



A P P E N D I X

G

MITIGATION MEASURES TABLE

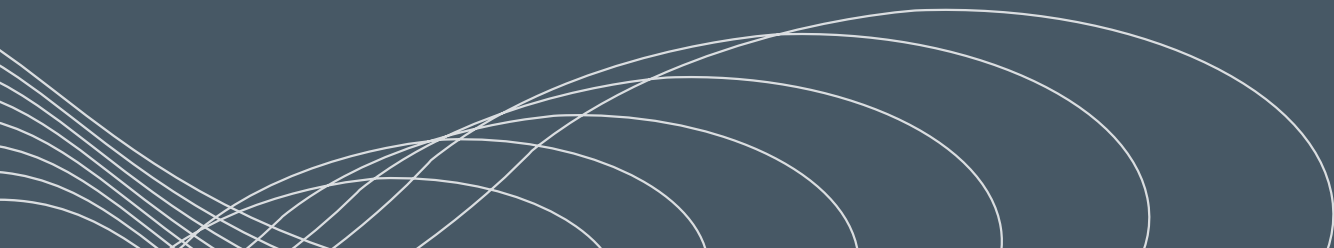


Table G.1 Mitigation measures

Impact/risk	ID#	Measure(s)	Timing	Responsibility
Water				
General	WM01	<p>A Water Management Plan will be developed for Snowy 2.0 Main Works that includes:</p> <ul style="list-style-type: none"> • proposed mitigation and management measures for all construction water management categories; • spill management and response; • a surface and groundwater monitoring program; • water quality trigger levels; • reporting requirements; • corrective actions; • contingencies; and • responsibilities for all management measures. <p>The WMP will be prepared in consultation with DPIE, EPA, WaterNSW and key local stakeholders, and would consider concerns raised during the exhibition and approvals process for the project.</p>	Construction	Contractor
General	WM02	<p>A water monitoring program will be developed as part of the water management plan to monitor quality and quantity impacts to surface water, groundwater and reservoirs.</p> <p>The water monitoring program will incorporate and update the existing monitoring network and detail monitoring frequencies and water quality constituents.</p>	Construction and operation	Contractor
Water quality impacts from stormwater runoff	WM03	Where practical, clean water will be diverted around or through construction areas. Runoff from clean water areas that cannot be diverted will be accounted for in the design of water management systems.	Construction	Contractor
Water quality impacts from stormwater runoff	WM04	An Erosion and Sediment Control Plan (ESCP) will be prepared for each construction area that will include relevant information presented in the water management report (Annexure D to water assessment)	Construction	Contractor
Water quality impacts from stormwater runoff	WM05	<p>A suitably qualified erosion and sediment control professional(s) will be engaged to:</p> <ul style="list-style-type: none"> • oversee the development of ESCPs; • inspect and audit controls; • train relevant staff; and <p>progressively improve methods and standards as required.</p>	Construction	Contractor
Groundwater modelling	WM06	<p>The groundwater model developed for Snowy 2.0 Main Works will be validated and, if necessary, recalibrated to new groundwater monitoring data as the monitoring record increases throughout construction.</p> <p>It is recommended that assessment of the monitoring record and groundwater affecting activities, along with model updates, be undertaken at least annually throughout construction and into operation until it is evident that the update frequency can be reduced.</p>	Construction and operation	Contractor Snowy Hydro

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Impact/risk	ID#	Measure(s)	Timing	Responsibility
Groundwater inflow / drawdown	WM07	Where discrete high flow features are intercepted, pre-grouting and secondary grouting from the TBM may be undertaken to enable tunnel construction.	Construction	Contractor
Water supply	WM08	<p>A water supply system will be established to supply water for potable water use and construction activities.</p> <p>The system will most likely source water from regional groundwater resources, but may also source water from either Tantangara or Talbingo Reservoirs provided licences are available.</p> <p>Extraction from watercourses will be avoided. The most suitable extraction locations and water sources will be established during detailed design</p>	Construction	Contractor Snowy Hydro
Reservoir water quality (wastewater management)	WM09	<p>A wastewater management system will be established to manage effluent from construction compounds and accommodation camps.</p> <p>All wastewater will be treated to meet the water quality specifications provided in the water management report (Annexure D to water assessment) and will be discharged to reservoirs.</p> <p>Wastewater discharges to watercourses will be avoided.</p>	Construction	Contractor
Reservoir water quality (process water management)	WM10	<p>A process water management system will be established to manage water from subsurface excavations and large surface excavations during construction; and to supply water to construction activities.</p> <p>All surplus process water will be treated to meet the water quality specifications provided in the water management report (Annexure D to water assessment) and will be discharged to reservoirs.</p> <p>Process water discharges to watercourses will be avoided.</p>	Construction	Contractor
Changes to reservoir water quality due to plug removal within the reservoirs	WM11	<p>The specifications and locations of the proposed environmental measures will be determined as part of detailed design, including the installation of silt curtains.</p> <p>They will be designed such that water quality criteria is agreed with the regulators, with the application of a mixing zone if required.</p>	Construction	Contractor
Reservoir bed sediments are disturbed by commissioning water flows	WM12	<p>Investigations to minimise the disturbance of bed sediments due to water flows during commissioning will be undertaken as part of detailed design. Potential measures to minimise the disturbance of bed sediments include:</p> <ul style="list-style-type: none"> • investigate mitigated design measures; • dredging sediments from the potential disturbance zones and placing them in another part of the reservoir; and/or • armouring the sediments in the potential disturbance zones. <p>These options are currently being assessed.</p>	Construction	Contractor Snowy Hydro

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Impact/risk	ID#	Measure(s)	Timing	Responsibility
Flooding	WM13	Further consideration of flooding conditions and impacts, including flood modelling where necessary, will be undertaken to support future detailed design of both temporary and permanent works.	Construction Operation	Contractor Snowy Hydro
Flooding	WM14	Flood emergency response plans will be developed for both construction and operational phases	Construction Operation	Contractor Snowy Hydro
Terrestrial ecology				
Fauna strike to Smoky Mouse and Eastern Pygmy possum	ECO1	<p>Management measures to mitigate the potential impacts of fauna strike are currently being considered. These measures include:</p> <ul style="list-style-type: none"> • reduced speed limit along Lobs Hole Ravine Road and Marica Trail at night, when fauna species are likely to be most active; • fencing of these roads to prevent access to the road surface; and • construction of fauna underpasses. <p>The adopted measures will be agreed in consultation with DPIE.</p>	Construction	Contractor
Spread of weeds	ECO2	A weed and pathogen monitoring program will be implemented, with a weed control program to be implemented if weeds are identified along road verges. This will include wash-down stations will be constructed at a suitable location, with wash down for weeds as well as <i>P.cinnamomi</i> .	Construction	Contractor
Impacts to GDEs	ECO3	A GDE monitoring program will be implemented to ensure actual impacts are within prediction. If actual impacts are greater than predicted, adaptive management will be implemented.	Construction	Contractor

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Impact/risk	ID#	Measure(s)	Timing	Responsibility
Removal of native vegetation and threatened species habitat	ECO4	<p>A Biodiversity Management Plan will be prepared and implemented during construction. It will include the following measures:</p> <ul style="list-style-type: none"> • establishment of exclusion zones around retained vegetation, including fencing and signage; • pre-clearing surveys conducted prior to clearing, including translocation of fauna into areas of retained vegetation; • vegetation clearing undertaken in accordance with the two-stage process; • mulching and stockpiling of cleared native vegetation for use during rehabilitation; • retention of hollows logs and limbs for placement within retained vegetation and reuse during rehabilitation; • regional surveys for the Smoky Mouse to demonstrate presence of a significant regional population; • collection of native seeds and alpine sod for propagation; and <p>establishment of native plant nursery and propagation of endemic native species for use in rehabilitation works.</p>	Construction	Contractor
	ECO5	A threatened species monitoring program will be designed and implemented to ensure impacts arising from clearing are within prediction.	Construction	Contractor
Increase in predatory and pest species	ECO6	A pest and predator monitoring program will be designed and implemented to ensure Main Works does not result in a significant increase in numbers of pest and predatory species and impacts to threatened species remain within prediction.	Construction	Contractor

Table G.1 Mitigation measures

Impact/risk	ID#	Measure(s)	Timing	Responsibility
Aquatic ecology				
Impacts to aquatic habitats	AE01	<p>An Aquatic Habitat Management Plan will be prepared and implemented to guide management of impacts to aquatic habitat. The plan will:</p> <ul style="list-style-type: none"> • be prepared in consultation with NPWS and DPI-Fisheries; • include a description of measures that would be implemented to: <ul style="list-style-type: none"> – protect aquatic habitat outside the approved disturbance areas; – minimise the loss of key aquatic habitat; – minimise the impacts of the development on threatened fauna species; – minimise the impact of the development on fish habitat; – relocate Murray crayfish from the shallower parts of the approved disturbance area in Talbingo Reservoir prior to disturbing these areas – notify DPI-Fisheries of any fish kills; • include a trigger action and response plan for the Murray crayfish, which would be implemented if monitoring shows the development is adversely affecting the species; • include a program to restore and enhance the aquatic habitat of the approved disturbance area except for the intake and their approach areas as soon as practicable following the completion of development in these areas; • include a program to monitor and report on the effectiveness of these measures. 	Construction	Contractor
	AE02	Bridges or culverts would be designed and constructed in accordance with NSW DPI fish passage requirements for waterway crossings (Fairfull & Witheridge 2003).	Construction	Contractor
	AE03	Construction works within the channel of a permanent waterway with type 1 or 2 key fish habitat would allow some flow to maintain fish passage at all times and be staged to minimise the total disturbance at any given time.	Construction	Contractor

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Impact/risk	ID#	Measure(s)	Timing	Responsibility
Spread of weeds pest fish and pathogens	AE04	<p>A Weed, Pest and Pathogen Management Plan will be prepared and implemented to minimise and manage the spread of weeds, pest fish and pathogens. The plan will:</p> <ul style="list-style-type: none"> • be prepared in consultation with NPWS and DPI-Fisheries; • include a description of measures that would be implemented to: <ul style="list-style-type: none"> – minimise the spread of weeds and pest via vehicle and plant movements; – remove aquatic macrophytes appropriately where required to do so to enable construction activities; • include a program to monitor and report distribution of pest fish within the project area; • include a surveillance plan for EHNH in key locations within the project area. 	Construction	Contractor
Underwater blasting impacts	AE05	Designated blast limits and other management measures to minimise impacts to aquatic ecology will be outlined in the Blast Management Plan.	Detailed design	Contractor
Controls	AE06	<p>Install the following:</p> <ul style="list-style-type: none"> • fish barrier on Tantangara Creek designed to prevent upstream migration of Climbing galaxias; and • fine mesh screens to prevent transfer of key species through releases from the Tantangara Dam River Outlet Works and the Murrumbidgee – Eucumbene tunnel. 	Construction	Contractor
Land				
Rehabilitation	REHAB01	<p>A Rehabilitation Management Plan will be prepared for the new landforms at Tantangara Reservoir, Lobs Hole and Talbingo Reservoir. The plan will:</p> <ul style="list-style-type: none"> • include a detailed plan for rehabilitation of the site; • include detailed performance and completion criteria for evaluating the performance of the rehabilitation of the sites, and triggering any remedial action (if necessary); • describe the measures that would be implemented to: <ul style="list-style-type: none"> – comply with the rehabilitation objectives and associated performance and completion criteria; – progressively rehabilitate the site; <p>include a program to monitor and report the effectiveness of these measures.</p>	Construction	Contractor
Creation of new landforms	REHAB02	<p>New landforms will:</p> <ul style="list-style-type: none"> • be safe, stable and non-polluting; <p>maximise surface drainage to the natural environment</p>	Construction	Contractor
Assessment of surface disturbance and excavation areas	CONTAM01	Targeted investigations will be undertaken prior to construction along the surface disturbance areas using a risk-based approach. The results of these targeted investigations will determine the level of management to be implemented.	Pre-construction	Contractor

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Impact/risk	ID#	Measure(s)	Timing	Responsibility
Assessment of imported Virgin Excavated Natural Material (VENM)	CONTAM02	Prior to the importation of any VENM during construction, the VENM source(s) will be identified and assessed against the definition of VENM in the <i>Waste Classification Guidelines</i> (NSW EPA 2014) and POEO Act. The VENM source(s) will be assessed by an appropriately qualified contaminated land consultant.	Construction	Contractor
Contaminated soil management during construction	CONTAM03	Protocols for the management of contaminated soil during construction will be included in the CEMP.	Construction	Contractor
Excavated rock waste management and transport	CONTAM04	Material which has been assessed as not suitable for reuse on land or for subaqueous disposal or cannot be reused will be classified in accordance with the <i>Waste Classification Guidelines</i> (NSW EPA 2014). The excavated rock would be transported to an appropriate excavated rock disposal area. Approval would be obtained prior to transport and would require an estimate of the likely volume of excavated rock to be disposed.	Construction	Contractor
Asbestos management	CONTAM05	An Asbestos Management Plan (AMP) will be developed for areas and items identified during pre-construction investigations as containing Asbestos Containing Materials ACM (ACM), areas suspected of containing ACM (such as historical buildings) and to address unexpected finds of ACM during construction. Specifically, protocols will be stipulated for separation, monitoring, validation and clearance of asbestos.	Pre-construction	Contractor
Asbestos management	CONTAM06	An Occupational Hygienist (Hygienist) will be on-site for the duration of the excavation works where ACM has been identified from pre-construction or where unexpected finds of ACM are encountered.	Construction	Contractor
PAF rock	CONTAM07	An Excavated Rock Management Plan would be developed which would include measures identified in the Preliminary Site Investigation – Contamination (Appendix N.1).	Pre-construction	Contractor
Unexpected finds	CONTAM08	An unexpected finds procedure will be included in the CEMP. Workers will be trained to identify potential contamination that may be encountered during construction.	Pre-construction	Contractor
Alpine humus soils and peat bogs/fens	SOIL01	Mitigations will be included in the Rehabilitation Management Plan to minimise impacts to Alpine humus soils and peat bogs/fens.	Construction	Contractor

Table G.1 Mitigation measures

Impact/risk	ID#	Measure(s)	Timing	Responsibility
Loss of soil resource	SOIL02	<p>Preservation of the soil resource including quantity and quality to be managed through the implementation of soil management measures incorporated within the rehabilitation management plan which includes:</p> <ul style="list-style-type: none"> • an inventory of soils to be stripped, including depths and volumes; • a topsoil stripping and stockpiling procedure; • subsoil management measures; and <p>a soil reinstatement methodology which includes a topsoil application procedure.</p>	Construction and operation	Contractor
Soil erosion and sedimentation	SOIL03	<p>Site-based Erosion and Sediment Control Plans (ESCPs) will be prepared by a Certified Professional in Erosion and Sediment Control (CPESC) for the construction works with controls addressing the sensitivity and the proximity of the receiving environment and attention will be given to areas where there is an increased risk of erosion, such as, dispersive soils and steep slopes and subalpine landscapes.</p>	Construction	Contractor
Soil capability	SOIL04	<p>The Rehabilitation Management Plan (refer to REHAB01) will be implemented and will include measures to minimise:</p> <ul style="list-style-type: none"> • loss of soil; • loss of organic matter and nutrient decline; • soil structural decline; and • compaction. <p>The plan will include measures for subsoil management.</p>	Construction and operation	Contractor
Geodiversity – Ravine block streams	GEO1	<p>Design principles identified in the Cenozoic Geodiversity Report will be implemented to minimise impacts to the Ravine block streams during detailed design.</p>	Design and construction	Contractor
Geodiversity – Ravine tufa	GEO2	<p>Design principles identified in the Cenozoic Geodiversity Report will be implemented to minimise impacts to the Ravine tufa during detailed design.</p>	Design and construction	Contractor
Geodiversity – Lick Hole Formation fossil locality	GEO3	<p>Final road design will consider incorporating interpretive signage and safe stopping space within the proposed road and disturbance footprint where practical.</p>	Construction	Contractor
Geodiversity – Kellys Plain Volcanics Type Locality	GEO4	<p>During construction, ensure that the former Traces Knob quarry is not in-filled.</p>	Construction and operation	Contractor and Snowy Hydro
Geodiversity – Kellys Plain Volcanics agglomeratic porphyry	GEO5	<p>Identify outcrops of agglomeratic porphyry prior to construction at Tantangara portal. Excavated rock placement should leave some of the best examples of the agglomeratic porphyry uncovered.</p>	Pre-construction, construction and operation	Contractor and Snowy Hydro

Table G.1 Mitigation measures

Impact/risk	ID#	Measure(s)	Timing	Responsibility
Geodiversity	GEO6	A management plan will be prepared that includes measures that minimise impacts to known geodiversity sites and potential undocumented geodiversity sites identified in accordance with the recommendation in the Cenozoic and Paleozoic Geodiversity reports.	Construction	Contractor
Geodiversity	GEO7	Consult with NPWS regarding opportunities to enhance the geotourism potential of impacted geodiversity sites through the development of the masterplan for recreational use.	Operation	Snowy Hydro
Aboriginal Cultural heritage				
Impact to known and unknown heritage sites and items	HER01	<p>An Aboriginal Heritage Management Plan (AHMP) will be prepared and implemented to guide the process for management and mitigation of impacts to Aboriginal objects. The AHMP will:</p> <ul style="list-style-type: none"> • be prepared in consultation with RAPs and DPIE; • describe survey units in which impacts are allowable; and <p>include procedures relating to the conduct of additional archaeological assessment, if required.</p>	Pre-construction	Contractor
Loss of Aboriginal cultural heritage	HER02	<p>Specific management and mitigation measures are listed for each individual survey unit and Aboriginal object locale in Appendix P.1 and will be included in the AHMP.</p> <p>Management measures to be included in the AHMP are:</p> <ul style="list-style-type: none"> • for survey units within the project disturbance footprint which are assessed to be of higher significance values, impact mitigation measures will be implemented. These would comprise salvage in the form of archaeological excavation and archaeological analysis prior to impacts; and • the AHMP is to include measures for the management of any Aboriginal objects that may be found during construction. 	Pre-construction	Contractor
Historic Heritage				
Loss of historic heritage	HER03	Salvage and/or archival recording of potential and known heritage items to be conducted in respect of certain items that warrant that level of impact mitigation.	Pre-construction	Contractor

Table G.1 Mitigation measures

Impact/risk	ID#	Measure(s)	Timing	Responsibility
	HER04	<p>Specific management and mitigation measures are listed for each individual heritage item in Appendix P.2 and will be included in a cultural heritage management plan (CHMP). A series of management recommendations will be presented. In some instances, no impact mitigation is required. For others a range of measures are recommended ranging the establishment of no-zones to ensure the protection of items, salvage of movable heritage to salvage excavation and archival recording.</p> <p>Appropriate avoidance measures will be taken for Washington Hotel (site R20) and Ravine Cemetery (R118).</p> <p>A minimum 20 m project construction avoidance buffer will be applied to the Washington Hotel (site R20) structure.</p> <p>No ground disturbance will occur within the cadastral boundary of Ravine Cemetery as shown on Figure 6.20 in the EIS. Some non-ground invasive vegetation clearance will be required at the western and northern boundaries of the cadastral boundary of Ravine Cemetery (refer to bush fire risk and hazard assessment, Appendix T).</p>	Pre-construction, construction	Contractor
Transport				
Speed limit reductions	TRA01	<p>At locations where minimum sight distances cannot be achieved, due to the existing road alignments, the posted speed limits adjacent to the intersections will be reduced to satisfy the sight distance requirements and maintain safe manoeuvring conditions for motorists. These intersections and the proposed speeds are:</p> <ul style="list-style-type: none"> • Snowy Mountains Highway/ Tantangara Road – 60 km/hr • Snowy Mountains Highway/ Rock forest – 80 km/hr • Link Road / Lobs Hole Ravine Road – 60 km/hr • Link Road / Snowy Mountains Highway – 80 km/hr • Based on feedback from community consultation speed limit reductions are also being considered for Snowy Mountains Highway through the township of Adaminaby to 60 km/h. Any speed limit changes will be discussed with the relevant roads authority and documented in the construction traffic management plan as required. 	Construction	Contractor
Intersection upgrades	TRA02	<p>Based on the consideration of construction activities as well as intersection capacity assessment following intersections will be upgraded:</p> <ul style="list-style-type: none"> • Snowy Mountains Highway / Marica access - establish new construction access (BAR / BAL); and • Snowy Mountains Highway /Rock Forest access - establish new construction access (BAR / BAL). 	Construction	Contractor
OSOM vehicle movements	TRA03	<p>The TMPs will be prepared, submitted and approved by the RMS under permit, prior to the commencement of any deliveries considered 'high risk' OSOM movements in accordance with RMS guidelines.</p>	Construction	Contractor

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Impact/risk	ID#	Measure(s)	Timing	Responsibility
Road maintenance	TRA04	<p>Road maintenance will be managed through the following measures:</p> <ul style="list-style-type: none"> • a Road Dilapidation Report will be prepared and approved prior to and following Snowy 2.0 Main Works; • routine defect identification and rectification of the internal road network will be managed as part of the project maintenance procedure; and • internal access roads will be designed in accordance with the relevant vehicle loading requirements. 	Construction	Contractor
Traffic control	TRA05	Road works associated with pavement widening, such as those associated with intersection upgrades, that require temporary occupation of traffic lanes or working adjacent to the road, a Traffic Control Plan (TCP) will be prepared identifying the traffic control measures.	Construction	Contractor
Community consultation	TRA06	Affected communities, visitors and emergency services will be notified in advance of any disruptions to traffic and restriction of access to areas of KNP impacted by project activities.	Pre-construction, construction, operations	Snowy Hydro/ Contractor
Construction traffic management	TRA07	A Construction Traffic Management Plan will be prepared and will include guidelines, general requirements and procedures to be used when construction activities have a potential impact on existing traffic arrangements.	Pre-construction	Contractor
Marine transport	NAV01	<p>The following measures will be implemented to manage interactions between marine transport and public boating activities during construction:</p> <ul style="list-style-type: none"> • public exclusion zones will be established around all in-reservoir construction areas; • an aquatic license will be obtained from RMS for all in-reservoir construction activities and exclusion zones; • all work vessels will be limited to 4 knots; • all vessels and barges will be fitted with Automatic Identification System and comply with all licensing requirements of Australian Maritime Safety Authority and Roads and Maritime Services including specific requirements for Alpine Waters; • any fixed obstruction such as marker buoys and moorings will comply with Roads and Maritime Services requirements and are adequately lit at night; and • notification signs advising of the works and public closures at: <ul style="list-style-type: none"> – the intersection of Snowy Mountains Highway and Tantangara Road; – the intersection of Snowy Mountains Highway and Long Plain Road; and, – Tantangara Boat Ramp. 	Construction	Contractor

Table G.1 Mitigation measures

Impact/risk	ID#	Measure(s)	Timing	Responsibility
Amenity				
Visual and landscape impacts resulting from permanent placement of excavated material	LCV01	The placement of excavated material in Talbingo, Lobs Hole and Tantangara Reservoir will be rehabilitated as guided by the Rehabilitation Strategy and in consultation with NPWS.	Detailed design	Contractor Snowy Hydro NPWS
Visual and landscape impacts resulting from permanent infrastructure	LCV02	Detailed design is to consider: <ul style="list-style-type: none"> materials and finishes that complement or where possible recede into the surrounding landscape; the use of vegetation to screen project elements and re-vegetation of disturbed areas in line with the Rehabilitation Strategy; and lighting to avoid spill that might affect sensitive areas or receivers.	Detailed design	Contractor
Construction impacts	NV01	Prepare a construction noise and vibration management plan (CNVMP) that will address noise and vibration management and mitigation options (where required). The CNVMP will include as a minimum: <ul style="list-style-type: none"> identification of nearby residences and sensitive land uses; a description of approved hours of work and what work will be undertaken; a description of what work practices will be applied to minimise construction noise, in particular how construction noise levels will be managed where predicted noise levels above the NMLs have been identified; a description of what work practices will be applied to minimise vibration; a description of the complaints handling process; and a description of monitoring that is required. 	Construction	Contractor
Exceedance of day and night-time criteria at assessment location: R6	NV02	Affected landholders should be consulted prior to and during construction and should be notified of proposed mitigation measures that will be used to manage construction noise levels to below Interim Construction Noise Guideline (EPA 2009) NMLs where practicable.	Pre-construction Construction	Contractor
Vibration impacts in the vicinity of heritage items	NV03	If the safe working distances are encroached vibration monitoring will be carried out at nearby heritage items. If required, the monitoring system will be fitted with an auditory and visual alarm that triggers when vibration levels reach the nominated criteria. This would indicate if and when alternate work practices should be adopted (such as decrease vibratory intensity, alternate equipment selection, or other measure).	Construction	Contractor

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Impact/risk	ID#	Measure(s)	Timing	Responsibility
Blasting in the vicinity of sensitive receptors and heritage items	NV04	<p>A Blasting Management Plan be prepared including specific details to:</p> <ul style="list-style-type: none"> • address the potential for wet drill and blast activities at Talbingo and Tantangara intakes to ensure potential impacts are managed; • allow for blast practices to be reviewed as needed when blasting occurs in the vicinity of significant heritage items; and <p>allow for blast practices to be reviewed and adapted if complaints are received from residents due to night blasting.</p>	Construction	Contractor
Operational noise	NV05	<p>The design of operational structures, plant and equipment is to consider:</p> <ul style="list-style-type: none"> • All operational plant and equipment including ventilation, pumps, generators, transformers, variable speed drives or other plant associated with the surface structures of Snowy 2.0 shall be subject to detailed acoustic review prior to final specification. • Design shall be assessed against the requirements of the Noise Policy for Industry (EPA 2017) and consider the amenity criteria for passive recreation. <p>Building and equipment shall be designed to satisfy the Snowy Hydro design limits of L_{Aeq} 80dB(A) internal.</p>	Operation	Contractor Snowy Hydro
Hazards				
APZs	HAZ01	APZs are established for all Snowy 2.0 Main Works sites to achieve BAL 29.	Construction and operation	Contractor Snowy Hydro
	HAZ02	Vegetation is managed within operational APZs in perpetuity.	Construction	Contractor
Construction Standards	HAZ03	All buildings proposed within each development site shall comply with BAL-29 construction standards of Australian Standard AS3959-2018 'Construction of buildings in bush fire-prone areas' or NASH Standard (1.7.14 updated) 'National Standard Steel Framed Construction in Bush fire Areas -2014' as appropriate.	Construction	Contractor
On-site Refuge	HAZ04	All On-site Refuge buildings will be within the centre of each Snowy 2.0 Main Works Accommodation site, constructed to BAL-29 construction standard, be of appropriate capacity, signposted and mapped.	Construction	Contractor
Access	HAZ05	Primary and secondary access is maintained, upgraded and/or constructed to comply where possible with performance criteria and/or acceptable solution requirements of PBP 2018 and NSW RFS Fire Trail Standards (NSWRFS 2019). Consultation with the NSW RFS will be undertaken where compliance is constrained.	Construction	Contractor

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Water supply	HAZ06	Water supply requirements for firefighting, including the provision of hydrants and hose reels, is designed, constructed in accordance with the relevant Standards and PBP 2018.	Construction	Contractor
Electricity supply	HAZ07	Electricity supply and distribution is provided in accordance with the requirements of PBP 2018 and the relevant standards.	Construction	Contractor
Emergency management and response	HAZ08	<p>A Bushfire Emergency Management Plan is prepared for the project area and includes responsibilities associated with and details of:</p> <ul style="list-style-type: none"> • site specific hazards and risk at each Snowy 2.0 Main Works site; • procedures to maintain bushfire awareness; • bushfire mitigation measures; • fire preparedness actions; • fire response actions including responses to Emergency Alerts issued by emergency services; and <p>bushfire recovery requirements.</p>	Pre-construction	Contractor
	HAZ09	Each main works accommodation camp shall have a full time, onsite Emergency Response Team (ERT), with an appropriate level of training and equipment to respond to potential bushfire and initial structural fire events.	Construction	Contractor
Air				
Exceedances of air quality criteria for PM ₁₀ and PM _{2.5}	AQ01	Sealed treatment of roads 1 km each side of the Lobs Hole and Tantangara accommodation camps	Pre-construction	Contractor
Social				
General	SOC1	Refine and implement the Social Impact Management and Monitoring Plan (SIMMP) provided in the SIA (Appendix X.1).	As specified by the SIMMP	Contractor Snowy Hydro
General	SOC2	<p>As part of the CSMPs being prepared for Snowy 2.0 Main Works and to support implementation of the SIMMP, incorporate ongoing liaison activities with representatives from Snowy Valleys Council and Snowy Monaro Regional Council to assist monitoring and reporting of change in indicators relating to:</p> <ul style="list-style-type: none"> • population change; • housing availability and affordability; • local employment and training rates; • incidences of traffic congestion; • recreation user visitation; • demand for health, education and welfare services; and • cumulative impacts of Snowy 2.0 Main Works. 	Bi-annual	Contractor SVC SMRC

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Recreational user impacts	REC01	<p>A recreational plan is to be prepared for sites impacted by the project and should:</p> <ul style="list-style-type: none"> • be prepared in consultation with NPWS • detail recreational offsets to be provided by the project such as: <ul style="list-style-type: none"> – permanent boat launch areas in Talbingo and Tantangara Reservoirs – Lobs Hole campground • describe measures to be implemented to minimise impacts during construction, including a process for advance communication to stakeholders and visitors when closures are expected 	Pre-construction	Snowy Hydro
Economics				
Positive local employment	ECON1	Provision of employment opportunities for local workers where they have the necessary skills and experience.	Construction	Snowy Hydro and contractor
Positive local employment	ECON2	Providing and/or collaborating with local education facilities to provide, ongoing training and certification opportunities for local workers to ensure they have the necessary skills to work on the project.	Construction	Contractor
Positive business opportunities	ECON3	<p>Collaborating with SMRC, SVC, economic development organisations, local chambers of commerce and State Government to:</p> <ul style="list-style-type: none"> • inform local businesses of the goods and services required of the project, service provision opportunities and compliance requirements of business to secure contracts; • encourage and provide local businesses on how to meet the requirements of the project for supply contracts; and <p>develop relevant networks to assist qualified local and regional businesses tender for provision of goods and services to support the project.</p>	Construction	Contractor