APPENDIX N

ABORIGINAL AND HISTORIC CULTURAL HERITAGE ASSESSMENT REPORT

New South Wales ARCHAEOLOGY

Proposed Segment Factory for Snowy 2.0, Polo Flat, Cooma

Aboriginal and Historic Cultural Heritage Assessment Report

Date: 24 September 2019
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Local Government Area: Snowy Monaro Regional

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EXECUTIVE SUMMARY

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). Snowy 2.0 is the largest committed renewable energy project in Australia and is critical to underpinning system security and reliability as Australia transitions to a decarbonised economy. Snowy 2.0 will link the existing Tantangara and Talbingo reservoirs within the Snowy Scheme through a series of underground tunnels and a new hydro-electric power station will be built underground.

Snowy 2.0 has been declared to be State significant infrastructure (SSI) and critical State significant infrastructure (CSSI) by the NSW Minister for Planning under Part 5 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). CSSI is infrastructure that is deemed by the NSW Minister for Planning and Public Spaces to be essential for the State for economic, environmental or social reasons. An application for CSSI must be accompanied by an environmental impact statement (EIS).

Separate applications are being submitted by Snowy Hydro for different phases of Snowy 2.0, including Exploratory Works for Snowy 2.0 (the Exploratory Works) and Snowy 2.0 Main Works (the Main Works).

The first phase of Snowy 2.0, the Exploratory Works (Application Number SSI 9208), includes an exploratory tunnel and portal and other exploratory and construction activities primarily in the Lobs Hole area of the Kosciuszko National Park (KNP). Exploratory Works has been assessed in a separate EIS and is subject to an approval issued by the former NSW Minister for Planning on 7 February 2019. Construction for Exploratory Works has already commenced.

The second phase of Snowy 2.0, the Snowy 2.0 Main Works (Application Number SSI 9687), covers the major construction elements of Snowy 2.0, including permanent infrastructure (such as the underground power station, power waterways, access tunnels, chambers and shafts), temporary construction infrastructure (such as construction adits, construction compounds and accommodation), management and storage of extracted rock material and establishing supporting infrastructure (such as road upgrades and extensions, water and sewage treatment infrastructure, and the provision of construction power). Snowy 2.0 Main Works also includes the operation of Snowy 2.0. The EIS for Snowy 2.0 Main Works was submitted to the NSW Department of Planning, Industry and Environment (DPIE) in September 2019.

A separate application has also been submitted for a proposed factory that would manufacture precast concrete segments that would line the tunnels being excavated

for Snowy 2.0 (Application Number SSI 10034). This Aboriginal and Historic Heritage Assessment Report (A&HCAR) supports the EIS for the proposed segment factory.

On 26 June 2019, Snowy Hydro referred the proposed segment factory (Reference Number 2019/8481) to the Commonwealth Minister for the Environment under the provisions of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). On 13 August 2019, the proposed segment factory was determined by the Acting Assistant Secretary Assessments and Waste Branch of the Commonwealth Department of the Environment and Energy (DEE), as delegate to the Minister, to be 'not a controlled action' and therefore does not require further assessment or approval under the EPBC Act.

New South Wales Archaeology Pty Ltd has been engaged by Snowy Hydro Limited to conduct an Aboriginal and historic cultural heritage assessment of the proposed segment factory at Polo Flat.

The assessment has been conducted in accordance with the Department of Planning, Industry and Environment's (DPIE) *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011) and *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (NSW DECCW 2010a).

The historic heritage assessment of historic cultural heritage has been undertaken in accordance with the principles of the Australia ICOMOS Burra Charter (Australia ICOMOS 2013a) and its relevant Practice Notes (Australia ICOMOS 2013b, 2013c, 2017). It also complies with the Historical Archaeology Code of Practice (Heritage Council of NSW 2006) and the NSW Heritage Manual (1996) and its various updates and other guidelines published by the NSW Heritage Office (1996, 2001, 2009), as relevant.

The historic heritage assessment has included a review and synthesis of the historical context of the area. This has been based on primary and secondary sources, including historical maps and various published and unpublished sources.

A process of Aboriginal community consultation has been undertaken for the Snowy 2.0 project in accordance with the NSW DPIE *Aboriginal cultural heritage consultation requirements for proponents 2010* (NSW DECCW 2010b). In addition, Snowy Hydro has consulted independently with the relevant Local Aboriginal Land Councils and the Northern and Southern Kosciuszko National Park Aboriginal Community Memorandum of Understanding Groups. The consultation process is regular and on-going as the broader project is developed.

In addition to consultation, the heritage assessment has included a review of the relevant anthropological, historical and archaeological literature and a program of comprehensive field survey.

This report describes the assessment process, the Aboriginal objects and historic items, places and features of cultural value within the landscape and the proposed impacts and harm. It sets out a series of management and mitigation measures for the consideration of all stakeholders including the Aboriginal community and the NSW DPIE.

No previously recorded AHIMS sites or statutory and non-statutory listed historic heritage items are present in the site. A comprehensive field assessment has been conducted. The site was found to be highly disturbed and no Aboriginal objects or historic heritage items were recorded. The site has been assessed to be of very low to negligible archaeological and heritage potential.

As a result of the assessment, the following conclusions and recommendations are made:

- The land in which impacts would occur is generally highly disturbed by previous land use.
- No Aboriginal objects are known to be present on site. Furthermore, the site has been assessed to be of very low archeological potential.
- No historic sites are known to be present in the site and none were recorded during the field inspection.
- It is concluded that there are no heritage constraints in regard to the proposal. No further heritage assessments are warranted.

Acknowledgments

Archaeological evidence confirms that Aboriginal people have had a long and continuous association with the region for thousands of years. We would in particular like to acknowledge and pay our respects to the traditional owners of the country which is encompassed by the proposal.

1. INTRODUCTION

1.1 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%. 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 has been declared to be State significant infrastructure (SSI) and critical State significant infrastructure (CSSI) by the NSW Minister for Planning under Part 5 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). CSSI is infrastructure that is deemed by the NSW Minister for Planning and Public Spaces to be essential for the State for economic, environmental or social reasons. An application for CSSI must be accompanied by an environmental impact statement (EIS).

Separate applications are being submitted by Snowy Hydro for different phases of Snowy 2.0, including Exploratory Works for Snowy 2.0 (the Exploratory Works) and Snowy 2.0 Main Works (the Main Works).

The first phase of Snowy 2.0, the Exploratory Works (Application Number SSI 9208), includes an exploratory tunnel and portal and other exploratory and construction activities primarily in the Lobs Hole area of the Kosciuszko National Park (KNP). Exploratory Works has been assessed in a separate EIS and is subject to an approval issued by the former NSW Minister for Planning on 7 February 2019. Construction for Exploratory Works has already commenced.

The second phase of Snowy 2.0, the Snowy 2.0 Main Works (Application Number SSI 9687), covers the major construction elements of Snowy 2.0, including permanent infrastructure (such as the underground power station, power waterways, access tunnels, chambers and shafts), temporary construction infrastructure (such as construction adits, construction compounds and accommodation), management and storage of extracted rock material and establishing supporting infrastructure (such as road upgrades and extensions, water and sewage treatment infrastructure, and the provision of construction power). Snowy 2.0 Main Works also includes the operation of Snowy 2.0. The EIS for Snowy 2.0 Main Works has been submitted to DPIE in September 2019.

A separate application has also been submitted for a proposed factory that would manufacture precast concrete segments that would line the tunnels being excavated for Snowy 2.0 (Application Number SSI 10034). This Aboriginal and Historic Heritage Assessment Report (A&HCAR) supports the EIS for the proposed segment factory.

On 26 June 2019, Snowy Hydro referred the proposed segment factory (Reference Number 2019/8481) to the Commonwealth Minister for the Environment under the provisions of the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). On 13 August 2019, the proposed segment factory was determined by the Acting Assistant Secretary Assessments and Waste Branch of the Commonwealth Department of the Environment and Energy (DEE), as delegate to the Minister, to be 'not a controlled action' and therefore does not require further assessment or approval under the EPBC Act.

1.2 THE PROPOSED SEGMENT FACTORY

The tunnels for Snowy 2.0, including the exploratory tunnel for Exploratory Works and underground tunnels linking Tantangara and Talbingo reservoirs for the Main Works, would be excavated, for the most part, using tunnel boring machines (TBMs) and would be lined using precast concrete segments. These segments are proposed to be manufactured at the proposed segment factory to be located on the south-eastern side of Polo Flat (the site), which is an industrial area located to the east of Cooma.

The proposed segment factory would contain a building for the casting and curing of the segments, uncovered storage areas for raw materials and segments, vehicle parking areas and associated offices and workshops.

Main inputs for the segments include aggregate, sand, cement and rebar steel. Primary outputs include the segments which would be transported to the TBM launch sites for Exploratory Works and Main Works within KNP.

The construction phase of the proposed segment factory would last about five months utilising a workforce of about 30 people. Construction would take place six days a week (from Monday to Saturday) and for 10 hours per day.

The factory would operate over a period of about 3.5 years utilising a workforce of about 125 people. It would be operational 24 hours a day, seven days a week.

The proposed segment factory would be constructed and operated by Future Generation Joint Venture (FGJV) which has been contracted by Snowy Hydro to construct Snowy 2.0.

At the completion of the construction of Snowy 2.0, the proposed segment factory would be decommissioned.

Further details of the proposed segment factory are provided in Chapter 2 of this report.

1.3 LOCATION OF THE SITE

The site of the proposed segment factory is located on the south-eastern side of Polo Flat, predominantly on the southern part of the land owned by Snowy Hydro. The site is located to the east of Polo Flat Road and to the north of Carlaminda Road. Figure 1.1 shows the location of the site in a regional context and Figure 1.2 shows the site in its local context.

The site contains the following land parcels:

- southern part of Lot 14 in Deposited Plan (DP) 250029 – also known as 9 Polo Flat Road, Polo Flat;
- Lot 3 in DP 238762 – also known as 33 Carlaminda Road, Polo Flat; and
- an unmade road corridor, directly south of the aforementioned lots.

Except for a few buildings located on the southern part of Lot 3 in DP 238762, the site is vacant and dominated by grassland. A third order watercourse flows in a north-westerly direction through the middle of the site.

Lot 14 in DP 250029 is a large parcel of land which contains a private airfield predominantly located in the middle and northern part of the land. This airfield was originally established in 1921 and further developed in the late 1950s and 1960s to service the Snowy Scheme. It became the base for the Snowy Mountains Hydro-electric Authority's (the predecessor to Snowy Hydro) flying unit and aircraft. The land was sold by Snowy Hydro in 1998 where it continued use as a private airfield. Snowy Hydro purchased the land again in early 2019.

The site is surrounded by industrial development to the west and predominantly rural land to the south and east. To the north of the site is the remainder of Lot 14 in DP 250029 which contains the private airfield, and other industrial development. Snowy Hydro's private airfield contains a main north-south aligned runway, hangers and offices. It also contains an above ground fuel tank for the refuelling of planes and helicopters.

Lot 3 in DP 238762 contains a communications tower which will cease use (ie transmission) in August 2019.

There is an isolated industrial operation containing a residence located about 150 metres (m) to the south-east of the site, and an abattoir located about 350 m to the east.

The nearest residence is a rural residence located about 450 m to the south-south-east of the site. The nearest residences within Cooma are located about 1 km to the west of the site.

1.4 PROPONENT

Snowy Hydro is the proponent for the proposed segment factory. Snowy Hydro is an integrated energy business – generating energy, providing price risk management products for wholesale customers and delivering energy to homes and businesses. Snowy Hydro is the fourth largest energy retailer in the NEM and is Australia's leading provider of peak, renewable energy.

As previously stated, the proposed segment factory would be constructed and operated by FGJV which has been contracted by Snowy Hydro to construct Snowy 2.0.

1.5 PURPOSE OF THE REPORT

This Aboriginal and historic heritage assessment supports the EIS for the proposed segment factory. It documents the heritage assessment methods and results, the initiatives built into the project design to avoid and minimise impacts, and the mitigation and management measures proposed to address and residual impacts not able to be avoided.

The specific objects of this assessment are to:

- to record all items of Aboriginal and historic heritage value that exist within the development footprint;
- to assess the significance of heritage items in the project area;
- to assess the potential impacts of the project on items of historic heritage in the project area; and
- to formulate management measures for the protection of Aboriginal and historic heritage items in the development footprint.

1.6 ASSESSMENT GUIDELINES AND REQUIREMENTS

This Aboriginal and historic heritage report has been prepared in accordance with the:

- Secretary's Environmental Assessment Requirements (SEARs), issued by DPIE on 31 July 2019.

The SEARs and additional information request must be addressed in the EIS. Table 1 lists the matters relevant to this assessment and where they are addressed in this report.

Table 1 The SEARs requirements for Aboriginal and historic heritage.

Requirement	Section addressed
Heritage – an assessment of the Aboriginal and historic heritage (cultural and archaeological) impacts of the project.	This report

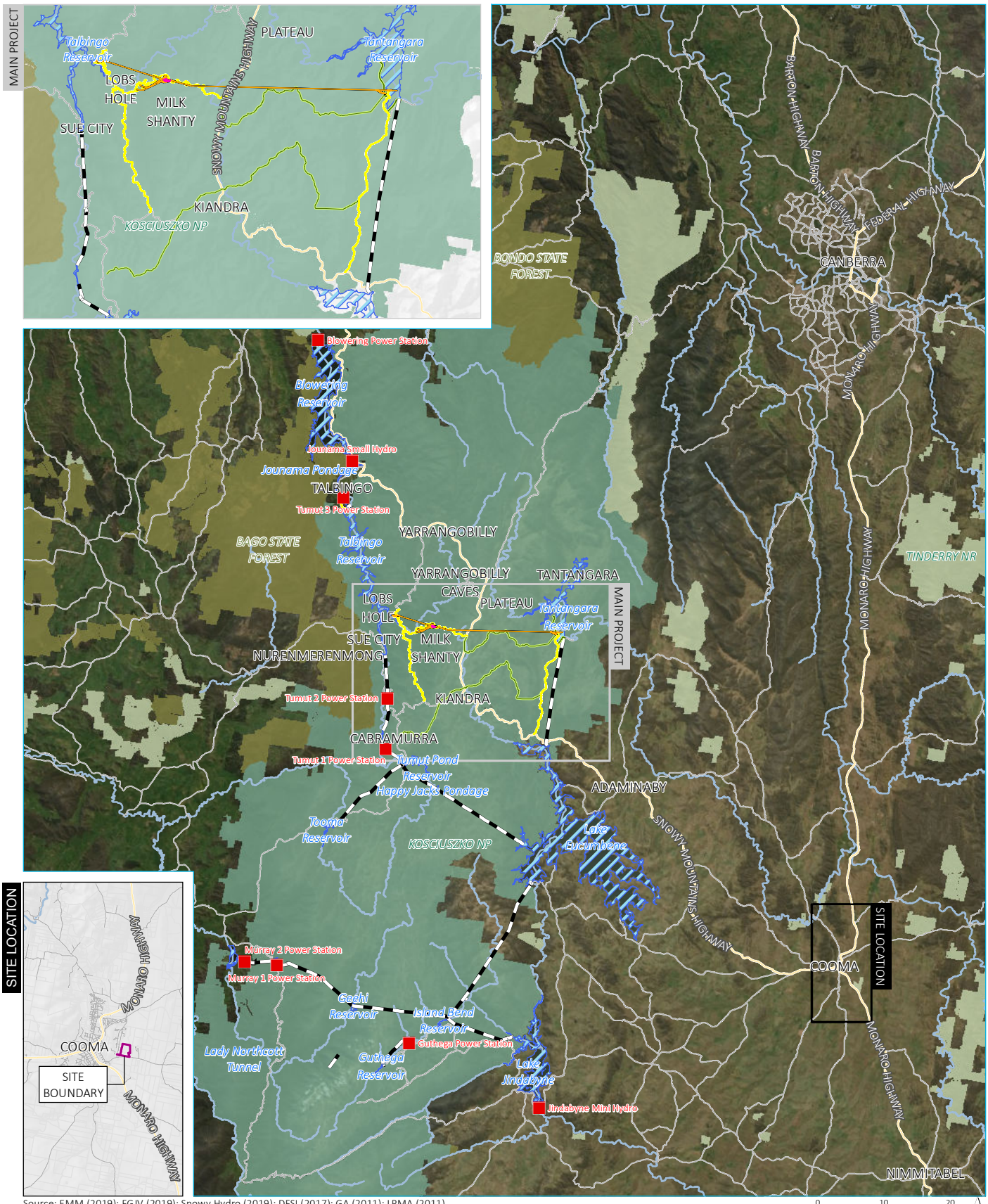
The content and format of the report is set out in accordance with the NSW OEH (2011) *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* document. The report aims to document:

- The Aboriginal objects and declared Aboriginal places (as relevant) located within the area of the proposed activity;
- The cultural heritage values, including the significance of the Aboriginal objects and declared Aboriginal places that exist across the whole area that will be affected by the proposed activity, and the significance of these values for the Aboriginal people who have a cultural association with the land, as relevant;
- How the requirements for consultation with Aboriginal people have been met (as specified in clause 80C of the National Parks and Wildlife Regulation);
- The views of those Aboriginal people regarding the likely impact of the proposed activity on their cultural heritage (if relevant);
- The actual or likely harm posed to the Aboriginal objects or declared Aboriginal places from the proposed activity, with reference to the cultural heritage values identified;
- Any practical measures that may be taken to protect and conserve those Aboriginal objects or declared Aboriginal places (if relevant); *and*
- Any practical measures that may be taken to avoid or mitigate any actual or likely harm, alternatives to harm, or, if this is not possible, to manage (minimise) harm (if relevant).

In addition, this report documents the historic heritage assessment.

This A&HCHAR has been prepared by Dr Julie Dibden (ANU: BA honours; PhD), New South Wales Archaeology Pty Ltd.

The field inspection was conducted by Andrew Pearce and Jo Dibden, NSW Archaeology Pty Ltd. Field assistance has been provided by the people representing Merrimans Local Aboriginal Land Council.



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

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KEY

- Site boundary

Snowy 2.0 project elements
- Utilities
- Tunnels, portals, intakes
- Power station
- Permanent roads and surface infrastructure

Existing Snowy Scheme
- Existing power station
- Existing pipeline tunnel
- Scheme storage

- Main road
- Local road or track
- Watercourse
- Kosciuszko National Park
- NPWS reserve
- State forest

Location of site in regional context

Proposed Segment Factory for Snowy 2.0,
Polo Flat, Cooma
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Figure 1

snowy 2.0

EMM creating opportunities

2. PROJECT DESCRIPTION

2.1 INTRODUCTION

It is proposed to construct and operate a factory on the site to supply precast concrete segments that would line the tunnels for Snowy 2.0.

The construction phase of the proposed segment factory would last about five months utilising a workforce of about 30 people. The operational phase would last about 3.5 years utilising a workforce of about 125 people.

The proposed segment factory would be decommissioned at the completion of operations.

2.2 CONSTRUCTION

2.2.1 Main Activities

The following main activities would be undertaken for the construction of the proposed segment factory:

- demolition and removal of buildings and decommissioned telecommunications tower on the southern part of site;
- clearing, removal of topsoil and vegetation (topsoil excavated would be stockpiled on site for later use);
- undertaking earthworks to establish level surfaces;
- establishment of primary access road;
- installation of site services (power, water and communications);
- establishment of site surfaces (ie concrete, asphalt and cement soil); and
- construction of site facilities and buildings, including precast building, concrete batching plant (CBP), workshops, offices, parking areas, storage areas and associated facilities.

2.2.2 Earthworks

Excavation will be carried out at the site to provide level surfaces, establish the access road and create the required trenches for drainage.

Where possible excavated material would be reused on site for filling and compaction (including benching areas of the site where required). Where there is a deficit of excavated material, additional material would be sourced from local quarries.

2.2.3 Traffic Movements

Construction vehicle movements will comprise construction worker's light vehicles and heavy vehicles transporting equipment, building and construction materials, waste, and fill material if required.

2.2.4 Construction Timeframes and Hours

The construction phase of the proposed segment factory would last about five months (estimated to commence in March 2020 subject to obtaining the required approvals). Construction would be undertaken from Monday to Saturday for 10 hours per day. Access to the site would generally start at 6 am for pre-starts and toolbox talks, and construction would commence at 7 am.

2.2.5 Workforce

A workforce of about 30 people would be required to construct the proposed segment factory.

2.3 OPERATIONS

2.3.1 General

The segments would be produced by casting concrete (made in the CPB) in reusable steel moulds which would then be cured in a chamber. Following curing, the segments would be temporarily stored onsite before being transported to the TBM launch sites within KNP.

The casting and curing would be undertaken in the precast building. Storage of the segments would predominantly be undertaken in uncovered storage areas.

Main inputs for the segments include aggregate, sand, cement and steel rebar.

Approximately 130,500 segments would be manufactured over the operational period.

2.3.2 Site Layout

The layout of the proposed segment factory is shown in Figure 2.1. Details of the site layout are provided below.

General Layout

The CBP and precast building (which contains a casting room and curing chamber) would be located at the southern end of the site. Open storage areas would be located predominantly to the north of the building on the northern part of the site.

Site offices and workshops would be located in the south-western corner of the site.

Ingress and Egress

Vehicle ingress and egress to the site would be provided on a new access road which would connect to Polo Flat Road. The access road would be constructed on an existing informal service road located in the unmade road corridor immediately north of Carlaminda Road. Following completion, the access road would be dedicated to Snowy Monaro Regional Council (SMRC) as a public road.

Raw Material Storage

Cement silos, and aggregate and sand storage areas for the CBP would be located adjacent to the CBP. Storage would be sized to hold approximately three days production.

Other raw materials include steel rebar and concrete admixtures which would be stored in, or adjacent to, the precast building.

Parking

Two large parking areas are proposed in the south-western corner of the site, and to the north of the precast building. Parking in the south western area would be used for light vehicles, trucks and buses. Parking to the north of the precast building would be used for trucks.

Drainage

A diversion drain would be constructed around the eastern perimeter of the site to divert water from the third order watercourse. The drain diversion would be constructed to match the general width and depth of the existing watercourse.

A detention basin would be provided to the north of the site to collect surface flows. Overflows from the detention basin would be directed into the diversion drain.

2.3.3 Utility Connections

The proposed segment factory would be connected to utility mains, including communications, electricity, water, wastewater and gas.

2.3.4 Segment Inputs

As previously stated, main inputs for the precast concrete segments include aggregate, sand, cement and steel rebar. These main inputs would likely be sourced from quarries near Canberra.

In addition to these main inputs, several accessories are also required to produce the segments, such as reinforcement cages, steel fibres, gaskets and inserts. These inputs would likely be sourced locally or from Canberra.

2.3.5 Segment Transport

Following casting, curing and storage, the segments would be transported to the TBM launch sites within KNP.

2.3.6 Traffic Movements

Operational vehicle movements will comprise light vehicles (worker's vehicles and service vehicles) and heavy vehicles required for the transportation of the main inputs for the segments and for the transportation of the segments from the site to the TBM launch sites within KNP.

2.3.7 Staff and Manpower

A workforce of about 125 people would be required to operate the proposed precast segment factory. As many local workers as possible would be sourced from the Snowy Mountains Regional LGA and surrounding localities.

2.3.8 Hours of Operation

It is proposed to operate the proposed segment factory 24 hours a day, seven days a week. It is estimated that the factory would operate for a period of about 3.5 years.

2.4 DECOMMISSIONING

As previously stated, the proposed segment factory would be decommissioned at the completion of construction of Snowy 2.0 which would include removal of all plant and equipment. Snowy Hydro would retain the main structures such as the precast building, workshops and offices and seek to use these for an alternative industrial use.

It is envisaged that Snowy Hydro would submit a separate application for approval for an alternative use of the site prior to the decommissioning phase of the project.

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

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KEY

- Site boundary
- Rail line
- Main road
- Local road or track
- Watercourse
- Cadastral boundary
- NPWS reserve

Location of site in local context

Proposed Segment Factory for Snowy 2.0,
Polo Flat, Cooma
Aboriginal and Historic Cultural Heritage
Assessment Report
Figure 2

snowy 2.0

EMM creating opportunities

Source: EMM (2019); FGJV (2019); Snowy Hydro (2019); DFSI (2017); ESRI (2019); GA (2011); LPMA (2011)

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KEY

- Site boundary
- Indicative site layout
- Local road or track
- Cadastral boundary
- Precast yard, concrete plant, aggregates area, precast warehouse, segment storage
- Bus stop and parking
- Offices, guard house and first aid
- Mechanical and plant workshop with parking
- Trailer parking
- Storage area
- Emergency storage area
- Detention basin
- Drainage

Proposed site layout

Proposed Segment Factory for Snowy 2.0, Polo Flat, Cooma
Aboriginal and Historic Cultural Heritage Assessment Report
Figure 3

snowy 2.0

EMM creating opportunities

3. LEGISLATIVE CONTEXT - ABORIGINAL HERITAGE

3.1 NEW SOUTH WALES LEGISLATION

3.1.1 EP&A Act and its Regulation

The NSW *Environmental Planning and Assessment Act 1979* (EP&A Act) is the primary legislation regulating environmental planning and assessment in NSW. Part 5 of the EP&A Act establishes the assessment and approval regime for State significant infrastructure (SSI) and critical State significant infrastructure (CSSI).

Snowy 2.0 has been declared CSSI by the NSW Minister for Planning under the provisions of the EP&A Act and is defined in Clause 9 of Schedule 5 of the *State Environmental Planning Policy* (*State and Regional Development) 2011* (SRD SEPP).

3.1.2 *National Parks and Wildlife Act 1974* (NPW Act 1974)

The NPW Act provides statutory protection for all Aboriginal objects and Aboriginal Places.

An 'Aboriginal object' is defined as

> 'any deposit, object or material evidence (not being a handicraft for sale) relating to Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains'.

An Aboriginal place is an area declared by the Minister to be an Aboriginal place for the purposes of the Act (s84), being a place that in the opinion of the Minister *is or was of special significance with respect to Aboriginal culture*.

Part 6 of the *National Parks and Wildlife Act 1974* (NPW Act) provides specific protection for Aboriginal objects and declared Aboriginal places by establishing offences of harm. Harm is defined to mean destroying, defacing, damaging or moving an object from the land. There are a number of defense's and exemptions to the offence of harming an Aboriginal object or place. One of the defense's is that the harm is carried out under an Aboriginal Heritage Impact Permit (AHIP).

However, under Section 5.23 of the EP&A Act 1979, the following authorisations are not required for approved State significant infrastructure (and accordingly the provisions of any Act that prohibit an activity without such an authority do not apply):

- an Aboriginal heritage impact permit under section 90 of the *National Parks and Wildlife Act 1974.*

It is also noted that no Aboriginal objects have been identified in the project areas and hence none would be impacted as a result of the proposal.

4. LEGISLATIVE CONTEXT – HISTORIC HERITAGE

4.1 COMMONWEALTH LEGISLATION

The Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) aims to protect matters of national environmental significance (MNES) including:

- world heritage properties;
- national heritage places;
- Ramsar wetlands of international importance;
- nationally threatened species and ecological communities;
- migratory species;
- Commonwealth marine areas;
- the Great Barrier Reef Marine Park;
- nuclear actions (including uranium mining); and
- a water resource, in relation to coal seam gas development and large coal mining development.

There are no MNES of heritage value relevant to the site at Polo Flat.

4.2 NEW SOUTH WALES LEGISLATION

4.2.1 NSW *Environmental Planning & Assessment Act 1979* and its Regulation

The *NSW Environmental Planning & Assessment Act 1979* (NSW EP&A Act) is the primary legislation regulating environmental planning and assessment in NSW. Part 5 of the EP&A Act establishes the assessment and approval regime for State significant infrastructure (SSI) and critical State significant infrastructure (CSSI).

Snowy 2.0 has been declared CSSI by the NSW Minister for Planning under the provisions of the EP&A Act and is defined in Clause 9 of Schedule 5 of the *State Environmental Planning Policy (State and Regional Development) 2011* (SRD SEPP).

The EP&A Act also establishes the framework for cultural heritage values to be formally assessed in the planning and development consent process. The EP&A Act requires that environmental impacts are considered before land development; this includes impacts on cultural heritage items and places as well as archaeological sites and deposits.

The EP&A Act requires that local governments prepare planning instruments, such as Local Environmental Plans (LEPs) and Development Control Plans (DCPs) in accordance with the EP&A Act, to provide guidance on the level of environmental assessment. This includes identification of heritage items, as listed on the heritage schedules of an LEP. Where a project is being assessed as CSSI, approval by the relevant council is not required but the items require assessment and management if they are affected by a proposal. Heritage items listed on the LEPs have been considered in this assessment.

4.2.2 Heritage Act 1977

The *Heritage Act 1977* (Heritage Act) is the primary piece of State legislation affording protection to items of environmental heritage (predominantly cultural) in NSW. Under the Heritage Act, 'items of environmental heritage' include places, buildings, works, relics, moveable objects and precincts identified as significant based on historical, scientific, cultural, social, archaeological, architectural, natural or aesthetic values.

Items that are formally assessed to be of State significance and are listed on the State Heritage Register (SHR), established under Part 3A of the Heritage Act. Items listed on the SHR are given automatic protection under the Heritage Act against any activities that may damage an item or affect its heritage significance.

Under Section 170 of the Heritage Act, government agencies must establish and keep a register that includes all items of environmental heritage that have been identified by the agency, or that are listed on the SHR, an environmental planning instrument, or which may be subject to an interim heritage order that are owned, occupied or managed by that government body.

The Heritage Division also keeps a register called the State Heritage Inventory (SHI) of heritage items that are listed on Schedule 5 of local planning instruments and most Section 170 registers and makes them available online.

These registers provide a list of known heritage items to be considered during this assessment.

Part 6 of the Heritage Act provides protection for 'relics', regardless of their listing status. It applies to all land in NSW that is not included in the SHR. Section 4(1) of the Heritage Act (as amended 2009) defines a 'relic' as follows:

A "relic" means any deposit, artefact, object or material evidence that:

a) relates to the settlement of the area that comprises New South Wales, not being Aboriginal settlement, and

b) is of State or local heritage significance.

Section 139 (1) of the Heritage Act states that:

> "A person must not disturb or excavate any land knowingly or having reasonable cause to suspect that the disturbance or excavation will or is likely to result in a relic being discovered, exposed, damaged or destroyed unless the disturbance or excavation is carried out in accordance with an excavation permit."

Approval under the Heritage Act is not applicable for projects assessed as CSSI. However, where unanticipated relics are discovered, notification to the Heritage Council is regulated under Section 146 of the Heritage Act.

Section 146 Notification of discovery of relic:

> A person who is aware or believes that he or she has discovered or located a relic (in any circumstances, and whether or not the person has been issued with a permit) must:
>
> c) within a reasonable time after he or she first becomes aware or believes that he or she has discovered or located that relic, notify the Heritage Council of the location of the relic, unless he or she believes on reasonable grounds that the Heritage Council is aware of the location of the relic, and
>
> d) within the period required by the Heritage Council, furnish the Heritage Council with such information concerning the relic as the Heritage Council may reasonably require.

The Heritage Act identifies the category of 'works', which refers to historical infrastructure, and is viewed as separate to that of archaeological 'relics' under the Heritage Act. 'Works' may be buried, and are therefore archaeological in nature, but exposing a 'work' does not trigger reporting obligations under the Heritage Act unless it is of demonstrable significance.

4.3 IMPLICATIONS OF A LISTING

Listing on statutory registers provides a basis under which the item or place is protected, and change is managed through project approval. Statutory listings provide legal protection for heritage items under the legislation outlined above. Statutory and non-statutory registers have been reviewed.

Statutory registers reviewed as a part of this assessment include:

- National Heritage list (NHL) - the register is made under the EPBC Act.
- Commonwealth Heritage List (CHL) - the register is made under the EPBC Act.
- SHR - this register is made under Part 3A of the Heritage Act. Items on the SHR undergo a rigorous assessment process and must reach a high significance

threshold to be included. Inclusion on the SHR is directed by the Minister for Heritage.

- Heritage and Conservation Register (s170 register) - this register is made under Section 170 of the Heritage Act. It is a register of heritage items that are owned or managed by state government authorities. Items on the s170 register may also be listed on other registers. Demolition, change to fabric and change of ownership require notification to the Heritage Council of NSW.
- Schedule 5 of the LEP. The EP&A Act sets the provisions for the making of LEPs. Most LEPs are prepared to a standard template, which includes environmental heritage in Schedule 5 (the heritage schedule). Where an item is included in the heritage schedule, development applications must include an assessment of impacts to the item. Where a project is being assessed as SSD, approval by the relevant council is not required but the items require assessment and management if they are affected by a proposal.
- State Heritage Inventory (SHI), which was cross-checked with Schedule 5 of the LEPs and the s170 register. The SHI is not a single statutory register, but a central collection of listed statutory heritage items maintained by the Heritage Division.

Non-statutory listing is an acknowledgment of a site's or place's importance to sections of the community. Listings on such registers do not place legal requirements on development but nevertheless influence the future of such listed items. Non-statutory registers reviewed as a part of this assessment include:

- National Trust of Australia, NSW (NT) - the NT is made up of autonomous state chapters. Each chapter is a community-based and non-government organisation, with a mandate to conserve and promote Australia's natural and cultural heritage. Classification by NT is a strong acknowledgment of heritage significance and while statutory constraints are not applicable, classification offers protection through visibility and community action.
- Register of the National Estate (RNE) - the RNE is an archived list of heritage items that were protected under the now repealed Commonwealth *Heritage Commission Act 1975*, which was replaced by the EPBC Act. While many items were transferred from the RNE to the NHL or CHL, those that were not remain on the RNE as an indication of their heritage value.

5. DESCRIPTION OF THE AREA – BACKGROUND AND CONTEXT

In this section, background and relevant contextual information is compiled, analysed and synthesized. The purpose of presenting this material is to gain an initial understanding of the cultural landscape. The following topics are addressed (*cf*. NSW OEH 2011: 5):

- The physical setting or landscape;
- History of peoples living on that land; *and*
- Material evidence of Aboriginal land use.

5.1 THE PHYSICAL SETTING OR LANDSCAPE

Aboriginal people have occupied NSW for more than 42,000 years (Bowler *et al*. 2003). Evidence and cultural meanings relating to occupation are present throughout the landscape (NSW OEH 2011: iii).

A consideration of landscape is particularly valuable in archaeological modelling for the purposes of characterising and predicting the nature of Aboriginal occupation across the land. In Aboriginal society, landscape could be the embodiment of Ancestral Beings, and the basis of a social geography and economic and technological endeavour. The various features and elements of the landscape are/were physical places that are known and understood within the context of social and cultural practice. The reality of the physical world is such that human occupation, and certain cultural practices and behaviours, cannot be equivalent and always possible everywhere; '... environments constitute arenas of human action and being, they yield resources to be exploited, and they impose constraints and provide enabling conditions for practices' (Keen 2004: 3).

In Australia, a general model of subsistence organisation existed, a collector model, whereby people in groups formed home bases from which they made foraging forays, and returned, for the sharing and distribution of food (Keen 2004: 104). In this model people make few residential moves, and those made are often to locales valued as much for the presence of water or firewood, as they are for food (Keen 2004: 104). Geographical and environmental data is used in this study for anticipating where in the landscape people may have habitually resided in base camp scenarios, and how the patterns in their material objects, relate to those landforms.

Given that the natural resources that Aboriginal people harvested and utilised were not evenly distributed across landscapes, Aboriginal occupation and the archaeological manifestations of that occupation will not be uniform across space. Therefore, the examination of environmental context is valuable for predicting the type and nature of archaeological sites which might be expected to occur. Factors

that typically inform the archaeological potential of landscape include the presence or absence of water, animal and plant foods, stone and other resources, the nature of the terrain and the cultural meanings associated with a place.

Additionally, geomorphological and humanly activated processes need to be defined as these will influence the degree to which material evidence may be visible and/or conserved. Land which is heavily grassed and geomorphologically stable will prevent the detection of archaeological material, while places which have suffered disturbance may no longer retain artefacts or stratified deposits. A consideration of such factors is necessary in assessing site significance and formulating mitigation and management recommendations.

The site is located north east from the township of Cooma. The landform elements present comprise a flat and simple slopes (Figure 4). The terrain is very gently undulating.

The site contains the southern part of Lot 14 in DP 250029, also known as 9 Polo Flat Road, Polo Flat, Lot 3 in DP 238762, also known as 33 Carlaminda Road, Polo Flat and an unmade road corridor, directly south of 9 Polo Flat Road, Polo Flat and 33 Carlaminda Road, Polo Flat.

The site is in the Parish of Gladstone, County of Beresford, in the local government area of the Snowy Monaro Regional Council.

The site is situated on the Monaro and is part of the Eastern Uplands of southeastern Australia (Jennings and Mabbutt 1977). The Eastern Uplands consists of a wide plateau which extends from the coastal escarpment on the east, to the slopes of its western side. The landscape has low relative relief, lies generally below 600m altitude and slopes generally less than 5º. About 20% of the Uplands contains steeper hills and ranges, and the subject area falls generally within this latter description.

The Monaro is an area of high tablelands and mountains; it is bounded on the north by the Namadgi ranges, on the west by the alpine watershed, the east by the Kybeyan and Gourock escarpment and the south by the Victorian border (Flood 1980). Four distinct natural environments have been defined by Costin (1954); the alpine, sub-alpine, montane and tableland. The proposal area is situated within the latter. The tableland is generally located at elevations between 610 – 915 m (Flood 1980).

The area has a strongly seasonal thermal climate (Jennings and Mabbutt 1977). In summer, hot days are followed by temperate nights, while in winter days are cool to cold and the nights cold and frosty with temperatures regularly falling below 0 °C. Each winter brings some light snow falls over most of the district which can be heavier on higher ground (Plowman 2007). Average rainfall annual is 688 mm (Flood

1980). Flood (1980) draws attention to the phenomena of cold air drainage, frost and wind as affecting human occupation in the region. High winds and frost occur frequently; Flood (1980) argues that, in particular, the combination of cold temperature with wet winds was probably more significant in regard to human occupation than cold in itself.

Geology within the local area is comprised of Quaternary alluvium overlying Silurian dacite. No rock outcrops in the site.

The site is drained by an ephemeral third order drainage depression which was unlikely to have provided Aboriginal land users with water other immediately after rain.

The site is vegetated with grasses, tussock, thistle and other weeds. The great majority of the original vegetation structure has been altered through clearance and subsequent farming and more recently airport construction. No trees remain in the site. The local landscape has a history of European land use extending from the earlier-mid part of the 1800s and principally comprising the grazing of livestock, clearing and timber getting (Dearling 2004; Plowman 2007).

Summary

The proposal area is located at a considerable distance from a source of reliable and abundant water, - the Murrumbidgee River - where focused Aboriginal occupation in the local area is expected to have occurred. In addition, it is situated within a generally amorphous landscape devoid of focal features that Aboriginal people may have been attracted to. In an Aboriginal land use context, the site possesses very low biodiversity. Given the above the proposal area is assessed to be unlikely to have been targeted by Aboriginal people for intensive occupation which would result in significant levels of artefact discard. The site is therefore assessed to be of very low archaeological sensitivity.

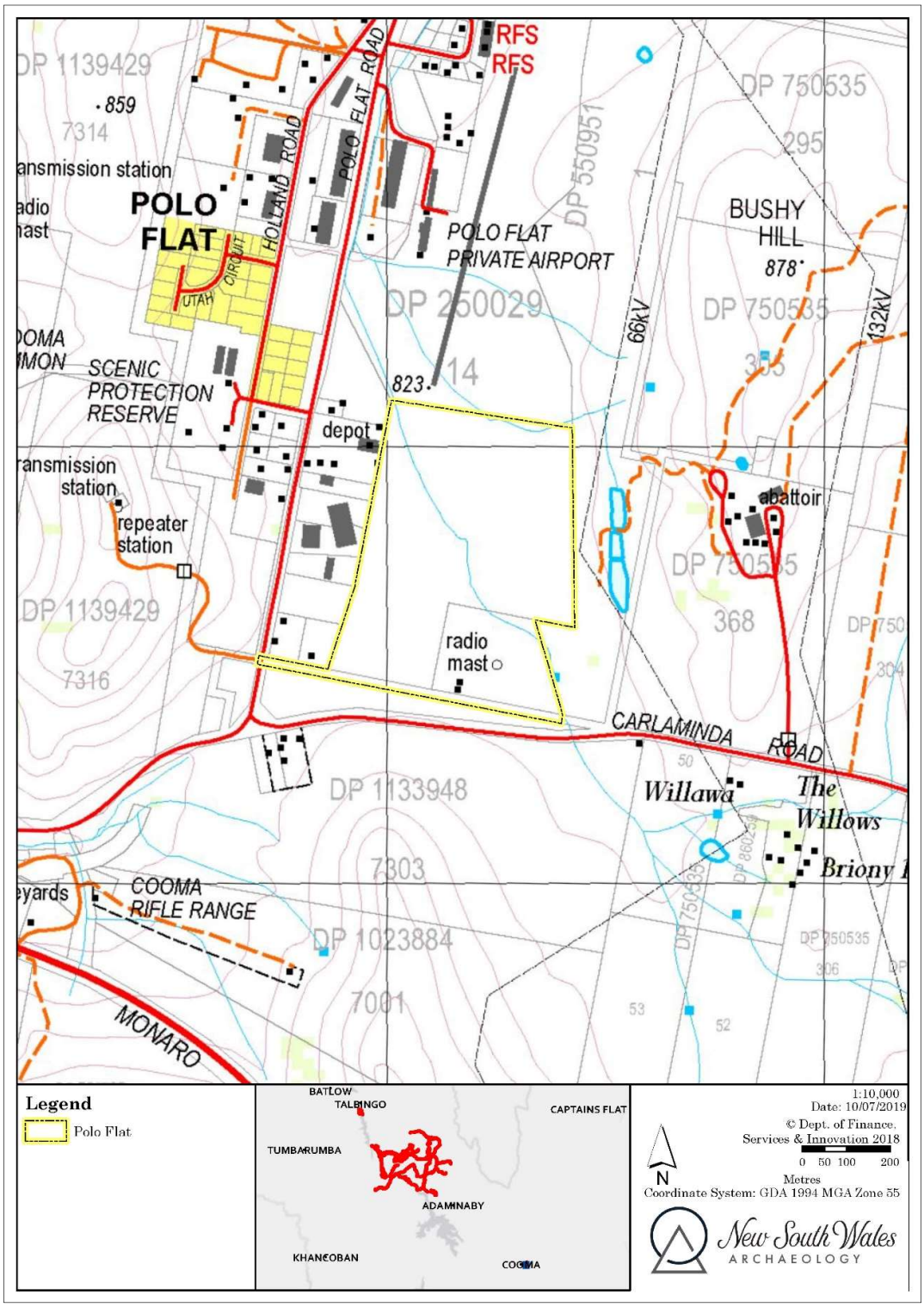

Figure 4 The location of the project area in its topographic context.

5.2 History of Aboriginal People Living on the Land

Aboriginal people have occupied Australia for at least 42,000 years and possibly as long as 60,000 (Bowler *et al.* 2003; Mulvaney and Kamminga 1999: 2). By 35,000 years before present (BP), all major environmental zones in Australia were occupied, including periglacial environments of Tasmania (Mulvaney and Kamminga 1999: 114). At the time of early occupation, Australia experienced moderate temperatures. However, between 25,000 and 12,000 years BP (the Last Glacial Maximum), dry and either intensely hot or cold temperatures prevailed across the continent (Mulvaney and Kamminga 1999: 114). At this time, the mean monthly temperatures on land were 6 - 10ºC lower; in southern Australia coldness, drought and winds acted to change the vegetation structure from forests to grass and shrublands (Mulvaney and Kamminga 1999: 115-116).

During the Last Glacial Maximum at about 24 - 22,000 years ago, sea levels fell to about 130 metres below present and, accordingly, the continent was correspondingly larger. With the cessation of glacial conditions, temperatures rose with a concomitant rise in sea levels. By c. 6,000 BP, sea levels had more or less stabilised to their current position. With the changes in climate during the Holocene, Aboriginal occupants had to deal not only with reduced landmass but changing hydrological systems and vegetation; forests again inhabited the grass and shrublands of the Late Glacial Maximum. As Mulvaney and Kamminga (1999: 120) have remarked:

> *When humans arrived on Sahul's[1] shores and dispersed across the continent, they faced a continual series of environmental challenges that persisted throughout the Pleistocene. The adaptability and endurance in colonising Sahul is one of humankinds' inspiring epics.*

Aborigines have lived in the Cooma-Monaro district and its environs for at least 21,000 years (Flood *et al.* 1987). In the south-eastern highlands the Birrigai rock-shelter has provided dates of occupation from 21,000±200 years BP (Flood *et al.* 1987: 16). During the Pleistocene the environment of the region would have been cold steppe grassland with vegetated shrubs and scattered groups of Eucalypts located in protected positions (Mulvaney and Kamminga 1999). Between 23,000 and 15,000 years ago harsh conditions prevailed, and the mountain peaks were glaciated above 1900 metres; periglacial conditions were present to at least 1000 metres above sea level. The alpine zone was a cold desert with scattered fields of perennial *Plantago* herb fields which may have provided some bulbs and tubers for human consumption (Mulvaney and Kamminga 1999). Over time, the Aboriginal people experienced and adapted to steady and considerable changes in conditions associated with gradual

[1] Sahul is the name given to the single Pleistocene era continent which combined Australia with New Guinea and Tasmania.

climatic warming, including the alteration of vegetation and variation in the distribution of wildlife (Young 2000).

As far as possible, an ethnographic and historical review of Aboriginal life in the region is outlined below. However, our understanding of Aboriginal people in this area, and the historical dimension of the colonial encounter has been reconstructed from scant records produced during a context of death and dispossession (Swain 1993: 115); it is sketchy and severely limited. Stanner (1977) has described the colonial and post-colonial past as a 'history of indifference', and this portrays both the substantive situation which prevailed and the general lack of regard for this history. For a considerable period of time after Europeans arrived in Australia, no concerted ethnographic investigations were undertaken to learn about the society and culture of Aboriginal people. As a result, in trying to reconstruct the complex traditional cultures of Aboriginal groups, investigators of today are necessarily required to piece together, as best as possible, fragmentary information derived from the incidental annotations of disparate early observers. As elsewhere, this applies also to the Aboriginal peoples who occupied the country that included the subject area. Knowledge and understanding of Aboriginal social life and organisation in south-eastern New South Wales at the time of European occupation is minimal. Fundamental details relating to kinship, clan, territorial and religious organisation is, by and large, unknown.

At the time of European contact, the major part of what is now called the Monaro was inhabited by at least 500 Ngarigo speaking Aborigines (Helms 1895: 388). This group harvested the resources of the riverine, grassland and open forests of the region, including those located in the environs of the subject area. Their choice of camp-site was influenced by several factors, and from archaeological evidence, Flood (1980: 158) indicates that in this region camp-sites will be typically found within one kilometre of reliable water sources, most usually within 100 metres from water, though never at the water's edge.

The Ngarigo people maintained social relationships with neighbouring groups including Ngunnawal, Djilamatang, Jamathang and coastal groups including the Yuin (Howitt 1904). Some information is recorded about the nature of Aboriginal occupation of the region during the early period of European occupation. The literature which does exist has presented a biased view of Aboriginal life within the mountains which is focused particularly on Bogong Moth exploitation. Indeed, the ethnohistoric literature has implied to some readers that seasonal exploitation of the moth was the major reason for Aboriginal usage of the Alpine region (Flood 1980).

Flood (1973, 1980) was heavily influenced by the extant ethnohistoric literature which focused on moth exploitation in her seminal study of the region. She constructed a hypothesis of seasonal usage of the highlands based on the exploitation of the moth. The moth, she argued, was important as an economic food source and

its exploitation may have been causal as the impetus for the initial usage of the highlands. Flood (1980) suggested that the Ngarigo people occupied low altitude valleys (< than 600 m) in winter, moving into higher areas in summer for the purpose of exploiting the Bogong Moth. She argued that the occupation pattern which resulted from the exploitation of moths is one in which a series of camps extended from the lowest valleys below 300 m up to the alpine treeline zone at 1830 m.

A contrary viewpoint to Flood's (1980) model has been provided by Chapman (1977) who argued that there was no evidence which pointed to the moth as being a staple food source; Chapman argued that the importance of the moth as a food resource has been over emphasized by early commentators. She argued that in addition to the lack of evidence that the moth was a reliable food source, moths lack the nutritional value to act as a staple and that the moth, in any case was primarily consumed by men. Chapman (1977) instead argued that the significance of moth exploitation was that it fostered social cohesion within the region. Likewise, Kamminga *et al.* (1989) have argued that the large inter tribal gatherings which were associated with moth exploitation acted to mediate and foster political and social linkages between the different language and tribal groups which came together during these occasions.

Researchers such as Bowdler (1981), Cooke (1988), Gott (1982) and Kamminga *et al.* (1989) have drawn attention to a variety of vegetable products available locally which are likely to have been utilized as food resources. Bowdler (1981) has argued that the importance of the moth was more ideological than economic and that the yam daisy would have provided a more reliable food source.

A model of seasonal usage of the high country nevertheless continues to have currency within the literature. The seasonal migration to higher altitudes in summer months is accepted (*cf.* Navin 1991). During winter small groups of Aboriginal people would have occupied the lower montane valleys and the adjacent tablelands (Mulvaney and Kamminga 1999: 298). The region would have opened up considerably however, in summer. It was during this time that people from other areas gathered to perform inter-tribal ceremonies (Mulvaney and Kamminga 1999: 299). Although ceremonial activities are not known to have taken place in the subject area, nevertheless these affiliated groups moved through various corridors in order to congregate in the Alps, and while making their way through country they may have traversed the region where the survey area is situated (*cf.* Howitt 1904; Payten 1949; Flood 1980).

5.3 HISTORIC OVERVIEW

Clune (1964: 296) suggests that Joseph Wild, an ex-convict working for Charles Throsby, was the first non-Indigenous person to sight the Snowy Mountains. This occurred while Throsby, a farm owner at Bong Bong near Moss Vale, was overseeing the construction of the Goulburn Plains road. During the course of this work,

Throsby was informed by Aborigines of the existence of a large lake to the south and, two days journey beyond this, a river which they called 'Mourumbidgee'. Responding to this, Wild led a short expedition and on 19 August 1820 located lake Wee-raa-waa, now known as Lake George. According to Clune (1964: 296), two days later, Wild climbed a hill near present day Bungendore and saw in the distance the Snowy Mountains. However, Neal (1976: 4) reasonably proposes that it is more likely that Wild observed the snow-capped peaks of the Canberra area.

Much of the impetus for early exploration in NSW was driven by the need for new land for grazing (Andrews 1998). In 1823, a group of experienced explorers gathered at the Throsby property at Bong Bong to prepare for their next expedition. The men in question were Charles Throsby, Captain Mark Currie, Major John Ovens, Joseph Wild and an Aboriginal guide. They set out to explore the land south of Lake George. The party attempted to follow the Murrumbidgee south but upon encountering rugged terrain they elected to travel a few kilometres to the east through a chain of clear downs that is believed to have been the Michelago, Colinton and Bredbo valleys. It was during this part of the journey that they came across an Aboriginal tribe near Billilingra. After overcoming some apparent initial fear of the newcomers the Aboriginal people engaged in conversation with the assistance of the guide accompanying Throsby's party, and amongst other things, they informed the explorers that the area of the rolling downs was the 'Monaroo'. The group continued on and crossed a river they presumed to be the Murrumbidgee, but is more likely to have been the Numeralla, and made it to an area in the vicinity of present-day Bunyan before having to turn back on account of their limited supplies. They named the treeless plains 'Brisbane Downs' after the governor of the time, however the Aboriginal name proved the more popular name in time (Neal 1976: 5-6; Plowman 2007: 6, 8-9).

At this time in the early history of Australia, while exploration was reasonably extensive, there were attempts by the government to contain settlement to the area around Sydney. Governor Darling established the "limits of location" in 1826, an arbitrary line around the Sydney region, bounded by the Manning River in the north, the Lachlan River in the west and the Moruya River in the south, that designated the area within which European settlers could officially be granted land. In 1829 the limits of location were extended to include an area known as the Nineteen Counties, which included County Murray (bounded by the Murrumbidgee River) on the Limestone Plains (Poiner & Jack 2007; Campbell 1968). While the official limits of location were a bureaucratic attempt to contain settlement and maintain order in the colonies, the reality was that the more intrepid and entrepreneurial settlers were exploring lands outside the limits of location and squatting on land that suited their purposes (Campbell 1968).

European settlement of the Monaro began in the late 1820s. The Limits of Location at that time ended at Michelago, so all settlement to the south was technically illegal.

Census records from 1828 indicate that there were already 20 new settlers on the Monaro, although there is some confusion regarding this number since the people listed were all servants living on the Limestone Plains. Nevertheless, Richard Brooks is known to have had stock and men at *Gegedzerick* near Berridale in 1827. In 1832, William Glanville came to the area to work for Joseph Ward at *Wambrook*. He reported that at that time there was a hut at Cooma (Kuma) belonging to Cooper and Levy and that *Coolringdon*, *Gegedzerick* and *Wambrook* were the only stations to the west of this. Two years later, John Lhotsky relayed information from Mr Bath, the manager of Kuma Station, that R. Campbell had been established at Waterholes, near Michelago for seven years, Richard Brooks had been at *Jijedery* (Gegedzerick) for six years, Cooper and Levy had been at Cooma for five years and Dr Reid had been at Bunyan for a similar period of time. Similarly, the White family had been at *Tom Grogin* near Nimmitabel for around four years and other families were established at *Yinibrothers*, *Billilingra*, *Bulungewaing* and various other stations around the Snowy and Maclaughlin Rivers (Neal 1976; Plowman 2007: 10).

When John Lhotsky travelled through the region in 1834, he considered himself 'surrounded by absolute anarchy and lawlessness' (cited in Andrews 1998). At that time the majority of men living on the Monaro during the 1830s were assigned servants either serving their sentence, ticket of leave, or freed and in employment (Andrews 1998). The theft and resale of livestock was common practice.

Lhotsky's description of the landscape noted that it was a remarkable though inexplicable fact that the plains were 'altogether destitute of trees'. He observed that there was a surprising number of travellers on the roads that he was continually being interrupted. 'There is a greater traffic and motion on Menoro, than our Legislature may believe' (Plowman 2007). At Bunyan he met with a Dr Reid who suggested a visit to Mr Bath, the manager of Kuma Station. Cooma became a part of a 19,000 acre run used by William Bradley (Cooma-Monaro 150 Years On Committee 1999 [C-M150YOC 1999]). Cooma was surveyed for a town in 1849 at which time two groups of buildings were already established in the Lambie and Back street areas (C-M150YOC 1999). Land sales commenced in 1850.

Cooma became a thriving town by the late 1850s at which time traffic to and from the Kiandra gold rush significantly increased the settlement (C-M150YOC 1999). By the end of the 1800s, the town developed further with the construction of substantial churches, schools and municipal buildings which were often built with the local granite (C-M150YOC 1999). By the 1950s, Cooma was a flourishing country town of approximately 2,000 people and the centre of a large regional farming community (Howell 1996).

During the development of the Snowy Mountains Scheme in 1949, Cooma became the headquarters for the Snowy Mountains Hydro-electric Authority (becoming the SMA). The town was immediately transformed. By the peak of the Snowy Mountains

Scheme, the population of Cooma swelled to 9,000-10,000 people (C-M150YOC 1999). Some 686 houses were built in Cooma North and Cooma East (C-M150YOC 1999).

The railway came to Cooma in 1889 (C-M150YOC 1999). By the early 1950s the goods shed and siding was unable to accommodate the demand placed on it by the SMA, and in July 1952, a 2.3 km branch line was opened to workshops and storage areas at Polo Flat.

Prior to development as an industrial area and airfield, the Polo Flat area was cleared pasture and utilized for stock grazing. Polo Flat contains an airfield which was originally established in 1921. The aviation pioneer Chares Kingsford-Smith is believed to have landed at the site on a barnstorming visit to the region (The Weekly Bulletin – Rotary Club of Cooma Inc)).

The airfield was developed in the late 1950s and 1960s to service the Snowy Scheme. It became the base for the Snowy Mountains Hydro-electric Authority's flying unit and aircraft (Neal 1976). By 1976 the fleet was reduced to one aeroplane, but the Polo Flat airstrip was still maintained (Neal (1976). The original hangers and terminal buildings are extant. The land was sold by Snowy Hydro in 2001 where it continued use as a private airfield. Snowy Hydro purchased the land again in early 2019. This airfield is north of the proposed segment factory and will not be impacted by the project.

5.4 Material Evidence

5.4.1 OEH Aboriginal Heritage Information Management System

A search of the NSW OEH Aboriginal Heritage Information Management System (AHIMS) has been conducted for proposed segment factory on the 21 April 2019 (AHIMS Reference: #416381). The search area measured 16 square kilometres and encompassed the area between eastings 691000 – 695000, and northings 5986000 – 5990000. Six Aboriginal object sites are listed for the search area including one hearth, one quarry and four artefact scatters (Appendix 2). The location of the Aboriginal object sites, as per the AHIMS grid references, are shown in Figure 5. The sites closest to the project area are c. one kilometre away to the north east; there are no Aboriginal objects listed on the AHIMS register in the proposed segment factory site.

It is noted that the AHIMS register only includes sites which have been reported to the NSW OEH. Generally, sites are only recorded during targeted surveys undertaken in either development or research contexts. Accordingly, this AHIMS search is not an actual or exhaustive inventory of Aboriginal objects situated within the local area. It is also noted that sites listed on AHIMS may be variable in their accuracy; it is not uncommon for grid references and/or the datum to be incorrect.

Searches have been conducted of the NSW State Heritage Inventory and the Australian Heritage Database. No Aboriginal sites are listed in either database for the project area.

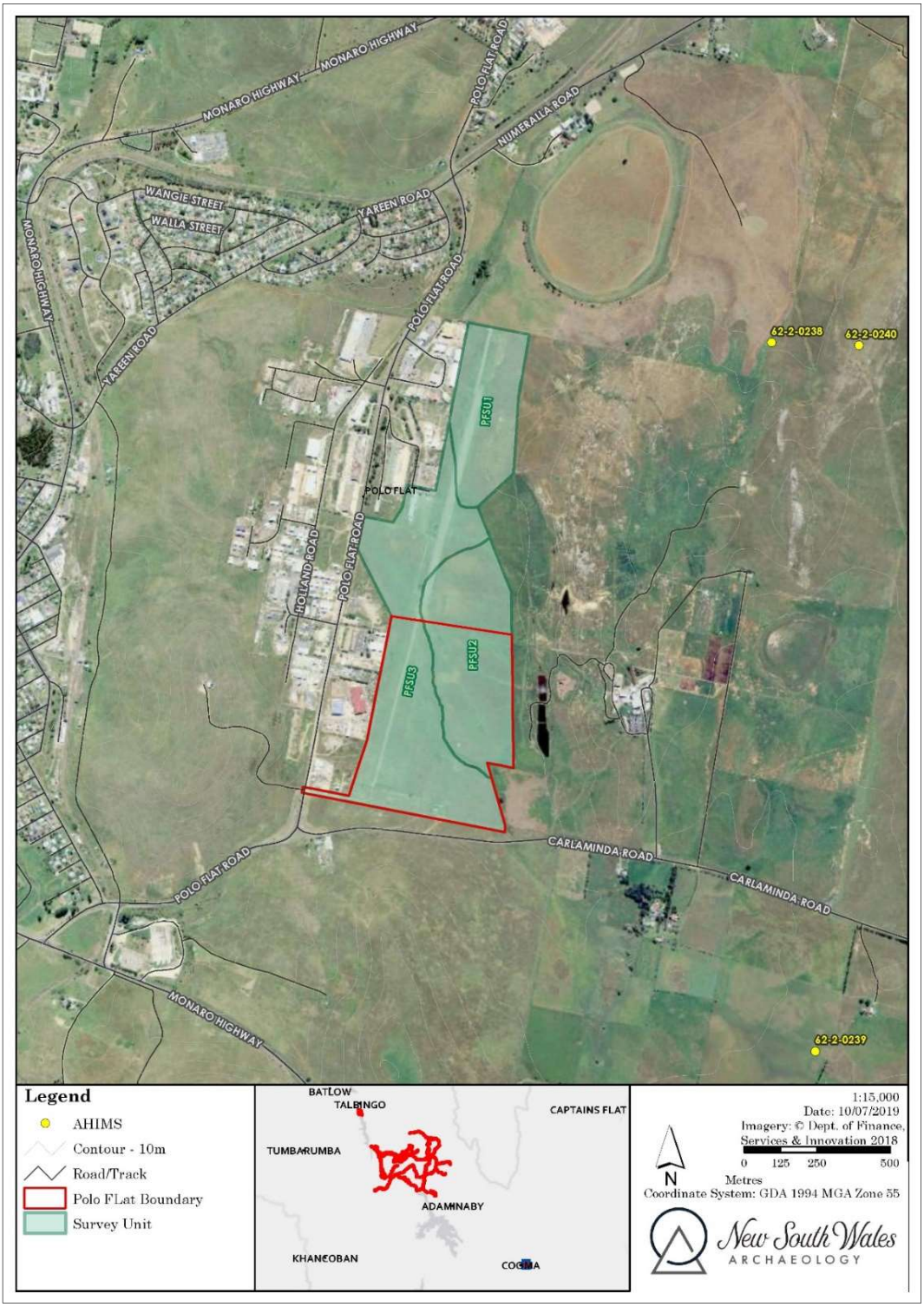

Figure 5 The location of AHIMS Aboriginal object locales in respect of the site.

5.4.2 Historic Heritage Schedules

A series of heritage register searches have been undertaken for the area in and around the Polo Flat site (searches conducted on 23 July 2019). These searches have included statutory and non-statutory lists and databases at local, state and national levels including the Australian Heritage Database, State Heritage Register and the State Heritage Inventory.

A number of historic items in Polo Flat are listed on the Cooma-Monaro Regional Council LEP (Cooma-Monaro LEP), none of which are in the proposed segment factory site (Figure 6). They include:

- Mine – Bushy Hill: an old gold mine dating from 1897 (this site is also listed on the Non-Statutory archive Register of the National Estate);
- Nissen Hut: A large curved-roofed building clad in corrugated iron possibly dating to the 1950s when the SMA was active in the area;
- Nissen Huts: Two large curved-roofed building clad in corrugated iron possibly dating to the 1950s when the SMA was active in the area;
- Railway Bridge: A single-lane timber trestle railway bridge over Polo Flat Road;
- Woolshed: Associated with SMA and later the TWG Wool.

The site does not feature any historical items listed on the WHL, NHL, CHL, SHR, s170 register, or Cooma-Monaro LEP.

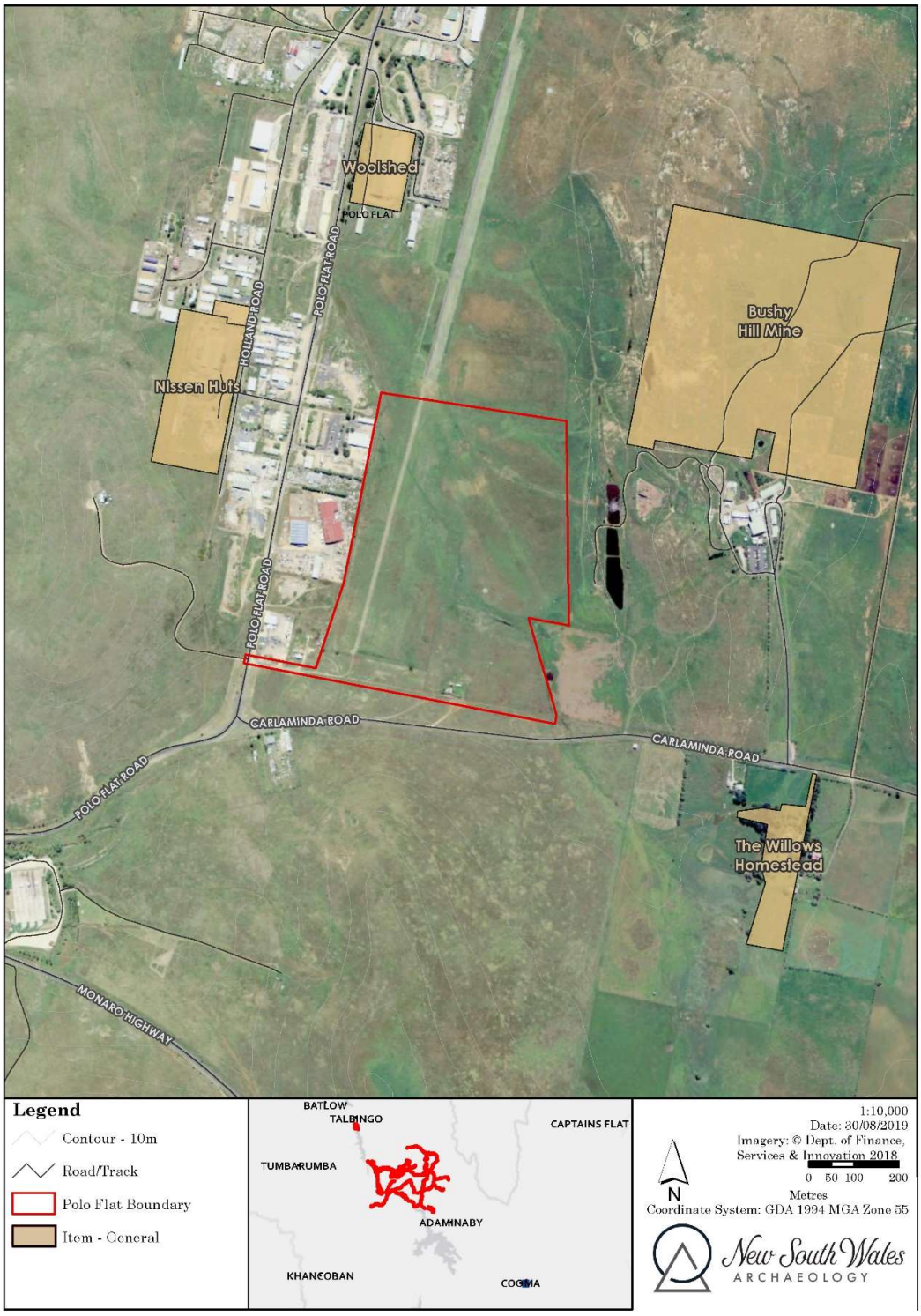

Figure 6 Location of historic items listed Cooma-Monaro LEP in relation to the project area.

5.4.3 Previous Archaeological Research in the Region

There have been a limited number of archaeological studies conducted within the immediate local area. The following discussion includes archaeological work and its results conducted within the wider area.

On the tablelands around Cooma, Flood (1980) recorded two artefact scatters which she described as being indications of transitory camp sites. One was positioned on a slope beside Cooma Creek (No 12), south of Cooma, while the other was recorded on a slope above Rock Flat (No. 13) in association with a quartzite deposit and mineral spring. Flood's (1980: 181) survey on the Monaro Tablelands was 'rather uneven' however, she argued that the site distribution patterns were significant. Flood (1980) found that few sites were recorded on the treeless parts of the tablelands and explained this as being due to the unfavourable nature of such an environment. Flood (1980) suggested that the location of sites in the area indicated an intention to exploit local raw material such as quartzite and basalt and could also be '…in the nature of transit camps'.

Djekic (1982) recorded twelve sites while surveying the route for a proposed transmission line between Cooma and Jindabyne. These sites were comprised of six scarred trees, four artefact scatters and two isolated artefact finds.

Lance and Hughes (1983) surveyed an area of c. six hectares in the northern area of the Cooma township for the proposed site of the Snowy Mountains Hydro-Electric Authority head office. Visibility was limited and no sites were found. However, Lance, formerly a Cooma resident, noted his previous observation of artefact scatters on slopes one kilometre from Cooma Creek near North Cooma, comprised of quartz and quartzite flakes and flaked pieces.

Paton (1985) recorded fourteen artefact scatters, six isolated finds and one stone quarry while surveying for the proposed Cooma-Royalla 132 kV transmission line north of Cooma. Six sites were large to very large open artefact scatters. One site covered an area of 1, 000 sq. metres; artefact density is calculated to be in the order of 1 artefact per 2 sq. metres. Paton attributed the location and size of these sites to their aspect and proximity to the nearby Numeralla River.

Stone (1988) surveyed the route of the proposed 26 kilometre long 11kV distribution line between Bunyan and Cowra Creek, north of Cooma. The proposed route crossed undulating and hilly farmland and steep stony terrain. Three Aboriginal artefact scatters, four stone procurement sites and one isolated find were recorded.

Comber (1988) conducted a study of four stone procurement areas at Bredbo, Chakola, Spring Downs and Rock Flat. The material exploited at these sites was Ordovician chert, which was primarily used for the manufacture of small tools.

Navin (1991) surveyed a small area south of Cooma on the summit of Mt Gladstone for a proposed communication facility. No sites were found.

In 1991 two burials were found, exposed in an alluvial terrace north-east of Bunyan. The skeletal remains were dated to about 6000 years BP and were accompanied by grave goods, including 327 pierced macropod teeth from Eastern Grey, Red Neck and Swamp Wallabies, as well as 450 grams of red ochre (Feary and Pardoe 1992). Stone artefacts, including hammerstones, and bone implements were also found at the site (Cohen 1993).

In 1992 Wellington surveyed 1.4 kilometres of a crown road along the Numeralla River at Chakola, 18 kilometres north of Cooma. One artefact scatter and one isolated find were recorded in the survey. The scatter was located on a broad low ridge and contained approximately 210 stone artefacts but was not considered to have high archaeological significance.

Oakley (1994) conducted a survey of four proposed Optus sites in the Cooma area at Mt Gladstone, Nanny Goat Hill, the Cooma Repeater Site and Jinderboine Hill. Good visibility was encountered in all locations; however, no sites were found and each area was assessed to be of low potential.

Navin (1994) conducted a survey for a proposed Cooma sewerage augmentation programme. This survey included planned pumping stations at Cooma North, Central Cooma, Cooma South and Polo Flats, as well as several kilometres of linking mains and a four hectare area beside Cooma Creek known as 'The Glen'. The survey located three Aboriginal sites adjacent to Cooma Creek, two of which were small low density artefact scatters. A third site, located on basal spur slopes on the western side of the ridgeline at 'The Glen', contained '…numerous concentrations of surface artefacts of varying density, surface area and artefact rock type' (Navin 1994:12). Artefacts included flakes, cores and flaked pieces of vein and crystal quartz, silcrete, volcanics and chert. Subsequent subsurface testing revealed a similar assemblage of raw materials present in the deposit (English and Gay 1994).

Kuskie *et al.* (1995) surveyed the proposed route of the Eastern Gas Pipeline. Two artefact scatters were located in an area east of the Cooma township. During monitoring of the pipeline construction by Australian Archaeological Survey Consultants in 1999 two very low density artefact scatters comprised of quartz cores and flakes were located in an area more than 2.5 km to the north east of Cooma.

Carter (2003) recorded an isolated find while surveying an area of c. 2.5 hectares for a proposed subdivision of Lot 4 DP 845442, North Cooma. Carter (2003) assessed the study area to be of low potential generally.

Dibden and Mason (2003 pers observ.) recorded a sparse artefact scatter on the top of the cliff and extending southwards over a large area on the eastern side of Lambie Gorge.

Dibden (2003) conducted an assessment of a proposed subdivision site at West Cooma. The landforms comprised simple northward faces slopes which were located at some distance from water. No Aboriginal artefacts were recorded. This result was argued to be in keeping with the relevant predictive model of site location.

A 2003 survey of Portion 319 of 31 hectares in Yallakool Road did not locate any Aboriginal sites (Saunders 2003a). Areas of archaeological sensitivity associated with a creek and a drainage line were identified on the basis of topographic modelling but were too disturbed to have retained any archaeological potential.

Saunders (2003b) surveyed an area of 4.047 hectares at North Cooma in response to a subdivision proposal, finding an extensive Aboriginal artefact scatter, comprised predominantly of chert and silcrete, in multiple exposures. The area surveyed was a low gradient footslope land element, and the Effective Survey Coverage was estimated to have been 2.8%. Surface artefact salvage and subsurface testing subsequently recovered a total of 71 artefacts. Eighty two percent were recovered from the surface and 18% from the test pits (Saunders 2004a). The artefacts comprised flakes, flaked pieces, a blade and a chip. The raw material was mainly silcrete, with a small amount of chert and quartz.

Saunders (2004b) surveyed a proposed 27.8 hectare subdivision in Yallakool Road, Cooma. The proposal area was situated mainly on the moderate to steep slopes of a major spur off the Tillabudgery ridgeline, but also included areas of low gradient basal slope near a minor tributary of Cooma Creek. No sites were found despite many areas of bare, partly eroded ground.

In 2004 Dearling carried out preliminary level archaeological assessments within eight northern Monaro nature reserves (Coornatha NR, Dangelong NR, Good Good NR, Kybeyan NR, Mt Clifforf NR, Numeralla NR, Undoo NR and Wadjan NR) and two state conservation areas (Kybeyan SCA and Macanally SCA). Based on environmental and topographic attributes, Dearling rated each study area's potential for prehistoric Aboriginal utilisation and subsequent archaeological signature; more rugged settings affording only periodic or sporadic water sources were generally seen as having low potential and most were most likely utilised during ephemeral, low intensity hunter-gatherer visitation, whereas zones with gentler terrain and more reliable water were attributed variable or higher potential (Dearling 2004). These assessments were based on a preliminary predictive model created on the basis of previous archaeological findings made in the broader region (Dearling 2004: 13-14), specifically:

- Sites will generally be found in association with low gradient or flat areas along major ridges, particularly at ridge junctions and connective points with subsidiary ridge features such as spurs, in saddles or on shoulders;
- Larger sites tend to occur on elevated terraces or basal slopes of spurs and knolls adjacent to permanent or ephemeral water sources, particularly above areas of cold air drainage;
- Near riverine corridors Aboriginal sites will be found on low gradient ground adjacent to but elevated above river channels (eg. low ridges, spurs, knolls and crests);
- Artefact scatters exhibiting higher artefact counts and greatest density will occur closer to permanent watercourses; and
- 'Major sites' will be found at or near spur termini above river valleys.

Subsequent survey of the nature reserves and state conservation areas resulted in the recording of 22 Aboriginal sites including 13 artefact scatters and nine isolated finds, containing a total of 167 artefacts; one 'probable' Aboriginal scarred tree was also noted in Good Good NR (Dearling 2004: 122, 202). In general accordance with the predictive model, it was found that more rugged terrain with less reliable water sources (eg. Coornatha NR, Mt Clifford NR, Numeralla NR and elevated components of Dangelong NR) exhibited little archaeology aside from occasional small, low density artefact scatters (Dearling 2004: 19-20, 39). In these elevated areas, features such as major ridge lines were seen as examples of locations most likely to exhibit small sites with low artefact counts and densities (Dearling 2004: 122). Conversely, most finds were made near more substantial watercourses on locally elevated and well-drained features (eg. river and creek banks, basal slopes and slightly elevated crests in Kybeyan SCA, Dangelong NR and Kybeyan NR) with highest site/assemblage complexity being apparent within or close to ecological boundaries (Dearling 2004: 41, 57-58, 95 122). The highest artefact density was apparent in Good Good Nature Reserve where the low gradient spur and ridge system adjacent to Cowra Creek was seen to be a particularly attractive zone for Aboriginal occupation (Dearling 2004: 46, 122).

Saunders (2005a) located a small disturbed artefact scatter in a proposed 1.21 ha residential subdivision in Kiah Avenue, Cooma. Four stone artefacts were recorded on gently inclined lower slopes approximately 150m from Cooma Back Creek. The artefacts comprised three flakes and a core. Recorded stone types were chert, quartz and quartzite. Saunders concluded that the artefacts probably originated in Kiah Avenue and were outliers of a larger scatter situated on a less disturbed basal slope closer to the creek.

Saunders (2005b) also surveyed a proposed residential subdivision of 12.5 hectares in Kiah Avenue. The proposal area was situated on the eastern slopes of a spur

emanating from Mt Gladstone and terminating at Cooma Back Creek. Slope gradient was variable, ranging from approximately 20%, mainly at upper elevations, to approximately 5%. Five small low density stone artefact scatters were recorded. The artefacts comprised flakes, flaked pieces and a core. Raw materials were quartz, volcanic, silcrete and quartzite. All the sites were all highly disturbed.

Navin Officer Heritage Consultants (2005) undertook an archaeological assessment of Lot 3 Mittagang Road, which entailed survey of an area measuring 45.68 hectares. This area is situated about 500 metres to the southwest of the current proposal area. Fair to good visibility (Effective Survey Coverage (ESC) = 4.9%) was encountered during the survey. Five Aboriginal objects were identified including occurrences of stone artefacts varying in size from one to four artefacts (TR1, TR2, TR3 and TR4) as well as a possible quartz/quartzite procurement area (TR5). Areas of archaeological potential were also identified on basal slopes in association with artefact scatters TR3 and TR4. Four other areas of archaeological potential were identified on low gradient and locally elevated locales adjacent the drainage lines. All of the recorded artefact scatters were interpreted as representing low density artefact distributions. The area as a whole was assessed as being unlikely to contain high density artefact scatters (Navin Officer Heritage Consultants 2005).

Saunders (2006a) conducted a survey for a proposed house site at Lot 107 of proposed subdivision Lot 105 DP 1047280 Bidgee Road and a separate survey for a proposed subdivision at Lot 91 DP 710633 Bidgee Road (Saunders 2006b). No sites or areas of archaeological potential were identified in either of those studies, and both areas were assessed to be of low archaeological sensitivity.

Dibden (2009a) was commissioned to undertake an Aboriginal archaeological assessment in relation to the proposed replacement of a water reservoir at Church Hill, located in North Cooma, NSW. The proposal area was situated on an elevated area about one kilometer to the east of Cooma Creek. The area was a gently sloping crest with a gradient ranging between 0 - 7°. Eleven stone artefacts were recorded in five different exposures across the landform. ESC encountered during the survey was low, however, numerous soil exposures were present. The area was assessed to be of low archaeological potential due to the high degree of prior impacts and the relatively low density of artefact distribution over that area. The Aboriginal objects recorded were assessed to be of low archaeological significance.

A total of 56 Aboriginal object locales were recorded in the Boco Rock Wind Farm site during the assessment conducted for the development application (Dibden 2009b). The majority of these were low or very low-density stone artefact distributions located within Survey Units assessed to be of low archaeological potential and sensitivity. A small number of Aboriginal object locales were assessed to be of low/moderate or moderate archaeological significance.

Stone artefacts were found in all environmental contexts surveyed except for flats beside the Maclaughlin River. Generally, plateau and ridge crest landforms were found to contain sparse and isolated stone artefact distributions only, and in many Survey Units on such landforms, no artefacts were found at all. More consistent artefact distribution was found on lower elevation landforms including crests and slopes which fall away from the plateau, or otherwise, are situated above but in close proximity to the Maclaughlin River. This pattern of artefact density and distribution is generally consistent with the predictive model of site type and location applicable to the area.

Artefacts were not recorded in half of the Survey Units (#21). It was predicted that stone artefacts are likely to be present in most, if not all these Survey Units, however, it was assessed that artefact density would be low, very low or negligible.

As noted above, no artefacts were recorded on flats situated in Survey Units adjacent to the Maclaughlin River. This result is in keeping with the predictive model of site type and location relevant to the local area in which it is considered that camp site locations in the vicinity of reliable water are likely to have been on elevated landforms above cold air drainage. While it is unlikely that there are no artefacts in flat landforms, the survey results suggest that artefact density is likely to be very low in flats; effective survey coverage was consistently and considerably higher in flats than elsewhere in the study area.

Approximately half of the artefact recordings consisted of either single stone artefacts (#26: 46%) or otherwise very low numbers (26 locales consist of between 2 and 10 artefacts). The results were assessed to be a reflection of the low artefact density present in the landforms in which they are situated.

The majority of artefacts recorded were flakes, flake portions, flaked pieces and cores made from a range of materials including quartz, silcrete, chert, quartzite and volcanics. The majority of artefacts were made from milky quartz with a minor presence of translucent quartz. Quartz is locally available in pebble form in the Maclaughlin River and also in terrestrial exposures in shale bedrock. All cortex on quartz artefacts was found to be of pebble form. The dominance of this material is likely to be a reflection of the local availability of this stone. It is noted that the majority of the Survey Units are situated on basalt bedrock and autochthonous quartz was found to be generally absent. Accordingly, the majority of fractured quartz found was considered likely to be artefactual.

Silcrete in many different colours and textures was recorded. Silcrete artefacts possessed both terrestrial and pebble cortex indicating that this material has come from a variety of regional sources. A distinctive, fine grained silcrete with brown and grey mottles was recorded; this same or very similar material has been observed in

assemblages at Jindabyne (pers. observation). Other materials were found in very minor frequencies.

In addition to flaking debitage, a number of other artefact types or implements were recorded including a silcrete retouched artefact, three amorphous flaked pieces with evidence of usewear (possible scrapers) two hammerstones, an anvil and a large chopper. These implements were found in all landform contexts.

A subsequent program of salvage excavation was undertaken at the Boco Rock Wind Farm in 2016 (Dibden 2017a). This excavation revealed the subsurface presence of stone artefacts across the three topographic contexts sampled and, in particular, moderate densities in two of the sites. Site SU19/L2, on top of the high, exposed ridge crest of Sherwin's Range is located at c. 2.5 kilometres from any water and there is no protection from the weather. Site SU13/L5 is located at between 1 and 2 kilometres from water and was also exposed. None of the sites fit easily within previous occupation and predicted site locational models.

The salvage program revealed the incidence of significant artefact densities in landforms situated at considerable distance from water and in exposed and potentially hostile environmental contexts. This finding is a considerable archaeological revelation and provides an important counter narrative to previous occupation models in which Aboriginal habitation is seen to be tethered to riparian zones or otherwise sheltered from the prevailing weather. Rather, it is likely that Aboriginal people experienced the Monaro landscape in a manner and in ways which we, at some distance, at least in time, cannot readily comprehend.

In addition, a new retouched artefact type has been identified, hitherto unknown in southeastern Australia. These highly standardised, tiny and delicate, triangular shaped microliths were made from a range of materials and found in all three sites. Their function is not known with any certainty at this time; however, they are likely to have been a variety of spear barb. As such, they are likely to have been elements of men's subsistence equipment and, accordingly, provide a nuanced and gendered perspective to the archaeological record.

Dibden (2017b) conducted an assessment of a proposal to construct an access track and conduct the drilling of up to 10 bore holes within the Rock Lodge prospect at Myalla. Twelve Aboriginal object locales of very low density, highly disturbed artefact distributions were recorded on simple slopes and a crest landform near Jinny Brother Creek.

5.5 Predictive Model of Aboriginal Site Distribution

5.5.1 Archaeological Models

In the Cooma-Monaro district recorded open artefact scatter sites possess variability in terms of size, artefact density and the composition of the raw material assemblage. A general correlation between the permanence of water and the permanence and/or complexity of Aboriginal occupation can be expected to have obtained in the study area. In other areas, where intensive sub-surface excavation programs have been undertaken it has been found that larger and more complex sites are generally located near to permanent water sources with smaller sites located in minor tributary locations (*cf* Jo McDonald CHM P/L1997). At locations in the vicinity of ephemeral water sources open camp sites exhibit low absolute artefact numbers and low densities. Also, differences in the relationship between the permanence of water and open sites is reflected in the range of lithic activities that have been undertaken at sites. Open sites close to permanent water possess evidence of a greater range of lithic activities, while sites near ephemeral water have evidence of one-off occupation and limited lithic activity (Jo McDonald CHM P/L1997). While the Jo McDonald CHM P/L (1997) model is based on work undertaken on the Cumberland Plain rather than the Monaro, it can be reasonably expected that if comparable detailed work was carried out locally a similar model of site variability would be produced.

In the absence of such a detailed local model, a basic classification based on stream ordering is considered to be potentially useful for predicting both the location of Aboriginal camp sites and to indicate the potential nature and complexity of activities carried out at sites in the Monaro. Using stream ordering, the following general predictions about Aboriginal open site locations and their nature can be made: The density of artefacts in a locale will vary according to the permanence of water, landscape unit (including vegetation structure) and proximity to lithic resources. At the headwaters of upper tributaries (first order creeks) archaeological evidence will be sparse. At the middle reaches of minor tributaries (second order creeks) archaeological evidence will be sparse but indicate focussed activity. At the lower reaches of tributary creeks (third order creeks) archaeological evidence will indicate more frequent occupation and evidence of more concentrated activities. At major creeklines and rivers (fourth order) archaeological evidence will indicate more permanent occupation which is of greater complexity. Creek junctions may provide foci for site activity. Ridgetops between drainage lines will usually contain limited evidence (*after* Jo McDonald CHM P/L1997). The following prediction of site location takes into account the type of Aboriginal sites known to be present within the wider local area, the topography and water sources proximate to the project area.

5.5.2 Predictive Model of Site distribution for the Site.

Stone Artefacts

Stone artefacts will be located either on the ground surface and/or in subsurface contexts. Typically, stone artefacts recorded in open sites are representative of debris which results from flaking stone and will include unmodified flakes, cores and flaked pieces. Actual stone tools such as deliberately formed artefacts (eg. scrapers, backed blades or adzes) or pieces which possess evidence of use are generally present in low frequencies. The raw materials used for artefact manufacture are usually fine grained siliceous stone. In the Cooma-Monaro area common raw materials include quartz, silcrete, quartzite, fine grained acid volcanics and chert.

Within the local area it is predicted that stone artefacts may be distributed across the landscape in a virtual continuum. Artefact density can be expected to vary in relation to local availability of water, resources and the nature of the terrain. In the site the distribution of stone artefacts is expected to be generally very low if not negligible. The predicted low density of stone artefacts is a factor of the distance to permanent water and concentrated resource zones (biodiversity), and the amorphous nature of the terrain.

Scarred and Carved Trees

Scarred and carved trees result from the removal of bark from trees by Aboriginal people for either domestic or ceremonial purposes. These site types can occur anywhere that trees of sufficient age are present, however, in an Aboriginal land use context would most likely have been situated on flat or low gradient landforms in areas suitable for either habitation and/or ceremonial purposes. Bark removal by European people through the entire historic period and by natural processes such as fire blistering and branch fall, make the identification of scarring from a causal point of view very difficult. Accordingly, given the propensity for trees to bear scarring from natural causes their positive identification is impossible unless culturally specific variables such as stone hatchet cut marks or incised designs are evident and rigorous criteria in regard to tree species/age/size and it specific characteristics in regard to regrowth is adopted.

Nevertheless, the likelihood of trees bearing cultural scarring remaining extant and *in situ* in the site is low given events such as land clearance and bushfires. Generally scarred trees will only survive if they have been carefully protected such as the trees associated with Yuranigh's grave at Molong where successive generations of European landholders have actively cared for them. The site is grassland and the potential for scarred trees to be present in the project area is unlikely.

Stone Quarry and Procurement Areas

A lithic quarry is the location of an exploited stone source (Hiscock & Mitchell 1993:32). Sites will only be located where exposures of a stone type suitable for use in artefact manufacture occur. These sites will commonly have evidence of exploitation including extraction and preliminary flaking preparation. The presence of these site types is dependent on the surface exposure of suitable stone. Quarries are a rare site type in this region, however, Comber (1988) recorded numerous quartz quarries on the Monaro. No quarries are known to be present in the site. The potential for quarries to be present in the site is very low.

Ceremonial Places and Sacred Geography

Burbung and ceremonial sites are places which were used for ritual and ceremonial purposes. Possibly the most significant ceremonial practices were those concerned with initiation and other rites of passage such as those associated with death. Sites associated with these ceremonies are burbung grounds and burial sites. Additionally, secret rituals were undertaken by individuals such as clever men. These rituals were commonly undertaken in 'natural' locations such as water holes.

In addition to site specific types and locales, Aboriginal people invested the landscape with meaning and significance; this is commonly referred to as a sacred geography. Natural features are those physical places which are intimately associated with spirits or the dwelling/activity places of certain mythical beings (*cf*. Knight 2001; Boot 2002). Boot (2002) refers to the sacred and secular meaning of landscape to Aboriginal people which has '… legitimated their occupation as the guardians of the places created by their spiritual ancestors'.

While many places in the high country are known in respect of their sacredness, none are reported for the site.

Burial/interment sites

Burial/interment sites have been recorded within the wider region. On the Monaro they include human remains buried in excavated ground contexts (eg. Helms 1895: 404-406; Feary 1996), placed in limestone caves (eg. Spate 1997: 39) and deposited in standing hollow trees (eg. Helms 1895: 399; Flood 1980: 120). This site type is rarely located during field survey. There is, however, little potential for burials to be present in the site given the lack of very old hollow trees and geographic context.

Contact Sites

These sites are those which contain evidence of Aboriginal occupation during the period of early European occupation. Evidence of this period of 'contact' could potentially be Aboriginal flaked glass, burials with historic grave goods or markers, and debris from 'fringe camps' where Aborigines who were employed by, or traded

with the white community, may have lived or camped. The most likely location for contact period occupation sites would be places adjacent to permanent water and located in relative proximity to centres of European occupation such as towns and homesteads. No contact sites are known to be present. The potential for contact sites to be present in the site is considered possible but low.

6. ABORIGINAL CONSULTATION PROCESS

A formal process of Aboriginal community consultation has been conducted as a component of broader Snowy 2.0 project in accordance with the guidelines as set out in the NSW DPIE *Aboriginal cultural heritage consultation requirements for proponents 2010* (NSW DECCW 2010b).

The early stages of the consultation process have been documented previously in the following Aboriginal Cultural Heritage Assessment Reports prepared for Snowy 2.0:

- Snowy 2.0 Feasibility Study - Access and Corrective/Emergency Maintenance at Ravine and Tantangara Reservoir Aboriginal Cultural Heritage Assessment Report. Julie Dibden 28 January 2017 (This 2017 ACHA supported AHIP C0003441 issued for the works);
- Snowy 2.0 Exploratory Works – Aboriginal Cultural Heritage Assessment Report. Julie Dibden 20 July 2018.

Updated information about Snowy 2.0 and the cultural heritage assessment inclusive of additional areas in the project footprint was provided to RAPS on 13 May 2019.

The Registered Aboriginal Parties (RAPS) for the Snowy 2.0 project are:

- Iris White, on behalf of the Ngarigo people;
- Koomurri Ngunawal Aboriginal Corporation (since deregistered via email on 22/12/17);
- Corroboree Aboriginal Corporation;
- Bega Local Aboriginal Land Council;
- Lindsay Connolly, Steve Connolly and Ramsey Freeman
- Brungle-Tumut Local Aboriginal Land Council,
- Arnold Williams, on behalf of the Ngunnawal Elders Corporation,
- Ellen Mundy,
- John Dixon and
- Toomaroombah Kunama Namadgi Indigenous Corporation.

Given that no Aboriginal objects would be impacted by the proposed construction of the segment factory the NSW DPIE *Aboriginal cultural heritage consultation requirements for proponents 2010* (NSW DECCW 2010b) is not relevant to the project. Accordingly, a consultation process has not been undertaken which is specific to the proposed segment factory.

However, the consultation process initiated at the beginning of the Snowy 2.0 project during geotechnical works is regular and on-going as the broader project is developed. It has continued throughout the Early Works, Main Works and Polo Flat projects.

The project area is within the boundaries of the Merrimans Local Aboriginal Land Council and field assistance was provided by Eric and Merv Naylor.

A copy of this draft report will be provided to RAPS and the Merrimans Local Aboriginal Land Council for review.

7. ARCHAEOLOGICAL FIELD ASSESSMENT AND RESULTS

7.1 OVERVIEW

The project area has been divided into three Survey Units and the archaeological signature of these has been established during the assessment. Survey Units are the framework for the development of the heritage status, significance, and appropriate management and mitigation measures.

7.2 FIELD SURVEY

7.2.1 Survey Methodology

The field survey was designed to assess the archaeological sensitivity of the entire proposal area. All survey areas have been subject to a reasonably comprehensive assessment. The pedestrian survey methodology entailed walking parallel transects across individual Survey Units with each surveyor situated c. 10 – 20 metres apart. Each Survey Unit was surveyed until the entire area had been systematically inspected. This methodology enabled direct visual inspection of as much of the ground surface of the proposal area as practicable.

The approach to recording in the current study has been a 'nonsite' methodology: the elementary unit recorded is an artefact rather than a site (Dunnell 1993; Shott 1995). The rationale behind this approach is that artefacts may be directly observed, however, 'sites' are a construction within an interpretative process. Given that it can be expected that full archaeological visibility will not be encountered during the survey, the process of identifying site boundaries (if they exist at all) will not be possible.

The density and nature of the artefact distribution in the project area will vary across the landscape in accordance with a number of behavioural factors which resulted in artefact discard. While cultural factors will have informed the nature of land use, and the resultant artefact discard, environmental variables are those which can be utilised archaeologically in order to analyse the variability in artefact density and nature across the landscape. Accordingly, in this study, while the artefact is the elementary unit recorded, it is the Survey Unit which is utilised as a framework of recording, analysis, and management (Wandsnider and Camilli 1992). Each survey area has been divided into Survey Units, defined according to broad landform morphological types (as defined below), discrete development envelopes and survey traverses.

The field survey variables recorded are defined below:

Survey Unit Variables

Landscape variables utilised are conventional categories taken from the *Australian Soil and Land Survey Field Handbook* (McDonald *et al.* 1998). Landforms form the primary basis for defining Survey Unit boundaries.

The following variables were recorded for each Survey Unit:

Morphological type:

- Simple slope: - element adjacent below crest or flat and adjacent above a flat or depression.
- Flat.

Slope class and value (ave.):

- Level: <1°.
- Very gentle: 1°.
- Gentle: 3°.

Soil

Soil type and depth was recorded for each Survey Unit. This observation is based solely on the potential for soil to contain artefacts; it does not imply that artefacts will be present or absent.

Survey Coverage Variables

Survey Coverage Variables are a measure of ground surveyed during the study and the type of archaeological visibility present within that surveyed area. Survey coverage variables provide a measure with which to assess the effectiveness of the survey so as to provide an informed basis for the formulation of management strategies. Specifically, an analysis of survey coverage is necessary in order to determine whether or not the opportunity to observe stone artefacts in or on the ground was achieved during the survey. In the event that it is determined that ground exposures provided a minimal opportunity to record stone artefacts, it may be necessary to undertake archaeological test excavation for determining whether or not stone artefacts are present. Conversely, if ground exposures encountered provided an ideal opportunity to record the presence of stone artefacts, the survey results may be considered to be adequate and, accordingly, no further archaeological work may be required.

Two variables were used to measure ground surface visibility during the study; the area of ground exposure encountered, and the quality and type of ground visibility

(archaeological visibility) within those exposures. The survey coverage variables estimated during the survey are defined as follows:

- Ground Exposure (GE) – an estimate of the area of exposures of bare ground; *and*
- Archaeology Visibility (AV) – an estimate of the average levels of potential archaeological surface visibility within those exposures of bare ground. Archaeological visibility is generally less than ground exposure as it is dependent on adequate breaching of the bare ground surface which provides a view of the subsurface soil context. Based on subsurface test excavation results conducted in a range of different soil types across New South Wales it is understood that artefacts are primarily situated 10 - 30 cm below the ground; reasonable archaeological visibility therefore requires breaching of the ground surface to at least a depth of 10 cm (Dibden 2005b).

Based on the two visibility variables as defined above, an estimate (Net Effective Exposure – NEE) of the archaeological potential of exposure area within a survey unit has been calculated. The Effective Survey Coverage (ESC) calculation is a percentage estimate of the proportion of the Survey Unit which provided the potential to view archaeological material.

The data collected forms the basis for the documentation of survey results outlined in the section below.

7.2.2 Field Survey – Results

In accordance with the OEH Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW (DECCW 2010a), the purpose of a field survey is to record the material traces and evidence of Aboriginal land use that are:

- Visible at or on the ground surface, or
- Exposed in section or visible as features (e.g. rock shelters with rock-art),
- and to identify those areas where it can be inferred that, although not visible, material traces have a high likelihood of being present under the ground surface (DECCW 2010a: 12).

Survey Coverage and Observations

A comprehensive field survey was conducted on 15 March 2019 with a second undertaken on the 10 July 2019. The survey on the 15 March was conducted by Jo Dibden, Andrew Pearce and Eric Naylor and Merv Naylor. The second survey was of a recent addition to the southern end of the project area and was conducted by Jo Dibden and Andrew Pearce.

During the field survey, effective survey coverage (ESC) was generally quite low. Survey coverage is described and summarised in Table 2 below. The site consists of three Survey Units which have been delineated based on changes of landform element, aspect and gradient. The area surveyed is greater than the development footprint due to a significant reduction in the site as the design was refined (see Figure 7).

The whole site has undergone significant levels of prior disturbance associated with grazing, land clearance, fencing and landform modification (Plates 1 - 5). This previous landuse and its cumulative effects are assessed to have caused high levels of impact to almost all ground surfaces where impacts are proposed, and to any Aboriginal objects which may once have been present in those areas.

The total survey area measured 634,182 square metres. Ground exposures inspected included areas of animal marks and tracks, erosional exposures and patches of bare earth. Broad areas of ground exposure were infrequent, and ground exposures measured approximately a total of 36,557 square metres in area. Of that ground exposure area, archaeological visibility inspected (the potential artefact bearing soil profile) was low. Archaeological visibility is estimated to have been c. 13,330 square metres (NEE). Effective Survey Coverage is calculated to have been 2.1% of the surveyed area.

It is noted that the original survey area is larger than the current layout of the project.

Table 2 Effective Survey Coverage.

ID	Area	inspected %	sq m	GE %	GE sq m	AV %	NEC sq m	ESC %	exposure
SU1	123882	70	86717	30	26015	40	10406	8.4	Low: bare earth
SU2	192473	60	115484	5	5774	30	1732	0.9	Very low: bare earth
SU3	317827	50	158914	3	4767	25	1192	0.4	Very low: bare earth and grader activity
	634182		361114		36557		13330	2.1	

No Aboriginal objects or historic heritage items were recorded in the project area (see Figure 7). The ESC encountered during the field survey is low and less than adequate for the purposes of determining the archaeological status and potential of the subject area based on the field inspection results alone. Accordingly, recourse to the predictive model is necessary in order to consider the nature of the archaeological sensitivity of the subject site. In this regard, all Survey Units are assessed to be of low archaeological potential and sensitivity.

Plate 1 SU1 looking south.

Plate 2 SU1 looking west.

Plate 3 SU3 looking north.

Plate 4 SU3 looking south east. Note modified channel of drainage line.

Plate 5 The Polo Flat runway looking south. Note, this is north of the project area and outside the footprint of the proposed segment factory.

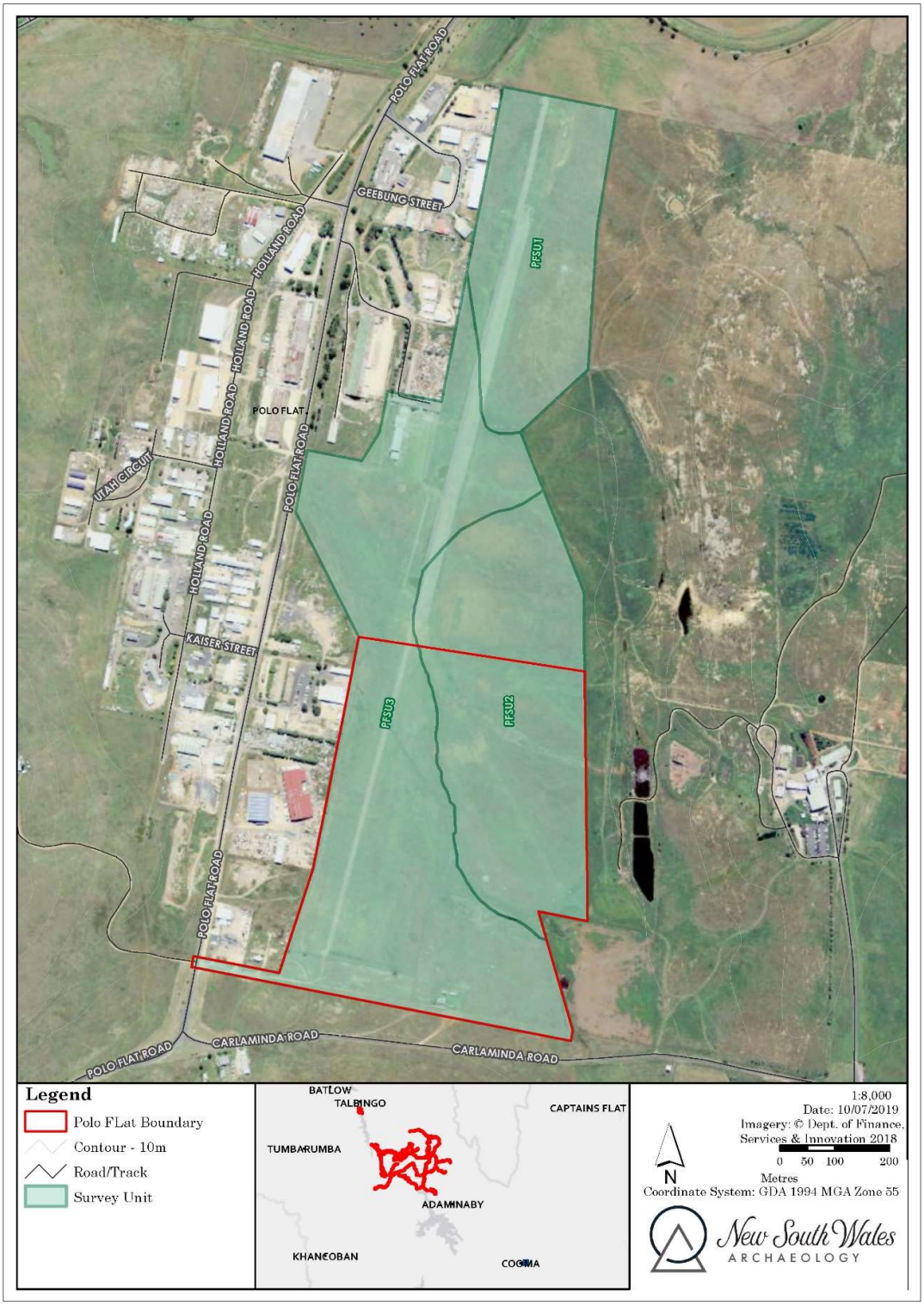

Figure 7 The location of Survey Units defined during the assessment. Note project are outlined in red.

Table 3 A description of Survey Units recorded during the assessment.

ID	Start	Finish	Description	Disturbance	Predicted/Known Artefact Density	Aboriginal Objects	Historic items
SU1	693277. 5989110	693303. 5988487	A simple slope landform of gentle gradient with a westerly aspect. Vegetation is grasses, tussock and various weeds including St John's wort and Patterson's curse. Geology is Silurian acid volcanics and sediments in the east, grading to Quaternary silt and clay downslope to the west. Soil is a reddish brown silty/clayey loam. The landform is eroded. SU moderately disturbed.	The main disturbance to the SU is from clearance, fencing, cropping, grazing and probable grading. Compounding this there appears to be a history of significant erosion.	Negligible	Nil recorded	Nil recorded
SU2	693349. 5988375	693431. 5987592	A simple slope landform of gentle gradient with a westerly aspect Vegetation is grasses, tussock and various weeds including St John's wort and thistle. Geology is Silurian acid volcanics and sediments in the east, grading to Quaternary silt and clay downslope to the west. Soil is a reddish brown silty/clayey loam. The landform is highly eroded. SU moderately/highly disturbed.	The main disturbance to the SU is from clearance, fencing, cropping, grazing and probable grading. There are a number of drainage lines running east to west that have been mechanically formed and a sizeable stepdown of c. 30 cm along the eastern fence-line indicating significant erosion.	Negligible	Nil recorded	Nil recorded
SU3	693201. 5988729	693108. 5987495	A flat landform of level gradient with open aspect. Vegetation is predominantly grass with various weeds and shrubs. Geology is	The main disturbance is the result of construction of the aeroplane runway. The landform has been	Negligible	Nil recorded	Nil recorded

ID	Start	Finish	Description	Disturbance	Predicted/Known Artefact Density	Aboriginal Objects	Historic items
			Quaternary silt and clay. Soil is a grey brown silty/clayey loam. The landform is aggraded and eroded. SU highly disturbed.	mechanically levelled and in parts infilled with imported material that includes asbestos, concrete, metal pipes, rubber, etc. Tarmac has been laid, and concrete pads. Naturally occurring rock has been graded up and pushed into drainage lines, which in turn have been mechanically formed. The result of these activities is a grossly disturbed landform.			

8. CULTURAL HERITAGE VALUES AND STATEMENT OF SIGNIFICANCE

The information provided in this report and the assessment of significance of Aboriginal objects provides the basis for the proponent to make informed decisions regarding management and mitigation which should be undertaken in respect of proposed impacts.

The following significance assessment criteria is derived from the relevant aspects of ICOMOS Burra Charter (Australian ICOMOS 1999).

8.1 SIGNIFICANCE ASSESSMENT CRITERIA – ABORIGINAL HERITAGE

The NPWS (1997) defines significance as relating to the meaning of sites: 'meaning is to do with the values people put on things, places, sites, land'. The following significance assessment criteria are derived from the relevant aspects of ICOMOS Burra Charter and NSW Department of Urban Affairs and Planning's 'State Heritage Inventory Evaluation Criteria and Management Guidelines'.

Aboriginal cultural heritage sites are assessed under the following categories of significance:

- Social or cultural value to contemporary Aboriginal people;
- Historical value;
- Scientific/archaeological value;
- Aesthetic value.

Aboriginal cultural significance

The Aboriginal community will value a place in accordance with a variety of factors including contemporary associations and beliefs and historical relationships. Most heritage evidence is highly valued by Aboriginal people given its symbolic embodiment and physical relationship with their ancestral past. It will almost certainly be the case that the value Aboriginal people feel for Aboriginal objects will differ to archaeological considerations.

Archaeological value

The assessment of archaeological value involves determining the potential of a place to provide information which is of value in scientific analysis and the resolution of potential archaeological research questions. Relevant research topics may be defined and addressed within the academy, the context of cultural heritage management or by Aboriginal communities. Increasingly, research issues are being constructed with reference to the broader landscape rather than focusing specifically on individual site locales. In order to assess scientific value sites are evaluated in

terms of nature of the evidence, whether or not they contain undisturbed artefactual material, occur within a context which enables the testing of certain propositions, are very old or contain significant time depth, contain large artefactual assemblages or material diversity, have unusual characteristics, are of good preservation, or are a part of a larger site complex. Increasingly, a range of site types, including low density artefact distributions, are regarded to be just as important as high density sites for providing research opportunities.

In order to assess the criteria of archaeological significance further, and also to consider the criteria of rarity, consideration can be given to the distribution of stone artefacts across the continent. There are two estimates of the quantity of accumulated stone artefacts in Australia (Wright 1983:118; Kamminga 1991:14; 2002). Wright estimated an average of 500,000 débitage items and 24,000 finished tools per square kilometre, which equates to a total of about 180 billion finished stone tools and four trillion stone débitage items in Australia. Kamminga's estimates, which were determined from a different set of variables, provide a conservative estimate of 200 billion stone tools and 40 million tonnes of flaking débitage (see Kamminga 1991:14; 2002). These two estimates are similar and suggest that the actual number of stone tools and items of flaking débitage in Australia is in the trillions. The stone artefacts distributed in the proposed activity area cannot, therefore, be considered to be rare.

The vast majority of stone artefacts found in Australia comprise flaking debris (termed débitage) from stone tool making. While it can be reasonably inferred from a range of ethnographic and archaeological evidence that discarded stone artefacts and flaking debris was not valued by the maker, in certain circumstances these objects may to varying degrees have archaeological research potential and/or Aboriginal social value. However, only in very exceptional circumstances is archaeological research potential high for particular sites (Kamminga, J. pers. comm. June 2009).

Aesthetic value

Aesthetic value relates to aspects of sensory perception. This value is culturally contingent.

8.2 STATEMENT OF SIGNIFICANCE - ABORIGINAL OBJECT SITES

The Survey Units in the project area are assessed to be of very low archaeological heritage value primarily because of their predicted negligible artefact density and high degree of previous impacts and disturbance.

8.2 SIGNIFICANCE ASSESSMENT CRITERIA – HISTORIC HERITAGE

Understanding the heritage significance of an item, place or landscape is integral to the process of assessing potential heritage impacts and developing appropriate management and mitigation strategies. The nature and extent of potential heritage impacts cannot be determined without first establishing heritage significance.

Within Australia, the *Australia ICOMOS Burra Charter, 2013* (Australia ICOMOS 2013) is the principal document that sets a standard of practice for those who provide advice, make decisions about, or undertake works to places of cultural significance. Within NSW, there are a series of documents that specify the criteria and guidelines for assessing heritage significance. The NSW heritage assessment criteria, which are set out in the HO&DUAP (2001) publication *Assessing Heritage Significance: a NSW Heritage Manual update*, encompass the various types of heritage values identified in the *Burra Charter*, which include historical, aesthetic, scientific, social and spiritual significance. Other publications relevant to the process of assessing heritage significance in NSW include the following:

- *New South Wales Historical Themes* (NSW Heritage Council 2001), which sets out relevant historical themes with reference to the national historical theme framework (AHC 2001);
- *Investigating Heritage Significance: draft guideline* (NSW Heritage Office 2004), which outlines procedures for background research, undertaking community consultation, investigating fabric and managing significance;
- *Levels of Heritage Significance* (NSW Heritage Office 2008), which provides supplementary guidance on establishing whether a place or object is of local, state, national or world significance; and
- *Assessing Significance for Historical Archaeological Sites and 'Relics'* (NSW Heritage Branch 2009), which provides updated summaries of the heritage significance criteria, significance rankings, levels of significance and the application of these concepts to archaeological sites.

8.4 STATEMENT OF SIGNIFICANCE – HISTORIC HERITAGE

No historic items, archaeological sites or relics are present in the project area. The site has no historic heritage significance.

9. IMPACT ASSESSMENT

In this section, the nature and extent of the proposed activity and any potential harm to Aboriginal object locales and historical items is identified. The assessment takes into consideration the extent to which the development or activity will change the surrounding landscape (NSW OEH 2011).

Direct harm would occur as a result of an activity which disturbs the ground such as road works or excavations for construction, as listed previously in Section 2. Indirect harm may occur to places situated adjacent and beyond areas in which direct impacts happen, for example, via exacerbated erosional processes.

When assessing harm, a consideration of Ecologically Sustainable Development (ESD) is required. ESD is defined in the Protection of the Environment Administration Act 1991. Section 6(2) of that Act states that ESD requires the effective integration of economic and environmental considerations in decision-making processes and that ESD can be achieved through the implementation of:

(a) the precautionary principle,

(b) inter-generational equity,

(c) conservation of biological diversity and ecological integrity,

(d) improved valuation, pricing and incentive mechanisms.

The principles of ecologically sustainable development and the matter of cumulative harm have been considered for this project. The proposed impacts will take place within an area that has sustained a high level of prior impacts. The works would therefore occur in areas which have already received a certain level of impact and harm. Accordingly, considerations of ecologically sustainable development and cumulative impacts can be considered largely irrelevant in the matter at hand.

Avoidance or the mitigation of harm has not been considered as an option in relation to the proposed segment factory. The significance of the project area has not been assessed to be of sufficient significance to warrant the implementation of avoidance or mitigation strategies.

The consideration of ESD has concluded that avoidance of impacts is not warranted.

10. MANAGEMENT AND MITIGATION

In the previous sections, the results of the background research and information about the cultural values of the project areas has been outlined a summary of which presented below.

It is noted that no information about Aboriginal places, areas or objects has been identified as a result of the process of Aboriginal consultation which has been undertaken (as specified in clause 80C of the NPW Regulation).

No previously recorded Aboriginal object sites are known to be present in the site.

No Aboriginal object locales were recorded during the field survey. Artefact density has been assessed to be negligible or very low based on a consideration of the environmental and geographic context.

No historic heritage items, archaeological sites or relics are present in the proposed segment factory.

The field survey of the project can be considered to have been comprehensive. All survey units were subject to intensive survey with regular and parallel pedestrian transects by four people made at reasonably close intervals. Nevertheless, Effective Survey Coverage for the surveyed area is calculated to have been very low due to thick grass coverage.

The Effective Survey Coverage achieved during the survey is considered to have been insufficient to characterise the nature of artefact distribution based on a consideration of the field survey results alone. Accordingly, the assessment of the archaeological status of the project area is necessarily made via recourse to a consideration of the environmental context and the nature of prior impacts to the land surface.

The environmental context has been assessed to have provided Aboriginal land users with a limited range of resources and an ephemeral water source only. Accordingly, the nature of land use is predicted to have been intermittent and infrequent. Such occupation is likely to have resulted in very low levels of artefact discard.

Furthermore, give the high levels of previous land impacts, any artefact presence in the project area would be generally highly disturbed. It is concluded that the archaeological potential and sensitivity of the project area is very low.

Archaeological test excavation has not been undertaken in respect of the proposal as it could not be justified (*cf*. NSW DECCW 2010a: 24). Effective Survey Coverage

achieved during the survey was very low. However, given the high levels of previous disturbance and predicted low density of stone artefact distribution, subsurface test excavation is not warranted. The predictions regarding the nature of any undetected (subsurface) archaeology is made with relatively high confidence.

It is concluded there are no information gaps which are of a significant magnitude to warrant further consideration.

In the section below a number of potential management and mitigation strategies are discussed.

10.1 Management and Mitigation Strategies

Further Investigation

The field survey has been focused on recording artefactual material present on visible ground surfaces. Further archaeological investigation would entail subsurface excavation undertaken as test pits for the purposes of identifying the presence of artefact bearing soil deposits and their nature, extent, integrity and significance. Further archaeological investigation in the form of subsurface test excavation can be appropriate in certain situations. These generally arise when a proposed development is expected to involve ground disturbance in areas which are assessed to have potential to contain high density artefactual material and when the Effective Survey Coverage achieved during a survey of a project area is low due to ground cover, vegetation etc.

No areas of the proposal area have been identified which warrant further archaeological investigation in order to formulate appropriate management and mitigation strategies. No Aboriginal objects or survey units with potential conservation value have been identified to have a high probability of being present in the subject area. Accordingly, test excavation conducted under OEH's *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010: 24) is not necessary.

Conservation

Conservation is a suitable management option in any situation; however, it is not always feasible to achieve. Such a strategy is generally adopted in relation to sites which are assessed to be of high cultural and scientific significance but can be adopted in relation to any site type. In the case at hand, the development of a conservation strategy is not relevant given the absence of known Aboriginal objects and the predicted low archaeological potential of the subject area.

Mitigated Impacts

Mitigated impact usually takes the form of partial impacts only (i.e. conservation of part of an Aboriginal site or Survey Unit) and/or salvage in the form of further research and archaeological analysis prior to impacts. Such a management strategy is generally appropriate when Aboriginal objects are assessed to be of moderate or high significance to the scientific and/or Aboriginal community and when avoidance of impacts and hence full conservation is not feasible. Salvage can include the surface collection or subsurface excavation of Aboriginal objects and subsequent research and analysis. In the case at hand, the development of a mitigated impact strategy is not required given the absence of known Aboriginal objects and the predicted low archaeological potential in the impact area.

Unmitigated Impacts

Unmitigated impact to Aboriginal objects can be given consideration when they are assessed to be of low archaeological and cultural significance and otherwise in situations where conservation is simply not feasible. Unmitigated impact is appropriate in regard to the proposed activities.

Monitoring

Monitoring during construction for the purposes of identifying cultural material that may be uncovered during earth disturbance can be implemented as a management strategy. However, monitoring is a reactive rather than proactive strategy, and as such, is not an ideal management tool in cultural heritage management. Monitoring for artefacts is not a widely accepted method of management because sites of significance can be destroyed as monitoring is taking place and because it can result in lengthy and costly delays to development works if significant cultural material is uncovered. In the case at hand, the development of a monitoring strategy is not warranted.

11. CONCLUSIONS AND RECOMMENDATIONS

The recommendations are made on the basis of:

- A consideration of the relevant legislation (see Statutory Information).
- The results of the investigation as documented in this report.
- Consideration of the type of development proposed and the nature of proposed impacts.
- The discussion is Section 10 regarding impact mitigation and management.

The following recommendations are made:

1. There are no identified cultural and/or archaeological heritage constraints in regard to the proposed works.

2. No Aboriginal objects are known or predicted to be present in the site.

3. No historic items, archaeological sites or relics are present in the site.

4. No further archaeological investigations are required in respect of the proposal.

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APPENDIX 1 GLOSSARY

Aboriginal object - A statutory term, meaning: '… any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises NSW, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains' (s.5 NPW Act).

Declared Aboriginal place - A statutory term, meaning any place declared to be an Aboriginal place (under s.84 of the NPW Act) by the Minister administering the NPW Act, by order published in the NSW Government Gazette, because the Minister is of the opinion that the place is or was of special significance with respect to Aboriginal culture. It may or may not contain Aboriginal objects.

Harm - A statutory term meaning '… any act or omission that destroys, defaces, damages an object or place or, in relation to an object – moves the object from the land on which it had been situated' (s.5 NPW Act).

Place - An area of cultural value to Aboriginal people in the area (whether or not it is an Aboriginal place declared under s.84 of the Act).

Proponent - A person proposing an activity that may harm Aboriginal objects or declared Aboriginal places and who may apply for an AHIP under the NPW Act.

Proposed activity - The activity or works being proposed.

Subject area - The area that is the subject of archaeological investigation. Ordinarily this would include the area that is being considered for development approval, inclusive of the proposed development footprint and all associated land parcels. To avoid doubt, the subject area should be determined and presented on a project-by-project basis. In this instance, the subject area refers to all areas in which impacts are proposed.

APPENDIX 2 AHIMS SITE SEARCH

Office of Environment & Heritage

AHIMS Web Services (AWS)
Extensive search - Site list report

Your Ref/PO Number : Polo Flat
Client Service ID : 416381

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
62-2-0397	Mullian Range North Ridge Fire Site	GDA	55	691604	5988878	Open site	Valid	Hearth : 1		
	Contact	Recorders		Ms.Alice Williams					Permits	
62-2-0374	Church Hill SU1	GDA	55	691664	5988878	Open site	Valid	Artefact : 11		
	Contact	Recorders		Mr.Andrew Pearce					Permits	
62-2-0386	Church Hill SU1 North Cooma	AGD	55	691664	5988878	Open site	Valid	Artefact : 11		
	Contact	Recorders		Mr.Andrew Pearce					Permits	3129
62-2-0238	EGP 2-28;	AGD	55	694200	5988860	Open site	Valid	Artefact : -		Open Camp Site
	Contact	Recorders		Kerry Navin					Permits	
62-2-0239	EGP 2-29;	AGD	55	694350	5986430	Open site	Valid	Artefact : -	Open Camp Site	102206
	Contact	Recorders		Kerry Navin					Permits	
62-2-0240	EGP 2-30;	AGD	55	694500	5988850	Open site	Valid	Artefact : - , Stone Quarry : -	Open Camp Site,Quarry	
	Contact	Recorders		Kerry Navin					Permits	

Report generated by AHIMS Web Service on 21/04/2019 for Julie Dibden for the following area at Datum :GDA, Zone : 55, Eastings : 691000 - 695000, Northings : 5986000 - 5990000 with a Buffer of 50 meters. Additional Info : Archaeological assessment. Number of Aboriginal sites and Aboriginal objects found is 6