TfNSW TAP Lapstone Station Aboriginal Heritage Due Diligence Assessment

Prepared by AMBS Ecology & Heritage
for SNC-Lavalin

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1 Introduction

AMBS Ecology & Heritage (AMBS) was commissioned by SNC Lavalin on behalf of Transport of New South Wales (TfNSW) to prepare a specialist assessment of Aboriginal heritage to assess the impacts of the proposed Lapstone Station Upgrade (the Proposal). This specialist assessment forms part of the Review of Environmental Factors (REF) which is being prepared to assess the impacts of the Proposal, in the considerations for approval under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

1.1 Background

TfNSW is the lead agency for integrated delivery of public transport services across all modes of transport in NSW. TfNSW is proposing to upgrade Lapstone Station as part of the NSW Government's Transport Access Program (TAP) which aims to provide a better experience for public transport customers by delivering accessible, modern, secure and integrated transport infrastructure.

Lapstone Station has been identified for an accessibility upgrade as it does not currently meet key requirements of the Disability Standards for Accessible Public Transport (DSAPT) or the *Commonwealth Disability Discrimination Act* 1992 (DDA).

Lapstone Station is approximately 63 kilometres from Central Station, Sydney on the Blue Mountains Line of the Intercity Trains Network. The station is located on the eastern edge of the settlement of Lapstone, with the Nepean River about 330m to the south-east. It is a dual platform station with the northbound side of the station (Platform 1) providing services to Central Station, Sydney, and the south bound side (Platform 2) providing services to the Blue Mountains and beyond to Lithgow.

The station building is located on Platform 1 and contains a waiting room, staff office with ticketing window, storeroom and toilet facilities.

The station and western platform (Platform 1) are accessed via a combination of paths, ramps, and stairs from the station car park and pedestrian footpaths from adjoining roads.

The eastern side of the station (Platform 2) is accessed from the station and western side of the rail corridor via a steel pedestrian footbridge located towards the northern end of the platforms. A dirt track provides informal access to pedestrians from the east, and the neighbouring residential settlement of Leonay, through the adjoining bushland.

The commuter car park is located on the western side of the station. It currently provides one accessible parking space. Untimed on-street parking on surrounding streets is also available on the western side of the station.

Figure 1.1 and Figure 1.2 provide the regional and local site context for the Proposal.

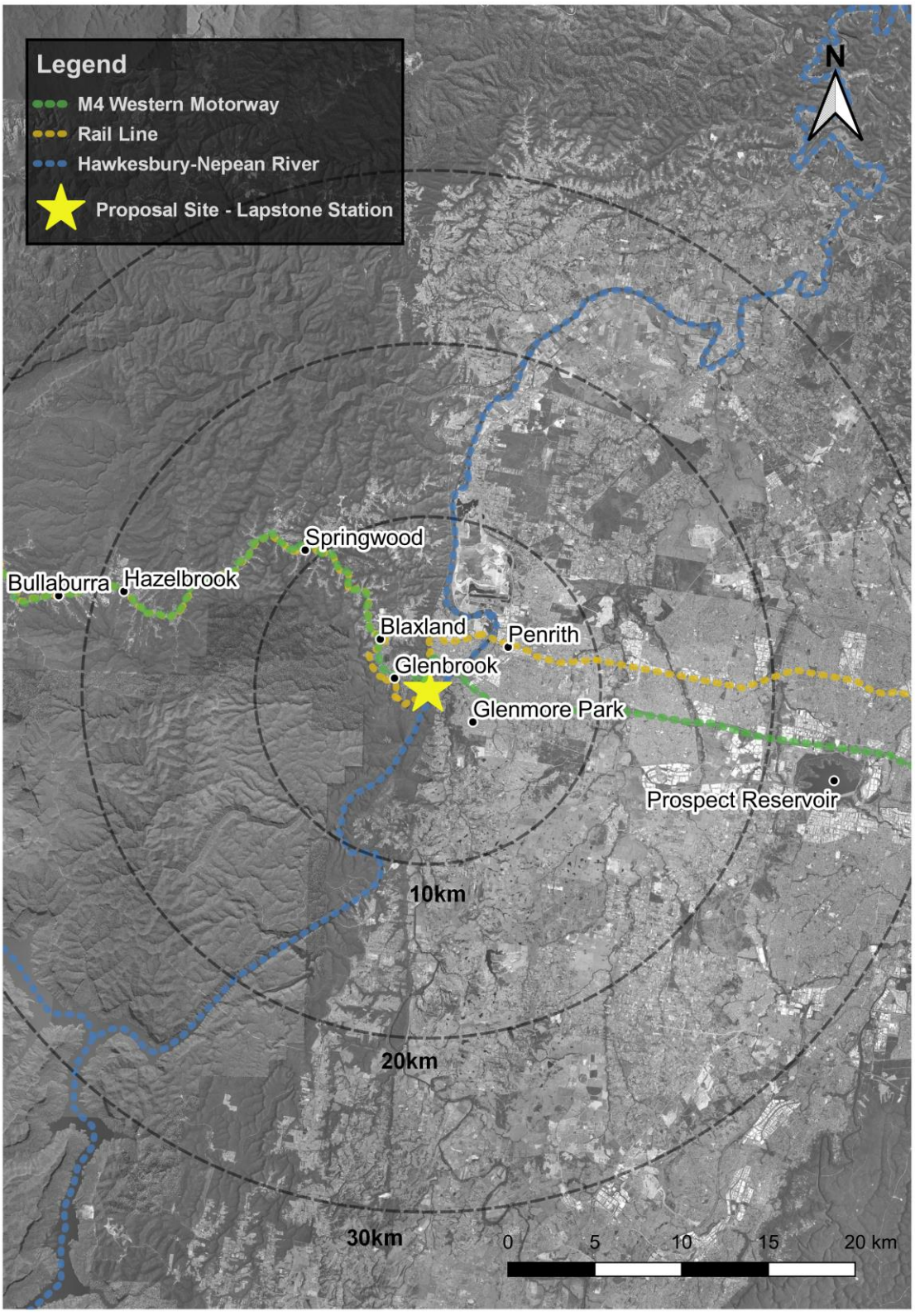

Figure 1.1 Regional context.

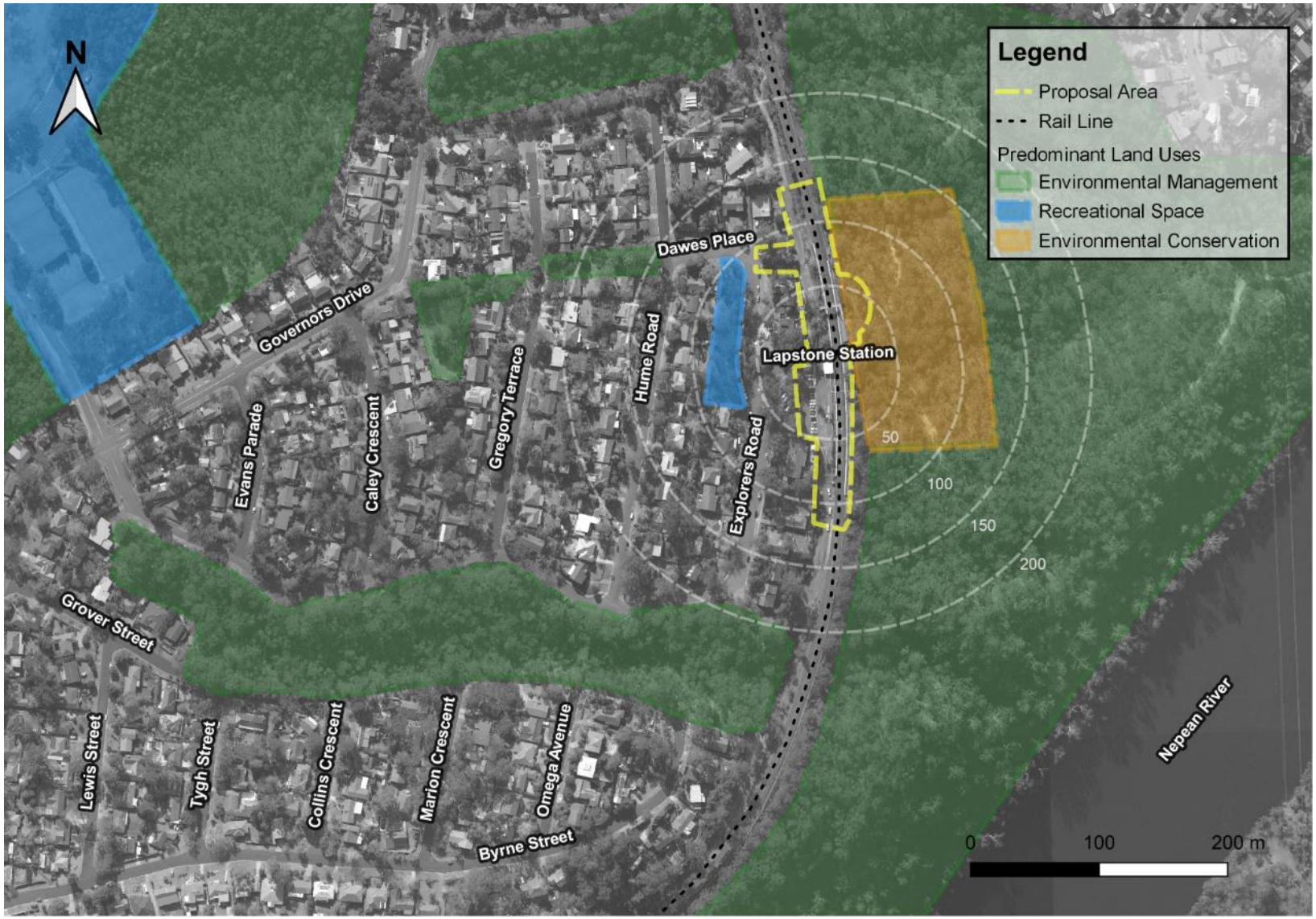

Figure 1.2 Local site context.

1.2 Overview of the Project

The Proposal area is identified in Figure 1.3. The Proposal area includes:

- the rail corridor around Lapstone Station (including the station building, platforms, footbridge, shelter and connecting paths and stairs);
- an area of the bushland reserve to the east of the station footbridge;
- a portion of the lower tier of the station commuter carpark, and;
- a proposed construction compound area within the road reserve at the eastern extent of Dawes Place

Figure 1.3 The Proposal area.

As part of the TAP program, the Proposal would aim to provide a station precinct that is accessible for all sections of the community including people with a disability, limited mobility, parents/carers with prams, and customers with luggage.

Key features of the Proposal are:

- installation of one new lift to the eastern end of the existing footbridge and a new footpath from the base of the lift to connect to Platform 2
- construction of a new DSAPT compliant ramp that provides access on the western side of station from the commuter car park to the footbridge
- construction of a new entrance point south of the station building on Platform 1, including new stair and ramp access from the commuter car park
- relocation and upgrade of the existing non-compliant accessible parking space within the commuter car park closer to the new Platform 1 entrance
- provision of a new kiss and ride space which will replace an existing car space
- closure of the steep ramp immediately north of the station building that currently provides access to Platform 1
- all stairs upgraded with compliant handrails, TGSIs and stair nosings
- installation of TGSIs along the full length of both platforms
- localised regrading of some platform areas to achieve compliant cross falls
- modifications to the existing station building layout including:
- reconfigure the existing station toilets and store room to accommodate one family accessible toilet, one male ambulant toilet, one female ambulant toilet and a new store room
- the building modifications will include providing level access from Platform 1 into both the waiting room and the new family accessible toilet
- installation of seating cut into the local listed heritage sandstone rail cutting on Platform 1
- closed circuit television (CCTV) cameras to provide coverage to meet security standards for new infrastructure
- power supply upgrade to support new infrastructure
- trimming and removal of trees and vegetation to construct and accommodate the new accessible paths and lift
- ancillary work including installation of platform hearing loops, service relocation, lighting, opal card reader relocation, landscaping, drainage works, wayfinding signage, relocation of bins and furniture, and new bin storage area.

Subject to planning approval, construction is expected to commence in mid-2020 and take around 12 to 18 months to complete.

Temporary site compound facilities would be needed for laying down equipment and machinery, parking plant and vehicles and storage of materials. The proposed area is the vegetated road reserve at the eastern end of Dawes Place.

Figure 1.4 shows the general layout of key elements of the Proposal based on the strategic concept design. The design would be further refined during the detailed design phase.

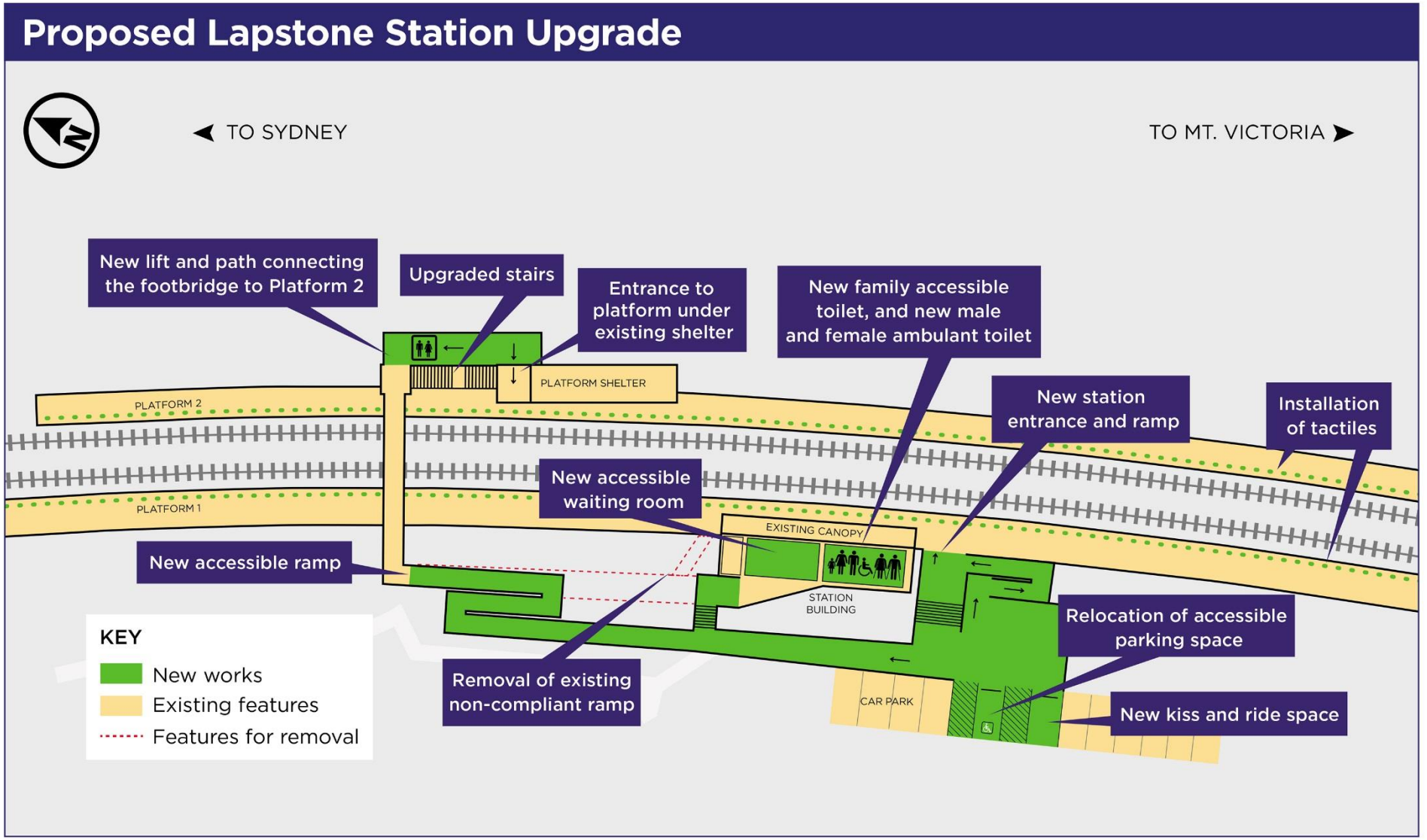

Figure 1.4 Key features of the Proposal (subject to detailed design).

1.3 Methodology

This report has been prepared in accordance with current heritage best practice and the guidelines of Department of Planning, Industry and Environmental (DPIE, formerly the Office of Environment and Heritage, OEH) as specified in the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (DECCW 2010). As such, the due diligence assessment has addressed the following requirements:

- identify any previously recorded Aboriginal sites;
- develop a predictive model for local Aboriginal archaeological sites, including any landscape features within the Project Area which are likely to indicate the presence of Aboriginal objects; and
- identify any constraints resulting from Aboriginal objects that may be present within the Project Area, and any requirements for additional Aboriginal heritage investigations or permits.

This due diligence assessment does not include consultation with representatives of the local Aboriginal community as per DPIE's *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010*, and therefore does not address the cultural or spiritual significance of the project area. Assessments of cultural significance, which address the values of a site to the Aboriginal community itself, can only be carried out by the relevant Aboriginal communities. Should the results of this assessment determine that there is potential for Aboriginal objects to be present within the Project Area, additional cultural heritage assessment with representatives of the local Aboriginal community in accordance with DPIE requirements will be necessary.

1.4 Authorship

This report has been prepared by AMBS Heritage Consultant Petra Balanzategui and AMBS Director Aboriginal Heritage Christopher Langeluddecke.

2 Statutory Context

The conservation and management of heritage items takes place in accordance with relevant Commonwealth, State or Local Government legislation. Non-statutory heritage lists, ethical charters, conservation policies, organisational policies, and community attitudes and expectations can also have an impact on the management, use, and development of heritage assets. Listings relevant to the Project Area are summarised below.

2.1 Environment Protecting and Biodiversity Conservation Act 1999

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) aims to protect and manage places of national environmental significance. Several heritage lists, including the National Heritage List (NHL) and the Commonwealth Heritage List (CHL), are addressed by the EPBC Act. The NHL lists places that have outstanding value to the nation, while the CHL includes items and places owned or managed by Commonwealth agencies. Ministerial approval is required for controlled actions which would have a significant impact on items and places on the NHL or CHL.

There are no Aboriginal heritage items or places listed on the NHL or CHL within the Project Area or its vicinity.

2.2 National Parks and Wildlife Act 1974 & National Parks and Wildlife Amendment Regulation 2010

The *National Parks and Wildlife Act 1974* (NPW Act) specifies that the Director-General of the National Parks and Wildlife Service (NPWS; now Heritage, DPC) is responsible for the care, control and management of various natural and cultural areas, including Aboriginal places and objects throughout NSW. Under this Act, all Aboriginal Objects are protected regardless of significance or land tenure. Such Aboriginal Objects include pre-contact features like scarred trees, middens and open camp sites, and post-contact features such as Aboriginal fringe camps. The Act also protects Aboriginal Places, which can only be declared by the Minister administering the NPW Act; these are defined as being a place that is or was of special significance with respect to Aboriginal culture.

There are no declared Aboriginal Places within the Project Area Section 4.2.1.

Under Section 90 of the NPW Act, it is an offence to destroy, deface, damage or desecrate an Aboriginal Object or Aboriginal Place, unless an Aboriginal Heritage Impact Permit (AHIP) has been issued by DPIE. The Act requires that reasonable precautions and due diligence be undertaken to avoid impacts on Aboriginal Objects. The *National Parks and Wildlife Amendment Regulation 2010* establishes a *Due Diligence Code of Practice* which specifies activities that are low impact, thus providing a defence to the strict liability offence of harming an Aboriginal object.

2.2.1 Aboriginal Heritage Information Systems

The Aboriginal Heritage Information Management System (AHIMS) is part of the regulatory framework for the implementation of the NPW Act. Maintained by DPIE, the AHIMS includes a database of Aboriginal heritage sites, items, places and other objects that have been reported to DPIE, as well as site cards describing Aboriginal sites registered in the database and associated Aboriginal heritage assessment reports. Section 89A of the NPW Act requires individuals and corporations to notify DPIE of the location of Aboriginal sites identified during field investigations, regardless of land tenure or any likely impacts to such sites. Nevertheless, the AHIMS is not a comprehensive list of all Aboriginal heritage sites in NSW; it only includes information that has been reported to DPIE. The accuracy of site co-ordinates in the database therefore varies depending on the method used to record locations.

The results of a site search for the local area are presented in Section 4.2.1.

2.3 Heritage Act 1977

The *Heritage Act 1977* protects heritage places, buildings, works, moveable objects, precincts and archaeological sites that are important to the people of NSW. Items that have particular importance to the State of NSW are listed on the State Heritage Register (SHR). Such items can include those of Aboriginal and non-Aboriginal heritage significance.

There are no Aboriginal heritage items or places in the vicinity of the Project Area listed on the SHR. There is one historic heritage item located approximately 400m north east of the current Project Area. The site of Edinglassie, located at Lapstone Place is the site of a gothic style cottage built in the late 1820s as a rural retreat for Justice Forbes, Chief Justice of New South Wales (State Heritage Register 2019). A single locally significant geological heritage item is visible at the Project Area, the Sedimentary Dykes (L002), which are listed on the Blue Mountains LEP 2015.

2.4 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) is the main act regulating land use planning and development in NSW. The EP&A Act also controls the making of environmental planning instruments (EPIs). Two types of EPIs can be made: Local Environmental Plans (LEPs) covering local government areas; and State Environment Planning Policies (SEPPs), covering areas of State or regional environmental planning significance. LEPs commonly identify, and have provisions for, the protection of local heritage items and heritage conservation areas. The Project Area is located within the Blue Mountains Local Government Area.

The EP&A Act also requires consideration to be given to environmental impacts as part of the land use planning process. In NSW, environmental impacts include cultural heritage impacts and as such any required Review of Environmental Factors (REF), Environmental Impact Statement (EIS) or Environmental Impact Assessment (EIA) should incorporate an assessment of Aboriginal cultural heritage. The consent authority is required to consider the impact on all Aboriginal heritage values, including natural resource uses or landscape features of spiritual importance, as well as the impact on Aboriginal Objects and Aboriginal Places.

2.4.1 Blue Mountains Local Environmental Plan 2015

Part 5, Clause 5.10 'Heritage Conservation' of the Blue Mountains LEP is consistent with current heritage best practice guidelines, and provides for the protection of heritage items, places, conservation areas, and archaeological sites. Schedule 5 'Environmental heritage' does not include any Aboriginal objects or places of Aboriginal heritage significance within the Project Area or its vicinity.

2.4.2 Penrith Local Environmental Plan 2010

Part 5, Clause 5.10 'Heritage conservation' of the Penrith LEP is consistent with current heritage best practice guidelines and provides for the protection of heritage items and heritage conservation areas (including associated fabric, settings and views), archaeological sites, and Aboriginal objects and Aboriginal places of heritage significance. Schedule 5 'Environmental heritage' does not include any Aboriginal objects or places of Aboriginal heritage significance within the Project Area.

3 Environmental Context

An understating of environmental factors within the local landscape can inform an understanding of past human occupation of an area. Analysing the nature of the local landscape, specifically the factors which affect patterns of past human occupation including topography, geology, soils, hydrology and vegetation, contributes to predictive modelling of archaeological sites, contextualises archaeological material and enables the interpretation of past human behavioural patterns.

3.1 Geology & Soils

The Project Area is within the Hawkesbury soil landscape (see Figure 3.1), which contains shallow (<50m), discontinuous siliceous sands associated with rock outcrop, and some locally deep sands on the inside of benches and along joints/fractures. The Project Area is located above Glenbrook Gorge (and Creek) to the south, and is underlain by Hawkesbury Sandstone, comprising medium to coarse-grained quartz sandstone with minor shale and laminate (Chapman & Murphy 1989:44). Sandstone outcrops comprise a distinctly blocky appearance, and appear as overhangs, low platforms, boulders and fragmented rubble (Chapman & Murphy 1989:44; Saunders 1993:7).

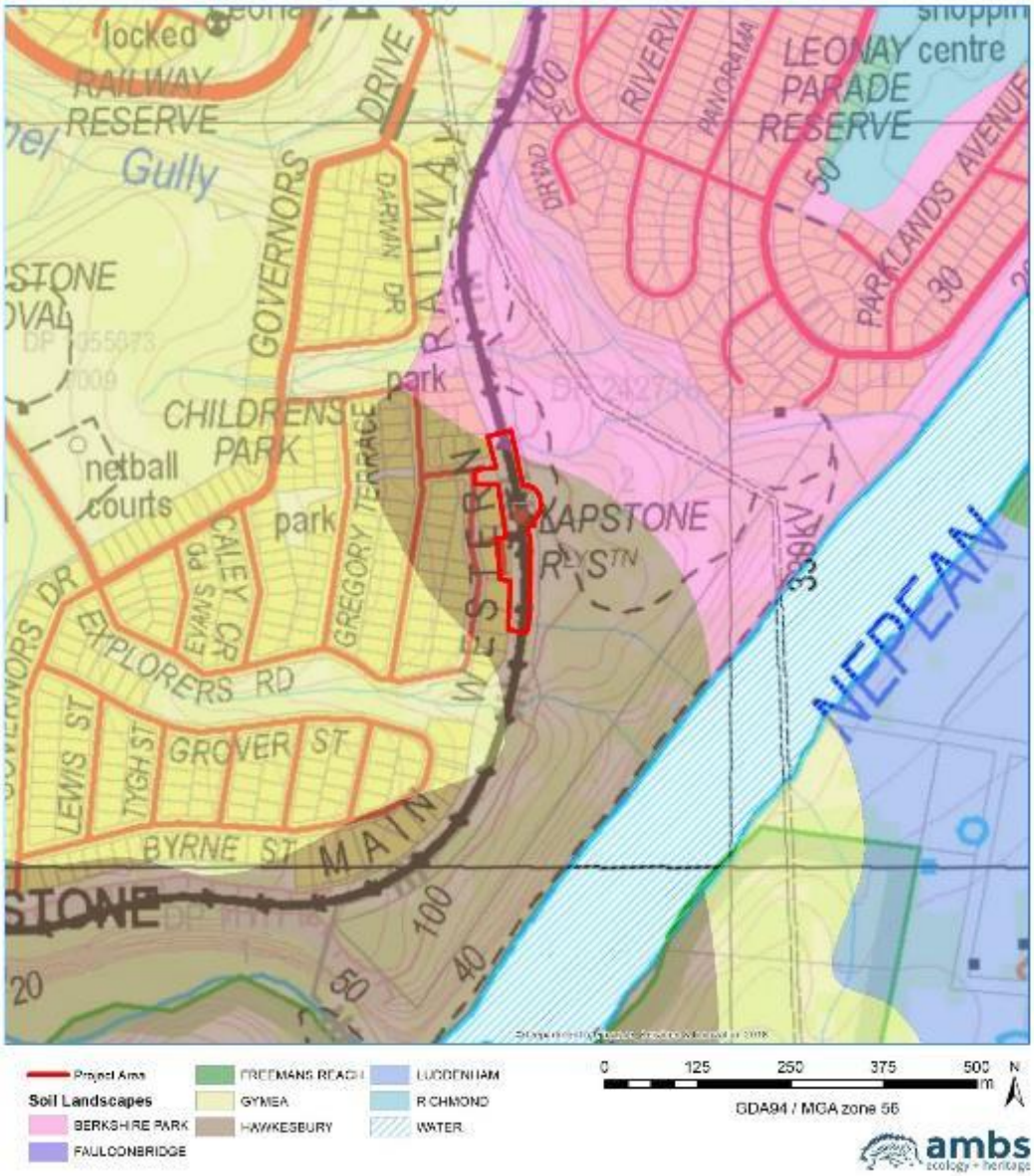

Figure 3.1 Soil landscapes in the vicinity of the Project Area.

3.2 Vegetation

The Project Area was extensively cleared for construction of the railway, and currently comprises intentional garden plantings and regrowth native and non-native vegetation (seen in Figure 3.2 and Figure 3.3). Such clearing will have impacted the integrity of archaeological deposits and will have removed any of the trees modified (scarred or carved) by Aboriginal people in the past. Original vegetation of the Hawkesbury soil landscape would have consisted of uncleared open-woodland (dry sclerophyll) with pockets of tall open-forest (wet sclerophyll) and closed- forest (rainforest) (Chapman & Murphy 1989:44).

Figure 3.2 Garden plantings and imported wood chips. View looking to south east.

Figure 3.3 Regrowth vegetation in western portion of Project Area. View looking south from the footbridge.

3.3 Topography & Hydrology

The Project Area is located in the lower Blue Mountains, the topography of which is rugged with rolling to very steep hills, narrow crests and ridges, narrow incised valleys, steep side slopes with rocky benches, broken scarps and boulders (Bannerman & Hazleton 1990:43). Local relief varies from 40m to 200m and slopes are >25% (Chapman & Murphy 1989:44). The Nepean River and its tributaries form the main drainage system in the local area. Glenbrook Creek is one such tributary and is located approximately 700m to the south west of the Project Area. It flows east into the Nepean River, which is located approximately 400m east of the Project Area. Another tributary is Tunnel Gully Creek, which is located 280m north east of the Project Area. This drainage system would have provided good local water sources, and the area is likely to have been used extensively by Aboriginal people in the past; although the most frequent, repeated occupation is likely to have occurred adjacent to the Nepean River (and in fact 10,000 surface artefacts were located in an area c.775m2 on the Nepean River terrace beside Jamisons Creek by Kohen in 1984).

3.4 Land Use & Disturbance

The township of Lapstone was established by Mr Arthur J Hand, an alderman of the Blue Mountains City Council, who in October 1954, purchased 116 acres of vacant timbered land in the Lower Mountains, known as 'Stephen's Paddock'. Soon after its purchase, the land was sub-divided into twenty- acre lots, anticipating the future construction of the railway station by Hand (Nepean Times 1957:9, Lewis 2014). Construction of the Lapstone Railway Station commenced in 1960 by Hand's company Lapstone Estate Pty Ltd (Nepean Times 1960:1). The sandstone cutting within which the station stands, however, dates to 1911-1913, associated with excavations for the Glenbrook Deviation. The Lapstone Station opened in February 1964 and by July, the town 'Lapstone' was officially named by the Blue Mountains City Council, incorporating "*the area to the*

south of Glenbrook…'Lapstone Estate' and a number of adjoining reserves" (Govt Gazette, 1964: 2049).

The Project Area comprises a vegetated road reserve at the eastern end of Dawes Place, a car park, footbridge, two platforms, a station building, the rail corridor and associated infrastructure. Residential development is located outside of the western border of the Project Area and scrubland is located adjacent to the east. The Project Area has been extensively impacted by excavation and construction of the rail line, station building and associated infrastructure. The high level of disturbance to the ground surface and natural landform suggests that intact archaeological deposits are unlikely to remain.

4 Aboriginal Heritage Context

This section describes the nature of the known Aboriginal archaeology of the Project Area, based upon a review of relevant archaeological reports and publications, and a search and review of previously recorded sites in the AHIMS database. This review and discussion allow for the development of a predictive model for potential Aboriginal sites within the Project Area. Summary descriptions of site features are provided in Table 4.1.

Table 4.1 Description of Aboriginal site features (after OEH 2012:8-10).

Site Feature	Description
Aboriginal Ceremony and Dreaming	Previously referred to as mythological sites these are spiritual/story places where no physical evidence of previous use of the place may occur, e.g. natural unmodified landscape features, ceremonial or spiritual areas, men's/women's sites, dreaming (creation) tracks, marriage places etc.
Aboriginal Resource and Gathering	Related to everyday activities such as food gathering, hunting, or collection and manufacture of materials and goods for use or trade.
Art	Art is found in shelters, overhangs and across rock formations. Techniques include painting, drawing, scratching, carving engraving, pitting, conjoining, abrading and the use of a range of binding agents and the use of natural pigments obtained from clays, charcoal and plants.
Artefacts	Objects such as stone tools, and associated flaked material, spears, manuports, grindstones, discarded stone flakes, modified glass or shell demonstrating evidence of use of the area by Indigenous people. Artefact scatters are often recorded on AHIMS as “open camp sites".
Burials	A traditional or contemporary (post-contact) burial of an Aboriginal person, which may occur outside designated cemeteries and may not be marked, e.g. in caves, marked by stone cairns, in sand areas, along creek banks etc.
Ceremonial Ring	Raised earth ring(s) associated with ceremony.
Conflict	Previously referred to as massacre sites where confrontations occurred between Aboriginal and non-Aboriginal people, or between different Indigenous groups.
Earth Mound	A mounded deposit of round to oval shape containing baked clay lumps, ash, charcoal and, usually, black or dark grey sediment. The deposit may be compacted or loose and ashy. Mounds may contain various economic remains such as mussel shell and bone as well as stone artefacts. Occasionally they contain burials.
Fish Trap	A modified area on watercourses where fish were trapped for short-term storage and gathering.
Grinding Grooves	A groove in a rock surface resulting from manufacture of stone tools such as ground edge hatchets and spears, may also include rounded depressions resulting from grinding of seeds and grains.
Habitation Structure	Structures constructed by Aboriginal people for short or long-term shelter. More temporary structures are commonly preserved away from the NSW coastline, may include historic camps of contemporary significance. Smaller structures may make use of natural materials such as branches, logs and bark sheets or manufactured materials such as corrugated iron to form shelters. Archaeological remains of a former structure such as chimney/fireplace, raised earth building platform, excavated pits, rubble mounds etc.
Hearth	Cultural deposit sometimes marked by hearth stones, usually also contains charcoal and may also contain heat treated stone fragments.
Modified Tree	Trees which show the marks of modification as a result of cutting of bark from the trunk for use in the production of shields, canoes, boomerangs, burials shrouds, for medicinal purposes, foot holds etc., or alternately intentional carving of the heartwood of the tree to form a permanent marker to indicate ceremonial use/significance of a nearby area, again these carvings may also act as territorial or burial markers.
Non-Human Bone and Organic Material	Objects which can be found within cultural deposits as components of an Aboriginal site such as fish or mammal bones, ochres, cached objects which may otherwise have broken down such as resin, twine, dilly bags, nets etc.
Ochre Quarry	A source of ochre used for ceremonial occasions, burials, trade and artwork.
Potential Archaeological Deposit (PAD)	An area where Indigenous objects may occur below the ground surface.
Shell	An accumulation or deposit of shellfish from beach, estuarine, lacustrine or riverine species resulting from Aboriginal gathering and consumption. Usually found in deposits previously

	referred to as shell middens. Must be found in association with other objects like stone tools, fish bones, charcoal, fireplaces/hearths, and burials. Will vary greatly in size and components.
Stone Arrangement	Human produced arrangements of stone usually associated with ceremonial activities or used as markers for territorial limits or to mark/protect burials.
Stone Quarry	Usually a source of good quality stone which is quarried and used for the production of stone tools.
Waterhole	A source of fresh water for Aboriginal groups which may have traditional ceremonial or dreaming significance and/or may also be used to the present day as a rich resource gathering area (e.g. waterbirds, eels, clays, reeds etc.).

4.1 Regional Heritage Context

The Project Area seems to have been traditionally occupied by Aboriginal people of the Darug language group, with the Gundungurra located to the south. R.H. Mathews identified Darug territory as extending inland from the coast of Sydney, including from the mouth of the Hawkesbury River as far as west as Mount Victoria, while ethnographer Norman Tindale suggested that their boundaries extended even further up from the mouth of the Hawkesbury, to Lithgow and the Newnes Plateau (Mathews 1901; Tindale 1974).

Aboriginal occupation of the greater Sydney region is likely to have spanned at least 20,000 years, although dates of more than 40,000 years have been claimed for artefacts found in gravels of the Cranebrook Terrace on the Nepean River (Nanson et al. 1987; Stockton 2009; Stockton & Holland 1974). Late Pleistocene occupation sites have been identified on the fringes of the Sydney basin and from rock shelter sites in adjoining areas. Dates obtained from these sites were 14,700 Before Present (BP) at Shaws Creek in the Blue Mountain foothills (Kohen et al. 1984), c.15,000-c.11,000 BP at a levee near Pitt Town adjacent to the Hawkesbury River (Williams et al. 2012), c.11,000 BP at Loggers Shelter in Mangrove Creek (Attenbrow 1981, 2004), and c.20,000 BP at Burrill Lake on the South Coast (Lampert 1971). The majority of sites in the Sydney region, however, date to within the last 5,000 years, with some researchers proposing that occupation intensity increased from this period (Kohen 1986; McDonald 1994; McDonald & Rich 1993); although it has recently been argued that this is part of a longer trend in stepwise population growth and diversification of economic activity evident in south east Australia from the Early to Mid-Holocene (Williams 2013). This increase in sites may reflect an intensity of occupation that was influenced by rising sea levels, which stabilised approximately 6,500 years ago. Older occupation sites along the now submerged coastline would have been flooded, with subsequent occupation concentrating on and utilising resources along the current coastlines and in the changing ecological systems of the hinterland (Attenbrow 2010:55-56).

Creeks and other water resources were the focus of Aboriginal occupation, providing fresh water, fish, eels, waterbirds and plant foods, in addition to terrestrial animals drawn to the water (Attenbrow 2010:70-71). In regards to Aboriginal people of the hinterland, Watkin Tench observed that they *"depend but little on fish, as the river yields only mullets, and that their support is derived from small animals which they kill, and some roots (a species of wild yam chiefly) which they dig out of the earth"* (Tench cited in Leslie & Wheeler 2004:15). Trees provided shade, habitat for animals and birds, and bark for shelters (huts), canoes, paddles, shields, baskets and bowls. Edible plant species in the region included figs, yams, fern roots, cabbage tree palm hearts and some lilies (Leslie & Wheeler 2004:16). Hawkesbury sandstone outcrops provided material with which to make tools. When overhanging they provided shelter from the elements, and flat stone surfaces and shelters were sometimes engraved or painted by Aboriginal people (Attenbrow 2010:105, 113-116, 120-122).

4.2 Local Archaeological Context

There have been a number of archaeological investigations previously undertaken in the vicinity of the Project Area. The information summarised below is based on reports that have been registered with the AHIMS, and which are most relevant and informative to the archaeological background of the current project.

In 1983, Haglund and Associates were commissioned by Blue Mountains City Council (Council) to complete an archaeological survey of the proposed walking and bridle tracks near Yellow Rock and Knapsack Bridge, approximately 1.8km north of the current Project Area. The Knapsack Bridge walking track was proposed to be located from the zig-zag railway opposite Marges Lookout to the footings of the bridge. An archaeological survey of the Project Area did not identify any Aboriginal objects or sites. Hawkesbury sandstone outcrops were present in the area but weren't suitable for engravings or shelters. No scarred trees were identified, most likely due to historic logging. Ground disturbance had occurred in the area from the construction of the bridge and was evident in the form of quarrying and stone working. It was recommended that if any Aboriginal objects or sites were identified during track construction, that they be recorded, and the track be diverted (Stockton 1983:1-9).

In 2004, Archaeological and Heritage Management Solutions (AHMS) were commissioned by NSW Rods and Traffic Authority (RTA) to undertake an Aboriginal archaeological assessment of proposed safety improvement works along a section of the Great Western Highway at Lapstone Hill, approximately 2.3 km north-west of the current Project Area. The assessment was required as part of a Review of Environmental Factors (REF) and proposed works involved widening of the road within the existing road corridor. An archaeological survey of the study did not identify any Aboriginal objects, sites or places within the Project Area. The Project Area had been significantly disturbed from construction of the Great Western Highway and as a result was deemed to have low potential to retain intact Aboriginal sites and/or objects (Leslie & Wheeler 2004:3-45).

In 2005, AHMS was commissioned by Council to undertake an Aboriginal Archaeological Survey and Assessment for Tunnel Gully Reserve (Reserve), Lapstone, located approximately 800m north west of the current Project Area. The assessment was required to accompany a Plan of Management prepared by Council to address current recreational use and issues associated with residential amenities. The key objective of the assessment was to identify Aboriginal sites and heritage values within the Reserve and provide guidance in regard to their management. An archaeological survey of the Reserve identified three Aboriginal rockshelters (one with an archaeological deposit and two with PAD) and one axe grinding groove, all located adjacent to Tunnel Gully Creek. As a result, AHMS recommended that native shrub species with dense foliage be planted in front of the shelters to obscure the sites from view, vehicle tracks into the Reserve be closed and that the existing walking track be diverted from the Aboriginal sites (AHMS 2005:1-60).

4.2.1 Registered Aboriginal Sites

An extensive search of the AHIMS database was undertaken on 19 July 2019 (AHIMS client service ID #436183), which identified 92 registered Aboriginal sites within the following coordinates: Datum GDA94 Zone 56, Eastings: 278400-285000, Northings: 6257500-6263500. No AHIMS sites have been record near to the Project Area, and the closest site to Lapstone Station is approximately 600m to the north-west. Open camp site types are the most frequently recorded in the local area, followed by artefact and habitation structure; PAD. The search results are summarised in Table 4.2 and presented in Figure 4.1 and Figure 4.2.

Table 4.2 Summary of Aboriginal sites previously recorded in the vicinity of the Project Area.

Site Type	Number of Sites Present	Percentage
Open Camp Site	33	35.87%
Artefact	13	14.13%
Habitation Structure; Potential Archaeological Deposit (PAD)	11	11.96%
Grinding Groove	8	8.70%
Shelter with Deposit	7	7.61%
Modified Tree (Carved or Scarred)	5	5.43%
Habitation Structure	3	3.26%
Habitation Structure; Ochre Quarry	2	2.17%
Rock Engraving	2	2.17%
Shelter with Art	2	2.17%
Grinding Groove; Shelter with Art; Shelter with Deposit	2	2.17%
Open Camp Site; Stone Arrangement	1	1.09%
Potential Archaeological Deposit (PAD)	1	1.09%
Shelter with Art; Shelter with Deposit	1	1.09%
Stone Arrangement	1	1.09%
Total	**92**	**100.00%**

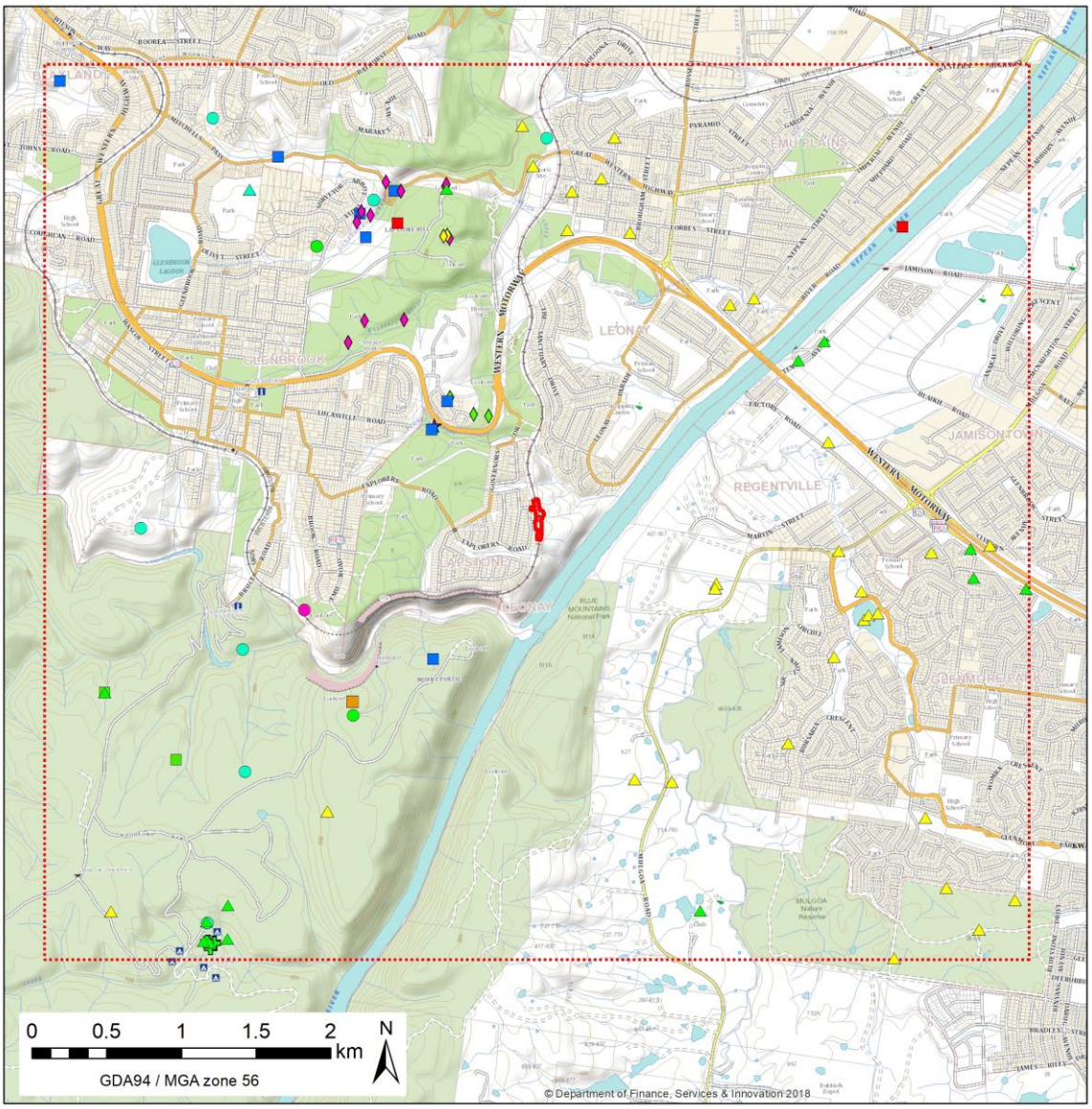

Figure 4.1 Registered AHIMS sites in the region.

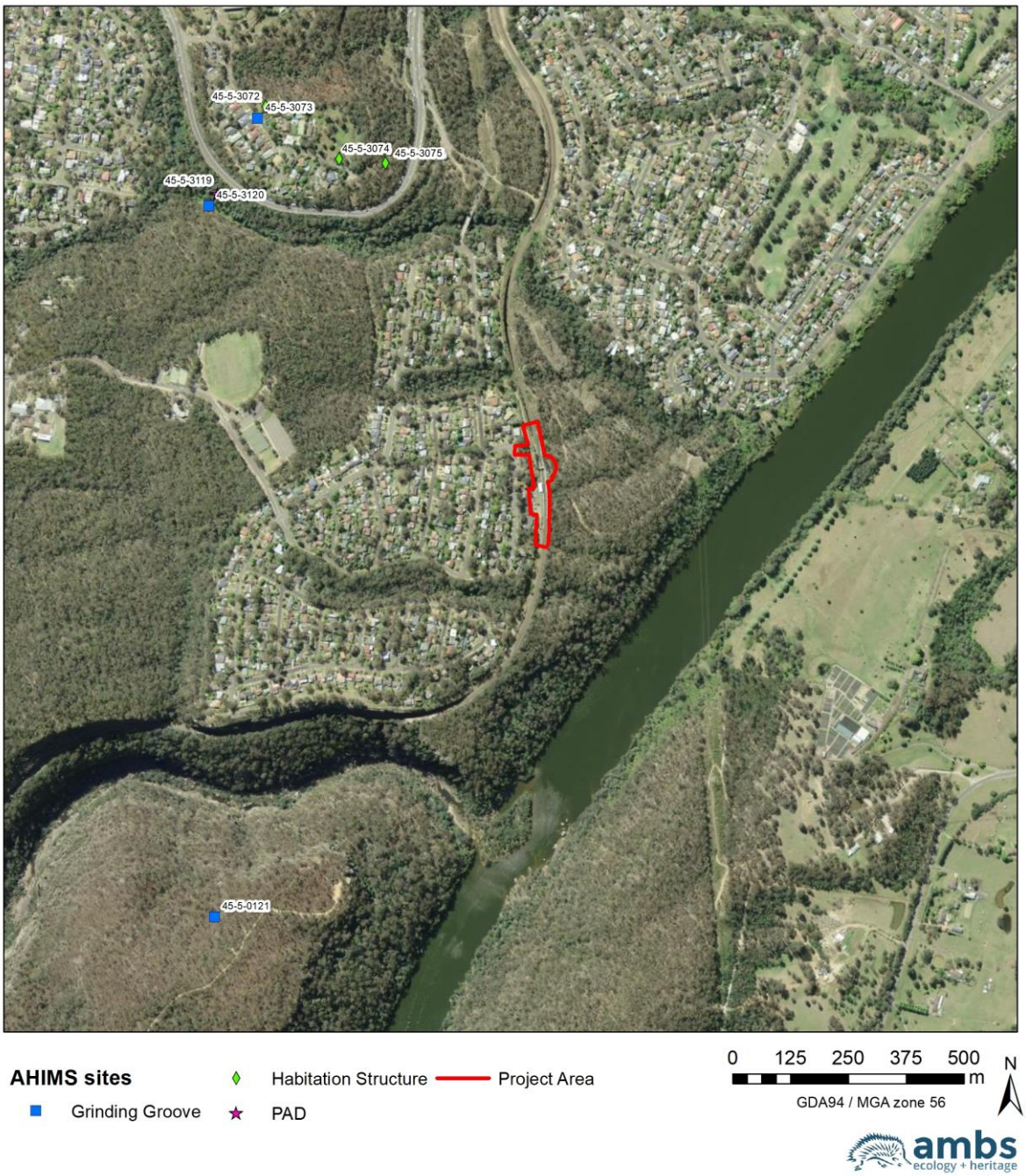

Figure 4.2 Registered AHIMS sites in the vicinity of the Project Area.

4.3 Discussion & Aboriginal Heritage Site Prediction Modelling

No Aboriginal heritage sites, objects or places have previously been recorded in the Project Area. A review of existing information on the Aboriginal heritage values and archaeology of the area identified that the Project Area has undergone extensive disturbance associated with the construction of the station, rail corridor and associated infrastructure. Landforms in the Project Area would have had potential to retain archaeological sites, particularly stone tool sites (open camp sites). However, the high level of historic disturbance is likely to have impacted and removed *in situ* Aboriginal heritage objects.

On the basis of the registered archaeological sites in the region, and review of previous archaeological studies, the following conclusions can be drawn regarding the potential presence and location of Aboriginal heritage sites within the landscape of the Project Area.

- Open camp sites are the most common site type in the local area and are the most likely site type to be present in the Project Area. Surface expressions of this site type appear as artefact scatters or isolated finds. Open camp sites are found in all environmental contexts but are most readily identified through surface survey in areas where vegetation is limited, and ground surface visibility is high.

- Open camp sites may occur in all landform contexts throughout the Project Area, although water is often the defining characteristic in distribution patterns. From the body of research throughout the region and within the broader state of context, it is generally accepted that people tended to camp in proximity to water, with camping occurring more frequently the more permanent the water source.

- The DPIE Code of Practice notes that landscape features which are located on a ridge top or ridge line, and which are not disturbed lands, are likely to retain Aboriginal Objects, an assertion confirmed by an analysis of Aboriginal sites previously recorded throughout the region and within the broader state context (DECCW 2010:12). The topography of the lower Blue Mountains consists of rugged with rolling to very steep hills, narrow crests and ridges, narrow incised valleys, steep side slopes with rocky benches, broken scarps and boulders (Bannerman & Hazleton 1990:43). Prior to modification, landforms in the Project Area would have had potential to retain stone artefact sites. However, it is unlikely that these sites have survived due to the removal of topsoil and modification of the natural topography.

- Due to the level of historic disturbance in the Project Area, which has included levelling and excavation for the construction of the railway, there is limited potential for natural soil surfaces or rock exposures to have survived within the Project Area.

- Historic land clearing has resulted in the removal of original native vegetation. As a result, there is limited potential for mature trees of an age suitable to retain evidence of Aboriginal cultural modification to survive in the Project Area.

- Sites associated with geological features such as stone quarry sites, axe grinding grooves, stone engravings/art and shelter sites, are highly unlikely to be present within the Project Area due to disturbance associated with the construction of Lapstone Station. If natural sandstone is present, it is highly likely that it has been cut into.

- Burials and ceremonial sites (including stone arrangements) are highly unlikely to be present in the Project Area given the disturbance caused by vegetation clearing, land modification and construction of the Lapstone Station and associated infrastructure.

5 Visual Inspection

A visual inspection of the Project Area was undertaken on Friday 26 July 2019 by AMBS archaeologists Christopher Langeluddecke and Petra Balanzategui. The inspection involved a pedestrian inspection of the Project Area, focusing on areas of ground surface exposure. The inspection aimed to assess the Project Area's current condition and to identify whether Aboriginal objects, or landscape features likely to indicate the presence of Aboriginal objects, are present within the Project Area.

The Project Area comprises a car park, footbridge, two platforms, a station building, seating, the rail corridor and associated infrastructure. The car park, station building, and footbridge are connected by an asphalt path. Surface visibility was variable across the Project Area due to grass, garden plantings, asphalt paths and the station infrastructure. Vegetation within the Project Area has been extensively cleared, and native and non-native regrowth vegetation has been intentionally planted in the western portion of the Project Area (Figure 5.4). Regrowth trees were young and therefore not of an age suitable to bear evidence of Aboriginal cultural modification. A grass lawn (Figure 5.6) is situated east of the car park, and a sewerage line has been established beneath it, suggesting subsurface disturbance. Soil exposures in this area were inspected for cultural materials, but none was found. The natural landform behind the station building has been modified and landscaping is evident by two rows of small boulders. The natural sandstone has been excavated into, and therefore no stone outcrops with potential to retain Aboriginal rock art or grinding grooves were observed within the Project Area (see Figure 5.7).

The proposed area for the site compound is a vegetated road reserve at the eastern end of Dawes Place (Figure 5.8 and Figure 5.9). The proposed site compound area is located 75m north west of the station building and is bordered by residential development to the north, a fence line to the east, a rail access road to the south and Dawes Place to the west. It comprises a maintained grass lawn with regrowth vegetation. Regrowth trees are young and therefore not of a suitable age to bear evidence of Aboriginal cultural modification. A large soil exposure situated in the centre of the area was inspected for cultural material, however none was identified. Disturbance has occurred from extensive vegetation clearing and levelling of the natural landform.

No Aboriginal sites, objects or places, or areas of potential Aboriginal archaeological sensitivity were identified within the Project Area or immediate surrounds during the visual inspection. Visual inspection of the Project Area confirmed that majority of the Project Area has experienced significant disturbance. As per the DPIE Code of Practice, lands can be considered disturbed "*if it has been the subject of a human activity that has changed the land's surface, being changes that remain clear and observable*" (OEH 2010:7). Examples of disturbance in the Project Area, provided by the Code include construction of roads, trails and tracks, clearing of vegetation, construction of buildings and the erection of other structures, and construction or installation of utilities and other similar services (such as above or below ground electrical infrastructure, water or sewerage pipelines, stormwater drainage and other similar infrastructure) (OEH 2010:7-8).

The DPIE Code of Practice notes that landscape features which are located on a ridge top or ridge line, and which are not disturbed lands, are likely to retain Aboriginal Objects. The topography of the lower Blue Mountains consists of rugged with rolling to very steep hills, narrow crests and ridges, narrow incised valleys, steep sideslopes with rocky benches, broken scarps and boulders (Bannerman & Hazleton 1990:43). Prior to modification, it is likely that the Project Area was located on a simple slope or lower simple slope landform. The Project Area has been disturbed by land modification, vegetation clearing, excavation of the railway and construction of the station building and associated infrastructure. As such, it is unlikely that Aboriginal heritage objects remain within the Project Area.

Figure 5.1 Lapstone station building and evidence of sewerage line. View looking east.

Figure 5.2 Landscaping behind the station building. View looking to north.

Figure 5.3 Ramp with asphalt leading to footbridge. View looking to north.

Figure 5.4 Imported wood chips and garden plantings. View looking to west.

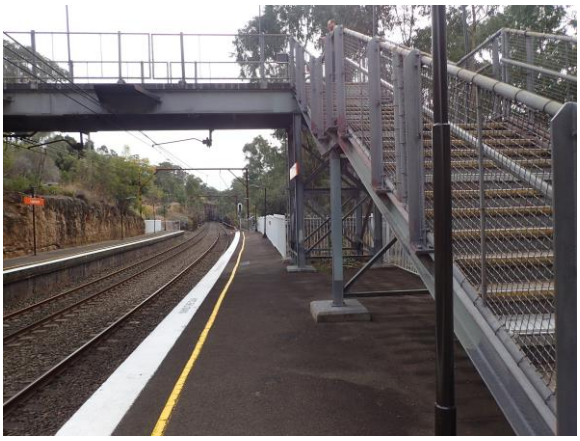

Figure 5.5 Rail corridor, platform, stairway and footbridge. View looking to the north.

Figure 5.6 Grass lawn adjacent to car park. View looking to south.

Figure 5.7 Sandstone that has been cut into for construction of the rail corridor. View looking to north.

Figure 5.8 Proposed site compound area east of Dawes Place. View to north west.

Figure 5.9 Proposed site compound area bordered with grass lawn and regrowth vegetation. View to east.

The proposed works for the lift pit include vegetation clearance and disturbance within 20m of the eastern boundary of the Project Area. This 20m impact zone includes regrowth scrubland and an informal unsealed access track (Figure 5.10-Figure 5.15). No Aboriginal sites, objects or places, or areas of potential Aboriginal archaeological sensitivity were identified within this part of the Project Area during the visual inspection. Vegetation has been extensively cleared in the past, with scrub and regrowth trees remaining. Regrowth trees were young and therefore not of a suitable age to bear evidence of Aboriginal cultural modification. This area is not being regularly maintained as overgrown grass and weeds were dominant. Soil exposures were frequent and were inspected for cultural materials, however such exposures were subject to a high level of erosion and no objects were observed. Extensive vegetation clearing in this area would have impacted topsoils and resulted in the loss of topsoil through erosion. Prior to modification, it is likely that the Project Area comprised a simple slope landform, however this has since been slightly levelled for the construction of the rail corridor. It is highly likely that this part of the Project Area was impacted during the initial construction of the station and rail corridor in the 1960s.

Figure 5.10 Regrowth vegetation adjacent to proposed location of lift. View looking to north west.

Figure 5.11 View from current foot bridge to proposed location of lift pit.

Figure 5.12 Evidence of vegetation clearing. View looking to west.

Figure 5.13 Cleared vegetation for informal unsealed access track. View looking to east.

Figure 5.14 Young regrowth vegetation within the 20m impact zone and informal unsealed access track. View looking to east.

Figure 5.15 Extensive vegetation clearing resulting in scarce, young regrowth vegetation. View looking to east

6 Conclusions & Recommendations

The Due Diligence process is intended to allow initial determination of the likely presence of Aboriginal heritage objects which may be impacted by an activity. Where a due diligence assessment determines that there are, or are likely to be, Aboriginal heritage objects present in an area of activity, more detailed investigation and impact assessment is required in the form of an ACHA, regardless of their significance or context. If the subsequent ACHA determines that harm will occur to Aboriginal objects, then an application for an AHIP would be required to allow the activity.

The following recommendations are based on the statutory requirements, a review of the environmental and Aboriginal heritage context of the Project Area, the results of the visual inspections and current heritage best practice, in accordance with the DPIE *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*. A summary of this assessment's compliance with the Code of Practice is presented below in Table 6.1.

Table 6.1 Due Diligence process and results summary (after DECCQ 2010:10-13).

Due Diligence Assessment Process	Response
Step 1. Will the activity disturb the ground surface or any culturally modified trees?	The proposed development will disturb the ground surface in the Project Area (see Section 1.2). No culturally modified trees are present in the Project Area as all trees are regrowth and not of an age suitable to bear evidence of Aboriginal cultural modification.
Step 2a. Are there any relevant confirmed site records or other associated landscape feature information on the AHIMS database?	No Aboriginal heritage sites or associated landscape feature information are recorded on the AHIMS database within the Project Area (see Section 3 and 4).
Step 2b. Are there any other sources of information of which a person is already aware? Other sources of information can include previous studies, reports or surveys which you have commissioned or are otherwise aware of.	A number of archaeological assessments have been undertaken in the local area (see Section 4.2).
Step 2c. Are there landscape features present likely to indicate presence of Aboriginal objects?	Prior to the construction of the station and rail corridor, it is likely that the Project Area comprised a simple slope landform which may have retained stone artefact sites. The natural landform of the Project Area has been significantly modified and as such, there is low likelihood that Aboriginal objects are present within the Project Area (See Section 3.3 and 3.4).
Step 3. Can harm to Aboriginal objects listed on AHIMS or identified by other sources of information be avoided, and/or can the carrying out of the activity at the relevant landscape features be avoided?	No Aboriginal objects listed on AHIMS are present in the Project Area, and no identified Aboriginal objects were identified within the Project Area by other sources of information (see Section 3 and 4).
Step 4: Does a desktop assessment and visual inspection confirm that there are Aboriginal objects or that they are likely?	No observable Aboriginal objects are present within the Project Area, and it is unlikely that subsurface archaeological objects are present within the Project Area (See Section 4.3 and 5).

No Aboriginal heritage sites, objects or places were identified by the archaeological background study and archaeological inspection of the Project Area, and no areas with potential to retain subsurface Aboriginal archaeological deposits were identified within the Project Area. There are no previously identified Aboriginal heritage sites recorded on AHIMS within the Project Area, and no previously registered Aboriginal heritage sites will be impacted by the proposed development.

Given the historic level of disturbance observed in the Project Area, it is considered highly unlikely that evidence of previous occupation by Aboriginal people remains within the area of the proposed TAP upgrade works. The level of archaeological assessment undertaken and the results of the background analysis suggest that it is unlikely that further archaeological assessment of the Project Area will increase the current scientific understanding of the region. No further Aboriginal heritage assessment is required for the proposed TAP upgrade works of Lapstone Station.

There are no additional constraints to the proposed development arising from considerations of Aboriginal cultural heritage and archaeology. No further Aboriginal cultural heritage assessment is required prior to the proposed Lapstone Station TAP upgrade works, and the proposed development may proceed with due caution.

All construction staff would undergo an induction in the recognition of Aboriginal cultural heritage material. This training would include information such as the importance of Aboriginal cultural heritage material and places to the Aboriginal community, as well as the legal implications of removal, disturbance and damage to any Aboriginal Indigenous cultural heritage material and sites.

Impacts to Aboriginal heritage sites in NSW, regardless of their level of significance or integrity, require the prior written consent DPIE, under Section 87 or Section 90 of the NPW Act. The Project Area is unlikely to retain Aboriginal objects; however, if unexpected Aboriginal heritage objects are uncovered during construction, the procedures contained in TfNSW's *Unexpected Heritage Finds Guideline* (TfNSW, 2019b) would be followed, and works within the vicinity of the find would cease immediately. The Contractor would immediately notify the TfNSW Project Manager and TfNSW Environment and Planning Manager so they can assist in co-ordinating next steps, which are likely to involve consultation with an Aboriginal heritage consultant, the DPIE and the Local Aboriginal Land Council. If human remains are found, work would cease, the site would be secured and the NSW Police and the DPIE would be notified. Where required, further archaeological investigations and an AHIP would be obtained prior to works recommencing at the location.

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