Australian Government
Department of the Environment and Energy

Title of Proposal - Snowy 2.0 Exploratory Works

Section 1 - Summary of your proposed action

Provide a summary of your proposed action, including any consultations undertaken.

1.1 Project Industry Type

Commonwealth

1.2 Provide a detailed description of the proposed action, including all proposed activities.

Context: Snowy 2.0

Snowy Hydro Limited (Snowy Hydro) proposes to develop Snowy 2.0, a large scale pumped hydro-electric storage and generation project which would increase hydro-electric capacity within the existing Snowy Mountains Hydro-electric Scheme (Snowy Scheme). This would be achieved by establishing a new underground hydro-electric power station that would increase the generation capacity of the Snowy Scheme by almost 50%, providing an additional 2,000 MW generating capacity, and providing approximately 350 GWh of storage available to the National Electricity Market (NEM) at any one time. Snowy 2.0 would link the existing Tantangara and Talbingo reservoirs within the Snowy Scheme through a series of underground tunnels and hydro-electric power station (Snowy 2.0).
Snowy 2.0 is the key energy development for the future NEM and the key enabler of an orderly and secure transition to a low emissions economy.

Proposed action: Exploratory Works

This referral is not for Snowy 2.0. Rather, this referral is for Exploratory Works (described further below) to undertake geotechnical and geophysical works to gather technical and environmental information for Snowy 2.0. The primary purpose of the Exploratory Works is to gain a greater understanding of the conditions at the proposed location of the underground power station, approximately 850 m below ground level. Factors to be evaluated include rock conditions, ground temperature and stress conditions. These Exploratory Works are separate to and do not form part of a stage of Snowy 2.0.

The justification for the Exploratory Works is due to the underground power station being one of, if not the most, challenging areas for the design of Snowy 2.0. Design and construction of excavations of this size and complexity are highly dependent on the rock properties and structural geology at the potential locations. The existing geotechnical investigation program is largely a surface-based program that utilises deep drill holes to access the depths of the proposed underground caverns. This approach is appropriate for determining preliminary subsurface geological information on a broad scale for feasibility studies, but has limitations for detailed design of large underground caverns.

Snowy Hydro (previously the Snowy Mountains Hydro-Electric Authority) designed and constructed both Tumut 1 and Tumut 2 power station complexes. For both Tumut 1 and Tumut 2, exploratory tunnel programs were completed prior to the finalisation of the design and the start of construction of those power stations. It is important to note that the depths of Tumut 1 and Tumut 2 power stations are approximately one third the depth of the proposed Snowy 2.0 power station and situated in a different geological unit.

This Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) assessment is solely focused on the Exploratory Works. A separate EPBC Act referral and assessment will be completed for Snowy 2.0.

The Exploratory Works elements are shown on the figures provided and comprise:
- establishment of an exploratory tunnel to the site of the underground power station for Snowy 2.0;
- establishment of a construction pad and portal;
- excavated rock management;
- subaqueous rock placement;
- establishment of an accommodation camp;
- road establishment and upgrades providing access to the proposed construction areas;
- establishment of barge access infrastructure on Talbingo reservoir;
- supporting power and communication; and
- a program of geotechnical investigation to inform the detailed design.

A supporting document has been provided that further details each of the Exploratory Works elements identified.

1.3 What is the extent and location of your proposed action? Use the polygon tool on the map below to mark the location of your proposed action.

Area	Point	Latitude	Longitude
Proposed action area	1	-35.60126171842	148.27729329429
Proposed action area	2	-35.604611467406	148.44689473472
Proposed action area	3	-35.902733067189	148.44964131675
Proposed action area	4	-35.903845443865	148.28072652183
Proposed action area	5	-35.60126171842	148.27729329429

1.5 Provide a brief physical description of the property on which the proposed action will take place and the location of the proposed action (e.g. proximity to major towns, or for

off-shore actions, shortest distance to mainland).

The Exploratory Works are within the Snowy Mountains, in southern NSW. The Exploratory Works are within the Snowy Valleys Local Government Area (LGA), which was formed in 2016 from the merger of the Tumut and Tumbarumba Shires.

The Exploratory Works occur in the Australian Alps and Southeastern Highlands Interim Biogeographic Regionalisation of Australia (IBRA) regions.

The Exploratory Works, apart from some road upgrades and barge access locations, will be undertaken within the Kosciuszko National Park (KNP). For a large portion of this land, the NSW Government is identified as the controlling authority. Parts of the road upgrade works and the barge access location at the Talbingo Spillway are on freehold land owned by Snowy Hydro.

The majority of Exploratory Works are in the Ravine region of the KNP. This region is between Talbingo Reservoir to the north-west and the Snowy Mountains Highway to the east, which connects Adaminaby and Cooma in the south-east to Talbingo and Tumut to the north-west of the KNP.

Talbingo Reservoir is an existing reservoir that forms part of the Snowy Scheme. The reservoir, approximately 50 km north-west of Adaminaby and approximately 30 km east-north-east of Tumbarumba, is popular for recreational activities such as fishing, water skiing and canoeing.

1.6 What is the size of the proposed action area development footprint (or work area) including disturbance footprint and avoidance footprint (if relevant)?

236 ha total, including 114 ha disturbance footprint and 122 ha avoidance footprint

1.7 Is the proposed action a street address or lot?

Street Address

Lobs Hole Ravine Road

Talbingo Reservoir
Kosciuszko National Park NSW 2627
Australia

1.8 Primary Jurisdiction.

New South Wales

1.9 Has the person proposing to take the action received any Australian Government grant funding to undertake this project?

No

1.10 Is the proposed action subject to local government planning approval?

No

1.11 Provide an estimated start and estimated end date for the proposed action.

Start date 12/2018

End date 09/2021

1.12 Provide details of the context, planning framework and State and/or Local government requirements.

This EPBC Act assessment is for the proposed Exploratory Works. Under the applicable New South Wales laws, the Exploratory Works have the benefit of the Critical State Significant Infrastructure (CSSI) provisions of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). The Exploratory Works will be assessed and determined separately following the established, robust planning processes under the EP&A Act, as they need to be completed to inform the design of Snowy 2.0. A separate EPBC Act assessment will be completed for Snowy 2.0.

NSW assessment process

The EP&A Act and the NSW *Environmental Planning and Assessment Regulation* 2000 (EP&A Regulation) are the primary pieces of legislation regulating environmental planning and assessment in NSW. The legislation is supported by a range of environmental planning instruments (EPIs) including State environmental planning policies (SEPPs) and local environmental plans (LEPs).

The EP&A Act and EP&A Regulation is principally administered by the NSW Department of Planning and Environment (DPE) and local councils. The parts of the EP&A Act and EP&A Regulation that relate to SSI and CSSI are administered by DPE.

Part 5, Division 5.2 of the EP&A Act establishes the assessment and approval regime for State significant infrastructure (SSI) and CSSI. Section 5.13 enables the Minister for Planning to declare SSI to be CSSI if "it is of a category that, in the opinion of the Minister, is essential for the State for economic, environmental or social reasons". On 7 March 2018, the NSW Minister for Planning declared Snowy 2.0 to be CSSI. This declaration came into effect on 9 March 2018 and is included in clause 9 of Schedule 5 of the *State Environmental Planning Policy (State and Regional Development) 2011*.

The NSW assessment and approval process for the Exploratory Works will involve:

- An Environmental Impact Statement (EIS) which will be prepared in accordance with the Secretary's Environmental Assessment Requirements (SEARs) and Part 3 of Schedule 2 of the

EP&A Regulation (as per Section 5.16 of the EP&A Act). The DPE will place the EIS on public exhibition for a minimum of 28 days (as per Section 2.21(2)(d), and 2.22(1), with Schedule 1, Part 1, Division 2, Item 12 of the EP&A Act). During the exhibition period, government agencies and the community will have the opportunity to review the EIS and make a written submission to the DPE for consideration in its assessment of the Exploratory Works.

- At the completion of the public exhibition period, DPE will collate and provide Snowy Hydro with a copy of all submissions received during the exhibition period. After reviewing the submissions, Snowy Hydro will prepare a submissions report that responds to the relevant issues raised. If changes are required to the Exploratory Works as a result of the issues raised or to minimise environmental impact, a preferred infrastructure report (PIR) may also be required.

- If this is required, Snowy Hydro would prepare the PIR to address the changes to the design to minimise impacts and submit this for review to the DPE. The PIR would be made available to the public. Approval from the NSW Minister for Planning is required before Snowy Hydro can proceed with the Exploratory Works (as per Section 5.19 of the EP&A Act).

There are a number of authorisations, approvals and licences under other NSW legislation that may apply to the CSSI, under sections 5.23 and 5.24 of the EP&A Act.

Local government requirements

EPIs (including local environmental plans) do not apply to CSSI by virtue of section 5.22 of the EP&A Act. However, consideration of the instruments that would have applied to the Exploratory Works project area will be undertaken as part of the NSW assessment process.

1.13 Describe any public consultation that has been, is being or will be undertaken, including with Indigenous stakeholders.

Snowy Hydro has started initial consultation with stakeholders including local, State and Commonwealth government agencies, local social infrastructure providers, the community, and interest groups with regard to the Exploratory Works (and Snowy 2.0 more broadly).

- Public drop-in sessions were held in November 2017 at Adaminaby, Cooma, Talbingo and Tumut to provide an overview of the feasibility study and Snowy 2.0;

- Public meetings and drop-in sessions were held in April and May 2018 in Adaminaby, Cooma, Jindabyne, Talbingo, Tumbarumba and Tumut to provide an overview of Exploratory Works;
- Interviews were held with social infrastructure providers in Adaminaby, Batlow, Cabramurra, Cooma, Providence Portal, Talbingo, Tumbarumba and Tumut throughout March 2018 (child care centres, medical centres and hospital, accommodation providers, local schools, etc) to inform the social impact assessment for the Exploratory Works (and Snowy 2.0 more broadly);
- Interviews and surveys with recreational users of KNP and Talbingo Reservoir were conducted in March and April 2018 for the Exploratory Works (and Snowy 2.0 more broadly);
- Government agency meetings for the Exploratory Works were undertaken in February through

to May 2018, including meetings with Commonwealth Department of Environment and Energy (DEE) (with regard to EPBC referral), NSW DPE (with regard to EIS), NSW National Parks and Wildlife Service (NPWS) (with regard to KNP and Exploratory Works elements and impacts), as well as NSW Office of Environment and Heritage (OEH), NSW Environment Protection Authority (EPA), NSW Department of Primary Industry - Lands and Water (DPI Water), Snowy Valleys Council and Snowy Monaro Regional Council; and
- Meetings with the National Parks and Wildlife Association Regional Advisory Committee, Nature Conservation Council and National Parks Association, with respect to the Exploratory Works elements and impacts.

Information on Exploratory Works (and Snowy 2.0 more broadly) has been provided in information booklets and on Snowy Hydro's website.

Consultation for the Exploratory Works is ongoing and will continue to be undertaken as part of the EIS process for the Exploratory Works. Consultation to be undertaken includes:

- Community meetings, briefings and drop-in sessions;
- Meetings and briefings with interest groups;
- Continued engagement and consultation with local, State and Commonwealth government agencies; and
- Public engagement as part of the NSW EIS public exhibition and response to submissions process.

A formal process of Aboriginal community consultation has been conducted as a component of the NSW assessment for Exploratory Works in accordance with the guidelines set out in the NSW OEH's *Aboriginal cultural heritage consultation requirements for proponents 2010* (NSW DECCW 2010). There are five Registered Aboriginal Parties (RAPS) for the project:

- Iris White, on behalf of the Ngarigo people;
- Koomurri Ngunawal Aboriginal Corporation;
- Corroboree Aboriginal Corporation;
- Bega Local Aboriginal Land Council; and
- Lindsay Connolly, Steve Connolly and Ramsey Freeman.

Additional consultation has also been undertaken by Snowy Hydro including presentation to the Northern and Southern Memorandum of Understanding (MOU) Kosciusko Advisory Groups in September 2017, and presentation to the Northern MOU Kosciusko Advisory Group (relevant to the Exploratory Works) in April 2018.

1.14 Describe any environmental impact assessments that have been or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project.

As described in section 1.12 of this referral, assessment for the Exploratory Works will be undertaken under the Commonwealth EPBC Act and the NSW EP&A Act. Environmental impact assessments that have been or will be carried are outlined below.

Commonwealth

Environmental impacts of the project with regard to Commonwealth matters are documented in the attached assessment reports:

- EPBC Assessment: Matters of National Environmental Significance Report (EMM 2018a) - attached/provided with this Referral
- EPBC Assessment: National Heritage Assessment (NSW Archaeology 2018)
- attached/provided with this Referral

NSW

A preliminary environmental assessment (PEA) has been prepared and submitted to DPE on 23 March 2018 (and is provided with this referral). The PEA identifies the environmental issues associated with the Exploratory Works that are considered to require further investigation and assessment. In response to the PEA, DPE have issued SEARs on 18 May 2018, to be addressed in the EIS.

Environmental impacts of the Exploratory Works will be documented in the EIS, and supported by technical specialist studies where required. The EIS and technical studies are required to respond to the SEARs. Technical studies to be prepared include:

- Biodiversity Development Assessment Report (BDAR) prepared in line with the NSW *Biodiversity Conservation Act 2016*
- Aboriginal Cultural Heritage Assessment Report (ACHAR) prepared in line with Part 6 of the NSW *National Parks and Wildlife Act 1974*
- Historic heritage assessment
- Groundwater assessment
- Surface water and hydrology assessment
- Noise and vibration impact assessment
- Air quality impact assessment
- Traffic and transport assessment
- Social and economic assessments.

The EIS and supporting technical studies will be made available to the public when DPE places these materials on public exhibition later this year.

1.15 Is this action part of a staged development (or a component of a larger project)?

No

1.16 Is the proposed action related to other actions or proposals in the region?

No

Section 2 - Matters of National Environmental Significance

Describe the affected area and the likely impacts of the proposal, emphasising the relevant matters protected by the EPBC Act. Refer to relevant maps as appropriate. The interactive map tool can help determine whether matters of national environmental significance or other matters protected by the EPBC Act are likely to occur in your area of interest. Consideration of likely impacts should include both direct and indirect impacts.

Your assessment of likely impacts should consider whether a bioregional plan is relevant to your proposal. The following resources can assist you in your assessment of likely impacts:

• Profiles of relevant species/communities (where available), that will assist in the identification of whether there is likely to be a significant impact on them if the proposal proceeds;

• Significant Impact Guidelines 1.1 – Matters of National Environmental Significance;

• Significant Impact Guideline 1.2 – Actions on, or impacting upon, Commonwealth land and Actions by Commonwealth Agencies.

2.1 Is the proposed action likely to have ANY direct or indirect impact on the values of any World Heritage properties?

No

2.2 Is the proposed action likely to have ANY direct or indirect impact on the values of any National Heritage places?

Yes

2.2.1 Impact table

Place	Impact
Australian Alps National Parks and Reserves	A full assessment of this National heritage place is provided in the attached Assessment of Impacts on National Heritage Places (NSW Archaeology 2018).
Snowy Mountains Scheme	A full assessment of this National heritage place is provided in the attached Assessment of Impacts on National Heritage Places (NSW Archaeology 2018).

2.2.2 Do you consider this impact to be significant?

No

2.3 Is the proposed action likely to have ANY direct or indirect impact on the ecological character of a Ramsar wetland?

No

2.4 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed species or any threatened ecological community, or their habitat?

Yes

2.4.1 Impact table

Species	Impact
Smoky Mouse (Pseudomys fumeus)	A full assessment of this threatened species is provided in the attached Matters of National Environmental Significance Report: Species and Communities (EMM 2018a).
Booroolong Frog (Litoria booroolongensis)	A full assessment of this threatened species is provided in the attached Matters of National Environmental Significance Report: Species and Communities (EMM 2018a).
Spotted-tail Quoll (Dasyurus maculatus)	A full assessment of this threatened species is provided in the attached Matters of National Environmental Significance Report: Species and Communities (EMM 2018a).
Macquarie Perch (Macquaria australasica)	A full assessment of this threatened species is provided in the attached Matters of National Environmental Significance Report: Species and Communities (EMM 2018a).
Trout Cod (Maccullochella macquariensis)	A full assessment of this threatened species is provided in the attached Matters of National Environmental Significance Report: Species and Communities (EMM 2018a).

2.4.2 Do you consider this impact to be significant?

No

2.5 Is the proposed action likely to have ANY direct or indirect impact on the members of any listed migratory species, or their habitat?

No

2.6 Is the proposed action to be undertaken in a marine environment (outside Commonwealth marine areas)?

No

2.7 Is the proposed action to be taken on or near Commonwealth land?

No

2.8 Is the proposed action taking place in the Great Barrier Reef Marine Park?

No

2.9 Is the proposed action likely to have ANY direct or indirect impact on a water resource related to coal/gas/mining?

No

2.10 Is the proposed action a nuclear action?

No

2.11 Is the proposed action to be taken by the Commonwealth agency?

Yes

2.11.1 Describe the nature and extent of the likely impact on the whole of the environment.

It is noted that it is expected that Snowy Hydro Limited will become a 'Commonwealth agency' for the purposes of the EPBC Act during the assessment (or following the assessment) of this referral.

As at the date of this referral, Snowy Hydro Limited is a Corporations Law company with three shareholders comprised of the NSW Government (58%), Victorian Government (29%) and Commonwealth Government (13%).

On 21 March 2018, the Commonwealth entered into separate Share Sale Agreements with the States of NSW and Victoria respectively, for the acquisition by the Commonwealth of the shares in Snowy Hydro Limited held by each State. The Share Sale Agreements each provide that completion is to occur on 29 June 2018, with share transfers to be registered on 1 July 2018.

Following registration of the share transfers on 1 July 2018, the Commonwealth will hold 100% of the issued shares in Snowy Hydro Limited. Consequently, subject to obtaining the necessary approvals, at the date that Snowy Hydro Limited proposes to carry out the Exploratory Works,

Snowy Hydro Limited will be a "Commonwealth agency" as defined under s528 of the EPBC Act.

For nature and extent of likely impact on the whole environment, see attached PEA (EMM 2018b) for the Exploratory Works submitted to DPE.

The PEA was prepared to identify the environmental issues associated with the Exploratory Works that are considered to require further investigation and assessment. A number of studies have commenced with regard to informing the EIS for Exploratory Works, and have contributed to avoidance and mitigation principles incorporated into the refinement of the design. Further management measures will be identified to mitigate potential impacts of the action on the environment.

2.11.2 Do you consider this impact to be significant?

No

2.12 Is the proposed action to be undertaken in a Commonwealth Heritage Place Overseas?

No

2.13 Is the proposed action likely to have ANY direct or indirect impact on any part of the environment in the Commonwealth marine area?

No

Section 3 - Description of the project area

Provide a description of the project area and the affected area, including information about the following features (where relevant to the project area and/or affected area, and to the extent not otherwise addressed in Section 2).

3.1 Describe the flora and fauna relevant to the project area.

The Exploratory Works PEA describes the existing environment (EMM 2018b), with further detail on threatened species under the EPBC Act provided in the attached Matters of National Environmental Significance Report: Species and Communities (EMM 2018a).

3.2 Describe the hydrology relevant to the project area (including water flows).

The Exploratory Works PEA describes the existing environment of the proposed action area, with further information provided below.

The Yarrangobilly River is a major regional watercourse that flows into the Talbingo Reservoir, downstream of the Exploratory Works area. The Yarrangobilly River catchment has an area of 271 km2 that is wholly within the KNP. The catchment is characterised by a range of subalpine grasslands and woodlands and montane dry sclerophyll forests. Elevations range from 550 m AHD at Lobs Hole to more than 1,400 m AHD in the head water catchments. There are no dams or flow diversions in the Yarrangobilly River catchment upstream of the Talbingo Reservoir.

Median rainfall within the Yarrangobilly River Catchment ranges from 1350 mm/year in the head water catchments to the 950 mm/year at Ravine. The spatial variation in median rainfall generally reflects the variation in topography within the catchment.

Rainfall varies seasonally. In winter and spring there is a predominance of westerly weather that results in regular precipitation. Summer and autumn are generally drier. However, rainfall is generally of higher intensity and of shorter duration than winter rainfall.

Stream flows in the Yarrangobilly River have been continuously recorded from 1972 at a Snowy Hydro-operated stream gauge at Lobs Hole (gauge 410574). The stream flow statistics show that the majority of annual stream flows occur in late winter and early spring. Stream flows are at their lowest in late summer and generally remain low until the winter months. This is a typical regime for rivers in the Australian Alps.

The lowest monthly flow on record was 390 ML/month, which occurred in February 1983 following a dry winter and spring. This indicates that permanent stream flows are maintained in the river during drought conditions. Maximum flows are generally associated with flood events, which have occurred in all seasons. The largest flood on record occurred in October 2010.

3.3 Describe the soil and vegetation characteristics relevant to the project area.

The Exploratory Works PEA (EMM 2018b) describes the existing environment of the proposed action area. Ground truthed vegetation communities are identified in the provided Matters of National Environmental Significance Report: Species and Communities (EMM 2018a).

Three main soil types have been identified in the project area through desktop assessment: Rudosols, Tenosols and Organosols. Kurosols and Dermosols were also identified in the proposed action area but with lesser overall coverage.

Tenosols and Rudosols are associated with high exposed ridges and elevated stony slopes. Dermosols are found on the upper slopes with subsoil clay content increasing at down slope. Kurosols are found on the lower slopes and tableland areas adjacent to the mountains. Organosols are found in basins and depressions in valley floors where water collects all year round.

3.4 Describe any outstanding natural features and/or any other important or unique values relevant to the project area.

The landscapes of KNP have been shaped from a mosaic of different rock types, each of which has contributed a characteristic appearance to the land. The attached Assessment of Impacts on National Heritage Places (NSW Archaeology 2018) provides a description of the biodiversity, geodiversity, and heritage values of the KNP that are relevant to the proposed action area.

3.5 Describe the status of native vegetation relevant to the project area.

Ground truthed vegetation communities are identified in the provided Matters of National Environmental Significance Report: Species and Communities (EMM 2018a).

3.6 Describe the gradient (or depth range if action is to be taken in a marine area) relevant to the project area.

Barge access is proposed to provide an alternative to road access. New barge ramps are required for Talbingo Reservoir, one at the Spillway at the north end of the reservoir and one in Middle Bay at the south end of the reservoir. The dedicated barge ramps will have a slope of approximately 1 vertical to 10 horizontal (1V: 10H).

Construction of the ramps will involve:

- site establishment and cut and fill and/or dredging to form the barge ramp;
- installation of precast concrete planks to form the surface of the ramps;
- construction of land-side laydown areas
- installation of bollards for mooring lines; and
- minor dredging to allow barge access at the reservoir minimum operating level (MOL).

A channel will be dredged in Middle Bay to a depth of 532 m AHD (2.3 m below the MOL).

3.7 Describe the current condition of the environment relevant to the project area.

The Exploratory Works PEA (EMM 2018b) describes the existing environment of the proposed action area. A description of the condition of the KNP with regard to the proposed action area is provided in the Assessment of Impacts on National Heritage Places (NSW Archaeology 2018).

3.8 Describe any Commonwealth Heritage Places or other places recognised as having heritage values relevant to the project area.

There are no Commonwealth Heritage Places relevant to the proposed action. Heritage items and values relevant to the project area are shown in the Exploratory Works PEA (EMM 2018b), and the Assessment of Impacts on National Heritage Places (NSW Archaeology 2018).

3.9 Describe any Indigenous heritage values relevant to the project area.

The Snowy Mountains is country to several groups and many Aboriginal people have cultural and spiritual associations that have long histories embodied in objects which can be seen on the ground and other intangible values related both to the past and current concerns and aspirations. The proposed action itself is within the lands of the Wolgalu people (Boot 2000).

The high country has been the subject archaeological survey and assessment over many decades. However, only one study only has been undertaken within the immediate area of the proposed activities. This study (the Kosciusko Baseline Heritage Study 1991) resulted in the recording of AHIMS sites at Lobs Hole Ravine (Johnson 1992). Unfortunately, the extensive field surveys undertaken during that assessment were not documented or analysed in detail. A number of other studies however have been undertaken for the surrounding areas.

An overview of registered Indigenous heritage sites relevant to the proposed action area are identified in the Exploratory Works PEA (EMM 2018b). Further work is being undertaken as part of the EIS to better understand Indigenous heritage values relevant to the proposed action area, including a process of Aboriginal community consultation in accordance with the NSW OEH Aboriginal cultural heritage consultation requirements for proponents 2010 (NSW DECCW 2010).

3.10 Describe the tenure of the action area (e.g. freehold, leasehold) relevant to the project area.

A map of applicable land tenure information for the Exploratory Works is provided/attached to this referral. The Exploratory Works, apart from some road upgrades and barge access infrastructure, will be undertaken within the KNP. For a large portion of this land, the NSW Government is identified as the controlling authority. Parts of the road upgrade works and the

barge access location at the Talbingo Spillway are on freehold land owned by Snowy Hydro.

3.11 Describe any existing or any proposed uses relevant to the project area.

The Exploratory Works would predominantly be in the Ravine region of the KNP. The KNP has several recreational values and uses including bushwalking, mountain biking, horse riding, boating, fishing and cross-country skiing. The Ravine region of the KNP is between Talbingo Reservoir to the north-west and the Snowy Mountains Highway to the east which connects Adaminaby and Cooma in the south-east to Talbingo and Tumut to the north-west of the KNP. Talbingo Reservoir is an existing reservoir that forms part of the Snowy Scheme. The reservoir, approximately 50 km north-west of Adaminaby and approximately 30 km east-north-east of the township of Tumbarumba, is popular for recreational activities such as fishing, water skiing and canoeing. Other attractions and places of interest beyond the vicinity of the Exploratory Works project area include Selwyn Snow Resort, the Yarrangobilly Caves complex and Kiandra. Kiandra has special significance as the first place in Australia where recreational skiing was undertaken and is also an old gold rush town.

Section 4 - Measures to avoid or reduce impacts

Provide a description of measures that will be implemented to avoid, reduce, manage or offset any relevant impacts of the action. Include, if appropriate, any relevant reports or technical advice relating to the feasibility and effectiveness of the proposed measures.

Examples of relevant measures to avoid or reduce impacts may include the timing of works, avoidance of important habitat, specific design measures, or adoption of specific work practices.

4.1 Describe the measures you will undertake to avoid or reduce impact from your proposed action.

The development of Exploratory Works has been underpinned by the guiding design principles of avoiding and minimising environmental impacts wherever possible. These guiding principles have resulted in an optimised design for the proposed action which avoids significant impacts to MNES.

Detail on avoidance and minimisation of impacts to threatened species under the EPBC Act is provided in section 5.2 of the attached Matters of National Environmental Significance Report: Species and Communities (EMM 2018a).

4.2 For matters protected by the EPBC Act that may be affected by the proposed action, describe the proposed environmental outcomes to be achieved.

Detail on environmental management principles to be achieved for matters protected under the EPBC Act is provided in the attached Matters of National Environmental Significance Report: Species and Communities (EMM 2018a).

Section 5 – Conclusion on the likelihood of significant impacts

A checkbox tick identifies each of the matters of National Environmental Significance you identified in section 2 of this application as likely to be a significant impact.

Review the matters you have identified below. If a matter ticked below has been incorrectly identified you will need to return to Section 2 to edit.

5.1.1 World Heritage Properties

No

5.1.2 National Heritage Places

No

5.1.3 Wetlands of International Importance (declared Ramsar Wetlands)

No

5.1.4 Listed threatened species or any threatened ecological community

No

5.1.5 Listed migratory species

No

5.1.6 Commonwealth marine environment

No

5.1.7 Protection of the environment from actions involving Commonwealth land

No

5.1.8 Great Barrier Reef Marine Park

No

5.1.9 A water resource, in relation to coal/gas/mining

No

5.1.10 Protection of the environment from nuclear actions

No

5.1.11 Protection of the environment from Commonwealth actions

No

5.1.12 Commonwealth Heritage places overseas

No

5.2 If no significant matters are identified, provide the key reasons why you think the proposed action is not likely to have a significant impact on a matter protected under the EPBC Act and therefore not a controlled action.

Commonwealth action

The PEA provided with this referral outlines the environmental issues associated with the project that are considered to require further investigation and assessment. A number of studies have commenced with regard to informing the EIS for Exploratory Works, and have contributed to avoidance and minimisation principles incorporated into the refinement of the design. Further management measures will be identified to mitigate potential impacts of the action on the environment in the EIS.

Key avoidance and minimisation principles adopted through the design process include:

- applying an exclusion buffer of 50 m around the Yarrangobilly River, to avoid and minimise impacts to threatened frog species and habitat;
- minimising and refining the Exploratory Works footprint where feasible to minimise the extent of clearing required;
- limiting and minimising clearing along Upper Lobs Hole Ravine Road, in the areas of known Smoky Mouse habitat;
- limiting the proposed hours of use along Lobs Hole Ravine Road, in the areas of known Smoky Mouse habitat;
- excluding as far as possible activities on the former Lobs Hole Mine to minimise risks of the Exploratory Works on contaminated land;
- designing a rock emplacement area that will treat potential acid forming properties of the excavated material, to ensure there are no detrimental impacts to the downstream environment;
- identifying water management principles that can be adopted through design to minimise impacts; and
- consulting with relevant stakeholders, in particular NPWS and OEH, to ensure desired management outcomes are understood.

The majority of these measures are further described in the provided technical report (EMM 2018a).

Threatened Species

A substantive process has been undertaken to identify the biodiversity values within the Exploratory Works assessment area, including:

- desktop assessments and a candidate species assessment, to identify species requiring further assessment and consideration;
- preliminary assessment, including detailed vegetation mapping and habitat assessment;
- targeted flora and fauna surveys, either meeting or exceeding NSW and Commonwealth survey guidelines;
- a robust impact avoidance and minimisation strategy through avoidance of key constraints identified during the process outlined above; and
- commitment to a substantive list of controls to ensure any unavoidable impacts are further minimised and mitigated.

The design of the Exploratory Works has seen significant effort expended on avoiding and minimising impacts to key biodiversity features. This has resulted in direct impacts to Smoky Mouse habitat being avoided, and only minor direct impacts to Booroolong Frog habitat in three degraded locations. Impacts to Spotted-tail Quoll habitat have been kept to degraded areas, while impacts to Macquarie Perch and Trout Cod will be localised.

Indirect impacts to Smoky Mouse habitat have also largely been avoided, with suitable controls implemented to avoid indirect impacts from fauna vehicle strike, weeds, pathogens and increased feral animal activity. These control measures are supported by species experts in OEH (L. Broome pers. comm.).

As outlined in the Matters of National Environmental Significance Report: Species and Communities (EMM 2018a), there are significant controls to be implemented to avoid impacts to water quality and quantity. No water will be taken from the Yarrangobilly River, meaning no changes to water quantity as a result of the Exploratory Works. As a result of the controls incorporated into the design of the proposed action, the risk of water quality impacts to Booroolong Frog and Macquarie Perch habitat is considered low to negligible and would not result in a significant impact.

Overall, it is considered that the Exploratory Works are unlikely to result in a significant impact to threatened species.

National Heritage Places

The proposed action occurs within two National Heritage places, the Australian Alps National Parks and Reserves and the Snowy Mountains Scheme. These are places with outstanding heritage, and include natural, Indigenous and historic values.

The assessment has concluded that the proposed action will not have a significant impact on the National Heritage values of either National Heritage place. The proposed action would not

cause one or more National Heritage value to be lost, degraded or damaged, or notably altered, modified, obscured or diminished.

Section 6 – Environmental record of the person proposing to take the action

Provide details of any proceedings under Commonwealth, State or Territory law against the person proposing to take the action that pertain to the protection of the environment or the conservation and sustainable use of natural resources.

6.1 Does the person taking the action have a satisfactory record of responsible environmental management? Please explain in further detail.

Snowy Hydro has an excellent track record of responsible environmental management and compliance with environmental laws, permits and approvals.

Snowy Hydro's operations are subject to environmental laws and regulations as well as project and site-specific environmental permits and approvals issued at the Federal, State and Local Government levels. These include the KNP Plan of Management and the Snowy Management Plan for operations within KNP; Environmental Protection Licences (EPLs) and environmental authorisations applicable to each of Snowy Hydro's generation facilities; and the Snowy Water Licence which prescribes rights and obligations with respect to the collection, diversion, storage, use and release of water within the Snow Scheme and the release of environmental flows.

Snowy Hydro operates in accordance with a number of EPLs and environmental authorisations that specify the conditions relating to pollution prevention and monitoring.

Snowy Hydro has the following EPLs and environmental authorisations:

- EPL 10515 Scheme Wide Operations
- EPL 10379 Cabramurra Town Sewage Treatment Plant
- EPL 13036 Colongra Power Station
- EPL 13161 Transport of Trackable Waste
- EPL 21051 Helicopter related activities
- Valley Power Waste Discharge Licence
- Laverton North Waste Discharge Licence
- Lonsdale & Port Stanvac Power Station EPL
- Angaston Power Station EPL

For Snowy Scheme operations licensed under EPLs 10515, 10379 and 13161, a Pollution Incident Response Management Plan (PIRMP) has been developed and made publicly available in accordance with Part 3A clause 98D(2) & 98D(3) of the NSW *Protection of the Environment Operations (General) Amendment (Pollution Incident Response Management Plans) Regulation 2012* for Snowy Hydro Limited.

All licences and the PIRMP for Snowy Scheme operations are located on the Snowy Hydro website (https://www.snowyhydro.com.au/our-energy/environment/environment-protection-

licences/) as well as the NSW EPA's register under the *Protection of the Environment Operations Act 1997* (POEO Act).

6.2 Provide details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against either (a) the person proposing to take the action or, (b) if a permit has been applied for in relation to the action – the person making the application.

EPA v Snowy Hydro Limited (2008) 162 LGERA 273 – Land and Environment Court of NSW: In September 2008, as occupier, Snowy Hydro was convicted and fined $100,000 + prosecutor's costs for an offence against s120(1) of the POEO Act, regarding an incident that occurred at Jindabyne Dam.

The fine was imposed for causing water pollution to the Snowy River. This resulted from an incident during works to upgrade the Jindabyne Dam spillway in 2006. Snowy Hydro was prosecuted as occupier of the site, and its principal contractor, Fulton Hogan, who carried out the works which introduced the pollutants to the river, was also convicted for the same offence (EPA v Fulton Hogan Pty Ltd [2008] NSWLEC 268).

6.3 If it is a corporation undertaking the action will the action be taken in accordance with the corporation's environmental policy and framework?

Yes

6.3.1 If the person taking the action is a corporation, please provide details of the corporation's environmental policy and planning framework.

An Environmental Management System (EMS) has been in place at Snowy Hydro since June 2000 and independently certified to the ISO14001 Standard. Further information is available on Snowy Hydro's website (https://www.snowyhydro.com.au/our-energy/environment/environmental-systems-processes/).

The EMS ensures Snowy Hydro stands by its environmental commitments by:

- Setting clear direction through the Environment Policy and Objectives
- Identifying environmental risks and legal obligations
- Putting in place effective operational controls
- Checking and correcting as they go
- Reviewing and updating policies and procedures

6.4 Has the person taking the action previously referred an action under the EPBC Act, or been responsible for undertaking an action referred under the EPBC Act?

Yes

6.4.1 EPBC Act No and/or Name of Proposal.

2000/112 - Snowy Mountain Hydro-electric Authority (SMHEA)/Water Management/Kosciuszko National Park/NSW/Murray 1 Pressure Tunnel

Section 7 – Information sources

You are required to provide the references used in preparing the referral including the reliability of the source.

7.1 List references used in preparing the referral (please provide the reference source reliability and any uncertainties of source).

Reference Source	Reliability	Uncertainties
EMM 2018a. Matters of National Environmental Significance Report: Species and Communities, EMM Consulting Pty Ltd, April 2018	EMM in this report has relied on a range of published literature, industry guidelines, project generated technical reports and field investigation. The report has been prepared by suitably qualified professional ecologists. As such, the reliability of the data used for this referral is considered to be high.	N/A
EMM 2018b. Preliminary Environmental Assessment Exploratory Works, March 2018, EMM Consulting Pty Ltd, prepared for Snowy Hydro Limited, 15 March 2018	EMM has relied upon publically available desktop information such as the NSW BioNet Atlas, Aboriginal Heritage Information Management System (AHIMS) database, and other published literature and reports. These sources are listed within the PEA document. The report has been prepared by suitably qualified environmental consultants. As such, a reasonably high level of reliability is assumed in the context of the desktop level of information presented.	Any uncertainties identified in the cited text should be considered in the context of the uncertainties of those database and desktop results presented.
NSW Archaeology 2018. Snowy 2.0 Exploratory Works Assessment of Impacts on National Heritage Places, NSW Archaeology Pty Ltd, April 2018	NSW Archaeology in this report has relied on a range of published literature, industry guidelines, project generated technical reports and field investigation. The report has been prepared by a suitably qualified professional	N/A

Reference Source	Reliability	Uncertainties
	archaeologist. As such, the reliability of the data used for this referral is considered to be high.	
Snowy Hydro Limited, 2017. Snowy 2.0 Feasibility Study Report	The report is a feasibility study outlining the concept of Snowy 2.0. The context of the report is to provide an understanding of the overall project to a feasibility level.	The report is a feasibility study outlining the concept of Snowy 2.0 and is subject to the limitations noted in that report.

Section 8 – Proposed alternatives

You are required to complete this section if you have any feasible alternatives to taking the proposed action (including not taking the action) that were considered but not proposed.

8.0 Provide a description of the feasible alternative?

Snowy Hydro considered a range of alternative solutions, layouts and locations for the various elements of the Exploratory Works. The alternatives that have been assessed as part of the Exploratory Works are:

- An assessment of the consequences of the 'Do Nothing' option;
- Refinements to the location of the Exploratory tunnel
- Alternative road upgrades, extensions and alignments;
- Alternative access arrangements, including barge loading and unloading arrangements; and
- Power supply and communications alternatives.

Do nothing

The do nothing alternative is to proceed with the approval for Snowy 2.0 without a better understanding of the site conditions (rock conditions, ground temperature and stress conditions) for the largest proposed cavern housing the power station. The works would be undertaken within the Ravine Beds rock unit, which has not been intersected by any other excavation or tunnel for the existing Snowy Scheme. This is one of, if not the highest risk areas for Snowy 2.0, and without this condition information Snowy 2.0 may not be considered feasible for construction. This do nothing alternative is not proposed due to the great advantage of the Exploratory Works, which will provide a significant amount of detailed geological conditions that will be documented during the excavation of the tunnel itself. This information is vital to and will feed into the design of Snowy 2.0.

Location of the exploratory tunnel / Location of the Machine Hall

During the course of the design process, a number of alternatives were proposed for both the end point of the tunnel (at the proposed location of the Machine Hall cavern) and the location of the portal (allowing surface access to the tunnel). The end result is the proposed exploratory tunnel portal at Lobs Hole and a tunnel that is shorter in length, optimising the effort required in constructing the exploratory tunnel and the quantity of detailed geotechnical data that will be documented during the excavation of the tunnel itself and during the geotechnical investigations to follow.

Alternative road upgrades, extensions and alignments

Given the relative isolation of Lobs Hole, where most of the Exploratory Works construction activity is to occur, the area's steep and difficult terrain and the low level of service provided by

existing roads and tracks, access was always going to provide challenges. An alternative access road upgrade was proposed which comprised an alignment option west of Upper Lobs Hole Ravine Road, as shown in the PEA (EMM 2018b). However, this option was later discounted as the required upgrades would result in significant impacts to Smoky Mouse habitat (a critically endangered species) due to the limited avoidance and mitigation potential available for this option.

Alternative barge loading and unloading arrangements

During concept development, it became apparent that the topographical constraints of the land meant that road access to the location of the exploratory tunnel portal and the facilities at Lobs Hole would be extremely limited for overlong and oversized loads. Further road upgrades, extensions and alternative alignments were investigated, however no practical level of road upgrades would be sufficient to provide road access for some of the plant and construction equipment required for the Exploratory Works.

As a response, the use of Talbingo Reservoir was explored to provide overwater access between the northern end of the reservoir, where there is all weather road access between an existing boat ramp and the Snowy Mountain Highway via Talbingo township, and at Middle Bay near Lobs Hole.

Northern Talbingo Reservoir

It is proposed that the location of the existing spillway at the northern end of the reservoir be utilised for barge access facilities. Alternatives considered for these facilities included:

- provision of a dedicated barging facility in the spillway area which can be isolated from the public and include lay down areas and associated facilities;
- provision of a ramp excavated into emplaced spoil from the original construction of the spillway; and
- piled wharf, pontoon and hinged gangway constructions; all of which were discounted early in the design process.

Southern Talbingo Reservoir

Middle Bay was identified as the optimal location for the barge facilities at the southern end of the reservoir. The PEA (EMM 2018b) included several possible locations for ‘barge access and wharf infrastructure’ in the Middle Bay area. Like the assessment of options for the facilities proposed for the northern end of Talbingo Reservoir, consideration was given to the options of piled wharf, pontoon and hinged gangway, with preference given to a barge ramp on the basis of cost and schedule benefits.

Power supply and communications alternatives

Power supply

The alternatives considered for the supply of power included:

- installation of permanent and construction power supply in Lobs Hole; and
- diesel generators.

The provision of a permanent power supply for Exploratory Works would require installation of a small substation in Lobs Hole as well as cutting into the existing 330 kV UTSS to Yass line. Transmission lines would then be provided to each of the construction zones (camp, portal and Middle Bay facilities).

This alternative was not feasible for the Exploratory Works phase of development because of the required lead time (up to 18 months for application lodgement and assessment) and because the connection process would require that the 330 kV line is taken out of service for an extended period. As a result, this alternative was not adopted due to the time constraints and exploratory nature of these works.

Communications

The topographic features of the area and relative isolation of the location of the Exploratory Works posed challenges for the provision of suitable communications. A number of alternative means of securing land-based communications were considered and discarded during the development of the Exploratory Works. These included:

- Provision of microwave towers providing line-of-site from the existing network to Lobs Hole and the exploratory tunnel. This alternative was not progressed as the provision of towers would not provide a suitable connection for the operations phase of Exploratory Works and because this alternative would require a substantial construction footprint within the KNP;
- New optic fibre line above the existing 330 kv Transgrid line. This alternative would require a three month outage of the main transmission line, which is not feasible and therefore discounted; and
- New optic fibre line along Lobs Hole Ravine Road from Cabramurra. This alternative would require full trenching of cable from Cabramurra to Lobs Hole, a distance of about 40 km.

The preferred alternative for the establishment of communication infrastructure servicing the Exploratory Works is to provide a fibre optic link by way of a submarine cable across Talbingo Reservoir from Tumut 3 Power Station to Middle Bay, then via a buried conduit to Lobs Hole and the exploratory tunnel and portal.

8.1 Select the relevant alternatives related to your proposed action.

Activities

8.9 Describe any public consultation that has been, is being or will be undertaken (including with Indigenous stakeholders).

Public consultation was described in Section 1.13. Consultation on alternatives has been undertaken primarily with relevant government agencies: DEE, DPE, OEH, and NPWS. Consultation has been aimed at refining the Exploratory Works to avoid and minimise impacts to sensitive environments as much as possible. This formed part of the key-decision making process.

The outcomes of consultation with government agencies on alternatives to avoid and minimise impacts to sensitive environments has been communicated with the community and interest groups where possible.

8.10 Describe any environmental impact assessments that have been, is being or will be carried out under Commonwealth, State or Territory legislation including relevant impacts of the project for the alternative.

Two reports have been prepared to support this referral (EMM 2018a; NSW Archaeology 2018) and describe the impacts that have been avoided due to refinement of the Exploratory Works and discounting of other options and alternatives. Further description and assessment of the alternatives considered will be documented in the EIS prepared for the Exploratory Works under the EP&A Act.

8.12 Nominate any matters of National Environmental Significance that are likely to be impacted by this alternative proposal by ticking the relevant checkboxes.

- National Heritage Places
- Listed threatened species or any threatened ecological community
- Listed migratory species

8.12.1 Please provide further information on potential impacts of matters of environmental significance that you have nominated above.

Two supporting documents have been prepared for this referral to describe the environmental impacts of the Exploratory Works: Matters of National Environmental Significance Report: Species and Communities (EMM 2018a) and Assessment of Impacts on National Heritage Places (NSW Archaeology 2018). These documents describe the impacts of alternatives to the proposed action that have been avoided due to the increased environmental impacts that would arise if they were adopted by the proposed action.

8.13 Describe any impacts on the flora and fauna relevant to the alternative proposal.

The attached Matters of National Environmental Significance Report: Species and Communities (EMM 2018a) describes the impacts associated with alternatives to the proposed action, which would be far greater than those adopted by the proposed action.

8.26 What are the proposed measures for any alternative action to avoid or reduce impact?

The attached Matters of National Environmental Significance Report: Species and Communities (EMM 2018a) describes the impacts associated with alternatives to the proposed action. The alternative action is considered to have greater impacts and therefore has not been adopted.

8.27 Do you have another alternative?

No

Section 9 – Contacts, signatures and declarations

Where applicable, you must provide the contact details of each of the following entities: Person Proposing the Action; Proposed Designated Proponent and; Person Preparing the Referral. You will also be required to provide signed declarations from each of the identified entities.

9.0 Is the person proposing to take the action an Organisation or an Individual?

Organisation

9.2 Organisation

9.2.1 Job Title

Manager Water and Environment

9.2.2 First Name

Andrew

9.2.3 Last Name

Nolan

9.2.4 E-mail

andrew.nolan@snowyhydro.com.au

9.2.5 Postal Address

PO Box 332
Cooma NSW 2630
Australia

9.2.6 ABN/ACN

ABN

17090574431 - SNOWY HYDRO LIMITED

9.2.7 Organisation Telephone

0264532888

9.2.8 Organisation E-mail

info@snowyhydro.com.au

9.2.9 I qualify for exemption from fees under section 520(4C)(e)(v) of the EPBC Act because I am:

Not applicable

Small Business Declaration

I have read the Department of the Environment and Energy's guidance in the online form concerning the definition of a small a business entity and confirm that I qualify for a small business exemption.

Signature:..... Date: .....

9.2.9.2 I would like to apply for a waiver of full or partial fees under Schedule 1, 5.21A of the EPBC Regulations

No

9.2.9.3 Under sub regulation 5.21A(5), you must include information about the applicant (if not you) the grounds on which the waiver is sought and the reasons why it should be made

Person proposing the action - Declaration

I, Andrew Ride, declare that to the best of my knowledge the information I have given on, or attached to the EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence. I declare that I am not taking the action on behalf of or for the benefit of any other person or entity.

Signature:..... Date: 1/6/18

I, _____, the person proposing the action, consent to the designation of _____ as the proponent of the purposes of the action describe in this EPBC Act Referral.

Signature:..... Date: .....

9.3 Is the Proposed Designated Proponent an Organisation or Individual?

Organisation

9.5 Organisation

9.5.1 Job Title

Manager Water and Environment

9.5.2 First Name

Andrew

9.5.3 Last Name

Nolan

9.5.4 E-mail

andrew.nolan@snowyhydro.com.au

9.5.5 Postal Address

PO Box 332
Cooma NSW 2630
Australia

9.5.6 ABN/ACN

ABN

17090574431 - SNOWY HYDRO LIMITED

9.5.7 Organisation Telephone

0264532888

9.5.8 Organisation E-mail

info@snowyhydro.com.au

Proposed designated proponent - Declaration

I, Snowy Hydro Ltd, the proposed designated proponent, consent to the designation of myself as the proponent for the purposes of the action described in this EPBC Act Referral.

Australian Government
Department of the Environment and Energy

Signature:..... Date: 1/6/18

9.6 Is the Referring Party an Organisation or Individual?

Organisation

9.8 Organisation

9.8.1 Job Title

Director

9.8.2 First Name

Duncan

9.8.3 Last Name

Peake

9.8.4 E-mail

dpeake@emmconsulting.com.au

9.8.5 Postal Address

20 Chandos Street
St Leonards NSW 2065
Australia

9.8.6 ABN/ACN

ABN

28141736558 - EMM CONSULTING PTY LIMITED

9.8.7 Organisation Telephone

02 9493 9500

9.8.8 Organisation E-mail

info@emmconsulting.com.au

Referring Party - Declaration

I, Duncan Peake, I declare that to the best of my knowledge the information I have given on, or attached to this EPBC Act Referral is complete, current and correct. I understand that giving false or misleading information is a serious offence.

Signature:..... Date: 28 MAY 2018

Australian Government
Department of the Environment and Energy

Appendix A - Attachments

The following attachments have been supplied with this EPBC Act Referral:

1. attachment_-_description_of_exploratory_works_elements.pdf
2. attachment_1_description_of_exploratory_works_elements_180528.pdf
3. ewreferral011_avoidancedisturbance_20180518_03.pdf
4. ewreferral012_landusetenure_20180517_01.pdf
5. ewreferraldisturbanceavoidance_02pg_emm_20180515.zip
6. ewreferraldisturbanceonly_02pg_emm_20180515.zip
7. j17188_exploratoryworks_mnes_report_v1.1_low_resolution.pdf
8. j17188_exploratoryworks_mnes_report_v1_lr.pdf
9. j17188_pea_exploratory_works_final_mar18_rdc.pdf
10. sh_2.0_assessment_of_nes_nhl_16_may_2018_rdc.pdf