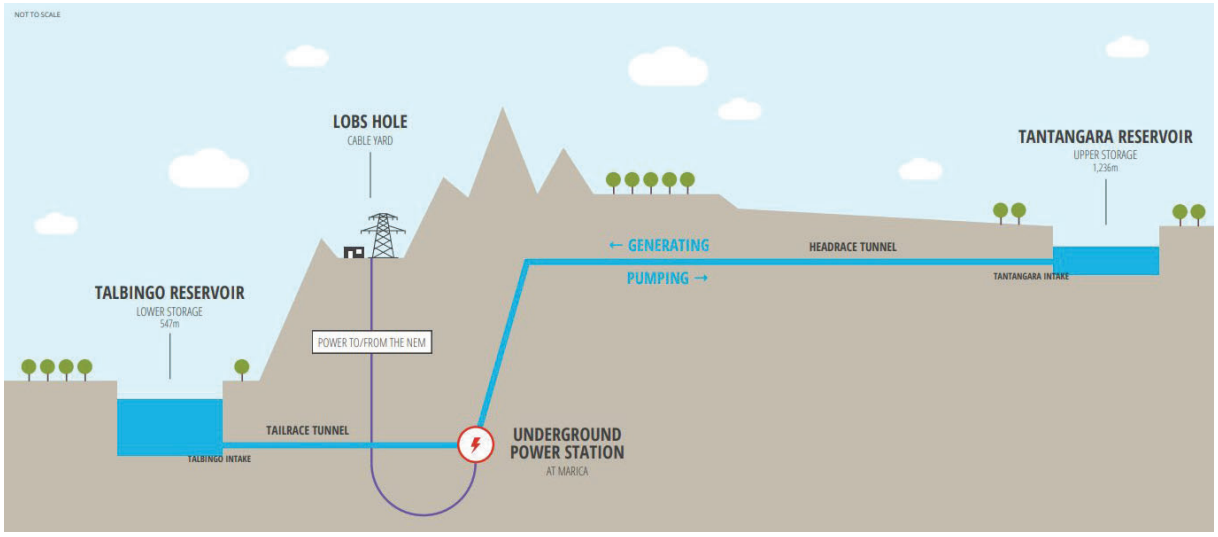


Figure 1-1: Schematic of Main Works (EIS, EMM)

1.3. Timing

Figure 1-2 displays the original timing for Exploratory Works and Snowy 2.0 Main Works. Construction of Snowy 2.0 Main Works commenced in Quarter 3 2020, with the Approval of the Main Works Environmental Management Strategy granted on 14 August 2020.

Due to a number of factors include bushfires that impacted the site in 2020, and Covid-19 which has significant impacts to the project, the construction phase will now be ongoing for another 2 years, with stage operations commencing in late 2028.

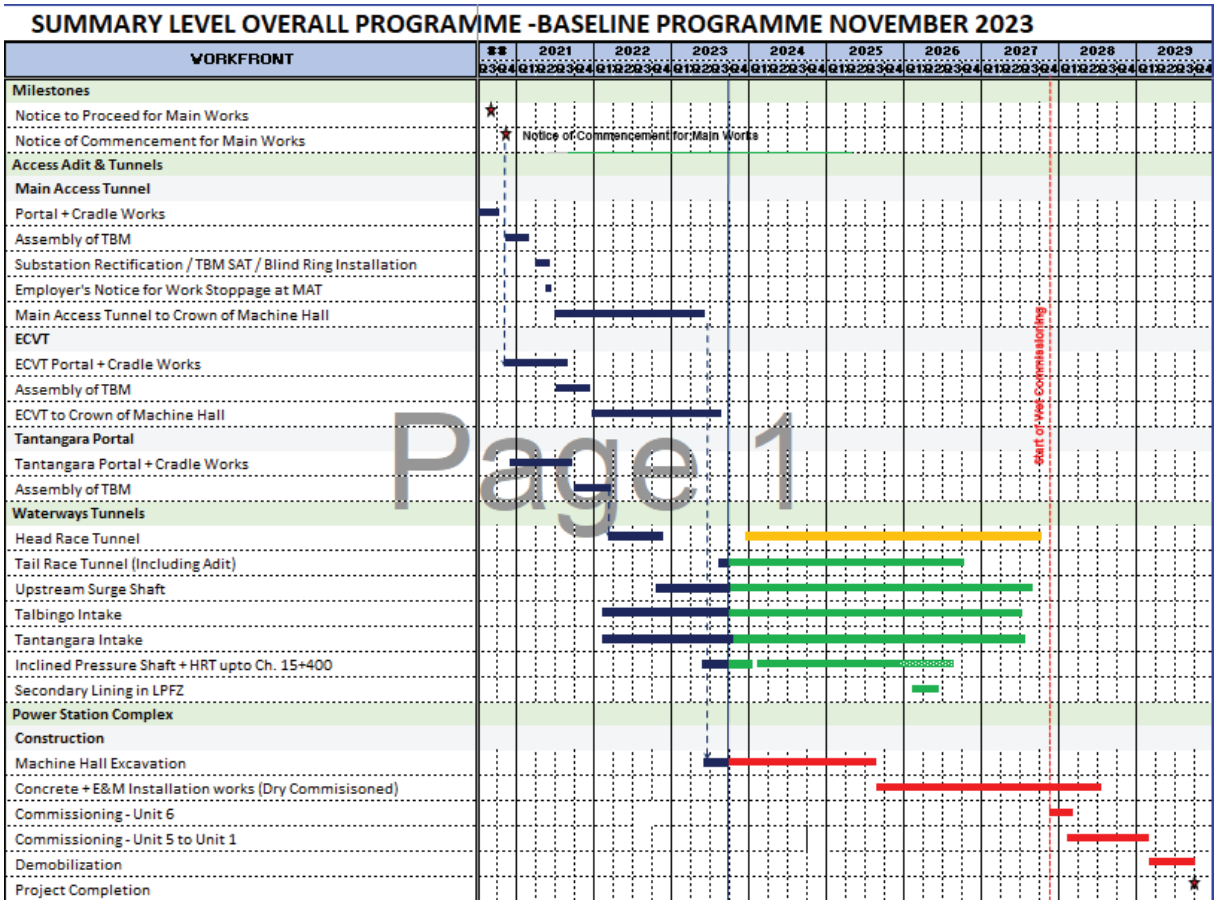


Figure 1-2: Timing of Snowy 2.0 Exploratory Works and Main Works (EIS, EMM)

1.4. Scope

This document has been prepared for the Snowy 2.0 Main Works project. Specific elements pertaining to the scope and management of the Exploratory Works stage has been retained in this revision (Rev L), where appropriate, for background information and cohesiveness of the document.

1.5. Purpose

This Environmental Management Strategy (EMS) presents the framework for environmental management for Snowy 2.0 Main Works.

This EMS has been prepared to address the requirements of the Infrastructure Approval (CSSI 9687) issued for Snowy 2.0 Main Works on 20 May 2020. All Main Works activities undertaken on the project will be required to be undertaken in accordance with this EMS and the relevant management plans.

The purpose of this EMS is to provide a structured approach to the management of environmental issues during the delivery of the project. Implementing this EMS will ensure that the project, meets the regulatory and approval requirements in a systematic manner. In particular, this EMS:

- describes the project and activities to be undertaken;
- describes the strategic framework for environmental management of the project;

- identifies the approvals, licences and permits that relate to the project;
- describes the roles and responsibilities of personnel in relation to environmental management;
- describes the procedures that will be implemented for community consultation and notification, and complaints management; and
- outlines a monitoring regime for construction.

Specific on-site management measures identified in this document will be incorporated into the relevant management plans. These aspect-specific documents will detail the management measures which are to be implemented on the ground. Construction personnel will be required to undertake works in accordance with this EMS and the mitigation measures identified in these site-specific documents.

1.6. Consultation

Whilst there is no specific consultation requirement for this EMS, the Infrastructure Approval requires that many of the management plans, strategies and programs are developed in consultation with relevant stakeholders and agencies.

Consultation required for these management plans, strategies and programs is detailed within Table 1-1, with ‘S’ indicating that the document is to be prepared to the satisfaction of that agency and ‘C’ indicating that consultation is required.

Table 1-1: Consultation required for the management plans

Document	Main Works Infrastructure Approval condition	Main Works EIS or RTS requirement	Exploratory Works EIS or RTS requirement	Project which the plan addresses	Timing of document	Dept of Planning, Housing and Infrstructure	Department of Climate Change Energy, the Environment and water	National Parks and Wildlife Service	Environment Protection Authority	Department of Primary Industries – Fisheries	Water Group	Natural Resources Access Regulator	Biodiversity & Conservation	Heritage Council	Registered Aboriginal Parties	Yala Ngurumbang Yindyamarra Expert Advisory Committee	Sthn Snowy Mountains Aboriginal Community MOU Group	Snowy Valleys Council	Snowy Monaro Regional Council	Transport for NSW	NSW Police	Landowners of the nearby properties	Relevant recreational fishing groups
Environmental Management Strategy	Schedule 4 condition 1	-	-	Main Works and Exploratory Works	Prior to development	S																	
Biodiversity Management Plan	Schedule 3 condition 18	REMM EC02, EC04, ECO05, EC06, AE04	REMM ECO01, ECO04, Section 4.11.4 of the RTS	Main Works and Exploratory Works	Prior to construction	S	C	C					C										
Water Management Plan[1], which includes: • Surface Water Management Plan • Groundwater Management Plan	Schedule 3 condition 31	REMM WM01, WM02, ECO02	REMM SOIL02	Main Works and Exploratory Works	Prior to construction	S	C	C	C	C	C	C											
Heritage Management Plan	Schedule 3 condition 35	REMM HER01, HER04, GE06	REMM HER01, HER03	Main Works and Exploratory Works	Prior to development	S	C	C					C	C	C	C	C						
Spoil Management Plan, including detailed plans for the spoil emplacement areas[1]: • Lobs Hole (Main Yard) • Ravine Bay • GF01 • Tantangara • Rock Forest	Schedule 3 condition 7	REMM CONTAM07	REMM CON02, CON01	Main Works and Exploratory Works	Prior to construction	S		C	C	C	C	C								C			
Construction Noise Management Plan – Rock Forest	Schedule 3 condition 57	REMM NV01	REMM KNP01, NOI01	Main Works	Prior to construction at Rock Forest	S																C	
Natural Hazard Management Plan (titled Emergency Management Plan in the Approval)	Schedule 3 condition 61	REMM HAZ08, REMM WM14	REMM PUS02, REMM PUS01, 4.1.7 of the RTS	Main Works and Exploratory Works	Prior to construction			S															
Other Post-Approval documents required by the Approval																							
Transport Management Plan • Heavy Vehicle Salvage Plan • Marine Transport Management Plan • Snow & Ice Traffic Management Plan • Communication Strategy	Schedule 3 condition 46	REMM TRA07	REMM TRA01, PUS05	Main Works and Exploratory Works	Prior to construction	S		C										C	C	C	C		
Digital Strategy (SHL)	Schedule 3 condition 2	-	-	Main Works	Within 6 months of the commencement of construction	S		C															
Rehabilitation Management Plan	Schedule 3 condition 10	REMM REHAB01, SOIL01, SOIL04, LCV01	REMM SOIL04, KNP06, SOIL03	Main Works and Exploratory Works	Within 18 months of the commencement of construction	S		C	C	C			C							C			
Biosecurity Risk Management Plan (SHL)	Schedule 3 condition 22	-	-	Main Works	Within 2 years of the commencement of construction	C	C	C		S													
Threatened Fish Management Plan (SHL)	Schedule 3 condition 24	-	-	Main Works	Within 12 months of the commencement of construction	C	C			S													
Recreational Fishing Management Plan (SHL)	Schedule 3 condition 26	-	-	Main Works	Within 12 months of the commencement of construction	C		C		S													C
Recreation Management Plan (SHL)	Schedule 3 condition 39	-	-	Main Works	Within 12 months of the commencement of construction	S		C		C										C			
Long-Term Road Strategy (SHL)	Schedule 3 condition 50	-	-	Main Works	Within 2 years of the commencement of construction	S		C												C			

Document	Main Works Infrastructure Approval condition	Main Works EIS or RTS requirement	Exploratory Works EIS or RTS requirement	Project which the plan addresses	Timing of document	Dept of Planning, Housing and Infrstructure	Department of Climate Change Energy, the Environment and water	National Parks and Wildlife Service	Environment Protection Authority	Department of Primary Industries – Fisheries	Water Group	Natural Resources Access Regulator	Biodiversity & Conservation	Heritage Council	Registered Aboriginal Parties	Yala Ngurumbang Yindyamarra Expert Advisory Committee	Sthn Snowy Mountains Aboriginal Community MOU Group	Snowy Valleys Council	Snowy Monaro Regional Council	Transport for NSW	NSW Police	Landowners of the nearby properties	Relevant recreational fishing groups
Visual Impact Management Plan	Schedule 3 condition 54	-	-	Main Works	Within 12 months of the commencement of construction	S		C															
Subsidence Management Plan	M0dification 2 and 3			Main Works	Prior to recommencing Tunnelling works at tantangara or Marica	S	C	C			C		C										

[1] The detailed plans may be submitted on a staged basis as permitted by condition 7 and condition 31 of schedule 3.

1.7. Plans prepared to the satisfaction of agencies

1.7.1. Plans prepared to the satisfaction of the Planning Secretary

The EMS and relevant management plans will be submitted to Department of Planning and Environment (DPE or Department) for confirmation that the document has been prepared to the satisfaction of the Secretary.

In accordance with the Infrastructure Approval, prior to development, the EMS and Heritage Management Plan were prepared to the satisfaction of the Planning Secretary.

Prior to the commencement of construction, the following additional plans were prepared to the satisfaction of the Planning Secretary:

- Biodiversity Management Plan;
- Water Management Plan;
- Transport Management Plan;
- Spoil Management Plan;
- Construction Noise Management Plan – Rock Forest (for commencement of construction at Rock Forest).
- Subsidence Management Plan

The approved EMS will be implemented in accordance with the requirements of condition 2 of schedule 4 of the Infrastructure Approval. Regardless of the allocation of responsibilities within this EMS and the management plans, the responsible party is to be assigned in accordance with the Contract.

1.7.2. Plans prepared to the satisfaction of NPWS

The Natural Hazard Management Plan including a Bushfire Management Plan (titled Emergency Management Plan in condition 61 of schedule 3 of the Infrastructure Approval) was prepared prior to construction and to the satisfaction of the NSW National Parks and Wildlife Service (NPWS).

The Rehabilitation Management Plan will also be prepared and approved to the satisfaction of NPWS

1.7.3. Plans prepared to the satisfaction of DPI Fisheries

Three post-approval documents are required to be prepared by SHL to the satisfaction of the Director-General of Department of Primary Industries – Fisheries (DPI Fisheries). These include the:

- Biosecurity Risk Management Plan;
- Threatened Fish Management Plan; and
- Recreational Fishing Management Plan.

1.8. Distribution

FGJV's Environmental Manager will coordinate the preparation, review and distribution, as appropriate, of the environmental documents. During construction, FGJV's environmental documents will be stored electronically at the site office and on the project document control system (Aconex).

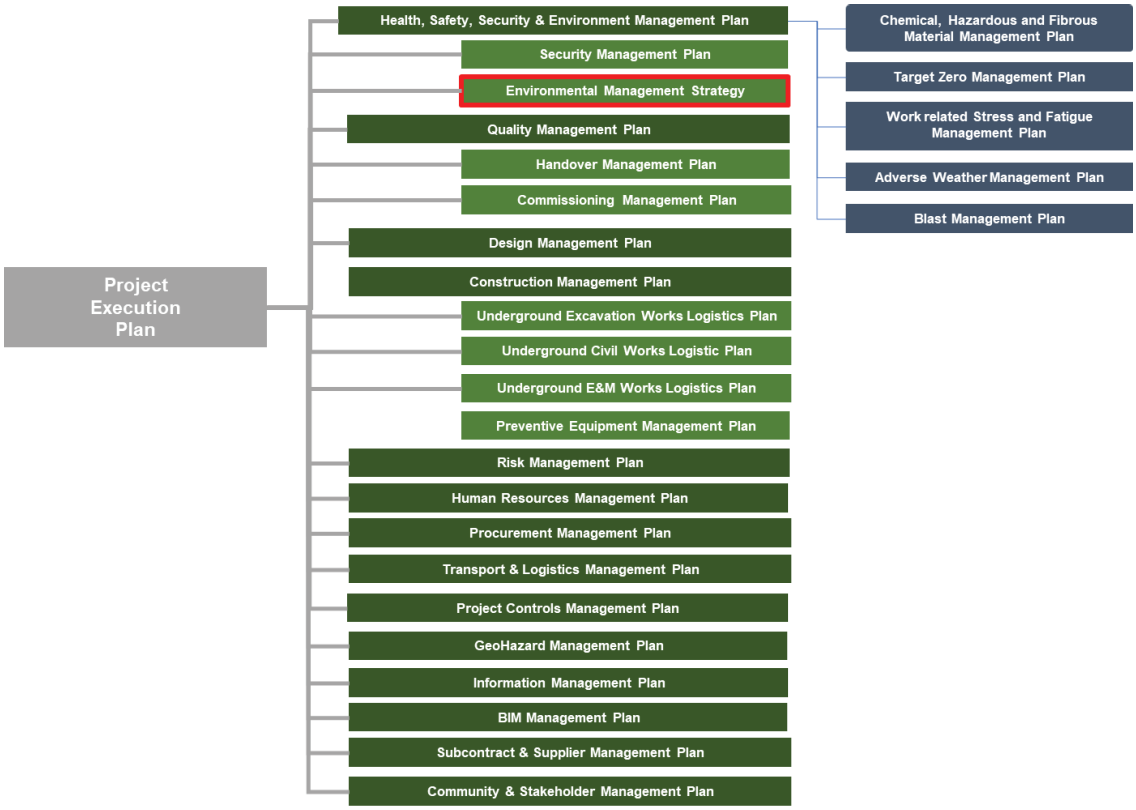
The EMS and relevant management plans, programs or strategies will be made available to all personnel and subcontractors either by hard copy (if requested) or through the project document control system. Documents which are required to be made publicly available will also be placed on the SHL project website.

Registered copies will be distributed to:

- SHL's Representative;
- SHL's Environmental Manager;
- FGJV's Project Director; and
- FGJV's Environmental Manager.

1.9. Plan Hierarchy

This Plan belongs to a suite of Management Plans, as illustrated in the figure following.



1.10. Review and Improvement

1.10.1. Revision

In accordance with condition 4 of schedule 4 of the Main Works Infrastructure Approval, and unless the Planning Secretary agrees otherwise, within three months of the below, strategies, plans and programs will be reviewed and if necessary revised after:

- the submission of an incident report under condition 6;
- the submission of an independent environmental audit report under condition 10; and

- any modification to the conditions of the Infrastructure Approval; or
- a direction of the Planning Secretary under condition 4 of schedule 2.

Where any revisions to the management plans, strategies or programs are made, the revised document will be issued to the SHL prior to submission to the Department.

In accordance with condition 3 of schedule 4, any strategy, plan or program required under the Infrastructure Approval may be submitted on a staged basis with the agreement of the Planning Secretary. Updates to any approved strategies, plans or programs may also be submitted at any time.

Condition 3 also states that, with the agreement of the Planning Secretary, staged or updated strategies, plans or programs may be prepared without undertaking all the consultation required under the applicable condition in this approval.

Only the FGJV Environmental Manager, or delegate, has the authority to change any of the environmental management documentation.

Should the EMS or management plans not require review or revision under condition 4, then they will be reviewed at least annually and revised as necessary. Revised versions of the EMS will be made available through the processes described in Section 1.6.

1.10.2. Continuous Improvement

Continuous improvement of this EMS will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process will be designed to:

- identify areas of opportunity for improvement of environmental management and performance;
- determine the cause or causes of non-compliances and deficiencies;
- develop and implement a plan of corrective and preventative action to address any non-compliances and deficiencies;
- verify the effectiveness of the corrective and preventative actions;
- document any changes in procedures resulting from process improvement; and
- make comparisons with objectives and targets.

2. PROJECT DESCRIPTION

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 Tantangara and Talbingo Reservoirs.

Snowy 2.0 will increase the generation capacity of the Snowy Scheme by an additional 2,200 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.

As with most of the existing Snowy Scheme, the majority of Snowy 2.0 is within Kosciuszko National Park. SHL has been working with NPWS since the announcement of Snowy 2.0 to ensure long term management objectives for Kosciuszko National Park are considered in the project development.

2.1. Project Location

Snowy 2.0 is in the Australian Alps in southern NSW, approximately mid-way between Canberra and Albury. The project is within both the Snowy Valleys and Snowy Monaro Regional local government areas. The nearest large towns are Cooma and Tumut and other nearby towns include Talbingo, Cabramurra, Adaminaby and Tumbarumba. The location of these towns in relation to the project are shown on Figure 2-2.

The majority of the project area is within Kosciuszko National Park. Kosciuszko National Park is an area recognised for its unique landscapes, recreational and heritage values, as well as the successful co-existence of the Snowy Scheme within this area over the past 65 years.

The regional location of Snowy 2.0 Main Works is identified in Figure 2-2, with the key elements of the permanent infrastructure identified in Figure 2-3. Site layout diagrams (as provided within the Infrastructure Approval) are included within Appendix A1.

2.2. General Features

The general features of Snowy 2.0 Main Works include:

- an underground pumped hydro-electric power station complex;
- water intake structures at Tantangara and Talbingo reservoirs;
- underground power waterway tunnels, chambers and shafts;
- underground access tunnels;
- fish control structures at Tantangara Creek and in proximity to Tantangara Reservoir wall;
- new and upgraded roads to allow ongoing access and maintenance;
- power, water and communication infrastructure, including:
    - a cable yard to facilitate the connection of Snowy 2.0 to the national electricity market (NEM) transmission network;
    - permanent auxiliary power connection;
    - permanent communication cables; and
    - permanent water supply to the underground power station.

2.3. Construction activities and sequencing

The works associated with Snowy 2.0 Main Works commenced upon approval of the relevant management plans, and was being undertaken in parallel, with the remainder of the Exploratory Works scope. The sequence and overlapping nature of the project works is indicated in Figure 2-1.

The Main Works activities will follow the natural sequence of project delivery and include pre-construction minor works and construction works. Further detail of these activities is provided in Section 2.3.1.

For the most part, the management plans were prepared to address both Main Works and Exploratory Works within the one document. Where this occurred, the approved management plans for Exploratory Works continued to remain in place until they were superseded by the management plans for Main Works, following their approval by the relevant authority. Where the Approval / REMMs are specific to only one project (for example the Subaqueous Emplacement Management Plan for Exploratory Works), this plan was only prepared for the relevant project. A list of the plans and their applicability are detailed within Table 4-4.

As detailed within condition 7 and condition 31 of the Infrastructure Approval, the Water Management Plan and Spoil Management Plan will be submitted on a staged basis as additional information and detailed design becomes available. Subsequent versions of the Spoil Management Plan will include for example, the detailed plans for spoil emplacement areas, and subsequent versions of the Water Management Plan will include for example, detail relating to the operation of the outlet points.

As detailed within Section 1.9, all management plans will be subject to review and if necessary, revision during the project. These reviews will occur following the submission of an incident report; following submission of an independent environmental audit report; following any modification to the conditions of approval; at the direction of the Planning Secretary; and where not required by these items, at least on an annual basis. The sequencing of pre-construction and construction and is provided within Figure 2-1.

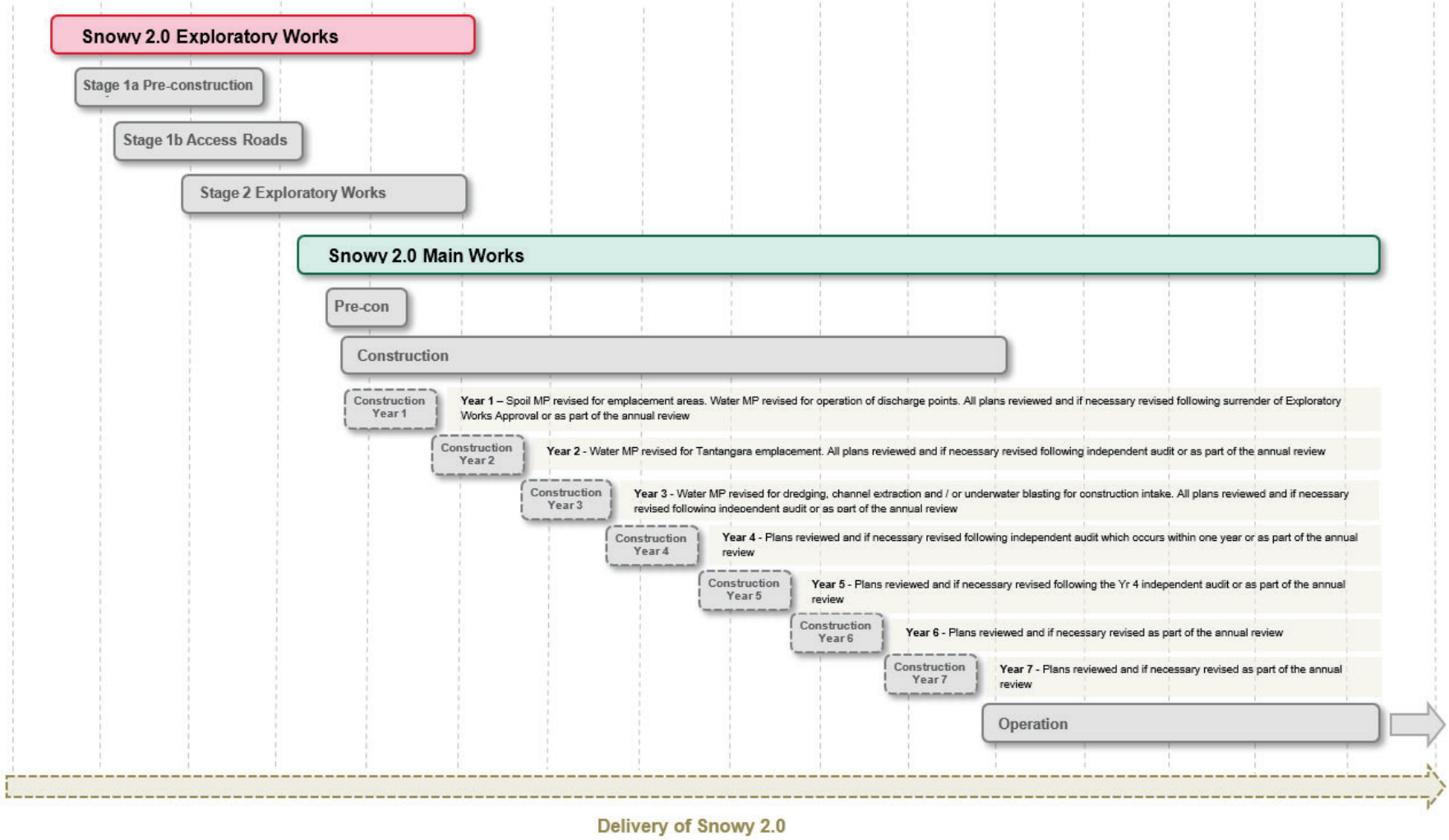


Figure 2-1: Delivery of Snowy 2.0

2.3.1. Snowy 2.0 Main Works

Pre-construction minor works

Pre-construction minor works occurred prior to construction and included the following:

- building/road dilapidation studies;
- survey works;
- installation of environmental impact mitigation measures, including the installation of monitoring equipment, erosion and sediment controls, and fencing provided that there is no clearing;
- archaeological investigation works (archival recording, archival research, salvage excavation or relocation of heritage items);
- minor clearing (ie slashing, lopping or pruning of vegetation) for the purpose of archival recording, archival research, salvage excavation or relocation of heritage items only.

Pre-construction minor works commenced following approval of the Environmental Management Strategy and Heritage Management Plan as permitted by the Infrastructure Approval. This is indicated within Section 4, Figure 4-3.

A Pre-construction Minor Works Management Plan was prepared and was included in earlier revisions of this Plan. Pre-construction minor works were therefore undertaken in accordance with the Infrastructure Approval, Main Works EIS, Main Works RTS, the Environmental Management Strategy, Heritage Management Plan, and the Pre-construction Minor Works Management Plan.

Construction

All other work required to be constructed on the project occurs during the construction stage. The construction elements of Snowy 2.0 Main Works include:

- construction compounds, portals, stockpile areas, yards, maintenance and laydown areas to provide areas for plant and equipment, and storage of construction materials, at Talbingo Reservoir, Lobs Hole, Marica, and Tantangara Reservoir;
- access tunnels and adits to support main tunnelling activities and construction of the underground power station complex;
- a construction logistics site at Rock Forest;
- site-based accommodation camps to house the temporary workforce at Lobs Hole, Marica and Tantangara Reservoir;
- road establishment and other access improvements and upgrades to allow access to construction sites;
- management of excavated rock from tunnelling and excavation activities, including:
    - permanent storage of excavated rock within Talbingo and Tantangara reservoirs;
    - temporary and/or permanent on-land storage within the Kosciuszko National Park and temporary and/or permanent storage outside of Kosciuszko National Park;
- temporary water supply for water required by construction activities;
- temporary water and wastewater treatment facilities where needed to manage the above sites and construction activities;
- continued use of the Lobs Hole substation for construction power if required; and

- establishment of barge access at Tantangara Reservoir for construction of the intake.

Construction works did not occur until approval of the Biodiversity Management Plan, Water Management Plan, Transport Management Plan, Spoil Management Plan and Natural Hazard Management Plan were granted. Prior construction to commencing at Rock Forest, the Construction Noise Management Plan – Rock Forest required approval which was granted 20 December 2020 for construction of the laydown area. A staged approach was taken with the Construction Noise Management Plan – Rock Forest Prior, therefore revision and further approval was required prior to placement of spoil at Rock Forest which was granted 28 March 2023. This is indicated within Section 4, Figure 4-3.

2.4. Operation

It must be noted that though the operational phase is described within this section, this Environmental Management Strategy does not apply to the operational phase of the project.

The operational phase of the project will occur following the construction phase. Operation of Snowy 2.0 will involve the transfer of water through the underground tunnels and power station to provide energy generation, as well as large-scale energy storage that will be available on-demand at critical times of peak demand, including times when renewable energy output or thermal generation is low. To do this, Snowy 2.0 will have two operating modes; energy generating mode and pumping mode (for large-scale energy storage Figure 2-4 provides an overview of the principles of the operation of Snowy 2.0.

Following the commencement of operation, both Tantangara and Talbingo reservoirs will have increased operational functions. Tantangara Reservoir will act as the head storage for generation from the Snowy 2.0 power station and will also act as storage for water pumped up from Talbingo Reservoir. Talbingo Reservoir will act as tail storage from Snowy 2.0 generation.

Due to these additional operational functions of the reservoirs, the short and longer term water levels, as well as the rates of water level rise and fall, are expected to experience some degree of change compared to the historical operations. Under the existing Snowy Scheme, the levels within the various reservoirs are subject to significant variability due to the design and construction of reservoirs, the environmental releases required by the Snowy Water Licence and variations of annual flows into the existing scheme. In operating the Snowy 2.0 power station, SHL will move water directly (in both directions) between Tantangara and Talbingo reservoirs (rather than in only one direction via Lake Eucumbene, Tumut Pond and Tumut 2 Pondage), and as a consequence will store water at different locations in the Snowy-Tumut Development. For example, more water is likely to be held for longer in Tantangara than was previously diverted from Tantangara Reservoir to Lake Eucumbene.

As a result of the operation of Snowy 2.0, the water level in Tantangara Reservoir will be more variable than historically. Notwithstanding this, the EIS determined that no additional land will be affected by the inundation and water storages will continue to be held within the footprint of the existing Full Supply Levels.

During operation, several service roads established during construction will be used to access surface infrastructure including the power station's vent shaft, the water intake structures, and the headrace tunnel surge shaft. Permanent access tunnels (the MAT and emergency egress, cabling and ventilation tunnel (ECVT)) will be used to enter and exit the power station. For some roads, permanent access by SHL will require restricted public access arrangements. Operational access arrangements are shown within Figure 2.8 of Appendix 2 of the Infrastructure Approval.

Table 2-1: Key activities for the phases of Snowy 2.0 Main Works

Phase	Key activity	Activities (summary)
Pre-construction minor works	Pre-construction works	• Building/road dilapidation studies • Survey works • Installation of environmental impact mitigation measures, including the installation of monitoring equipment, erosion and sediment controls, and fencing provided that there is no clearing • Archaeological investigation works (archival recording, archival research, salvage excavation or item relocation) • Minor clearing (ie slashing, lopping or pruning of vegetation) for the purpose of archival recording, archival research, salvage excavation or relocation of heritage items only
Construction	Construction of portal works, construction compounds, tunnelling support infrastructure, relevant access roads and ancillary infrastructure. These include: • Talbingo Portal; • Talbingo construction support areas; • Main Yard; • Emergency, cable and ventilation tunnel (“ECVT”) Portal (including Cable yard and Substation); • Main Access Tunnel (“MAT”) Portal; • Marica construction support areas; • Surge shaft yard; • Tantangara construction support areas; • Tantangara Portal; • Tantangara communication tower; • Marica communication tower.	• Installation of temporary and permanent safety measures including signage, barricades and any other equipment necessary • Installation and maintenance of temporary fencing for delineation of sensitive areas or other features • Installation and maintenance of environmental controls including establishment of short term and long-term erosion and sedimentation control systems and devices including sediment basins, wastewater treatment plants and drainage • Trimming of hazardous trees following pre-construction survey if required and as per assessment recommendations • Collection and storage of indigenous/native seed and alpine soda • Clearing and grubbing of vegetation and topsoil including stockpile management • Topsoil stripping and stockpiling • Short-term excavation and stockpiling of topsoil • Earthworks including trenching, excavation of cuttings, construction of fills including selected zone material, and placement of excess spoil in stockpiles • Utilisation of suitable material from necessary excavations for re-use in and around the site • Site preparation of all roads (new or upgraded) • Laying of road base, pavements, footpaths and drainage • Installation of road furniture including but not limited to barriers, line marking, guide posts and road signs • Construction of bridges and culverts where required • Construction of retaining walls where needed • Excavation or placement of fill for new road levels • Placement / replacement of topsoil and revegetation and other surface treatments to disturbed earth surfaces including lining of open drains • Installation of underground communications cable laid in trench, with some sections also underbored or bridged where suitable • Installation and operation of pipelines, pits and conduits to support the trunk services, including the use of trenching machines • Installation of construction power laid in trench, with some sections also underbored, bridged or constructed overhead where suitable • Direct drilling of cable trenches in sensitive areas • Installation of permanent power by buried cable, laid in trench, with some sections also underbored or bridged where suitable

Phase	Key activity	Activities (summary)
		• Establishment and operation of temporary facilities to support tunnelling such as a concrete batch plant, dewatering plant, fuel farm and bowser, explosives magazine • Establishment of a portal building and helipad at the MAT portal • Transport TBM and Supporting System • Assemble and launch the TBM through excavated trench/Launch Shaft/Portal • Receipt and use of precast segments • Establish temporary power supply system through generators • Drill and blast • Testing of excavated rock for suitability of placement where required • Transport of excavated rock from tunnels, adits, portals, and surge shafts to stockpile areas • Transport to and filling placement areas within the reservoirs and on land placement for construction pads and permanent land forming; • Installation of ground support to the portal face and within the tunnel such as rock bolts and shotcrete, canopy tubes, steel arches, precast concrete segments • Concrete works • Installation and testing of mechanical and electrical equipment • Other activities incidental to the activities undertaken with minor impacts such as removal and disposal of existing redundant infrastructure and minor structures • Ongoing use and maintenance of the facilities • Site stabilisation, progressive rehabilitation, weed and pest control • Utilisation of Helipads; • Access for project construction, maintenance and monitoring activities in relation to all above works, including Environmental monitoring and recording in accordance with approved management plans • Installation of wheel washes on entrances and exits to comply with conditions of Infrastructure Approval.
	Construction of accommodation camps including: • Lobs Hole Main Works accommodation camp (including Exploratory camp); • Marica accommodation camp; and • Tantangara accommodation camp.	• Installation of temporary and permanent safety measures including signage, barricades and any other equipment necessary • Fencing the perimeter of the site where required • Installation and maintenance of temporary fencing for delineation of sensitive areas or other features • Installation and maintenance of environmental controls including establishment of short term and long-term erosion and sedimentation control systems and devices including sediment basins • Trimming of hazardous trees following pre-construction survey if required and as per assessment recommendations • Collection, storage and propagation of indigenous/native seed and alpine soda • Clearing and grubbing of vegetation and topsoil including stockpile management • Topsoil stripping and stockpiling • Earthworks including excavation of cuttings, construction of fills and placement of excess spoils in pads and stockpiles, crushing, sorting and screening the material

Phase	Key activity	Activities (summary)
		• Earthworks including trenching, excavation of cuttings, construction of fills and backfilling of trenches, and placement of excess spoil in stockpiles • Installation and operation of utilities and associated plants to support the accommodation such as water, wastewater, power and communications • Installation of trunk services - pipes, pits and conduits • Installation of foundations and building modules and structures such as bedroom modules, mess and ablution facilities, kitchen facilities, offices, storage containers, waste management areas, laundry facilities, recreational areas • Installation of footpaths, roads and road furniture in accordance with any approved traffic management plans and traffic control plans in place for Main Works • Ongoing occupation and operation of the accommodation camps for the duration of construction activities • Other activities incidental to the activities undertaken with minor impacts such as removal and disposal of existing redundant infrastructure and minor structures • Site stabilisation, progressive rehabilitation and weed control • Access for project construction, maintenance and monitoring activities in relation to all above works, including environmental monitoring and recording in accordance with approved management plans.

	Tunnelling and subsurface works.
	These include:
	• Talbingo Adit;
	• Tailrace Tunnel;
	• Main Access Tunnel;
	• ECVT;
	• Power Station Cavern Complex;
	• Tailrace Surge tank;
	• Ventilation shaft;
	• Draft tube and collector tunnels;
	• Pressure tunnels;
	• Headrace Surge tank
	• Headrace Tunnel; and
	• Tantangara Adit.
	• Marica Aditt (mod 3)
		• Installation of temporary and permanent safety measures including signage, barricades and any other equipment necessary
		• Installation and maintenance of temporary fencing for delineation of sensitive areas or other features
		• Installation and maintenance of environmental controls including establishment of short term and long-term erosion and sedimentation control systems and devices including sediment basins, waste water treatment plants and drainage
		• Installation and assembly of:
		  • Ventilation;
		  • Emergency power generation;
		  • Air compressors;
		  • Water tanks;
		  • Workshops;
		  • Conveyor belts, etc to support tunnelling
		• Tunnelling including horizontal excavation using drill and blast, probing, TBM, trenchers, ground reinforcement, grouting, sealing and lining and ventilation
		• Testing of excavated rock for suitability of placement where required
		• Transport of excavated rock from tunnels, adits, portals, and surge shafts to stockpile areas
		• Execute power waterways, power station cavern and associated tunnel infrastructure
		• Ongoing use and maintenance of the facilities
		• Other activities incidental to the activities undertaken with minor impacts such as removal and disposal of existing redundant infrastructure and minor structures
		• Access for construction, operation, maintenance and monitoring activities in relation to all above works, including environmental

Phase	Key activity	Activities (summary)
		• monitoring and recording in accordance with approved management plans
	Reservoir works These include: • Talbingo Water Intake and associated structures; • Talbingo Barge launch area (Exploratory Works); • Tantangara Water Intake and associated structures; • Tantangara Barge launch area; and • Tantangara Fish Screen.	• Installation of temporary and permanent safety measures including signage, barricades and any other equipment necessary • Installation and maintenance of temporary fencing for delineation of sensitive areas or other features • Installation and maintenance of environmental controls including establishment of short term and long-term erosion and sedimentation control systems and devices including sediment basins, and drainage • Trimming of hazardous trees following pre-construction survey if required and as per assessment recommendations • Clearing and grubbing of vegetation and topsoil including stockpile management • Short-term excavation and stockpiling of topsoil • Cut excavation and benching at intake and gate shaft to create retaining temporary rock plug to allow dry works zone; • Installation of permanent rock anchors • Concrete works • Removal of rock plug • Excavation and tunnelling of permanent approach channel • Earthworks including trenching, excavation of cuttings, construction of fills and backfilling of trenches, and placement of excess spoil in stockpiles • Dredging, channel extraction and underwater blasting in the reservoirs • Utilisation of suitable material from necessary excavations for re-use in and around the site • Installation of diffusers for water treatment plant discharge into Talbingo and Tantangara reservoirs • Operation of discharge points • Installation of underground communications cable laid in trench, with some sections also underbored or bridged where suitable • Installation of pipelines, pits and conduits to support the trunk services • Installation of footpaths, roads and road furniture in accordance with any approved traffic management plans and traffic control plans in place for Main Works • Installation of fish control structures • Placement / replacement of topsoil and revegetation and other surface treatments to disturbed earth surfaces including lining of open drains • Other activities incidental to the activities undertaken with minor impacts such as removal and disposal of existing redundant infrastructure and minor structures • Site stabilisation and progressive rehabilitation • Ongoing use of the facilities • Other activities incidental to the activities undertaken with minor impacts such as removal and disposal of existing redundant infrastructure and minor structures • Access for project construction, maintenance and monitoring activities in relation to all above works, including environmental monitoring and recording in accordance with approved management plans
	Spoil emplacement areas	• Installation of temporary and permanent safety measures including signage, barricades and any other equipment necessary

Phase	Key activity	Activities (summary)
	These include: • Ravine Bay; • GF01; • Lobs Hole; • Tantangara; and • Rock Forest. • Marica (temporary)	• Installation and maintenance of temporary fencing for delineation of sensitive areas or other features • Installation and maintenance of environmental controls including establishment of short term and long-term erosion and sedimentation control systems and devices including sediment basins • Trimming of hazardous trees following pre-construction survey if required and as per assessment recommendations • Clearing and grubbing of vegetation and topsoil including stockpile management • Stockpiling of topsoil and other materials • Earthworks including excavation of cuttings, construction of fills and placement of excess spoils in pads and stockpiles, crushing, sorting and screening of material • Testing of excavated rock for suitability of placement where required • Utilisation of suitable material from necessary excavations for re-use in and around the site, including for embankments, construction pads, operational pads and structures and in road works • Transport to and filling of areas within the reservoirs and onland placement for construction pads and permanent landforming • Stockpile management • Final landforming • Installation of footpaths, roads and road furniture in accordance with any approved traffic management plans and traffic control plans in place for Main Works • Management of Naturally Occurring Asbestos (NOA) and encapsulation • Placement / replacement of topsoil and revegetation and other surface treatments to disturbed earth surfaces including lining of open drains • Other activities incidental to the activities undertaken with minor impacts such crushing and screening plant, removal and disposal of existing redundant infrastructure and minor structures • Site stabilisation, progressive rehabilitation and weed control • Access for project construction, maintenance and monitoring activities in relation to all above works, including environmental monitoring and recording in accordance with approved management plans
	Ancillary activities	• Geotechnical investigation works and soil sampling • Installing groundwater bores in the Ravine beds on site for water supply • Establishing a temporary site office • Installation of environmental controls, where required • Utilisation of barge launch areas • Marine access to geotechnical monitoring points, reservoir spoil emplacement areas; reservoir works and fish screen • Marine based project construction support • Maintenance and repair of submerged fibre optic cable, water supply and waste service pipeline • Access for survey, maintenance and monitoring activities in relation to all above works, including environmental monitoring and recording in accordance with approved management plans
Operation	Operation of Snowy 2.0 Main Works	• Transfer of water between Tantangara Reservoir and Talbingo Reservoir to provide electricity generation

Phase	Key activity	Activities (summary)

		• Large-scale energy storage
		• Operation of the permanent infrastructure including the:
		  • intake and gate structures and surface buildings at Tantangara and Talbingo Reservoirs;
		  • fish control structures on Tantangara Creek and Tantangara Reservoir wall;
		  • power waterway tunnels primarily comprising the headrace tunnel, headrace surge structure, inclined pressure tunnel, pressure pipelines, tailrace surge tank and tailrace tunnel;
		  • underground power station complex comprising the machine hall, transformer hall, ventilation shaft and minor connecting tunnels;
		  • access tunnels (and tunnel portals) to the underground power station comprising the MAT and ECVT;
		  • portal building and helipad at the MAT portal;
		  • communication, water and power supply including the continued use of the Lobs Hole substation;
		  • cable yard adjacent to the ECVT portal to facilitate the connection of Snowy 2.0 to the NEM; and
		  • access roads, permanent bridge structures and barge launch ramps needed for the operation and maintenance of Snowy 2.0 infrastructure
		• Maintenance activities such as:
		  • maintenance of equipment and systems within the power station complex, intake structures, gates and control buildings;
		  • maintenance of access roads (vegetation clearing, pavement works, snow clearing);
		  • dewatering the headrace and tailrace tunnel (estimated once every 15 to 50 years, or as required);
		  • maintenance of electricity and communications infrastructure (cables, cable yard, cable tunnel)
		• Completion of rehabilitation
		• Rehabilitation monitoring

2.5. Snowy 2.0 Exploratory Works

The Exploratory Works project commenced in March 2019 (SSI-9208) with the works in progress currently being managed by the main works approval (SSI-9687) as per Schedule 2 of the main works approval.

Key elements of the Exploratory Works project are summarised below:

- pre-construction minor works (not construction activities);
- installation of environmental impact mitigation measures, including the installation and use of monitoring equipment, erosion and sediment controls, and fencing;
- minor clearing or translocation of native vegetation within the approved disturbance footprint for the pre-construction minor works;
- borehole drilling and geophysical surveys, and horizontal and other test drilling;
- the exploratory tunnel which is approximately 3.1 km long leads to the site of the underground power station. Excavation of the tunnel occurred through a method of both drill and blast and tunnel boring machine (TBM);

- a portal construction pad for the exploratory tunnel. This provided the entrance structure to the tunnel and an area for infrastructure and equipment needed to support tunnelling activities;
- road upgrades for transport and delivery of the TBM and TBM equipment;
- a turnaround area on Link Road;
- laydown areas at Talbingo north;
- an accommodation camp for the construction workforce;
- barge access infrastructure;
- excavated rock management. The excavated rock will be managed by a combination of the following options:
    - re-use – suitable material was used as construction materials for roads or similar;
    - on land placement – material was placed in one of two on land emplacement areas. The eastern emplacement area was designed to safely treat reactive material during temporary storage. The western emplacement area was used for temporary storage of materials for re-use or offsite disposal;
- services infrastructure such as diesel-generated power, water and communication;
- establishment of construction power connection to the transmission line at Lobs Hole;
- diesel storage and generators for TBM power supply until the Lobs Hole substation is commissioned;
- removal of dangerous trees on Lobs Hole Ravine Road;
- light vehicle access to Lobs Hole via Lobs Hole Ravine Road north;
- maintenance and rehabilitation of existing tracks required for groundwater monitoring and geotechnical investigations; and
- post-construction revegetation and rehabilitation, management and monitoring.

2.6. Snowy 2.0 Segment Factory

On 31 March 2020, the Minister for Planning and Public Spaces approved the Snowy 2.0 Segment Factory (Segment Factory). The Segment Factory is located in in the industrial area at Polo Flat, Cooma and will produce concrete segments to line the underground tunnels for both Snowy 2.0 Main Works and the Exploratory Works project.

The Segment Factory is located on industrial-zoned land in the south-eastern corner of Polo Flat, an industrial zoned area located to the east of Cooma. The operational facility contains a concrete batching plant, a warehouse building for the manufacture of precast concrete segments (the precast building), uncovered storage areas for raw material and segments, vehicle parking areas and associated offices and workshops.

The Segment Factory will produce and transport approximately 14,500 precast reinforced concrete tunnel rings (containing 130,500 segments) to be exclusively used on the Snowy 2.0 project. The concrete segments are transported to Lobs Hole, Tantangara Reservoir, and the laydown area at Rock Forest, via the Monaro Highway and Snowy Mountains Highway.

In accordance with the Infrastructure Approval for the Snowy 2.0 Segment Factory (CSSI 10034), a separate Environmental Management Strategy and relevant management plans have been prepared the construction and operation of the Segment Factory.

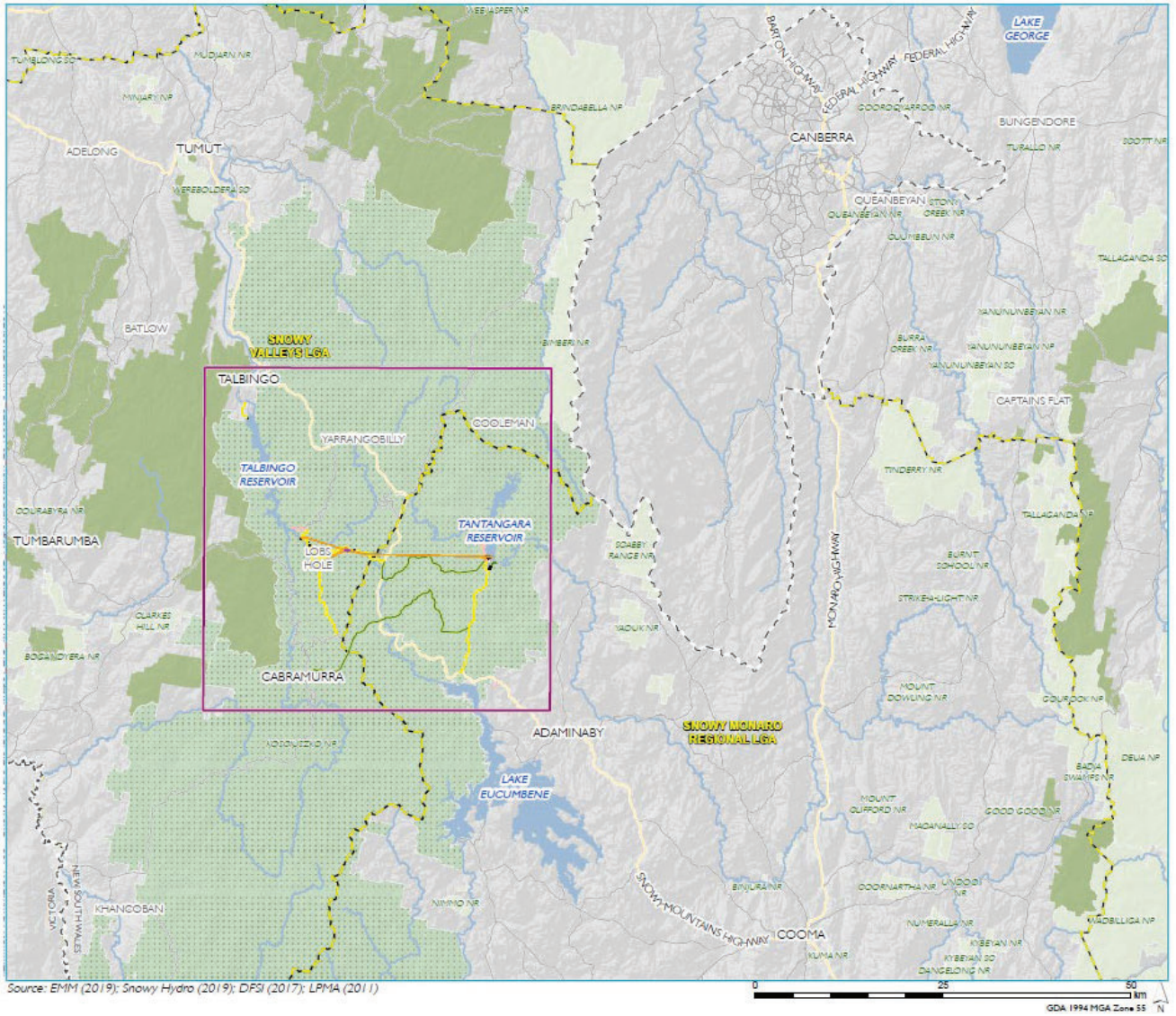


Figure 2-2: Regional location of Snowy 2.0 Main Works

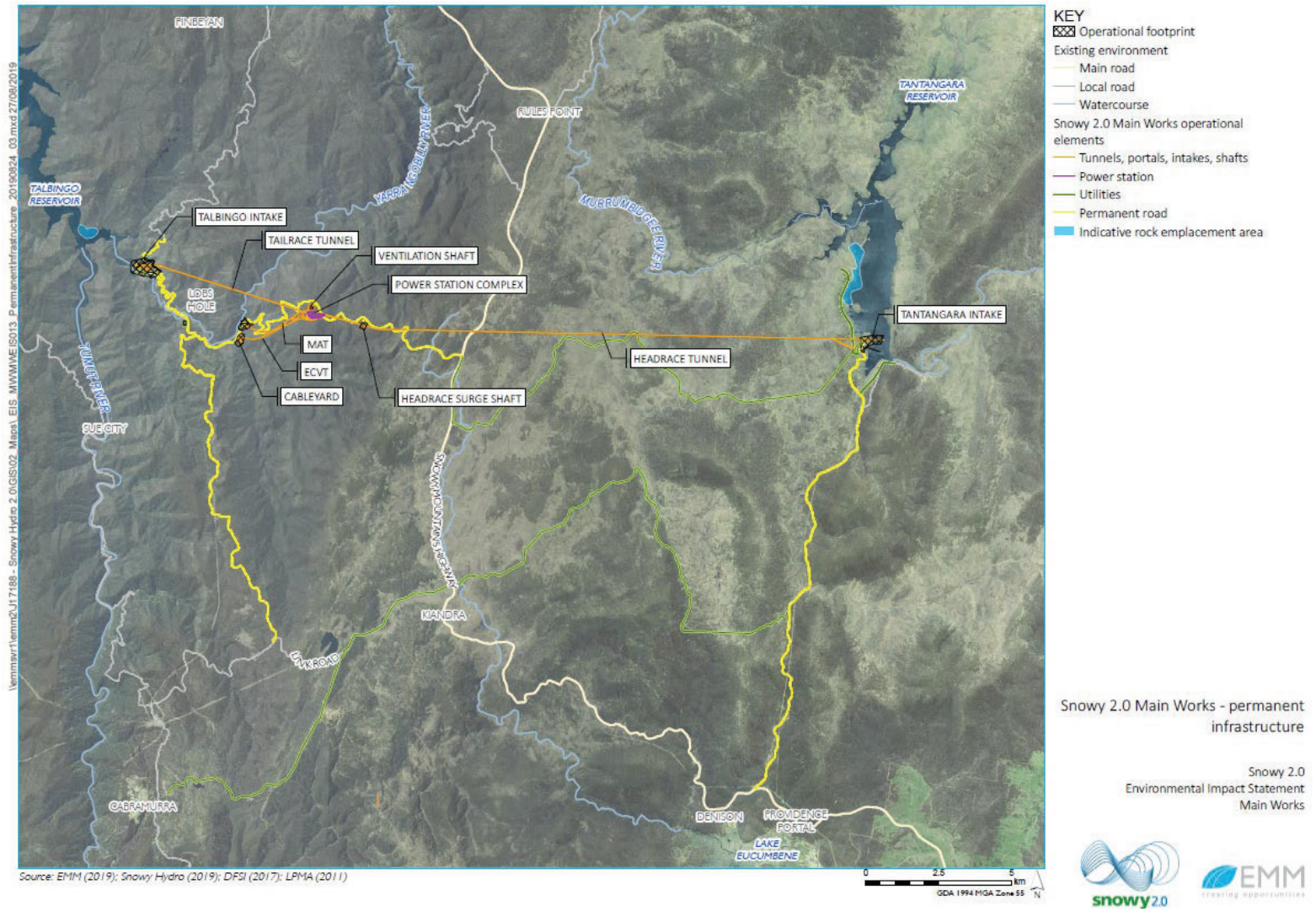


Figure 2-3: Snowy 2.0 Main Works – overview of permanent infrastructure

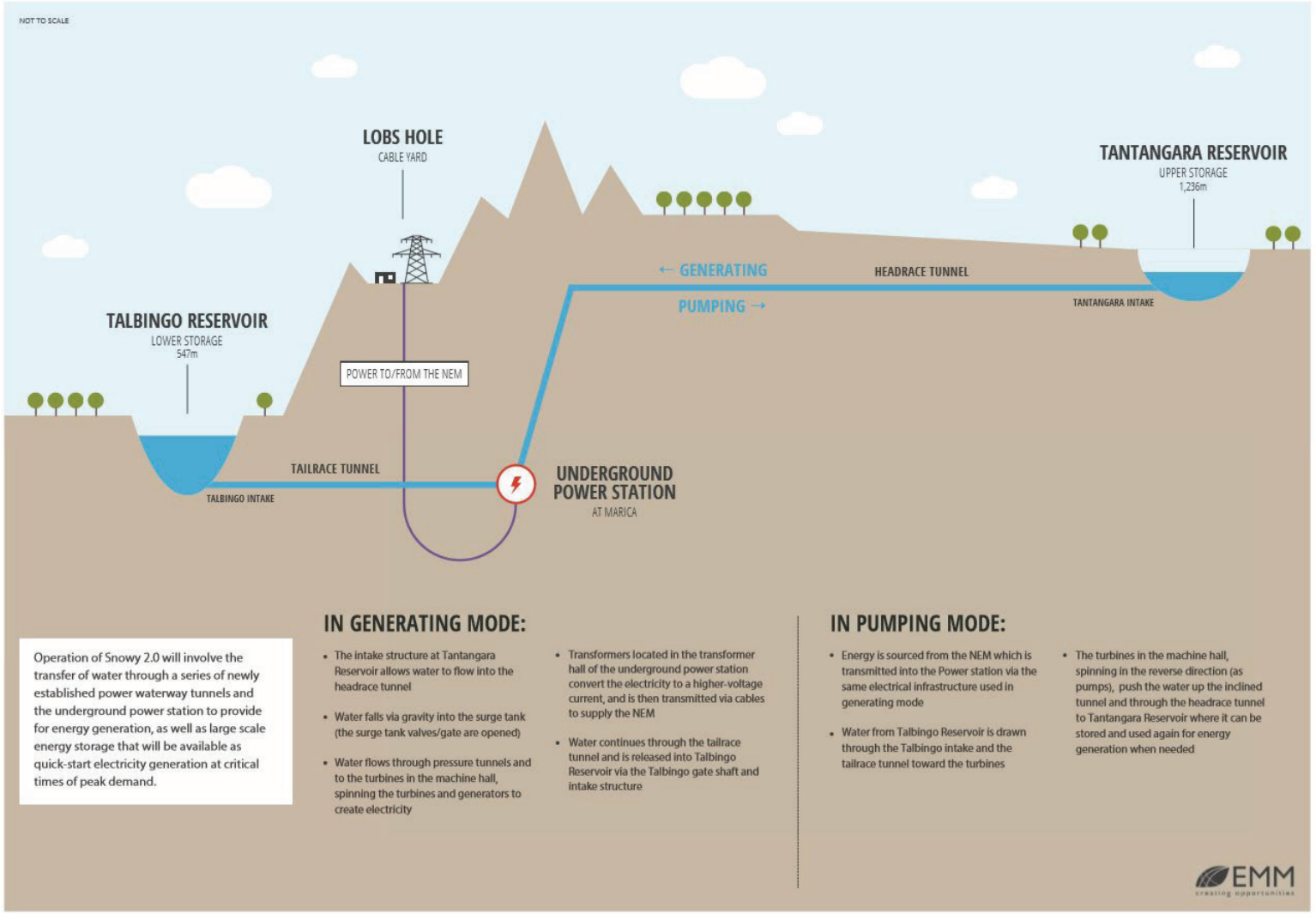


Figure 2-4: Operating principles of Snowy 2.0 Main Works (EIS, EMM)

2.7. Disturbance area

A key refinement following public exhibition of the Main Works EIS was a change to and clarification of disturbance area terminology.

The disturbance area is an estimation of the area required for construction works based on the current level of project design. It is expected that the precise location of the disturbance area may move within the broader construction envelope and consequently there will be some further refinements to the disturbance area.

Note that the approved Exploratory Works disturbance area (SSI 9208) will also be a disturbance area for Main Works, even following the surrender of the Exploratory Works Approval. The cumulative disturbance area for Main Works and the approved Exploratory Works project is therefore presented in the Appendix 2 of the Infrastructure Approval (included in Appendix A1 of this EMS).

The revised disturbance area terminology as defined within the Infrastructure Approval and Submissions Report is detailed within Table 2-2. An example of the terminology is provided in Figure 2-5.

Table 2-2: Disturbance area terminology

Term	Definition	Reasoning
Project area	The project area is the broader region within which Snowy 2.0 will be built and operated, and the extent within which direct impacts from Snowy 2.0 Main Works are anticipated.	The project area does not represent a footprint for the construction works, but rather indicates an area that was investigated during environmental assessments.
Construction envelope	The envelope within which the disturbance area of the development may be located.	As detailed design continues, final siting of the infrastructure (i.e. the disturbance area) can move within the assessed construction envelope subject to recommended environmental management measures and provided it does not exceed the limits defined by the construction envelope.
Disturbance area	The area within the construction envelope where development may be carried out; the precise location of the disturbance area will be fixed within the construction envelope following final design.	

Figure 2-5: Disturbance area and construction envelope

2.8. Works within the Construction Envelope

The disturbance area for the project is the area within the construction envelope where development may be carried out. The precise location of the disturbance area will be fixed within the construction envelope following final design.

Where project works are required to occur in locations outside of the disturbance boundary, FGJV will review the proposed area of clearing against the limits included within condition 5 of schedule 2. The review will be undertaken to ensure that the maximum disturbance area and maximum native vegetation clearing remains within the total areas nominated within the condition. These area limits are included within Table 2-3.

All vegetation clearing which occurs on the project will be monitored regularly to record the extent of clearing which has occurred, and to ensure that the clearing limits are not exceeded.

Table 2-3: Maximum disturbance area and native vegetation clearing

Matter	Exploratory Works	Main Works	Total
Maximum Disturbance Area	126 ha	504 ha	630 ha
Maximum Native Vegetation Clearing	107 ha	425 ha	532 ha

Note that the areas in Table 2-3 relate to direct disturbance and clearing and do not include the indirect impacts of this disturbance and clearing.

2.9. Works outside of boundaries

Except for immediate works to protect life and property, approval from relevant agencies is required for any works outside the EIS boundary.

In the event of an unexpected disturbance being identified outside the EIS boundary, this is a reportable event under Condition 7 of Schedule 4. If the area of unexpected disturbance requires remediation, so long as the area is less than 1ha and has been assessed as part of the original EIS assessment, the Project will require approval from relevant agencies, however, will not require a modification to the approval, prior to commencing emergency remediation works. This relates only to areas requiring emergency intervention, and the minimal amount of land required to gain access to the area requiring remediation works.

Consultation with the required regulatory authorities, including DPE and NPWS will be undertaken prior to accessing the area in accordance with the Trigger Action Response Plan (TARP) Emergency Response Outside Project Boundary Regulatory Communication Plan (Appendix A6).

2.10. Change Management

Refinements to the project may occur during project delivery as detailed design occurs and construction methodologies are confirmed.

Design changes or changes in scope will be communicated to the FGJV Environmental Manager either through formal change processes or via informal communications.

In accordance with section 5.25(2) of the EP&A Act, a modification to the Infrastructure Approval is not required if the infrastructure as modified will be consistent with the existing approval. Proposed changes will therefore be assessed for consistency against the approved project.

FGJV will undertake an assessment of the proposed changes for potential impacts and compare them to the proposed impacts for the assessed and approved project. Consideration will also be given to requirements of the Commonwealth Approval issued under *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act).

Once prepared, consistency assessments will be submitted to SHL for review and determination by SHL's Representative.

Changes deemed to be consistent with the approved project can proceed. Changes that are not consistent with the Approval will require modification under Section 5.25 of the EP&A Act and determination by the Minister for Planning and Public Spaces.

2.11. Construction Hours

2.11.1. Working hours

Construction will be carried out 24 hours per day, seven days per week.

3. PLANNING

3.1. Legal and other Requirements

A register of legal and other requirements for the project is included in Appendix A2. This register will be maintained throughout the project and updated as required. An online subscription service will provide regular notifications. Updates will include new/amended approvals and licences or updates to legislation.

Any changes made to the legal requirements register will be communicated to the wider team where necessary through toolbox talks, specific training or other methods detailed in Section 5.

3.2. Conditions of Approval

The conditions from the Main Works Infrastructure Approval relevant to the preparation of this EMS are detailed in Table 3-1.

The conditions relevant to the Exploratory Works Infrastructure Approval have been included within Appendix A6 and retained within this version for historical compliance purposes.

Table 3-1: Conditions relevant to the EMS – Main Works

Condition	Requirement	Where addressed
Environmental Management		
Environmental Management Strategy		
Schedule 4, condition 1	Prior to the commencement of the development of the Main Works, the Proponent must prepare an Environmental Management Strategy for the development to the satisfaction of the Planning Secretary. This strategy must:	This document Section 1.6 and Section 1.7
	(a) provide the strategic framework for the environmental management of the development;	Section 4 Section 4.1.3 Section 4.1.4
	(b) identify the statutory approvals that apply to the development;	Section 3.1 Section 3.4 Table 3-4 Appendix A2 – Legal and other requirements
	(c) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development; and	Section 4.2 Section 4.2.2 Table 4-6

Condition	Requirement	Where addressed
	(d) describe the procedures that would be implemented to: • keep the local community and relevant agencies informed about the progress of the development; • receive, handle, respond to, and record complaints; • resolve any disputes that may arise during the development; • respond to incidents and/or non-compliances; and • respond to any emergency.	Section 6.1.2 Section 6.2 Section 6.2.1 Section 7, Section 7.2.4, Section 8.4.1 Section 7.3
Schedule 4, condition 2	The Proponent must implement the approved Environmental Management Strategy.	This document Section 1.7
Staging and Updating of Strategies, Plans or Programs		
Schedule 4, condition 3	With the agreement of the Planning Secretary, the Proponent may submit any strategy, plan or program required under this approval on a staged basis. The Proponent may also submit updates to approved strategies, plans or programs at any time. With the agreement of the Planning Secretary, the Proponent may prepare the staged or updated strategy, plan or program without undertaking all the consultation required under the applicable condition in this approval. *Notes:* • While any strategy, plan or program may be submitted on a progressive basis, the Proponent will need to ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times. • If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.	Section 1.9.1
Update of Strategies, Plans or Programs		
Schedule 4, condition 4	Within 3 months of the following, unless the Planning Secretary agrees otherwise, the Proponent must review and (if necessary) update the approved strategies, plans and programs for the development to the satisfaction of the Planning Secretary: (a) the submission of an incident report under condition 6 below; (b) the submission of an independent environmental audit report under condition 10 below; and (c) any modification to the conditions of this approval; or (d) a direction of the Planning Secretary under condition 4 of schedule 2. *Note: 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.*	Section 1.9.1
Monitoring		
Schedule 4, condition 5	The Proponent may undertake monitoring outside the construction envelope of the development provided this monitoring is required under the conditions of this approval and authorised under an approved management plan.	Section 8.2.1
Reporting		
Notification of Dates		
Schedule 4, condition 6	At least 1 week prior to the relevant notification date, the Proponent must notify the Department, NPWS and NSW DPI via the Major Projects Portal of the date of the: (a) commencement of the development of the Main Works;	Section 8.4.3

Condition	Requirement	Where addressed
	(b) commencement of development on the following sites under this approval: • Marica site; • Plateau site; • Tantangara site; and • Rock Forest site; (c) commencement and completion of the required road upgrades; (d) commencement and completion of construction; (e) commencement of commissioning and testing the power station; (f) completion of the initial rehabilitation of the site following construction; (g) completion of the ecological rehabilitation of the site, apart from the areas used for operations; (h) commencement and completion of operations; (i) commencement of decommissioning the development; (j) completion of the final rehabilitation of the site; and (k) completion of the ecological rehabilitation of the areas used for operations.	
Incident Reporting		
Schedule 4, condition 6[1]	The Proponent must notify the Department and NPWS via the Major Projects Portal immediately after it becomes aware of an incident on site. This notice must set out the location and nature of the incident.	Section 7.2.1
Reporting Non-compliances		
Schedule 4, condition 7	Within 7 days of becoming aware of any non-compliance with the conditions of this approval, the Proponent must notify the Department via the Major Projects portal of the non-compliance. This notice must set out the non-compliance, the reasons for the non-compliance (if known) and what actions have been taken, or will be taken, to address the non-compliance.	Section 8.4.1 Section 7.2.1
Reporting on Environmental Performance		
Schedule 4, condition 8	The Proponent must provide regular reporting on the environmental performance of the development on its website in accordance with the requirements in any approved strategies, plans or programs.	Section 8.4.5
Independent Environmental Audit		
Schedule 4, condition 9	Within one year of the commencement of construction and every 3 years thereafter, unless the Planning Secretary agrees or directs otherwise, the Proponent must commission and pay the full cost of an Independent Environmental Audit of the development. This audit must: (a) be conducted by a suitably qualified, experienced and independent team of experts, including a lead auditor, whose appointment has been endorsed by the Planning Secretary; (b) include consultation with the relevant agencies; (c) assess the environmental performance of the development and whether it is complying with the requirements in this approval (including the requirements of any approved strategy, plan or program); (d) review the adequacy of the approved strategies, plans or programs for the development; and (e) recommend appropriate measures or actions to improve the environmental performance of the development, and/or any approved strategies, plans or programs.	Section 8.3
Schedule 4, condition 10	Within 12 weeks of commissioning this audit, unless the Planning Secretary agrees otherwise, the Proponent must submit the following via the Major Projects Portal:	Section 8.3.2

Condition	Requirement	Where addressed
	(a) a copy of the audit report; (b) its response to the recommendations in the audit report; and (c) a copy of the proposed audit action plan to address the recommendations.	
Schedule 4, condition 11	The Proponent must implement any approved audit action plan for the development.	Section 8.3.2
Access to Information		
Schedule 4, condition 12	From the commencement of the development of the Main Works until the completion of the ecological rehabilitation of the areas used for operations, the Proponent must: (a) make copies of the following information publicly available on its website: • the documents referred to in the definition of the Exploratory Works and Main Works; • current statutory approvals for the development; • approved strategies, plans or programs; • a comprehensive summary of the monitoring results of the development, reported in accordance with the requirements in the conditions of this approval, or any approved strategies, plans and programs; • a monthly summary of complaints; • a record of all incidents and non-compliances; • any independent environmental audit, and the Proponent's response to the recommendations in any audit; • any approved audit action plan; • any other matter required by the Planning Secretary; (b) keep this information up to date.	Section 8.4.5

[1] This condition number is repeated within the Approval.

3.3. Revised Environmental Management Measures

Environmental safeguards and management measures are included in the EIS in Appendix G. During preparation of the Submissions Report, revised environmental management measures (REMMs) were developed and included in Appendix C of the Submissions Report. A tracked change version of the REMMs was provided in the Additional Information provided to the Department on 24 March 2020 (*Snowy 2.0 Main Works – Preferred Infrastructure Report – Response to request*).

REMMs which reference a Construction Environmental Management Plan or EMS are included within Table 3-2 and Table 3-3. These requirements are not detailed within this EMS, but instead within the relevant management plans listed within the final column.

The Main Works REMMs relevant to the EMS are listed in Table 3-2, whilst the relevant Exploratory Works REMMs are included within Table 3-3.

Table 3-2: Revised environmental management measures relevant to the EMS – Main Works

Impact	Ref #	Revised environmental management measures	Where addressed
Contaminated soil management	CONTAM 03	Protocols for the management of contaminated soil during construction will be included in the CEMP or EMS.	Contaminated Land Management Plan

Impact	Ref #	Revised environmental management measures	Where addressed
during construction			
Unexpected finds	CONTAM 08	An unexpected finds procedure will be included in the CEMP. Workers will be trained to identify potential contamination that may be encountered during construction.	Contaminated Land Management Plan

The REMMs relevant to the EMS from the Exploratory Works RTS are listed within Table 3-3.

Table 3-3: Revised environmental management measures relevant to the EMS – Exploratory Works

Impact	Ref #	Revised environmental management measures	Where addressed
Impacts to soil resources	SOIL01	Soil management procedures (including stripping, stockpiling and application) will be implemented as part of the CEMP. The objectives of soil management will be to: • preserve as much of the topsoil and subsoil as possible; • minimise the risk of contamination; • minimise the risk of any topsoil degradation or compaction during construction and following reinstatement; • ameliorate subsoil where required for use in rehabilitation works; • minimise topsoil mixing with unsuitable soil and spoil materials during stripping and stockpiling; and • ensure reinstatement of soil horizons in the correct order and required depths to allow for rehabilitation.	Spoil Management Plan
Geodiversity – rock streams	GEO01	Measures to avoid and minimise impacts to geodiversity features will be implemented as part of the CEMP and include: • digging the road deeper into the rock stream should be avoided where practical, and excavations that take place to widen the road should be undertaken on the upslope side of the road; • appropriate drainage should be constructed under the road to ensure no build-up of water occurs above the road, within the rock stream, during heavy rain; • educational signage should be provided in a nearby suitably widened area to provide information on the periglacial rock stream geoheritage features; • if any works are required to stabilise upslope sections of rock stream it is recommended that open mesh wire fencing is used so the general public and scientists can see and appreciate the architecture of the deposit. Building a solid wall or spraying concrete on the upslope side should be avoided.	Heritage Management Plan
Geodiversity – fossiliferous beds	GEO02	Measures to avoid and minimise impacts to geodiversity features will be implemented as part of the CEMP and include: • representative excavated spoil is to be preserved off site so that palaeontologists (from various research organisations) can look through the fresh material and collect fossil specimens for scientific research and curation in their respective collections; and • depending on the option of road upgrades to be implemented, interpretive signs could be installed in an appropriate location near the cuttings to highlight features in the exposures,	Heritage Management Plan

Impact	Ref #	Revised environmental management measures	Where addressed
		provided the fossils were protected from being easily collected.	
Spills of hydrocarbons	WAT11	Procedures to address spills and leaks will be developed and implemented as part of the CEMP.	Water Management Plan
Refuelling	M1.10	A refuelling protocol will be developed for in-reservoir borehole drilling and will be included in the Construction Environment Management Plan (CEMP).	Water Management Plan

3.4. EPBC Act Approval conditions

The conditions from the EPBC Act Approval (EPBC 2018/8322) relevant to the EMS are detailed in Table 3-4.

Table 3-4: EPBC conditions relevant to the EMS – Main Works

Condition	Requirement	Where addressed
Notification of the commencement of the action		
Condition 28	The approval holder must notify the Department in writing of the date of commencement of the action within 10 business days after the date of commencement of the action.	Section 8.4.3
Compliance records		
Condition 29	The approval holder must maintain accurate and complete compliance records.	Section 8.4.2
Preparation and publication of plans		
Condition 31	The approval holder must: (a) submit plans required by conditions 18, 22 and 24 of the NSW approval and conditions 18 and 22 of this approval for consultation purposes, electronically to the Department; (b) publish each plan approved by the NSW Planning Secretary or Director-General of NSW Department of Primary Industries on the website within 20 business days of the date the plan is approved, unless otherwise agreed to in writing by the Minister; (c) exclude or redact sensitive ecological data from plans published on the website or provided to a member of the public; and (d) keep plans published on the website until the end date of this approval, unless otherwise agreed to in writing by the Minister.	Section 1.6 and Section 8.4
Annual compliance reporting		
Condition 33	The approval holder must prepare a compliance report for each 12 month period following the date of commencement of the action, or otherwise in accordance with an annual date that has been agreed to in writing by the Minister. The approval holder must: (a) publish each compliance report on the website within 60 business days following the relevant 12 month period; (b) notify the Department by email that a compliance report has been published on the website and provide the weblink for the compliance report within five business days of the date of publication; (c) keep all compliance reports publicly available on the website until this approval expires, unless otherwise agreed to in writing by the Minister; (d) exclude or redact sensitive ecological data from compliance reports published on the website; and	Section 8.4.2

Condition	Requirement	Where addressed
	(e) where any sensitive ecological data has been excluded from the version published, submit the full compliance report to the Department within 5 business days of publication. Note: Compliance reports may be published on the Department's website.	
Reporting incidents and non-compliances		
Condition 34	The approval holder must notify the Department in writing of any incident as soon as practicable after becoming aware of the incident and no later than two business days. The notification must specify: (a) a short description of the incident; and (b) the location (including co-ordinates), date, and time of the incident. In the event the exact information cannot be provided, provide the best information available.	Section 7.2.3
Condition 35	The approval holder must provide to the Department in writing the details of any incident or non-compliance with the conditions or commitments made in plans within 10 business days after becoming aware of the incident or non-compliance, specifying: (a) any condition that is or may be in breach; (b) any corrective action or investigation which the approval holder has already taken or intends to take in the immediate future; (c) the potential impacts of the incident or non-compliance on protected matters; and (d) the method and timing of any remedial action that will be undertaken by the approval holder.	Section 7.2.3 and Section 8.4.1
Independent audits		
Condition 36	The approval holder must ensure that independent audits of compliance with the conditions are conducted as requested by the Minister.	Section 8.3
Condition 37	For each independent audit, the approval holder must: (a) provide the name and qualifications of the independent auditor and the draft audit criteria to the Department; (b) only commence the independent audit once the audit criteria have been approved in writing by the Department; and (c) submit an audit report to the Department within the timeframe specified in the approved audit criteria.	Section 8.3

3.5. Approvals, Permits and Licences

SHL and/or FGJV will obtain licences, permits and approvals as required throughout delivery of the project. Copies of licences, approvals and permits shall be held on site with files available for audit and inspection purposes.

A summary of the approvals, licences and permits detailed is shown in Table 3-5 below.

Environment Protection Licence (EPL) 21266 was issued for the project for the scheduled activity of extractive activities for the Exploratory Works phase.

The premises boundary for the Exploratory Works EPL was expanded to encompass both Exploratory Works and Main Works activities and the governing scheduled activity for Main Works was revised to electricity generation.

A Construction Lease was established with NPWS (with an accompanying Works Access Licence), in order to carry out Snowy 2.0 Main Works.

Table 3-5: Approvals, licences and permits summary table

Legislation	Requirement	Agency	Responsibility	Timing
Environmental Planning and Assessment Act 1979	Infrastructure Approval under the EP&A Act	Department of Planning, Industry and Environment	SHL	Prior to the commencement of the relevant infrastructure. Approval for the project was granted on 20 May 2020 by the Minister for Planning and Public Spaces under Section 5.19 of the EP&A Act.
Environment Protection and Biodiversity Conservation Act 1999	Proposed action	Department of Climate Change, Energy, the Environment and water(DCCEEW)	SHL	The project has been determined by DCCEEW to be a controlled action, and therefore requires further approval under the *Environment Protection and Biodiversity Conservation Act 1999*. The referral number is EPBC 2018/8322.
Protection of the Environment Operations Act 1997	Environment Protection Licence	Environment Protection Authority	SHL	EPL 21266 has been issued for the project for the scheduled activity of extractive activities for the Exploratory Works phase. The premises boundary for the Exploratory Works EPL was expanded to encompass both Exploratory Works and Main Works activities and the governing scheduled activity for Main Works was revised to Electricity Generation.
Water Management Act 2000	Water access licence (section 60)	Water Group	SHL	SHL have secured three Water Access Licences for the project: • WAL42960 – Groundwater licence; • WAL42407 – Surface water licence; and • WAL43544 – Surface water licence The four licences allow for direct and indirect take of groundwater from the Lachlan Fold Bent (LFB) Murray Darling Basin (MDB) groundwater source, direct take from the Upper Tumut water source (from within Talbingo Reservoir) and direct take from Tantangara (from within Tantangara Reservoir).
	Controlled activity approvals and aquifer interference approvals (section 91)	Water Group	SHL	In accordance with s 5.23 of the EP&A Act, SSI projects are exempt from requiring an activity approval under section 91 (other than an aquifer interference approval). An activity approval is therefore not required, however an aquifer interference licence may be required. If aquifer interference is expected to occur through excavation, deep excavations, and dewatering then an aquifer interference licence may be required. Caverns, tunnels, cuttings and pipelines are considered minimal impact if a water access licence is not required. If aquifer interference is expected to occur through excavation, deep excavations and dewatering then an aquifer interference licence will be required.

Legislation	Requirement	Agency	Responsibility	Timing
Water Act 1912	Obtain a licence where interference with groundwater is likely to occur.	Water Group	SHL	The EIS advises that in Section 4.4.4 that monitoring bore licences are required under the *Water Act 1912*.
Roads Act 1993	Road occupancy licence (ROL)	Transport for NSW	FGJV	ROLs were obtained and will continue to be obtained as required, prior to relevant works and / or road occupancy.
Local Government Act 1993	Building Code Construction Certificate and Occupation Certificate	Snowy Valleys Council or private certifier	FGJV	In accordance with condition 11 of schedule 2, a Construction Certificate and Occupation Certificate is required prior to the commencement of construction or use of relevant structures in the surface infrastructure area.
Dangerous Goods (Road and Rail Transport) Act 2008	Ensure that dangerous goods are transported in a safe manner.	EPA	FGJV	Vehicles that transport dangerous goods are required to be licensed. Drivers transporting dangerous goods are required to be licensed.
Heavy Vehicle (Adoption of National Law) Act 2013 No 42	Obtain approvals to travel route for Over Size and Over Mass (OSOM) vehicles	Transport for NSW	FGJV	Where the dimensions of the vehicle could interfere with overhead wires, bridges and other structures on or beside the road, approval to travel the route must be sought from the relevant authorities. These third-party approvals will be required prior to the issue of a permit.

3.6. Standards and Guidelines

Compliance standards, policies and guidelines relevant to the project are detailed in the respective management plans. The requirements of these standards have been taken into account in the preparation of the EMS and will be considered by FGJV during the preparation of the Work Method Statements and Work Packs.

4. ENVIRONMENTAL MANAGEMENT SYSTEM

4.1. Environmental Management Framework

The project will use the FGJV Business Management System which includes the Environmental Management System designed to comply with the requirements of *ISO 14001 Environmental Management Systems*. This delivers integrated management of health, safety, security and environment (HSSE). Figure 4-1 summarises the Environmental Management System hierarchy.

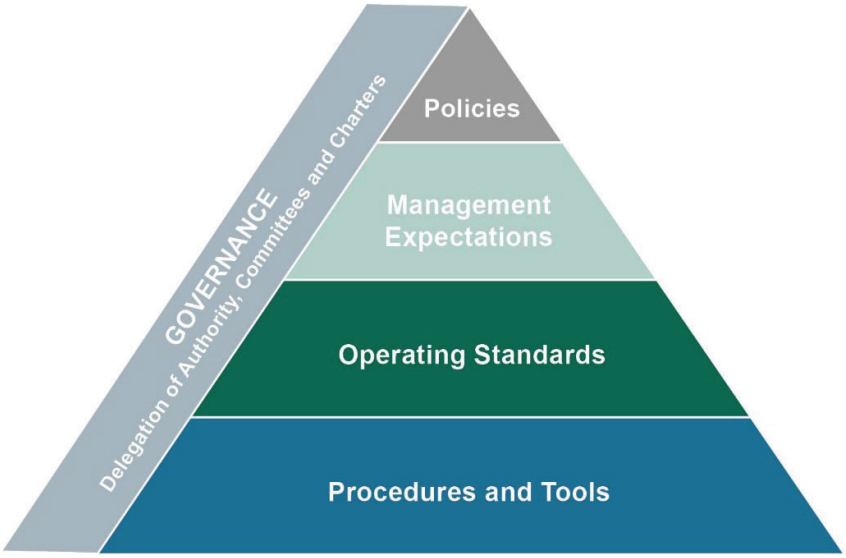


Figure 4-1: Environmental Management System Hierarchy

The Health, Safety, Security and Environment Management Manual (HSSE Manual) describes the Environmental Management System for FGJV. The Environmental Management System is audited annually by an independent third-party organisation to ensure the processes are maintained and are being used throughout the business and in project delivery.

Table 4-1 summarises the Environmental Management System components.

Table 4-1: Environmental Management System components

Management System Component	Description
HSSE Policy & HSSE Management Expectations	The policy sets the overall guidelines and direction to HSSE and represents the commitment of management to the achievement of its aims. The Policy for the Project is presented in Appendix A3. The *HSSE Management Expectation* clearly defines minimum expectations to ensure that all FGJV personnel and subcontractors understand their obligations and accountabilities to contribute to FGJV's HSSE culture.

Management System Component	Description
HSSE Operating Standards	The HSSE Operating Standards set out the minimum mandatory performance requirements. Environmental minimum mandatory performance requirements are set out in the following HSSE related Operating Standards: • Environment Management Operating Standard; • Major Accident Event Hazard Management Operating Standard.
HSSE Management Manual	Provides a framework for the HSSE component of the Business Management System (BMS), an overview of the key elements and reference documents.
HSSE Procedures, documents and registers (tools)	Procedures or work practices which provide the detailed steps to be taken to identify risks, work safely, protect the environment, investigate incidents, and implement continuous improvement.
HSSE Management Plans – This EMS and relevant sub-plans	Project specific plans prepared to identify and manage project HSSE risks and achieve the Operating Standards performance requirements.
Project/Site Specific Procedures, Work Instructions	Project and activity specific procedures, risk assessments and work methods to mitigate HSSE hazards. They are prepared by project personnel.

4.1.1. Environment Policy

FGJV believes that respect for the project location, its surroundings and the communities in which it operates is essential for project success, as well as compliance with all environmental requirements. This commitment is described in the Policy for Environment, Sustainability and Community. This outlines the commitment to establish environmental management and community engagement plans to avoid, minimise and mitigate impact. The Policy is provided in Appendix A3.

The Policy for Environment, Sustainability and Community will be communicated to staff and sub-contractors via inductions and ongoing awareness programs as detailed within Table 4-2.

Table 4-2: Policy communication

What	Who	When
Communicate environment and sustainability policies to FGJV employees	Environmental Manager Training Coordinators	Staff induction Project induction On display at FGJV managed work sites Project environmental and sustainability training presentation
Communicate environment and sustainability policies to FGJV subcontractors	Environmental Manager Training Coordinators	Prior to commencement of operations
Apply FGJV policies to all FGJV activities	All staff	At all times

4.1.2. Objectives and Targets

As a means of assessing environmental performance, environmental objectives and targets have been established. These objectives and targets have been developed in consideration of requirements in statutory approvals, the EIS and RTS commitments, contractual requirements, legislative requirements, HSSE project performance requirements and significant environmental aspects and impacts. They assist in determining whether the commitments of the Policy are being met. Environmental objectives for the project are provided below in Table 4-3.

Table 4-3: Objectives and targets

Objective	Target	How monitored and measured
Comply with all legislative requirements	Compliance with statutory approvals.	Audits, reports, inspections, monitoring.
Construct the project in accordance with the conditions of the Infrastructure Approval, the revised environmental management measures and any other environmental approvals	No regulatory infringements (PINs or prosecutions). No formal regulatory warning.	Audits, reports, inspections, monitoring.
Engage with stakeholders and the broader community, minimise complaints and respond to any complaints within a suitable timeframe	Disseminate regular project updates and other information to keep the community informed of the project. Record and respond to complaints within a timely manner.	Review complaints register and timeliness of response.
Continuously improve environmental performance	Develop and maintain a program of ongoing environmental training. Capture lessons learnt where required from environmental incidents to minimise repeat issues. Encourage and reward innovation and effort throughout the workforce.	Reports, induction records, training delivered, lessons learnt disseminated.

4.1.3. Environmental Management Strategy

The EMS is the overarching management tool in relation to environmental performance during project delivery. The EMS describes the construction environmental management framework for the project and the system for minimising and managing environmental risks.

The EMS and relevant management plans have been prepared in consideration of the Infrastructure Approval and the revised environmental management measures presented in the RTS / Additional information provided to the Department on 24 March 2020.

The EMS details the management plans which are being prepared to address specific environmental aspects of the project and outlines the environmental management practices and procedures that are to be followed during the construction of this project. It provides the overall framework for the system to ensure environmental impacts are minimised and legislative and other requirements are fulfilled.

An overview of the FGJV EMS is presented in Figure 4-2.

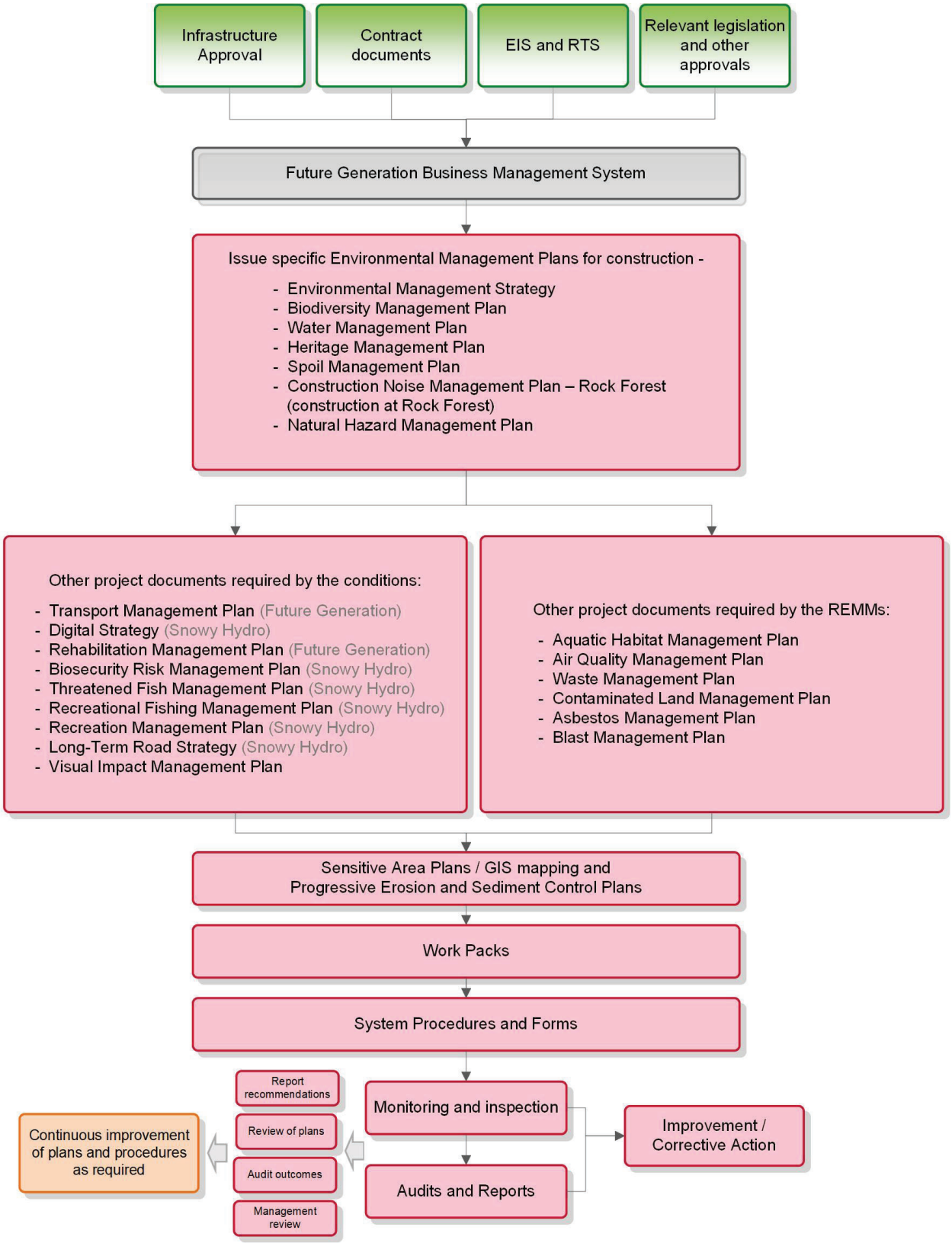


Figure 4-2: EMS overview

4.1.4. Environmental Management Plans

A number of environmental management plans are required to support the EMS. They document the aspects, impacts, management measures and monitoring requirements for each key environmental aspect.

The conditions of Approval and REMMs define the content and issues to be addressed in most of the management plans. Table 4-4 details the management plans required to be prepared and their timing.

Most plans have been prepared to address both Main Works and Exploratory Works within the one document. Where this occurred, the approved management plans for Exploratory Works continued to remain in place until they were superseded by the management plans for Main Works, following their approval by the relevant authority.

Where the Approval / REMMs are specific to only one project (for example the Subaqueous Emplacement Management Plan for Exploratory Works), this plan was only prepared for the relevant project. A list of the plans, approval status and their applicability relevant to the project are listed below.

Table 4-4: EMS plans and timing

Existing Exploratory Works Plans (Stage 1 and Stage 2)	**Snowy 2.0 Main Works Plan**	**How the plans will apply**
Environmental Management Strategy	Environmental Management Strategy	The Snowy 2.0 Main Works EMS (this document) **addresses both projects.** The Stage 1 and Stage 2 Exploratory Works EMS is now redundant as the Snowy 2.0 Main Works EMS is approved.
Biodiversity Management Plan	Biodiversity Management Plan	The Snowy 2.0 Main Works Biodiversity Management Plan **addresses both projects.** The Stage 1 and Stage 2 Exploratory Works Biodiversity Management Plan is now redundant as the Snowy 2.0 Main Works Biodiversity Management Plan is approved.
Water Management Plan	Water Management Plan	The Snowy 2.0 Main Works Water Management Plan **addresses both projects.** The Stage 1 and Stage 2 Exploratory Works Water Management Plan is now redundant as the Snowy 2.0 Main Works Water Management Plan is approved.
Aboriginal Heritage Management Plan	Heritage Management Plan	The Snowy 2.0 Main Works Heritage Management Plan **addresses both projects.** The Stage 1 and Stage 2 Exploratory Works Aboriginal Heritage Management Plan is now redundant as the Snowy 2.0 Main Works Heritage Management Plan is approved.
Historic and Natural Heritage Management Plan		The Snowy 2.0 Main Works Heritage Management Plan **addresses both projects.** The Stage 1 and Stage 2 Exploratory Works Historic and Natural Heritage Management Plan is now redundant as the Snowy 2.0 Main Works Heritage Management Plan is approved.
Traffic Management Plan	Transport Management Plan	The Snowy 2.0 Main Works Transport Management Plan **addresses both projects.** The Stage 1 and Stage 2 Exploratory Works Traffic Management Plan is now redundant as the Snowy 2.0 Main Works Transport Management Plan is approved.

Existing Exploratory Works Plans (Stage 1 and Stage 2)	Snowy 2.0 Main Works Plan	How the plans will apply
Excavated Material Management Plan	Spoil Management Plan	The Snowy 2.0 Main Works Spoil Management Plan **addresses both projects.** The Stage 1 and Stage 2 Exploratory Works Excavated Material Management Plan is now redundant as the Snowy 2.0 Main Works Spoil Management Plan is approved.
-	Construction Noise Management Plan – Rock Forest	The Snowy 2.0 Main Works Construction Noise Management Plan – Rock Forest is a **new document.** This document will be prepared specifically **for the Snowy 2.0 Main Works project** and in particular, the works at Rock Forest. Refer also below to the Construction Noise and Vibration Management Plan required by the RTS.
Bushfire Management Plan	Natural Hazard Management Plan (titled Emergency Management Plan within the Approval)	The Snowy 2.0 Main Works Natural Hazard Management Plan **addresses both projects.** The Stage 1 and Stage 2 Exploratory Works Bushfire Management Plan is now redundant as the Snowy 2.0 Main Works Natural Hazard Management Plan is approved.
Subaqueous Emplacement Management Plan		**Only required for the Exploratory Works project.** This plan will be prepared only in the event of subaqueous emplacement occurring prior to surrender of the Exploratory Works Infrastructure Approval.
Rehabilitation Management Plan		Please refer to Section 4.1.5 (Other Post-Approval documents). **The Snowy 2.0 Main Works Rehabilitation Management Plan will address both projects, once approved.** The Exploratory Works Rehabilitation Management Plan will become redundant once the Snowy 2.0 Main Works Management Plan is approved.
Worker – Recreational Management Plan		**Only required for the Exploratory Works project.** The Stage 1 and Stage 2 Exploratory Works Worker – Recreational Management Plan was developed and approved, however is now redundant.

4.1.5. Other Post-Approval documents

Further to the environmental management plans listed within Section 4.1.4, the Infrastructure Approval requires other post-approval documents to be prepared, including plans and strategies. These are required to be prepared 6 to 24 months from the commencement of construction. The Post-Approval documents for the project include those listed within Table 4-5.

Table 4-5: Other post-approval documents

Plan	Responsibility	Timing and application
Digital Strategy	SHL	Within 6 months of construction commencement, this plan is currently in progress at time of this EMS revision.
Rehabilitation Management Plan	SHL	Within 18 months of construction commencement, this plan is currently in progress at time of this EMS revision.

Plan	Responsibility	Timing and application
Biosecurity Risk Management Plan	SHL	Within 2 years of construction commencement. This plan is currently in progress at the time of this EMS revision.
Threatened Fish Management Plan	SHL	With 12 months of construction commencement. This plan is currently in progress at the time of this EMS revision.
Recreational Fishing Management Plan	SHL	With 12 months of construction commencement. This plan is currently in progress at the time of this EMS revision.
Recreation Management Plan	SHL	With 12 months of construction commencement. This plan is currently in progress at the time of this EMS revision.
Long-Term Road Strategy	SHL	Within 2 years of construction commencement. This plan is currently in progress at the time of this EMS revision.
Visual Impact Management Plan	FGJV	With 12 months of construction commencement. This plan is currently in progress at the time of this EMS revision.
Subsidence Management Plan	SHL/FGJV	Prior to recommencing tunnelling works at Tantangara and Marica

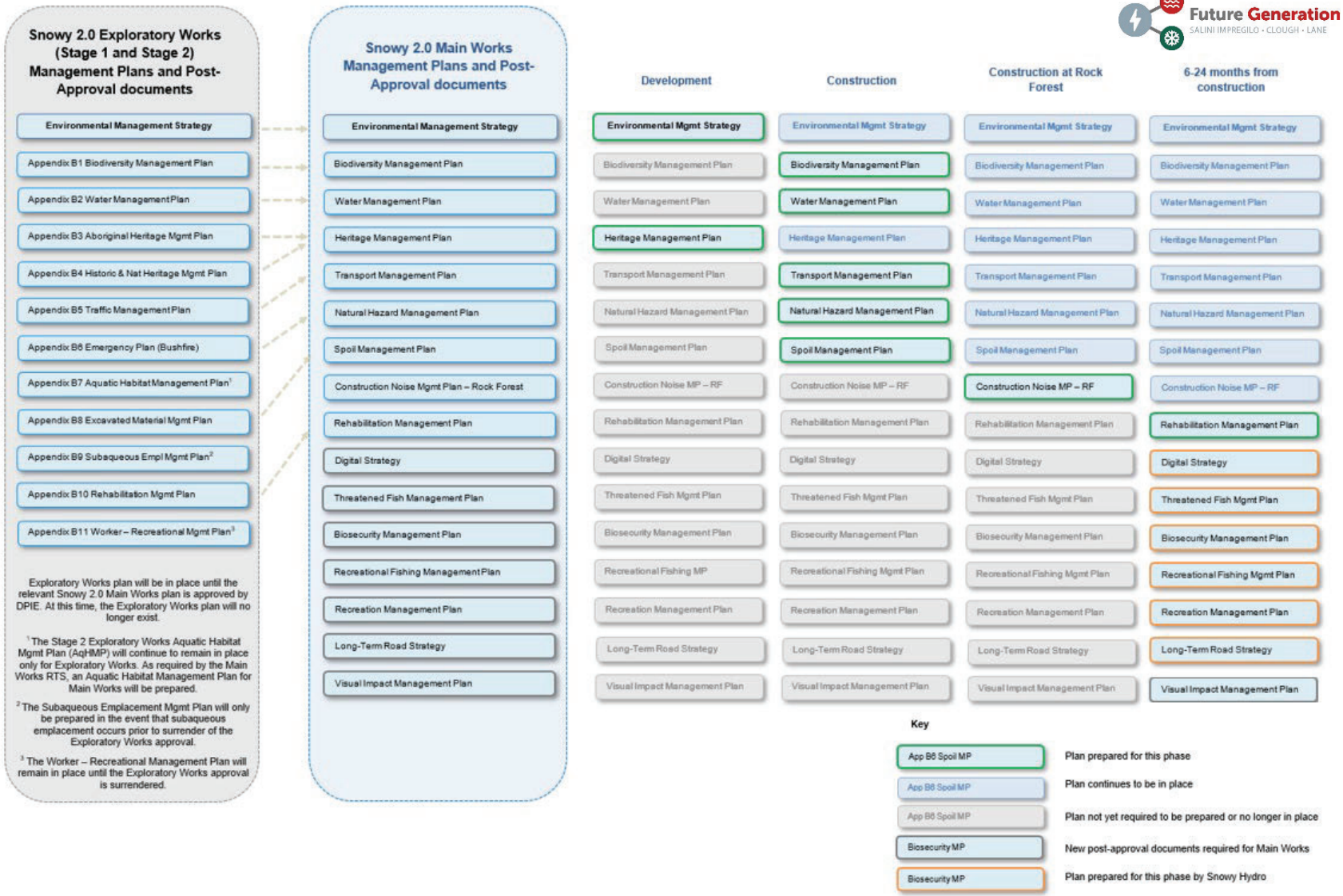


Figure 4-3: Management plans and post-approval documents, transitioning from Exploratory to Main Works

4.1.6. Work Packs

Work Packs describe the construction implementation in detail. The preparation of Work Packs involves a comprehensive review of the requirements of many aspects of project delivery, including design, construction, environment, and safety. The Work Packs provide specific instructions on how to conduct components of the construction. The Work Pack incorporates the procedures relevant to site specific activities to reduce risk and ensure ongoing environmental compliance. These measures are based on relevant measures in EMS and subordinate management plans.

Work Packs set out the construction methodology for a particular activity or set of activities, specific to the project. Work Packs communicate the relevant requirements of the environmental management plans to site personnel.

The FGJV Environmental Manager (or delegate) will review all Work Packs to ensure that they capture and adequately address relevant requirements in this EMS, management plans and the FGJV Geographic Information System (GIS) sensitive area mapping.

The Work Packs will be prepared prior to commencement of the works to which they relate.

Construction personnel and sub-contractors undertaking a task governed by a Work Packs will participate in training and awareness associated with the Work Pack.

Regular inspections against compliance with the Work Packs will be undertaken to ensure that controls are being implemented.

4.1.7. Sensitive Area Plans

To aid in the identification and protection of significant environmental features associated with the project, a set of Sensitive Area Plans (SAPs) will be prepared. The SAPs identify environmental constraints and ‘no go’ zones and will be included in the project Work Packs.

A copy of each of the worksite SAPs will be available for FGJV personnel and subcontractors and at each of the worksite locations.

4.1.8. Progressive Erosion and Sediment Control Plans

Progressive erosion and sediment control plans (ESCPs) are to be developed and will show the site layout and approximate location of erosion and sediment control structures on site. They will be developed for all work areas prior to commencing activities and will be updated as changes occur on site.

Environmental staff will typically develop the ESCPs in consultation with Project Engineers, Superintendents, Foremen and the Soil Conservationist (as required). This will ensure that erosion and sediment control management is incorporated into the planning stage of construction activities and is coordinated in its approach.

ESCPs will be regularly reviewed as site conditions change and flow paths are altered (e.g. the reshaping of drainage lines to direct sediment laden runoff to sediment basins). All revisions will be controlled and allocated an appropriate revision number.

ESCPs will generally be prepared on detailed drainage diagrams and will include a title, date and revision number; details regarding the implementation period and staging; and the location of temporary and permanent erosion and sediment control measures proposed to treat stormwater prior to discharge.

ESCPs are designed for use as a practical guide and as required, will be produced in conjunction with Work Method Statements or Work Packs.

4.1.9. Procedures, Forms and Other Documents

The project's Environmental Management System procedures, forms, and other documents (for example the Clearing Permit, Dewatering Permit, and the Unexpected Finds Release Permit) provide instructions and records related to both environmental and non-environmental activities throughout the project.

Procedures and forms used will be developed and implemented by FGJV. Records will be held on site by in electronic form by the project's Environmental Manager and Environmental Coordinators.

4.1.10. Document Control and Records

Records shall be developed and maintained by FGJV including:

- training records;
- incident reports;
- audit and inspection forms;
- monitoring results; and
- volume of waste to landfill, waste recycled, and waste disposed of offsite.

FGJV shall maintain all records generated as a result of environmental management and make these available on request to SHL.

4.2. Roles and Responsibilities

4.2.1. Organisational Structure

Figure 4-4 shows the project parties relevant to environmental governance.

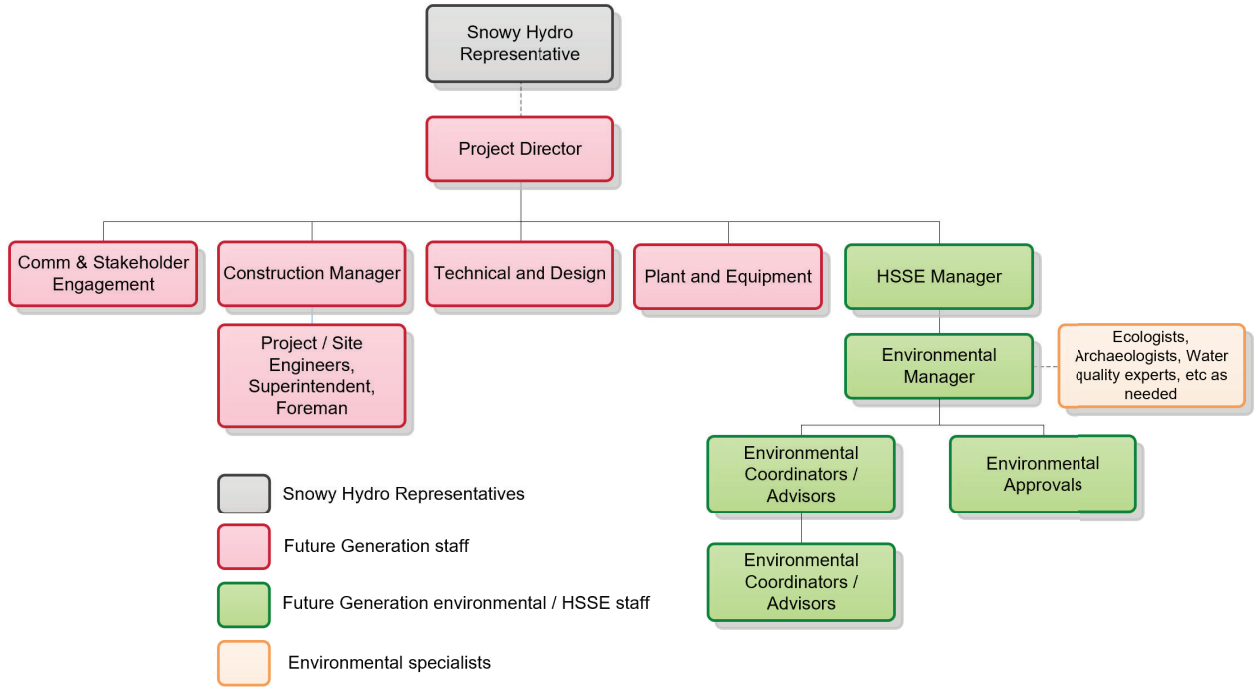


Figure 4-4: Project parties

The FGJV organisation is described in Table 4-6. The FGJV Project Director, in consultation with functional Department Managers, will ensure that appropriate resources are available to effectively manage the implementation of the EMS during delivery of the project.

All FGJV staff, subcontractors and visitors are required to operate in accordance with this EMS and related environmental management plans during construction.

The project environmental management structure incorporates the following site personnel:

- Environmental Manager responsible for overall management of the EMS and environmental management plans; and
- Environmental Co-ordinators to assist in implementing and monitoring measures in the EMS and environmental management plans.

Further additional support, as required, is available to the project, as described in Section 4.2.2.

4.2.2. Roles and Responsibilities

SHL Project Director

The environmental responsibilities of the SHL Project Director include (but are not limited to):

- monitor the environmental performance of the project in relation to SHL requirements;
- liaise with relevant stakeholders (as required);
- attend project meetings (as required).

The SHL Project Director has the authority to direct works for the delivery of the Snowy 2.0 project in accordance with the contract.

The SHL Project Director is accountable for the delivery of the Snowy 2.0 project.

SHL Environmental Manager

The environmental responsibilities of the SHL Environmental Manager (or their delegate) include (but are not limited to):

- review any environmental management plans and related documents prepared for the project;
- liaise between FGJV and stakeholders (government agencies) as required;
- review minor project refinements that are consistent with the project environmental assessment and approval documentation; and
- monitor the environmental performance of the project in relation to SHL requirements.

The SHL Environmental Manager is accountable for ensuring that the project works are executed in accordance with the Infrastructure Approval and to provide assurance with all relevant management plans. The SHL Environmental Manager has the authority to review and issue a response of objection or no-objection for FGJV's management plans and to direct works (such as monitoring) undertaken by SHL.

FGJV Project Team

Table 4-6 summarises the roles, responsibilities, authority and accountability of FGJV personnel. These requirements will be communicated to personnel and incorporated into their job descriptions.

Table 4-6: Environmental roles and responsibilities

Role	Authority, Responsibilities and Accountability
Project Director	**Authority**
	• Appointed by the FGJV Project Executive Committee • Directly manages the Project Management Team
	Responsibilities
	• Overall delivery of the project program • Manage all key aspects of project performance, including environmental performance • Undertake actions in accordance with the project's due diligence framework • Define and refine project management philosophies, capabilities, processes and tools • Ensure project practices and on-site activities are conducted in accordance with project policies and procedures • Ensuring personnel delegated responsibility for environmental management are adequately trained and competent to implement the requirements of the project EMS • Direct activities to ensure resource needs are accurately forecasted and linked to the project, including the identification of skill and behavior requirements • Ensuring personnel delegated responsibility for environmental management are adequately trained and competent to implement the requirements of the project EMS • Making available resources to enable execution of project environmental management activities • Making available resources to enable execution of project emergency response systems • Drive the creation of systems, practices and behaviors that promote the identification and appropriate management of potential risks and opportunities • Lead negotiations with SHL to achieve an agreed resolution of complaints and non-conformance reports (NCR) • Ensure all management plans – including the HSMP, QMP, DMP and CEMP – are fully developed and implemented • Attending and participating in environmental meetings as appropriate
	Accountability
	• Delivering the project in accordance with the requirements of the contract
Health, Safety & Environment Manager	**Authority**
	• Management and direction of the Health Safety and Environment Team
	Responsibilities
	• Review HSE standards and plans developed for each project to ensure that FGJV and legislative requirements are met • Review overall HSE performance and report to the project Management and Corporate HSE Manager • Interface with major subcontractors and SHL management, Regulatory and with HSE personnel as required regarding HSE matters • Coordinate third party certification audits • Specify resources to enable execution of HSE activities on site • Specify resources to enable execution of emergency response systems on site • Arrange for and participate in HAZID workshops • Provide HSE Advisors, project line management and subcontractor with feedback on HSE performance • Participate in the Target Zero commitment workshop • Implement and coordinate Target Zero activities and strategies

Role	Authority, Responsibilities and Accountability
	• Receive and circulate relevant HSE information • Coordinate and participate in scheduled HSE audits and reviews • Statistical analysis and incident trend reviews • Develop training and induction schedules and content • Attend and participate in HSE meetings as required • Coordinate and participate in workplace inspections • Record, monitor and follow up close out of action items in InControl.
	Accountability
	• Delivering the HSE aspects of the project in accordance with contract and legislative requirements. • Communication of HSE requirements to the Project Management and HSE Teams.
Environmental Manager	**Authority**
	• Management and direction of the Environment Team.
	Responsibilities
	• Ensuring environmental approvals are obtained and in place prior to commencement of the relevant works • Ensuring implementation of the EMS and FGJV management plans • Review, and where required, revise environmental management documents • Specifying resources to enable execution of environmental activities on site • Specifying resources to enable execution of emergency response systems on site • Arranging for and participating in HAZID workshops • Providing environmental coordinators, project line management, and FGJV with feedback on environmental performance • Participating in the Target Zero commitment workshop • Receiving and circulating relevant environmental information • Coordinating and participating in scheduled environmental audits and reviews • Performing statistical analysis and environmental incident trend reviews • Developing training and induction content • Attending and participating in environmental meetings as required • Coordinating and participating in workplace inspections • Recording, monitoring and following up close out of action items in InControl • Taking responsibility for the overall environmental performance of the site • Providing leadership in the implementation of all environmental initiatives • Specifying and making available resources to enable execution of environmental activities.
	Accountability
	• Implementation and delivery of the environmental requirements of the project • Communication of environmental requirements to the Project Management and Environmental Teams
Design Manager	**Authority**
	• Management and direction of the Design Team
	Responsibilities
	• Ensuring detailed design progressively addresses all relevant environmental obligations • Ensuring works are designed to fulfil the requirements and objectives of this EMS

Role	Authority, Responsibilities and Accountability
	• Liaising with the Client's Representative, Construction Manager, Environmental Manager, and design consultants on environmental issues
	Accountability
	• Delivering the design aspects of the project in accordance with contract and other requirements
Site / Construction Manager	**Authority**
	• Management and direction of the Site / Construction Team, including Superintendents and Supervisors
	Responsibilities
	• Ensuring resources are specified to eliminate or minimise environmental hazards • Participating in incident investigations and review all incident reports • Arranging for and participating in HAZID workshops • Participating in workplace inspections • Reviewing audit findings and close out reports • Reviewing overall project environmental performance • Attending and participating in environmental meetings as appropriate • Participating in Target Zero commitment workshop • Reviewing work planning requirements • Remaining abreast of all relevant environmental laws, permits and standards • Providing construction and field management and supervisors with environmental information current to their requirements • Ensuring environmental standards developed for each activity meet with FGJV requirements • Scheduling and coordinating site-based environmental activities • Interfacing with client environmental personnel during their site visits • Conducting periodic drills and reviews of emergency response systems and procedures • Providing project line management with feedback on environmental performance
	Accountability
	• Delivery of the construction aspects of the project • Ensuring subcontractors conduct their environmental responsibilities as required in the Contract
Environmental Coordinators / Advisors	**Authority**
	• Advise Supervisors and Superintendents of environmental assignments or actions which are required to occur
	Responsibilities
	• Conducting workplace inspections • Recording, monitoring and following up close out of action items • Ensuring corrective actions are implemented • Participating in Target Zero workshops • Complying with statutory requirements, including duty of care • Liaising with supervisors on relevant environmental issues • Attending and participating in environmental meetings • Reporting and investigating all environment incidents in the area of control • Reviewing and closing out environmental incident reports • Providing support and direction to all supervisors through positive discussions on environmental initiatives

Role	Authority, Responsibilities and Accountability
	• Conducting weekly workplace inspections • Supporting employees to perform their work in an environmentally conscious manner • Reporting all incidents and hazards to management • Monitoring the use and maintenance of spill kits at all work sites • Ensuring work group employees participate in relevant environmental activities
	Accountability
	• Communication of environmental requirements to project personnel including Superintendents and Supervisors • Being accountable for ongoing development and implementation of project environmental activities and practices
Superintendents	**Authority**
	• Direct Supervisors and project personnel to undertake works
	Responsibilities
	• Participating in HAZID workshops and audits • Motivating employees to report all environmental incidents • Participating in Target Zero workshops • Conducting inspections of their work area per the Audit and Inspection Schedule • Planning for and incorporating environmental management into all work plans and activities • Opening and maintaining external communication during emergencies • Maintaining a log of communications sent and received during an emergency • Reporting all incidents and hazards to management • Complying with statutory requirements, including duty of care • Reporting hazardous conditions • Participating in any relevant environmental training • Providing suggestions to improve environmental management on the project • Reporting any near miss or environmental incidents • Participating in site environmental meetings as required
	Accountability
	• Works undertaken by project personnel and at the direction of Supervisors
Supervisors	**Authority**
	• Direct works undertaken by project personnel
	Responsibilities
	• Planning for, and incorporating environmental management into all work plans and activities • Participating in workplace inspections • Ensuring that instructions are issued and adequate information provided to field-based employees which relate to environmental risks on site • Participating in any relevant environmental training • Reporting any near miss or environmental incidents • Providing suggestions to improve environmental management on the project
	Accountability
	• Works undertaken by project personnel
	Authority
	• Undertaking works in accordance with the EMS and management plans

Role	Authority, Responsibilities and Accountability
All Personnel, Including Subcontractor	**Responsibilities**
	• Undertaking works in accordance with the EMS and management plans • Participating in any relevant environmental training • Reporting any near miss or environmental incidents to their Supervisors • Providing suggestions to improve environmental management on the project.
	Accountability
	• Works undertaken at the direction of their relevant supervisor

Specialist and other environmental resources

Specialist consultants and subcontractors are engaged for environmental support roles such as:

- water quality specialist for assistance with the Water Management Plan, Surface Water Management Plan, monitoring program and technical advice;
- groundwater quality specialist for assistance with the Groundwater Management Plan, monitoring program and technical advice;
- soil conservationist for assistance with implementation of erosion and sediment control measures, and ongoing inspections and advice;
- ecologists for assistance with the Biodiversity Management Plan, pre-clearing inspections and ongoing advice throughout construction;
- heritage consultants and archaeologists for assistance with the Heritage Management Plan, archival recording and salvage works required for Aboriginal heritage and Historic heritage items;
- noise specialists for review of the Construction Noise Management Plan, noise modelling and ongoing advice throughout construction as required;
- NATA-certified laboratories for soil and water quality analysis;
- GIS, database and other software as required during the course of the project; and
- environmental monitoring hardware.

Subcontractors and suppliers

All subcontractors will work under this EMS, sub-plans and relevant procedures in the BMS.

Subcontractors will not normally be required to prepare and implement a separate EMP in addition to this EMS, except where the risk of environmental harm from the subcontractor's activities is assessed as significant or the subcontractor has control of a specific project area.

Where the subcontractor is required to prepare its own EMP, that EMP shall address the specific section of the project area/activities and shall be submitted for the approval of the FGJV Environmental Manager within four weeks of appointment and prior to commencement on site (whichever is the earlier). This period is to allow FGJV to review the Subcontractor's EMP and to discuss it with key stakeholders (as applicable). FGJV will ensure that each such plan assesses the level of environmental risk and develops appropriate management controls for the section's full scope of work to a standard at least consistent with this EMS.

Subcontractors are required to carry out their work in accordance with contract instructions and in an environmentally sound manner.

All subcontractor personnel are required to attend a project induction, which includes an environmental component and task-specific training (if relevant) before they commence any work on site. The Environmental Manager or delegate will confirm and implement requirements for effective subcontractor control based on known project risks and demonstrated subcontractor performance or the contrary.

4.3. Environmental Risk Management

4.3.1. Risk and Hazard Management Approach

FGJV operates a risk management approach consistent with AS/NZS ISO 31000:2009 Australian Standard Risk Management. Over the life of the project, risks will be identified, assessed and controlled through the use of a number of different risk management tools, primarily risk assessments.

A risk management approach will be used to determine the severity and likelihood of an activity's impact on the environment and to prioritise its significance.

The objectives of the risk assessment are to:

- identify activities/aspects, events or outcomes that have the potential to adversely affect the local environment and/or human health/property;
- qualitatively evaluate and categorise each risk item;
- assess whether risk issues can be managed by environmental protection measures;
- qualitatively evaluate residual risk with implementation of measures; and
- eliminate or reduce to as low as reasonably practicable (ALARP) all hazards and risks.

4.3.2. Environmental Risk Register

An environmental risk assessment is included in Appendix A4 – Environmental aspects and impacts register. This risk assessment details the environmental aspects identified for the project, the initial risk category prior to appropriate management strategies, and reference to the appropriate document which detailing proposed mitigation strategies.

Aspects and impacts were identified for all construction activities that contribute to harm or impact on the environment including, air, noise, water, heritage, waste and biodiversity.

The ongoing determination of environmental aspects and impacts will be achieved through the risk management processes outlined above, which results in the maintenance of a list of environmental risks (aspects and impacts), corresponding risk mitigation strategy and risk ranking for each risk. Each environmental risk is categorised, based on the following:

- the environmental aspect;
- type of potential impact (or consequence); and
- likelihood of occurrence.

A risk matrix for the initial environmental risk assessment is provided below Table 4-7.

Table 4-7: Risk matrix

Consequence	Likelihood				
	1	2	3	4	5
	Rare	Unlikely	Possible	Likely	Almost Certain
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 - Medium

The descriptions in Table 4-8 were used to determine the likelihood and consequence of an event.

Table 4-8: Likelihood and consequence table

Likelihood	Description
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.
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.
Possible	Historically, the event has been known to occur, based on comparisons with similar projects conducted under similar conditions. Based upon current project circumstances, it is plausible for this event to occur over the course of this project.
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.
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.
Consequence	**Description**
Negligible	Promptly reversible/trivial impact on air, water, soil, flora, fauna, habitat or heritage.
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 (e.g. category A and B) heritage items. Visual, noise or airborne dust impacts with potential for credible stakeholder/public complaint.
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 (e.g. Category A and B) heritage items. Visual, noise or airborne dust impacts with potential for regular response.
Major	Long term (>10 years) impact on population of significant (e.g. threatened) flora or fauna. Long term impacts on soil, air, water quality. Potential for long term offsite impacts. Loss of numerous significant heritage items.
Severe	Permanent impact on the populations of the significant (e.g. threatened) flora or fauna. Permanent unconfined impact on previously undisturbed ecosystem.

FGJV will maintain the environmental risk register in the project files (separate to this EMS). Risks will be reviewed on a regular basis.

5. TRAINING AND AWARENESS

Environmental training and awareness is an important means to positively influence the attitude of workers engaged in the project whilst ensuring they are aware of their obligation and the requirements of this EMS. Internal and on-the-job training will be provided by FGJV on a regular basis for all employees and subcontractors.

The main forms of training will be provided on site will include the site induction, toolbox training and environmental awareness training, and daily pre-start briefs.

Records of induction and training will be kept on site within databases held by FGJV. Inductees will be required to sign-off that they have been informed of the environmental issues and that they understand their responsibilities.

5.1. Site Induction

All personnel (including sub-contractors) will be required to attend a compulsory site induction that includes an environmental component prior to commencement on-site. This is done to ensure all personnel involved in the project are aware of the requirements of the EMS and to ensure the implementation of environmental management measures. The FGJV Environmental Manager (or delegate) will prepare the environmental component of the site induction.

The environmental component will include an overview of the following elements:

- relevant details of the EMS;
- relevant conditions of environmental licences, permits and approvals;
- key environmental issues, i.e. protection of Kosciusko National Park, heritage sites and water management;
- information relating to the location of environmental constraints;
- relevant environmental management requirements and responsibilities;
- management measures for the control of environmental issues;
- notification and response requirements in the event of unexpected finds (i.e. for heritage, contaminated land or threatened species);
- regulatory penalties and consequences of non-compliance;
- incident response and reporting; and
- emergency response and evacuation (fire and flooding).

A record of all environment inductions will be maintained and kept on-site by FGJV. Amendments to the induction may be made at any time as a result of work modifications or amendments to this EMS or related documentation.

5.2. Short-Term Workers Induction

Personnel working on the project for less than 7 days over the lifetime of the project, and where their tasks do not have significant risk of environmental harm, will undertake a short-term workers induction. This includes a briefing of their responsibilities as contained in the full induction, a site-specific induction for the work scope they are required to undertake and review of relevant JHAs.

Short-term visitors, not conducting physical work, will be required to be accompanied by inducted personnel at all times.

5.3. Toolbox Talks and Environmental Awareness

Toolbox talks, environmental awareness training, and construction methodology briefings will be delivered by FGJV as necessary to achieve a suitable level of workforce awareness and competence appropriate to the activities.

Toolbox talks will be tailored to specific environmental issues relevant to upcoming works or previous incidents and will include general and specific discussion of the key environmental aspects of the project.

Targeted environmental awareness training will be provided to individuals or groups of workers with a specific authority or responsibility for environmental management or those undertaking an activity with a high risk of environmental impact.

5.4. Daily Pre-start Meetings

Daily pre-starts will be conducted by the FGJV Supervisors prior to the start of work each day to inform workers of key safety, environmental and activity coordination considerations, and other information that may be relevant in the performance of the day's work. Records of pre-starts meetings will be maintained and be available on site.

6. COMMUNICATION AND COMPLAINTS MANAGEMENT

6.1. Communication

SHL and FGJV are committed to making certain effective communication is undertaken on a regular basis at all levels of the project. A high level of communication is an important factor in the successful and correct delivery of environmental outcomes on the project and it will ensure environmental performance is continually communicated, understood, and improved.

6.1.1. Internal Communication

The methods of internal (on site) communication will include:

- inductions;
- toolbox talks;
- pre-start meetings;
- alerts, bulletins and / or initiatives; and
- Work Packs.

FGJV will discuss environmental issues as a regular component of their toolbox and site meeting agenda.

FGJV will present environmental communications to its workforce on a minimum weekly basis. This will include information on the management of environmental risks or key site environmental issues as required. Records of the topics, attendance and presenter's name will be maintained.

6.1.2. External Communication

Stakeholder

External communication with stakeholders such as government agencies is often required during project delivery. Communication can be for various matters including:

- organising government agency site inspections;
- through consultation on management plans; or
- through notification of relevant incidents.

External stakeholders for the project include:

- NPWS;
- Environment Protection Authority (EPA);
- Department of Climate Change, Energy, the Environment and Water
- DPE;
- Biodiversity and Conservation Division;
- DPI Fisheries;
- Water Group;
- Natural Resources Access Regulator;
- Snowy Valleys Council;
- Snowy Monaro Shire Council;

- Transport for NSW;
- NSW Police;
- Heritage Council;
- Registered Aboriginal Parties;
- Yala Ngurumbang Yindyamarra Expert Advisory Committee;
- Southern Snowy Mountains Aboriginal Community MOU Group; and
- relevant recreational fishing groups.

Consultation with these stakeholders will occur for the development of the relevant management plans as detailed within the Infrastructure Approval. Additional consultation will occur as required during delivery of the project.

Reporting to EPA will occur in accordance with the requirements of the POEO Act and the EPL as detailed within Section 8.4.

Community communication

Communication tools which will be used by the project to inform stakeholders and the community will include:

- notifications of construction activities;
- written correspondence (letters / emails);
- advertisements (as required);
- fact sheets;
- newsletters (as required);
- meetings / doorknocks;
- targeted presentations (as required);
- the project website; and
- enquiries and complaints line.

Relevant information which is required by SHL for communications activities (such as for notifications, fact sheets, maintaining the website etc) will be provided by FGJV.

6.2. Complaint Management

A complaints management system including the complaints register will be maintained by SHL and FGJV.

The complaints management system will include a process to manage complaints including receiving, recording, tracking and responding to complaints within a defined timeframe. If a complaint cannot be responded to immediately, a follow up phone call or verbal response will be made to the complainant in accordance with the timeframes detailed below.

The key processes involved in recording complaints and enquiries are as follows:

- all enquiries / complaints will be recorded in a complaints register;
- complaints received for the duration of the project will be acknowledged verbally within 2 hours from the time of complaint unless the complainant agrees otherwise. Any received out of hours will be responded to on the next working day;

- complaints received via email will be acknowledged within 24 hours;
- complaints received via letters will be acknowledged within 5 days of receipt. Where a phone number or email address is supplied, a response will be provided within 24 hours.

The community and stakeholder engagement staff will attend to enquiries and complaints received through the enquiries and complaints 1800 information line, project email address, from letters mailed to the project team, during community meetings or through construction / site staff.

The project enquiries and complaints 1800 number will be included on project communications, including notifications, advertisements, and on the SHL website.

All complaints will be investigated and dealt with impartially. All correspondence, agreements, resolutions, and other relevant information will be recorded in Darzin (the complaints management program). If a complainant is not satisfied with the resolution provided, the complaint can be escalated, and alternative offers of resolution can be discussed.

6.2.1. Dispute Resolution

Wherever possible, complaints will be resolved directly between FGJV and the stakeholder.

If a complaints management process has been followed and the issue cannot be resolved, the complaint will be referred to FGJV's Senior Management and SHL's Representative for further review. The escalated review process will include an assessment of the details of the complaint received, any findings of the investigation undertaken in response to the complaint, and any further matters raised by the complainant.

If a complaint requires referral to senior management and SHL, the complainant will be informed of this and the outcome of the review process.

7. INCIDENTS AND EMERGENCIES

7.1. Environmental Incidents

Environmental incidents will be managed and reported using the FGJV Incident Notification, Investigation and Review Procedure. The procedure flowchart is presented in Appendix A5. The FGJV procedure is consistent with SHL Quality Management System procedure '*QP14-07 - Incident Management Procedure*' (Procedure).

Environmental incidents and regulatory compliance incidents may include the following events caused by the works:

- chemical spills and leaks (including hydrocarbons);
- unauthorised discharge of contaminated waters to the environment;
- clearing or damage to vegetation outside of the designated clearing areas;
- unauthorised damage or interference to threatened species, endangered ecological communities or critical habitat;
- unauthorised death or injury of native fauna;
- unauthorised impact to heritage items, artefacts or sites;
- any potential breach of legislation, including a potential breach of a safeguard;
- unauthorised dumping of waste; and
- fires which result from project works.

All efforts will be undertaken to avoid and reduce impacts of incidents. A decision may need to be made by the supervisor and/or manager to suspend work. A supervisor/manager may request additional staff be deployed to the site to provide additional capacity or capability to manage the incident.

An emergency spill response procedure is provided as an Appendix to the Surface Water Management Plan. This procedure will be used in the event of an oil, fuel or chemical spill on land or water.

7.2. Incident Reporting

All workers (employees and contractors) are responsible for ensuring timely and effective initial internal reporting of incidents that they are involved in, or witness.

Information provided must be facts only, not statements of opinion or assumptions.

7.2.1. Incident Reporting in accordance with the Infrastructure Approval

Incidents are defined in the Infrastructure Approval as being '*An occurrence or set of circumstances that causes or threatens to cause material harm and which may or may not be or cause a non-compliance*.'

FGJV will immediately notify SHL of an incident which arises through the Infrastructure Approval. The notification will set out the location and nature of the incident.

SHL will then notify DPE and NPWS, via the NSW Major Projects portal, immediately after becoming aware of an incident on site.

Where the incident results in a non-compliance with the Infrastructure Approval, within 7 days after becoming aware of the non-compliance, FGJV will notify SHL of the non-compliance. The notice will set out:

- the non-compliance;
- the reasons for the non-compliance (if known); and
- what actions have been taken, or will be taken, to address the non-compliance.

SHL are to notify DPE (within the 7 day period) of the non-compliance via the Major Projects Portal, with the notification including the details provided above.

Non-compliances will be reported in accordance with Section 8.5 of this EMS.

All written requirements of the Planning Secretary or relevant public authority, which may be given at any point in time, to address the cause or impact of an incident must be complied with, within any timeframe specified by the Planning Secretary or relevant public authority.

7.2.2. Incident Reporting in accordance with the POEO Act

FGJV will notify SHL of pollution incidents on or around the site. SHL or FGJV will notify EPA via the EPA Environment Line (telephone 131 555) in accordance with Part 5.7 of the POEO Act.

The circumstances where this will take place include:

- if the actual or potential harm to the health or safety of human beings or ecosystems is not trivial;
- if actual or potential loss or property damage (including clean-up costs) associated with an environmental incident exceeds $10,000.

7.2.3. Incident Reporting in accordance with the EPBC Act

SHL or FGJV is to notify DCCEEW in writing of any incident as soon as practicable after becoming aware of the incident and no later than two business days. The notification must specify:

- a short description of the incident; and
- the location (including co-ordinates), date, and time of the incident. In the event the exact information cannot be provided, provide the best information available.

DCCEEW will be provided, in writing, the details of any incident or non-compliance with the conditions or commitments made in plans (as defined under the EPBC Act Approval) within 10 business days after becoming aware of the incident or non-compliance, specifying:

- any condition that is or may be in breach;
- any corrective action or investigation which has already occurred or intends to occur in the immediate future;
- the potential impacts of the incident or non-compliance on protected matters; and
- the method and timing of any remedial action that will be undertaken by the approval holder.

7.2.4. Management Actions

Management actions that will be implemented in response to an incident are detailed below in Table 7-1.

Table 7-1: Environmental incident management actions

Management Action	Responsibility
Environmental incidents will be reported to SHL.	FGJV
Incidents that require notification to DPE and NPWS will be reported in accordance with the requirements of the Infrastructure Approval.	FGJV and SHL

Management Action	Responsibility
Incidents that require notification to EPA will be reported in accordance with the requirements of the POEO Act.	FGJV and SHL
The cause will be investigated as soon as reasonably practicable.	FGJV
Any required response actions will be undertaken.	FGJV

7.3. Environmental Emergencies

A Natural Hazard Management Plan (S2-FGJV-ENV-PLN-0050) has been prepared for the project in accordance with condition 61 of Schedule 3. The plan includes measures that are implemented to respond to and minimise the risk of bushfires, flood risks, and landslips.

The project also has in place an Emergency Response Management Plan (ERMP) (S2-FGJV-HSA- PLN-0002). An emergency is an event that injures people, adversely affects the environment, or damages assets, and requires a coordinated deployment of emergency resources to provide a first response.

The ERMP are implemented in the event of an environmental emergency arising during construction. In accordance with the approved ERMP, emergency access is requested from NPWS and DPE to the site team to investigate, under supervision of the Environmental Manager, or delegate.

For all naturally caused emergencies outside of the boundary with imminent threat to persons or property, a trigger action response plan (TARP) has been developed. This TARP specifically outlines FGJVs emergency response and approval process for works occurring outside of the project boundary, see Appendix A7.

An emergency spill response procedure is also provided within the Surface Water Management Plan (S2-FGJV-ENV-PLN-0011). This procedure is used in the event of an oil, fuel or chemical spill on land or water.

8. INSPECTIONS, MONITORING AND AUDITING

8.1. Environmental Inspections

Implementation of a regular program of inspections is an essential part of the success of work activities. The effectiveness of environmental protection measures described in this EMS and management plans will be inspected and assessed on a weekly basis through the use of a weekly checklist. The purpose of the checklist is to:

- provide a surveillance tool to ensure that safeguards are being implemented;
- identify where problems might be occurring;
- identify where sound environmental practices are not being implemented; and
- facilitate the identification and early resolution of problems.

Deficiencies and required actions will be analysed and prioritised at the completion of the inspection and timeframes for implementation of corrective actions agreed. Any non- compliances identified through the checklist process will be highlighted and an environmental inspection report (minor issues) or an environmental incident report completed.

The issue will remain ‘open’ until:

- the issue has been resolved;
- a new or revised procedure has been established and implemented; or
- training has been provided to relevant personnel / subcontractors.

The findings of inspections will be discussed at toolbox meetings and concerns raised will be considered by the FGJV project management team for review or improvement of the environment procedures.

In addition to the weekly inspections, the FGJV environmental staff and SHL environment staff will jointly undertake regular inspections of work sites, and in particular critical activities throughout construction of the project. Stakeholders such as DPE, NPWS and EPA will be invited to attend relevant inspections.

An inspection schedule is provided in Table 8-1.

Table 8-1: Inspection schedule

Activity	Frequency	Responsibility	Record
Environmental site Inspection	Weekly	FGJV Environmental Manager or nominated representative. SHL to be invited at the discretion of FGJV.	Site inspection checklist

8.2. Monitoring

8.2.1. Monitoring Programs

Monitoring will be undertaken for environmental aspects of the project to confirm the adequacy of implementation of the management measures. Specific monitoring programs have been developed for high risk aspects of the project and are included within the relevant management plans.

The monitoring programs have been developed to address the requirements of the Infrastructure Approval. In general, these require:

- parameters to be monitored, location and frequency;
- the reporting of monitoring and analysis results against relevant criteria;
- methods that will be used to analyse the monitoring data;
- procedures to identify and implement additional mitigation measures where results of monitoring are unsatisfactory.

The timing, frequency, methodology, locations, and responsibilities for the proposed environmental monitoring programs are specified in the respective management plans and summarised in Table 8-2. The monitoring programs range from those involving formal sample collection, analysis and measurement, to those involving a more qualitative assessment.

Where authorised under an approved management plan and required under the conditions of the Infrastructure Approval, in accordance with condition 5 of schedule 4, the monitoring may be undertaken outside of the construction envelope.

Table 8-2: Environmental monitoring summary

Activity	Management Plan	Frequency	Responsibility	Record	Timing
Water monitoring					
Receiving surface water monitoring (in accordance with EPL 21266)	Surface Water Management Plan (SWMP)	In accordance with the approved SWMP	FGJV / SHL	Field sampling and testing records and laboratory tests reports	In accordance with the approved SWMP
Wet weather and TARP monitoring	Surface Water Management Plan	In accordance with the approved SWMP	FGJV / SHL	Field sampling and testing records and laboratory tests reports	In accordance with the approved SWMP
Groundwater quality monitoring (in accordance with EPL)	Groundwater Management Plan (GMP)	In accordance with the approved GMP	FGJV / SHL	Field sampling and testing records and NATA tests reports	In accordance with the approved GMP
Groundwater level monitoring	Groundwater Management Plan	In accordance with the approved GMP	FGJV	Monthly groundwater reports	In accordance with the approved GMP
Groundwater inflow monitoring	Groundwater Management Plan	In accordance with the approved GMP	FGJV	Monthly groundwater reports	In accordance with the approved GMP
Biodiversity monitoring					
Groundwater Dependant Ecosystem monitoring	Groundwater Management Plan	In accordance with the approved GMP	SHL	Field records	In accordance with the approved GMP
Biodiversity monitoring	Biodiversity Management Plan (BMP)	In accordance with the approved BMP	SHL	Field records	In accordance with the approved BMP
Weeds	Biodiversity Management Plan	In accordance with the approved BMP	FGJV / SHL	Field records	In accordance with the approved BMP
Feral Animals	Biodiversity Management Plan	In accordance with the approved BMP	FGJV / SHL	Field records	In accordance with the approved BMP
Spoil monitoring					
Excavated rock	Spoil Management Plan (SMP)	In accordance with the approved SMP	FGJV	Inspection report Laboratory test report	In accordance with the approved SMP
Other monitoring					
Heritage - natural heritage monitoring (Tufa deposits, boulder streams)	Heritage Management Plan (HMP)	In accordance with the approved HMP	FGJV / SHL	Field record / report	In accordance with the approved HMP
Noise	Construction Noise Management Plan – Rock Forest (CNMP)	In accordance with the approved CNMP	FGJV	Field record	In accordance with the approved CNMP

8.2.2. Monitoring Results Outside of Expected Range

Irrespective of the type of monitoring conducted, the results will be used to identify potential or actual problems arising from construction processes. Where monitoring results are outside of the expected range, the process described below will be implemented:

- the results will be analysed by the FGJV Environmental Manager or Environmental Coordinator with the view of determining possible causes for the exceedance including a review of the potential construction activities impacting that site of the exceedance;
- a site inspection will be undertaken;
- relevant personnel will be contacted and advised of the problem;
- an agreed action will be identified; or
- action will be implemented to rectify the problem.

The SHL Environmental Manager will be advised of any exceedances and implemented actions within the monthly report.

Any exceedances which result in a non-compliance of the conditions, will be reported in the relevant Compliance Report and as required within Section 8.4 and 8.5 of the EMS.

Monitoring outcomes which exceed certain thresholds may be subject to the implementation of a TARP. These have been developed and provided within the relevant management plans to allow prompt identification of unpredicted impacts and to guide the implementation additional management measures and corrective actions should certain conditions arise. They provide potential indicators to the exceedances beyond those predicted, assigning a hierarchy of alarms or trigger levels to each potential indicator, specifying appropriate responses and when these should be applied.

8.3. Auditing

The purpose of auditing is to assess compliance with the EMS and associated management plans, the Approval and any relevant legal and other requirements (e.g. licences, permits, regulations, contract documentation).

8.3.1. Internal Audits

Internal auditing will be undertaken during construction with the documents and environmental aspects audited based on the stage of the project and environmental risk. FGJV will prepare an audit schedule outlining the proposed items for auditing. The audit schedule will be maintained by the FGJV for the duration of the project and updated on minimum six-monthly basis or when any change is made to the schedule.

8.3.2. External Audits

An independent environmental audit will be commissioned by SHL and conducted within one year of the commencement of construction of Main Works and every three years thereafter, unless the Planning Secretary directs otherwise. The audit is to be carried out by a suitably qualified, experienced and independent team of experts including a lead auditor, whose appointment has been endorsed by the Planning Secretary.

Within 12 weeks of commissioning this audit, or as otherwise agreed by the Planning Secretary, SHL must submit a copy of the audit report to DPE via the Major Projects Portal, together with a response to any recommendations and a copy of the proposed audit action plan.

The approved audit action plan will be implemented.

In accordance with the EPBC Act Approval, the Australian Government Minister may request that independent audits occur. For each audit of the EPBC Act Approval, the name and qualifications of the independent auditor, and the draft criteria are to be provided to DCCEEW. The audit cannot commence until the audit criteria have been approved in writing, and the audit report must be submitted to DCCEEW within the timeframe specified in the approved audit criteria.

8.4. Reporting

8.4.1. Reporting Non-compliances

Infrastructure Approval non-compliances

FGJV is to notify SHL within 7 days of becoming aware of a non-compliance. The notice will be prepared in accordance with condition 7 of schedule 4 and will set out:

- the non-compliance;
- the reasons for the non-compliance (if known); and
- what actions have been taken, or will be taken, to address the non-compliance.

SHL are to notify DPE (within the 7 day period) of the non-compliance via the Major Projects Portal, with the notification including the details provided above.

EPBC Act Approval non-compliances

DCCEEW will be provided, in writing, the details of any non-compliance within the conditions or commitments made in plans (as defined under the EPBC Act Approval) within 10 business days after becoming aware of the non-compliance, specifying:

- any condition that is or may be in breach;
- any corrective action or investigation which has already occurred or intends to occur in the immediate future;
- the potential impacts of the incident or non-compliance on protected matters; and
- the method and timing of any remedial action that will be undertaken by the approval holder.

8.4.2. EPBC Act Approval compliance reporting

SHL and / or FGJV will prepare a compliance report in accordance with condition 33 of the EPBC Act Approval, for each 12 month period following the date of commencement of the action, or otherwise in accordance with an annual date that has been agreed to in writing by the Minister.

In undertaking compliance reporting, the following is to occur:

- each compliance report is to be published on the project website within 60 business days following the relevant 12 month period;
- DCCEEW is to be notified by email that a compliance report has been published on the website and provide the weblink for the compliance report within five business days of the date of publication;
- all compliance reports are to be publicly available on the website until the EPBC Act Approval expires, unless otherwise agreed to in writing by the Minister;

- sensitive ecological data is to be excluded or redacted from compliance reports published on the website; and
- where any sensitive ecological data has been excluded from the version published, the full compliance report is to be submitted to DCCEEW within five business days of publication.

8.4.3. Reporting Notification of Works Commencement

The commencement of certain stages of works are required to be reported in accordance with condition 6 of schedule 4. Notification will be provided to DPE, NPWS and NSW DPI via the Major Projects Portal at least one week prior to the following:

- commencement of the development of Main Works;
- commencement of development on the following sites:
  - Marica site;
  - Plateau site;
  - Tantangara site; and
  - Rock Forest site;
- commencement and completion of the required road upgrades;
- commencement and completion of construction;
- commencement of commissioning and testing the power station;
- completion of the initial rehabilitation of the site following construction;
- completion of the ecological rehabilitation of the site, apart from the areas used for operations;
- commencement and completion of operations;
- commencement of decommissioning the development;
- completion of the final rehabilitation of the site; and
- completion of the ecological rehabilitation of the areas used for operations.

In accordance with condition 28 of the EPBC Act Approval, SHL are to notify DCCEEW in writing of the date of commencement of the action, within 10 days after the date of commencement of the action.

8.4.4. Other Reporting

FGJV are required to prepare and submit various reports to SHL and to undertake reporting required under the Infrastructure Approval. A summary of these reports is provided in Table 8-3. This table will be updated as required by FGJV during the progress of the project.

Table 8-3: Other reporting requirements

No.	Report	Requirement	Timing	Responsibility	Recipient
1	Monthly environmental report	For incorporation in project Monthly Reports	Monthly	FGJV Environmental Manager	SHL
2	EPL Monthly Report	As required by the EPL	As required by the EPL	SHL	Public

No.	Report	Requirement	Timing	Responsibility	Recipient
3	EPL Annual Return	As required by the EPL	Annual based on date of EPL issue	SHL	EPA
4	SHL and/or agency environmental inspection reports	Response to items raised in SHL and/or agency site inspections.	Timing of close out of actions dependent on risk.	FGJV Environmental Manager, Environmental Coordinators	SHL
5	Website updates	Provide regular reporting on the environmental performance of the project on the website	In accordance with the reporting requirements in any strategies, plans or programs or at least monthly	SHL	Public

8.4.5. Project Website

A website will be maintained that includes the following information:

- the documents referred to in the definition of the Exploratory Works and Main Works. As required by these definitions, this would include:
  - the Exploratory Works EIS;
  - the *Response to Submissions Exploratory Works for Snowy 2.0* dated October 2018 and additional information provided to the Department on 17 October 2018, 19 November 2018 and 23 January 2019;
  - the *Modification Report* (Modification 1) dated 6 June 2019, associated *Submissions Report* dated 2 September 2019 and amendment letter dated 4 October 2019;
  - the Modification Report (Modification 2) dated 17 October 2019 and associated *Submissions Report* dated 10 January 2020
  - the Main Works EIS;
  - the *Snowy 2.0 Main Works – Response to Submissions* dated February 2020*;*
  - additional information provided to the Department by EMM on 24 March 2020 and 7 April 2020;
- current statutory approvals for the development;
- approved strategies, plans or programs;
- a comprehensive summary of the monitoring results of the development, reported in accordance with the requirements in the Infrastructure Approval, or any approved strategies, plans or programs;
- a monthly summary of complaints;
- a record of all incidents and non-compliances;
- any independent environmental audit, and the Proponent's response to the recommendations in any audit;
- any approved audit action plan; and
- any other matter required by the Planning Secretary.

In accordance with condition 31 of the EPBC Act Approval, management plans which are required to be consulted with DCCEEW are to be published on the project website within 20 business days of the date of approval of the plan.

As required by condition 8 of schedule 4, regular reporting of the environmental performance of the development will be provided on the project website in accordance with the requirements of any of the approved strategies, plans or programs. The regular reporting will include information relating to:

- spoil management;
- rehabilitation (following approval of the Rehabilitation Management Plan and commencement of rehabilitation on site);
- biodiversity monitoring;
- biosecurity risk management (following approval of the Biosecurity Risk Management Plan);
- threatened fish management (following approval of the Threatened Fish Management Plan);
- recreational fishing management (following approval of the Recreational Fishing Management Plan);
- surface water monitoring;
- groundwater monitoring;
- heritage management, archival records and the findings of any excavations and salvage works undertaken as part of the Heritage Management Plan (following completion of archival recording and salvage works and preparation of a report);
- implementation of the Recreation Management Plan (following approval);
- effectiveness of the transport management measures;
- effectiveness of the construction noise management measures at Rock Forest.

8.5. Non-compliance, Corrective and Preventative Action

A non-compliance is the failure to comply with the requirements of this EMS and supporting documentation. Where a non-compliance has been identified, a correction action/preventative action will be developed and implemented to minimise the potential for recurrence.

In the event of a non-compliance the following will occur:

- the nature of the event will be investigated;
- advice may be sought from a specialist;
- monitoring may be undertaken;
- the effectiveness or need for new/additional controls will be reviewed;
- an appropriate preventative and corrective action will be implemented;
- environmental documentation will be reviewed and revised; and
- the activities may be stopped, if necessary, by the FGJV Environmental Manager in consultation with the Project Director and Project HSE Manager. A hold will be placed on the area until appropriate actions have been undertaken.

Corrective actions may be generated from a number of sources, including but not limited to incidents, audits, inspections and management reviews. Corrective actions will be systematically managed to ensure issues raised are recorded and closed out in a timely manner.

Corrective/preventative actions will be entered into FGJV's quality system database and include details of the issue raised, the action required, and timing and responsibilities. The database will be reviewed regularly to ensure actions are closed out as required. The close out details shall include the date closed and the name of the person verifying completion of the required action.

9. DOCUMENTATION

9.1. Records

The FGJV Environmental Manager is responsible for maintaining all environmental management documents. The following records are those that will be generated through delivery of the project:

- monitoring and inspection records;
- correspondence with public authorities;
- induction and training records;
- site specific records such as those prepared for dewatering and water management, out of hours works, clearing, unexpected finds etc;
- waste classification records, waste disposal and recycling records;
- plans, strategies and reports, and revisions thereof, to ensure compliance with the Infrastructure Approval;
- reports on environmental incidents, environmental non-compliance, and corrective actions;
- audit reports.

All environmental management documents are subject to ongoing review and continual improvement.

9.2. Document and Data Control

FGJV will coordinate the preparation, review, and distribution, as appropriate, of the environmental documents. During construction, environmental documents will be stored electronically at the site office or on the project document control system (Aconex).

Aconex is used to control the flow of documents and data within the FGJV teams and between FGJV, SHL, and stakeholders.

Controlled documents and data will be uniquely identified and will bear a defined revision number recorded on each page of the document.

APPENDIX A1 – SITE LAYOUT

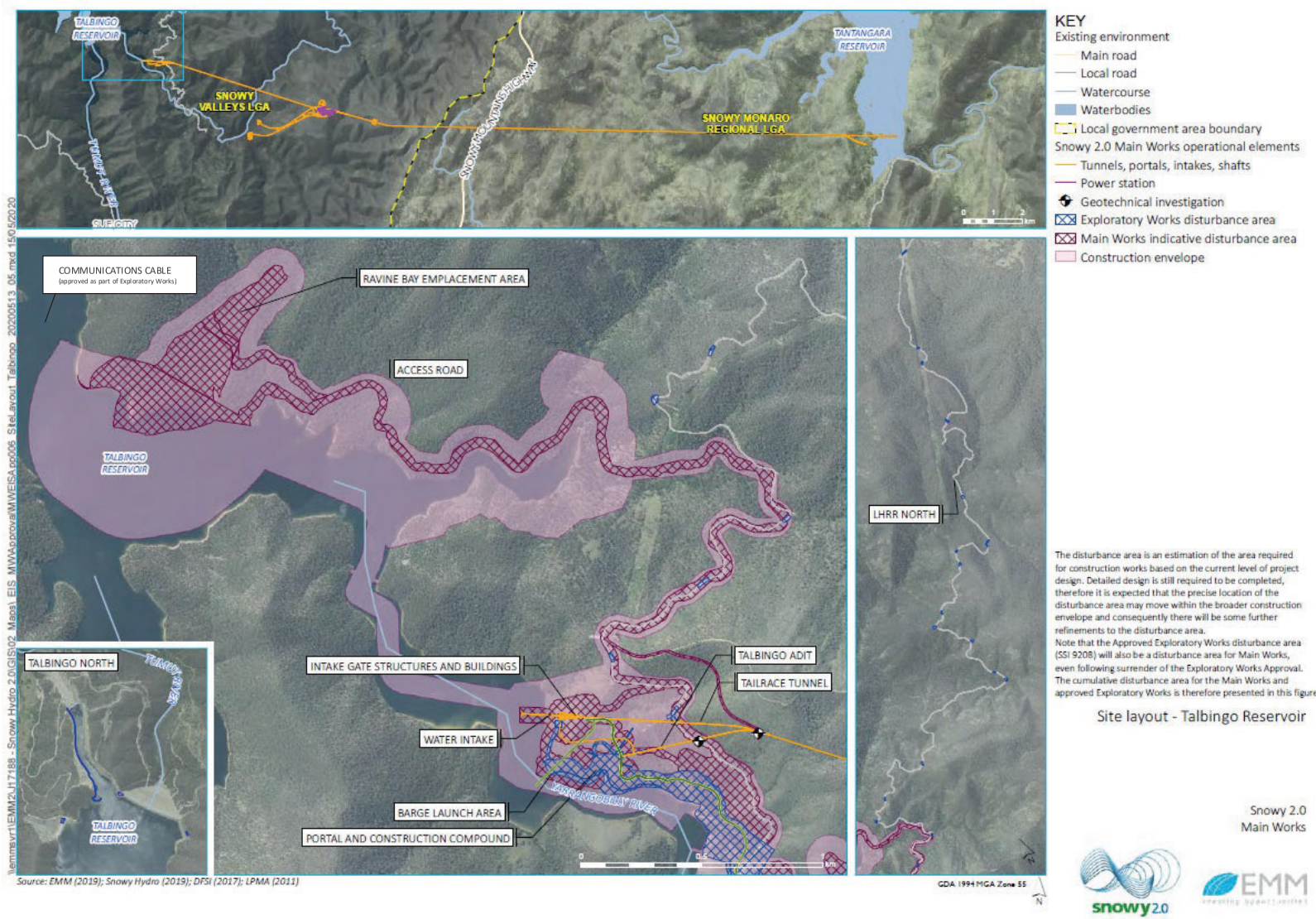


Figure A5-1: Site layout – Talbingo Reservoir (Figure 2-1 of the Approval)

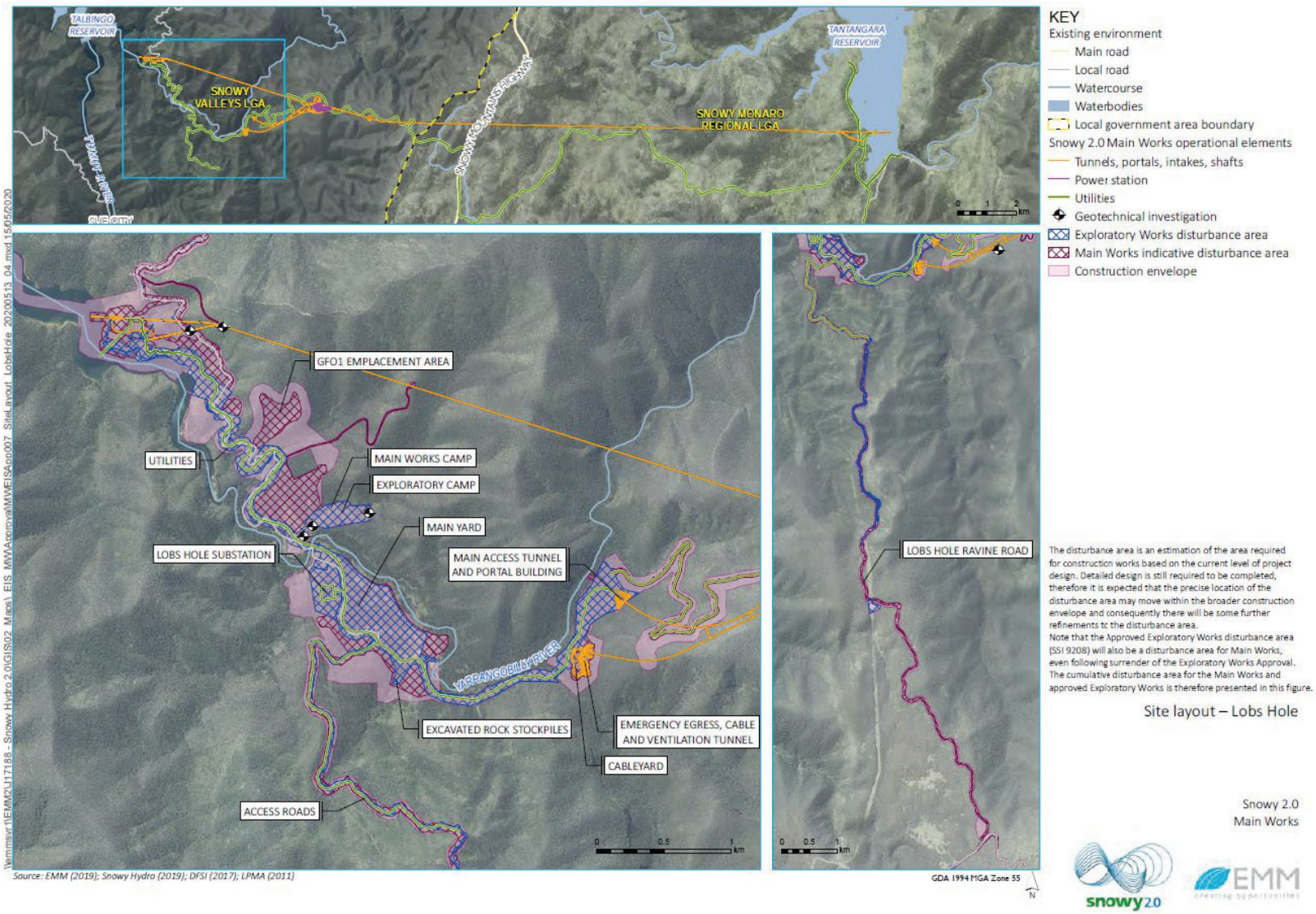


Figure A5-2: Site layout – Lobs Hole (Figure 2-2 of the Approval)

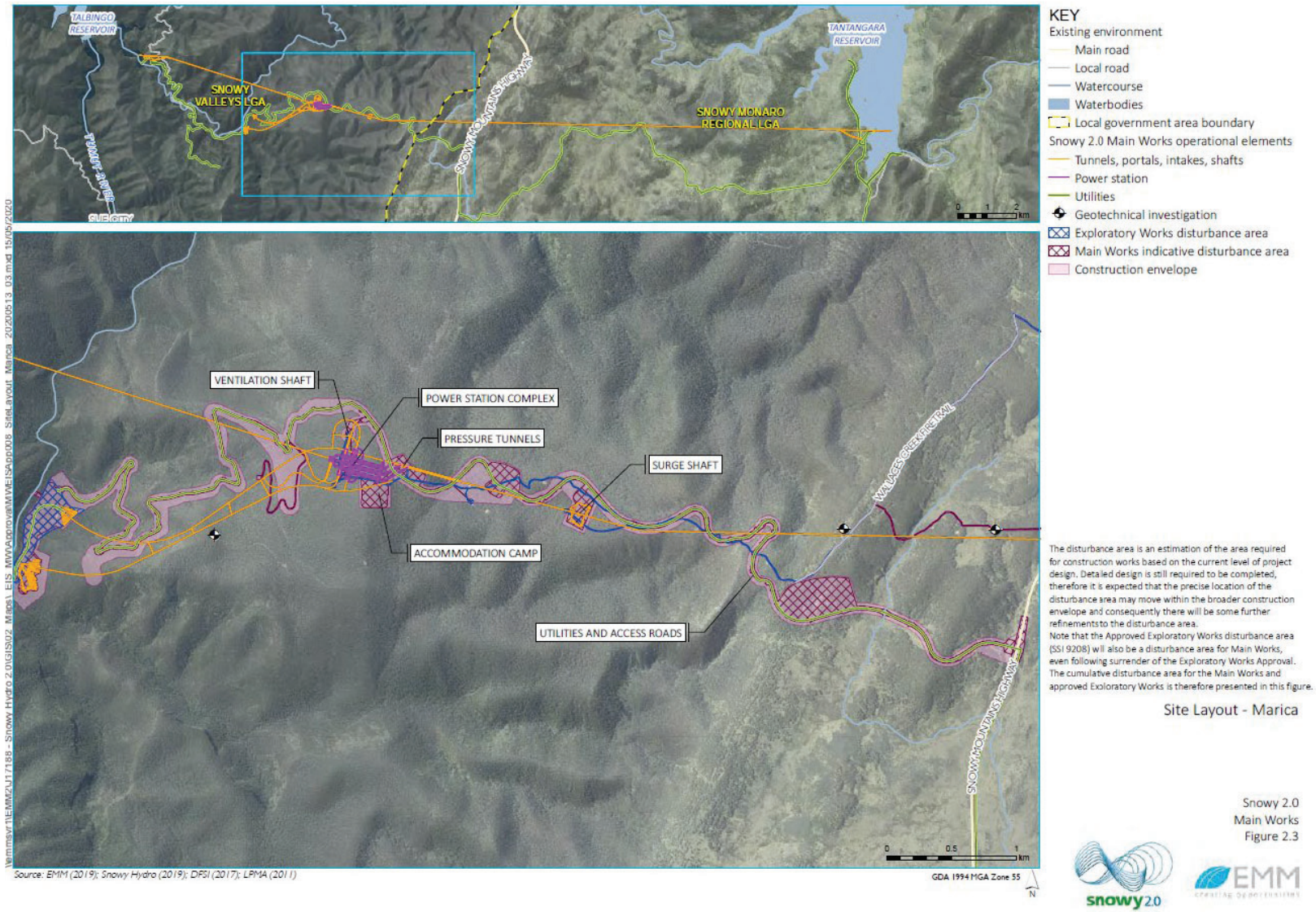


Figure A5-3: Site layout – Marica (Figure 2-3 of the Approval)

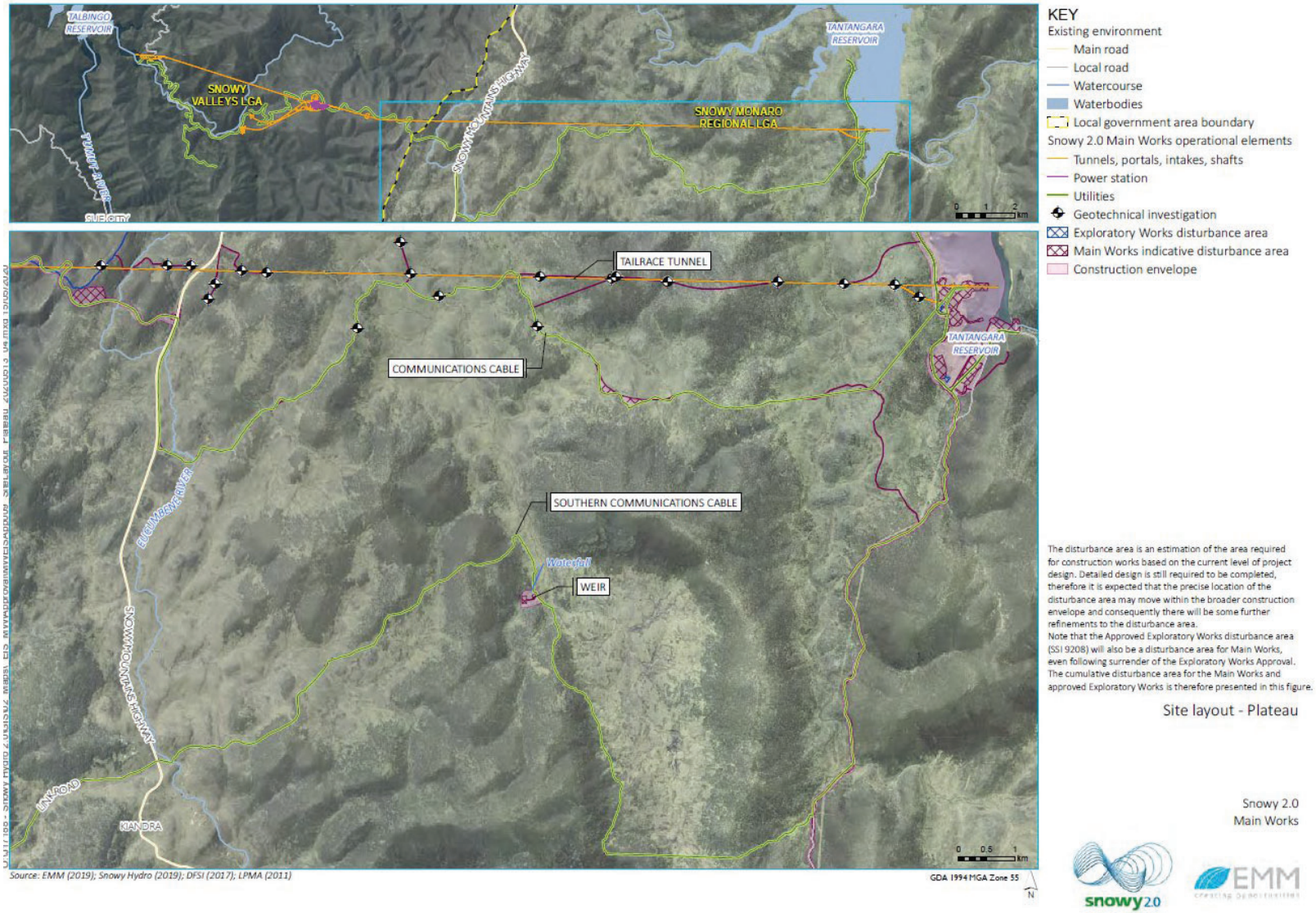


Figure A5-4: Site layout – Plateau (Figure 2-4 of the Approval)

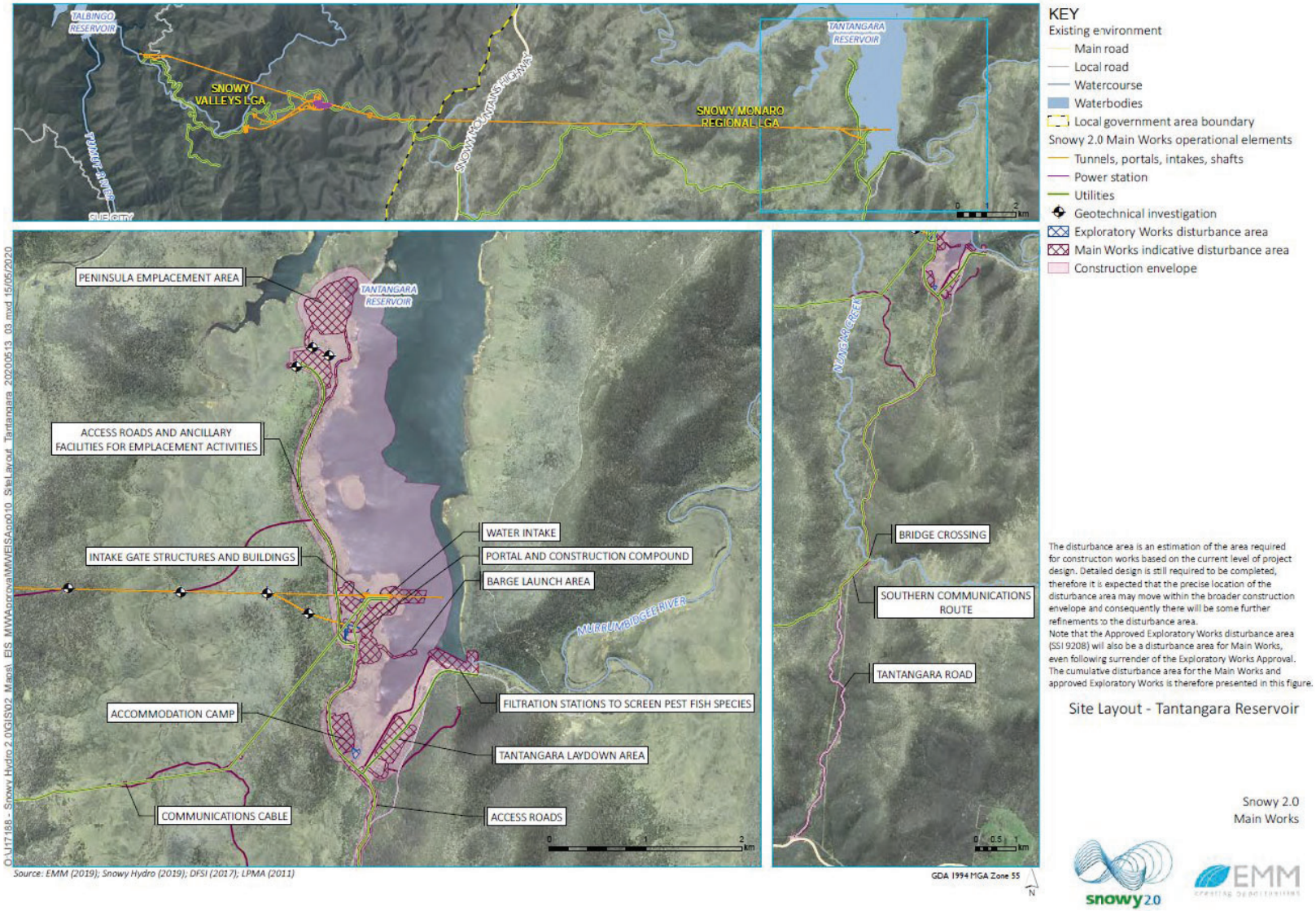


Figure A5-5: Site layout - Tantangara Reservoir (Figure 2-5 of the Approval)

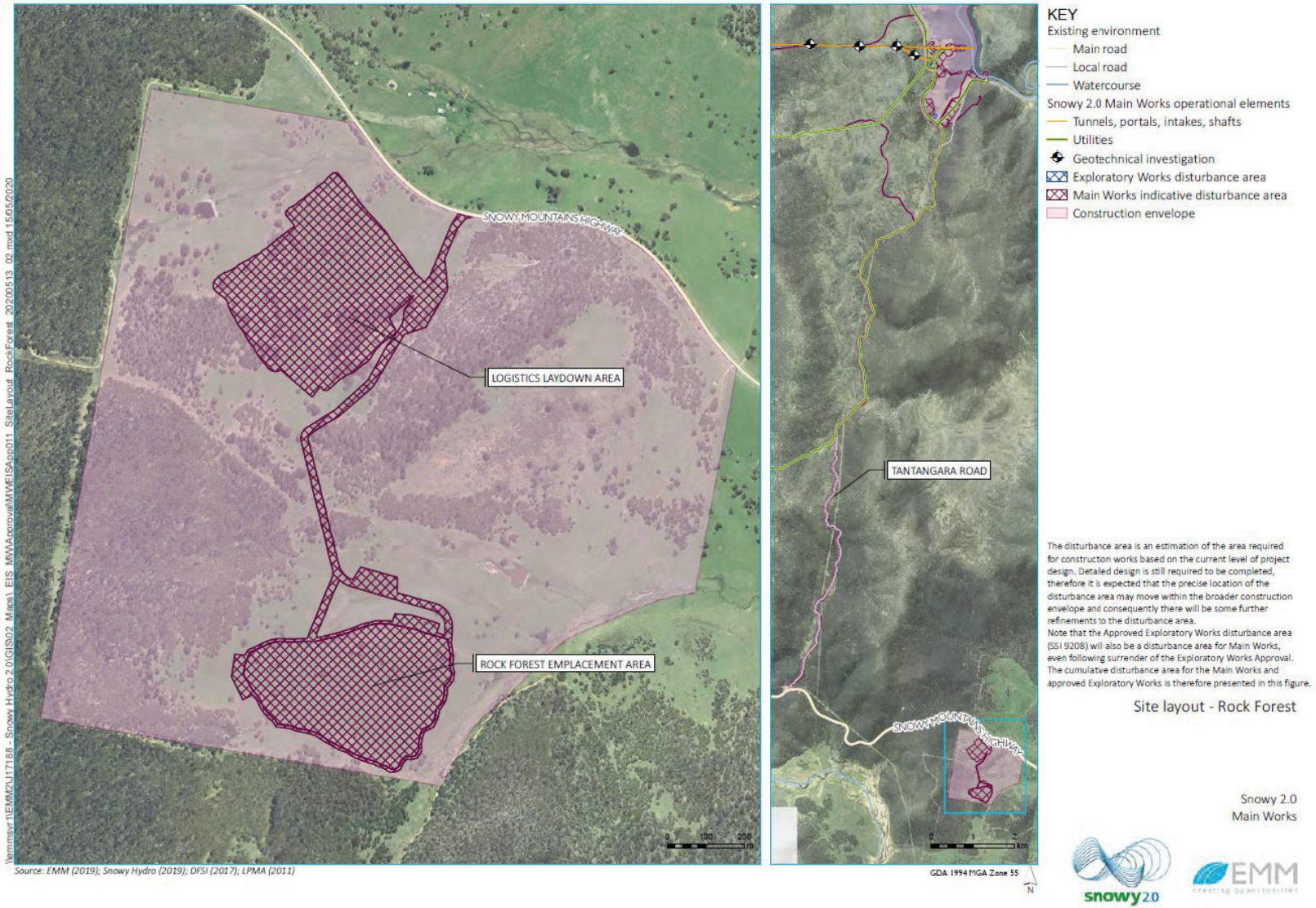


Figure A5-6: Site layout – Rock Forest (Figure 2-6 of the Approval)

APPENDIX A2 – LEGAL AND OTHER REQUIREMENTS

Legislation

Legislation	Aspect	Reference	Requirement	Responsibility	Applicable
General					
Environmental Planning and Assessment Act 1979	All	Section 5.19	Approval of the Minister required to carry out State significant infrastructure (SSI). Comply with the Conditions of the Infrastructure Approval and the revised environmental management measures from the Submissions Report.	SHL	Yes Snowy 2.0 Main Works is declared to be critical State significant infrastructure (CSSI) with the declaration coming into effect on 9 March 2018. Snowy 2.0 Main Works may be carried out without development consent under Part 4 of the EP&A Act, however application for approval of the CSSI is to occur. The *Snowy 2.0 Main Works - Environmental Impact Statement* was submitted to Department of Planning, Industry and Environment in September 2019 and publicly exhibited between 26 September 2019 and 7 November 2019. In February 2020, the response to submissions was prepared (*Snowy 2.0 Main Works – Response to Submissions*). Approval for the Snowy 2.0 Main Works project was granted by the Minister for Planning and Public Spaces on 20 May 2020. On 27 January 2022 SSI-9687-MOD 1, 'Main Access to Marica Services Connection' was approved.
Environment Protection and Biodiversity Conservation Act 1999	Proposed action	Section 28	A person must not take an action that has, will have or is likely to have a significant impact on any of the matters of national environmental significance without approval.	-	Yes The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) aims to protect matters of national environmental significance (MNES) including national heritage places. Following referral of the project to Department of Environment, Agriculture and Water, the project was determined on 5 December 2018 to be a controlled action, and therefore required further assessment and approval under the *Environment Protection and Biodiversity Conservation Act 1999*. The referral number is EPBC 2018/8322. The relevant controlling provisions are: • National Heritage places (sections 15B and 15C); • Listed threatened species and communities (sections 18 and 18A); • Listed migratory species (sections 20 and 20A); • Commonwealth action (section 28).

Legislation	Aspect	Reference	Requirement	Responsibility	Applicable
National Parks and Wildlife Act 1974	Kosciuszko National Park		All activities on reserved land must be consistent with the objects and purpose of the NPW Act. All activities within KNP must be consistent with the KNP Plan of Management in accordance with Part 5 of the *National Parks and Wildlife Act 1974.*	SHL	Yes The KNP PoM incorporates the Snowy Management Plan, which is set out in Schedule 2 of the Snowy Management Plan Procedures Agreement dated 3 June 2002. SHL is required, under Part 4 of the *National Parks and Wildlife Regulation 2009*, to comply with the environmental management obligations imposed on the company under the Snowy Management Plan.
SHL Corporatisation Act 1997	All	Section 37	Section 37(2) of the *SHL Corporatisation Act 1997* entitles SHL to grant a lease, licence, easement or right of way over KNP, for the purposes of the existing Snowy Scheme development.	SHL	Yes The Snowy Park Lease was granted to SHL in 2002 and has a term of 75 years. The lease covers land where surface infrastructure associated with SHL has been constructed. Section 41(5) of the *SHL Corporatisation Act 1997* provides that development that is for a purpose for which a lease has been granted under Part 6 of the Act, is taken to be authorised under the *National Parks and Wildlife Act 1974.*
	Water use	Section 23	Part 5, Section 23 of the *SHL Corporatisation Act 1997* provides rights for SHL to collect water from rivers, streams and lakes within the Snowy water catchment; to divert water; to store that water and to use water to generate electricity. The Snowy Water Licence is a statutory instrument issued under Part 5 of the *SHL Corporatisation Act 1997.*	-	The rights are subject to section 32 of the *SHL Corporatisation Act 1997* and Part 1 of Chapter 3 of the *Water Management Act 2000.* Section 32 states that a person may be granted an access licence, water use approval or water supply work approval under the *Water Management Act 2000* in relation to water authorised by the Snowy water licence. Part 1 of Chapter 3 of the *Water Management Act 2000* relates to basic landholder rights including domestic and stock rights, harvestable rights and native title rights. These are not applicable to the Main Works project.
Protection of the Environment Operations Act 1997	Scheduled activity	Section 47 Section 48	Do not carry out or allow an activity listed in Schedule 1, or carry out work to enable such an activity, unless the premises are licensed by the EPA.	SHL	EPL 21266 has been issued for the project for the scheduled activity of extractive activities for the Exploratory Works phase. The premises boundary for the Exploratory Works EPL will be expanded to encompass both Exploratory Works and Main Works activities and the governing scheduled activity for Main Works will be Electricity Generation. In accordance with Schedule 1 of the POEO Act, additional scheduled activities which may be relevant to the Snowy 2.0 Main Works include:

Legislation	Aspect	Reference	Requirement	Responsibility	Applicable
					9 Chemical storage In the event that: • General chemicals storage – capacity to store more than 20 tonnes of pressurised gases, 200 tonnes of liquified gases or 2000 tonnes of chemicals is stored; • On-site generated chemical waste storage – storing on site at any time more than 5 tonnes of any chemical substance produced on site that is prescribed waste; • Petroleum products storage – capacity to store more than 200 tonnes (liquified gases) or 2000 tonnes (chemicals in any other form); an EPL would be required for the scheduled activity of chemical storage. In the event that chemicals or petroleum products above this amount is required, an application will be made to include chemical storage on the EPL. **13 Concrete works** Required if more than 30,000 tonnes per year of concrete product is produced. Includes the production of concrete products but does not apply to concrete batching. **15 Contaminated soil treatment** Required if treating and storing more than 30,000 cubic metres of contaminated soil or disturbing more than 3 ha of contaminated soil. **15A Contaminated groundwater treatment** Groundwater from the tunnelling works will be treated as required, however any analytes / parameters which required treatment would likely be due to the naturally high background levels (and not due to contaminated groundwater). Should the treatment of contaminated groundwater occur, with the system having a capacity of more than 100 megalitres per year of contaminated water, then an EPL will be applied for. **16 Crushing, grinding or separating** Required if there is a capacity to process more than 150 tonnes of material per day or 30,000 tonnes per year. This does not however

Legislation	Aspect	Reference	Requirement	Responsibility	Applicable
					apply to an activity declared to be a scheduled activity by road construction. **19 Extractive activities** Land-based extractive activity - means the extraction, processing or storage of extractive materials, either for sale or re-use, by means of excavation, blasting, tunnelling, quarrying or other such land-based methods. Extraction on land is not occurring for the purpose of sale or re-use. **36 Sewage treatment** Relates to the operation of sewage systems and applies if the system has a processing capacity that exceeds 2500 persons equivalent or 750 kilolitres per day whichever is the greater.
	Harming the environment	Section 115 Section 116 Section 117	Do not risk harming the environment by wilfully or negligently: • disposing of waste unlawfully. • causing any substance to leak, spill or otherwise escape (whether or not from a container); or • causing any controlled substance to be emitted into the atmosphere.	FGJV	Yes Management measures included within the Surface Water Management Plan, the Waste Management Plan and the Air Quality Management Plan.
	Notification of pollution incidents	Section 148	Notify the EPA immediately of pollution incidents where material harm to the environment is caused or threatened.	SHL / FGJV	Yes Included within Section 7 of the EMS.
	PIRMP prepared if EPL required	Section 153A-F	Requires the holder of an EPL to prepare a pollution incident response management plan (PIRMP)	SHL / FGJV	A PIRMP will be prepared as part of the EPL.
	Control equipment	Section 167	Properly and efficiently maintain and operate any installed pollution	FGJV	Yes Included within the relevant management plans, such as the Surface Water Management Plan.

Legislation	Aspect	Reference	Requirement	Responsibility	Applicable
			control equipment (including monitoring devices).		
Roads Act 1993	Road use	Section 138	Road occupancy licences (ROLs) required for any activity likely to impact on traffic flow	FGJV	Yes ROLs will be obtained as required.
Rural Fires Act 1997	Bushfire prone land	Section 100B	Bush fire safety authority	-	No Certain approvals and authorisations are not required for approved SSI projects. In accordance with s 5.23 of the EP&A Act, SSI projects are exempt from requiring approvals under section 100B of the *Rural Fires Act 1997*.
Environmentally Hazardous Chemicals Act 1985	Hazards and risks	Section 28	The legislation aims to minimise the risks to human health and the environment from hazardous industrial chemicals. Obtain a licence to undertake prescribed activities involving environmentally hazardous chemicals or declared chemical wastes.	FGJV	Prescribed activities are activities which, by reason of a chemical control order, may lawfully be carried on only under the authority of a licence. Prescribed activity is defined in the *Environmentally Hazardous Chemicals Act 1985* as 'in relation to a chemical or any chemical waste, means the act of manufacturing, processing, keeping, distributing, conveying, using, selling or disposing of the chemical or waste or any act related to any such act.' A licence to carry out an activity prohibited by a chemical control order must be obtained from EPA. EPA currently have five chemical control orders in place for: • aluminium smelter wastes containing fluoride and / or cyanide; • dioxin-contaminated waste materials; • organotin waste materials; • polychlorinated biphenyl compounds; • scheduled chemical wastes. There is no known handling of these substances which would occur, however should the requirements of the *Environmentally Hazardous Chemicals Act 1985* be triggered, then a licence may be required. Should the requirements of this legislation be triggered, licences to carry out an activity prohibited by a chemical control order will be obtained from EPA.

Legislation	Aspect	Reference	Requirement	Responsibility	Applicable
Dangerous Goods (Road and Rail Transport) Act 2008	Hazards and risks	Section 9	Ensure that dangerous goods are transported in a safe manner.	FGJV	Dangerous goods are required to be transported in a safe manner. Vehicles that transport dangerous goods are required to be licensed. Drivers transporting dangerous goods are required to be licensed. Licences to transport dangerous goods will be obtained if required.
Pesticides Act 1999	Hazards and risks	Section 12 Section 13 Section 14 Section 15 Section 17	Use pesticides in an environmentally sensitive manner. Do not use an unregistered pesticide without a permit. Read the label or permit for the pesticide. Use registered pesticides in accordance with instructions on the label. Do not use any restricted pesticide unless authorised by a certificate of competency or a pesticide control order under the Act. Compliance with pesticide codes of practice is required.	FGJV	Works are required to be undertaken in accordance with relevant legislative requirements including (if required), the application of pesticides in accordance with the *Pesticides Act 1999*. In the event that an unregistered pesticide is used, a permit will be required to be obtained.
National Greenhouse and Energy Reporting Act 2007 and Regulations 2008	Greenhouse gas emissions	-	Accounting and reporting of greenhouse gases produced and energy consumed during construction.	SHL / Contractor	Yes Applicability dependent on thresholds.
Water					
Protection of the Environment Operations Act 1997	Water pollution	Section 120 Section 122	Do not cause water pollution (other than to a sewer), except in accordance with the conditions of any EPA licence.		Yes Management measures have been incorporated within the Surface Water Management Plan.
Water Management Act 2000	Water access licence	Section 60A	Do not take water from a water source (a lake, river or estuary or place where water occurs naturally on or below the surface of the	SHL	Yes The *Water Management Act 2000* applies to areas of New South Wales that have a water sharing plan. The project area is subject to the following water sharing plans:

Legislation	Aspect	Reference	Requirement	Responsibility	Applicable
			ground and includes coastal waters) without an access licence.		• *Water sharing plan for the Murrumbidgee unregulated and alluvial water sources 2012*, Upper Tumut surface water source; • *Water sharing plan for the NSW Murray Darling Basin Fractured Rock Groundwater Sources 2011,* Lachlan Fold Belt Murray Darling Basin Groundwater Source; and • *Water sharing plan for the South Coast Groundwater Sources 2016,* Lachlan Fold Belt Coast Groundwater Source. Section 60A of the *Water Management Act 2000* requires that a water access licence (WAL) be obtained to extract water from a water source. Section 21 and Schedule 4 of the *Water Management (General) Regulation 2018* does however provide exemptions for the requirement to obtain water access licences. Relevant exemptions from Part 1 of Schedule 4 are detailed below: • clause 7 provides an exemption for water taken in the course of certain aquifer interference activities (in relation to taking up to 3 ML of groundwater from a groundwater source); • clause 11 exempts a person engaged in the operation of hydro-electric station in relation to the water required for the purpose of generating hydro-electric power but only if the water is returned to the same water source and the returned water is of the same quality; • clause 17A provides exemption for the taking of groundwater for excavation works where they are a holder of a water supply work authority in relation to taking of more than 3 ML of groundwater. Water access licences are therefore not required for certain aquifer interference activities (in relation to taking up to 3ML of groundwater); or taking of greater than 3ML of groundwater for excavation works where a water supply work approval is held. Any other water required for construction purposes would however require a water access licence. This includes extraction for: • interception activities (i.e. intercepted groundwater during tunnelling); • potable uses for human consumption associated with the accommodation camp; and

Legislation	Aspect	Reference	Requirement	Responsibility	Applicable
					• process water via the services pipeline from Talbingo and Tantangara Reservoirs for tunnelling and construction activities. SHL have secured three Water Access Licences for the project: • WAL42960 – Groundwater licence; • WAL42407 – Surface water licence; and • WAL43544 – Surface water licence The three licences allow for direct and indirect take of groundwater from the Lachlan Fold Bent (LFB) Murray Darling Basin (MDB) groundwater source and direct take from the Upper Tumut water source (from within Talbingo Reservoir). SHL is also in the process of applying for additional groundwater licences via the Controlled Allocation Order for additional share entitlement from the LFB MDB groundwater source (RO13-19-093), and new share entitlements from the LFB South Coast groundwater source (RO13-19-192). The additional groundwater licence shares cover the peak predicted annual take modelled in the Main Works EIS.
	Water use approval	Section 89	A water use approval confers a right on its holder to use water for a particular purpose at a particular location.	-	No Certain approvals and authorisations are not required for approved SSI projects. In accordance with s 5.23 of the EP&A Act, SSI projects are exempt from requiring a water use approval under section 89.
	Water management works approval	Section 90	Do not construct/use a water supply work, drainage work or flood work without the appropriate approval.	-	No There are three kinds of water management work approvals, namely, water supply work approvals, drainage work approvals and flood work approvals: • a water supply work approval authorises its holder to construct and use a specified water supply work at a specified location; • a drainage work approval confers a right on its holder to construct and use a specified drainage work at a specified location; and • a flood work approval confers a right on its holder to construct and use a specified flood work at a specified location. Certain approvals and authorisations are not required for approved SSI projects.

Legislation	Aspect	Reference	Requirement	Responsibility	Applicable
					In accordance with s 5.23 of the EP&A Act, SSI projects are exempt from requiring a water management work approval under section 90.
	Activity approvals	Section 91 Section 91E Section 91F	Controlled activity approvals and aquifer interference approvals.	-	In accordance with s 5.23 of the EP&A Act, SSI projects are exempt from requiring an activity approval under section 91 (other than an aquifer interference approval). An activity approval is therefore not required, however an aquifer interference licence may be required when an activity involves any of the following: (a) the penetration of an aquifer, (b) the interference with water in an aquifer, (c) the obstruction of the flow of water in an aquifer, (d) the taking of water from an aquifer in the course of carrying out mining, or any other activity prescribed by the regulations, (e) the disposal of water taken from an aquifer as referred to in paragraph (d). If aquifer interference is expected to occur through excavation, deep excavations, and dewatering then an aquifer interference licence will be required. Caverns, tunnels, cuttings and pipelines are considered minimal impact if a water access licence is not required. If aquifer interference is expected to occur through excavation, deep excavations and dewatering then an aquifer interference licence may be required.
Water Act 1912 Note that this Act is being progressively repealed by the *Water Management Act 2000*	Surface water	Section 21B	Obtain a licence or permit for construction or use of 'work' for purposes including the taking and using of water	-	The *Water Act 1912* does not apply to areas where a water sharing plan is in place. The project is subject to the following water sharing plans: • *Water sharing plan for the Murrumbidgee unregulated and alluvial water sources 2012*, Upper Tumut surface water source; • *Water sharing plan for the NSW Murray Darling Basin Fractured Rock Groundwater Sources 2011,* Lachlan Fold Belt Murray Darling Basin Groundwater Source; and • *Water sharing plan for the South Coast Groundwater Sources 2016,* Lachlan Fold Belt Coast Groundwater Source.

Legislation	Aspect	Reference	Requirement	Responsibility	Applicable
	Groundwater	Section 112 Section 121A	Obtain a licence where interference with groundwater is likely to occur.	-	The EIS advises that in Section 4.4.4 that monitoring bore licences are required under the *Water Act 1912.*
	Floodplains	Section 180	Obtain an approval for controlled works. These include works which occur on a designated floodplain, which can prevent land from being flooded or which can affect water flow to or from a river or lake.	-	The *Water Act 1912* does not apply to areas where a water sharing plan is in place. As the project is subject to water sharing plans, the project works are governed by the *Water Management Act 2000.*
Biodiversity					
Biodiversity Conservation Act 2016	Flora and fauna		Legislation responsible for the conservation of biodiversity in NSW through the protection of threatened flora and fauna species, populations and Endangered Ecological Communities (EECs). The *Biodiversity Conservation Act 2016*, together with the *Biodiversity Conservation Regulation 2017,* established the Biodiversity Offsets Scheme.	SHL	Yes
Biosecurity Act 2015	Weed management	Section 22	Under Part 3 of the *Biosecurity Act 2015,* landowners or land managers have a general biosecurity duty to prevent, eliminate or minimise the biosecurity risk posed or likely to be posed by priority weeds. A biosecurity risk exists where priority weeds have the potential to negatively impact on agriculture, industry, the liveability of our city, human health or the environment. Invasive weeds are known as 'Biosecurity Matter' or 'Priority Weeds'.	FGJV	Yes A Weed, Pest and Pathogen Management Plan will be prepared and implemented for the project.

Legislation	Aspect	Reference	Requirement	Responsibility	Applicable
Fisheries Management Act 1994	Taking or possessing fish or marine vegetation	Section 37	Permit to take and possess fish or marine vegetation	SHL FGJV	A section 37 permit is required for any activity that involves taking or possessing fish or marine vegetation that would otherwise be unlawful under the *Fisheries Management Act 1994* including any collecting activities. There is currently no proposal to take and possess fish or marine vegetation, however in the event that this is required, a permit would be applied for.
	Dredging or reclamation	Section 199 Section 201	Provide the Minister for Primary Industries 28 days' notice of planned dredging or reclamation work.	FGJV	Yes Section 201 requires a person to obtain a permit for dredging or reclamation. Certain approvals and authorisations are not required for approved SSI projects. In accordance with s 5.23 of the EP&A Act, SSI projects are exempt from requiring approvals under section 201 of the *Fisheries Management Act 1994*. Section 5.23 of the EP&A Act is silent on s199 and therefore the requirement for notification remains. Section 199 requires a government authority to give notice of dredging or reclamation.
	Mangroves, seagrasses and marine vegetation	Section 205	Do not harm any mangroves, seagrasses or other marine vegetation on public water land protected by the regulations without a permit.	Not applicable	No Certain approvals and authorisations are not required for approved SSI projects. In accordance with s 5.23 of the EP&A Act, SSI projects are exempt from requiring approvals under section 205 of the *Fisheries Management Act 1994*.
	Fish passage	Section 219	Do not block fish passage without a permit	Not applicable	No Certain approvals and authorisations are not required for approved SSI projects. In accordance with s 5.23 of the EP&A Act, SSI projects are exempt from requiring approvals under section 219 of the *Fisheries Management Act 1994*.
Heritage					
Heritage Act 1977	Heritage	Section 57	Do not undertake an activity that will affect a place, building, work, relic, moveable object or precinct which is subject to an Interim Heritage Order or is listed on the State Heritage Register without approval from the Heritage Council.	Not applicable	No Certain approvals and authorisations are not required for approved SSI projects. In accordance with s 5.23 of the EP&A Act, SSI projects are exempt from requiring approvals under Part 4 of the *Heritage Act 1977*. Section 57 is within Part 4 of the *Heritage Act 1977*.

Legislation	Aspect	Reference	Requirement	Responsibility	Applicable
		Section 139	An excavation permit is required under certain circumstances. A person must not disturb or excavate land with knowledge or reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed; or a person must not disturb or excavate land on where a relic has been discovered or exposed.	Not applicable	No Certain approvals and authorisations are not required for approved SSI projects. In accordance with s 5.23 of the EP&A Act, SSI projects are exempt from requiring approvals under section 139 of the *Heritage Act 1977*.
		Section 146	Notify the heritage Council on discovery of a relic.	FGJV / SHL	Yes A person who is aware or believes that he or she has discovered or located a relic must within a reasonable time notify the Heritage Council of the location of the relic, unless he or she believes on reasonable grounds that the Heritage Council is aware of the location of the relic, and within the period required by the Heritage Council, furnish the Heritage Council with such information concerning the relic as the Heritage Council may reasonably require. Notification requirements are included within the Heritage Management Plan.
National Parks and Wildlife Act 1974	Aboriginal places and objects	Section 86 Section 90	Do not harm or desecrate an Aboriginal object or Aboriginal place without consent. Section 86 creates the offence and section 90 creates the requirement to obtain a permit to impact an Aboriginal object, place, land, activity or person.	Not applicable	No Certain approvals and authorisations are not required for approved SSI projects. In accordance with s 5.23 of the EP&A Act, SSI projects are exempt from requiring approvals under section 90 of the *National Parks and Wildlife Act 1974*.
		S89A	Notify the NPWS within reasonable time of becoming aware of the location or discovery of certain Aboriginal objects.	SHL / FGJV	Yes Notification requirements are included within the Heritage Management Plan.

Legislation	Aspect	Reference	Requirement	Responsibility	Applicable
Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Commonwealth)	Protection of areas and objects	Section 20	Report any discovery of Aboriginal remains to the Federal Minister for the Environment and Heritage.	SHL / FGJV	Yes
		Section 22	Comply with the provisions of any declaration in relation to a significant Aboriginal area or object.	SHL / FGJV	Yes
Contaminated material					
Protection of the Environment Operations Act 1997	Land pollution	Section 142A – Section 142E	Do not cause or permit land pollution other than under authority of a licence or regulation (however it is not a land pollution offence to place virgin excavated natural material or lawful pesticides and fertilisers on land, or by placing matter on land that has been notified to the EPA as an unlicensed landfill and which is operated in accordance with the regulations.)	FGJV	Yes
Contaminated Land Management Act 1997	Reporting contamination	Section 60	Duty to report contamination.	SHL / FGJV	Yes If project activities have caused land contamination, or a landowner becomes aware of land that is contaminated, there is a legal duty under section 60 of the *Contaminated Land Management Act 1997* to notify the EPA. The level of contaminants in the soil is to be above the *National Environmental Protection (Assessment of Contamination) Measure 1999;* or meet the criterion prescribed by the regulations; or the contaminant has or will enter neighbouring land, the atmosphere, groundwater or surface water.
Noise					
Protection of the Environment Operations Act 1997	Plant maintenance and operation	Section 139	Do not operate plant if it emits noise caused by failure to maintain or operate the plan in a proper and efficient manner.	FGJV	Yes

Legislation	Aspect	Reference	Requirement	Responsibility	Applicable
Protection of the Environment Operations Act 1997	Materials management	Section 140	Do not cause noise by failing to properly and efficiently deal with materials.	FGJV	Yes
Waste					
Protection of the Environment Operations Act 1997	Littering	Part 5.6A	Do not litter in a public place or an open private place. Do not litter from a vehicle. Only deposit advertising material in receptacles provided for mail or newspapers or under the door of the premises. Do not deposit advertising material on or in vehicles.	FGJV	Yes
	Waste and transportation	Part 3.2 Section 47 Schedule 1	Do not undertake a scheduled waste activity unless in accordance with an environment protection licence.	FGJV	Yes A licence must be obtained when construction and demolition wastes are applied to land under certain circumstances. This includes the placing of excess fill material onto properties. Section 143 notices should be obtained in accordance with the Waste Management Plan for the application of any waste off site. Any transport of more than 200 kg or litres of trackable waste must be undertaken by a person licensed to transport such waste.
		Section 143	Only transport waste to a facility that can lawfully accept the waste.		Yes Section 143 Notices are to be obtained for waste that is sent to a facility / premise outside of the project boundary in accordance with the Waste Management Plan.
		Section 115	Do not dispose of waste in a manner that harms or is likely to harm the environment.		Yes Relevant management measures have been included in the Waste Management Plan.
Protection of the Environment	Waste and transportation	Regulation cl.49	Comply with general requirements for the transport of waste.	FGJV	Yes For example, any vehicle used by the person to transport waste must be kept in a clean condition and be maintained so as to prevent

Legislation	Aspect	Reference	Requirement	Responsibility	Applicable
Operations (Waste) Regulation 2005					spillage of waste. For some wastes only, licensed transporters can be used.
		Regulation Part 3	Comply with record keeping requirements in relation to the transport of certain types of waste.	FGJV	Yes
Local Government Act 1993	Wastewater	Section 68	Section 68 of the LG Act requires approval of the relevant local council to build/install and operate a sewage management system.	FGJV	The EIS advises that approval from EPA will be required under the *Local Government Act 1993* prior to the construction of the sewage treatment plant. There will be no connection to council's sewage treatment system, therefore council approval is not considered to be required. Should sewage treatment form a scheduled activity under the POEO Act, approval from EPA will be obtained.
Notification requirements (summarised from the details above)					
Protection of the Environment Operations Act 1997	Notification of pollution incidents	Section 148	Notify the EPA immediately of pollution incidents where material harm to the environment is caused or threatened.	FGJV / SHL	Yes
Fisheries Management Act 1994	Dredging or reclamation	Section 199 Section 201	Provide the Minister for Primary Industries 28 days' notice of planned dredging or reclamation work.	FGJV / SHL	Yes Section 199 requires a government authority to give notice of dredging or reclamation.
Heritage Act 1977	Notify the Heritage Council on discovery of a relic	Section 146	Notify the Heritage Council on discovery of a relic.	FGJV / SHL	Yes A person who is aware or believes that he or she has discovered or located a relic must within a reasonable time notify the Heritage Council of the location of the relic, unless he or she believes on reasonable grounds that the Heritage Council is aware of the location of the relic, and within the period required by the Heritage Council, furnish the Heritage Council with such information concerning the relic as the Heritage Council may reasonably require. Notification requirements are included within the Heritage Management Plan.
Aboriginal and Torres Strait Islander Heritage	Protection of areas and objects	Section 20	Report any discovery of Aboriginal remains to the Federal Minister for the Environment and Heritage.	SHL / FGJV	Yes

Legislation	Aspect	Reference	Requirement	Responsibility	Applicable
Protection Act 1984 (Commonwealth)					
National Parks and Wildlife Act 1974	Aboriginal places and objects	Section 89A	Notify the NPWS within reasonable time of becoming aware of the location or discovery of certain Aboriginal objects.	SHL / FGJV	Yes
Contaminated Land Management Act 1997	Reporting contamination	Section 60	Duty to report contamination.	SHL / FGJV	Yes If project activities have caused land contamination, or a landowner becomes aware of land that is contaminated, there is a legal duty under section 60 of the *Contaminated Land Management Act 1997* to notify the EPA. The level of contaminants in the soil is to be above the *National Environmental Protection (Assessment of Contamination) Measure 1999*; or meet the criterion prescribed by the regulations; or the contaminant has or will enter neighbouring land, the atmosphere, groundwater or surface water.

AS/NZS ISO 14001:2016 Environmental Management Systems

ISO14001:2016 Elements		Where addressed
Context of the organisation	Understanding the organisation and its context	Section 1.1 and 4.2
	Understanding the needs and expectations of interested parties	Sections 1.6 and 1.7
	Determining the scope of the Environmental Management System	Section 1.4 and 4
	Environmental Management System	Section 4
Leadership	Leadership and commitment	Sections 4.2 and Appendix A3
	Environmental Policy	Appendix A3
	Organisational roles and responsibilities	Section 4.2
Planning	Actions to address risks and opportunities	Sections 4.3
	Environmental objectives and planning to achieve them	Section 1.9.2 and 4.1.2
Support	Resources	Sections 4.2
	Communication	Section 6
	Documented information	Sections 1.9 and 9
Operation	Operational planning and control	Sections 4.1, 4.2, 4.3, and 8
	Emergency preparedness and response	Section 7
Performance evaluation	Monitoring, measurement, analysis and evaluation	Section 8
	Internal audit	Section 8.3.1
	Management review	Section 1.9
Improvement	General	Section 1.9
	Non-conformity and corrective action	Sections 8.4
	Continual improvement	Sections 1.9.2

APPENDIX A3 – ENVIRONMENT and SUSTAINABILITY POLICY

APPENDIX A4 – ENVIRONMENTAL ASPECTS AND IMPACTS REGISTER

No	Activity	Environmental Aspect	Risk	Cause	Possible Outcome	Consequence	Likelihood	Initial Risk Rating	Risk Treatment(s)	Consequence	Likelihood	Residual Risk Rating	Risk Owner
1	Vegetation Clearing	Biodiversity	Injury/mortality of fauna	Removal of occupied habitat, including hollow-bearing trees, shrubs, nests, ground cover, rocks	- Reputational impacts - Potential regulatory action from agencies	3 - Moderate	4 - Likely	12 - High	- Biodiversity Management Plan - Pre-clearing procedure - Ecologists supervision during clearing operations	3 - Moderate	2 - Unlikely	6 - Medium	FGJV
2	Vegetation Clearing	Biodiversity	Removal of vegetation/habitat not permitted to be impacted by the project approval	Vegetation clearing outside of construction envelope	- Unauthorised impact to flora / National Park - Project delays - Financial penalties - Reputational impacts	4 - Major	3 - Possible	12 - High	- Biodiversity Management Plan - Exclusion zones and defined clearing limits and no-go zones - Training of contractors on environmental exclusion zones and consequences - Sensitive Area Plans / GIS mapping	3 - Moderate	2 - Unlikely	6 - Medium	FGJV
3	Vegetation Clearing	Biodiversity	Removal of vegetation/habitat not permitted to be impacted by the project approval	Vegetation clearing that results in impacts additional to the total area in condition 5 of schedule 2	- Unauthorised impact to flora / National Park - Project delays - Financial penalties - Reputational impacts	4 - Major	3 - Possible	12 - High	- Biodiversity Management Plan - Exclusion zones, defined clearing limits and no-go zones - Training of contractors on environmental exclusion zones and consequences - Sensitive Area Plans / GIS mapping	3 - Moderate	2 - Unlikely	6 - Medium	Snowy Hydro
4	Earthworks/ Roadworks	Biodiversity	Removal of vegetation/habitat not permitted to be impacted by the project approval	Vegetation clearing outside of construction envelope	- Unauthorised impact to flora / National Park - Project delays - Financial penalties - Reputational impacts	4 - Major	3 - Possible	12 - High	- Biodiversity Management Plan - Spoil Management Plan - Exclusion zones and defined clearing limits and no-go zones - Training of contractors on environmental exclusion zones - Sensitive Area Plans / GIS mapping	3 - Moderate	2 - Unlikely	6 - Medium	FGJV
5	Earthworks/ Roadworks	Biodiversity	Impacts on vegetation/habitat beyond the construction envelope	Improper stockpiling of excavated material and engineered fill	- Unapproved impacts beyond construction envelope - Potential regulatory action from agencies - Project delays - Financial penalties - Reputational impacts	3 - Moderate	3 - Possible	9 - Medium	- Spoil Management Plan - Biodiversity Management Plan - Training of contractors on environmental exclusion zones - Sensitive Area Plans / GIS mapping	3 - Moderate	1 - Rare	3 - Low	FGJV
6	Construction of waterway crossings	Biodiversity	Loss of aquatic habitat not permitted to be impacted by the construction envelope	Clearing outside the project footprint, plant operation and excavation outside project footprint	- Unapproved impacts beyond construction envelope - Potential regulatory action from agencies - Reputational impacts	3 - Moderate	3 - Possible	9 - Medium	- Biodiversity Management Plan - Exclusion zones and defined clearing limits and no-go zones - Training of contractors on environmental exclusion zones and consequences - Sensitive Area Plans / GIS mapping	3 - Moderate	1 - Rare	3 - Low	FGJV
7	Construction of waterway crossings	Biodiversity	Injury/mortality of aquatic fauna	Earthworks/clearing and construction at waterway crossings without proper ecological supervision and procedures.	- Unauthorised impact to fauna (and potentially threatened fauna) - Potential regulatory action from agencies	3 - Moderate	3 - Possible	9 - Medium	- Biodiversity Management Plan - Pre-clearance procedure - Ecologist supervision during clearing - Exclusion zones and defined clearing limits and no-go zones - Training of contractors on environmental exclusion zones and consequences - Sensitive Area Plans / GIS mapping	2 - Minor	2 - Unlikely	4 - Low	FGJV
8	Construction of Barge Access Infrastructure	Biodiversity	Injury/mortality of aquatic fauna	Earthworks/Clearing in riparian habitats adjacent to the Talbingo Reservoir	- Unauthorised impact to fauna (and potentially threatened fauna) - Potential regulatory action from agencies	3 - Moderate	3 - Possible	9 - Medium	- Biodiversity Management Plan	2 - Minor	2 - Unlikely	4 - Low	FGJV
9	Construction of Barge Access Infrastructure	Biodiversity	Loss of aquatic habitat not permitted to be impacted by the project approval	Earthworks/Construction within Talbingo Reservoir beyond the approved construction envelope	- Unauthorised impact to fauna (and potentially threatened fauna) - Unapproved impacts beyond construction envelope - Potential regulatory action from agencies	3 - Moderate	3 - Possible	9 - Medium	- Biodiversity Management Plan - Training for contractors - Sensitive Area Plans / GIS mapping	3 - Moderate	1 - Rare	3 - Low	FGJV
10	Dredging	Biodiversity	Loss of fish, fish eggs and invertebrates within the dredge area	Hydraulic entrainment of aquatic fauna in the dredge cutter head	- Unauthorised impact to fauna (and potentially threatened fauna) - Impacts to aquatic fauna population - Loss of threatened species within Talbingo Reservoir	3 - Moderate	3 - Possible	9 - Medium	- Dredging Management Plan (for Exploratory Works if required)	4 - Major	1 - Rare	4 - Low	FGJV
11	Stockpile/spoil emplacement	Biodiversity	Introduction and spread of weeds, pests and pathogens causing native/threatened	Disturbance of natural areas and storage of spoil provides opportunity for weeds to establish and spread beyond the project area	- Impact to biodiversity in exceedance of the approved Project - Spread of weeds in the National Park - Smothering / impacts to native vegetation - Long term maintenance requirements	3 - Moderate	4 - Likely	12 - High	- Biodiversity Management Plan - Weed, Pest and Pathogen Management Plan	3 - Moderate	2 - Unlikely	6 - Medium	FGJV

No	Activity	Environmental Aspect	Risk	Cause	Possible Outcome	Consequence	Likelihood	Initial Risk Rating	Risk Treatment(s)	Consequence	Likelihood	Residual Risk Rating	Risk Owner
			species population declines within KNP										
12	Transport of materials, equipment and personnel	Biodiversity	Frequent Injury/mortality of protected fauna	Driving vehicles on access roads during times of high fauna activity. Excessive speed on access roads. Inattention of drivers on potential for fauna impacts.	- Trigger EPBC Act thresholds for impacts on Commonwealth listed species, including Booroolong Frog and Smoky Mouse - Potential regulatory action from agencies - Financial penalties - Reputational impacts - Personal injury due to collision with large fauna including kangaroos, feral pigs, horses and deer	4 - Major	3 - Possible	12 - High	- Biodiversity Management Plan - Transport Management Plan - Drivers Code of Conduct	3 - Moderate	2 - Unlikely	6 - Medium	FGJV
13	Transport of materials, equipment and personnel	Biodiversity	Introduction and spread of weeds, pests and pathogens causing native/threatened species population declines within KNP	Vehicular movements from disturbed and contaminated areas beyond KNP into undisturbed areas within the project area and surrounding national park	- Impact to biodiversity in exceedance of the approved Project - Spread of weeds in the National Park - Smothering / impacts to native vegetation - Long term maintenance requirements	4 - Major	3 - Possible	12 - High	- Biodiversity Management Plan - Weed, Pest and Pathogen Management Plan - Weed and seed washdown inspections - Washdown facility for plant - Hygiene inspections of vehicles	4 - Major	2 - Unlikely	8 - Medium	FGJV
14	Vegetation Clearing	Surface water	- Erosion and sedimentation - Contamination of surface water and breach of EPL water quality performance standards	Newly exposed sediment and topsoil carried into catchments and watercourses during rainfall events	- Water pollution - Loss of topsoil - Impacts to aquatic habitat and fauna - Potential regulatory action from agencies - Financial penalties - Reputational impacts	4 - Major	3 - Possible	12 - High	- Water Management Plan - Surface Water Management Plan - Surface Water Monitoring Program - Erosion and sediment control measures - Clean water diversions - Sediment basins and water treatment - Trigger Action Response Plan	4 - Major	2 - Unlikely	8 - Medium	FGJV
15	Earthworks/ Roadworks	Surface water	- Contamination of surface water - Breach of EPL water quality performance standards - Dispersion of contaminants	Exposed sediment carried into catchments and watercourses during rainfall events	- Water pollution - Loss of topsoil - Impacts to aquatic habitat and fauna - Potential regulatory action from agencies - Financial penalties - Reputational impacts	4 - Major	3 - Possible	12 - High	- Water Management Plan - Surface Water Management Plan - Baseline water quality data - Surface Water Monitoring Program - Erosion and sediment control measures - Clean water diversions - Process and intercepted water management - Sediment basins and water treatment - Trigger Action Response Plan	4 - Major	2 - Unlikely	8 - Medium	FGJV
16	Spoil emplacement	Surface Water	Contamination of surface water, breach of EPL water quality performance standards	Runoff from spoil stockpiles causes contaminated/polluted stormwater discharge into watercourses due to lack of controls or inadequately installed controls	- Adverse water quality impacts - Loss of amenity - Potential regulatory action from agencies	4 - Major	3 - Possible	12 - High	- Spoil Management Plan - Water Management Plan - Surface Water Management Plan - Erosion and sediment control measures - Clean water diversions - Sediment basins and water treatment - Trigger Action Response Plan	4 - Major	2 - Unlikely	8 - Medium	FGJV
17	Construction of waterway crossings and barge access infrastructure	Surface water	- Contamination of surface water - breach of EPL water quality performance standards - Dispersion of contaminants	Construction activities in Yarrangobilly Creek and Wallace Creek without controls that prevent siltation and turbidity discharge being carried downstream	- Water pollution - Impacts to aquatic habitat and fauna - Potential regulatory action from agencies - Financial penalties - Reputational impacts	4 - Major	3 - Possible	12 - High	- Water Management Plan - Surface Water Management Plan - Specific management measures implemented for working within creeks, rivers and riparian areas - Surface Water Monitoring Program - Erosion and sediment control measures - Clean water diversions - Process and intercepted water management - Sediment basins and water treatment - Trigger Action Response Plan	4 - Major	2 - Unlikely	8 - Medium	FGJV
18	Dredging activities	Surface water	Contamination of surface water, breach of EPL water quality performance standards	Disturbance of reservoir bed results in increased turbidity, siltation and dissolved oxygen levels	- Water pollution - Impacts to aquatic habitat and fauna - Potential regulatory action from agencies - Financial penalties - Reputational impacts	4 - Major	3 - Possible	12 - High	- Water Management Plan - Dredging Management Plan (for Exploratory Works if dredging) - Surface Water Management Plan - Trigger Action Response Plan	4 - Major	2 - Unlikely	8 - Medium	FGJV
19	Transport of materials, equipment and personnel	Surface water	Contamination of surface water, breach of EPL water quality performance standards	Vehicular spills along access road or within Project compounds	- Hydrocarbon pollution - Potential regulatory action from agencies - Financial penalties - Reputational impacts	3 - Moderate	3 - Possible	9 - Medium	- Water Management Plan - Surface Water Management Plan - Spill Response Procedure - Training of drivers and relevant personnel - Trigger Action Response Plan - Refuelling and washdown in designated areas	3 - Moderate	2 - Unlikely	6 - Medium	FGJV

No	Activity	Environmental Aspect	Risk	Cause	Possible Outcome	Consequence	Likelihood	Initial Risk Rating	Risk Treatment(s)	Consequence	Likelihood	Residual Risk Rating	Risk Owner
20	Storage of hazardous materials	Surface water	Contamination of surface water, breach of EPL water quality performance standards	Spill of stored hazardous material escaping containment into waterways	- Hydrocarbon pollution - Potential regulatory action from agencies - Financial penalties - Reputational impacts	4 - Major	3 - Possible	12 - High	- Water Management Plan - Surface Water Management Plan - Bunded areas for storage of fuels and oils - Spill Response Procedure - Provision of spill response kits - Trigger Action Response Plan	4 - Major	2 - Unlikely	8 - Medium	FGJV
21	Storage of hazardous materials	Groundwater	Contamination of groundwater	Spill or leaks of stored hazardous material dispersing into ground water	- Potential for irreparable damage to groundwater quality - Impact to groundwater dependent species or ecosystems - Damage to Karst features	4 - Major	3 - Possible	12 - High	- Water Management Plan - Groundwater Management Plan - Groundwater Monitoring Program - Bunded areas for storage of fuels and oils - Spill Response Procedure - Provision of spill response kits - Trigger Action Response Plan	4 - Major	2 - Unlikely	8 - Medium	FGJV
22	Tunnel construction	Groundwater	Contamination of groundwater, ground water level depletion	Interception of groundwater during tunnelling activities provides interface for contamination of groundwater and/or reduction in groundwater levels	- Impact to groundwater levels beyond those assessed - Ecological impacts in dependent waterways and groundwater dependent ecosystems including karst features	3 - Moderate	2 - Unlikely	6 - Medium	- Water Management plan - Groundwater Management Plan - Groundwater level and quality monitoring - Groundwater Dependent Ecosystem monitoring	3 - Moderate	1 - Rare	3 - Low	FGJV
23	Tunnelling and spoil emplacement	Contamination	Contamination of soils by NOA and acid-forming materials, spread of contamination across the site and surrounds, potential for significant health hazards caused by naturally occurring asbestos	Irresponsible management and movement of contaminated spoil	- Potential for significant health hazards - Long term contamination - Potential regulatory action from agencies - Financial penalties - Reputational impacts	5 - Severe	4 - Likely	20 - Extreme	- Spoil Management Plan - Training for all contractors - Geotechnical investigations to aid in predicting NOA presence	5 - Severe	2 - Unlikely	10 - Medium	FGJV
24	Earthworks/ Roadworks	Landform	Loss and/or degradation of topsoils and subsoils	Exposed sediment carried into catchments and watercourses during rainfall events due to lack of controls or inadequately installed controls	- Adverse water quality impacts - Loss of amenity - Potential regulatory action from agencies	4 - Major	3 - Possible	12 - High	- Water Management Plan - Surface Water Management Plan - Baseline water quality data - Surface Water Monitoring Program - Erosion and sediment control measures - Clean water diversions - Process and intercepted water management - Sediment basins and water treatment - Trigger Action Response Plan	4 - Major	2 - Unlikely	8 - Medium	FGJV
25	Clearing and earthworks	Landform	Loss of visual amenity	Earthworks, spoil emplacement and vegetation clearing not adequately remediated following completion of the project.	- Amenity impacts to KNP - Loss of amenity for KNP users - Impacts inconsistent with project approval Reputational impacts	3 - Moderate	3 - Possible	9 - Medium	- Minimise soil and vegetation clearance - Sensitive area plans / GIS mapping - Rehabilitation Management Plan	3 - Moderate	2 - Unlikely	3 - Low	FGJV
26	Clearing and earthworks	Landform	Loss of geodiversity features, fossils, boulder screes beyond those assessed in the project approval	Clearing outside the project footprint, plant operation and excavation outside project footprint	- Unapproved impacts beyond construction envelope - Loss of geodiversity values - Potential regulatory action from agencies - Reputational impacts	3 - Moderate	3 - Possible	9 - Medium	- Sensitive area plans / GIS mapping - Heritage Management Plan identifies areas of conservation significance - Unexpected finds protocol	3 - Moderate	2 - Unlikely	3 - Low	FGJV
27	Spoil emplacement	Landform	Changes to landform and natural water flows	Earthworks, stockpiles, spoil emplacement and structures disrupting existing surface and groundwater regimes	- Groundwater level reduced - Surface water flows in waterways cease to flow - Unpredictable water quality impacts from changed water regime	3 - Moderate	2 - Unlikely	6 - Medium	- Spoil Management Plans - Detailed plans for emplacement areas - Water Management Plan - Surface Water Management Plan	3 - Moderate	1 - Rare	3 - Low	FGJV
28	Earthworks, vegetation clearing, blasting, transport of plant	Heritage	Damage to heritage items, including culturally significant sites, artefacts and heritage values	Clearing outside the project footprint, plant operation and excavation outside project footprint, relocation of blasting not assessed for sensitive area/item impacts	- Unapproved impacts beyond project boundary - Potential regulatory action from agencies - Financial penalties - Reputational impacts	3 - Moderate	3 - Possible	9 - Medium	- Sensitive area plans / GIS mapping - Heritage Management Plan identifies areas of conservation significance - archival recording and / or salvage of items carried out as required by the Approval	3 - Moderate	2 - Unlikely	3 - Low	FGJV

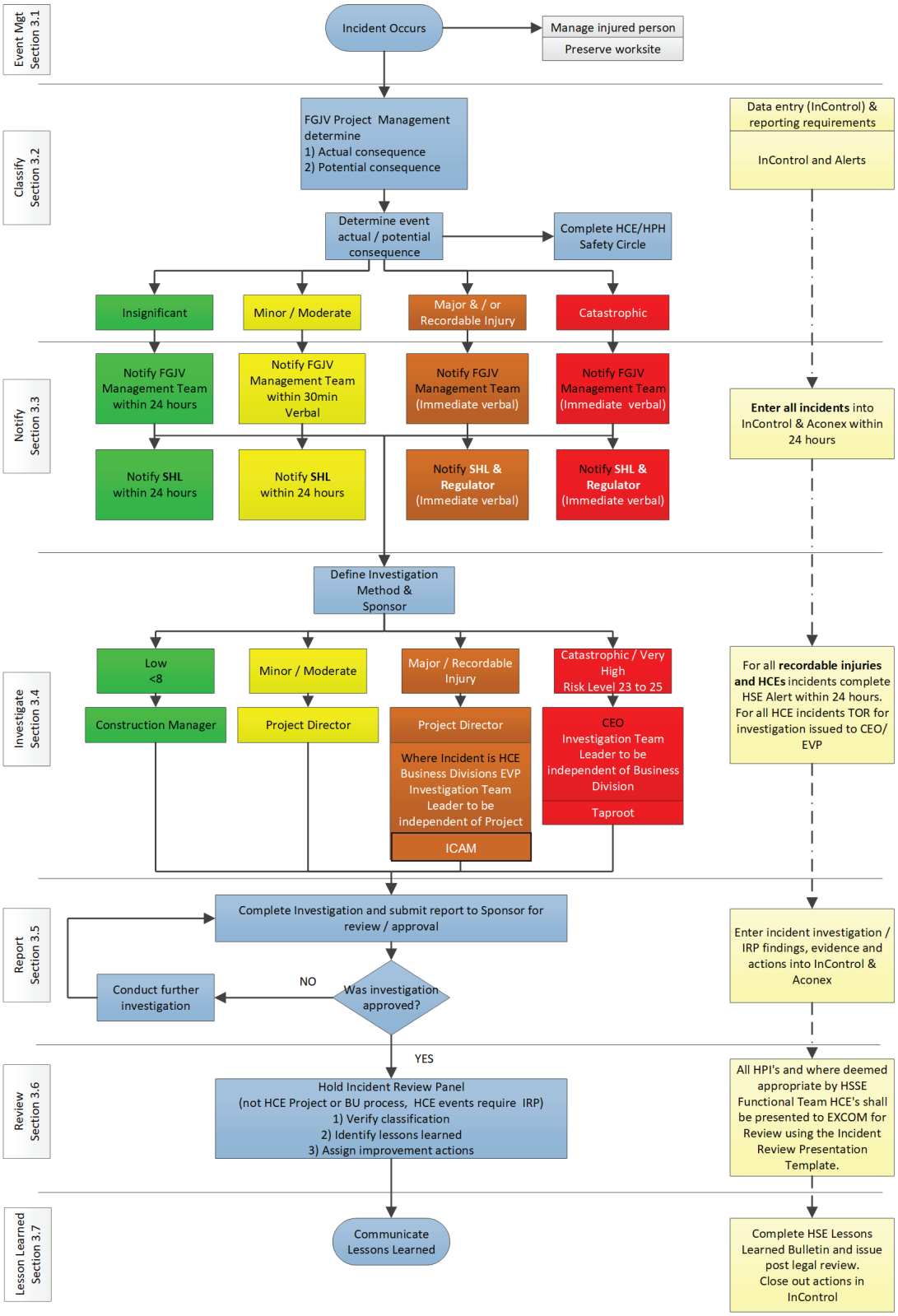
No	Activity	Environmental Aspect	Risk	Cause	Possible Outcome	Consequence	Likelihood	Initial Risk Rating	Risk Treatment(s)	Consequence	Likelihood	Residual Risk Rating	Risk Owner
29	Actions of site personnel or members of public	Heritage	Theft of heritage items	Persons entering restricted areas unmonitored and using heritage documentation to locate items of interest	- Loss of items of cultural significance - Impacts to relationships with traditional owners - Potential regulatory impacts from agencies - Reputational impacts	2 - Minor	3 - Possible	6 - Medium	- Heritage Management Plan - Archival recording and salvage - Exclusion zones and defined clearing limits	2 - Minor	1 - Rare	2 - Low	FGJV
30	Earthworks, vegetation clearing, blasting, transport of plant	Noise and vibration	Increased noise and vibration levels at sensitive receivers, particularly at Rock Forest	Noise levels from construction activates and transport of materials, equipment and personnel exceeds the levels assessed in the approval. Works change from those assessed. The project site is remote from sensitive receivers, noise impacts are more likely an issue at Rock Forest.	- Sleep disturbance at sensitive receiver locations - Decreased amenity for KNP users in the locality - Loss of support from local community	3 - Moderate	3 - Possible	9 - Medium	- Construction Noise Management Plan - Traffic Management Plan	3 - Moderate	1 - Rare	3 - Low	FGJV
31	Earthworks, blasting, transport of plant	Noise and vibration	Vibratory impacts to heritage items, geodiversity and structures	Vibrations from plant operation, transport, and blasting impacts exceed those assessed and cause structural damage to sensitive items	- Loss of items of cultural significance Impacts to relationships with traditional owners - Potential regulatory impacts from agencies	2 - Minor	2 - Unlikely	4 - Low	- Heritage Management Plan - Archival recording and salvage - Exclusion zones and defined clearing limits	2 - Minor	1 - Rare	2 - Low	FGJV
32	Rock crushing/ screening	Noise and vibration	Increased noise and vibration levels at sensitive receivers	Rock crushing and screening activities situated too close to sensitive receivers	- Sleep disturbance at sensitive receiver locations - Decreased amenity for KNP users in the locality - Loss of support from local community	3 - Moderate	3 - Possible	9 - Medium	- Construction Noise Management Plan - Noise monitoring to evaluate impacts and establish additional mitigation where required	3 - Moderate	1 - Rare	3 - Low	FGJV
33	Rock crushing/ screening	Air Quality	Increased dust emissions	Rock crushing and screening activities not implementing adequate dust suppression mitigation	- Excessive dust emission/deposition in surrounding environment - Air quality impacts exceed the approved project levels - Adverse biodiversity impacts	3 - Moderate	4 - Likely	12 - High	- Dust suppression through use of water cart - Progressive stabilisation of the site	3 - Moderate	2 - Unlikely	6 - Medium	FGJV
34	Earthworks, blasting, transport of plant	Air Quality	Visible dust plumes and deposition of dust on surfaces	Blasting and plant movements cause dust particle to become airborne and carried in wind to other areas	- Excessive dust emission/deposition in surrounding environment - Air quality impacts exceed the approved project levels - Adverse biodiversity impacts	3 - Moderate	4 - Likely	12 - High	- Dust suppression through use of water cart - Progressive stabilisation of the site	3 - Moderate	2 - Unlikely	6 - Medium	FGJV
35	Vegetation clearing, spoil emplacement	Air Quality	Visible dust plumes and deposition of dust on surfaces, impacts to amenity, Dust generation from exposing of topsoil and sub soil through vegetation removal,	Exposed sediment and stockpiled fines become airborne in strong winds and carried to other areas	- Excessive dust emission/deposition in surrounding environment - Air quality impacts exceed the approved project levels - Adverse biodiversity impacts	3 - Moderate	4 - Likely	12 - High	- Dust suppression through use of water cart - Spoil Management Plan - Rehabilitation/stabilisation of cleared areas where possible	3 - Moderate	2 - Unlikely	6 - Medium	FGJV
36	Spoil management, tunnelling	Air Quality / Waste	Release of airborne fibres from disturbed Naturally Occurring Asbestos (NOA)	Excavated materials containing NOA are not appropriately identified and/or contained following excavation from tunnel	- Airborne contamination and deposition to surrounding areas - Potential for significant health hazards - Long term contamination - Potential regulatory action from agencies - Financial penalties - Reputational impacts	5 - Severe	4 - Likely	20 - Extreme	- Spoil Management Plan - Geotechnical investigations to aid in predicting NOA presence	5 - Severe	2 - Unlikely	10 - Medium	FGJV
37	Earthworks, roadworks	Waste	Excess use of natural resources and energy, production of greenhouse gases	Unnecessary operation/ idling of machinery and plant	- Excessive consumption of diesel and other resources - Unnecessary production of greenhouse gases	1 - Negligible	4 - Likely	4 - Low	- Training/instruction to machinery and plant operators to shut down equipment when not required	1 - Negligible	3 - Possible	3 - Low	FGJV

No	Activity	Environmental Aspect	Risk	Cause	Possible Outcome	Consequence	Likelihood	Initial Risk Rating	Risk Treatment(s)	Consequence	Likelihood	Residual Risk Rating	Risk Owner
38	Storage / disposal of hazardous materials	Waste	Contamination of soil and water, unlawful disposal of waste	Inadequate storage of hazardous materials, inadequate spill management practices, improper disposal practices	- Contamination of soil and water in sensitive environment - Potential regulatory action from agencies - Financial penalties - Loss of community support - Reputational impacts	4 - Major	3 - Possible	12 - High	- Surface Water Management Plan to address spills - Spill Management Procedure - Use of licensed disposal contractors for waste disposal which requires licensing - Appropriate bunded storage of hazardous materials	4 - Major	2 - Unlikely	8 - Medium	FGJV
39	Operation of accommodation camp	Waste	Excess use of natural resources and energy	Inefficient use of resources within the accommodation camp	- Excessive use of water and electricity	2 - Minor	4 - Likely	8 - Medium	- Energy efficient design of site facilities - Water saving devices installed in camp facilities where possible	2 - Minor	2 - Unlikely	4 - Low	FGJV
40	Operation of accommodation camp	Waste	Odour impacts, contamination of soil and water in sensitive environment, excess waste sent to landfill	Inadequate management of camp waste including sewerage and mixed waste	- Unlawful disposal of waste - Excess waste generation - Contamination of waste streams - Contamination of soil and water - Potential regulatory action from agencies	4 - Major	3 - Possible	12 - High	- Waste facilities available at the camps - Use of licensed waste disposal contractors - Waste tracking - Regular inspection of controls	4 - Major	2 - Unlikely	8 - Medium	FGJV
41	Transport of materials, equipment and personnel	Waste	Unnecessary production of Greenhouse gases	Materials shipped from distant locations, excessive personal vehicle usage, repeated movements back and forth from site	- Unnecessary production of greenhouse gases - Impacts of the project exceed those assessed in the EIS	2 - Minor	5 - Almost Certain	10 - Medium	- Transport Management Plan implemented - Procurement of local materials to minimise shipping distances where possible - Communal transport to site for personnel (including buses and prohibition of personal vehicle use) where possible - Personnel to remain on site to reduce commute time and transport requirements	2 - Minor	2 - Unlikely	4 - Low	FGJV
42	Vegetation Clearing	Waste	Excessive production of Greenhouse gases	Excessive clearing of vegetation resulting in increased greenhouse gas emission from released carbon storage in decomposing vegetation	- Unnecessary production of greenhouse gases - Impacts of the project exceed those assessed in the EIS	2 - Minor	3 - Possible	6 - Medium	- Exclusion fencing to identify areas not to be cleared	2 - Minor	1 - Rare	2 - Low	FGJV
43	Hot works and plant operations	Emergency	Ignition of bushfire	Sparks from machinery or hot work activities ignites combustible vegetation and fire gets out of control	- Significant impact to KNP through bushfire - Potential destruction of project infrastructure and equipment - Potential for fatality/injury to personnel and members of the public - Damage to public property and adjacent properties - Loss of biodiversity - Project delays - Significant reputational impact - Potential regulatory actions from agencies - Financial penalties	5 - Severe	4 - Likely	20 - Extreme	- Natural Hazard Management Plan - Continuous monitoring of fire hazard throughout bushfire season - Suspension of fire risk work on days of elevated fire danger in accordance with the EMP - Fire preparedness mitigation measures implemented on fire danger days - Relevant personnel trained in rapid response to extinguish potential ignitions to prevent bushfire escalation - Provision of firefighting equipment throughout the project site	5 - Severe	3 - Possible	15 - High	FGJV
44	Working in bushfire prone areas	Emergency	Damage to construction site and works by bushfire	Siting of infrastructure and personnel in bushfire prone areas without appropriate bushfire mitigation in place.	- Damage to construction site and works - Project delays - Safety impacts	3 - Moderate	4 - Likely	12 - High	- Pre-position firefighting equipment - Safety and emergency systems and procedures - Implement preparatory actions of Natural Hazard Management Plan	3 - Moderate	2 - Unlikely	6 - Medium	FGJV
45	Earthworks	Emergency	Localised flooding within construction envelope	Alterations to existing hydrological regime through earthworks, blasting, basin construction, tunnelling and building construction beyond those assessed	- Localised flooding - Damage to project infrastructure - Project access/egress interrupted - Water quality impacts	3 - Moderate	2 - Unlikely	6 - Medium	- Consideration of hydrology throughout detailed design - Location of stockpiles and structures above flood zones where possible	3 - Moderate	1 - Rare	3 - Low	FGJV
46	Earthworks/ Roadworks	Traffic	Disturbance / traffic delays to local residents	Roadworks on local roads blocking or excessively delaying traffic movements and thoroughfare.	- Traffic delays on local and regional roads - Increased safety hazard - Adverse reputational impacts - Increased noise and air quality impacts	3 - Moderate	4 - Likely	12 - High	- Transport Management Plan - Engagement with community to manage expectations	3 - Moderate	3 - Possible	9 - Medium	FGJV

No	Activity	Environmental Aspect	Risk	Cause	Possible Outcome	Consequence	Likelihood	Initial Risk Rating	Risk Treatment(s)	Consequence	Likelihood	Residual Risk Rating	Risk Owner
47	Transport of materials, equipment and personnel	Traffic	Increased traffic volumes and congestion, increased road noise, degradation of roadways, traffic delays	Heavy and light vehicles moving in convoys through local towns to the project site.	- Traffic delays on local and regional roads - Increased safety hazard - Adverse reputational impacts - Increased noise and air quality impacts	3 - Moderate	4 - Likely	12 - High	- Transport Management Plan - Manage timing of OSOM movements - Driver code of conduct - Engagement with community	3 - Moderate	3 - Possible	9 - Medium	FGJV
48	Construction activities	Socio economic and KNP	Loss of public facilities and KNP recreational facilities, loss of access of areas to KNP for public use.	Construction activities inhibiting public access to KNP and reservoir facilities including camping areas and boat ramps to reservoirs	- Loss of community support for the project	3 - Moderate	3 - Possible	9 - Medium	- Clearly signposted signage indicated area closures and timeframes - Minimisation of project traffic movements during peak recreational periods	3 - Moderate	2 - Unlikely	6 - Medium	FGJV
49	Inflow of workforce to local area	Socio economic and KNP	Business impacts, increased housing demand	Workforce size relocating to local area	- Housing rental/purchase prices increase due to increased demand - Local services struggle to meet demands - Loss of community support for the project	2 - Minor	3 - Possible	6 - Medium	- Establishment of Pacific Hills development to provide accommodation for workforce - Encourage personnel to purchase local produce and use local business to stimulate positive economic growth in the locality	2 - Minor	2 - Unlikely	4 - Low	FGJV
50	Working in bushfire prone areas	Emergency	Damage to construction site and works by bushfire	Siting of infrastructure and personnel in bushfire prone areas without appropriate bushfire mitigation in place.	- Damage to construction site and works - Project delays - Safety impacts	3 - Moderate	4 - Likely	12 - High	- Pre-position firefighting equipment - Safety and emergency systems and procedures - Implement preparatory actions of Natural Hazard Management Plan	3 - Moderate	2 - Unlikely	6 - Medium	FGJV
51	Construction activities	Compliance	Damage to reputation and delay of project	- Inadequate environmental management processes and procedures that are not tailored to the specific activity being undertaken. - Environmental management processes and the specific requirements of any permits and approvals are not understood by supervisors, workers and/or permits and approvals. - Wilful disregard of environmental management processes and/or permits and approvals - Environmental risks are not properly assessed, analysed and controlled onsite.	- Negative impacts on SHL reputation - Lose stakeholder support for the project - Adversely impact on project schedule and cost to resolve breach or incident	3 - Moderate	3 - Possible	9 - Medium	- Leadership of an environmental protection culture to be actively driven from the Project Executive Committee - Environmental Plan and associated procedures - Environmental controls and obligations to be included in site induction for all personnel required before they can enter site, - HSE Manager to maintain records of all site inductions and other environmental protection related training - Construction Manager to ensure that environment risks are properly assessed, and appropriate controls identified in Level 1 and Level 2 Risk Assessments - No tolerance policy for any instances of wilful disregard for environment protection procedures or wilful breach of environmental permits and approvals - HSE Manger to instigate a formal investigation and written report to Project Executive Committee for any breach of an environmental licence or approval. - Ensure all sub-contracts have clauses that require compliance on site with FGJV environment protection plans and procedures - Consideration and inclusion of provisional sum and contingency for unforeseen environmental conditions. - Formalise parameters and scope with NSW Government around lease negotiations to ensure accountability for its progress and nurture support and smooth progress through scheduled interactions.	3 - Moderate	2 - Unlikely	6 - Medium	FGJV
52	Construction activities	All	Overspend and delays	Uncertainty of business case assumptions affecting contingency allocations	- Budget overruns - Significant project delays	3 - Moderate	3 - Possible	9 - Medium	- Consideration and inclusion of provisional sum and contingency for unforeseen environmental conditions. - Formalise parameters and scope with NSW Government around lease negotiations to ensure accountability for its progress and nurture support and smooth progress through scheduled interactions.	3 - Moderate	2 - Unlikely	6 - Medium	FGJV

No	Activity	Environmental Aspect	Risk	Cause	Possible Outcome	Consequence	Likelihood	Initial Risk Rating	Risk Treatment(s)	Consequence	Likelihood	Residual Risk Rating	Risk Owner
53	Construction activities	All	Project delays and contractual implications	- Insufficient information provided for EIS within tight timeframes - Multiple EIS seeking approvals concurrently – delays in each will impact on project schedule - Onerous non-statutory offset and other requirements - Lack of precedents for planning approvals creating uncertainty and risk addressed through further conditions and post approval requirements - Contractor construction methodology varies from assessed version	- Delays to project delivery timeframes on order to meet onerous conditions – delays in each EIS approval will impact on project schedule - Contractual implications - Delays will lead to significant financial impacts on the project - Quality of project delivery and build compromised in order to meet new conditions	3 - Moderate	3 - Possible	9 - Medium	- Provisional sum for changes to the EIS that impact delivery on cost or schedule - Contract provision for variation in case	3 - Moderate	2 - Unlikely	6 - Medium	FGJV
54	Construction activities	All	Project delays and additional costs	- Approval application not submitted on time - Inadequate or incorrect information included in approval application - Poor communication and relationship with approving authorities - Absence or agreement to fast track approval process for critical activities	- Schedule delay - Additional project costs	3 - Moderate	3 - Possible	9 - Medium	- Develop approvals schedule, determine the approvals that will be required and assign a manager for each approval or permit - Ensure knowledge of local legislation, procedures and authorities' requirements - Employing staff experienced in the procurement of the permits in project areas and in dealing with the relevant agencies - Early engagement with approving authorities to establish agreed timeframes for the approval process - Adequate allowance including contingency/ float in project construction schedule.	3 - Moderate	2 - Unlikely	6 - Medium	FGJV

APPENDIX A5 – ENVIRONMENTAL INCIDENT PROCESS



Guideline Document to improve external incident classification and reporting

Schedule 4, Condition 6 of CSSI 9687 states "The Proponent must notify the Department and NPWS via the Major Projects Portal immediately after it becomes aware of an incident on site. This notice must set out the location and nature of the incident". The following table has been revised in consultation with NPWS, EPA, and DPE with the methods of notification and timeframes as it is not always feasible to access a computer at the time of an incident. Therefore, verbal notification with required information will be provided immediately, and notification via the Major Projects Portal will occur within 24 hrs.

This is not an exhaustive list of incidents, but a guide.

Incident Classification			External reporting process		
Incident Level	**Incident Type**	**Incident / Event Description**	**When**	**Who**	**What**
Catastrophic	Emergency Spill	- Failure of equipment or plant leading to significant release entering waterway. - Spill of this scale would be outside the internal capability to manage and NSW HAZMAT unit would be engaged asap.	Immediately	FGJV / SHL	Refer Emergency Response Management Plan (S2-FGJV-HSA-PLN-0002)
Major	Major pollution / spill event to waterway / dam Unplanned environmental impacts / harm Process failure / non compliance	- Non trivial spills of chemicals or hydrocarbons entering waterway or drainage line with long impact time (i.e. > 3 days) and impacts (e.g. fish kills) - Vegetation clearing works without ecologist present resulting in known unauthorised impact to significant / protected species (flora or fauna) - Unauthorised harm to heritage items (e.g. Ravine Cemetery, Washington Hotel) - Significant work conducted outside the approved EIS boundary / lease area - Work causing fatal impact to multiple threatened or significant fauna species (e.g. Smoky Mouse or Boorolong Frog)	Immediately	FGJV	Verbal notification to SHL
			Immediately	SHL	Notify EPA via Pollution Hotline on 131 555 + via the Major Projects Portal
			As soon as reasonably practicable, at least within 24 hrs	SHL	Notify NPWS and DPE (verbal or email)
			Within 24 hours	FGJV	Submit Incident notification (S2-FGJV-HSA-FRM-0012) to Snowy Hydro in Aconex
			Within 5 days	FGJV	Submit incident investigation report to Snowy Hydro in Aconex
			Within 7 days	SHL	1. Provide non-compliance report (SHL-CSSI-WRI-XXX) and written R2.2 incident notification (SHL-EPL-WRI-XXX) to all regulators via email 2. Submit the above non-compliance report to DPE via the Portal

Incident Classification			External reporting process		
Incident Level	**Incident Type**	**Incident / Event Description**	**When**	**Who**	**What**
Moderate	Pollution to waterway or ground	- Spills of chemicals or hydrocarbons to waterway with short impact time (i.e. < 2 days) and impacts (e.g. Kelly's Plain Creek incident) - Non trivial hydrocarbon spills not contained and entering the surrounding environment (e.g. Ravine Sat Cow spill) - Sewage overflow event resulting in impacts to waterways or outside the EIS boundary - Untreated process water enters stormwater basin / drainage line which then enters into and impacts the environment	Immediately	FGJV	Verbal notification to Snowy Hydro Environment site team.
			Immediately	SHL	Notify EPA verbally of incident (not using Pollution Hotline)
			As soon as reasonably practicable, at least within 24 hrs	SHL	Notify NPWS and DPE verbally of incident
			Within 24 hours	FGJV	Submit Incident notification (S2-FGJV-HSA-FRM-0012) to Snowy Hydro in Aconex
			Within 5 days	FGJV	Submit incident investigation report to Snowy Hydro in Aconex
			Within 7 days	SHL	1. Provide non-compliance report (SHL-CSSI-WRI-XXX) and written R2.2 incident notification (SHL-EPL-WRI-XXX) to all regulators via email 2. Submit the above non-compliance report to DPE via the Portal
	Management of Spoil	- Spoil classification not adhered to resulting in PAF or NOA incorrectly located.	Immediately	FGJV	Verbal notification to Snowy Hydro Environment site team.
			Within 24 hours	FGJV	Submit Incident notification (S2-FGJV-HSA-FRM-0012) to Snowy Hydro in Aconex
	Management of weeds	Failure of wheel wash	Immediately		Verbal notification to FGJV or SHL Environmental site teams
	Unplanned environmental impacts / harm	- Clearing works causing impact to endangered species (flora and fauna)	Immediately	FGJV	Notify Snowy Hydro verbally providing available information and 'Moderate' or 'Minor' classification

	Process failure / non compliance	- Vegetation clearing works without ecologist with potential to impact significant / protected species (flora or fauna)	As soon as reasonably practicable, at least within 24 hrs	SHL	Notify NPWS and DPE verbally of incident

Incident Classification			External reporting process		
Incident Level	**Incident Type**	**Incident / Event Description**	**When**	**Who**	**What**
		- Traffic related incident with public / project vehicles resulting in harm to people - Development of surface depression resulting in unauthorised impact to the environment outside the EIS boundary	Within 24 hours	FGJV	Submit Incident notification (S2-FGJV-HSA-FRM-0012) to Snowy Hydro in Aconex
			Within 5 days	FGJV	Provide incident investigation report to SHL in Aconex
			Within 7 days	SHL	1. Provide non-compliance report (SHL-CSSI-WRI-XXX) to DPE and NPWS via email 2. Submit the above non-compliance report to DPE via the Portal
Minor	Pollution to water or ground	- Spill events contained wholly within the worksite or EIS boundary - Sewage overflow event contained to site - Bund failure or overflow resulting in localised spill - Process water entering sediment basins prior to treatment - Leachate discharge from a holding basin prior to treatment or testing	Immediately	FGJV	Notify Snowy Hydro site environment representative verbally.
			Within 24 hours	FGJV	Submit Incident notification (S2-FGJV-HSA-FRM-0012 to SHL in Aconex
			Within 5 days	FGJV	Provide incident investigation report to SHL in Aconex
	Surface water events	- Stormwater sediment basins overtop after design capacity has not been exceeded. - Visible signs of turbid stormwater leaving site controls (e.g. Marica trail and Dip Creek crossing / Ravine Bay spoil road) - Irrigation of stormwater basin causing overland flow into clean water drainage line or natural waterway	Immediately	FGJV	Notify Snowy Hydro site environment rep verbally
			Within 24 hours	SHL / FGJV	Notify EPA verbally of incident (not using Pollution Hotline)
			Within 24 hours	FGJV	Submit incident notification (S2-FGJV-HSA-FRM-0012) to Snowy Hydro in Aconex

Incident Classification			External reporting process		
Incident Level	**Incident Type**	**Incident / Event Description**	**When**	**Who**	**What**
			Within 5 days	FGJV	Provide incident investigation report to SHL in Aconex
			Within 7 days	SHL	1. Provide written R2.2 incident notification (SHL-EPL-WRI-XXX) to EPA (email) TBD step 2. Provide the non-compliance report (SHL-CSSI-WRI-XXX) to DPE and NPWS if by this point it is deemed a non-compliance TBD step 3. Submit the above to DPE via the Portal if deemed a non-compliance
	Unplanned environmental impact/harm Impact to community	- Clearing habitat tree without ecologist present - Clearing without permit signed - Clearing outside the clearing permit boundary, within the EIS Boundary - Traffic related incident with public / project vehicles resulting in no harm to people	Immediately	FGJV	Notify Snowy Hydro site environment representative verbally
			Within 24 hours	SHL	Notify NPWS and DPE verbally of incident
			Within 24 hours	FGJV	Submit incident notification (S2-FGJV-HSA-FRM-0012) to Snowy Hydro in Aconex
			Within 5 days	FGJV	Provide incident investigation to Snowy Hydro in Aconex
			Within 7 days	SHL	TBD step 1. Provide the non-compliance report (SHL-CSSI-WRI-XXX) to DPE and NPWS if by this point it is deemed a non-compliance TBD step 2. Submit the above to DPE via the Portal if deemed a non-compliance

Incident Classification			External reporting process		
Incident Level	**Incident Type**	**Incident / Event Description**	**When**	**Who**	**What**
Low / Insignificant	Release to environment	- Trivial hydrocarbon spills contained to the worksite - Concrete washout - Bund failure - Minor sewerage spill or leak - Release of process water contained to the worksite	Within 24 hours	FGJV	Notify Snowy Hydro site environment rep verbally
			Within 24 hours	FGJV	Submit incident notification (S2-FGJV-HSA-FRM-0012 to Snowy Hydro in Aconex
	Surface water events	- Stormwater sediment basins overtop after design capacity has been exceeded	Immediately	FGJV	Notify Snowy Hydro site environment rep verbally
			Within 24 hours	FGJV / SHL	Joint notification of EPA verbally of event (not using Hotline). If occurs over a weekend or public holiday wait till next business day to call.
			Within 3 days	FGJV	Notify all regulators via email
	Unplanned environmental impact / harm	- Fauna strike (native, non-endangered species) - Vehicle near miss between project and public vehicle	Immediately	FGJV	Notify Snowy Hydro site environment rep verbally
			Within 24 hours	FGJV	Submit incident notification (S2-FGJV-HSA-FRM-0012) to Snowy Hydro in Aconex and follow-up investigation (if required)

APPENDIX A6 – EXPLORATORY WORKS APPROVAL CONDITIONS

Table A6-1: Exploratory Works conditions relevant to the EMS

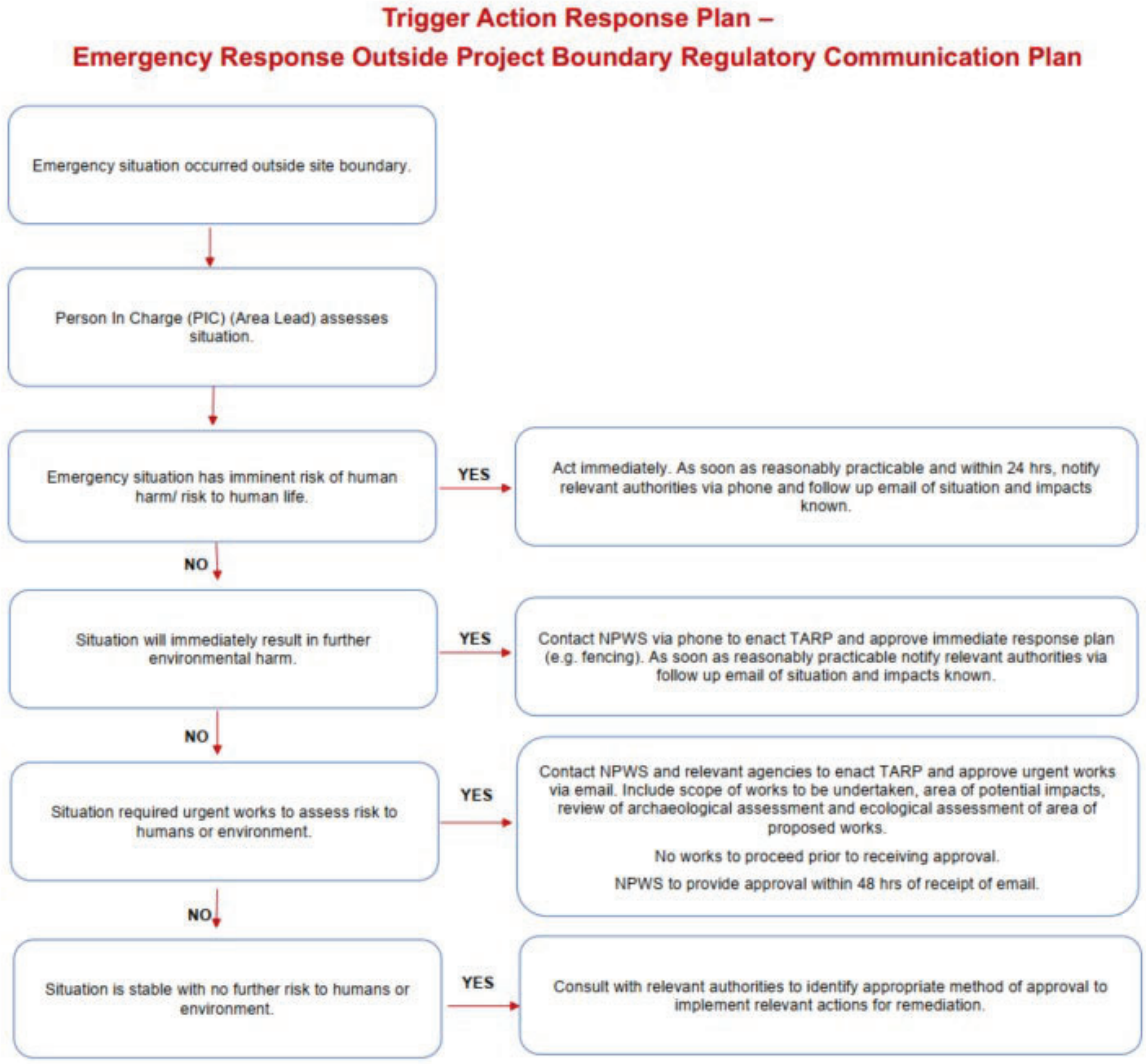
Condition	Requirement	Where addressed
Environmental Management Strategy		
Schedule 4, condition 1	Prior to carrying out any development under this approval, the Proponent must prepare an Environmental Management Strategy for the development to the satisfaction of the Planning Secretary. This strategy must:	This document Section 1.7
	(a) provide the strategic framework for environmental management of the development;	Section 4 Section 4.1.3 Section 4.1.4
	(b) identify the statutory approvals that apply to the development;	Section 3.1 Section 3.4 Table 3-4 Appendix A2 – Legal and other requirements
	(c) describe the role, responsibility, authority and accountability of all key personnel involved in the environmental management of the development;	Section 4.2 Section 4.2.2 Table 4-6
	(d) describe the procedures that would be implemented to: • keep the local community and relevant agencies informed about the development being carried out; • receive, handle, respond to, and record complaints; • resolve any disputes that may arise during the course of the development; • respond to any non-compliance; • respond to emergencies; and	 Section 6.1.2 Section 6.2 Section 6.2.1 Section 8.4.1 Section 7.3
	(e) include: • copies of any strategies, plans and programs approved under the Conditions of this approval; and • a clear plan depicting all the monitoring to be carried out in relation to the development.	 Section 4.1.3 and Section 4.1.4 Section 8.2
Schedule 4, condition 2	The Proponent must implement the approved Environmental Management Strategy for the development.	This document Section 1.7
Update & Staging of Strategies, Plans or Programs		
Schedule 4, condition 3	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, the Proponent may submit revised strategies, plans or programs required under this approval at any time. With the agreement of the Planning Secretary, the Proponent may also submit any strategy, plan or program required by this approval on a staged basis. The Planning Secretary may approve a revised strategy, plan or program required under this approval, or the staged submission of any of these documents, at any time. With the agreement of the Planning Secretary, the Proponent may prepare the revised or staged strategy, plan or program without undertaking consultation with all parties nominated under the applicable condition in this approval. *Notes:*	Section 1.9.1

Condition	Requirement	Where addressed
	• *While any strategy, plan or program may be submitted on a progressive basis, the Proponent will need to ensure that the existing operations on site are covered by suitable strategies, plans or programs at all times.* • *If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program must clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.*	
Revision of Strategies, Plans or Programs		
Schedule 4, condition 4	Within 3 months, unless otherwise agreed with the Planning Secretary, of: (a) the submission of an incident report under condition 5 below; (b) the submission of an audit report under condition 7 below; and (c) the approval of any modification to the conditions of this approval; or (d) a direction of the Planning Secretary under condition 4 of schedule 2; the Proponent must review, and if necessary revise, the strategies, plans, and programs required under this approval to the satisfaction of the Planning Secretary. Where this review leads to revisions in any such document, then within 4 weeks of the review the revised document must be submitted to the Planning Secretary for approval, unless otherwise agreed with the Planning Secretary. *Note: 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.*	Section 1.9.1
Incident notification		
Schedule 4, condition 5	The Department must be notified in writing via the Major Projects portal immediately after the Proponent becomes aware of an incident on site. The notification must identify the development, including the application number, and set out the location and nature of the incident.	Section 7.2.1
Non-compliance Notification		
Schedule 4, condition 6	The Department must be notified in writing via the Major Projects portal within 7 days after the Proponent becomes aware of any non-compliance. The notification must identify the development, including the application number, set out the Condition of approval that the development is non-compliant with, the way in which it does not comply, the reasons for the non-compliance (if known) and what actions have been taken, or will be taken, to address the non-compliance.	Section 8.4.1 Section 7.2.1
Compliance Reporting		
Schedule 4, condition 7	The Proponent must provide regular compliance reporting to the Department and NPWS on the development in accordance with the relevant *Compliance Reporting* requirements (DPE 2018).	Section 8.4.4 Compliance reporting for the Exploratory Works project will continue until surrender of the Exploratory Works Infrastructure Approval.
Regular Reporting		
Schedule 4, condition 8	The Proponent must provide regular reporting on the environmental performance of the development on its website in accordance with the reporting requirements in any strategies, plans or programs approved under the conditions of this approval.	Section 8.4.5
Independent Environmental Audit		

Condition	Requirement	Where addressed
Schedule 4, condition 9	Within one year of the commencement of construction and every 3 years thereafter, unless the Planning Secretary directs otherwise, the Proponent must commission and pay the full cost of an Independent Environmental Audit of the development. This audit must: (a) be conducted by a suitably qualified lead auditor and suitably qualified, experienced and independent team of experts in any field specified by the Planning Secretary, whose appointment has been endorsed by the Planning Secretary; (b) include consultation with the relevant agencies; (c) assess the environmental performance of the development and assess whether it is complying with the requirements in this approval, and any relevant EPL (including any assessment, plan or program required under these approvals); (d) review the adequacy of any strategies, plans or programs required under the abovementioned approvals; and (e) recommend appropriate measures or actions to improve the environmental performance of the development, and/or any strategy, plan or program required under the abovementioned approvals; and (f) be conducted and reported to the satisfaction of the Planning Secretary. *Note: This audit must be undertaken in accordance with the Independent Audit requirements (DPE 2018).*	Section 8.3.3 The Exploratory Works independent audit which is required to occur one year after the commencement of construction is underway.
Schedule 4, condition 10	Within 12 weeks of commissioning this audit, or as otherwise agreed by the Planning Secretary, the Proponent must submit a copy of the audit report to the Planning Secretary, together with its response to any recommendations contained in the audit report and a timetable for the implementation of these recommendations as required.	Section 8.3.3 The Exploratory Works independent audit which is required to occur one year after the commencement of construction is underway.
Schedule 4, condition 11	The Proponent must implement these recommendations, to the satisfaction of the Planning Secretary.	Section 8.3.3
Access to Information		
Schedule 4, condition 12	From the commencement of development under this approval, the Proponent shall: (a) Make copies of the following information publicly available on its website: • the EIS; • current statutory approvals for the development; • approved strategies, plans or programs required under the conditions of this approval; • a comprehensive summary of the monitoring results of the development, reported in accordance with the specifications in any conditions of this approval, or any approved plans and programs; • a summary of complaints, which is to be updated monthly; • any independent environmental audit, and the Proponent's response to the recommendations in any audit; • any other matter required by the Planning Secretary; and (b) keep this information up to date.	Section 8.4.5

APPENDIX A7 – TRIGGER ACTION RESPONSE PLAN

Emergency Response Outside Project Boundary Regulatory Communication Plan



Emergency: where there is imminent risk to human life or of significant environmental harm.

Urgent: where there is significant ongoing risk to human life or of significant environmental harm.

Stable: where an event has occurred, but no further impact is expected to occur prior to implementing remediation works.

Certificate Of Completion

Envelope Id: DBA6F72A-4B49-4F41-87FF-26F100BC3D0B
Status: Completed
Subject: Complete with Docusign: S2-FGJV-ENV-PLN-0007-O-Main Works-Environmental Management Strategy - C...
Source Envelope:
Document Pages: 127
Signatures: 2
Certificate Pages: 5
Initials: 0
AutoNav: Enabled
EnvelopeId Stamping: Enabled
Time Zone: (UTC+10:00) Canberra, Melbourne, Sydney

Envelope Originator:
Tamila Khalukhayeva
220-226
Sharp Street
Cooma, NSW 2630
t.khalukhayeva@futuregenerationjv.com.au
IP Address: 203.54.206.134

Record Tracking

Status: Original
3/3/2025 11:07:58 AM
Holder: Tamila Khalukhayeva
t.khalukhayeva@futuregenerationjv.com.au
Location: DocuSign

Signer Events	Signature	Timestamp
Dave DRUMMOND da.drummond@futuregenerationjv.com.au QHSE Director Security Level: Email, Account Authentication (None)	Signed by: Dave DRUMMOND 20030A67088E43C... Signature Adoption: Pre-selected Style Using IP Address: 203.54.206.134	Sent: 3/3/2025 11:13:44 AM Viewed: 3/3/2025 11:25:18 AM Signed: 3/3/2025 11:25:44 AM
Electronic Record and Signature Disclosure: Accepted: 3/3/2025 11:25:18 AM ID: fcbeb6f8-dc3c-4e96-8b7f-77949681bf10		
Massimo Franceschi m.franceschi@futuregenerationjv.com.au Project Director Future Generation JV Security Level: Email, Account Authentication (None)	DocuSigned by: F64E528E534C459... Signature Adoption: Uploaded Signature Image Using IP Address: 203.54.206.134	Sent: 3/3/2025 11:25:49 AM Viewed: 3/3/2025 1:07:03 PM Signed: 3/3/2025 1:07:26 PM
Electronic Record and Signature Disclosure: Accepted: 6/13/2021 11:29:54 AM ID: e9ffe166-26fd-4b8f-b66d-dec3bd5288dc		

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	3/3/2025 11:13:44 AM

Envelope Summary Events	Status	Timestamps
Certified Delivered	Security Checked	3/3/2025 1:07:03 PM
Signing Complete	Security Checked	3/3/2025 1:07:26 PM
Completed	Security Checked	3/3/2025 1:07:26 PM

Payment Events	Status	Timestamps

Electronic Record and Signature Disclosure

ELECTRONIC RECORD AND SIGNATURE DISCLOSURE

From time to time, Future Generation JV (we, us or Company) may be required by law to provide to you certain written notices or disclosures. Described below are the terms and conditions for providing to you such notices and disclosures electronically through the DocuSign system. Please read the information below carefully and thoroughly, and if you can access this information electronically to your satisfaction and agree to this Electronic Record and Signature Disclosure (ERSD), please confirm your agreement by selecting the check-box next to 'I agree to use electronic records and signatures' before clicking 'CONTINUE' within the DocuSign system.

Getting paper copies

At any time, you may request from us a paper copy of any record provided or made available electronically to you by us. You will have the ability to download and print documents we send to you through the DocuSign system during and immediately after the signing session and, if you elect to create a DocuSign account, you may access the documents for a limited period of time (usually 30 days) after such documents are first sent to you. After such time, if you wish for us to send you paper copies of any such documents from our office to you, you will be charged a $0.00 per-page fee. You may request delivery of such paper copies from us by following the procedure described below.

Withdrawing your consent

If you decide to receive notices and disclosures from us electronically, you may at any time change your mind and tell us that thereafter you want to receive required notices and disclosures only in paper format. How you must inform us of your decision to receive future notices and disclosure in paper format and withdraw your consent to receive notices and disclosures electronically is described below.

Consequences of changing your mind

If you elect to receive required notices and disclosures only in paper format, it will slow the speed at which we can complete certain steps in transactions with you and delivering services to you because we will need first to send the required notices or disclosures to you in paper format, and then wait until we receive back from you your acknowledgment of your receipt of such paper notices or disclosures. Further, you will no longer be able to use the DocuSign system to receive required notices and consents electronically from us or to sign electronically documents from us.

All notices and disclosures will be sent to you electronically

Unless you tell us otherwise in accordance with the procedures described herein, we will provide electronically to you through the DocuSign system all required notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you during the course of our relationship with you. To reduce the chance of you inadvertently not receiving any notice or disclosure, we prefer to provide all of the required notices and disclosures to you by the same method and to the same address that you have given us. Thus, you can receive all the disclosures and notices electronically or in paper format through the paper mail delivery system. If you do not agree with this process, please let us know as described below. Please also see the paragraph immediately above that describes the consequences of your electing not to receive delivery of the notices and disclosures electronically from us.

How to contact Future Generation JV:

You may contact us to let us know of your changes as to how we may contact you electronically, to request paper copies of certain information from us, and to withdraw your prior consent to receive notices and disclosures electronically as follows:
To contact us by email send messages to: dms@futuregenerationjv.com.au

To advise Future Generation JV of your new email address

To let us know of a change in your email address where we should send notices and disclosures electronically to you, you must send an email message to us at dms@futuregenerationjv.com.au and in the body of such request you must state: your previous email address, your new email address. We do not require any other information from you to change your email address.

If you created a DocuSign account, you may update it with your new email address through your account preferences.

To request paper copies from Future Generation JV

To request delivery from us of paper copies of the notices and disclosures previously provided by us to you electronically, you must send us an email to dms@futuregenerationjv.com.au and in the body of such request you must state your email address, full name, mailing address, and telephone number. We will bill you for any fees at that time, if any.

To withdraw your consent with Future Generation JV

To inform us that you no longer wish to receive future notices and disclosures in electronic format you may:

i. decline to sign a document from within your signing session, and on the subsequent page, select the check-box indicating you wish to withdraw your consent, or you may;

ii. send us an email to dms@futuregenerationjv.com.au and in the body of such request you must state your email, full name, mailing address, and telephone number. We do not need any other information from you to withdraw consent.. The consequences of your withdrawing consent for online documents will be that transactions may take a longer time to process..

Required hardware and software

The minimum system requirements for using the DocuSign system may change over time. The current system requirements are found here: https://support.docusign.com/guides/signer-guide-signing-system-requirements.

Acknowledging your access and consent to receive and sign documents electronically

To confirm to us that you can access this information electronically, which will be similar to other electronic notices and disclosures that we will provide to you, please confirm that you have read this ERSD, and (i) that you are able to print on paper or electronically save this ERSD for your future reference and access; or (ii) that you are able to email this ERSD to an email address where you will be able to print on paper or save it for your future reference and access. Further, if you consent to receiving notices and disclosures exclusively in electronic format as described herein, then select the check-box next to 'I agree to use electronic records and signatures' before clicking 'CONTINUE' within the DocuSign system.

By selecting the check-box next to 'I agree to use electronic records and signatures', you confirm that:

- You can access and read this Electronic Record and Signature Disclosure; and
- You can print on paper this Electronic Record and Signature Disclosure, or save or send this Electronic Record and Disclosure to a location where you can print it, for future reference and access; and
- Until or unless you notify Future Generation JV as described above, you consent to receive exclusively through electronic means all notices, disclosures, authorizations, acknowledgements, and other documents that are required to be provided or made available to you by Future Generation JV during the course of your relationship with Future Generation JV.