



# TRAFFIC MANAGEMENT PLAN SNOWY 2.0 – EXPLORATORY WORKS

Stage 1 - Exploratory Works Access Roads

December 2019



**lead**

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## Traffic Management Plan

Rev 1

Report Snowy 2.0 - Exploratory Works - Traffic Management Plan | Prepared for Snowy Hydro Limited | 16 December 2019

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### Document Control

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## Abbreviations and Glossary

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BCD	Biodiversity and Conservation Division
DEC	Department of Environment and Conservation (now Office of Environment and Heritage)
DECC	Department of Environment and Climate Change (now Office of Environment and Heritage)
DPIE	NSW Department of Planning, Industry and Environment <i>formerly</i> NSW Department of Planning and Environment
EIS	<i>Environmental Impact Statement Exploratory Works for Snowy 2.0</i>
EMS	Environmental Management Strategy
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EPA	NSW Environment Protection Authority
EWMS	Environmental Work Method Statement
Heavy vehicle	A vehicle that has a gross vehicle mass (GVM) or aggregate trailer mass (ATM) of more than 4.5 tonnes and a combination that includes a vehicle with a GVM or ATM of more than 4.5 tonnes (as defined under the Heavy Vehicle National Law (NSW))
KNP	Kosciusko National Park
KNP PoM	Kosciusko National Park Plan of Management
LoS	Level of Service
MTMP	Marine Traffic Management Plan
OEH	Office of Environment and Heritage
OSOM	Oversize over mass
POEO Act	<i>Protection of the Environment Operations Act 1997</i>
REMM	Revised Environmental Management Measures
ROL	Road Occupancy Licence
Submissions Report or RTS	<i>Response to Submissions Exploratory Works for Snowy 2.0</i>
TCP	Traffic Control Plan
TMP	Traffic Management Plan
VMP	Vehicle Movement Plan

# 1 Introduction

## 1.1 Background

Snowy Hydro Limited (Snowy Hydro) is the proponent of the Snowy 2.0 project which is a pumped hydro-electric storage and generation project proposed to address increasing demands for renewable energy supplies. Snowy 2.0 involves linking Talbingo and Tantangara reservoirs within the existing Snowy Mountains Hydro-electric Scheme (Snowy Scheme) and building an underground power station between the two reservoirs.

Snowy Hydro will carry out Exploratory Works prior to the main construction works for the Snowy 2.0 project, to inform the detailed design and to reduce project risk. Exploratory Works are required to obtain detailed geological data for the proposed location of the underground power station. An exploratory tunnel is to be constructed to gain this information. The Exploratory Works will predominantly be in the Lobs Hole area of Kosciuszko National Park (KNP). If the Exploratory Works are not undertaken, risks to the design and construct elements of the power station cavern are significantly increased.

The *Environmental Impact Statement Exploratory Works for Snowy 2.0* (EIS) was prepared to assess the impact of these works on the environment, including an assessment of traffic and transport impacts within Chapter 5.6 and Appendix Q. MOD1 reassessed traffic and transport impacts relevant to the exploratory works scope, revised traffic numbers, and proposed any required mitigation measures for both the exploratory works construction and Transgrid for the construction of the Lobs Hole substation within Chapter 6.4 and 7.1. The EIS and MOD1 identified that the main traffic and transport issue for the Exploratory Works would be the increase in traffic volumes from the delivery of materials to site. The peak heavy vehicle volume generated by the project was predicted to occur in the sixth month of the project with some 423 heavy vehicles accessing the project area in one month. For Stage 1 of the work heavy vehicles will be truck and dogs, rigid flat bed trucks, rigid tip trucks and semi-trailers with some oversize deliveries required for large earthmoving machinery and steel bridge beams.

The EIS concluded that the impact of the additional traffic volumes generated by Exploratory Works on the external road network would not lead to any noticeable change in road network performance. Similarly, no negative impacts on the internal road network, public transport, traffic crashes or emergency vehicles were predicted.

The Response to Submissions Exploratory Works for Snowy 2.0 (Submissions Report or RTS) included revised environmental management measures (REMM) within Chapter 8. The management measures from that report have been addressed within this TMP.

## 1.2 Context

This Traffic Management Plan (TMP or Plan) forms part of the Environmental Management Strategy (EMS) for Snowy 2.0 – Exploratory Works (the Project). The Exploratory Works is the first phase of Snowy 2.0, a pumped hydro-electric storage and generation project which will increase the hydro-electric capacity within the existing Snowy Mountains Hydro-electric Scheme. The main project, will be subject to a separate Environmental Impact Statement in 2019.

The TMP has been prepared to address the requirements of the Infrastructure Approval (SSI 9208) issued for Snowy 2.0 Exploratory Works on 7 February 2019, the *Environmental Impact Statement Exploratory*



*Works for Snowy Hydro 2.0, and the revised environmental management measures within the Response to Submissions Exploratory Works for Snowy 2.0.*

This revision of the TMP has been prepared to address the requirements of the Exploratory Works for Snowy 2.0 Modification 1 Assessment Report (MOD1) and the REMMs within the Exploratory Works Modification 1 Response to Submissions Report which were approved by Department of Planning, Industry and Environment (DPIE) on 2 December 2019.

The original EIS Exploratory Works scope includes:

- an exploratory tunnel about 3.1 km long to the site of the underground power station;
- horizontal and other test drilling, investigations and analysis in situ at the proposed cavern location and associated areas, and around the portal construction pad, access roads and excavated rock management areas all within the disturbance footprint;
- a portal construction pad for the exploratory tunnel. This will provide the entrance structure to the tunnel and an area for infrastructure and equipment needed to support tunnelling activities;
- an accommodation camp for the Exploratory Works construction workforce;
- road works and upgrades to enable access and haulage routes during Exploratory Works. This includes upgrades to 26 km of existing roads and creating about 2 km of new roads;
- barge access infrastructure to enable access and transport by barge on Talbingo Reservoir. This includes one new barge ramp at Talbingo Spillway in the northern part of Talbingo Reservoir and one new barge ramp at Middle Bay near Lobs Hole at the southern part of Talbingo Reservoir;
- excavated rock management, including subaqueous placement within Talbingo Reservoir. Up to 750,000 m<sup>3</sup> of excavated rock will need to be tested for its geochemical properties (ie whether the rock is reactive or non-reactive) before being managed by a combination of the following options:
  - re-use - suitable material can be used as construction materials for roads or similar. Some materials will be provided to NPWS for use in road maintenance and upgrades in other areas of KNP;
  - on land placement - material will be temporarily placed in one of two on land emplacement areas.
  - subaqueous placement within Talbingo Reservoir – suitable material will be placed at a suitable location within Talbingo Reservoir, subject to a number of water quality controls and monitoring; and
- services infrastructure such as diesel-generated power, water and communication;
- post-construction revegetation and rehabilitation, management and monitoring.

Having regard to the design changes identified in Modification 1, the scope now comprises the following listed in Table 1.1 below:

**Table 1.1**      **New scope items for EW (Stage 1 & 2) as a result of MOD1**



Stage 1	
<b>Lobbs Hole Substation</b>	<p>Additional disturbance area required for the construction power connection to an existing transmission line (Line 2) at Lobs Hole for power supply to the Exploratory Works accommodation camp and construction areas. This will provide a reliable and long-term source of construction power and will reduce the reliance on diesel generation and associated on-site storage requirements and emissions. Works in this area will include establishing a substation, connection infrastructure, access roads and ancillary construction areas;</p> <p>This will include:</p> <ul style="list-style-type: none"> <li>• construction of a 330/33 kV substation within Kosciuszko National Park and adjacent to Line 2, which forms a 330-kV connection between Upper Tumut Switching Station and Yass Substation;</li> <li>• geotechnical investigation works to inform the detailed design of the construction power substation;</li> <li>• replacement of one transmission support structure (Structure 54) within the existing transmission easement. This will involve removal of the existing structure and establishment of one new steel lattice tower, approximately 50 m in height;</li> <li>• short overhead 330 kV transmission line connections (approximately 100 m in length) between the substation and the new Structure 54;</li> <li>• 33 kV feeder connection between the substation and the Exploratory Works construction power network. This will be either overhead lines or underground cables;</li> <li>• establishment and upgrade of access tracks and roads to the new substation and transmission line structures;</li> <li>• installation of a fibre optic communication link into the new substation from the approved communication network; and</li> <li>• ancillary activities, including brake and winch sites, crane pads, site compounds and equipment laydown areas.</li> </ul> <p>(Illustrated Appendix F Figure 1i)</p>
<b>Camps Bridge and Wallaces Creek</b>	<ul style="list-style-type: none"> <li>• additional disturbance area around Camp Bridge and Wallaces Creek Bridge required for improved constructability of the crossings. Works within these areas will include vegetation clearing, levelling earthwork, erection of falsework, sediment controls, laydown, parking and movement of equipment;</li> </ul> <p>(Illustrated in Appendix F Figures 1h and 1i of this plan and Modification 1 Assessment Report Figure 3.9)</p>
<b>Lobs Hill Ravine Road and Construction Boundary Changes</b>	<ul style="list-style-type: none"> <li>• minor changes to the project boundary identified through detailed design including: <ul style="list-style-type: none"> <li>– revised road upgrade for Lobs Hole/Ravine Road to improve access, drainage and safety;</li> <li>– minor additions to construction areas for design optimisation.</li> </ul> </li> <li>• removal of dangerous trees on Lobs Hole Ravine Road. This will involve either complete or partial removal of up to 91 trees that have been identified to pose a safety risk to road users on Lobs Hole Ravine Road and Mine Trail Road;</li> </ul> <p>(Illustrated in Appendix F, Figures 1d, 1e, 1f and 1i)</p>

<b>Operating Hours</b>	<ul style="list-style-type: none"> <li>modify operating hours from existing 7 am to 6pm to sunrise to sunset</li> </ul>
<b>Miscellaneous</b>	<ul style="list-style-type: none"> <li>continued use of existing communications towers within KNP that were previously approved by the NPWS under a separate review of environmental factors (REF R – Wallaces Creek Geotechnical drilling) environmental impact assessment carried out under the NSW National Parks and Wildlife Act 1974 (NPW Act) and its regulation for the geotechnical investigation program; and</li> <li>increase in peak traffic volumes. Additional vehicles will be required to access the site to facilitate construction of Exploratory Works, however no change in impacts to the road network are expected.</li> </ul> <p>(location of communications towers illustrated in Appendix F Figures 1a, 1f, 1l)</p>
<b>Stage 2</b>	
<b>Borehole drilling and geophysical surveys</b>	<ul style="list-style-type: none"> <li>Borehole drilling and geophysical surveys for further geotechnical investigation of the Snowy 2.0 power station and power waterway at Marica, Talbingo and Tantangara;</li> <li>clearing of up to 2.79 hectares (ha) of additional vegetation for access tracks and drilling pads.</li> <li>About 1.33 ha within Smokey Mouse potential habitat;</li> <li>trimming of overhanging dangerous branches on adjacent trees (these trees will not require removal);</li> <li>mulching of trees and vegetation;</li> <li>establishment of an additional 1 km of access tracks (4 m wide), including minor earthworks,</li> <li>placement of geofabric (as required) and import of stabilised material;</li> <li>establishment of eight drilling pads and boreholes at top of the cavern area, with an area of 900 m<sup>2</sup> per pad, including minor earthworks, placement of geofabric (as required) and import of stabilised material (as required);</li> <li>undertaking geophysical surveys near Talbingo and Tantangara reservoirs;</li> <li>establishment of two drilling pads and boreholes at both Tantangara and Talbingo with an area of</li> <li>900 m<sup>2</sup> per pad, including approximately 400 m of additional access tracks and minor earthworks (as required);</li> <li>establishment of in-reservoir boreholes including one in Talbingo Reservoir and two in Tantangara Reservoir;</li> <li>drilling of additional nested vertical boreholes at each of the drilling pads up to a depth of 1,100 m;</li> <li>conversion of the investigation boreholes into monitoring bores;</li> <li>undertaking geophysical surveys; and</li> <li>rehabilitation of the drilling pads and access tracks following completion of works</li> <li>ongoing maintenance of existing access tracks required for geotechnical investigations within KNP</li> </ul> <p>(Illustrated in (Illustrated in Appendix F Figure 1j, 1k, 1l, 1m and 1n)</p>
<b>Talbingo Laydown</b>	<p>Outside of KNP, SHL is proposing to add four laydown locations to facilitate the construction of the communications cable linking Lobs Hole with the Tumut 3 Power Station.</p>

	These are proposed on existing hardstand areas along Talbingo Reservoir within Snowy Hydro owned land. (Illustrated in Appendix F, Figure 1o)
<b>Tantangara Access</b>	Two additional geotechnical boreholes are required to facilitate the detailed design of cuttings, bridge foundations, retaining wall foundations, and drainage structures near Nungar Creek  (Illustrated in Appendix F, Figure 1m and 1n)

The Exploratory Works is estimated to take around 30 to 34 months to complete.

As with most of the existing Snowy Scheme, the majority of Snowy 2.0 is within Kosciuszko National Park. Snowy Hydro has been working with NSW National Parks and Wildlife Service (NPWS) since the announcement of Snowy 2.0 to ensure long term management objectives for Kosciuszko National Park are considered in project development.

The Project has been designed in a way that avoids and minimises impacts to Kosciuszko National Park where possible. This has included the planning of access roads and construction areas to avoid impacting the heritage listed Washington Hotel ruins at Lobs Hole, and Smoky Mouse habitat along Upper Lobs Hole Ravine Road. It also includes designing road upgrades to minimise impacts to geodiversity features including a block stream and a fossil outcrop along Lower Lobs Hole Ravine Road. The former copper mine at Lobs Hole is also considered a geo-heritage site, however it is also a source of known contamination and has therefore been avoided as much as possible to prevent disturbance.

While there are some unavoidable impacts during construction, the Exploratory Works will allow for a number of longer-term benefits and contributions to Kosciuszko National Park through a biodiversity offset program, improved access roads and recreational facility upgrades. The completion of Exploratory Works will also allow for the greater benefits of Snowy 2.0 to be realised.

### 1.3 Construction activities and sequencing

Exploratory Works will be delivered in three stages:

- **Stage 1a – Pre-construction Minor Works** - pending the approval process, works may commence in the first quarter of 2019. The scope of pre-construction minor works includes dilapidation studies, survey work, borehole installation, site office establishment, minor access roads, installation of monitoring equipment, installation of erosion and sediment controls, archaeological salvage and minor clearing;
- **Stage 1b – Exploratory Works Access Roads (EWAR)** - pending the approval process, works may commence in the first quarter of 2019. The scope includes roadworks and upgrades to enable access and haulage routes during Exploratory Works;
- **Stage 2 – Exploratory Works** - pending progress with Stage 1, works may commence in quarter three of 2019. The scope for Stage 2 will be the remainder of the Exploratory Works, including the exploratory tunnel, portal construction pad, accommodation camp and excavated rock management. Stage 2 also includes subaqueous emplacement within Talbingo Reservoir.

To present the staging of plans a separate Staging Report has been prepared and was submitted to Department of Planning and Environment. Timing of the Exploratory Work stages is presented below.



**Figure 1** Timing of Exploratory Works stages

### 1.3.1 Exploratory Works Access Roads

The Exploratory Works Access Roads (EWAR) will provide early access to the tunnel portal located to the east of the Talbingo Reservoir, and to Talbingo Reservoir itself. The works include upgrades to and/or construction of the following roads:

- Ravine Road;
- Mine Trail Road;
- Lobs Hole Road;
- Wharf Road.

The EWAR will be undertaken by Leed Engineering. The scope includes but is not limited to the following:

- setting out the works including delineation of site boundaries;
- establishment of all site facilities required and removal upon completion, including all temporary safety and security measures required;
- locating and protecting all public and private utility services;
- maintenance of the existing roadway and associated infrastructure;
- clearing and grubbing of vegetation including creation of mulch and compost;
- establishment of short term and long-term (eg: detention and sedimentation basins) erosion and sedimentation control systems and devices;
- removal and disposal of existing infrastructure including pipes, culverts, drainage channels and other minor structures;
- excavation and stockpiling of topsoil;
- earthworks including excavation of cuttings, construction of fills including selected zone material, and placement of excess spoil in stockpile;
- progressive opening to traffic;
- treatment of cut and fill slope batter surfaces including slope retention systems where shown;

- construction of clean and dirty water drainage systems including culverts, open and subsoil drainage systems;
- construction of pavements including subgrades and pavements and road surfacing;
- design, supply, construction of temporary structures / bridges over Wallace Creek and the Yarrangobilly River and removal of completion;
- construction of permanent bridges over Wallace Creek and the Yarrangobilly River;
- installation of road furniture including but not limited to barriers, line marking, guide posts and road signs;
- placement / replacement of topsoil and revegetation and other surface treatments to disturbed earth surfaces including lining of open drains;
- clean up and restoration of work areas and areas disturbed by the contractor.

The works are proposed to commence in the first quarter of 2019

The additional EWAR scope as a result of MOD1 will include:

- construction of a 330/33 kV substation within Kosciuszko National Park and adjacent to Line 2, which forms a 330-kV connection between Upper Tumut Switching Station and Yass Substation;
- geotechnical investigation works to inform the detailed design of the construction power substation;
- replacement of one transmission support structure (Structure 54) within the existing transmission easement. This will involve removal of the existing structure and establishment of one new steel lattice tower, approximately 50 m in height;
- short overhead 330 kV transmission line connections (approximately 100 m in length) between the substation and the new Structure 54;
- 33 kV feeder connection between the substation and the Exploratory Works construction power network. This will be either overhead lines or underground cables;
- establishment and upgrade of access tracks and roads to the new substation and transmission line structures;
- installation of a fibre optic communication link into the new substation from the approved communication network; and
- ancillary activities, including brake and winch sites, crane pads, site compounds and equipment laydown areas.
- minor changes to the project boundary identified through detailed design including:
  - additional disturbance area around Camp Bridge and Wallaces Creek Bridge required for improved constructability of the crossings. Works within these areas will include vegetation clearing, levelling earthwork, erection of falsework, sediment controls, laydown, parking and movement of equipment;

- additional disturbance area required for the construction power connection to an existing transmission line at Lobs Hole. Works in this area will include establishing a substation, connection infrastructure, access roads and ancillary construction areas;
  - revised road upgrade for Lobs Hole/Ravine Road to improve access, drainage and safety; and
  - minor additions to construction areas for design optimisation.
- removal of dangerous trees on Lobs Hole Ravine Road. This will involve either complete or partial removal of up to 91 trees that have been identified to pose a safety risk to road users on Lobs Hole Ravine Road and Mine Trail Road;
- continued use of existing communications towers within KNP that were previously approved by the NPWS under a separate review of environmental factors (REF R – Wallaces Creek Geotechnical drilling) environmental impact assessment carried out under the NSW National Parks and Wildlife Act 1974 (NPW Act) and its regulation for the geotechnical investigation program;
- increase in peak traffic volumes. Additional vehicles will be required to access the site to facilitate construction of Exploratory Works, however no change in impacts to the road network are expected;

**This Plan identifies the project’s environmental management measures in relation to Traffic Management. It has been specifically developed for Stage 1 of the Exploratory Works project and includes management measures for aspects and impacts previously addressed within the Pre-Construction TMP (Stage 1a TMP).**

**This TMP will be revised prior to commencement of Stage 2 works as detailed in the Environmental Management Strategy (EMS) Section 2.1 and Section 4.1.3 and the Staging Report (February 2019).**

The timing of the preparation, consultation and submission of this plan is shown within Figure 4.3 of the EMS. During Stage 1 of the work ongoing revisions to the TMP will occur in accordance with Section 1.6.1 of the EMS and as required by the conditions of approval. Reviews and subsequent updates where required would occur as a result of:

- traffic related incidents on site
- delivery vehicles involved in traffic related incidents off site;
- non-conformances and corrective action reports from audit reports or observations;
- amendments to environmental approval consent conditions or modifications;
- changes to the work methodology that require changed traffic movements;
- complaints from members of the public or stakeholders; and
- a request for information (RFI) by Snowy Hydro.

In Stage 2 a Marine Traffic Management Plan (MTMP) will be developed in consultation with the Roads and Maritime Services, Maritime Division. This will be developed prior to the commencement of barge

and dredging activities. The MTMP will provide further details to those incorporated within this Traffic Management Plan to ensure the safety of recreational reservoir users during construction.

Management measures identified in this Traffic Management Plan will be incorporated into site specific documents which are to be prepared by the Contractor. These site-specific documents include stand-alone Traffic Management Plans (TMPs) and Traffic Control Plans (TCPs) prepared to meet safety and road management requirements in addition to the conditions of approval.

The TMPs and TCPs will detail the traffic management measures the Contractor will implement to minimise impacts to the road network and to ensure the safety of road users during construction. These documents will be referenced within the TMP. They will be developed progressively during construction and will detail the management measures which are to be implemented on the ground. Construction personnel will be required to undertake works in accordance with the mitigation measures identified in the site-specific documents.

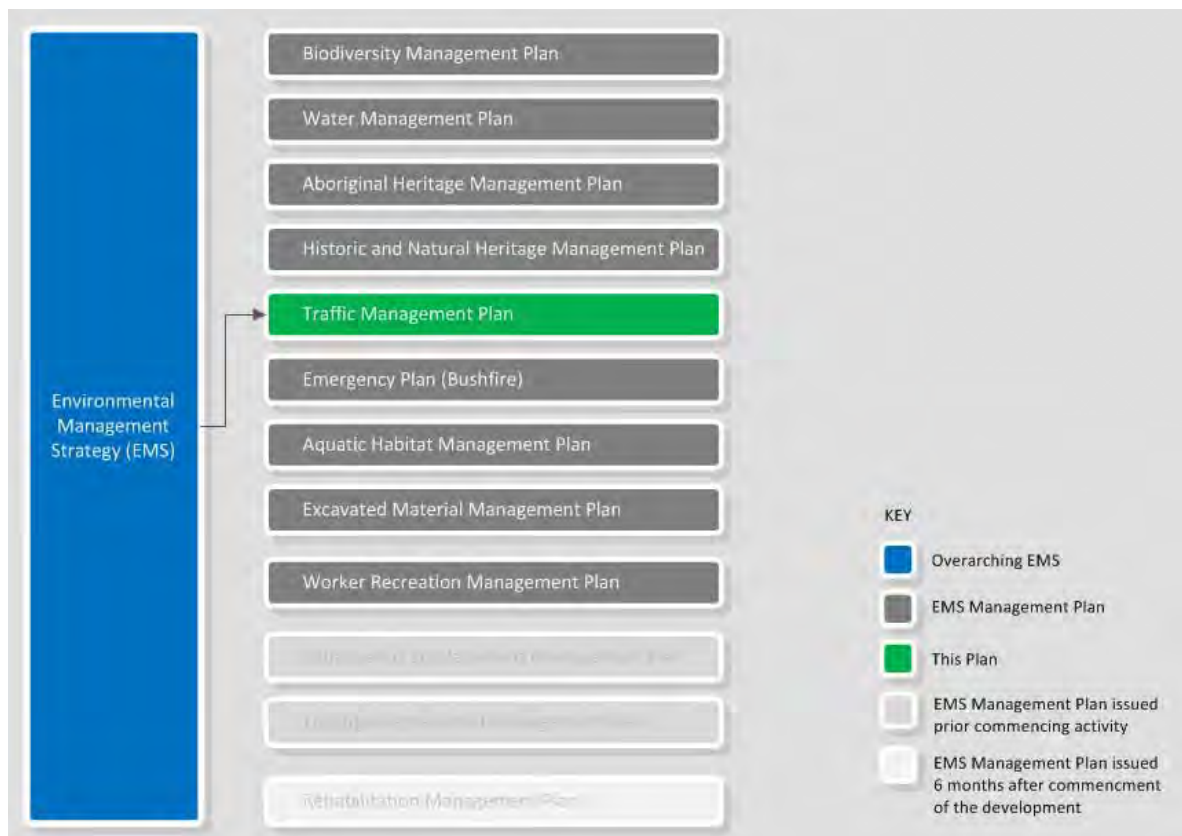
## 1.4 Environmental management system

The overall environmental management system for the Project is described in the Environmental Management Strategy (EMS).

This TMP forms part of Snowy Hydro Limited's environmental management framework for the Project, as identified in Figure 1.2 and as described in Section 3 of the EMS.

**This Plan aims to transfer the relevant requirements of the Approval documents into a management plan which can be practically applied on the Project site.**





**Figure 1.2 EMS structure**

## 1.5 Purpose and objective

The purpose of this Plan is to describe how traffic, transport and access requirements are to be managed during the delivery of Stage 1 of the project. It outlines the control measures that are to be implemented to minimise the potential impacts from construction traffic and transport on the surrounding community and environment.

The key objective of the TMP is to ensure that impacts related to traffic and transport are minimised and within the scope permitted by the conditions of approval. To achieve this, Snowy Hydro and the Contractor will:

- ensure appropriate measures are implemented to address the relevant conditions of approval and the REMMs listed within the Submissions Report, as detailed within Table 2.1 and Table 2.2 of this Plan;
- ensure appropriate measures are implemented during construction to avoid or minimise traffic and transport related impacts including safety related impacts;
- ensure appropriate measures are implemented to comply with all relevant legislation and other requirements as described in Section 2.1 and Section 2.5 of this Plan; and
- establish a traffic and transport monitoring program to assess the effectiveness of management measures and promote adherence with the code of conduct.

## 1.6 Consultation

In accordance with schedule 3, condition 46 of the conditions of approval, the TMP is to be prepared in consultation with;

- National Parks and Wildlife Services (NPWS),
- Roads and Maritime Services (RMS),
- Snowy Valleys Council (SVC); and
- Snowy Monaro Regional Council (SMRC).

The MOD1 Assessment Report and associated technical studies were submitted by Snowy Hydro to DPIE in June 2019 and publicly exhibited in accordance with the EP&A Act between 26 June and 9 July 2019. Nine submissions were received during the public exhibition period, including one from a special interest group and two individual community submissions.

Consultation for the Traffic Management Plan began in November 2018 and is summarised in Table 1.2.

**Table 1.2 Consultation undertaken for the TMP**

Date	Consultation	Outcomes
12 <sup>th</sup> December 2018	Initial consultation meeting with NPWS	Outlined the Project approval process and management plan development
14 <sup>th</sup> December 2018	Issued draft TMP to SVC	Sent as information for initial review and comment.
17 <sup>th</sup> December 2018	Issued draft TMP to SMRC	Sent as information for initial review and comment.
3 <sup>rd</sup> January 2019	Received initial TMP comments from SVC	Comments accepted and plan revised accordingly
16 <sup>th</sup> January 2019	Issued draft TMP to NPWS	Sent as information for their initial review
22 <sup>nd</sup> January 2019	Initial consultation meeting with NPWS	Discussed revisions to management plans and consultation and approval program
29 <sup>th</sup> January 2019	Issued draft TMP to RMS	Sent as information for initial review and comment.
29 <sup>th</sup> January 2019	Received initial TMP comments from NPWS	Comments accepted and plan revised accordingly
5 <sup>th</sup> February 2019	Initial consultation meeting with SVC regarding draft TMP	Discussion with SVC about current TMP scope and consultation process.
5 <sup>th</sup> February 2019	Initial consultation meeting with NPWS	Discussion with NPWS about current plans, latest comments and the ongoing consultation process.
6 <sup>th</sup> February	Initial consultation meeting with RMS regarding draft TMP	Discussion with RMS about current TMP scope and consultation process.
8 <sup>th</sup> February 2019	Received initial TMP comments from SMRC	Comments accepted and plan revised accordingly

Date	Consultation	Outcomes
12 <sup>th</sup> February 2019	Updated plans issued to NPWS, RMS, Snowy Valleys Council and Snowy Monaro Council	Updated plans issued
19 <sup>th</sup> February 2019	Comments received from NPWS	Comments accepted and plan revised accordingly
1 <sup>st</sup> March 2019	Confirmation received from Snowy Monaro Council that all comments other than an incorrect document reference had been incorporated in revised draft	Incorrect reference updated in document
1 <sup>st</sup> March 2019	Comments received from Roads and Maritime Services	Comments accepted and plan revised accordingly
24 <sup>th</sup> October 2019	MOD1 changes to TMP sent to NPWS, RMS, Snowy Valleys Council and Snowy Monaro Council	SVC replied with no comments

## 1.7 Communication Strategy

A Communication Strategy has been developed by Snowy Hydro which establishes the framework and methods by which Snowy Hydro and Contractors will engage and communicate with the community, relevant councils, government authorities, emergency services, local businesses and other parties impacted by the project during construction. It describes the processes by which interested parties will be consulted and the various means by which relevant project information will be shared with the affected community and stakeholders, including project information relating to traffic, transport and access.

The Communication Strategy aims to ensure that clear, up to date and timely advice to the community is provided in advance of upcoming works and that opportunity is made available to provide feedback. The strategy sets out the likely issues to be encountered during construction and how these will be proactively managed and resolved.

Snowy Hydro will provide advance communication of upcoming works, construction activities, milestones, traffic changes and traffic restrictions including those within Kosciuszko National Park through various forms of media including signage, the project website, letter box drops and formal media releases. Advance communication will be provided prior to traffic changes, disruptions, access restrictions, oversize deliveries and road closures.

This Communication Strategy can be found in the Snowy 2.0 Exploratory Works Environmental Management Strategy (EMS).

## 2 Environmental requirements

### 2.1 Legislation

Legislation relevant to traffic and transport management includes:

- *Environmental Planning and Assessment Act 1979* (EP&A Act);
- *Roads Act 1993*;
- *Dangerous Goods (Road and Rail Transport) Act 2008*;
- *Road Transport Act 2013*;
- *Transport Administrations Act 1988*;
- *Heavy Vehicle National Law (NSW) (2013 No 42a)*;
- *Road Rules 2014*;
- *Marine Safety Act 2013*;
- *Marine Safety Regulation 2016*; and
- *Commonwealth Marine Safety (Domestic Commercial Vessel) National Law 2012*.

Relevant provisions of the above legislation are explained in the register of legal and other requirements included in Appendix A1 of the EMS.

### 2.2 Conditions of approval

Project approval for SSI 9208 was granted by DPIE on 7<sup>th</sup> of February 2019 with the following historic and natural heritage management conditions included in the Infrastructure Approval. MOD1 was granted approval by DPIE on 2 December, 2019. The conditions relevant to traffic, transport and access are presented in Table 2.1.

**Table 2.1** Conditions of approval relevant to traffic, transport and access

Condition	Requirement	Where addressed
41	The Proponent must ensure the Miles Franklin (Murray Jackson) Drive/Snowy Mountains Highway intersection complies with the relevant Austroads sight distance requirements for a reaction time of 2.5 seconds for the posted speed limit, as amended by any relevant supplements adopted by the RMS.	Section 5.2.1
42	The Proponent must: <ul style="list-style-type: none"><li>a) prepare a dilapidation survey in accordance with guidelines and standards established by Austroads of the relevant section of Miles Franklin (Murray Jackson) Drive, Link Road and Kings Cross Road:<ul style="list-style-type: none"><li>• prior to the commencement of any construction and/or</li></ul></li></ul>	Section 5.2.2

Condition	Requirement	Where addressed
	<p>decommissioning works;</p> <ul style="list-style-type: none"> <li>• within 2 months of the completion of any construction and/or decommissioning works;</li> </ul> <p>b) rehabilitate and/or make good any development-related damage:</p> <ul style="list-style-type: none"> <li>• identified during the carrying out of the relevant construction and/or decommissioning works if it could endanger road safety, as soon as possible after the damage is identified, but within 7 days at the latest; and</li> <li>• identified during any dilapidation survey carried out following the completion of the relevant construction and/or decommissioning works within 2 months of the completion of the survey, unless the relevant roads authority agrees otherwise, to the satisfaction of the relevant road authorities.</li> </ul> <p>If there is a dispute about the scope of any remedial works or the implementation of these works, then either party may refer the matter to the Planning Secretary for resolution.</p>	
43	<p>During the development, the Proponent may close the following to the public:</p> <ul style="list-style-type: none"> <li>a) Lobs Hole Ravine Road from the Blue Creek Trail intersection (in the north) to the Link Road (in the south);</li> <li>b) Ravine campground;</li> <li>c) Spillway Road;</li> <li>d) Talbingo Spillway and recreation area;</li> <li>e) Middle Bay hand-launching boat ramp.</li> </ul>	Section 5.4
44	<p>All over-dimensional and heavy vehicles associated with the development must travel to and from the site via the:</p> <ul style="list-style-type: none"> <li>a) Snowy Mountains Highway, Miles Franklin (Murray Jackson) Drive and Spillway Road;</li> <li>b) Snowy Mountains Highway, Link Road, and Lobs Hole Ravine Road</li> <li>c) Snowy Mountains Highway, Coppermine Trail and Wallaces Creek Trail; or</li> <li>d) Snowy Mountains Highway, Tantangara Road and Quarry Trail.</li> </ul>	Section 5.3.1 and Appendix A
45	The Proponent must maximise the use of barge infrastructure on the Talbingo Reservoir to deliver heavy machinery, construction equipment and materials to the site.	Section 5.2.1 (Stage 2)
46	<p>Prior to carrying out any development, unless the Planning Secretary agrees otherwise, the Proponent must prepare a Traffic Management Plan for the development to the satisfaction of the Planning Secretary. This plan must:</p> <ul style="list-style-type: none"> <li>a) be prepared in consultation with the NPWS, RMS, Snowy Valleys Council and Snowy Monaro Regional Council;</li> <li>b) include a description of the measures that would be implemented to: <ul style="list-style-type: none"> <li>• minimise the traffic safety impacts of the development on: <ul style="list-style-type: none"> <li>– road users on Miles Franklin (Murray Jackson) Drive and Link Road;</li> <li>– road users on the Snowy Mountains Highway in proximity to the intersections with Link Road, Tantangara Road and Coppermine Trail during the borehole investigations at Tantangara and Marica;</li> <li>– recreational water users in the Talbingo Reservoir;</li> </ul> </li> <li>• notify the local community about development-related traffic impacts;</li> <li>• restrict the following along the Upper Lobs Hole Ravine Road: <ul style="list-style-type: none"> <li>– vehicle speeds to 40 km/h;</li> </ul> </li> </ul> </li> </ul>	<p>This plan</p> <p>Section 1.5</p> <p>Section 5</p> <p>Section 5.1 to 5.4</p> <p>Section 5.4.4 and Marine Traffic Management Plan (Stage 2)</p> <p>Section 1.6</p> <p>Section 4.1.2</p> <p>Section 5.1 to 5.4</p>

Condition	Requirement	Where addressed
	<ul style="list-style-type: none"> <li>– hours of operation to between sunrise and sunset*;</li> <li>• restrict vehicle speeds along Coppermine Trail, Wallaces Creek Trail and access tracks in the Marica area to 20 km/h between sunrise and sunset*;</li> <li>• maintain suitable access to the site for NPWS vehicles required to carry out any park or emergency operations;</li> <li>• schedule the use of heavy vehicles to minimise convoy length or congestion on the public road network;</li> <li>• ensure loaded vehicles entering or leaving the site have their loads covered or contained;</li> <li>• minimise dirt being tracked on the public road network from development-related traffic;</li> <li>• minimise workers using private vehicles to get to and from the site;</li> <li>• minimise light vehicles using routes to the site other than Coppermine Trail, Wallaces Creek Trail, Tantangara Road, Quarry Trail, Miles Franklin (Murray Jackson) Drive, Spillway Road, Link Road and Lobs Hole Ravine Road to get to and from the site;</li> <li>• provide sufficient parking on-site for all development-related traffic;</li> </ul>	Section 5.2.2
	c) include a detailed strategy for the use of over-dimensional vehicles and the repair of any damage caused by these vehicles;	Section 5.3 and Appendix B
	d) include a driver's code of conduct that addresses: <ul style="list-style-type: none"> <li>• travelling speeds;</li> <li>• procedures to ensure that drivers adhere to the designated over-dimensional and heavy vehicle routes;</li> <li>• procedures to ensure drivers implement safe driving practices;</li> </ul>	Section 6
	e) include a program to monitor and report on the effectiveness of these measures and the code of conduct.	
47	The Proponent must implement the approved Traffic Management Plan for the development.	Section 1.4
*Note: Sunrise and sunset times are to be taken from the nearest Bureau of Meteorology centre		

## 2.3 Revised environmental management measures

Environmental safeguards and management measures are included in the EIS in Section 6.3. During preparation of the Submissions Report, revised environmental management measures were developed and are included in Section 8 of the Submissions Report.

The environmental management measures relevant to this Plan are listed in Table 2.2 below. If additional measures are cross-referenced from another section of the EIS or Submissions Report, these measures are also included.

**Table 2.2 Management measures from the RTS relevant to traffic, transport and access**

Impact	Reference #	Environmental management measure	Where addressed
Impacts to threatened species	ECO05	Vehicle traffic movements along Upper Lobs Hole Ravine Road will be: <ul style="list-style-type: none"> <li>• limited to day time hours only (except for emergencies). Day time hours are to be taken as the time between First Light and</li> </ul>	Section 4.1.2

Impact	Reference #	Environmental management measure	Where addressed
		Last Light; <ul style="list-style-type: none"> <li>limited to 40km/h; and</li> <li>where practicable, reduced through the use of Talbingo Reservoir to barge heavy machinery, construction equipment and materials.</li> </ul>	
Construction traffic management plan	TRA01	A Construction Traffic Management Plan (CTMP) will be prepared and implemented during construction. The CTMP will set out the strategy and procedures to manage the impacts of the Exploratory Works construction on the local road network and traffic systems, including: <ul style="list-style-type: none"> <li>community and stakeholder notification processes for oversized vehicle movements and any planned disruptions to traffic and restriction of access to areas of KNP and Talbingo Reservoir; and</li> <li>traffic safety requirements, including appropriate signage, driver conduct and safety protocols.</li> </ul>	This plan
Road maintenance	TRA02	Road maintenance will be managed through the following measures: <ul style="list-style-type: none"> <li>a Road Dilapidation Report will be prepared and submitted to the relevant road authority prior to and following Exploratory Works for:               <ul style="list-style-type: none"> <li>Link Road;</li> <li>all roads within KNP not upgraded as part of the exploratory works and which will potentially be used by Heavy Vehicles during construction;</li> <li>local roads within Talbingo which will potentially be used by Heavy Vehicles during exploratory works;</li> <li>Spillway Road; and</li> <li>Miles Franklin (Murray Jackson) Drive.</li> </ul> </li> <li>routine defect identification and rectification of the roads used by construction heavy vehicles within KNP and the Spillway Road will be managed as part of the project maintenance procedure; and</li> <li>internal access roads upgraded or constructed as part of the Exploratory Works will be designed in accordance with the relevant vehicle loading requirements.</li> </ul>	Section 5.2.2 Section 7.2
Signage	TRA03	Where changes to the traffic conditions are required, appropriate signage will be installed in accordance with the following: <ul style="list-style-type: none"> <li>Traffic Control Device for Works on Roads (AS1742.3; 2009); and</li> <li>Traffic Control at Work Sites (Roads and Maritime Services; 2010).</li> </ul>	Section 5.1
Time of travel	TRA04	Standard hours of operation of heavy vehicles on local roads will be 7 am to 6 pm during weekdays and 8am to 1pm on Saturday, excluding upper Lobs Hole Ravine Road where no heavy vehicle movements will occur outside of day time hours (except in emergencies). Daytime hours being defined as First Light to Last Light. Access to the Barge Access Facility via Miles Franklin (Murray Jackson) Drive, and Spillway Road will be permitted 24 hours a day and 7 days a week to all vehicles.	Section 4.1.2
Traffic control	TRA05	Where temporary occupation of lanes is required traffic control measures specified in AS1742-2002 will be implemented. Where works require lane occupancy on RMS or council classified roads, a	Section 2.4.1 Section 5.1



Impact	Reference #	Environmental management measure	Where addressed
		Road Occupancy Licence will be obtained.	
Restricted access to Talbingo Reservoir for recreational users	SEC06	Access to Talbingo spillway and boat ramp will be closed to the public for the period of the Exploratory Works.	Section 5.4.2 (Stage 2)
Impact of increased traffic in KNP on recreational users	SEC07	Traffic management arrangements will be put in place to minimise the amenity and safety risks for recreational users during periods of high traffic flow.	Section 5.4.1
Access	PUS03 PUS05	<p>Consideration of maritime traffic management to minimise conflict between reservoir users and barge activities during Exploratory Works through the development and implementation of a maritime traffic management plan.</p> <p>Mitigation measures to be implemented include:</p> <ul style="list-style-type: none"> <li>establishing exclusion zones around barge access infrastructure and at other locations where navigation channel widths are constrained;</li> <li>undertaking community notification prior to maritime operations and barging. Posting information material at the boat ramps including the location of exclusion zones and informing on legally enforceable speed restrictions around construction plant and equipment in accordance with the Marine Safety Act 2013; and</li> <li>ensuring construction plant and equipment are fitted with Automatic Identification Systems.</li> </ul>	Marine Traffic Management Plan (Stage 2)

## 2.4 Licences and permits

### 2.4.1 Road Occupancy Licence

In accordance with Section 138 of the *Roads Act 1993*, a road occupancy licence (ROL) will be obtained from the relevant road authority for construction activities that are likely to impact on the operational efficiency of the road network (classified and unclassified roads). This includes activities impacting a traffic lane or lanes or off-road activities which affect traffic flow.

Works requiring an ROL are likely to occur at the intersection of Link Road and Lobs Hole Ravine Road and along Spillway Road. Any ROL required during construction will be obtained in consultation with the relevant road authority in advance of the traffic controls being implemented.

In conjunction with an ROL it may be necessary to reduce the speed limit of the roadway for the period of the occupancy for the safety of road users and workers. Roadwork speed zones will be established in accordance with *AS1742.3-2009 Traffic control devices for works on roads* in consultation with the road authority. The speed zone authorisations will form part of the ROL application process as required by the road authority.

## 2.5 Guidelines

The main guidelines, specifications and policy documents relevant to this Protocol include:

- Roads and Maritime Services (RMS) *QA Specification G10 – Traffic Management* (as applied for the Exploratory Works project);
- RMS Traffic Control at Worksites Manual (Version 5, 2018);
- *Road Occupancy Manual* (Roads and Maritime Services (RMS)), 2015;
- Australian Standard 1742 Parts 1 to 14 Manual of Uniform Traffic Control Devices;
- Australian Standard 1742.3-2009 Traffic control devices for works on roads;
- AGTM 02-08 Guide to Traffic Management Part 2: Traffic Theory, 2015;
- AGTM 06-07 Guide to Traffic Management Part 6: Intersections and Crossings – General, 2013;
- AGRD 04-09 Guide to Road Design Part 4: Intersections and Crossings – General, 2009;
- AGPT05-11 Guide to Pavement Technology Part 5: Pavement Evaluation and Treatment Design, 2011.

## 3 Existing environment

### 3.1 Existing road network

The existing external road network and primary transport routes for Exploratory Works are shown in Figure 3.1.

Roads outside the project area are referred to as the 'external' road network while those within the disturbance footprint are referred to as the 'internal' road network. External roads which will be used by traffic generated by Exploratory Works are:

- Snowy Mountains Highway;
- Link Road from Snowy Mountains Highway to Cabramurra;
- Kings Cross Road; and
- Miles Franklin (Murray Jackson) Drive.

The existing road conditions for the external roads are provided in the following sections.

The existing 'internal' road network consists of a series of unsealed gravel roads which have historically been used by NPWS, KNP park users and Snowy Hydro (during operational activities) to access Talbingo Reservoir and the Yarrangobilly River. The roads are generally narrow, windy and of between approximately 4 to 6 meters wide. The internal road network is shown in Figure 3.2 and includes:

- Lobs Hole Road (from Lobs Hole Road / Mines Trail intersection to Blue Creek Trail / Lobs Hole Road intersection);
- Ravine Road (from Link Road to Mines Trail / Lobs Hole intersection);
- Mine Trail Road;
- Middle Bay Road; and
- Spillway Road.

The internal road network excluding Spillway Road will be closed to the public for the duration of Exploratory Works and upgraded to a standard suitable for the safe operation of construction traffic. The existing environment as it relates to internal roads has therefore not been presented for roads being closed and upgraded. Sections of the internal road network to be closed to the public are illustrated in Appendix C, Figure C-1.

Spillway Road, Talbingo Spillway and the boat ramp will remain open to the public during Stage 1.

### 3.1.1 Snowy Mountains Highway

Snowy Mountains Highway (B72) is a 333 km state highway connection between Hume Highway at Mount Adrah and Princes Highway at Stony Creek. It is a two-lane two-way rural highway for the majority of its alignment, with sign posted speed limits ranging between 60 km/h to 100 km/h. The Snowy Mountains Highway passes through Tumut and Cooma and functions as a town centre main road in both locations. During snow season the Snowy Mountains Highway also provides access to Selwyn Snow Resort for vehicles travelling from either Tumut or Cooma.

In proximity to the project area, the Snowy Mountains Highway was determined to have a maximum of 140 vehicles per hour and an existing level of service 'A' as defined by the *Austroads Guide to Traffic Management (Part 3, 2009)*. Peak traffic volumes were observed to occur during the middle of the day, generally between 12pm and 1pm.

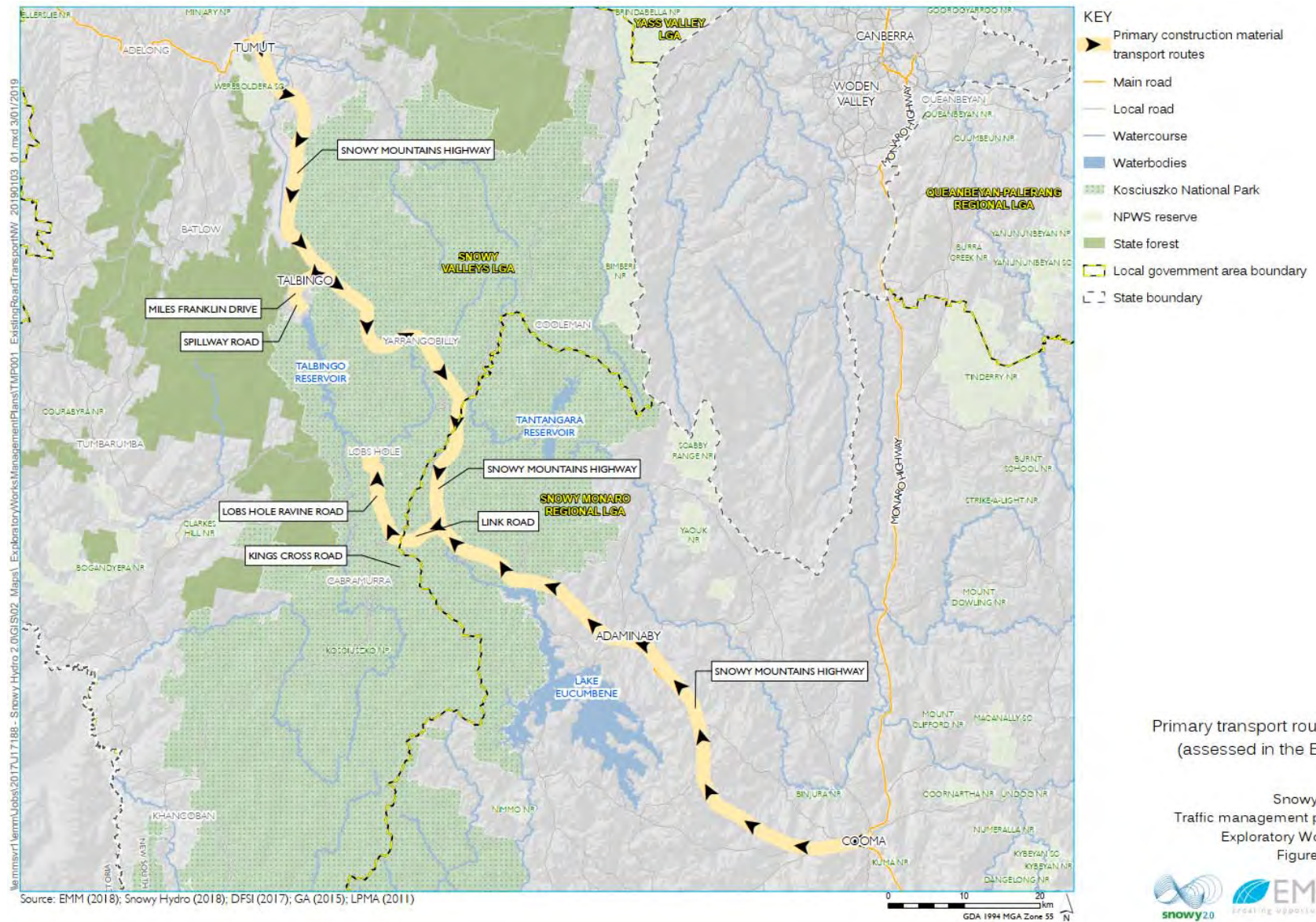
The Transport for NSW, Centre for Road Safety data for the period between 2013 and 2017, on the Snowy Mountains Highway, showed 30 traffic crashes were reported between Tantangara Road and Link Road and 26 traffic crashes were reported between Link Road and Miles Franklin (Murray Jackson) Drive. These comprised 21 non-casualty accidents, 10 minor injury accidents, 15 moderate injury accidents, 9 serious injury accidents and 1 accident involving a fatality.

### 3.1.2 Link Road

Link Road is a two-lane road between Goat Ridge Road to the west and Snowy Mountains Highway (B72) to the east. Link Road also provides the connection between Cabramurra and the Snowy Mountains Highway with a speed limit ranging between 80 km/h to 45 km/h. During snow season, traffic volumes along the road increase due to the nearby Selwyn Snow Resort, which is accessible via the Link Road and Kings Cross Road intersection.

Link Road was determined to have a maximum of 70 vehicles per hour and an existing level of service 'C' as defined by the *Austroads Guide to Traffic Management (Part 3, 2009)*. This level of service is based on a speed assessment on certain sections of this road rather than the traffic volumes relative to the road capacity. Peak traffic volumes were observed to occur during the middle of the day, generally between 12 pm and 1 pm.

The Transport for NSW, Centre for Road Safety data for the period between 2013 and 2017, showed three traffic crashes were reported on Link Road. One involving minor injury accident and two non-casualty tow away accidents.



**Figure 3.1 Primary transport routes (assessed in the EIS)**





Source: EMM (2018); Snowy Hydro (2018); SMEC (2018); Robert Bird (2018); DFSA (2017); LPMA (2011)

#### KEY

- |                         |                                     |
|-------------------------|-------------------------------------|
| — Exploratory tunnel    | On land rock management             |
| — Access road upgrade   | Subaqueous excavated rock placement |
| — Access road extension | Disturbance footprint               |
| — Communications cable  | Avoidance footprint                 |
| — Main road             |                                     |
| — Local road            |                                     |
| — Major watercourse     |                                     |

Project area and internal roads

Snowy 2.0  
Traffic management plan  
Exploratory Works  
Figure 3.2



Figure 3.2 Project area and internal roads

### 3.1.3 Miles Franklin (Murray Jackson) Drive

Miles Franklin (previously known as Murray Jackson) Drive is a two-lane road that provides the main connection to the town of Talbingo. The roadway also provides access to the Tumut 3 power station and Talbingo Spillway. Between Talbingo and the Snowy Mountains Highway, Miles Franklin (Murray Jackson) Drive is signposted with a speed limit of 80 km/hr, reducing to 60 km/hr on approach to the town of Talbingo. Between the Tumut 3 power station and Talbingo the speed limit increases to 100 km/hr.

At Talbingo Miles Franklin (Murray Jackson) Drive is a residential street. It has a maximum of 60 vehicles per hour observed during the traffic surveys. Miles Franklin (Murray Jackson) Drive was determined to function within the relevant environmental capacity performance standards for residential streets at all times as defined by the Austroads Guide to Traffic Management (Part 3, 2009). Peak traffic volumes were observed to occur during the middle of the day, generally between 12 pm and 1 pm.

The Transport for NSW, Centre for Road Safety data for the period between 2013 and 2017, showed two traffic crashes were reported on Miles Franklin (Murray Jackson) Drive. One involving moderate injury and one non-casualty tow away accident.

### 3.1.4 Kings Cross Road

Kings Cross Road is sealed for the initial 3 km of its length between Link Road and the Mount Selwyn Resort and for about 1 km at the western end near Cabramurra. The road is unsealed, but nevertheless generally straight and level, over the central section of the route. It is a two-lane two-way road with a general speed limit of 100 km/h, although lower speed limits apply in the vicinity of the Selwyn Snow Resort. The centre line of the road is not marked. Sealed sections have a width of 5-6 m, while the unsealed section has a width of approximately 7 m. All intersections are of a basic T-form with no additional turning lanes or other traffic capacity/safety improvements. Kings Cross Road is not an approved B-Double route.

The Transport for NSW, Centre for Road Safety data for the period between 2013 and 2017, showed one traffic crash was reported on Kings Cross Road involving minor injury.

## 3.2 Public transport

As presented in the EIS there are no public transport systems currently in operation within the vicinity of the project area.

## 3.3 Walking and cycling

There are no dedicated on-road or off-road walking and cycle facilities along the road network.

There are however, numerous bush walking and mountain biking tracks within Kosciuszko National Park. Many of these trails lead to camp sites that are not accessible by motorised vehicles.

Recreational use of Ravine road and access to Lobs Hole will not be available during construction of Stage 1. Restricted access is required to ensure the safety of the public and construction staff. It also reduces the potential conflict for turning vehicles to and from the Link Road and Ravine Road.



### 3.4 Talbingo Reservoir and recreational facilities

Talbingo Reservoir is approximately 5km south of the township of Talbingo. It is used for water skiing, paddle boarding, canoeing and swimming. It is also a popular fishing spot with Brown Trout, Rainbow Trout, Golden Perch, Macquarie Perch, Redfin and Trout Cod present, however surveys undertaken for the Exploratory Works indicate that Redfin is the predominant species.

Public access to the reservoir for boats is from either a concrete boat ramp on the western side of the dam wall or a slipway on the eastern side. The reservoir is also accessible from points within KNP including Lobs Hole Ravine campground and O'Hares Camping and Rest Area. Picnic tables and toilets are provided at both the boat ramp and the spillway.

Vessel counts undertaken between March and April 2018 as part of the Subaqueous excavated rock placement assessment (RHDHV 2018) indicate a peak daily demand of 75 vessels per day using the boat ramp and a typical daily demand of less than 10 vessels.

## 4 Traffic and transport aspects and impacts

### 4.1 Construction activities

An environmental aspect is an element of an organisation's activities, products, or services that has or may have an impact on the environment (ISO 14001 Environmental management systems). The relationship of aspects and impacts is one of cause and effect.


Key aspects of the Project that may result in impacts to traffic, transport and access include:

- the transport of equipment and materials to site required for the construction of road upgrades;
- transport of workers to and from the site; and
- transport of goods for the operation of compounds and facilities.

The EIS determined in Section 5.6.4 that the primary traffic impact would be from the delivery of materials to site. Negative impacts on the internal and external road network, public transport, traffic crashes or emergency vehicles were predicted to be negligible as a result of construction.

The aspects and impacts relevant to traffic, transport and access for Stage 1 are summarised in Table 4.1.

**Table 4.1 Project aspects and impacts relevant to Stage 1 traffic, transport and access**

	<b>Environmental Aspects</b> (Construction activities that may impact traffic, transport and access)	<b>Environmental Impacts</b>	<b>Environmental Factors (Conditions)</b>
	<p>The transport of materials to site required for the construction of the following:</p> <ul style="list-style-type: none"> <li>– Road improvements and upgrades</li> <li>– Clearing, grubbing and surface earthworks</li> <li>– Drainage construction</li> <li>– Bridge construction</li> </ul> <p>Operation of compounds and facilities</p> <p>Construction works that directly interface with the public.</p> <p>Increased light vehicles movements from Cooma and Cabramurra.</p>	<p>Traffic queuing and increased travel times</p> <p>Noise and vibration</p> <p>Reduced access to public facilities – Campgrounds and other KNP facilities, tracks and trails</p> <p>Damage to the road surface by construction heavy vehicles</p>	<p>Road standard</p> <p>Intersection type and number</p> <p>Existing traffic volumes</p> <p>Time of day dependency</p>

#### 4.1.1 Construction traffic volumes

Construction traffic generated by Stage 1 of the project has the potential to impact the external road network and will be made up of a combination of the following:

- heavy vehicles transporting materials to and from the works site from outside the project area;
- vehicle transport of oversize loads; and
- light vehicles transporting workers to and from site from Cabramurra and from outside the project area.

The EIS predicted the maximum daily volume of traffic likely to use the external road network during the 34 month construction period to be 48 vehicles per day (22 heavy vehicles and 26 light vehicles travelling to and from site). Similarly, the worst case maximum hourly volume was predicted to be 44 vehicles per hour (20 heavy vehicles and 24 light vehicles travelling to and from site)

The revised data suggested there could be between 126 to 150 heavy vehicle movements during a morning peak hour at the peak month. As mentioned previously there may be a one-off event whereby the heavy vehicle generation may reach approximately 150 movements.

In terms of light vehicle movements, there could be between 80 to 132 light vehicle movements during a morning peak hour. These revised traffic movements will occur along Link Road and Snowy Mountains Highway. There will be no additional movements on Miles Franklin Drive.

Stage 1 works will have a variable demand for staff and materials. The commencement and finalisation of works will produce less traffic movements than the height of construction. The existing users of the Link Road will be exposed to steadily increasing traffic leading to a peak that will then tail off over the four to six months of construction. During times of inclement weather or when contractors are not present on site (four days per fortnight) few if any construction vehicle movements will occur.

The access gate will be positioned on Ravine Road so as to allow for the off road (Link Road) storage of 25 vehicles light vehicles and three heavy vehicles. The occupants of each vehicle are recorded by security staff, the vehicle then enters the site (15-20 seconds per vehicle). In ten minutes the light and heavy vehicles above will be cleared to enter the site. The minimum spacing between the vehicles traveling at 30 km/hr will be 150m. As such the maximum predicted volume of 24 light vehicles per hour during the morning and afternoon is unlikely to be exceeded. The measures to ensure that construction traffic volumes do not adversely affect the level of service beyond those predicted within the EIS are provided in Section 5.

Indicative volumes, weights and lengths of heavy vehicles that were anticipated to be required for Stage 1 are provided in **Error! Reference source not found..**

**Table 4.2 Anticipated heavy vehicle types for Stage 1**

Vehicle type	Total Number	Weights	Length
Truck and dog	2,500	Up to 42.5T	Up to 19m
Semi-Trailer	80	Up to 42.5T	Up to 19m
Rigid truck – Flat Bed	130	Up to 26T	Up to 12.5m
Rigid truck - Tipper	400	Up to 26T	Up to 12.5m
Over-dimension vehicle	10	Required for some earthmoving machinery and steel bridge beams, under permit as required	

During stage 1 the peak heavy vehicle movements will be from the delivery of road building gravels for the Mines Trail, Lobs Hole and Warf Road. The contractors anticipated suppliers of road building materials are limited to 1000t/day. This equates to 33 in and out movements per day. This will equate to 3-4 in and out movements of heavy vehicles per hour during peak times. During inclement weather (rain and snow) or when Contractors are not present on site (four days per fortnight) no heavy vehicle movements will occur. The contractors estimate that a maximum of three to four other heavy vehicle movements may occur for other materials.

#### 4.1.2 Hours of operation

The majority of heavy vehicle operations on local roads will occur during standard working hours except for cases where there are oversized deliveries. These will occur outside of the hours stated and as requested by the NSW Police.

A locked gate with signage listing contact numbers and hours of operation will be erected at the entrance to Ravine Road from the Link Road. The gated access will prevent access (except in the case of emergency) along Lobs Hole Ravine Road to all vehicles outside of approved operating hours to minimise potential impacts to the Smoky mouse. Other measures to control traffic on site will include:

- Staff inductions/toolbox talks will note the need to be off-site outside of approved operating hours for Upper Ravine Road due to presence of Smoky Mouse;
- no vehicle movements will occur at night between chainage 0 and at chainage 7750 for the approved hours
- the speed limit of 40km/hr will apply along internal roads
- a second signed and locked gate on Lobs Hole Road will restrict access from the north from the Snowy Mountains Highway;
- For day shift workers a radio call is made one hour before conclusion of day work shift to ensure staff to stop work and prepare to leave the site to meet the approved operating hours of Upper Ravine Road;
- A sign in sheet will be kept checking all staff have left site within required time frames;
- In Vehicle Monitoring Systems (IVMS) data will be used to monitor behaviour.

## 4.2 Traffic and transport impacts

The potential for impacts on traffic and transport will depend on a number of factors. Primarily impacts will depend on the nature, extent and magnitude of construction activities and their interaction with the natural environment. Potential impacts attributable to Stage 1 work activities may include:

- short term road closures and/or traffic restrictions during the transport of oversize loads, refer Section 5.3.3;
- short term road or lane closures and/or traffic restrictions during road upgrades, maintenance repairs and minor road improvements, refer Section 5.1 and Section 5.2;
- increased traffic turning movements into and out of the site at the intersection of the Link Road with Lobs Hole Ravine Road and the intersection of the Link Road and the Snowy Mountain Highway, refer Section 5.1 and Section 5.3.1;
- increased light vehicle traffic volumes mainly at the start and end of shifts and roster periods, refer Section 5;
- increased heavy vehicle volumes and associated impacts including noise and road deterioration, refer Section 5.2.2 and Section 5.3; and
- the closure of access roads to recreational facilities within KNP, refer Section 5.4.

### 4.2.1 Road network performance

The contractors planned construction traffic and predicted volumes from the EIS indicate no significant impacts on network performance or level of service from construction during peak holiday periods. The EIS predicted impacts on the level of service for the affected external road network was negligible.

#### 4.2.2 Impacts to Kosciusko National Park facilities

The project will require the closure of access roads and facilities within Kosciusko National Park (KNP or Park), for the safety of park users and to allow access road improvements to be undertaken. The internal roads within the Park that will be closed during the Exploratory Works include:

- Lobs Hole Ravine Road from the Blue Creek Trail (in the north) to the Link Road (in the south);
- Mine Trail Road; and
- Middle Bay Road.

Spillway Road is located outside of KNP however it is used by park users to access boating and swimming facilities at the Talbingo spillway. During Stage 1 Spillway Road, Talbingo Spillway and the existing boat ramp will remain open to the public.

Other traffic and transport related impacts to KNP during Stage 1 of the Exploratory Works include:

- the closure of Lobs Hole Ravine campground;
- the Middle Bay boat ramp accessible by 4wd via Lobs Hole Ravine Road will closed during Exploratory Works;
- Initial materials deliveries to the site at about 7am will avoid most traffic using the national park vehicle entry station. Those delivery vehicles will take about 2.5 hours to access Lobs Hole exiting the site about 9.30 – 10am avoiding the am peak for skiers. Similarly in the afternoon most skiers will have left the area before the final delivery vehicles depart;
- Contractors will largely absent from site for four days around the week end each fortnight avoiding peak winter park use; and
- traffic queuing may be experienced at the national park vehicle entry station on Link Road during periods of high recreational use. Construction traffic will be enabled with access to the Park to avoid exacerbating queuing.

#### 4.3 Environmental risk assessment

The environmental aspects and impacts for traffic and transport are further considered within Appendix A3 of the EMS. This includes a risk assessment process. The risk assessment is based on (1) the likelihood of an impact occurring as a result of the aspect; and (2) the consequences of the impact if the event occurred.

## 5 Traffic, transport and access management measures

Traffic and transport impacts will be managed during Stage 1 of the Exploratory Works through the development and implementation of specific traffic management plans, traffic controls plans, the approval and regulation of heavy vehicle movements and haulage routes and clear and update communication of traffic impacts to the community. Snowy Hydro and Contractors aim to minimise adverse traffic impacts during constructions including changes to access arrangements and other transport services. Management measures to be implemented during construction are described in the following sections.

The main impact from construction is expected to be the increase in traffic volumes from the delivery of materials and transport of workers to site. As mentioned in Section 4.2.1 this is not likely to affect road network performance given the remote nature of the project. To minimise impacts the following management measure will be applied:

- construction materials will be delivered in full loads where practicable;
- delivery driver inductions will discuss platooning and techniques to avoid this behaviour;
- the delivery of materials will be planned and scheduled to minimise the impact during peak traffic periods;
- road material production, loading and unloading capacities lead to staggered deliveries;
- the site access gate to Link Road will be manned by a traffic control during work hours. The traffic control will record platooning and site staff will discuss this behaviour with suppliers.
- traffic control will ensure that queuing on Link Road by heavy vehicles is avoided;
- traffic control plans will be developed for site access routes and key intersections (e.g Link Road and Miles Franklin Drive) and signage installed in accordance with the Roads and Maritime publication *Traffic Control at Works Sites Manual* where required (Section 5.1).
- delivery drivers will be required to adhere to the Drivers Code of Conduct provided in Appendix B which requires drivers to be considerate of motorists and residents at all times;
- materials procurement contracts will require delivery drivers to adhere to the Drivers Code of Conduct;
- the receipt of materials by site staff requires about 10-15 minutes this will assist in the staggering of egress from the site by heavy vehicles;
- delivery drivers will have access to site amenities and will be encouraged to take meals on site;
- the majority of workers will be lodged at Cabramurra during stage 1. The contractor will coordinate ride share and a designated shuttle bus from the accommodation to site to minimise light vehicles accessing the site;



- during the site induction workers will be instructed on the routes to be used to access and exit the site. Light vehicles access will be via Miles Franklin Drive, Spillway Road, Link Road and Lobs Hole Ravine Road to get to and from site will be minimised;
- provision will be made for designated parking areas at the Lobs Hole compound to accommodate site vehicles and other construction related vehicles;
- a review of traffic impacts during peak periods will occur to investigate the level of service. Where impacts are beyond that predicted by the EIS management measures will be reviewed, and further measures considered to minimise impacts where practicable.

## 5.1 Fog, Ice and Snow

Local climate and weather conditions in the project area such as fog, storms, and snow present potential safety concerns to road users during construction. Staff attending site will be inducted and made aware of potential weather impacts on road use. Risks will be assessed daily by monitoring weather forecasts. The impacts will be managed by including weather forecasts and relevant management strategies in daily planning.

Management measures will include speed reductions, use of fog lights during periods of low visibility, cessation of works, grading and salting (by others) for snow removal and advising suppliers of potential adverse weather and likely site shutdowns. These will also be included in the Drivers' Code of Conduct for the Project.

## 5.2 Traffic Control Plans

Specific Traffic Control Plans (TCPs) will be developed as part of the construction planning process for all construction activities that affect traffic conditions and the safety of road users on the external or internal road network. They will be developed progressively during construction in accordance with the Roads and Maritime publication *Traffic Control at Works Sites Manual* and the Australian Standard *AS1742-2002 Manual of Uniform Traffic Control Devices*.

Where required the TCPs will be developed in consultation with the relevant road authority which includes Roads and Maritime Services, National Parks and Wildlife Services and Snowy Valleys and Snowy Monaro councils. The emergency services will be notified prior to the implementation of traffic changes to ensure that they are aware of the potential impacts that may affect emergency responses.

The TCPs will establish the specific management measures to be implemented to ensure the safety of road users and to maintain efficient road network operations. They will include:

- the traffic control devices to be installed in advance of the works which may include cones, barriers, signs, traffic controllers and temporary traffic signals etc and how these are to be established;
- additional advisory signs or speed restrictions to be installed during construction e.g. truck turning and trucks symbol signage at key intersections and along Link Road and Miles Franklin (Murray Jackson) Drive;
- road occupancy requirements and approvals;

- road speed reductions required for the safety of the public and workers; and
- traffic management inspection and maintenance requirements.

### 5.3 Road designs and access improvements

As part of Exploratory Works Stage 1 several internal roads will be upgraded as part of the Exploratory Works. The design and construction standard of these roads and other temporary roads constructed will be to a suitable standard to accommodate the predicted traffic loadings from heavy vehicles used during construction. They will be designed to meet relevant design, engineering and safety guidelines, including the Austroads Guide to Traffic Management.

#### 5.3.1 Road improvements – External road network

An assessment of access routes to and from site occurred during the EIS to determine the suitability of the roadway to cater for the predicted heavy vehicles during construction. The assessment found that some minor vegetation removal and a speed limit reduction is required at the intersection of Miles Franklin (Murray Jackson) Drive and the Snowy Mountains Highway to achieve the Austroads sight distance requirements. These minor improvements will be made in consultation with Roads and Maritime Services prior to the use of the Miles Franklin (Murray Jackson) Drive intersection with the Snowy Mountains Highway. As stated in the Response to Submissions the intersection of Link Road and Snowy Mountains Highway currently provides substantial sight distance in its current design configuration to cater for existing and expected traffic volumes and to meet the sight distance required.

To minimise the amount of dirt being tracked onto Link road and Spillway road rumble grids and/or clean rock will be placed at the exit from the project site. In addition, street sweepers may be used from time to time to remove dirt tracked onto the public road network. Road sweepers will be used to remove tracked dirt on the Link Road within 2 days of identification or sooner if rain is imminent.

Oversize vehicle deliveries may require the removal of signs and overhead cables to safely accommodate the vehicle dimension. The delivery of oversized loads will be contracted to reputable transport companies with experience in over-size deliveries. Oversize deliveries will be required to travel under permit. Application for these permits includes a review of the route and consultation with relevant authorities regarding the suitability of the route and modifications during travel required. The delivery of oversize loads will be strictly in accordance with the approved permit. Section 5.3 provides further information in relation to oversize and over-mass deliveries.

Any other improvements required to be made to external roads during construction will be undertaken in consultation with the relevant road authority.

#### 5.3.2 Dilapidation report

Prior to commencement of construction and/or decommissioning works, a qualified expert will visually survey road surfaces intended to be trafficked by construction heavy vehicles. A road dilapidation report will then be prepared in accordance with Austroads guidelines. The report will capture the current condition of the road surface on the external road network. Roads to be inspected include the Link Road, Miles Franklin (Murray Jackson) Drive, Spillway Road, Link Road to Cabramurra and Kings Cross Road and other minor external roads likely to be trafficked by heavy vehicles during construction. The survey will exclude the Snowy Mountains Highway. The road dilapidation report will be submitted to the relevant

road authority for review prior to commencing construction and/or decommissioning works and prior to the commencement of heavy vehicle movements.

Within two months of completion of any construction and/or decommissioning works, a subsequent visual survey will be occur on the same roads and a report prepared to assess the damage to them from construction heavy vehicles. The report will give consideration to any damage as a result of general road usage (under equivalent pre-development conditions and heavy vehicle volumes).

Should damage have been caused by construction heavy vehicles during the Exploratory Works it will be considered against the initial report and where required repairs completed by the Contractor in consultation with the relevant road authority. The repairs will be within two months of completion of the survey unless the relevant authority agrees otherwise.

## 5.4 Heavy vehicle and over-dimension vehicle management

### 5.4.1 Vehicle movement plans and heavy vehicle haulage routes

Vehicle movement plans (VMPs) will be developed for both external and internal roads. The plans will be used to communicate approved heavy haulage routes, travel directions, permitted intersection turning movements and approved parking and layup areas (areas used to queue trucks prior to entry to site). The VMPs are to be presented diagrammatically to allow for clear communication with the workforce. The VMPs will be progressively developed during construction and updated as conditions change.

The designated heavy vehicle and over-dimension vehicle haulage routes to be used during the Exploratory Works are included in Appendix A. Heavy vehicle routes to and from construction sites have been prepared with the objectives being to minimise impacts to local roads and maximise the utilisation of State and regional roads where feasible and reasonable. Requirements which have been considered during the development of the routes include the following:

- identified impacts of the EIS;
- conditions of approval;
- using Higher Mass Limit (HML) routes as outlined by RMS as part of their Intelligent Access Program (IAP) and Restricted Access Vehicle (RAV) routes; and
- consultation with TMC, RMS and other authorities or emergency services (as required).

Should the use of any local roads be required for heavy vehicles during construction that are not identified in this TMP, approval of Snowy Hydro (and if required in consultation with the road authority) must be obtained. Justification must be provided as to why the use is necessary and they are to be included in the VMP once approval is granted for their use.

Lay-up areas for heavy vehicles if needed during construction will be suitably positioned to ensure safe exit and entry to the roadway. Heavy vehicle parking, idling and queuing on public roads will be minimised where practicable particularly within the regional towns of Tumut, Talbingo, Adaminaby and Cooma.

The impact of heavy vehicles from convoys and congestion through local townships during peak traffic periods are to be mitigated through the following initiatives:

- deliveries will be scheduled the day prior and staggered to prevent vehicles queuing on the Link Road. Deliveries will be arranged so they travel at an ordered distance allowing for a steady entry into the Link Road without the need to queue;
- deliveries will be scheduled to occur such that heavy vehicle travel during peak periods through Cooma and Tumut, defined as between 8:00am and 9:30am and between 4:00pm and 5:30pm, will be avoided where practicable;
- the Drivers Code of Conduct requires drivers to pull over when safe to do so should excessive queuing occur on single lane roads; and
- heavy vehicles are to travel no less than five minutes apart from one another when in transit.

At all times heavy vehicle drivers will be required to obey the road rules which includes covering of loads when in transit to and exit from the project site.

#### 5.4.2 Drivers code of conduct

The safety of workers and road users is of paramount importance to Snowy Hydro and its Contractors and the fit and proper behaviour of drivers is directly related to establishing and maintaining a high safety standard during Exploratory Works. Further, all drivers involved in the project have an obligation to comply with their legal obligations whilst operating vehicles.

To assist in achieving safe outcomes during construction a driver's code of conduct has been developed and is included in Appendix B of the TMP. Prior to involvement in the project all vehicle drivers will be required to have read the code and acknowledge their compliance with it throughout their involvement in the project.

Heavy vehicle haulage routes will be communicated to haulage contractors during the procurement stage and requirements of the Drivers Code of Conduct, route use and compliance included in their contracts.

#### 5.4.3 Over-size and over-mass (OSOM) vehicles

The designated haulage routes to be used during the Exploratory Works by OSOM vehicles are included in Appendix A. The Snowy Mountains Highway will serve as the main transport route to and from the project during Stage 1 construction and provide access for OSOM vehicles required to deliver large indivisible objects. The Snowy Mountains Highway is classed as a Limited Access Location for the purpose of OSOM transport and requires a specific permit to be obtained in advance of travel for vehicles exceeding 2.5m in width and/or 19m in length.

In advance of OSOM deliveries the Contractor will develop a permit application and if required a Transport Management Plan in consultation with Roads and Maritime Services, relevant road authorities (Council or NPWS for Link Road) and the police. Advance notice of the OSOM deliveries will be provided to Roads and Maritime Services, Snow Monaro Regional Council and Snowy Valley Council as required. OSOM travel will occur under the conditions of permit once granted.

#### 5.4.4 Heavy Vehicle National Law

Persons involved in the loading of vehicles for road transport must ensure that the vehicle is not overloaded. It is noted that the recent changes to Chain of Responsibility provisions within the Heavy Vehicle National Law (HVNL) make all persons whom may influence the mass of a vehicle or its load responsible for compliance with the HVNL.

## 5.5 Access management

### 5.5.1 National Park public access

Recreational activities currently undertaken in the northern area of KNP include drive touring, picnicking, camping, walking, horse riding, cross country skiing, downhill skiing, snowboarding and snow play, cycling, climbing, caving, canoeing and rafting, boating and fishing. This strategy details the measures that will be implemented relating to traffic, transport and access to ensure the safety of the public and an ongoing positive experience for park users during construction.

During construction the following will be implemented to manage access and park user impacts within KNP:

- providing advance notification of any changes to park facilities including access roads, lobs hole campground and Talbingo spillway through advance signage, flyers, community announcements and the project and national park websites;
- providing updates as works progress and notification of any ongoing changes that impact park users;
- providing clear directional signage to alternative facilities within KNP;
- providing clear detour signage to alternative access routes where available;
- providing park user the opportunity to give feedback during construction to enable ongoing improvements to be made; and
- informing the workforce of the likely presence of park users and actions to be taken in the event that they enter the project area.

#### i KNP Road closures

Internal roads within KNP which will be closed to public during construction include:

- Lobs Hole Ravine Road from the Blue Creek Trail (in the north) to the Link Road (in the south);
- Mines Trail Road; and
- Middle Bay Road.

The indicative points at which advance closure signage will be installed is shown in Appendix C. Prior to the road closure advance information signage will be installed at the start of the roadway and at key decision points which will include the KNP gate houses. Road closure signage including advance warning signs will be installed in accordance with the RMS Traffic Control at Worksites Manual to enforce the closure of these roads. In some cases, gates or fencing may be warranted to deter entry. Gates and fencing would be installed in consultation with NPWS.

Snowy Hydro will coordinate the road closures with NPWS.



## ii Horse riding, walking and cycling tracks

There are no designated horse riding, walking or cycling tracks within the project area however there may be informal tracks used by the public. The public may also use management trails for recreational activities. Trails that have been identified that will be affected by the closure of internal roads or interface with the project areas include:

- Tolbar trail;
- Blue Creek Trail;
- Middle Creek Trail;
- Unnamed trail traversing Upper Lops Hole Ravine Road;
- O'Hares trail; and
- Yans crossing trail.

Advance warning signs will be installed at key points along informal tracks and trails in consultation with NPWS. The location of designated tracks and management trails are provided in Appendix D which includes the indicative locations of advance warning signs. In some cases, gates or fencing may be warranted to deter entry. Gates and fencing would be installed in consultation with NPWS.

It may not be possible to prevent members of the public from bushwalking into the project area, or operating boats near the end of Middle Bay Road. The Contractor will ensure that all site persons are briefed to be alert of unauthorised persons, and to stop works in the event that such a person enters the work area.

## iii Peak holiday season

During peak holiday season defined as the period from July to September there is potential for greater impacts to road traffic and park users due to the increase in tourist related traffic volumes. During these periods additional traffic inspections will be undertaken to confirm that these impacts do not warrant further mitigation and traffic management. Traffic management measures will be implemented where required or changes made to construction delivery routines during these periods to minimise peak traffic impacts.

### 5.5.2 Spillway Road upgrade and barge access facility

Talbingo Spillway and the existing boat ramp will remain open to the public at all times during Stage 1 of the Exploratory Works.

The Contractor will develop specific traffic control plans and implement a temporary lane closure (with stop/go flagman or temporary traffic lights in place) in accordance with the Roads and Maritime publication *Traffic Control at Works Sites Manual* and the Australian Standard *AS1742-2002 Manual of Uniform Traffic Control Devices* during the road upgrade works. This arrangement will provide for the passage of public vehicles one direction at a time during the upgrade works.

During Stage 2 the public may be restricted from accessing Talbingo Spillway and the existing boat ramp for the period of the Exploratory Works. This is to allow the construction of the barge facility and to allow the safe operation of the facility during tunnelling and tunnel support activities.

To minimise impacts to the community and recreational users during Stage 2 a new facility will be constructed on the eastern side of the spillway. This will be carried out in accordance with Schedule 3 Condition 4 of the SSI 9208 Project Consent Conditions.

### 5.5.3 Access for NPWS, Emergency Services and other utility service providers

Ongoing access to the site is required for the following parties;

- Snowy Hydro (the Client)
- the Client's contractors including the Civil Works and E&M Works D&C contractors
- National Parks and Wildlife Services (NPWS) and
- Transgrid.

During the construction works there will be several periods where access into the site will be restricted for lengths of time due to the nature of the works. The contractor will make every effort to provide safe access when requested, however in the event that safe access through the works is not available, alternative access to the site via the Snowy Mountain Highway and Lobs Hole Ravine Road shall be used.

Access is required to these utilities at all times in case of emergency repairs. Prior to the closure of the internal access roads the utility asset owners will be consulted, and a means of access determined. The agreed access provisions will be provided throughout construction. Should further access changes eventuate during construction access restrictions will not be implemented without first consulting with the affected asset owners.

Similar arrangements will be put in place for NPWS staff and vehicles required to carry out any park or emergency operations during Exploratory Works.

There is the potential for the works to impact emergency services access into the KNP. The Contractor will liaise with Emergency Services which may require access into the park for the purposes of emergency search and rescue. The Contractor will provide regular updates shall be provided on progress and access availability throughout the Project.

## 6 Transport and Traffic Monitoring Program

### 6.1 Monitoring

Monitoring will be undertaken to confirm the satisfactory traffic, transport and access outcomes are achieved during construction. The parameters and frequency of monitoring is provided in Table 6.1.

**Table 6.1 Construction monitoring locations, parameters and frequency**

Road	Site Location	Parameters	Type	Frequency
Internal/External	All	Driver fatigue	Audit	3 Monthly audit of work rosters and delivery schedules
External	All	OSOM Permits	Audit	3 Monthly audit of deliveries under OSOM permit
External	All	Driver conduct and transport route use	Review	Monthly review of traffic related complaints
Internal/External	All	Congestion, impacts to level of service, convoys and driver conduct	Inspection	Refer to Section 7.2
Internal/External	All	Road conditions, safety and traffic signage	Inspection	Refer to Section 7.2

### 6.2 Traffic incidents

Traffic incidents will be managed in accordance with Section 6 of the EMS and the Snowy Hydro Environmental Incident Procedure included within Appendix A4 of the EMS.

The Secretary and other relevant agencies will be notified of incidents via the Major Projects portal in accordance with Section 6.2 of the EMS. Depending on the circumstances this may include notification to the Department in writing for incidents defined under the conditions of approval, notification to the NPWS where required under the Deed of Agreement of Lease and notification to the EPA for pollution related incidents. Snowy Hydro would notify DPIE in writing immediately after they become aware of the incident on site.

Safety related traffic incidents within the bounds of the project area will be managed in accordance with the Safety Management Plan and the associated incident and emergency reporting procedures.

## 7 Compliance management

### 7.1 Training

All site personnel will undergo site induction training relating to traffic, transport and access management issues. The induction training will address elements related to traffic management including:

- existence and requirements of this TMP;
- relevant legislation;
- roles and responsibilities for traffic management;
- light vehicle routes to and from site;
- arrangements for transport of workers to site;
- traffic, transport and access mitigation and management measures;
- procedures to be implemented in the event of an incident (e.g. traffic accidents).

Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in traffic, transport and access management. Examples of training topics include:

- vehicle movement plans – approved heavy vehicle haulage routes, safe entry and exit and other access restrictions;
- driver behaviour and the drivers code of conduct for heavy vehicles including permitted parking and layup areas;
- delivery driver's induction which will include safe protocols to be followed whilst travelling on internal and external roads. The briefing will reinforce posted speed limits, advisory speeds and historic high accident points on winding sections of road;
- driving in snow and during icy conditions; and
- driver fatigue awareness training.

Targeted training in the form of toolbox talks or pre-start briefs will also be provided to personnel with a key role in traffic, transport and access management.

Further details regarding the staff induction and training are outlined in Section 4.4 of the EMS.

### 7.2 Inspections

Inspection of traffic, transport and access management measures will be undertaken regularly during construction with attention being made to those areas that interface with the public and affecting public safety for example external roads where lane closure may be required for maintenance purposes and

internal roads where road closures are installed. Additional inspections may be undertaken in accordance with the Contractor's Traffic Management Plans.

**Table 7.1**      **Traffic management inspections**

<b>Inspection</b>	<b>Frequency</b>	<b>Action</b>	<b>Reporting</b>	<b>Responsibility</b>
Road closures	Weekly	Inspection of signage and road closure delineation	Traffic inspection report	Contractor
Spillway Road Link Road Miles Franklin (Murray Jackson) Drive	Monthly during heavy vehicle or over-dimension vehicle use	Inspection of the road surfaces for signs of deterioration and maintenance requirements	Maintenance inspection report	Contractor
Internal Roads	Monthly once operational	Inspection of the road surfaces for signs of deterioration and maintenance requirements	Maintenance inspection report	Contractor
Cooma/Tumut	Monthly during heavy vehicle or over-dimension vehicle use	Inspection of heavy vehicle and over dimension vehicle routes for construction related convoys, congestion or level of service impacts during peak traffic periods	Traffic inspection report	Contractor
KNP Access including Link Road	Peak holiday season (July to September) - General weekly and in addition daily during heavy vehicle or over-dimension vehicle movements on Link Road	Inspection of construction affected queuing/congestion during peak holiday periods	Traffic inspection report	Contractor

Traffic inspections will be coordinated by the Contractor and will occur on a monthly or weekly basis as described in Table 7.1. Written inspection reports will be provided by the Contractor to Snowy Hydro generally on a monthly basis and weekly for Link Road, during peak holiday season (July to September).

Where inspections undertake of the road surface identifies defects which could endanger the safety or road users as a result of the construction work the Contractor will rectify the damage as soon as possible and no later than 7 days after identification.

In addition, effectiveness of the implemented management measures will be monitored in accordance with the EMS Section 7.1. This includes monitoring through the implementation of a regular program of environmental inspections. Weekly environmental inspections are intended to:

- provide for surveillance 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.

Any non-conformances identified through the inspection process will be highlighted and an environmental inspection report (minor issues) accordance with Section 7.7 of the EMS or an environmental incident report completed in accordance with Section 6 of the EMS. Auditing

Audits will be undertaken to assess the effectiveness of traffic, transport and access management measures, compliance with this TMP, the conditions of approval, EIS, Submissions Reports and other relevant approvals, licences and guidelines. Specific traffic related auditing identified in Table 6.1 includes audits of driver fatigue management and over-size or over-mass permits.

Audit requirements are detailed in Section 7.3 of the EMS.

### 7.3 Reporting

The Contractor will report to Snowy Hydro and other agencies as required on traffic management issues related to the project. This includes notification in relation to traffic incidents which adversely impact on traffic flow associated with the project.

Reporting will include monthly internal project reports and six monthly compliance reports as required by the conditions of approval. The six-monthly reports will track compliance against the conditions of approval and the revised environmental management measures and will be reported in accordance with, the relevant Compliance Reporting requirements (DPE 2018) as per, Schedule 4, Conditions 7 and 8.

Reporting requirements and responsibilities are documented in Section 7. of the EMS.



## Appendix A

### Approved haulage routes

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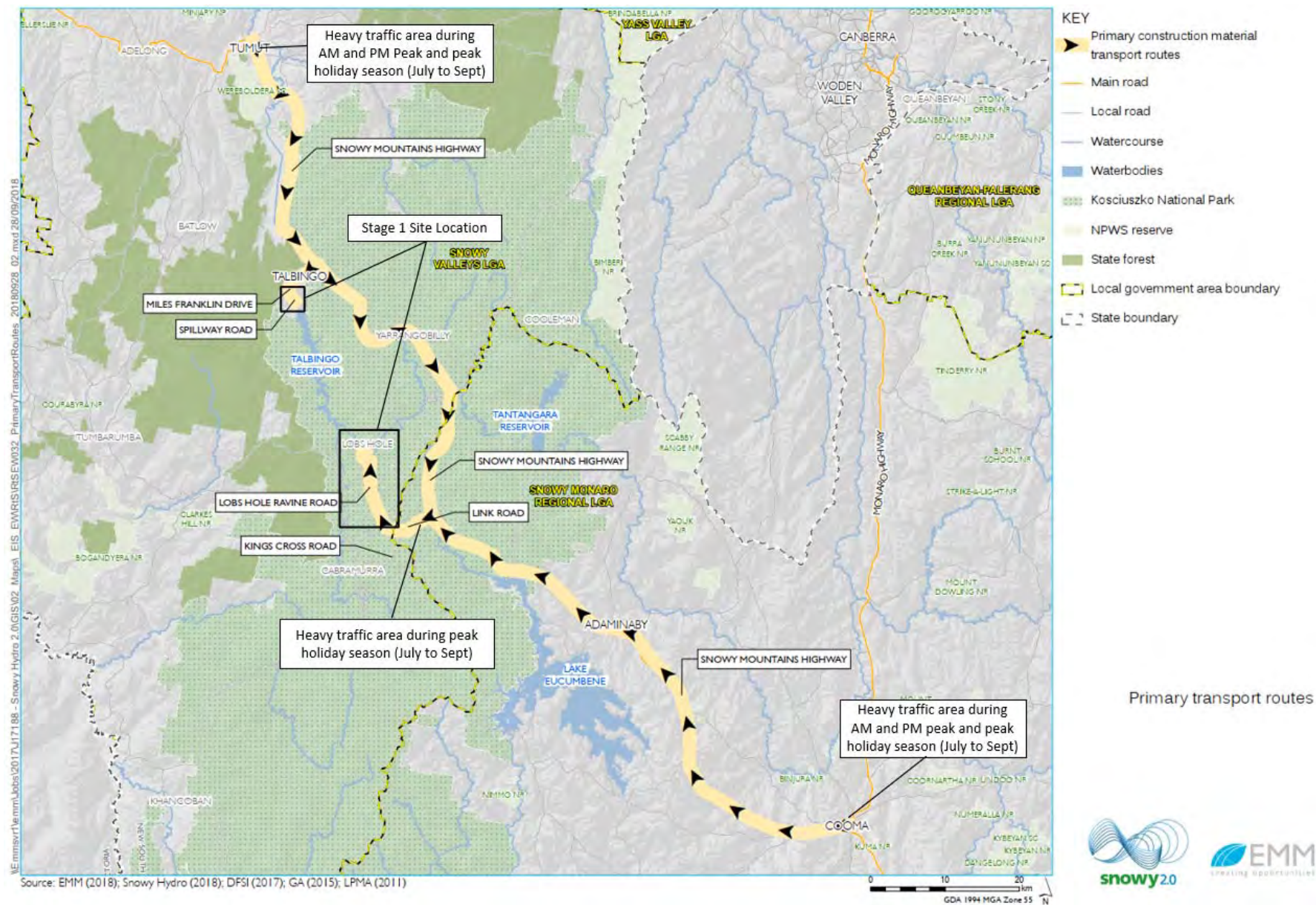


Figure A-1 Designated Haulage Routes for over-dimension and heavy vehicles

## Appendix B

### Drivers Code of Conduct

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## Drivers Code of Conduct – General

All drivers involved in the Exploratory Works are to comply with this Drivers Code of Conduct. By reading the attached you understand your obligations and accept your responsibility in regards to the safe and legal operation of vehicles at all times whilst working on this project.

### Drivers obligations

- 1) Drivers MUST at all times:
  - adhere to all of the obligations required by law;
  - be licensed to operate the vehicle;
  - drive at no more than the legal speed limit including those imposed by the project;
  - comply with all construction and road work signs and Vehicle Movement Plans (VMPs);
  - take the necessary and/or prescribed rest breaks so that operation of the vehicle is not affected by fatigue;
  - operate the vehicle free from the effects of drugs and alcohol; and
  - ensure that vehicles are operated safely and with a high degree of care and attention.
- 2) Vehicles will be operated in a manner that is suitable to the road and weather conditions.
- 3) Vehicles are not permitted to operate outside of the approved hours in the sign posted location on the upper section of Lobs Hole Ravine Road. A maximum speed of 40 km/hr applies in this area.

In the event of any potential fauna strike, drivers are to:

- ensure their personal safety;
  - notify their supervisor who MUST in turn notify the Contractor's environmental staff or Site Foreman / Superintendent.
- 4) There shall be no littering either onsite or whilst operating on the roads. Rubbish is to be disposed of in appropriate bins.
  - 5) Drivers are to notify their employer or operator immediately should the status or conditions of their driver's licence change in any way.
  - 6) Drivers are to give due consideration to the public at all times. This includes:
    - behaving and driving professionally at all times;
    - responding courteously if approached by members of the public and directing them to the community contact number.

## Additional requirements for heavy vehicles or over-dimension vehicles

In addition to the general driver requirements all heavy or over-dimension vehicle drivers involved in the Exploratory Works are to comply with the additional requirements related to heavy vehicles.

### **Additional Heavy or over-dimension vehicle drivers' obligations**

- 7) Drivers MUST at all times:
  - adhere to their Chain of Responsibility requirements;
  - ensure the heavy vehicle is operated within its legal mass and dimension limits;
  - adhere to any permit to travel requirements;
- 8) Drivers are to take regular rest breaks to manage fatigue and breaks of no less than the minimum periods prescribed by the National Heavy Vehicle Regulator. For solo drivers with no Basic Fatigue Management accreditation this means:
  - For the first 11 hours a maximum of 10 hours work time with 60 minutes rest in blocks of 15 continuous minutes
  - A maximum work time of 12 hours in 24 hours with 7 continuous hours of stationary rest
- 9) Drivers are to give due consideration to the public at all times. This includes:
  - laying up in approved locations only. Stopping on unformed road shoulders is not permitted;
  - not queuing or idling on local roads. Deliveries are to be staggered to allow steady entry into site and to avoid queuing on public roads;
  - adhering to the approved heavy vehicle routes and approved turn movements;
  - covering loads on transit to and from the project site;
- 10) Convoys and congestion can have a large impact on the local community and motorists and are of particular concern to Snowy Hydro. Drivers are to avoid forming convoys during travel and avoid travel during peak periods through Cooma and Tumut:
  - deliveries are to be scheduled to occur such that heavy vehicle travel through Cooma or Tumut is avoided where practicable during the peak traffic periods;
  - drivers are required to pull over and allow traffic to pass when safe to do so should excessive queuing occur on single lane roads; and
  - heavy vehicles are to travel no less than 5 minutes apart from one another when in transit.

## Appendix C

### Internal road closures indicative advance signage locations

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## Appendix D

### Indicative Track and trail closures and advance signage locations

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Figure D-1 Indicative Track and Trail Signage Location

## Appendix E

### Address of Network Access Plan Requirements

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**SNOWY 2.0 - EXPLORATORY WORKS**

**APPLICATION FOR WORKS ACCESS LICENCE #2**

**STAGE 1 EXPLORATORY WORKS ROADS**

**ADDRESS OF NETWORK ACCESS PLAN REQUIREMENTS**

**21/03/2019**

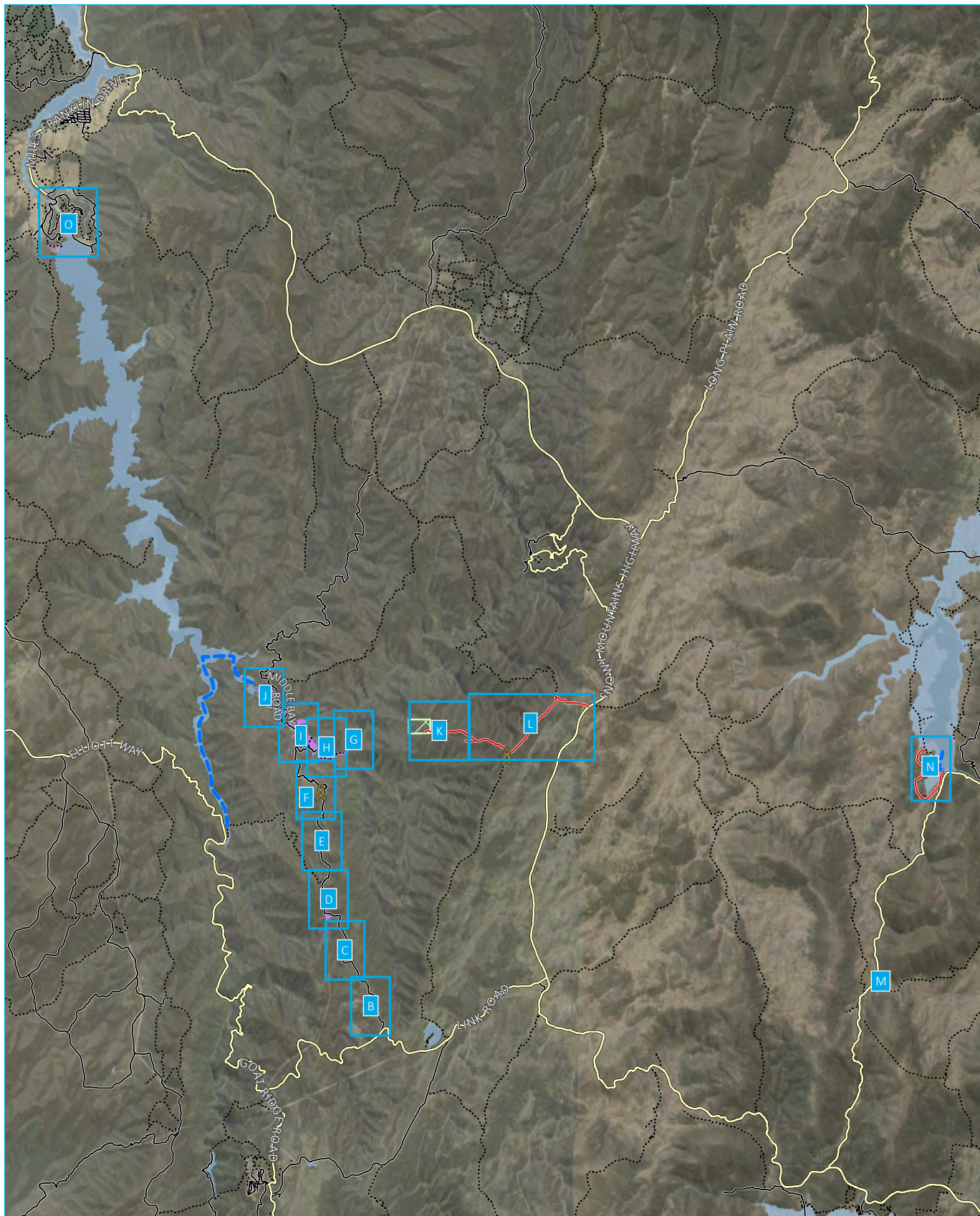
<b>3.8 Application For Lease Requirement</b>	<b>Where addressed in Stage 1 Traffic Management Plan</b>
(b) (i) Acknowledge and make provision for the continued access by NPWS to the roads and other transport networks at all times for the purpose of undertaking day to day management and operations in respect of KNP	Outlined in Section 5.5.3
(b) (ii) Include reasonable details in relation to: A. Each of the roads or access ways to be used by the Tenant for the purpose of accessing the Works	Outlined in Section 3.1
B. which roads or access-ways may be required to access the particular Licensed Areas or Premises	Outlined in Section 3.1
C. the type of roads or access-ways	Outlined in Section 3.1
D. the frequency of heavy vehicles on the relevant roads or access-ways	This has been provided in Table 4.2

## Appendix F

### Project Boundary

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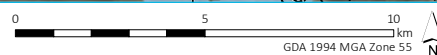




Source: EMM (2019); Snowy Hydro (2019); SMEC (2019); DFSI (2017); GA (2015); LPMA (2011)

## KEY

- Proposed temporary communications upgrade location
- Existing access track
- Boat access
- Main road
- Local road
- Vehicular track
- Map index
- EW approved construction footprint
- EW modification construction footprint (additional)
- Boreholes requiring on-site adjustment
- Waterbody



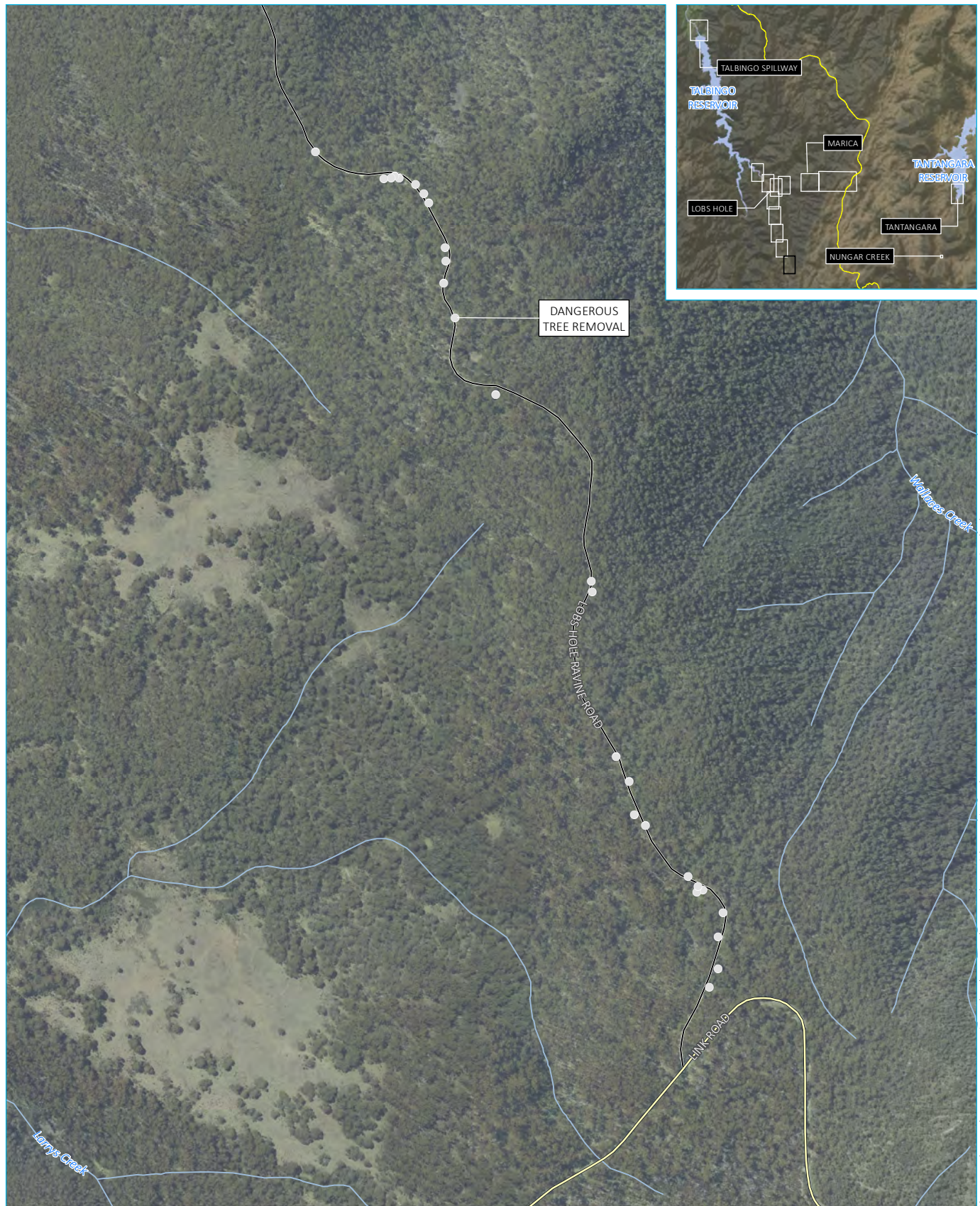
## Exploratory Works project boundary - overview

Snowy 2.0  
Exploratory Works EIS  
Modification 1  
1 a



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Source: EMM (2019); Snowy Hydro (2019); PhotoMapping (2018); SMEC (2019); DFSI (2017); GA (2015); LPMA (2011)

#### KEY

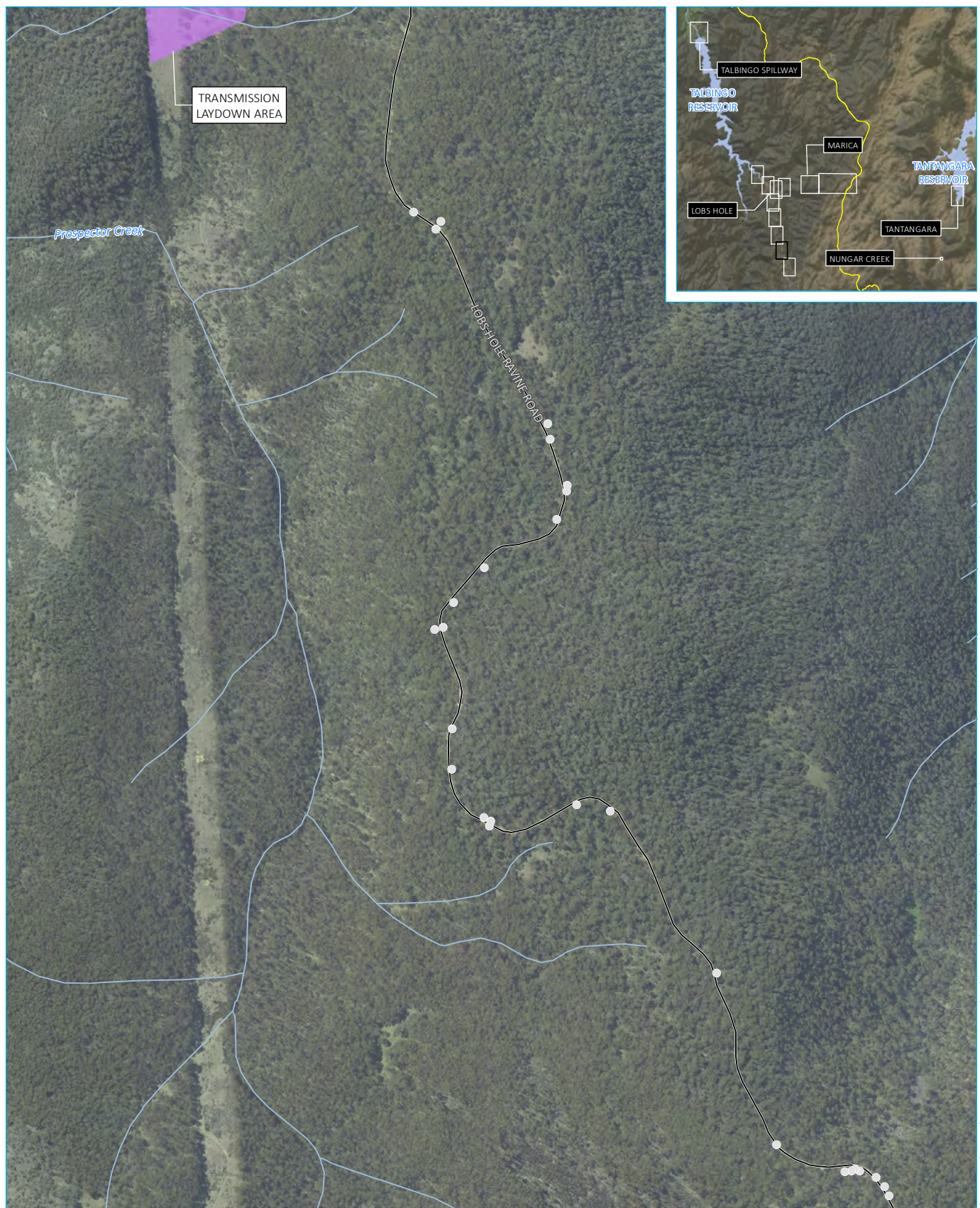
- Dangerous tree
- Main road
- Local road
- Watercourse/drainage line

Exploratory Works project boundary  
- Lobs Hole Ravine Road (Upper) 1

Snowy 2.0  
Exploratory Works EIS  
Modification 1  
1 b







Source: EMM (2019); Snowy Hydro (2019); PhotoMapping (2018); SMEC (2019); DFSI (2017); GA (2015); LPMA (2011)

#### KEY

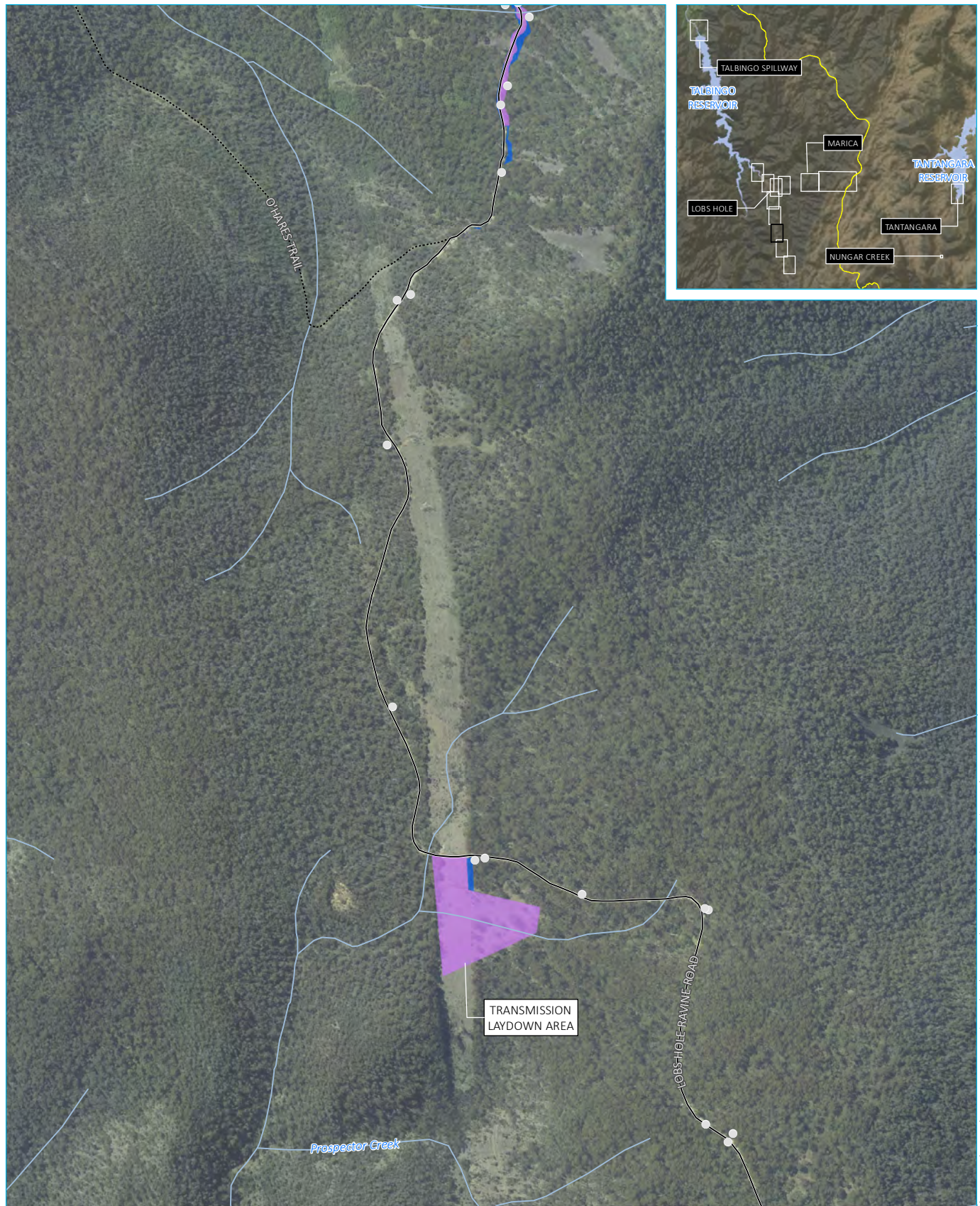
- Dangerous tree
- Local road
- Watercourse/drainage line
- EW approved construction footprint

Exploratory Works project boundary  
- Lobs Hole Ravine Road (Upper) 2

Snowy 2.0  
Exploratory Works EIS  
Modification 1  
1 c







Source: EMM (2019); Snowy Hydro (2019); PhotoMapping (2018); SMEC (2019); DFSI (2017); GA (2015); LPMA (2011)

#### KEY

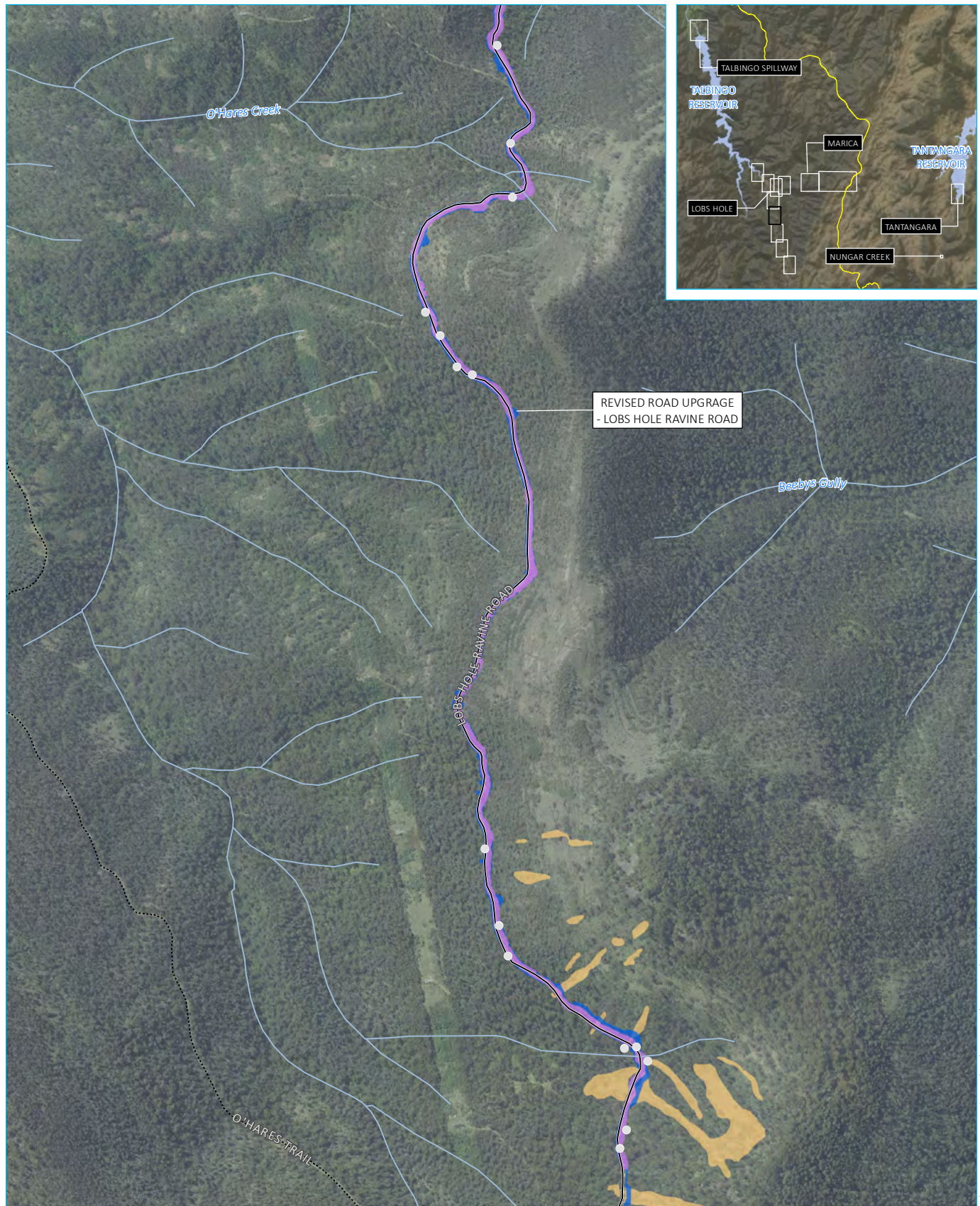
- Dangerous tree
- Local road
- ..... Vehicular track
- Watercourse/drainage line
- EW approved construction footprint
- EW modification construction footprint (additional)

Exploratory Works project boundary  
- Lobs Hole Ravine Road (Upper) 3

Snowy 2.0  
Exploratory Works EIS  
Modification 1  
1 d







Source: EMM (2019); Snowy Hydro (2019); SMEC (2019); DFSI (2017); GA (2015); LPMA (2011)

#### KEY

- Dangerous tree
- Local road
- ..... Vehicular track
- Watercourse/drainage line
- EW approved construction footprint
- EW modification construction footprint (additional)
- Boulder stream

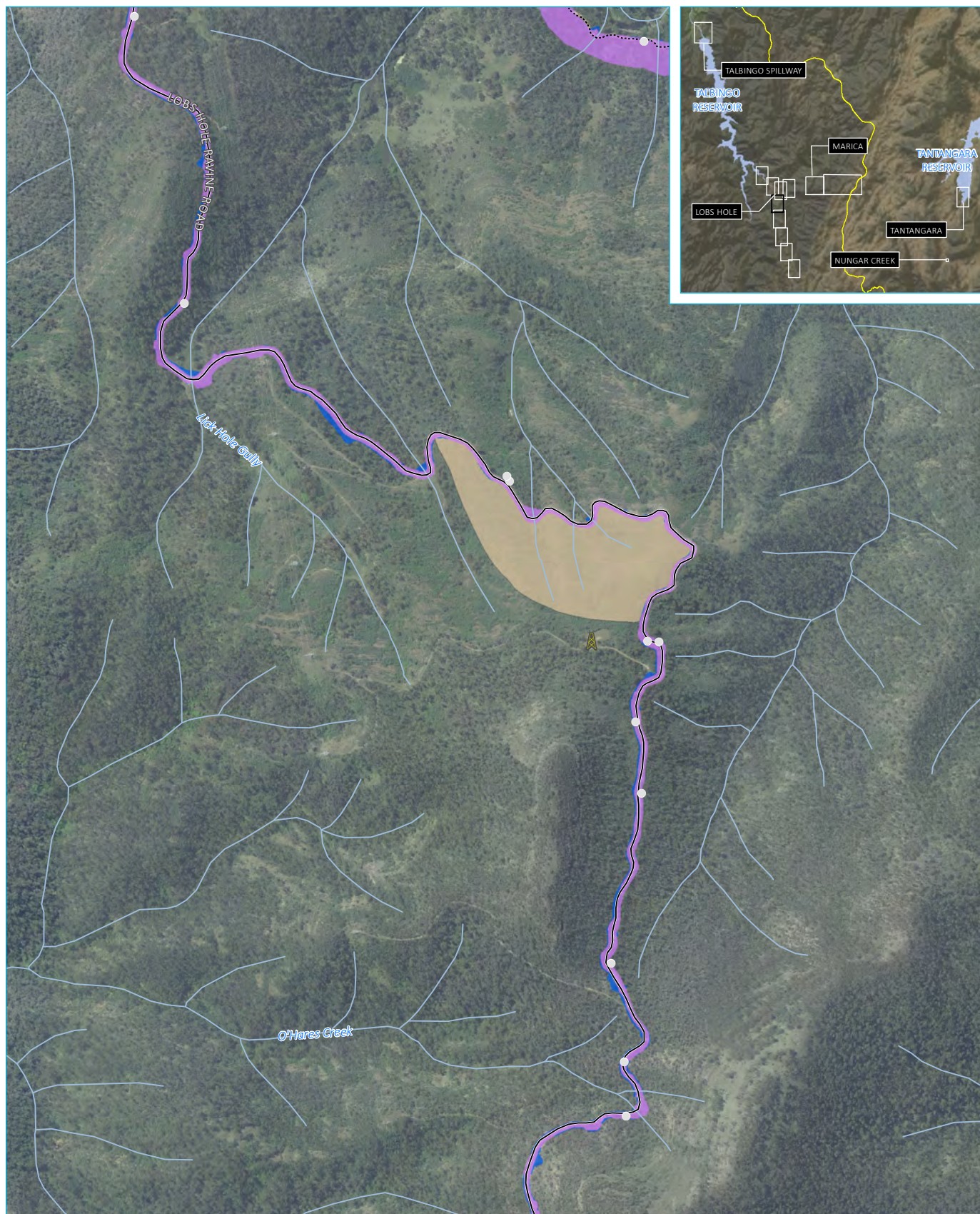
Exploratory Works project boundary  
- Lobs Hole Ravine Road (Lower) 1

Snowy 2.0  
Exploratory Works EIS  
Modification 1  
1 e



OV17188 - Snowy Hydro 2.0\GIS\02\_Maps\EIS\_EWA\_Mod1\AppendixB\_rts\G001\_MOD1ProjectElements\_20191127\_05.mxd 27/11/2019





Source: EMM (2019); Snowy Hydro (2019); SMEC (2019); DFSI (2017); GA (2015); LPMA (2011)

#### KEY

- Dangerous tree
- ▲ Existing temporary communications
- Local road
- ..... Vehicular track
- Watercourse/drainage line
- EW approved construction footprint
- EW modification construction footprint (additional)
- Fossil area

0 50 100  
m  
GDA 1994 MGA Zone 55  
N

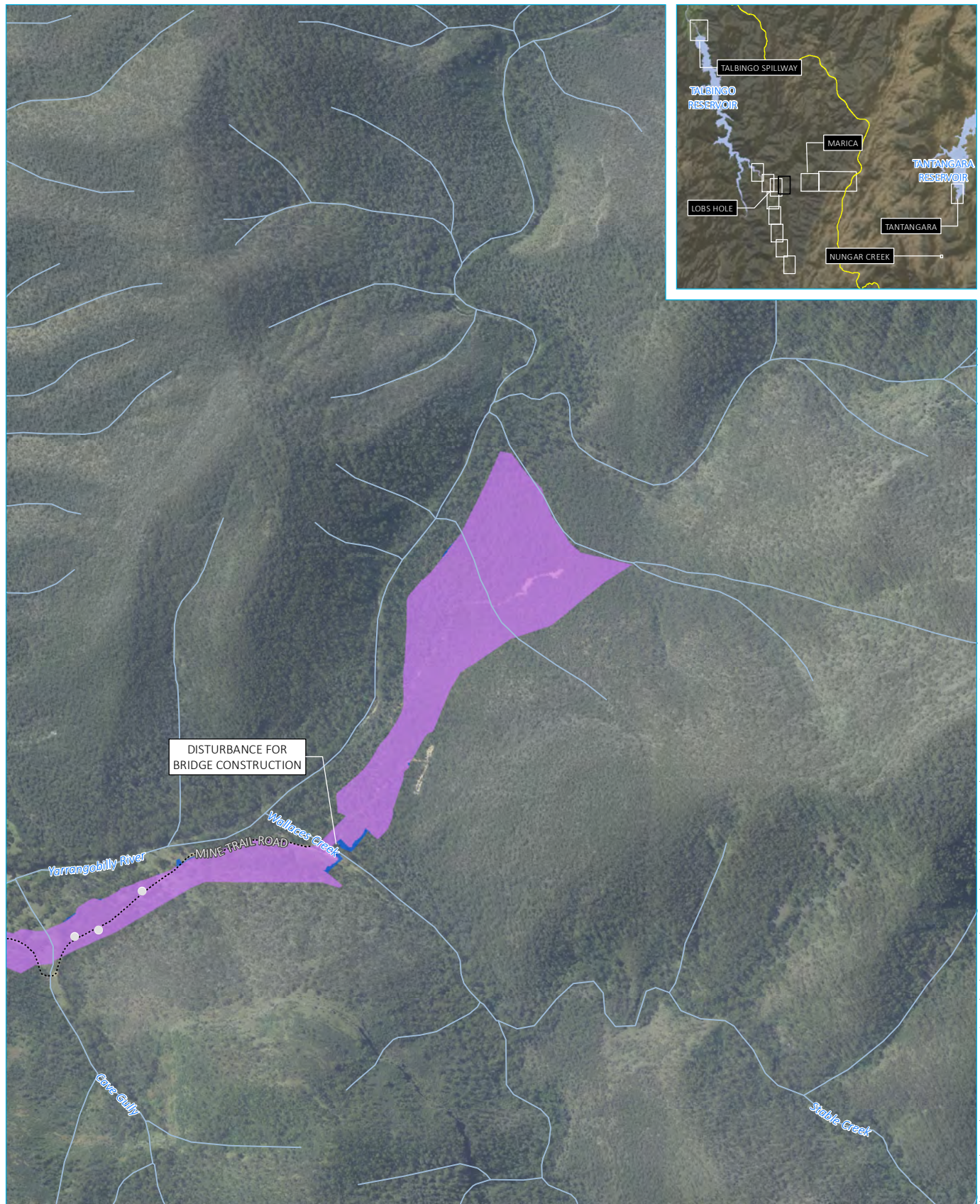
Exploratory Works project boundary  
- Lobs Hole Ravine Road (Lower) 2

Snowy 2.0  
Exploratory Works EIS  
Modification 1  
1 f



OU17188 - Snowy Hydro 2.0\GIS\02\_Maps\EIS\_EWA\_Mod1\AppendixB\_rts\G001\_MOD1ProjectElements\_20191127\_05.mxd 27/11/2019





Source: EMM (2019); Snowy Hydro (2019); PhotoMapping (2018); SMEC (2019); DFSI (2017); GA (2015); LPMA (2011)

#### KEY

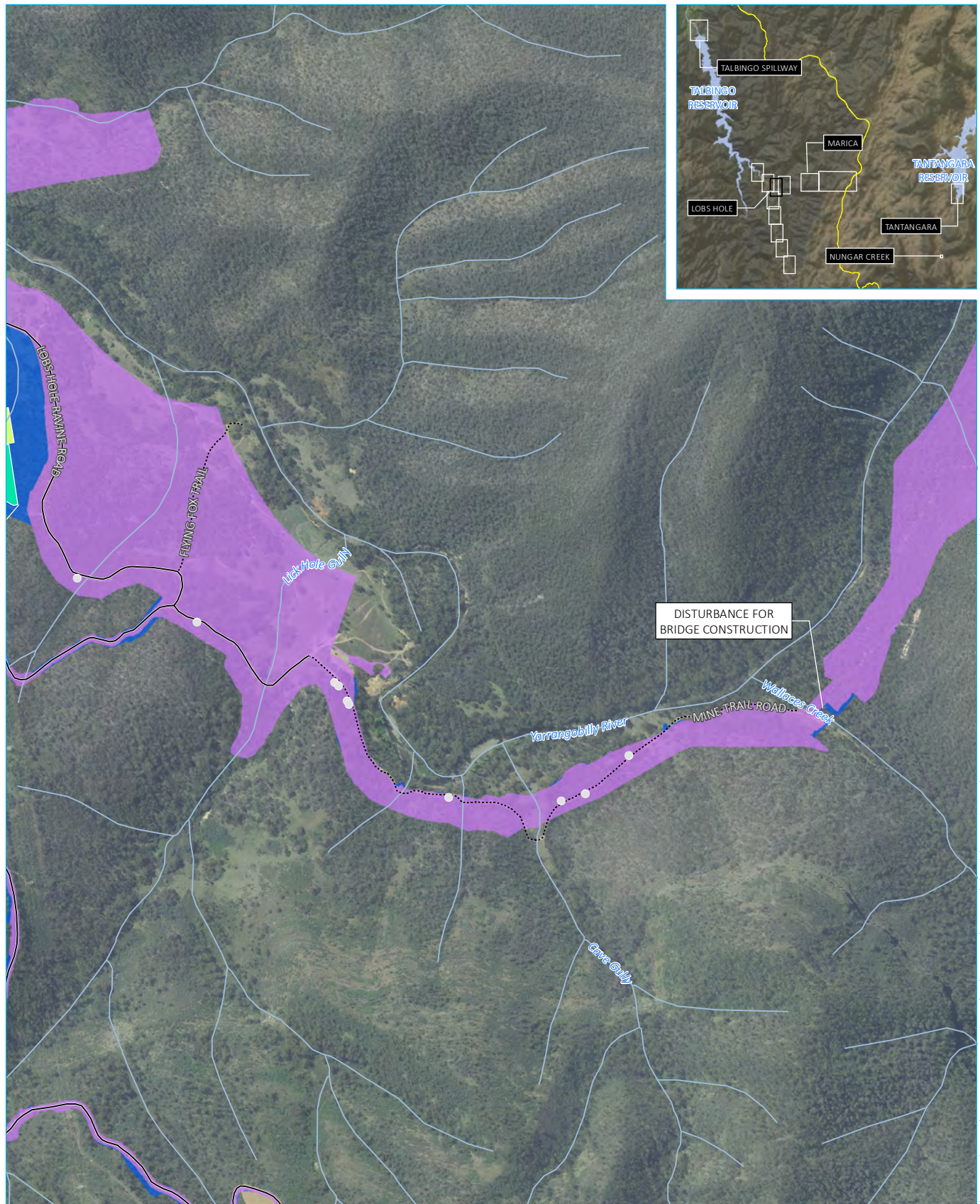
- Dangerous tree
- ..... Vehicular track
- Watercourse/drainage line
- EW approved construction footprint
- EW modification construction footprint (additional)

Exploratory Works project boundary  
- Mine Trail Road 1

Snowy 2.0  
Exploratory Works EIS  
Modification 1  
1 g







Source: EMM (2019); Snowy Hydro (2019); PhotoMapping (2018); SMEC (2019); DFSI (2017); GA (2015); LPMA (2011)

#### KEY

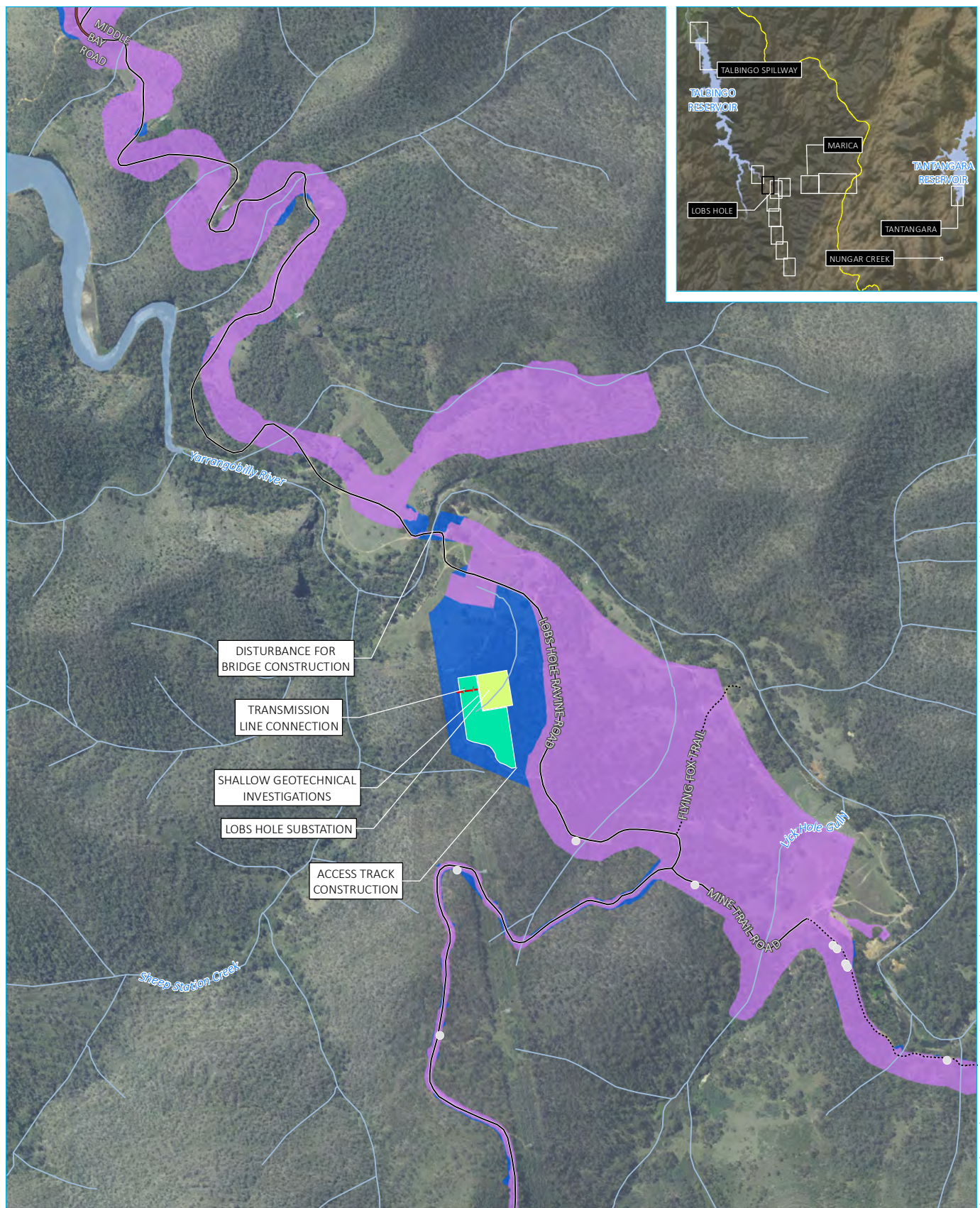
- Dangerous tree
- Local road
- ..... Vehicular track
- Watercourse/drainage line
- EW approved construction footprint
- EW modification construction footprint (additional)
- Indicative laydown area
- Proposed substation
- Fossil area

Exploratory Works project boundary  
- Mine Trail Road 2

Snowy 2.0  
Exploratory Works EIS  
Modification 1  
1 h







Source: EMM (2019); Snowy Hydro (2019); PhotoMapping (2018); SMEC (2019); DFSI (2017); GA (2015); LPGA (2011)

## KEY

- Dangerous tree
- Approved EW access
- Transmission line connection
- Local road
- ..... Vehicular track
- Watercourse/drainage line
- EW approved construction footprint
- EW modification construction footprint (additional)

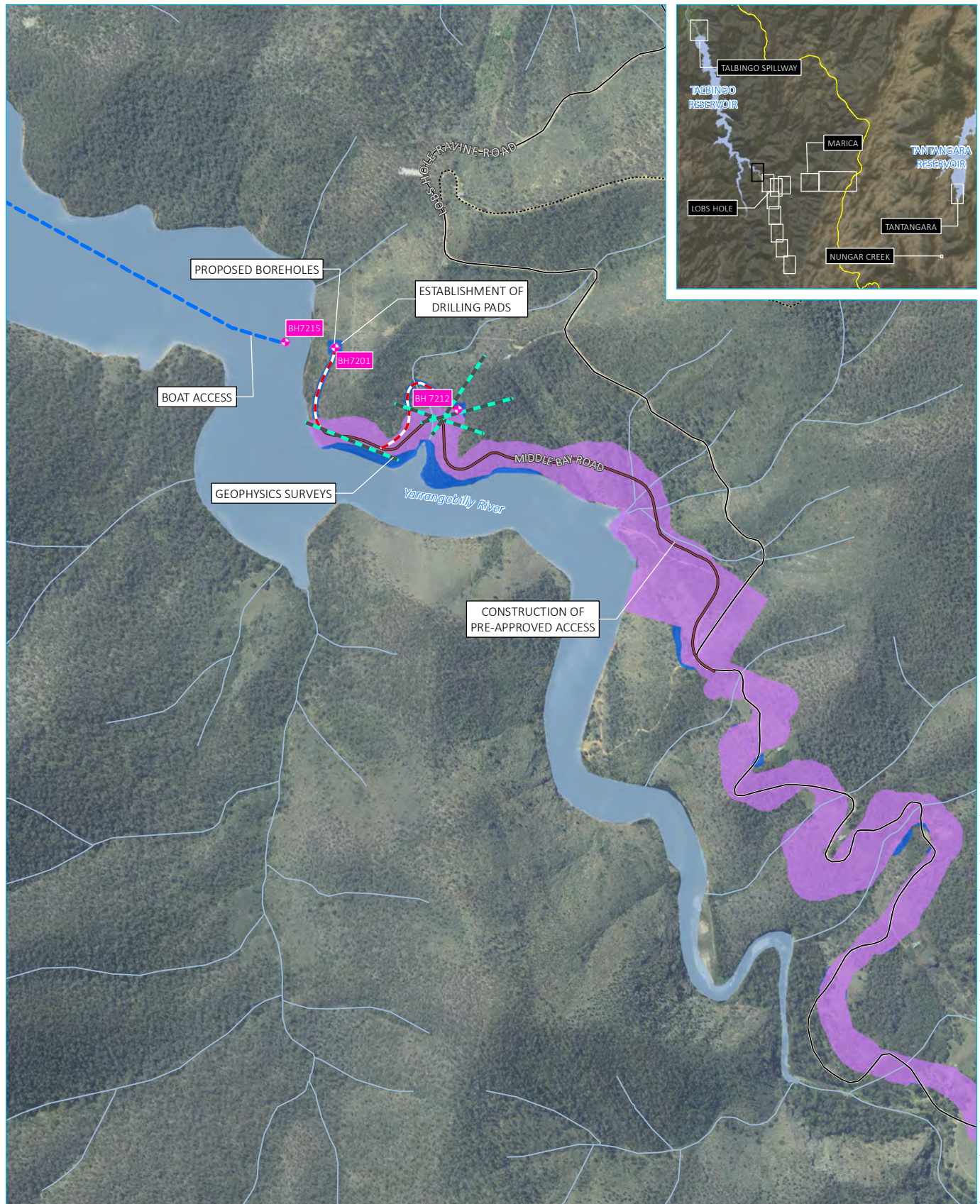
- Indicative laydown area
- Proposed substation
- Waterbody

Exploratory Works project boundary  
- Lobs Hole

Snowy 2.0  
Exploratory Works EIS  
Modification 1  
1 i







Source: EMM (2019); Snowy Hydro (2019); SMEC (2019); DFSI (2017); GA (2015); LPMA (2011)

#### KEY

- ◆ Proposed borehole
- Proposed geophysics
- Proposed access track
- Approved EW access
- Boat access
- Local road
- ⋯ Vehicular track
- Watercourse/drainage line
- EW approved construction footprint
- EW modification construction footprint (additional)
- Waterbody

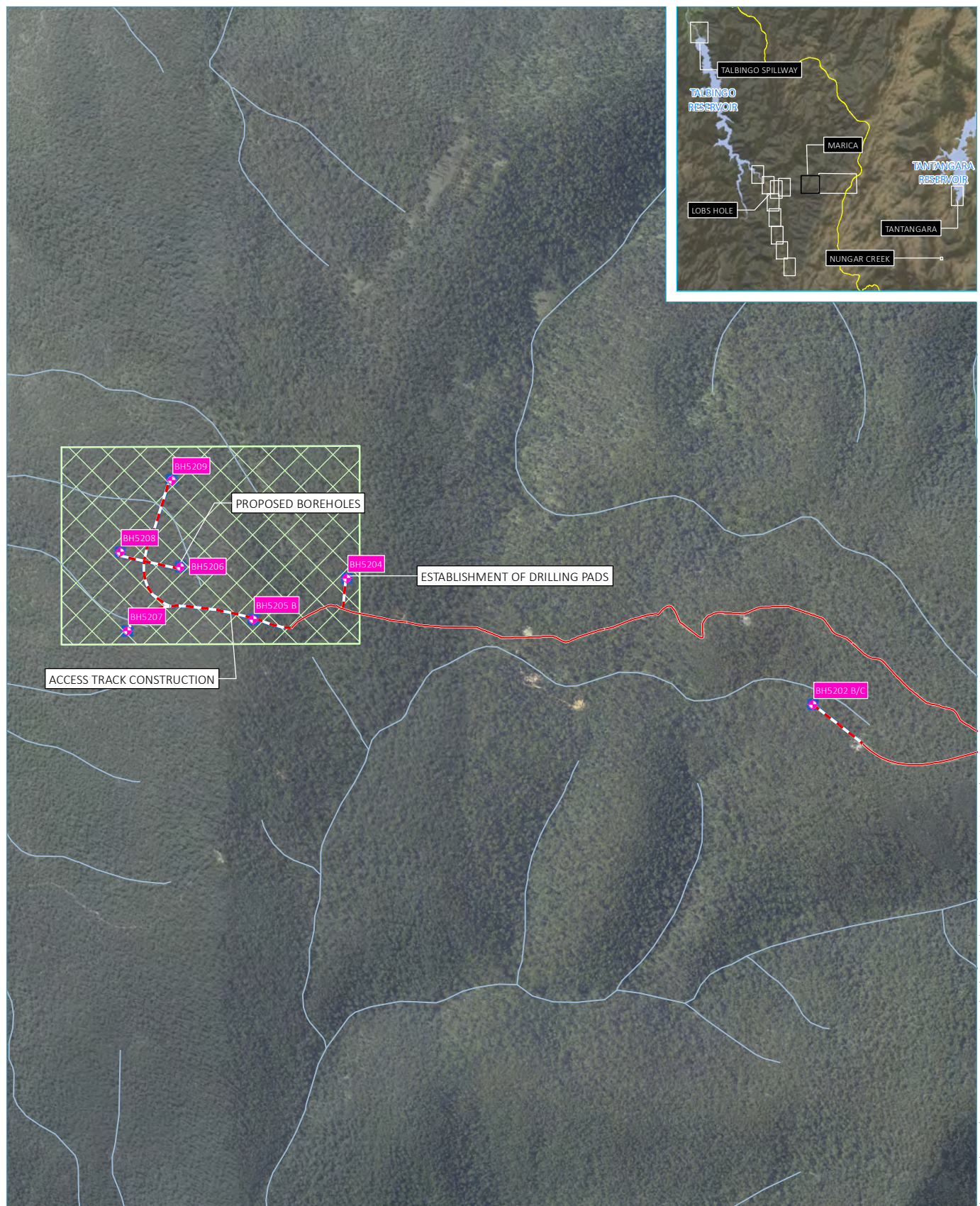
Exploratory Works project boundary  
- Lobs Hole Ravine Road

Snowy 2.0  
Exploratory Works EIS  
Modification 1  
1 j



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Source: EMM (2019); Snowy Hydro (2019); PhotoMapping (2018); SMEC (2019); DFSI (2017); GA (2015); LPMA (2011)

#### KEY

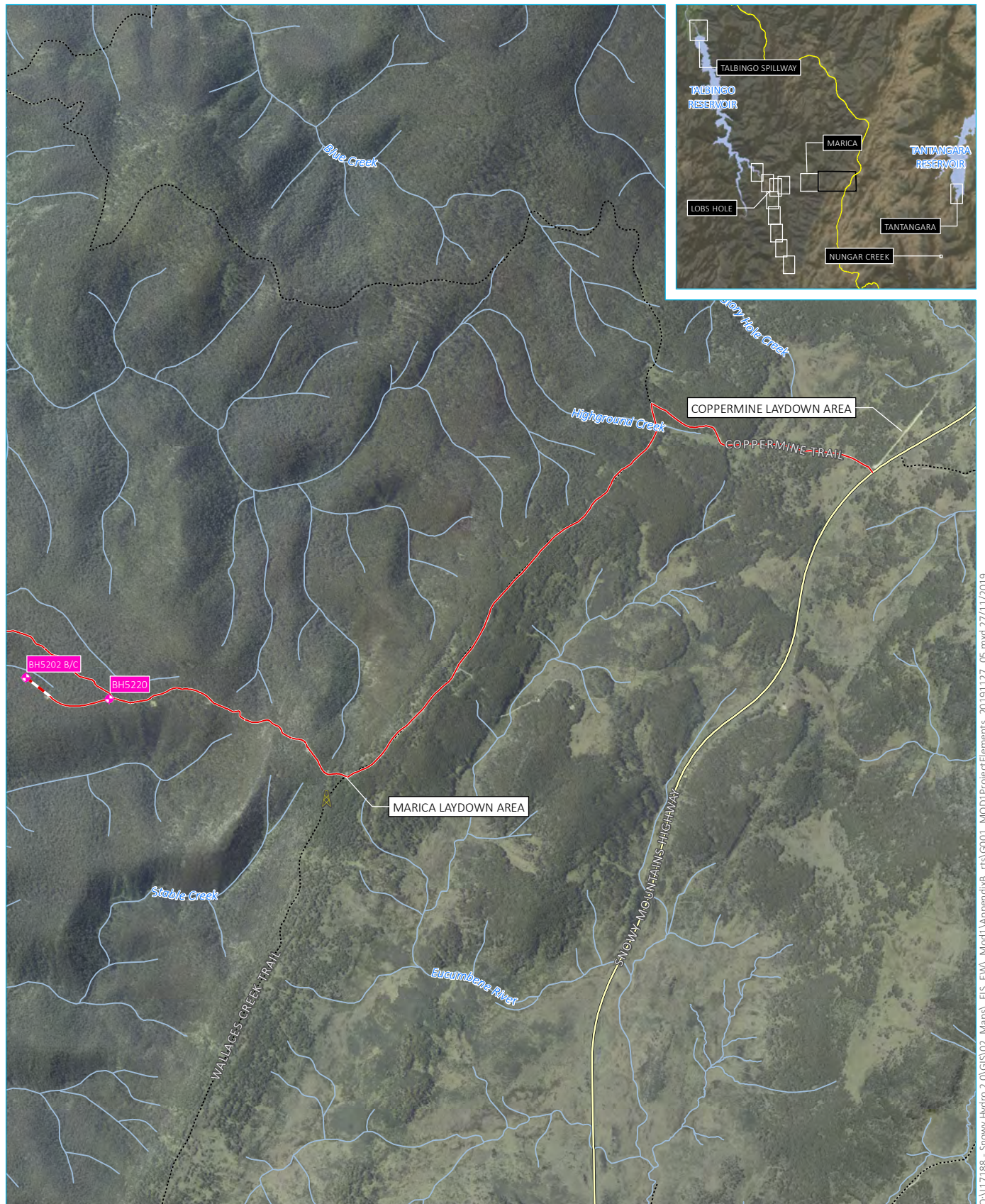
- ✦ Proposed borehole
- Existing access track
- - - Proposed access track
- Watercourse/drainage line
- EW modification construction footprint (additional)
- Boreholes requiring on-site adjustment

Exploratory Works project boundary  
- Marica 1

Snowy 2.0  
Exploratory Works EIS  
Modification 1  
1 k







Source: EMM (2019); Snowy Hydro (2019); SMEC (2019); DFSI (2017); GA (2015); LPMA (2011)

#### KEY

- ◆ Proposed borehole
- ▲ Existing temporary communications
- Existing access track
- - - Proposed access track
- Main road
- ⋯ Vehicular track
- Watercourse/drainage line
- EW modification construction footprint (additional)

Exploratory Works project boundary  
- Marica 2

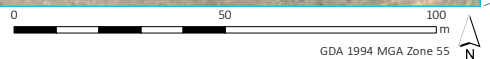
Snowy 2.0  
Exploratory Works EIS  
Modification 1  
11







Source: EMM (2019); Snowy Hydro (2019); PhotoMapping (2018); SMEC (2019); DFSI (2017); GA (2015); LPMA (2011)



#### KEY

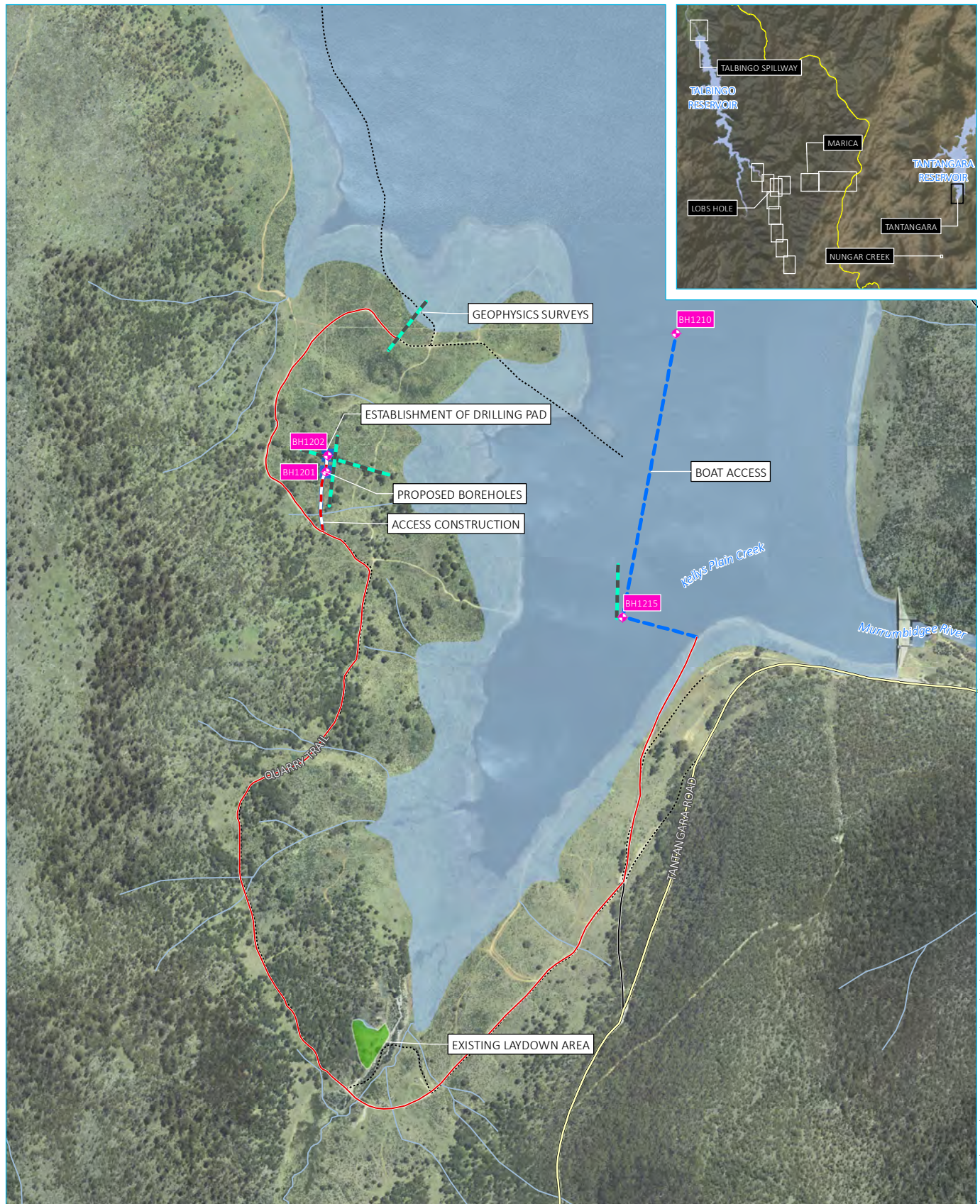
- Proposed borehole
- Main road
- Watercourse/drainage line
- Proposed work area

Exploratory Works project boundary  
- Nungar Creek

Snowy 2.0  
Exploratory Works EIS  
Modification 1  
1 m







Source: EMM (2019); Snowy Hydro (2019); PhotoMapping (2018); SMEC (2019); DFSI (2017); GA (2015); LPMA (2011)

#### KEY

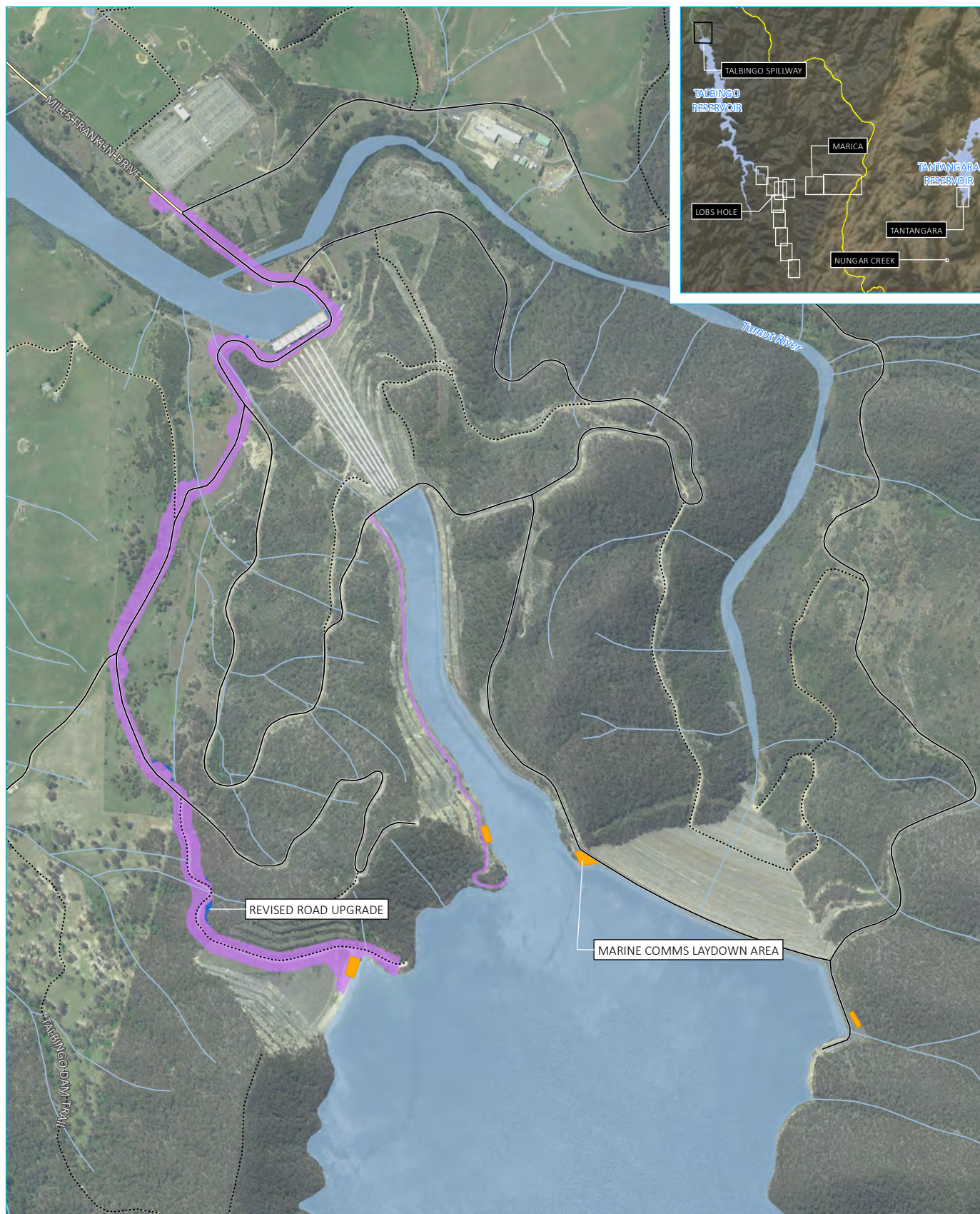
- ✦ Proposed borehole
- Proposed geophysics
- Existing access track
- - Proposed access track
- Boat access
- Main road
- Local road
- ..... Vehicular track
- Watercourse/drainage line
- EW modification construction footprint (additional)
- Existing laydown area
- Waterbody

Exploratory Works project boundary  
- Tantangara Reservoir

Snowy 2.0  
Exploratory Works EIS  
Modification 1  
1 n







Source: EMM (2019); Snowy Hydro (2019); PhotoMapping (2018); SMEC (2019); DFSI (2017); GA (2015); LPMA (2011)

#### KEY

- Main road
- Local road
- Vehicular track
- Watercourse/drainage line
- EW approved construction footprint
- EW modification construction footprint (additional)
- Marine comms laydown (proposed)
- Waterbody

Exploratory Works project boundary  
- Talbingo spillway

Snowy 2.0  
Exploratory Works EIS  
Modification 1  
10

