Transport for NSW

Captains Flat Station Masters Cottage Demolition and Remediation

Review of Environmental Factors

July 2025

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Acknowledgement of Country

Transport for NSW acknowledges the traditional custodians of the land on which the Captains Flat Station Masters Cottage Demolition and Remediation Review of Environmental Factors is proposed.

We pay our respects to Elders past and present and celebrate the diversity of Aboriginal people and their ongoing cultures and connections to the lands and waters of NSW.

Many of the transport routes we use today – from rail lines, to roads, to water crossings – follow the traditional Songlines, trade routes and ceremonial paths in Country that our nation's First Peoples followed for tens of thousands of years.

Transport for NSW is committed to honouring Aboriginal peoples' cultural and spiritual connections to the land, waters and seas and their rich contribution to society.

Approval and authorisation

Title	
Accepted on behalf of Transport for NSW by:	
Signed	
Date:	

Document review tracking

Draft No.	Date	Comments
Draft 1 (v1)	11/10/24	Issued by Ramboll for TfNSW review
Final (v2)	22/05/2025	Final issued by Ramboll to TfNSW
Revised Final (v3)	17/06/2025	Revised Final issued by Ramboll to TfNSW
Final 9v4)	28/07/2025	Certification page signed

\\auhunfp1\Shared_Files\Projects\Transport Asset Holding Entity\318001968 Captains Flat Rail Corridor Detailed Remediation Design\6.Deliverable\02. REF\CF SMC REF\1. Report\318001968_CaptainsFlat FSMC-REF_v4_20250728

Executive summary

The proposal

Transport for New South Wales (hereafter "Transport") proposes to demolish and remediate the former Station Masters Cottage (SMC) in Captains Flat (the proposal). The former SMC is owned by Transport Asset Holding Entity (TAHE) located at 2 Copper Creek Road, Captains Flat NSW (Lot 1 DP572636) (the site).

Need for the proposal

A detailed site investigation (DSI) was completed in 2022 and found that soils at the site and surrounding land contained heavy metals which exceeded human health and ecological criteria (Ramboll, 2022a). It was determined that retention of the SMC was not feasible due to human health impacts and therefore the decision was made to demolish the building and remediate the land. The remediation of the former SMC is part of larger remediation activities within the town of Captains Flat.

Proposal objectives

The objective of the proposal is to remediate the site suitable for residential land use, in accordance with its current land use zoning under the Queanbeyan-Palerang Regional Local Environmental Plan 2022. The future intention is for the site to be used as public open space, recreational use, as part of the Captains Flat Heritage Trail.

Options considered

A Remediation Options Assessment (Ramboll, 2022c) identified three possible options for remediation of the site. These remediation options were:

- leave the SMC in situ and remove accessible contaminated soil and backfill resultant excavation with clean imported soils
- temporarily relocate the SMC and remove contaminated soil and backfill resultant excavation with clean imported soils
- demolish the SMC and remove contaminated soil and backfill resultant excavation with clean imported soils
- do nothing.

Transport consulted Queanbeyan-Palerang Regional Council and the community in September and October 2023 on the preferred remediation option, preferred future land use option and remediation criteria for the SMC site.

Upon consideration of the proposed options, feedback from the community and stakeholders and identified constraints, it was decided that the preferred option would be to demolish the SMC and remove the contaminated soil, due to difficulties associated with retaining the SMC and the preference to achieve full site remediation.

Statutory and planning framework

The proposal is for demolition and remediation activities and is to be carried out by Transport. Therefore, it can be assessed under Division 5.1 of the *Environmental Planning and Assessment Act 1979 (NSW)*. Development consent from Queanbeyan-Palerang Regional Council is not required.

Community and stakeholder consultation

Section 2.11 of *State Environmental Planning Policy (Transport and Infrastructure) 2021* requires consultation with councils for development carried out by or on behalf of a public authority, if the development '*(a) is likely to affect the heritage significance of a local heritage item, or of a heritage conservation area, that is not also a state heritage item, in a way that is more than minor or inconsequential.*' As such, Transport will be required to consult with Queanbeyan-Palerang Regional Council on the proposal's impacts to the SMC as a local heritage item.

Transport will consult with local residents, stakeholders and government agencies before work starts and keep them informed during the project.

Transport will also consult the community and stakeholders on the historical interpretation of the SMC in the first half of 2025. This feedback will be used to:

- identify historical values
- determine how the historical values can be best interpreted;
- identify issues and opportunities; and
- determine a feasible historical interpretation option that reflects historical, cultural and community importance of the SMC.

Environmental impacts

The main potential environmental impact associated with the proposal is contamination. The proposal involves remediation works to remove contaminated materials and remediate land according to residential use criteria. This is expected to have a beneficial use for the environment in the long-term, although there are short-term minor negative impacts due to potential air and noise emissions from vehicles and machinery, dust from ground disturbance works, and potential for additional soil and water contamination. The proposal is considered to have a low risk of causing significant pollution to the environment with implementation of the mitigation and management measures described in the REF. It will not create environmental problems associated with waste disposal, increase demands on natural resources that are in short supply, or have cumulative environmental effects with other activities that can't be adequately managed.

Justification and conclusion

The removal of contaminated material will make the land suitable for ongoing residential land use, representing a positive long-term impact. The proposal, by removing and mitigating contaminated material, promotes the social and economic welfare of the community and it is expected to result in positive social impacts, enhance economic use of land, and protect the environment by bringing the locality into compliance with environmental health standards.

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1. Introduction

1.1 Proposal identification

Transport for New South Wales (hereafter "Transport") engaged Ramboll Australia Pty Ltd (hereafter "Ramboll") to prepare a review of environmental factors (REF) to consider and address potential environmental impacts associated with the demolition and remediation of the former Station Masters Cottage (SMC) in Captains Flat (the proposal).

The town of Captains Flat is approximately 44 kilometres southeast of Canberra and is situated in the Southern Tablelands within the Queanbeyan-Palerang Regional Council Local Government Area (LGA). The surrounding area includes the Yanununbeyan National Park to the northwest and the Tallaganda National Park to the south. The location of the proposal is shown in **Figure 1-1**.

The former SMC is a private residence located at 2 Copper Creek Road, Captains Flat NSW (Lot 1 DP572636) (the site). The site is comprised of a single-story weatherboard house with a back veranda on brick pier foundations situated on a 1,380 m^2 block. The backyard is fully fenced and contains a large detached garage and shed, and a smaller three walled shed in the western corner of the backyard. Adjacent to the veranda on the eastern side is an onsite septic system used for wastewater. The SMC is a local heritage listed item that was constructed between 1930 and 1940.

Land uses surrounding the proposal site include:

- Miners Road immediately to the east which connects to Captains Flat Road approximately 75 metres north of the proposal site,
- the Captains Flat Rail Corridor immediately to the west,
- Molonglo River to the west,
- Copper Creek immediately to the north-west,
- Captains Flat Rail Corridor and former ore loader approximately 95 metres to the southeast,
- the Lake George (legacy) Mine approximately 480 metres to the southeast, and
- the town of Captains Flat approximately 5.5 kilometres to the southeast.

A detailed site investigation (DSI) was completed in 2022 and found that soils at the site and surrounding land contained heavy metals which exceeded human health and ecological criteria (Ramboll, 2022a). It was determined that retention of the SMC was not feasible due to human health impacts and therefore the decision was made to demolish the building and remediate the land. The remediation of the former SMC is part of larger remediation activities within the town of Captains Flat.

1.2 Purpose of the report

This REF has been prepared by Ramboll on behalf of Transport. Transport is the proponent and determining authority under Division 5.1 of the *Environmental Planning and Assessment Act 1979 (NSW)* (EP&A Act).

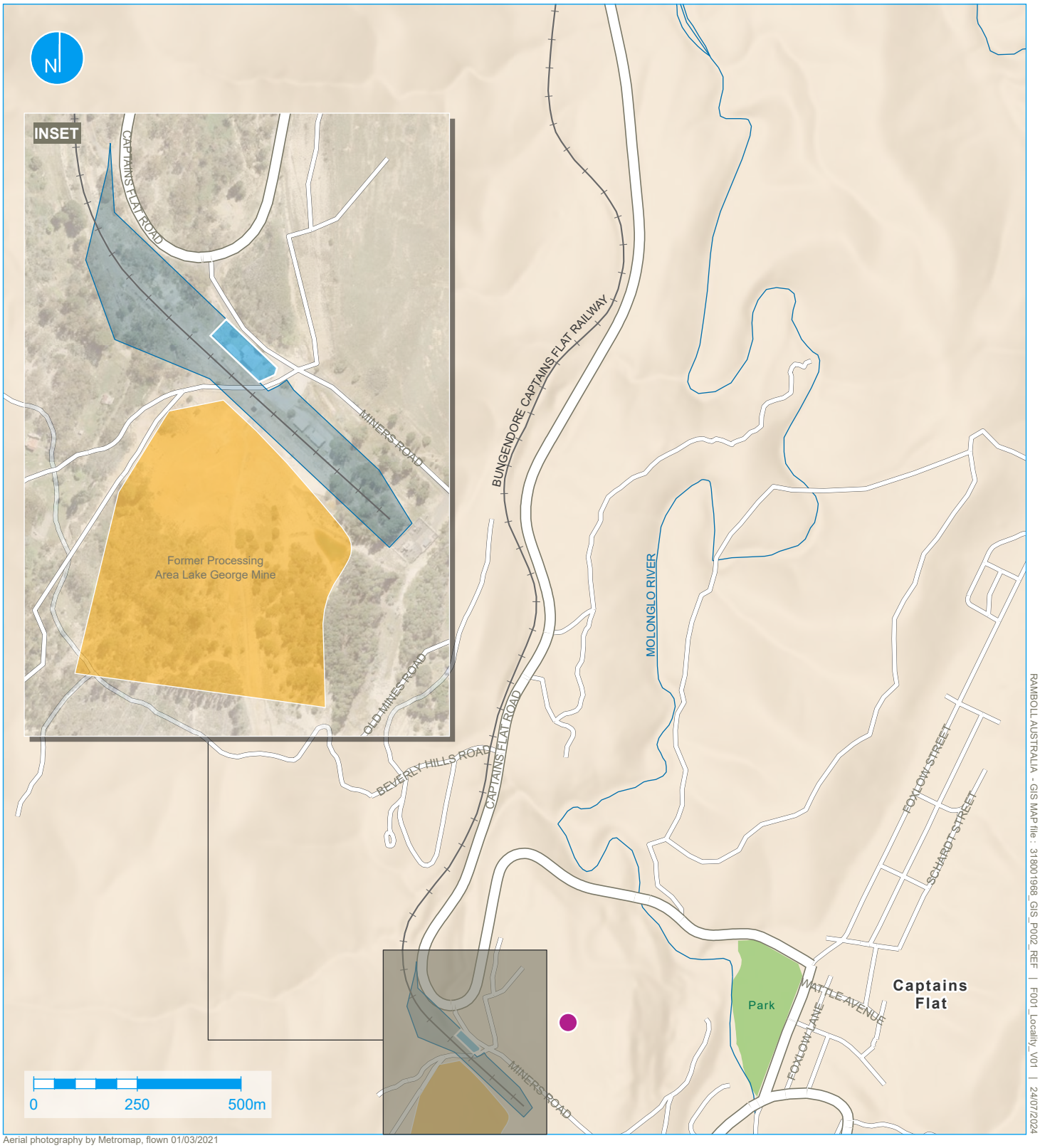
The purpose of the REF is to describe the proposal, to document the likely impacts of the proposal on the environment, and to detail mitigation and management measures to be implemented.

The description of the proposed work and assessment of associated environmental impacts has been undertaken in the context of Section 171 of the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation), the factors in *Guidelines for Division 5.1 assessments* (Department of Planning and Environment, 2022), the *Biodiversity Conservation Act 2016* (BC Act), and the *Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)* (EPBC Act).

The findings of the REF would be considered when assessing:

- Whether the proposal is likely to have a significant impact on the environment and therefore the necessity for an environmental impact statement (EIS) to be prepared.
- The significance of any impact on threatened species as defined by the BC Act in section 1.7 of the EP&A Act and therefore the requirement for a Species Impact Statement (SIS) or a Biodiversity Development Assessment Report (BDAR).

- The significance of any impact on nationally-listed biodiversity matters under the EPBC Act, including whether there is a real possibility that the activity may threaten long-term survival of these matters, and if offsets are required and able to be secured.
- The potential for the proposal to significantly impact any other matters of national environmental significance or Commonwealth land and the need, subject to the EPBC Act strategic assessment approval, to make a referral to the Australian Department of Climate Change, Energy, the Environment and Water for a decision by the Commonwealth Minister for the Environment on whether assessment and approval is required under the EPBC Act.



Aerial photography by Metromap, flown 01/03/2021

RAMBOLL AUSTRALIA - GIS MAP file : 318001988_GIS_P002_REF | F001_Locality_V01 | 24/07/2024

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Key

- Former Station Master's Cottage (Lot 1, DP572636)
- Former Processing Area Lake George Mine
- Declared area
- Railway
- Proposed Lake George Mine Site Containment Cell

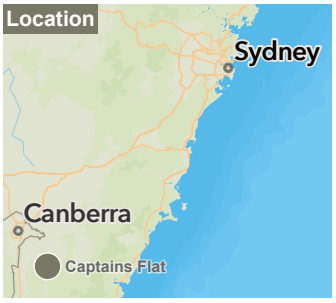


Figure 1-1 | Locality

Former Station Master's Cottage REF

2. Need and options considered

2.1 Strategic need for the proposal

Lead contamination at levels exceeding human health criteria were found in the soils and dust throughout the main residence and detached garage at the site. Lead concentration levels above the criteria are limited to the upper 0.3 metres of the soil (Ramboll, 2022a).

Additionally, site investigations by Ramboll (2022a) found that:

- concentration of arsenic at one location were above human health criteria in surface soil,
- concentration of lead at multiple locations were above human health criteria in surface soils less than 0.3 metres below ground level,
- concentration of arsenic, copper, lead and zinc were found above ecological criteria at several locations in surface soils at depths less than 0.1 metres below ground level, and
- asbestos and lead-based paint were present in the building materials of the SMC.

The elevated soil and dust concentrations present a potential risk to residential site users if not remediated, in addition to the contaminants in the building materials of the SMC. The site is currently unoccupied and is managed under an Interim Environmental Management Plan (Ramboll, 2022e).

2.2 Alternatives and options considered

A Remediation Options Assessment (ROA) (Ramboll, 2022c) identified three remediation strategy options, with two offsite removed material management pathways for each option (a total of six remediation options were assessed).. These options were assessed through a qualitative scoring system against a set of environmental, social and economic sustainability indicators. These remediation strategy options were:

- Leave the SMC in situ and remove accessible contaminated soil and backfill resultant excavation with clean imported soils,
- Temporarily relocate the SMC and remove contaminated soil and backfill resultant excavation with clean imported soils, or
- demolish the SMC and remove contaminated soil and backfill resultant excavation with clean imported soils.

Due to the known contamination at the site, the do-nothing approach was not a valid consideration.

The ROA identified that Option 1A *excavation of contaminated soils for containment at the Lake George (legacy) mine with the house remaining in place followed by removal of internal dust* was the option that received the highest score when considering the sustainability indicators.

However, constraints were identified in the ROA process that would impact the ability to remediate the site to residential land use criteria while retaining the SMC. This was due to the limited access caused by a lack of clearance underneath the house.

Therefore, a Future Land Use (FLU) assessment was undertaken by Transport to identify and evaluate the potential land use options. Eight options were considered in the FLU and are discussed in **Table 2-1**.

Table 2-1 Evaluation of the options to remediate the SMC Lot

Option	Discussion
1. Remediate to residential criteria and divest	This option was not evaluated as the property is not suitable for divestment under current procedures
2. Remediate to residential criteria and lease	This option would include the remediation of soils across the study area, including under the house, garage and sheds and removal of dust from inside the buildings. This option is considered high risk and will be the most expensive to remediate.
3. Remediate to commercial criteria and utilise for community lease (e.g. Men's Shed; Community Garden)	This option would include the remediation of soils across the study area and removal of dust from inside the buildings. Under this option, the contaminated soil under the buildings would remain in-situ. A Long-Term Environmental Management Plan (LTEMP) would be implemented to manage the residual risk to human health and the environment. This option would require a change to the permissible land use and or zoning along with the EPA amending the remediation criteria to commercial. As outlined above, this process will be time consuming and there are also risks that the land use / zoning change is not approved, and the EPA does not approve the change in remediation criteria.
4. Remediate to commercial criteria and utilise for commercial lease (e.g. café retail)	This option would include the remediation of soils across the study area and removal of dust from inside the buildings. Under this option, the contaminated soil under the buildings would remain in-situ. A LTEMP would be implemented to manage the residual risk to human health and the environment. This option would require a change to the permissible land use and or zoning along with the EPA amending the remediation criteria to commercial. As outlined above, this process will be time consuming and there are also risks that the land use / zoning change is not approved, and the EPA does not approve the change in remediation criteria.
5. Remediate to public open space criteria and utilise for recreational purposes (e.g. parks and gardens)	This option would include the remediation of soils across the study area and removal of dust from inside the buildings. Under this option, the contaminated soil under the buildings would remain in-situ. A LTEMP would be implemented to manage the residual risk to human health and the environment. This option would require a change to the permissible land use and or zoning along with the EPA amending the remediation criteria to public open space. This process will be time consuming and there are also risks that the land use / zoning change is not approved, and the EPA does not approve the change in remediation criteria.
6. Demolish the buildings and remediate to commercial / industrial criteria and resume into the rail corridor and form part of the Heritage Trail	This option was not evaluated as the commercial/industrial criteria is not suitable for the proposed land use of Heritage Trail.
7. Demolish the buildings and remediate to public open space criteria and resume into the rail corridor and form part of the Heritage Trial	This option would include the demolition of all buildings and infrastructure and remediation of soils across the study area. This option would require a change to the permissible land use and or zoning along with the EPA amending the remediation criteria to public open space. This process will be time consuming and there are also risks that the land use / zoning change is not approved, and the EPA does not approve the change in remediation criteria. It is noted that the criteria of public open space is in line with the remediation criteria for the rail corridor and will enable the study area to be included in the Heritage Trail. The study area would be established with parks and gardens including heritage interpretation to communicate the significance of the rail corridor and former residence to the community of Captains Flat.
8. Demolish the buildings and remediate to residential criteria and resume into the rail corridor and form part of the Heritage Trial	This option would include the demolition of all buildings and infrastructure and remediation of soils across the study area. No land use or zoning changes would be required for this option. It is noted that the criteria of residential is more stringent that the remediation criteria for the rail corridor and will enable the study area to be included in the Heritage Trail. The study area would be established with parks and gardens including heritage interpretation to communicate the significance of the rail corridor and former residence to the community of Captains Flat. As this option will achieve the remediation objectives in a timely manner and provide the asset back to the community with major social benefits, this option is regarded as the preferred option.

Source: OzArk (OzArk, 2025)

2.3 Preferred option

The FLU determined the most suitable option would be to demolish the SMC and associated above ground buildings, remediate the land to the residential land use criteria, and then absorb the vacant land into the rail corridor to form part of the *Captains Flat Heritage Trail – Pathway to Gold* (Transport for NSW, 2023).

As this option would achieve the remediation objectives in a timely manner and provide the asset back to the community with major social benefits, this option is regarded as the preferred option by Transport.

Contamination assessments determined that the former SMC cannot be retained due to the following constraints:

- widespread contamination across the site,
- confined spaces with limited access,
- asbestos materials in walls,
- exposure to lead dust from indoor and surficial soils, and
- structural engineering issues.

Following demolition of the former SMC and removal of the contaminated soil, the proposal site will be remediated so that it is suitable for continued residential land use. The risk to human health presented by lead in soils and dust is the main driver for the remediation and the chosen option achieves complete remediation of the site.

3. Description of the proposal

3.1 The proposal

Transport proposes to demolish the former SMC, remove contaminated soil and remediate the site suitable for residential land use, in accordance with its current zoned land use and criteria under the National Enviornmental Protection Measures 2013. The future intention is for the site to be used as public open space, recreational use, as part of the Captains Flat Heritage Trail.

The site is located within land zoned as RU1 (Primary Production) under the *Queanbeyan-Palerang Regional Local Environmental Plan 2022* (Queanbeyan-Palerang Regional LEP). The site is located adjacent to a former mine load-out facility and rail corridor on the Country Rail Network (CRN). Surrounding land use includes:

- North: Copper Creek, Captains Flat Road, Miners Road,
- East: Captains Flat rail corridor, former goods shed, Miners Road, Captains Flat Sewage Treatment Plant, residential community of Captains Flat,
- South: Captains Flat rail corridor and former ore loadout facility, processing area of the former Lake George Mine, and
- West: Captains Flat rail corridor, Copper Creek, large lot residential properties.

The site previously served as a private residential block comprising the SMC and a detached garage and shed. The SMC comprises a single-storey clad-framed dwelling with a conventional timber subfloor on brick piers with a rear varanada attached to the house. The backyard is completely fenced while the front yard and driveway are open to the rail corridor.

Until recently, the site was used as private residence. After the adjacent rail corridor was deemed significantly contaminated by the NSW Environment Protection Authority (EPA) (Declaration Number: 20211105) on 25 June 2021, the residents were relocated as an interim management measure. The site is owned by TAHE.

Key activities associated with the proposal are outlined in the following **Section 3.2**.

3.2 Demolition and remediation activities

The proposal includes the demolition, remediation and validation of the site, which comprises the area shown in **Figure 6-1**. The proposal would utilise existing contaminant distribution information and be guided by real time analysis of metals in soils using a field portable X-ray fluorescence (fpXRF). Interim management measures are currently in place under the *2 Copper Creek Road, Captains Flat Interim Environmental Management Plan* (Ramboll, 2022e) and will remain in place during the proposal, including but not limited to:

- PPE requirements,
- Measures to prevent offsite migration of contamination,
- restricted access to the public, and
- controls for workers accessing the site.

The following activities would be completed as part of the proposal:

Site establishment:

- implementation of measures to manage lead risk work:
    - retention of exclusion zones, limiting entry to only remediation workers and those adequately inducted,
    - establishment of clean and dust free facilities for workers to eat and drink in,
    - establishment of toilet facilities and wash up areas for decontamination, and
    - disposal area for any work-related contaminated materials, such as dust masks, disposable gloves, and coveralls.
- development of remediation management documentation for the proposal, including:
    - remedial works plan detailing specific remediation requirements,
    - work health and safety management plan detailing health and safety procedures and requirements, including those specific to lead and asbestos work and
    - construction environmental management plan detailing the controls to minimise impacts on the community and the environment.
- installation and establishment of environmental controls, including:
    - erosion and sediment controls,
    - dust controls,
    - monitoring equipment (as required),
    - waste management controls and protocols,
    - waste tracking protocols, and
    - security fencing.
- demarcation of the proposal, including identification of stockpile locations, and preparation of the haul route (as required), and
- protection of infrastructure.

The site environmental controls would be inspected, managed and maintained throughout the proposal. The site management plans developed for the proposal are to be reviewed and approved by the Site Auditor prior to the commencement of remediation.

Demolition works would involve:

- removal of hazardous materials (asbestos containing materials (ACMs), materials impacted by lead paint, and synthetic mineral fibres (SMF)) by an appropriately licensed removal contractor and to be undertaken in accordance with the *Code of Practice: Demolition Works* (Safe Work Australia, 2019), *Code of Practice: How to Manage and Control Asbestos in the Workplace* (SafeWork NSW, 2022a), AS/NZ 4361.2.2017 *Guide to Hazardous Paint Management Part 2: Lead paint in residential, public and commercial buildings*, and the *Code of Practice:*

How to Safely Remove Asbestos (SafeWork, 2022b). A Hazardous Materials Audit would be undertaken prior to commencing demolition works,

- decommissioning / disconnecting site services,
- demolition works to be undertaken in accordance with the Australian Standard *AS2601-2001 The demolition of structures, Code of Practice: How to Manage and Control Asbestos in the Workplace* (SafeWork NSW, 2022a), AS/NZ 4361.2.2017 *Guide to Hazardous Paint Management Part 2: Lead paint in residential, public and commercial buildings*, and the *Code of Practice: How to Safely Remove Asbestos* (SafeWork, 2022b). The final method would be determined by the demolition contractor, but would likely include:
  - dismantling structures and removal of nails, screws, fasteners,
  - removal of interior components including walls and floorboards,
  - use of manual equipment to breakdown smaller structures such as walls, partitions, and other structural components, and
  - mechanical demolition of major structural elements (roofing and walls) using excavators.
- removal of backyard fencing,
- demolition of detached shed,
- removal of onsite septic system, and
- demolition waste would be taken to an appropriately licensed waste mangement facility.

Remediation works would involve:

- excavation of soils exceeding NEPM 2013 health investigation levels (HILs) and health screening levels (HSLs) to an average depth of 0.5 metres:
  - excavated soils with lead greater than public open space criteria (HIL C – 600 mg/kg) would be placed in the Lake George Mine containment cell, and
  - excavated soils with lead greater than residential criteria (HIL A – 300 mg/kg) but less than HIL C would be placed in the adjacent rail corridor.
- appropriately validated soils would be imported, as required, to redevelop the site for use as part of the Captains Flat Heritage Trail, and
- the site would be stabilised post remediation via the application of an appropriate seed mix to reduce the potential for erosion and sediment loss.

3.2.1 Demolition and remediation hours and duration

Demolition and remediation works would be undertaken:

- over a period of approximately six to eight weeks commencing in late 2025,
- during the recommended standard construction hours provided in the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009) (ICNG) which is:
  - Monday to Friday 7am to 6pm,
  - Saturday 8am to 1pm, and
  - no work on Sundays or public holidays.

3.2.2 Plant and equipment

The equipment and machinery to be used would be determined by the demolition contractor, but is expected to include:

- excavators,
- hydraulic breaker,
- wheel loader,
- jack hammers,

- dump trucks for removal of waste and material, and
- various handheld tools and equipment.

3.2.3 Traffic management and access

Access to the site would be via Miners Road and Copper Creek Road. Demolition and remediation activities would require traffic control measures such as signage, cones and a traffic controller to direct traffic from both directions on Miners Road. Installation and removal of traffic controls would be done in accordance with the *Traffic control at work sites technical manual* (Transport for NSW, 2022).

Truck movement entering and exiting the site would be minimal. No additional traffic controls would be required for any trucks turning on to Captains Flat Road.

3.2.4 Previous investigations

Several previous investigations have been undertaken for the site which has informed this REF including:

- *Lake George Mine Remediation Review of Environmental Factors* (GHD, 2022),
- *Captains Flat Station Masters Cottage - Detailed Site Investigation* (Ramboll, 2022a),
- *Captains Flat Rail Corridor Remediation Action Plan* (Ramboll, 2022b),
- *Remediations Options Assessment: 2 Copper Creek Road Captains Flat NSW* (Ramboll, 2022c), and
- *Traffic Impact Assessment: Captains Flat Lead Abatement Works* (Ramboll, 2022d).

In addition to the above, an Interim Environmental Management Plan was prepared for the site for the management of risks associated with heavy metal contamination at the site prior to remediation (Ramboll, 2022e).

4. Statutory and planning framework

This section provides the statutory and planning framework for the proposal and considers the provisions of relevant state environmental planning policies, local environmental plans and other legislation.

4.1 Environmental Planning and Assessment Act 1979

The EP&A Act is the principal piece of environmental legislation for development planning and control in NSW. Transport is the proponent and the determining authority under Division 5.1 of the EP&A Act.

Under Section 5.5 of the EP&A Act, it is the duty of a determining authority to consider the environmental impact of an activity:

(1) For the purpose of attaining the objects of this Act relating to the protection and enhancement of the environment, a determining authority in its consideration of an activity shall, notwithstanding any other provisions of this Act or the provisions of any other Act or of any instrument made under this or any other Act, examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of that activity.

(2) (Repealed)

(3) Without limiting subsection (1), a determining authority shall consider the effect of an activity on any wilderness area (within the meaning of the Wilderness Act 1987) in the locality in which the activity is intended to be carried on.

(4) (Repealed)

The REF has been prepared under part 5 of the EP&A Act and describes the level of impact of the proposed work.

4.1.1 Environmental Planning and Assessment Regulation 2021

Under Clause 171 of EP&A Regulation, the determining authority is required to prepare an REF to demonstrate the project's impact on environmental factors have been considered. The determining authority must take into account the environmental factors specified in the guidelines that apply to the activity. If no such guideline exists, then the review must consider the environmental factors specified in Clause 171(2).

There are no specific guidelines relevant to the project and therefore subclause 171(2) applies. Consideration of Clause 171(2) is included in **Appendix A**.

4.2 State Environmental Planning Policies

4.2.1 State Environmental Planning Policy (Transport and Infrastructure) 2021

The proposal is regulated under the Transport and Infrastructure SEPP. Clause 2.92(1) enables development for the purpose of a railway or rail infrastructure facilities to be carried out on behalf of a public authority without consent on any land. Development for the purpose of rail infrastructure facilities includes environmental management works (Clause 2.9.2(2)(d)).

Environmental management works is defined in Clause 2.3 as:

> *"(a) works for the purpose of avoiding, reducing, minimising or managing the environmental effects of development (including effects on water, soil, air, biodiversity, traffic or amenity), and*
>
> *(b) environmental protection works.".*

The proposal is within the meaning of "environmental protection works" as defined by the *Local Land Services Act 2013* as:

> "*works associated with the rehabilitation of land towards its natural state or any work to protect land from environmental degradation, and includes re-vegetation or both regeneration works, wetland protection works, erosion protection works, dune restoration works and the like, but does not include coastal protection works (within the meaning of the* Coastal Protection Act 1979."

The proposal aligns with the definition of environmental management works and 'development' under Clause 2.92(2)(d) of the Transport and Infrastructure SEPP. Development consent is therefore not required for the proposal.

In addition, Section 2.92(2)(iii) includes alteration, demolition or relocation of a local heritage item as development permitted without consent if in connection with 'development' for the purpose of a railway or rail infrastructure facility.

Assessment of the proposal via a REF is the appropriate form of assessment under Part 5 of the EP&A Act.

Division 1 under Part 2.2 of the Transport and Infrastructure SEPP contains requirements for public authorities to consult with Councils and other specified authorities for certain developments. Section 2.10 to 2.15 of Transport and Infrastructure SEPP contains provisions for public authorities to consult with local councils and other public authorities prior to the commencement of certain types of development. Section 2.11 of Transport and Infrastructure SEPP requires consultation with councils for development carried out by or on behalf of a public authority, if the development '*(a) is likely to affect the heritage significance of a local heritage item, or of a heritage conservation area, that is not also a state heritage item, in a way that is more than minor or inconsequential.*'

Consultation specific to the proposal is discussed in **Section 5**.

4.2.2 State Environmental Planning Policy (Resilience and Hazards) 2021

Section 4 of the Resilience and Hazards SEPP defines a framework for management of contamination in NSW. It defines requirements for engagement with consent authorities and local Councils according to whether remediation is considered Category 1 (requiring development consent) or Category 2 (requiring notification 30 days before remediation).

Section 4.11(b)(ii) of the Resilience and Hazards SEPP enables remediation work (whether or not it is work described in Section 4.8(a)-(f)) to be carried out without consent if another State environmental planning policy permits the works to be carried out without consent. The works are permissible without consent under the Transport and Infrastructure SEPP. Transport must still comply with Section 4.13 – 4.15 of the Resilience and Hazards SEPP including:

- Provision of notice to Council that the works will be carried out at least 30 days prior to its commencement,
- Works carried out in accordance with the contamination land planning guidelines and guidelines in force under the *Contamination Land Management Act 1997, and*
- Provision of notice of completion of the works to Council.

4.2.3 Local Environmental Plans

Queanbeyan-Palerang Regional Local Environmental Plan 2022

The Queanbeyan-Palerang Regional LEP provides information on objectives and permissible activities within nominated land zones. The proposal site is zoned as 'RU1 – Primary production' with a residential land use. The objectives of this zone are to:

- encourage sustainable primary industry production by maintaining and enhancing the natural resource base,
- encourage diversity in primary industry enterprises and systems appropriate for the area,
- minimise the fragementation and alienation of resource lands,
- minimise conflict between land uses within this zone and land uses within adjoining zones,
- minimise the impact of development on the natural environment, and
- ensure development does not unreasonably increase the demand for public services or public facilities.

Under Clause 5.10(2) of the Queanbeyan-Pelarange Regional LEP, a development consent is required for the demolition or removal of a heritage item. The former SMC is listed as a heritage item under Schedule 5, Part 1 of this LEP. Additionally, under Clause 2.7 of the LEP, the demolition of any building or works requires a development consent.

As detailed in **Section 4.2.1**, Section 2.92(2)(iii) of the Transport and Infrascture SEPP permits the alteration, demolition or relcation of a local heritage item if the 'development' is for the purposes of a railway or railway infrascture facility. Therefore development consent for the demolition of the SMC is not required.

Council would be consulted in accordance with Section 2.11 of the Transport and Infrastructure SEPP.

4.3 Other relevant NSW legislation

4.3.1 Protection of the Environment Operations Act 1997 (POEO Act)

The POEO Act provides a licencing system for certain activities to be undertaken within NSW. The activities to which an environment protection licence (EPL) is required are listed in Schedule 1 of the POEO Act. Most activities in Schedule 1 of the POEO Act specify thresholds above which a licence is required.

The excavation of contaminated material and remediation of a site is not included as a scheduled activity under Schedule 1 of the POEO Act.

Schedule 1, Clause 48 identifies the transportation of trackable waste as an activity that requires an EPL and includes transportation of category 1 trackable waste of more than 200 kilograms in any load within NSW. Transport, as the consignor of the waste (being category 1 trackable waste due to the lead content), is required by Part 4, Division 2 of the *Protection of the Environment Operations (Waste) Regulation 2014* (POEO Regulation) to ensure the transporter of the waste holds an EPL to transport the waste.

Transport appointed UGL Regional Linx Pty Ltd (UGL Regional Linx) the operations and maintenance manager role of rail infrastructure within the CRN in January 2022. UGL Regional Linx holds an existing EPL 13421 (the EPL) for railway infrastructure operations and is applicable to all railway infrastructure operations undertaken within the licenced area.

The proposal is classified as development under the EPL and is therefore authorised under the existing EPL. A modification to EPL 3142 would not be required.

4.3.2 *Protection of the Environment Operations (Waste) Regulation 2014* (NSW) (POEO Regulation)

The POEO Regulation relates to the regulation of waste and resource recovery in NSW. Part 4 of the POEO Regulation specifies the tracking of certain wastes, including hazardous wastes, within, out of and into NSW. Specific wastes to which waste tracking requirements under Part 4 apply are detailed in Schedule 1 of the regulation.

All material handled during demolition and remediation of the former SMC would be required to be tracked and input into the Integrated Waste Tracking Solution which has replaced the EPA's online waste track system.

4.3.3 Roads Act 1993

Under Section 87 of the *Roads Act 1993,* Transport is permitted to carry out traffic control works on all public roads. Traffic control works would be required along Miners Road to manage the safe entry and exit of machinery and trucks to the site. Traffic control activities would likely include signage, traffic cones and a traffic controller to direct traffic from both directions.

4.3.4 National Parks and Wildlife Act 1974 (NP&W Act)

The *National Parks and Wildlife Act 1974* (NP&W Act) governs the management of national parks, historic sites, nature reserves, reserves, Aboriginal areas, and State game reserves in NSW. The NP&W Act also provides for the protection of native flora and fauna.

Under Section 90 of the NP&W Act, an Aboriginal Heritage Impact Assessment is required where works would disturb Aboriginal sites or artefacts. A search of the Aboriginal Heritage Information Management System (AHIMS) completed on 01 May 2024 showed no Aboriginal sites or artefacts are located in or immediately adjacent to the site area. Results of the AHIMS search is provided in **Appendix C**. An Aboriginal Heritage Impact Assessment is not required for the proposal. Consideration of the potential for impacts on Aboriginal cultural heritage is discussed in **Section 6.7**.

4.3.5 Contaminated Land Management Act 1997

Under Section 60 of the *Contaminated Land Management Act 1997*, landowners must notify the EPA in writing if activities have contaminated the land.

Transport notified the EPA on 25 September 2020 of contamination found within and adjacent to the rail corridor. The NSW EPA declared the land significantly contaminated (Declaration number: 20211105) on 22 April 2021. Transport submitted a Voluntary Management Proposal (VMP) detailing the pathway and schedule for management of the contaminated land on 25 June 2021. The NSW EPA approved the VMP on 13 September 2021.

Transport notified the EPA on 7 February 2022 of contamination found within the former SMC site following detailed site investigations. The NSW EPA declared the land significantly contaminated (Declaration number: 20221106) on 20 September

2022. Transport submitted a VMP on 1 May 2023 which was approved by NSW EPA on 31 August 2023. The VMP included a three-phase approach to the investigation and remediation activities of the site including:

- Phase 1 – Future Land Use: this involves determining the future land use of the site. The future land use is a key input to determining the remediation methodology.
- Phase 2 – Remediation Planning: this involves identifying and analysing the remediation options to support the preferred future land use; developing remediation action plan detailing the remediation implementation strategy and obtaining the necessary planning approvals to enable the remediation works.
- Phase 3 – Remediation and Validation: this involves the delivery of the remediation action plan and validation that the remediation has met the objectives of this proposal.

A Notice to Amend Approved VMP under Sections 17 and 44 of the Act was issued on 3 September 2024, to amend the VMP with completion of Phase 1 and note Phase 2 was now in process. The amendment notes that Phase 1 identified the most effective remediation strategy to be the demolition of the building assets and to include the land into the rail corridor, which EPA is satisfied meet the terms of the approved VMP.

4.3.6 Heritage Act 1977

The *Heritage Act 1977* (the Heritage Act) aims to promote and identify non-Aboriginal heritage within NSW and encourage the conservation and protection of such places. The Heritage Act legally protects heritage items listed on the State Heritage Register.

The former SMC is not listed on the State Heritage Register.

4.3.7 Water Management Act 2000

The *Water Management Act 2000* (WM Act) aims to provide for the sustainable and integrated management of the State's water in accordance with ecologically sustainable development (ESD) principles. The licensing and approvals provisions of the WM Act apply (in general terms) to water sources that are subject to a Water Sharing Plan (WSP). The following approvals are generally required under the WM Act:

- a water access licence under section 60a to allow water to be taken from a water source,
- a water use approval under section 89 to authorise the use of water for a particular purpose at a particular location,
- a controlled activity approval under section 91E for works undertaken on waterfront land, and
- an aquifer interference approval under section 91F.

The proposal does constitute works undertaken on waterfront land (due to proximity to Copper Creek, refer to **Section 6.3**). However, Transport as a public authority is exempt from Section 91(E)1 of the WM Act under Clause 41 of the *Water Management (General) Regulation 2018* in relation to all controlled activities carried out on or under waterfront land and Transport is exempt from requiring approval under Section 91(E)1.

4.4 Commonwealth legislation

4.4.1 Environment Protection and Biodiversity Conservation Act 1999

Under the EPBC Act, a referral to the Australian Government is required for proposed actions that have the potential to significantly impact matters of national environmental significance (MNES) or the environment of Commonwealth land. These are considered in **Appendix A** and **Section 6**.

Potential impacts to these biodiversity matters are also considered as part of **Section 6** of the REF and **Appendix A**.

Findings - matters of national environmental significance

A search of the EPBC Act Protected Matters Search was undertaken on 20 May 2025. The assessment of the proposal's impact, on MNES and the environment of Commonwealth land, found that there is unlikely to be a significant impact on relevant MNES or on Commonwealth land. Accordingly, the proposal has not been referred to the Australian Government Department of Climate Change, Energy, the and Water (DCCEEW) under the EPBC Act. Search results are provided in **Appendix E**.

Findings - nationally-listed biodiversity matters (where the strategic assessment applies)

The assessment of the proposal's impact on nationally-listed threatened species, endangered ecological communities and migratory species found that there is unlikely to be a significant impact on relevant MNES. **Section 6** describes the safeguards and management measures to be applied.

4.5 Confirmation of statutory position

The proposal is categorised as development for the purpose of railway or rail infrastructure facilities and is being carried out by or on behalf of a public authority. Under section 2.92 of Transport and Infrastructure SEPP the proposal is permissible without consent. The proposal is not for State significant infrastructure or State significant development. The proposal can be assessed under Division 5.1 of the EP&A Act.

Transport for NSW is the determining authority for the proposal. This REF fulfils Transport's obligation under Section 5.5 of the EP&A Act including to examine and consider to the fullest extent possible all matters affecting or likely to affect the environment by reason of the activity.

Compliance with Sections Section 2.11 of Transport and Infrastructure SEPP and Section 4.13 – 4.15 of the Resilience and Hazards SEPP is required.

5. Consultation

This section discusses the consultation undertaken to date for the proposal and the consultation proposed for the future.

5.1 Consultation strategy

Transport will consult with Council, local residents and stakeholders on the proposal before work starts.

Our consultation approach will provide an opportunity for Council, community and stakeholders to engage with Transport across a range of mediums including written, online and face-to-face.

We may do this using a variety of methods, such as:

- community updates,
    - emails,
    - web updates,
    - social media updates,
    - community and stakeholder meetings,
    - community information event,
- 'Have your say' website survey,
- project information telephone line – 1800 491 566, and
- project email – landassessment@transport.nsw.gov.au.

Transport has managed community relations throughout the assessment and interim management of contamination at Captains Flat. Transport will continue to manage community relations throughout remediation according to the community engagement plan.

A dedicated webpage has been created and is updated regularly for the Captains Flat contamination. The website is updated with the status of assessment results, management measures and remediation works at the site and can be accessed at https://www.transport.nsw.gov.au/projects/current-projects/captains-flat-contamination.

Community notifications have been provided for the broader contamination of Captains Flat since 2022. Stakeholder consultation undertaken specific to the former SMC remediation works has been summarised in **Table 5-1**.

Table 5-1: Stakeholder consultation summary

Stakeholder	Consultation Method / Date	Issues / Comments
Community and business	November 2022 Community information session	Presentation slides, and questions and answers provided on webpage
	December 2022 Community feedback invited on remediation options	Published the Remediation Options Assessment and the Remediation Action Plan
	December 2022 Proposed changes to Voluntary Management Proposal	Published the community update
	August 2023 Captains Flat Taskforce Community Information Drop-in Session	Responded to questions at the drop-in session led by the Captains Flat Taskforce.
	September 2023 Captains Flat Former Station Masters Cottage Community Information Session	Published the presentation slides from the community information session on 19 September 2023.
	December 2023 Captains Flat Former Station Masters Cottage Update	Published the event summary report for the September community session.
	February 2024 Captains Flat Former Station Masters Cottage update	Published an update for the community on next steps.

Stakeholder	Consultation Method / Date	Issues / Comments
	April 2024 Captains Flat Online Community Information Session	Provided an update to the community. Provided the presentation slides on the webpage.
	August 2024 Captains Flat Online Event Summary Report	Provided the presentation slides and project FAQs on webpage
	September 2024 Detailed site investigation to commence	Provided an email update to the community and on the webpage.
Environment Protection Authority (EPA)	July 2023 Voluntary Management Proposal Amendment Approved by EPA	Amendment to extend the project deadlines for Captains Flat Rail Corridor (Site)
Environment Protection Authority (EPA)	September 2024 Voluntary Management Proposal Amendment Approved by EPA	Amendment to extend the project deadlines for Captains Flat Former Station Masters Cottage

The stakeholder engagement activities to date have provided the opportunity for the community to be informed on the proposal and provide feedback. It has also enabled Transport to understand the community and stakeholder issues to be addressed as a part of remedial activity planning.

Transport acknowledges the potential impacts of the proposal to stakeholders and members of the community and is committed to:

- keeping potentially affected residents, property owners, interested stakeholders and the broader community informed before and during the work,
- implementing mitigation measures that will reduce the risk of impacts to human health and the environment from remediation works, and
- implementing Transport's complaints management process to respond to and resolve complaints as soon as possible.

5.2 Community involvement

Regular community consultation is undertaken and information is shared on Transport's website. Community information sessions and email updates have been used to provide progress updates on the status of remediation activities at the former SMC and adjacent rail corridor. Information sessions are held either in person or online with the most recent information session held in April 2024.

Community feedback is encouraged and can be provided to Transport through several pathways. This can be done by email or following the supplied link which leads to the Transport website.

5.3 Government agency and stakeholder involvement

As detailed in **Section 4.2.1**, consultation with Council is required prior to the demolition of the former SMC.

Various government agencies and stakeholders have been consulted about the proposal, including:

- NSW EPA,
- Queanbeyan-Palerang Regional Council,
- Department of Regional NSW,
- Legacy Mines, and

- the private landowner.

5.4 Ongoing or future consultation

Transport will continue to consult with local residents, government agencies, and hold community information sessions throughout the project. A dedicated Community Engagement Plan would be prepared and implemented before work starts (Refer to **Section 6.13.3** for further detail).

As discussed in **Section 4.2.1**, Section 2.11 of Transport and Infrastructure SEPP requires consultation with councils for development carried out by or on behalf of a public authority, if the development '*(a) is likely to affect the heritage significance of a local heritage item, or of a heritage conservation area, that is not also a state heritage item, in a way that is more than minor or inconsequential.*' As such, Transport will consult with Council on the proposal's impacts to the SMC as a local heritage item (refer to **Section 6.11.3**).

5.5 Public exhibition

Transport will exhibit the REF for 28 days on the Transport website and the NSW Government Have Your Say website.

Transport will inform the community via various channels including email, social media, and website and advise that submissions can be made via:

- Email to landassessment@transport.nsw.gov.au
- Have your say website.

Transport will prepare a submission report to respond to the feedback provided.

6. Environmental assessment

This section of the REF provides a detailed description of the potential environmental impacts associated with the construction and operation of the proposal. All aspects of the environment, potentially impacted upon by the proposal, are considered. This includes consideration of:

- Potential impacts on matters of national environmental significance under the EPBC Act.
- The factors specified in the Guideline for Division 5.1 assessments (DPE, 2022) and as required under section 171 of the *Environmental Planning and Assessment Regulation 2021*. The factors specified in section 171 of the *Environmental Planning and Assessment Regulation 2021* are considered in **Appendix A.**
- Site-specific safeguards and management measures are provided to mitigate the identified potential impacts.

6.1 Contamination

6.1.1 Existing environment

The former SMC is adjacent to a former mine load-out facility and rail corridor on the Country Regional Network (CRN). The former load-out facility and surrounding rail corridor was deemed significantly contaminated by the NSW EPA on 22 April 2021.

The Lake George (legacy) Mine is located approximately 480 metres southeast of the former SMC and is a known source of heavy metal contamination and acid mine drainage (AMD) which is impacting the surrounding area. Investigations at the former SMC identified potential human and environmental health risks associated with contamination resulting from the Lake George Mine and the historic loadout of ore from the mine by rail.

Lead contamination is known to exist in surface and near surface soils at levels which exceed human health criteria in soils less than 0.3 metres below ground level (mbgl). Concentrations of arsenic, copper, lead and zinc exceed the ecological criteria at multiple locations in soils generally less than 0.1 mbgl (Ramboll, 2022). Ecological criteria are further discussed in the following **Section 6.1.2**.

6.1.2 Criteria

Soil

The NEPM 2013 provides HILs and ecological-based investigation levels (EILs) for various land uses.

For the proposed residential land use, the guidelines adopted for the site are:

- HIL A – includes residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake, no poultry), child care centres, pre-schools and primary schools. HIL A has been adopted for intrusive maintenance works.
- EIL for urban residential and public open space – EILs are applicable for assessing the risk to terrestrial ecosystems. EILs are dependant on specific soil physiochemical properties and generally apply to the top 2 metres of soil.

Table 6-1 provides the soil assessment criteria for HILs and EILs for the relevant contaminants.

Table 6-1 Soil assessment criteria – health and ecological investigation levels

Contaminant	HIL A – low density residential (mg/kg)	EIL – urban residential and public open space (mg/kg)
Arsenic	100	100
Cadmium	20	-
Chromium	100	190
Copper	6,000	220
Mercury	40	-
Lead	300	1,100
Nickel	400	220

Contaminant	HIL A – low density residential (mg/kg)	EIL – urban residential and public open space (mg/kg)
Zinc	7,400	630

The end use of the site is public open space which conforms with HIL C of the NEPM however, the site would be remediated to HIL A criteria. The criteria for HIL A is more stringent than HIL C therefore the land would be remediated to an appropriate standard for public use.

Dust

Indoor dust remediation criteria were adopted from the following sources:

- *Protect your family from lead in your home* (United States Environmental Protection Agency, 2020), and
- AS 4361.2-1998 *Guide to lead paint management – residential and commercial buildings.*

Adopted lead dust contamination criteria within a residence are provided in **Table 6-2**.

Table 6-2 Lead dust assessment criteria (µg/m^2)

Item	Assessment criteria – residential property (µg/m^2)
Dust interior – hard floors	108
Dust interior – windowsills and shelves	1,076

6.1.3 Potential impacts

If not managed and controlled appropriately potential impacts resulting from contamination could be:

- contaminants within the soil could spread to uncontaminated areas,
- contaminants could seep into groundwater increasing the existing groundwater contamination levels,
- additional contaminants could be spread as a result of demolition and remediation works such as spills or leaks from machinery, or from chemicals used and stored at the site, and
- air quality degradation if soil and dust are poorly managed during demolition and remediation works.

6.1.4 Safeguards and management measures

Safeguards and management measures related to contamination are detailed in **Table 6-3**.

Table 6-3 Contamination safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Contaminated land	Remediation will be undertaken in accordance with the Captains Flat Rail Corridor Remediation Action Plan (Ramboll, 2022b) as updated to include the SMC land.	Transport Contractor	To update the Remediation Action Plan Prior to and during remediation
	A Construction Environmental Management Plan (CEMP) will be prepared by the Contractor, and include an Asbestos Removal Control Plan to appropriately manage the removal of known and/or unexpected by encountered asbestos.	Contractor	Prior to remediation
	A licenced asbestos assessor will complete an assessment of the potential asbestos containing materials, lead based paint and other hazardous material within the former SMC.	Transport	Prior to remediation
	Removal, handling and transport of contaminated and hazardous material will be undertaken by a licensed	Contractor	Prior to and during remediation

Impact	Environmental safeguards	Responsibility	Timing
	contractor and in accordance with the applicable requirements and guidelines.		
	If additional contaminated areas are encountered during demolition, appropriate control measures will be implemented to manage the immediate risks of contamination. All other works that may impact on the contaminated area will cease until the nature and extent of the contamination has been confirmed and any necessary site-specific controls or further actions identified in consultation with the Transport for NSW Senior Manager Environment and Sustainability and/or EPA.	Contractor	Prior to and during remediation
	Asbestos removal will be undertaken in accordance with the *Code of Practice How to Safely Remove Asbestos* (SafeWork, 2022b) and the *Code of Practice: How to Manage and Control Asbestos in the Workplace* (SafeWork NSW, 2022a).	Contractor	During remediation
Accidental spill	A site-specific emergency spill plan will be developed and include spill-management measures in accordance with the Transport *Code of Practice for Water Management* (RTA, 1999) and relevant EPA guidelines. The plan will address measures to be implemented in the event of a spill, including initial response and containment, notification of emergency services and relevant authorities (including Transport or EPA officers).	Contractor	Prior to and during remediation

6.2 Biodiversity

6.2.1 Existing environment

The site is largely disturbed and consists of the former SMC, the detached garage and shed, and a landscaped yard with fencing. There are several trees along the southeast end of the site along Copper Creek Road. The surrounding environment is also highly disturbed and includes the adjacent Captains Flat Rail corridor and former ore loader, the Lake George (legacy) Mine, Miners Road, Captains Flat Road and Copper Creek Road.

A search of the EPBC Act Protected Matters Search Tool was completed on 20 May 2025 and is provided in **Appendix E.** The search area included the formers SMC block and a 25 kilometre buffer zone. The results identified the following to potentially occur within the search area:

- Two listed threatened ecological communities within the site area being:
  - Natural Temperate Grassland of the South Eastern Highlands, and
  - White Box-Yellow Box Blakely's Red Gum Grassy Woodland and Derived Native Grassland.
- 41 listed threatened species, and
- 8 listed migratory species.

Previous investigations undertaken by GHD (2022) investigated the broader area of contamination for the Captains Flat township (the Lake George Remediation area) which included the SMC site. GHD (2022) describe that the White Box -Yellow Box -Blakely's Red Gum Grassy Woodland and Derived Native Grassland CEEC occurs as a small patch of degraded remnant vegetation adjoining Copper Creek in the west of the site in both private property and in the rail corridor.

The identified CEEC is located outside of the site boundary.

GHD (2022) did not map any Plant Community Types (PCTs) within the site, however, identified two PCTs in proximity to the site which are listed in the following **Table 6-4** and shown in **Figure 6-1**.

Table 6-4: PCTs in proximity to site

PCT (GHD, 2022)	Condition	Distance to site	Protection Status
PCT 283: Apple Box – Blakey's Red Gum moist valley and footslopes grass-forb open forest	Medium condition	120 metres to the south and southeast	PCT 283 comprises an occurrence of the White Box -Yellow Box -Blakely's Red Gum Grassy Woodland and Derived Native Grassland which is listed as a CEEC under the BC and EPBC Act.
PCT 730: Broad-leaved Peppermint – Mountain Gum dry open forest	Degraded / medium condition	35 metres to the southwest (south of the railway)	

Ramboll notes that both PCT 283 and PCT 730 were retired in June 2022 from the coast and tablelands bioregions as part of the V1.1 update to BioNet PCTs.

6.2.1 Potential impacts

Uncontrolled activities could result in accidental disturbance or removal of sensitive trees or vegetation that have been identified outside of the site boundary.

Given the extent of contamination across the site, the vegetation and trees contained within the site would likely require removal as part of the remediation activities. Given the nature and history of the site, being residential for a long period of time, and a review of site photographs and Google Street view, the tree species within the site appear to be deciduous and may be non-native. Trees requiring removal as part of the proposal would be replaced in accordance with Table 2-1 of the Transport *Tree and Hollow Replacement Guideline*s (Transport for NSW, 2023).

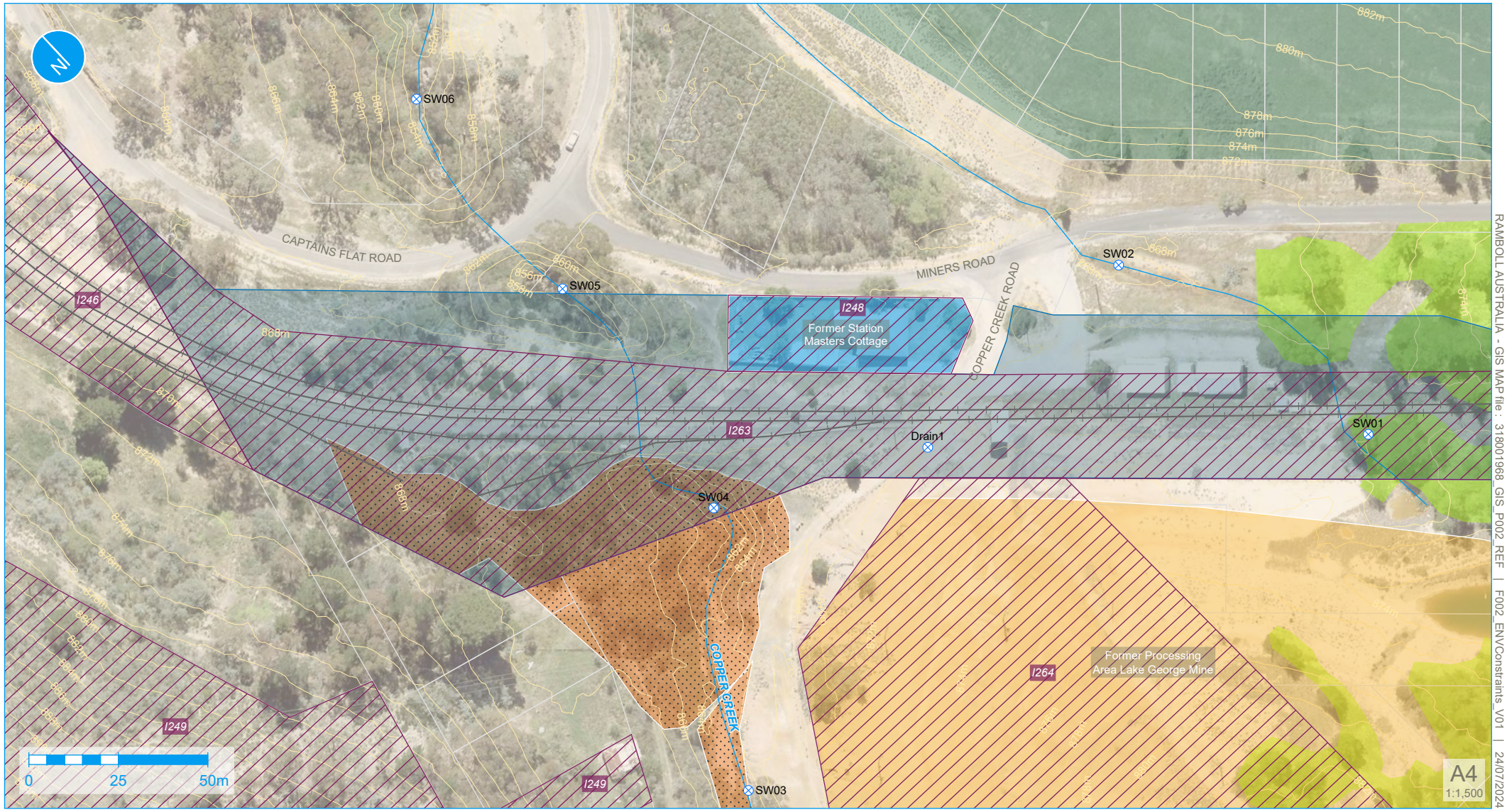
Given that the site is already highly disturbed it is unlikely that a threatened or migratory species would be found on site and therefore would not negatively impact a threatened or migratory species.

Potential exists for the distribution of weed species through the transportation of materials on vehicles to and from the site. This potential impact can be minimised through the implementation of the management measures outlined in **Section 6.2.2**.

Conclusion on significance of impacts

Impacts to threatened biodiversity is considered unlikely due to the disturbed nature of the site and due to the location of sensitive vegetation relative to the site. As discussed in **Section 4.4.1,** the proposal is not likely to significantly impact threatened species or ecological communities or their habitats, within the meaning of the *Biodiversity Conservation Act 2016* and therefore a SIS or BDAR is not required. All works would be contained to the site boundary.

The proposal is not likely to significantly impact threatened species, ecological communities or migratory species, within the meaning of the EPBC Act.



RAMBOLL AUSTRALIA - GIS MAP file - 318001968_GIS_F002_REF | F002_ENVConstraints_V01 | 24/07/2024

Aerial photography by Metromap, flown 01/03/2021

Key

- Declared area
- Former Station Master's Cottage
- Former Processing Area Lake George Mine
- Railway
- 2 m contour line
- Surface water sample
- Creek
- LEP local heritage general item (DPHI)

Plant Community Types (GHD 2022)

- PCT 283
- PCT 730
- Exotic grassland

Critically Endangered Ecological Community listed on both BC and EPCB Acts (GHD 2022)

- White Box - Yellow Box - Blakely's Red Gum Grassy Woodland and derived Native Grassland in the NSW North Coast, New England Tableland, Nandewar, Brigalow Belt South, Sydney Basin, South Eastern Highlands, NSW South Western Slopes, South East Corner and Riverina Bioregions

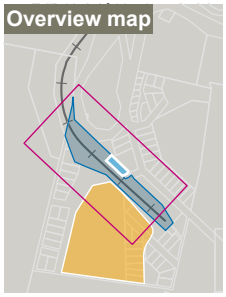


Figure 6-1 | Environmental constraints

Former Station Master's Cottage REF

6.2.2 Safeguards and management measures

Safeguards and management measures related to biodiversity are detailed in **Table 6-5.**

Table 6-5 Biodiversity safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Biodiversity	Biodiversity management measures will be included in the Construction Environmental Management Plan (CEMP).	Contractor	Prior to demolition works
Flora	Vegetation clearance will be limited to the site boundary.	Contactor	Prior to demolition works
	Trees will be removed and replaced in accordance with the Transport *Tree and hollow replacement guidelines* (Transport for NSW, 2023)	Contractor	Prior to, during and post remediation
	Contractors would be advised of requirements to avoid vegetation disturbance or clearance and plan machinery and vehicle access to avoid disturbance.	Contractor	Prior to and during remediation
Fauna	If native fauna species are present within the site, works will avoid the species or wait until the species has relocated from the site.	Contractor	Prior to and during remediation
	If native fauna is injured or trapped onsite, the construction contractor will contact the relevant wildlife authority to arrange for collection/removal from the site.	Contractor	Prior to and during remediation
Weeds	Waste containing noxious weeds and seeds will be removed from the site and disposed of at a licenced facility so that spread of weeds is minimised.	Contractor	Prior to and during remediation
	Site personnel will take reasonable steps to ensure that machinery is free of weed material before entering and exiting the site to avoid the introduction or spread of weeds.	Contractor	Prior to and during remediation

6.3 Hydrology and flooding

6.3.1 Existing environment

The site slopes gently down to the north-west, the surrounding site topography is characterised by a moderate north facing slope intersected by a moderate – steep gully directing Copper Creek which flows north-east to the Molonglo River.

Surface waters

Surface watercourses in proximity to the site include the following:

- Copper Creek, runs adjacent to the site's northern boundary at the closest point,
- Molonglo River, located 500 metres to the north-east,
- Keers Creek, located 660 metres to the east, and
- Forsters Creek, located >1.0 kilometres metres to the south-west.

Surface water sampling was undertaken for the RAP (Ramboll, 2022b) which investigated water quality upstream and downstream of the Lake George (legacy) mine site at six surface water monitoring locations (SW01 – SW06) (refer to **Figure 6-1** for the location of surface water monitoring locations).

The RAP found that the 95% Fresh water criteria were exceeded for cadmium, copper, lead and zinc at all sample locations. Chromium was exceeded at upgradient sample SW03, and nickel was exceeded at SW02, SW05 and SW06. The human health recreational criteria were exceeded for cadmium at SW01 and SW02 and for lead at all locations except the upgradient sample (SW03). The human health drinking water criteria were exceeded for cadmium at SW04-SW06, zinc at SW01, SW02, SW05 and SW06 and for lead at all locations. Concentrations of cadmium, lead and zinc were reported highest at SW01 and SW02.

The results indicate contaminated surface water is migrating from a dam on the mine site via a drainage line through the southern end of the site.

Groundwater

As part of the Detailed Site Investigation (Ramboll, 2022a) groundwater quality sampling was undertaken for the site. Groundwater sampling was undertaken at three wells, one well was onsite, one well was upgradient and the third was downgradient. The inferred flow direction is in a north-west direction which correlates with the topography of the site.

Generally, the groundwater was characterised as freshwater, neutral to acidic pH, slightly aerobic conditions and a slightly reducing environment. Upgradient concentrations of heavy metals were reported as higher than downgradient concentrations. This indicated that groundwater contamination is not a result from on-site contamination sources.

Flooding

The site is not listed as flood affected within the Queanbeyan-Palerang Regional LEP mapping (NSW Planning Portal, 2024).

6.3.2 Potential impacts

If not managed and controlled appropriately potential impacts relating to hydrology and flooding include:

- Sediment runoff to the stormwater system may occur during demolition and remediation activities where surfaces are exposed.
- Erosion of the exposed surfaces may occur during demolition and remediation activities from surface disturbance, wind, or rain.
- Impacts to water quality (turbidity, electrical conductivity, pH, nutrient levels, metals or temperature) may occur due to increase sediment loads or contamination impacts arising from the works.
- There is the potential for degradation of surface waters and groundwaters from the exposure of contaminated soils.

In addition to the potential disturbance of unknown contaminants that may be present within the site, there is potential for water contamination as a result of:

- accidental spills and leaks of chemicals, fuel or oil,
- inappropriate storage of hazardous materials,
- poorly maintained vehicles, plant and equipment, and
- litter entering waterways.

6.3.3 Safeguards and management measures

Safeguards and management measures related to surface water are detailed in **Table 6-6.**

Table 6-6 Hydrology and flooding safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Hydrology	A site-specific Erosion and Sediment Control Plan/s will be prepared and implemented as part of CEMP. The Plan will include arrangements for managing wet weather events, including monitoring of potential high-risk events (such as storms) and specific controls and follow-up measures to be applied in the event of wet weather.	Contractor	Prior to demolition works

Impact	Environmental safeguards	Responsibility	Timing
	A spill kit will be available on site. Personnel trained to respond to any spill incidences (should they occur) will always be available on site.	Contractor	Prior to and during remediation
	Spills are to be cleaned up and the area remediated as soon as practicable. Any collected clean up material will be disposed of consistent with the material's waste classification.	Contractor	Prior to and during remediation
	As soon as practicable following completion of remediation and validation activities, the surface will be stabilised (through application of an appropriate grass seed mix) to reduce the potential for erosion and sediment loss.	Contractor	Post remediation

6.4 Soils

A site and soil assessment (Lochinvar Getotechnical Consulting, 2020) has previously been undertaken at the SMC site.

6.4.1 Existing environment

The soil profile at the site described by Lochinvar Geotechnical Consulting (2020) includes a dark brown massively structured silty loam A1 horizon with a small percentage (<2%) of coarse fragments. Beneath the Al horizon, the soil transitions into a paler red-brown B1 horizon, around 180-190 mm deep, with a clay loam composition. The soil profile contains a bright red-brown B2 light clay horizon, with depths greater than 310 mm, showing a higher content of coarse fragments and exhibiting a blocky pedal structure.

Lead contamination is known to exist in surface and near surface soils and exceed human health criteria in soils less than 0.3 mbgl. Concentrations of arsenic, copper, lead and zinc exceed ecological criteria at multiple locations in soils generally less than 0.1 mbgl (Ramboll, 2022a). However, contamination impacts are further discussed in **Section 6.1**.

6.4.2 Criteria

Soil remediation criteria is discussed in **Section 6.1.3**.

6.4.3 Potential impacts

Poorly managed or exposed soils could result in the following potential impacts:

- sediment runoff into the stormwater system during demolition and remediation activities,
- erosion of exposed surface areas from demolition and remediation activities, wind or rain, and
- surface and groundwater quality degradation from increased sediment loads or contamination from the demolition and remediation works.

6.4.4 Safeguards and management measures

Safeguards and management measures related to soil are detailed in **Table 6-7.** Some hydrology safeguards and management measures identified in **Table 6-6** are also relevant to soils and have not been repeated in **Table 6-7.**

Table 6-7 Soils safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Soils	A contingency plan will be prepared for unexpected finds/contaminated soils within the CEMP and will include details of excavation, segregation, stockpiling, remediation, validation and disposal requirements for any contaminated matter.	Contractor	Prior to demolition works

Impact	Environmental safeguards	Responsibility	Timing
	Erosion and sediment controls would be installed in accordance with the *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004) (the Blue Book).	Contractor	Prior to and during remediation
	Erosion and sediment controls will be checked on a weekly basis and after a rain event (>10mm) in a 24 hours period and maintained as required.	Contractor	During remediation
	Surfaces would not be left exposed for extended periods of time and would be revegetated as early as possible.	Contractor	Prior to and during remediation
	Stockpiles of soil or fill would be covered or bunded and managed to prevent dust, erosion and sediment run off.	Contractor	Prior to and during remediation
	Meteorological conditions will be monitored daily with remediation activities adjusted to suit conditions. During periods of high wind remediation will be suspended. During period of high rainfall (greater than or equal to 10 mm of rain within a 24 hours period) remediation will be suspended.	Contractor	Prior to and during remediation
	Double handling of material will be avoided wherever possible, and material transfers optimised to limit time material is stockpiled or handled.	Contractor	During remediation
	Stockpile location and compounds will be contained within the SMC lot boundary. The locations of stockpiles will be confirmed prior to commencement of remediation and described within the CEMP.	Contractor	Prior to remediation
	Vehicle refuelling (if undertaken on site) will be undertaken using mobile refuelling vehicles equipped with spill containment equipment and a spill kit.	Contractor	During remediation
	Equipment cleaning and maintenance will be undertaken in an appropriately controlled area to reduce the potential for contaminated materials to migrate offsite.	Contractor	During remediation

6.5 Traffic and transport

A Traffic Impact Assessment (Ramboll, 2022d) was undertaken during the preparation of the Captains Flat Lead Abatement works. The assessment included Captains Flat Road and Miners Road, both which provide access to the proposal.

6.5.1 Existing environment

Captains Flat Road

Captains Flat Road is a two-way road that runs in an east to west direction and provides access to Captains Flat from the north and the south. The road conditions vary, and it has speed limit of 80 kilometres per hour. The road is winding on approach to the northern and southern end of Captains Flat, and requires vehicles to slow down to manoeuvre some of the turns.

The southern entrance of Captains Flat Road briefly turns into Braidwood Road prior to intersecting with Foxlow Street. The northern stretch of Captains Flat Road is runs over the Molonglo River approximately 450 metres from the Foxlow Street intersection. The road is fully sealed as it provides the main route to Queanbeyan and Canberra. The site can be accessed via the northern section of Captains Flat Road.

The Traffic Impact Assessment estimated that an average of 1268 to 1352 vehicles utilized Captains Flat Road per day. A standard road two-way road as has a capacity of 2800 passenger car units per hour. Captains Flat Road is therefore operating well under capacity (Ramboll, 2022d).

Miners Road

Miners Road is a publicly accessible sealed two-way road that provides access to the Lake George (legacy) Mine and through to the southern end of Foxlow Street.

6.5.2 Potential impacts

Demolition activities would require a small number of truck movements to transport demolition equipment and material to and from the proposal. Remediation activities would require the transportation of contaminated material to the containment cell for disposal and importation of clean soils to the proposal. The expected duration would be approximately six to eight weeks and would occur during standard construction hours as mentioned in **Section 3.2.1**. Works related to demolition and remediation would have a minor impact on the local road network.

Some intermittent road closure and traffic control measures may be required on Miners Road to allow trucks and machinery to enter and exit.

6.5.3 Safeguards and management measures

Safeguards and management measures related to traffic are detailed in **Table 6-8**.

Table 6-8 Traffic and transport safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Traffic and transport	A Traffic Control Plan will be prepared and implemented as part of the CEMP. The TMP will be prepared in accordance with the Transport *Traffic Control at Work Sites Manual* (RTA, 2010) and *QA Specification G10 Control of Traffic* (Transport for NSW, 2008). The TMP will include: • confirmation of haulage routes • measures to maintain access to local roads and properties • site-specific traffic control measures (including signage) to manage and regulate traffic movement • requirements and methods to consult and inform the local community of impacts on the local road network • access to the proposal including entry and exit locations and measures to prevent construction vehicles queuing on public roads • a response plan for any traffic incident related to the proposal • consideration of other developments that may be under construction to minimise traffic conflict and congestion that may occur due to the cumulative increase in construction vehicle traffic • monitoring, review and amendment mechanisms.	Contractor	Prior to and during remediation
Contaminated materials	The transportation of contaminated / remediation materials will be managed to maximise vehicle loads to minimise vehicle movements, where practicable.	Contractor	Prior to and during remediation

6.6 Noise and vibration

6.6.1 Methodology

A quantitative construction noise and vibration impact assessment has been completed for the proposal. The assessment included the following:

- initial desk top review to identify key environmental noise catchment areas and noise sensitive receptors from aerial photography,
- use of Australian Standards to determine background noise levels in the vicinity of the proposal,
- establishment of project specific noise goals for the construction works with consideration to the *Interim Construction Noise Guideline* (ICNG) (Department of Environment and Climate Change, 2009) and *Construction Noise and Vibration Guideline* (CNVG) (Transport for NSW, 2023), and
- a quantitative construction noise and vibration assessment utilising the Transport Construction Noise Estimator and CNVG.

Consideration was also given to the following standards and guidelines:

- *Noise Policy for Industry* (NPfI) (NSW EPA, 2017),
- *Environmental Noise Management Manual* (Roads and Traffic Authority, 2001),
- *Assessing Vibration: A Technical Guideline* (Department of Environment and Conservation, 2006),
- *Australian Standard AS 1055.2-1997 Acoustics – Description and measurement of environmental noise – Part 2: Application to specific situations,*
- *German Standard DIN 4150:2016 – Part 3: Structural vibrations in buildings: Effects on structures,* and
- *British Standard BS 7385-2:1993 Evaluation and measurement for vibration in buildings.*

6.6.2 Existing environment

Sites and noise sensitive receivers

The nearest noise sensitive receivers identified by review of aerial images are summarised in

Table 6-9 including coordinate locations.

Table 6-9 Sensitive receiver location

Sensitive Receiver ID	Location Coordinates		Distance to site (m)
	Latitude	Longitude	
SR1	35°35'26.37"S	149°26'13.40"E	125 m
SR2	35°35'27.68"S	149°26'10.71"E	200 m
SR3	35°35'34.29"S	149°26'26.59"E	340 m
SR4 (Captains Flat Hotel)	35°35'31.41"S	149°26'40.74"E	570 m

Rating background noise level

The Rating Background Level (RBL) for each sensitive receiver location have been estimated considering the site setting and the guidelines provided in AS1055.2-1997 and Transport for NSW's CNVG – Appendix D: Noise assessment using distance categories.

AS1055.2-1997 provides the following Noise Area categories relevant to the proposal site:

- R1 – Areas with negligible transportation,
- R2 – Areas with low density transportation, and
- R3 – Areas with medium density transportation or some commerce or industry.

According to Transport CNVG – Appendix D: Noise assessment using distance categories, sensitive receivers located adjacent to the proposal site can be categorised as:

- Rural/suburban – areas with negligible transportation or very limited local traffic, typically light vehicles only. 100 metres or more from road,
- Suburban/urban – areas with low density transportation. Typically, local traffic, light vehicles, intermittent traffic flow, and
- Urban – areas with medium density transportation or some commerce or industry. Typically, traffic is moving from one area to another (light and heavy vehicles) with heavy peak-hour traffic movement. May be on or close to bus route / light rail.

The adopted RBLs for each sensitive receiver based on the guidelines provided in AS1055.2-1997 and Transport CNVG are presented in **Table 6-10**.

Table 6-10 Receiver area type and adopted background noise levels

Receiver ID	Area type	Rating background level (RBL), L_{A90}, dB(A)		
		Day (7 am to 6 pm)	Evening (6 pm to 10 pm)	Night (10 pm to 7 am)
SR1	Suburban / urban[2]	45	40	35
SR2	Rural / suburban[1]	40	35	30
SR3	Suburban / urban	45	40	35
SR4	Urban[3]	50	45	40

1. Areas with negligible transportation or very limited local traffic, typically light vehicles only. 100 metres or more from road
2. Areas with low density transportation. Typically, local traffic, light vehicles, intermittent traffic flow
3. Areas with medium density transportation or some commerce or industry. Typically, traffic is moving from one area to another (light and heavy vehicles) with heavy peak-hour traffic movement. May be on or close to bus route / light rail

6.6.3 Assessment criteria

Construction hours

Construction activities will be limited to within the hours described in **Table 6-11** consistent with the NSW ICNG and Transport CNVG.

Table 6-11 Recommended construction hours

Construction hours	Monday to Friday	Saturday	Sunday / Public Holiday
Standard construction hours	7.00 am to 6.00 pm	8.00 am to 1.00 pm	No work
Construction activities with impulsive or tonal noise emissions	8.00 am to 5.00 pm[1]	9.00 am to 1.00 pm[1]	No work
Blasting	9.00 am to 5.00 pm	9.00 am to 1.00 pm	No blasting

1. Works may be carried out in continuous blocks not exceeding three hours each with a minimum respite from those activities and works of not less than one hour between each block. 'Continuous' includes any period during which there is less than a one-hour respite between ceasing and recommencing any of the work the subject of this condition.

Noise criteria

The ICNG provides procedures for determining project specific Noise Management Levels (NML) to assess construction noise emission levels at residential and other potentially sensitive receivers as presented in **Table 6-12**. These NMLs are to be calculated based on the adopted RBL measured at sensitive or representative locations. These levels apply at the boundary of the most affected residences / offices, or within 30 m from the residence where the property boundary is more than 30 m from the residence.

Table 6-12 Noise Management Levels

Time of day	Noise Management Level ($L_{Aeq,15min}$)	How to apply
Recommended standards hours Monday to Friday 7.00 am to 6.00 pm Saturday 8.00 am to 1.00 pm	Noise affected RBL + 10 dB	The noise affected level represents the point above which there may be some community reaction to noise. • Where the predicted or measured LAeq (15 min) is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. • The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
	Highly noise affected 75 dB	The highly noise affected level represents the point above which there may be strong community reaction to noise. • Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account: 1) times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning or mid-afternoon for works near residences 2) if the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
Outside recommended standard hours	Noise affected RBL + 5 dB	• A strong justification would typically be required for works outside the recommended standard hours. • The proponent should apply all feasible and reasonable work practices to meet the noise affected level. • Where all feasible and reasonable practices have been applied and noise is more than 5 dB(A) above the noise affected level, the proponent should negotiate with the community.

* Source: ICNG (DECC, 2009)

A summary of the noise criteria that would apply to construction activities is provided in **Table 6-13**.

Table 6-13 Noise criteria applicable to project

Receiver ID	Noise Management Level (NML), $L_{Aeq,15min}$, dB(A)		
	Day (7 am to 6 pm)	Evening (6 pm to 10 pm)	Night (10 pm to 7 am)
SR1	55	45	40
SR2	50	40	35
SR3	55	45	40
SR4	55	45	40

Vibration criteria

The impacts associated with vibration during construction activities are generally assessed under the following categories:

- Human exposure – refers to disturbance to the building occupants. This is assessed in accordance with NSW Assessing Vibration – A Technical Guideline (Department of Environment and Conservation, 2006) and the Transport for NSW Construction Noise and Vibration Strategy (2019). Intermittent vibration is assessed using the vibration dose value, fully described in BS6472 – 1992. Acceptable vibration dose values are presented in **Table 6-14**.
- Cosmetic damage – refers to vibration that may affect the structural integrity of a building or structure, or where the building contents may be impacted. This is assessed in accordance with the following Standards:
    - For transient vibration: British Standard BS 7385-2: 1993 Evaluation and measurement for vibration in buildings Part 2: Guide to damage levels from ground borne vibration (BSI 7385); and
    - For continuous or repetitive vibration: German Standard German Standard DIN 4150:2016 – Part 3: Structural vibrations in buildings: Effects on structures (DIN 4150).

These criteria are presented in **Table 6-15** and Table 6-15.

Table 6-14 Acceptable vibration values for intermittent vibration (m/s$^{1.75}$)

Location	Daytime (7.00 am to 10.00 pm)		Night (10 pm to 7 am)	
	Preferred value	Maximum value	Preferred value	Maximum value
Critical areas[1]	0.10	0.20	0.10	0.20
Residences	0.20	0.40	0.13	0.26
Offices, schools, educational institutions and places of worship	0.40	0.80	0.40	0.80
Workshops	0.80	1.60	0.80	1.60

1. Examples include hospital operating theatres and precision laboratories where sensitive operations are occurring. These criteria are only indicative, and there may be a need to assess intermittent values against the continuous or impulsive criteria for critical areas.

Table 6-15 Transient vibration guide values – Minimal risk of cosmetic damage (BS 7385)

Type of Building	Peak Component Particle Velocity in Frequency Range of Predominant Pulse	
	4 Hz to 15 Hz	15 Hz and Above
Reinforced or framed structures	50 mm/s at 4 Hz and above	
Industrial and heavy commercial buildings		
Unreinforced or light framed structures	15 mm/s at 4 Hz increasing to 20 mm/s at 15 Hz	20 mm/s at 15 Hz increasing to 50 mm/s at 40 Hz and above
Residential or light commercial type buildings		

Table 6-16 Cosmetic and structural damage vibration criteria (DIN 4150)

Type of Structure	Peak Component Particle Velocity (mm/s)			Vibration of horizontal plane of highest floor at all frequencies
	Vibration at the foundation at a frequency of			
	1 Hz to 10 Hz	10 Hz to 50 Hz	50 Hz to 100 Hz	
Buildings used for commercial purposes, industrial buildings, and buildings of similar design	20	20 to 40	40 to 50	40
Dwellings and buildings of similar design and/or occupancy	5	5 to 15	15 to 20	15
Structures that are sensitive to vibration and/or are of great intrinsic value (e.g. buildings that are under a preservation order)	3	3 to 8	8 to 10	8

6.6.4 Potential impacts

A quantitative construction noise assessment has been undertaken based on the calculation methods provided in the Transport Construction Noise Estimator.

The Estimator works in two ways:

- The user to enter plant items or activities and the tool outputs distances at which receivers may be impacted
- The user to enter the distances between plant and a receiver, background noise levels and to select whether acoustic shielding has been provided. The output also provides a list of additional mitigation measures from the Transport CNVG.

For the purposes of this assessment, the "Distance Based Scenario" method has been adopted to predict likely noise impacts of each proposed construction scenario on the nearest noise sensitive receivers.

Plant and equipment

Table 6-17 presents the proposed construction equipment assumed in the calculation of worst-case scenario construction noise impacts. The final equipment and machinery to be used would be determined by the demolition contractor.

Table 6-17 Proposed construction equipment and sound power levels

Construction equipment	Sound power levels $L_{Aeq,15min}$ dB(A)
Large excavator	110
Long reach excavator	110
Hydraulic breaker	122
Wheel loader	105
Jack hammer	121
Dump truck	108
Hand-held tools	105
Generator	103

* Source: Transport CNVG

Predicted noise levels

Table 6-18 presents the predicted noise level range at the identified noise sensitive receivers and predicted exceedance, where applicable.

Table 6-18 Predicted noise levels at nearest noise sensitive receivers

Receiver ID	Noise Management Level (Day) dB(A) $L_{Aeq,15min}$	Predicted Noise Level (Day) dB(A) $L_{Aeq,15min}$	Exceedance (dB)
SR1	55	61 to 66	Up to 11
SR2	50	56 to 61	Up to 11
SR3	55	52 to 56	Up to 1
SR4	60	47 to 52	No

The results of the construction noise assessment indicate compliance with the NML at SR4, and negligible exceedance at SR3. However, exceedances of the NML up to 11 dB(A) are predicted at SR1 and SR2 which are considered "significant" (NSW EPA's Noise Policy for Industry – Table 4.1: Significance of residual noise impacts).

Where exceedance of construction noise and vibration objectives are expected, the *Construction Noise Strategy* (Transport for NSW, 2016) identifies additional mitigation measures to be implemented to reduce the impacts on nearby sensitive receptors. Exceedances of the NMLs by up to 11dB(A) would be 'clearly audible' and do not require additional mitigation measures during the standard working hours. Works to occur outside of the standard working hours would require additional mitigation measures in accordance with the *Construction Noise Strategy* (Transport for NSW, 2016).

It should be noted that the calculation of the predicted noise levels assumed that all equipment used for each stage operate simultaneously and continuously. Therefore, the actual noise emission levels affecting the sensitive receivers are expected to the lower than the predicted noise levels. As a result, the actual exceedances of the NML are expected to be lower than the predicted exceedances at SR1, SR2 and SR3.

Vibration assessment

Energy from construction equipment is transmitted into the ground and transformed into vibrations. The extent to which vibrations may be experienced depends on several factors:

- type of equipment,
- frequency of vibrations generated by equipment,
- ground conditions, for example, soil type, moisture content and presence of rock, and
- topography.

Due to the above factors, there is inherent variability in ground vibration predictions without site-specific measurement data.

The Transport CNVG provides guidance for minimum working distances for both cosmetic and human comfort. The recommended minimum safe working distances for vibration intensive plant from a sensitive receiver is reproduced in Table **6-19** as relevant to the proposal.

Table 6-19 Recommended minimum safe working distances for vibration intensive plant from a sensitive receiver

Plant Item	Rating / Description	Minimum working distance	
		Cosmetic Damage (BS 7385)	Human Response (OH&E Vibration Guideline)
Vibratory Roller	<50 kN (typically 1-2 tonne)	5 m	15 m to 20 m
	<100 kN (typically 2-4 tonne)	6 m	20 m
	<200 kN (typically 4-6 tonne)	12 m	40 m
	<300 kN (typically 7-13 tonne)	15 m	100 m
	>300 kN (typically 13-18 tonne)	20 m	100 m
	>300 kN (>18 tonne)	25 m	100 m
Small Hydraulic Hammer	300 kg (5 to 12 t excavator)	2 m	7 m
Medium Hydraulic Hammer	900 kg (12 to 18 t excavator)	7 m	23 m
Large Hydraulic Hammer	1600 kg (18 to 34 t excavator)	22 m	73 m
Vibratory Pile Driver	Sheet Piles	2m to 20m	20 m
Pile Boring	< 800 mm	2 m (nominal)	4 m
Jack Hammer	Hand-held	1 m (nominal)	2 m

The minimum working distances are indicative and will vary depending on the particular item of plant and local geotechnical conditions and the dominant frequency of the construction vibration levels. They apply to cosmetic damage of typical light-framed residential buildings under typical geotechnical conditions and assume that construction vibration could include low frequency content with associated increased risk of cosmetic damage.

Based on distances from the proposed work sites to nearest receivers and items of plant to be used, vibration goals are expected to be met. However, it is recommended **Table 6-19** be used as a guide when selecting vibration generating plant and equipment.

6.6.5 Safeguards and management measures

Safeguards and management measures related to noise and vibration are detailed in **Table 6-20**.

Table 6-20 Noise and vibration safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Noise and vibration	Works are to be undertaken within the standard construction working hours.	Contractor	Prior to and during remediation
	If works are required outside of the standard construction working hours, the works are to be approved by Transport, and the *Construction Noise Strategy* applied including adoption and implementation of additional mitigation measures.	Contractor	Prior to and during remediation
	During site inductions and toolbox talks, site workers (including relevant subcontractors and temporary workforce) should be made aware of the hours of construction and how to apply practical, feasible and reasonable measures to minimise noise and vibration when undertaking construction activities (including driving vehicles).	Contractor	Prior to and during remediation

Impact	Environmental safeguards	Responsibility	Timing
Operation of plant and equipment	High noise generating activities will only be carried out in continuous blocks, not exceeding three hours each, with a minimum respite period of one hour between each block.	Contractor	During remediation
	Equipment which is used intermittently will be shut down when not in use.	Contractor	During remediation
	All engine covers will be kept close while equipment is operating.	Contractor	During remediation
	The site will be arranged to minimise noise impacts by locating potentially noisy activities away from the nearest receivers wherever possible.	Contractor	During remediation
	Plant and equipment will be maintained in accordance with manufacturers requirements and operated in a quiet and efficient manner	Contractor	During remediation
	Use of broadband reverse alarm in lieu of the traditional 'tonal' type reverse alarm	Contractor	During remediation
	Where possible avoid the generation of metallic impact noise and noise from the dropping of materials from heights.	Contractor	During remediation
Notification	Periodic notification (monthly letterbox drop/ email and website notification) detailing all upcoming construction activities delivered to sensitive receivers at least 7 days prior to commencement of relevant works.	Contractor	Prior to and during remediation
	Community would be notified of any works occurring outside of standards construction hours in accordance with the CNVG.	Contractor	Prior to demolition works

6.7 Air quality

6.7.1 Existing environment

Primary receivers impacted by dust and emissions would be the nearby residences identified in **Section 6.6.2**. Air quality monitoring has been undertaken within Captains Flat since June 2021 and is ongoing. The monitoring undertaken to inform air quality risks associated with heavy metals in airborne particulate matter from the legacy Lake George Mine. The monitoring program includes five sampling locations and a meteorological station. The SMC site hosts a sampling location and the meteorological station.

Through the study period (June 2021 to September 2024) a total of five exceedances of the annual TSP criteria occurred across the sampling locations, with two exceedances further investigated (Ramboll, 2024b). It was concluded that the two exceedances were likely the result of dry conditions and strong winds from the north (Ramboll, 2024b). Two of the monitoring locations reported similar results for some pollutants (i.e. arsenic, barium, chromium, cobalt, copper, iron, manganese, nickel, molybdenum, selenium, titanium and zinc), suggesting they are affected by the same pollution source, with a very strong correlation existing between some of these pollutants (Ramboll, 2024b).

The *Captains Flat Air Quality Monitoring Report June 2021 to September 2024* (Ramboll, 2024b) report also noted the following:

> *Analysis of some polar plots (i.e., TSP, Zn, As, Ti and Ba) suggests that a higher frequency of elevated concentrations from winds occurring in a north-south direction, affecting locations AQM3 and AQM4 in particular. This is likely a function of the distinctive valley terrain which is oriented in north-south direction. It is also noted*

that AQM1 recorded elevated concentration levels of various pollutants coming from the west, where there are no sites of former mining activities.

Exceedances of the NSW EPA 1-hour criteria of barium and nickel occurred on multiple days throughout the study period. Ramboll has made recommendations to Regional NSW, and they have subsequently engaged the EPA on this matter.

The Captains Flat Air Quality Monitoring Report June 2021 to September 2024 (Ramboll, 2024b) identified prevailing winds from the south-west to north-west to north. Winter and Spring recorded higher wind speeds with calmer conditions experienced in the Summer months. Winds were also identified as diurnal with northerlies occurring more often during daylight hours and south-westerlies occurring at night. Rainfall data was sourced from the Bureau of Meteorology's Goulburn Airport Automatic Weather Station, Rural Fire Services' meteorology station and the project's meteorology station.. A number of heavy rainfall events of 50 millimetres or above were recorded throughout 2023 with an event recorded in June 2023 over 300 millimetres, and an event in August 2023 of over 100 millimetres (Ramboll, 2024b).

6.7.2 Potential impacts

The proposal has the potential to impact air quality via the generation of dust and potentially cause offsite migration of particulate matter and contaminants if not appropriately managed. Activities that have the potential to cause airborne dust include:

- excavation and earth moving,
- demolition of structures,
- bulk handling and transportation of materials, including loading and unloading of bulk materials, and wheel generated dust,
- stockpiling material, and
- wind erosion of stockpiles and/or exposed areas.

Dust has the potential to impact the surrounding locality through suspension in the air, affecting visibility and cause health impacts. The lead-containing dust can settle on the ground and contaminate the soils, spreading the contamination to uncontaminated areas.

Due to the presence of ACMs at the site, there is also a risk of ACM particles becoming airborne during demolition activities. Management and mitigation measures relating to ACM have been detailed in **Table 6-3**.

The effectiveness of remediation at mitigating exposure risks associated with site contamination in the receiving environment would be assessed through air quality monitoring during and post remediation. Appropriate dust management controls would be implemented throughout the demolition and remediation works to limit the impacts to local air quality and any potential associated impacts. To monitor the dust generated from the proposal, an air quality management plan would be developed and would include a dust monitoring program to be conducted throughout the proposal works. The monitoring would include real-time alerts to notify the Remediation Contractor of any exceedances.

6.7.3 Safeguards and management measures

Air quality safeguards and management measures are detailed in **Table 6-21**.

Table 6-21: Air quality safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Air Quality Management Plan	An Air Quality Management Plan will be prepared and implemented as part of the CEMP. The Air Quality Management Plan will include, but not be limited to: • potential sources of air pollution • air quality management objectives consistent with any relevant published EPA and/or Office of Environment and Heritage (OEH) guidelines • mitigation and suppression measures to be implemented • methods to manage work during strong winds or other adverse weather conditions • a progressive rehabilitation strategy for exposed surfaces • air quality monitoring requirements and trigger responses.	Contractor	Prior to demolition works and during remediation
	The Air Quality Management Plan will include the controls identified in the Interim Environmental Management Plan (Ramboll, 2022e) to mitigate potential exposure to lead.	Contractor	Prior to demolition and remediation works
	Air quality monitoring would be undertaken in accordance with the Air Quality Management Plan.	Contractor	During remediation
	All workers will be briefed on the requirements under the Air Quality Management Plan and CEMP.	Contractor	During remediation
Air Quality Mitigation	In the event of a dust complaint, the following will be implemented: • stop work • identify dust source and review control measures • assess requirements for additional monitoring or investigation of impact • review trigger alert system to determine if unacceptable impact measured at site boundary.	Contractor	During remediation
	Works will cease immediately if it is apparent that dust generation could impact on nearby sensitive receivers, and suitable management measures would be applied. This may include the use of the water cart or an alternative dust suppressant, or waiting for more favourable weather conditions (less windy conditions).	Contractor	During remediation
	Stockpiles will be covered when not required to be accessible for current remediation works.	Contractor	During remediation
	All vehicles and trailers will be covered when transporting materials and waste off site.	Contractor	During remediation
	All plant and machinery will have emission control devices complying with Australian design standards.	Contractor	During remediation
	Excavation activities will be completed so that visible airborne dust is not generated.	Contractor	During remediation
	As soon as practicable following completion of remediation and validation activities in an area, the surface will be sealed (application of grasses) to reduce the potential for erosion and sediment loss.	Contractor	During and post remediation

6.8 Waste

6.8.1 Existing environment

The main waste streams to be generated by the proposal would be excavated lead contaminated materials and demolition wastes, including ACM. The *Remediation Options Assessment* (Ramboll, 2022c) identified an estimated volume of soil requiring remediation, refer **Table 6-22**.

Table 6-22: Estimated volume of demolition and remediation wastes

Area description	Area (m^2)	Depth (m)	Volume (m^3)	Tonnes (t) (using 1.8 tonnes/cubic metre)
Contaminated soil	1400	0.3	420	756
Demolition materials	-	-	50	90

The Remediation Options Assessment (Ramboll, 2022c), refer **Section 2.2** conducted in consultation with Transport identified the preferred remediation option was offsite disposal of contaminated excavated material in the purpose built containment cell at the Lake George Mine. Demolition wastes would be disposed of at an appropriately licensed facility.

The Hazardous Materials Assessment (Ramboll , 2024c) identified the presence of lead based paint and asbestos in the building materials at the site. Management of these materials is required in accordance with:

- *Code of Practice How to Manage and Control Asbestos in the Workplace* (SafeWork NSW, 2022a),
- *Code of Practice How to Safely Remove Asbestos* (SafeWork, 2022b), and
- *AS/NZS 4361.2.2017 Guide to Hazardous Paint Management Part 2: Lead paint in residential, public and commercial buildings*.

The Hazardous Materials Assessment (Ramboll , 2024c) notes that the *Waste Classification Guidelines Part 1: Classifying Waste* (NSW EPA 2014) pre-classifies waste contaminated with lead (including lead paint waste) from residential premises as General Solid Waste, where that waste is not otherwise pre-classified as special, liquid or hazardous waste.

6.8.2 Potential impacts

Waste generated as part of the proposal would be managed in accordance with the EPA's *Waste Classification Guideline* (EPA, 2014) and include:

- approximately 90 tonnes of building material,
- an undetermined amount of excavated material from the Site, anticipated to be in the order of 756 tonnes,
- general domestic waste generated by the remediation personal such as food scraps, plastic and paper containers, and
- sewage from remediation personnel. If required, a compound would be established with portable facilities.

As noted in **Section 6.8.1**, demolition wastes would be transported to an appropriately licenced facility. Contaminated excavated material would be disposed/transported as per:

- soils with lead greater than public open space criteria (HIL C – 600 mg/kg) for placement in the Lake George Mine containment cell, and
- soils with lead greater than residential criteria (HIL A – 300 mg/kg) but less than HIL C for placement in the rail corridor.

Waste tracking requirements would be required to ensure the wastes are being handled, transported and disposed of in an appropriate manner.

6.8.3 Safeguards and management measures

Waste safeguards and management measures are detailed in **Table 6-23.**

Table 6-23: Waste safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Waste	A Waste Management Plan (WMP) will be prepared and implemented as part of the CEMP. The WMP will include but not be limited to: • measures to avoid and minimise waste associated with the proposal • classification of wastes and management options (re-use, recycle, stockpile, disposal) in accordance with *Waste Classification Guidelines* (NSW EPA, 2014) • statutory approvals required for managing on- and off-site waste, or application of any relevant resource recovery exemptions • procedures for storage, transport and disposal • monitoring, record keeping and reporting. The WMP will align with the *Environmental Procedure - Management of Wastes on Transport for NSW Land* (Transport, 2014) and relevant Transport Waste fact sheets.	Contractor	Prior to demolition works and during remediation
	Designated waste storage and stockpile area(s) will be established, and waste will be appropriately segregated and stored based on the waste stream, being demolition material, contaminated excavated material, or general solid waste.	Contractor	During remediation
	All general solid waste generated onsite will be appropriately transported off site and disposed of at approved and licensed waste management facility.	Contractor	During remediation
	The site waste tracking system will be set up and remediation personnel trained in its implementation prior to works commencing.	Contractor	During remediation
	All remediation personnel will be informed during the site induction of the waste management hierarchy and the measures to be implemented.	Contractor	During remediation
	Promotion of efficient resource use, waste avoidance and waste minimisation.	Contractor	During remediation
	The waste storage and stockpile area(s) will be maintained in an organised condition, with waste material to be transported to and stockpiled in the designated storage area protected by appropriate controls and containment measures.	Contractor	During remediation
	The waste storage and stockpile area(s) will be clearly signed to ensure correct placement of material and prevent further contamination.	Contractor	During remediation
	The environmental controls and containment measures placed on waste stockpiles will be inspected and maintained as required on a weekly basis and after rain and strong wind events.	Contractor	During remediation
	If unexpected materials are discovered, the materials are to be segregated into a stockpile and possible disposal options investigated.	Contractor	During remediation

Impact	Environmental safeguards	Responsibility	Timing
	No waste material will be left on site once the remediation works have been completed.	Contractor	During remediation

6.9 Human health risks

6.9.1 Existing environment

The site contains material contaminated with lead, including lead paint (Ramboll, 2022a). Lead exposure is known to have significant impacts to human health from short and long term exposure and can include damage to kidneys, nerves or brain, and even infertility (SafeWork NSW, n.d.). Females with reproductive capacity have been identified as the most sensitive receptor at work sites (Resource Regulator, Department of Regional NSW).

ACM can release dust particles into the air if disturbed, enabling asbestos fibre inhalation (NSW Environment Protection Authority, n.d.). Asbestos related diseases and conditions can occur from exposure to asbestos, such as asbestosis, lung cancer, mesothelioma, and asbestos related pleural diseases (NSW Environment Protection Authority, n.d.). Asbestos exposure resulting in asbestos related diseases has been estimated to result in 4,000 Australian deaths each year (NSW Environment Protection Authority, n.d.).

6.9.2 Potential impacts

There is a risk of human health impacts from the proposal through the exposure to asbestos and lead. Inadequate management procedures could result in asbestos exposure through the demolition of the SMC and associated buildings, while exposure to lead contaminated material may also occur during activities which cause soil disturbance and dust generation. The primary routes of exposure relevant to human health are through ingestion following direct contact or inhalation of soil, dust and paint (Ramboll, 2022e). To reduce the likelihood and severity of impacts, the measures identified within the Interim Environmental Management Plan (Ramboll, 2022e) relating to human health are to be incorporated within the CEMP.

6.9.3 Safeguards and management measures

Human health safeguards and management measures are detailed in **Table 6-24**. The contamination and air quality safeguards and management measures described in **Table 6-3** and **Table 6-24** respectively**,** would also mitigate the potential risk to human health.

Table 6-24: Human health risks safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Human health	A worker health and safety plan will be developed and implemented as part of the CEMP in accordance with the following: • the measures detailed in the Interim Environmental Management Plan (Ramboll, 2022e), • SafeWork NSW *Lead Guidance,* • SafeWork NSW 2022 *Code of Practice Managing risks of hazardous chemicals in the workplace including the use of the hierarchy of control measures,* • *Managing individual exposure to lead in Australia - A guide to health practitioners* (Natinal Health and Medical Research Council, 2016)*,* • *NSW EPA LeadSmart – Work Smart: tradespeople and Mining Industry Workers* (LeadSmart, 2016)*,* • *Workplace Exposure Standards for Airborne Contaminants* (Safe Work Australia, 2024)*,* • *Work Health and Safety Act 2011* and *Work Health and Safety Regulation 2017,*	Contractor	Prior to demolition works and during remediation

Impact	Environmental safeguards	Responsibility	Timing
	• *Code of Practice How to Manage and Control Asbestos in the Workplace (SafeWork NSW, 2022a),* and • *Code of Practice How to Safely Remove Asbestos (SafeWork, 2022b).*		
	Should any previously unidentified potentially hazardous material be identified during remediation, works will cease in the vicinity of the material and the potentially hazardous materials inspected by an experienced occupational hygienist.	Contractor	During remediation
	Workers will remain in enclosed cabins of machinery when conducting remediation works.	Contractor	During remediation
	All vehicles and machinery will have windows closed at all times and an operating cabin air circulation system (air conditioning) equipment with high efficiency filter, and good seals to eliminate cabin dust intrusion.	Contractor	During remediation
	Workers outside the excavator shall be used minimally and on as need basis. These workers shall remain outside a 20 metres exclusion zone from the excavator, ideally upwind. If there is a need to be closer to the excavator (i.e. within 20 metre exclusion zone) workers will wear a P2 mask and a Type 5 single use disposable Tyvek suit.	Contractor	During remediation

6.10 Aboriginal cultural heritage

6.10.1 Existing environment

There are no known Aboriginal places located in proximity to the proposal. There are no registered AHIMS sites at the former SMC site. The results of the AHIMS search included 2 Copper Creek Road are presented in **Appendix C.** A Transport Stage 1 Preliminary Assessment of the Procedure for Aboriginal cultural heritage consultation and investigation (PACHCI) has been provided in **Appendix D**.

The site and surrounds have been subject to historical disturbances from the mining activities at the former Lake George Mine and the construction and operation of the rail corridor. The site itself has been disturbed for the construction of the buildings and establishment of surrounding landscape and gardens.

6.10.2 Potential impacts

Due to the highly disturbed nature of the site, and the absence of known Aboriginal sites, it is unlikely that Aboriginal cultural heritage artefacts will be exposed or impacted during demolition and remediation works. No Aboriginal Heritage Impact Permit is required.

6.10.3 Safeguards and management measures

Safeguards and management measures related to Aboriginal cultural heritage are detailed in **Table 6-25**.

Table 6-25 Aboriginal heritage safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Aboriginal heritage	The *Standard Management Procedure - Unexpected Heritage Items* (Transport, 2022) will be followed in the event that an unknown or potential Aboriginal object/s, including skeletal remains, is found during demolition or remediation. This applies where Transport does not have approval to disturb the object/s or where a specific safeguard for managing the disturbance (apart from the Procedure) is not in place.	Contractor	Prior to and during remediation
	Work will only re-commence once the requirements of the *Standard Management Procedure - Unexpected Heritage Items* (Transport, 2022 have been satisfied.	Contractor	Prior to and during remediation

6.11 Non-Aboriginal heritage

A Statement of Heritage Impact (SoHI) has been prepared for the proposal by OzArk Environment and Heritage (2025), refer **Appendix F**. The SoHI was necessitated by proposed impacts to the locally listed item, the Station Masters Cottage (OzArk, 2025).

6.11.1 Existing environment

The SMC is a locally listed heritage item under the Queanbeyan-Palerang Regional LEP (Item I248). OzArk (2025) describes the SMC as a representative example of a building style frequently used in the post WWII era. Constructed on a timber frame, the fibro (upper register) and weatherboard (lower register) house is utilitarian and without embellishments. The original fabric is largely intact, although the rear of the house has been altered by the addition of an extension. There is no evidence of former structures around the SMC that precede the current structure. A large pre-painted steel clad shed has been recently constructed in the back yard and a reasonably sympathetic addition with a large, covered verandah has been constructed at the rear of the house.

The assessment by OzArk (2025) investigated the current assessment thresholds established by the NSW Heritage Council which prescribe seven criteria for the assessment of heritage significance. This assessment shows that the SMC has local heritage significance due to its historic values, however, the item did not meet the assessment criteria for aesthetic, social, or representative heritage values.

6.11.2 Potential impacts

The SoHI (OzArk, 2025) concluded that the proposal will have a major impact on the heritage values of the SMC (former) (Item I248). As the proposal will result in major harm to the heritage values of a locally listed item, consultation with the Queanbeyan Palerang Regional Council is required. Section B10.1.5 of the Palerang Development Control Plan (DCP) (2015) states that the retention of heritage items is a prime objective. However, the DCP notes that demolition will typically only be permitted where the existing condition poses a significant health or safety risk that is beyond reasonable economic repair. Therefore, as the remediation of the SMC is not economically feasible, and the site poses a risk to the health and safety of the community, refer **Section 5**, the SMC will be demolished as part of the proposal. As such, the proposal will result in the removal of a locally listed heritage item (heritage item I248 under the Queanbeyan-Palerang Regional LEP).

The SoHI (2025) concluded that the loss of heritage value of a locally listed item will require mitigation measures to compensate for the loss of heritage values. It was assessed that the proposal will have a minor, indirect impact on the heritage values of the locally listed item ‘the Captains Flat Railway Goods Shed, Weighbridge, Gantry and Turntable’ (Item I263) as the historic association and current visual association between the two items will be lost. However, as the proposal will not harm significant fabric associated with Item I263, the indirect impact that the demolition of Item I248 will have on Item I263 is assessed as inconsequential.

6.11.3 Safeguards and management measures

Safeguards and management measures related to non-Aboriginal heritage are detailed in **Table 6-26**.

Table 6-26 Non-Aboriginal heritage safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
The SMC heritage	A Non-Aboriginal Heritage Management Plan will be prepared and implemented as part of the CEMP. It will provide specific drafting guidance on measures and controls to be implemented to avoid the adjacent listed item: The Captains Flat Railway Goods Shed, Weighbridge, Gantry and Turntable (Item I263) under the Queanbeyan-Palerang Regional LEP.	Contractor	Prior to demolition works
	No ground disturbing impacts or the storage of materials will occur within the heritage curtilage of the adjacent listed item: The Captains Flat Railway Goods Shed, Weighbridge, Gantry and Turntable (Item I263).	Contractor	Prior to and during demolition and remediation works

Impact	Environmental safeguards	Responsibility	Timing
	An archival report is to be commissioned and provided to Queanbeyan Palerang Regional Council for their records.	Transport	Prior to demolition works
	A brief heritage interpretation plan will be commissioned to guide the heritage interpretation at the site following the SMC structure's demolition.	Transport	Post demolition
Unexpected Non-Aboriginal heritage	The *Standard Management Procedure - Unexpected Heritage Items* (Transport , 2022) will be followed if any unexpected heritage items, archaeological remains or potential relics of non-Aboriginal origin are encountered.	Contractor	Prior to and during remediation
	Work will only re-commence once the requirements of the *Standard Management Procedure - Unexpected Heritage Items* (Transport, 2022) have been satisfied.	Contractor	Prior to and during remediation
Heritage consultation	Consultation with Council will occur prior to remediation works commencing in accordance with the requirements of Section 2.11(1)(a) of the Transport and Infrastructure SEPP due to the SMC being a local heritage item.	Transport	Prior to remediation
	Queanbeyan Palerang Regional Council will be consulted prior to the demolition of the Station Masters residence (former) (Item I248). The consultation with Queanbeyan Palerang Regional Council will demonstrate evidence that the demolition is required on public health grounds. Queanbeyan Palerang Regional Council will be provided a period of 21 days after the notice has been given to provide a response which will be considered by Transport.	Transport	Prior to demolition

6.12 Landscape character and visual impacts

6.12.1 Existing environment

The Captains Flat township is generally flat within a valley. Steeper areas occur on the vegetated slopes to the east and the west. Alluvial flats are associated with the northern part of the Molonglo Valley further north of the site.

The site is located adjacent to a former mine load-out facility and rail corridor on the CRN. Surrounding land use is described in **Section 3.1**.

The nearest sensitive receiver is a private residence located approximately 205 metres to the west. Other sensitive receivers would include motorists using Miners Road, Copper Creek Road or Captains Flat Road.

6.12.2 Potential impacts

The main visual impact would be the removal of the former SMC which has been a part of the visual environment since 1940.

Temporary visual impacts would occur during demolition from machinery, equipment, fencing, traffic controls and exposed surface areas. Following the completion of demolition and remediation, visual impacts would be minimal as the site would be seeded and stabilised.

6.12.3 Safeguards and management measures

Landscape character and visual safeguards and management measures are detailed in **Table 6-27**.

Table 6-27 Landscape character and visual safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Landscape character and visual impact	Contractors and workers would keep the site clean and tidy during demolition and remediation works.	Contractor	Prior to and during remediation
Landscape and visual impact	All waste materials would be removed offsite following demolition and remediation. Vehicles will be inspected and cleaned if required to avoid tracking of dirt or mud onto public roads.	Contractor	Prior to and during remediation

6.13 Socio-economic

6.13.1 Existing environment

Key social demographics for the Captains Flat township are provided as **Table 6-28** (UCL122032) (Australian Bureau of Statistics, 2021). The median age in Captains Flat is consistent with the NSW average (38 compared to 39). Captains Flat has a higher proportion of 'technicians and trade workers' occupations compared to the NSW average (17.7 percent compared to 11.9 percent).

Table 6-28: Key demographics for the Captains Flat locality

Attribute	Units	Captains Flat (UCL122032)	NSW
Population and people			
Population	No.	473	8,072,163
Median age	No.	38	39
People per household	No.	2.4	2.6
Indigenous status	%	6.8	3.4
Dwellings	No.	186	2,900,468
Labour and employment			
Unemployment rate	%	1.8	4.9
In the labour force	%	60.2	58.7
Not in the labour force	%	33.9	35.5
Income			
Median household weekly income	$	1,508	1,829
Median weekly rent	$	300	420
Average monthly household mortgage	$	1,300	2,167
Occupations (top)			
Technicians and trade workers	%	17.7	11.9
Machinery operators and drivers	%	10.9	6.0
Labourers	%	11.4	8.2
Clerical and administrative workers	%	14.1	13.0
Managers	%	12.7	14.6

Attribute	Units	Captains Flat (UCL122032)	NSW
Sales workers	%	5.0	8.0
Community and Personal Service Workers	%	10.9	10.6
Professionals	%	16.8	25.8

6.13.2 Potential impacts

Social impacts associated with the proposal are expected to be positive as it would result in the remediation of a significantly contaminated locality and bring the locality into compliance with human health criteria.

Additionally, social benefit would be generated through the incorporation of the site into the Captains Flat Heritage Trail – Pathway to Gold walking trail.

6.13.3 Safeguards and management measures

Socio-economic safeguards and management measures are detailed in **Table 6-29**.

Table 6-29 Socio economic safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Socio-economic	A Communication Plan (CP) will be prepared and implemented as part of the CEMP to help provide timely and accurate information to the community during construction. The CP will include (as a minimum): • mechanisms to provide details and timing of proposed activities to affected residents, including changed traffic and access conditions, and • contact name and number for complaints. The CP will be prepared in accordance with the *Community Involvement and Communications Resource Manual* (RTA, 2008).	Contractor	Prior to demolition works

6.14 Other impacts

6.14.1 Existing environment and potential impacts

Table 6-30 Other potential impacts

Environmental factor	Existing environment	Potential impacts
Bushfire	The site has been identified as being in a designated bushfire prone area (NSW Rural Fire Service, 2024).	The risk of bushfire due to the proposal is low as the proposal site and surrounds are devoid of dense vegetation. Activities associated with the proposal have low fire generating potential. Personnel will be advised of designated smoking areas and demolition methods that present a fire risk will be banned during times of high fire risk.
Climate change	Climate risks associated with the proposal can include: • removal of vegetation • increased waste being sent to landfill increase carbon and methane emissions	Climate change risks associated with the proposal would be low. The proposal site would be revegetated following remediation activities. Contaminated wastes would be disposed of in a purpose-built containment cell, where they cannot be reused.

Environmental factor	Existing environment	Potential impacts
		Other waste material would be recycled or sold where possible.
Greenhouse gas emissions	Greenhouse gas emissions are released through exhaust emissions from machinery, and vehicles transporting materials and personnel to and from site.	The project would utilise fuel efficient and low emission plant and machinery to minimise greenhouse gas emissions impacts.
Utilities	Utilities are likely to exist in the ground and have the potential to be encountered during remediation works.	The presence of utilities may impact the vertical extent of required remediation. If necessary, utilities will be removed during works and replaced upon completion.

6.14.2 Safeguards and management measures

Table 6-31 Other impacts safeguards and management measures

Impact	Environmental safeguards	Responsibility	Timing
Utilities	Prior to the commencement of works: • the location of existing utilities and relocation details will be confirmed following consultation with affected utility owners • further assessment will be undertaken if the scope or location of proposed utility relocation works falls outside of the assessed proposal scope and footprint.	Contractor	Prior to demolition works and during remediation

6.15 Cumulative impacts

6.15.1 Other projects and developments

Other projects occurring near the site are detailed below.

Lake George Mine Remediation Project

Remediation of the legacy Lake George Mine site which is heavily contaminated with metals and metalloids including lead, arsenic, copper, zinc and sulfur (GHD, 2022). The works include site preparatory early works, fencing historic mining structures, strategic structural works, remediation earthworks, augmentation of surface water drainage, and revegetation across several key domains, predominantly in the northern portion of Lake George Mine (GHD, 2022).

Remediation includes the Captains Flat Railway Precinct and identified lead abatement areas within the township.

The project includes the construction of a containment cell to encapsulate approximately 75,000m^3 of contaminated wastes resulting from the remediation works.

Remediation works commenced in November 2023 and are scheduled to continue to mid 2026.

Bungendore to Captains Flat Rail Corridor Remediation Project

The Bungendore to Captains Flat rail corridor transported lead ore from Lake George (legacy) Mine to Captains Flat between 1939 and 1940. Lead concentration levels which exceeded HILs were identified in the corridor between Captains Flat to the Bombala line intersection. This was reported to the NSW EPA in July 2022.

The project is currently in the investigation phase. It is expected that water sampling, a Human Health Risk Assessment and the preparation of an Interim Environmental Management Plan will be completed by the end of 2024.

6.15.2 Potential impacts

Table 6-32 Potential cumulative impacts

Environmental factor	Cumulative impacts
Contamination	• Increased exposure to contaminated material either through air
Noise	• Noise from machinery occurring simultaneously
Air quality	• Increased exposure to contaminated dust from remediation works
Water	• Increased sediment entering waterways due to demolition works
Soil	• Increased localised soil loss due to demolition works
Traffic	• Increased vehicle movements of construction trucks and independent personnel moving to and from site.

6.15.3 Safeguards and management measures

To minimise potential impacts of several remediation projects occurring within proximity to each other, safeguard and management measures identified in independent sections from **Section 6.1** to **Section 6.13** should be implemented at each site. It would be the responsibility of the nominated contractor to ensure that the proposed safeguards and management measures are undertaken throughout the duration of the proposal.

7. Environmental management

This section describes how the proposal will be managed to reduce potential environmental impacts during detailed design, construction, and operation. A framework for managing potential impacts is provided. A summary of site-specific environmental safeguards is provided and the licence and/or approval requirements required prior to construction are listed.

7.1 Environmental management plans (or system)

Safeguards and management measures have been identified in the REF to minimise adverse environmental impacts, including social impacts, which could potentially arise as a result of the proposal. Should the proposal proceed, these safeguards and management measures would be incorporated into the detailed design and applied during the construction and operation of the proposal.

A Construction Environmental Management Plan (CEMP) would be prepared to describe the safeguards and management measures identified. The CEMP will provide a framework for establishing how these measures will be implemented and who would be responsible for their implementation.

The CEMP would be prepared prior to construction of the proposal and must be reviewed and certified by the Transport for NSW Environment and Sustainability Officer, prior to the commencement of any on-site works. The CEMP will be a working document, subject to ongoing change and updated as necessary to respond to specific requirements. The CEMP would be developed in accordance with the specifications set out in the *QA Specification G36 - Environmental Protection (Management System)*, *QA Specification G38 - Soil and Water Management (Soil and Water Plan)*, *QA Specification G40 - Clearing and Grubbing, QA Specification G10 - Traffic Management* where applicable.

7.2 Summary of safeguards and management measures

Environmental safeguards and management measures outlined in this REF will be incorporated into demolition and remediation work procedures. These safeguards and management measures will minimise any potential adverse impacts arising from the proposed works on the surrounding environment. The safeguards and management measures are summarised in **Table 7-1.**

Table 7-1: Summary of safeguards and management measures

No.	Impact	Environmental safeguards	Responsibility	Timing
GEN1	General - minimise environmental impacts during construction	A CEMP will be prepared and submitted for review and endorsement of the Transport for NSW Senior Manager Environment and Sustainability prior to commencement of the activity. As a minimum, the CEMP will address the following: • any requirements associated with statutory approvals • details of how the project will implement the identified safeguards outlined in the REF • issue-specific environmental management plans • roles and responsibilities • communication requirements • induction and training requirements • procedures for monitoring and evaluating environmental performance, and for corrective action • reporting requirements and record-keeping • procedures for emergency and incident management • procedures for audit and review. The endorsed CEMP will be implemented during the undertaking of the activity.	Contractor / Transport for NSW project manager	Pre-construction / detailed design
CON1	Contaminated land	Remediation will be undertaken in accordance with the Captains Flat Rail Corridor Remediation Action Plan (Ramboll, 2022b) as updated to include the SMC land.	Transport Contractor	To update the Remediation Action Plan Prior to and during remediation
CON2	Contaminated land	A Construction Environmental Management Plan (CEMP) will be prepared by the Contractor, and include an Asbestos Removal Control Plan to appropriately manage the removal of known and/or unexpected by encountered asbestos.	Contractor	Prior to remediation
CON3	Contaminated land	A licenced asbestos assessor will complete an assessment of the potential asbestos containing materials, lead based paint and other hazardous material within the former SMC.	Transport	Prior to remediation
CON4	Contaminated land	Removal, handling and transport of contaminated and hazardous material will be undertaken by a licensed contractor and in accordance with the applicable requirements and guidelines.	Contractor	Prior to and during remediation

No.	Impact	Environmental safeguards	Responsibility	Timing
CON5	Contaminated land	If additional contaminated areas are encountered during demolition, appropriate control measures will be implemented to manage the immediate risks of contamination. All other works that may impact on the contaminated area will cease until the nature and extent of the contamination has been confirmed and any necessary site-specific controls or further actions identified in consultation with the Transport for NSW Senior Manager Environment and Sustainability and/or EPA.	Contractor	Prior to and during remediation
CON6	Contaminated land	Asbestos removal will be undertaken in accordance with the *Code of Practice How to Safely Remove Asbestos* (SafeWork, 2022b) and the *Code of Practice: How to Manage and Control Asbestos in the Workplace* (SafeWork NSW, 2022a).	Contractor	During remediation
CON7	Accidental spill	A site-specific emergency spill plan will be developed and include spill-management measures in accordance with the Transport *Code of Practice for Water Management* (RTA, 1999) and relevant EPA guidelines. The plan will address measures to be implemented in the event of a spill, including initial response and containment, notification of emergency services and relevant authorities (including Transport or EPA officers).	Contractor	Prior to and during remediation
BD1	Biodiversity	Biodiversity management measures will be included in the Construction Environmental Management Plan (CEMP).	Contractor	Prior to demolition works
BD2	Flora	Vegetation clearance will be limited to the site boundary.	Contactor	Prior to demolition works
BD3	Flora	Trees will be removed and replaced in accordance with the Transport *Tree and hollow replacement guidelines* (Transport for NSW, 2023)	Contractor	Prior to, during and post remediation
BD4	Flora	Contractors would be advised of requirements to avoid vegetation disturbance or clearance and plan machinery and vehicle access to avoid disturbance.	Contractor	Prior to and during remediation
BD5	Fauna	If native fauna species are present within the site, works will avoid the species or wait until the species has relocated from the site.	Contractor	Prior to and during remediation
BD6	Fauna	If native fauna is injured or trapped onsite, the construction contractor will contact the relevant wildlife authority to arrange for collection/removal from the site.	Contractor	Prior to and during remediation
BD7	Weeds	Waste containing noxious weeds and seeds will be removed from the site and disposed of at a licenced facility so that spread of weeds is minimised.	Contractor	Prior to and during remediation
BD8	Weeds	Site personnel will take reasonable steps to ensure that machinery is free of weed material before entering and exiting the site to avoid the introduction or spread of weeds.	Contractor	Prior to and during remediation
HD1	Hydrology	A site-specific Erosion and Sediment Control Plan/s will be prepared and implemented as part of CEMP. The Plan will include arrangements for managing wet weather events, including monitoring of potential high-risk events (such as storms) and specific controls and follow-up measures to be applied in the event of wet weather.	Contractor	Prior to demolition works

No.	Impact	Environmental safeguards	Responsibility	Timing
HD2	Hydrology	A spill kit will be available on site. Personnel trained to respond to any spill incidences (should they occur) will always be available on site.	Contractor	Prior to and during remediation
HD3	Hydrology	Spills are to be cleaned up and the area remediated as soon as practicable. Any collected clean up material will be disposed of consistent with the material's waste classification.	Contractor	Prior to and during remediation
HD4	Hydrology	As soon as practicable following completion of remediation and validation activities, the surface will be stabilised (through application of an appropriate grass seed mix) to reduce the potential for erosion and sediment loss.	Contractor	Post remediation
SO1	Soils	A contingency plan will be prepared for unexpected finds/contaminated soils within the CEMP and will include details of excavation, segregation, stockpiling, remediation, validation and disposal requirements for any contaminated matter.	Contractor	Prior to demolition works
SO2	Soils	Erosion and sediment controls would be installed in accordance with the *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004) (the Blue Book).	Contractor	Prior to and during remediation
SO3	Soils	Erosion and sediment controls will be checked on a weekly basis and after a rain event (>10mm) in a 24 hours period and maintained as required.	Contractor	During remediation
SO4	Soils	Surfaces would not be left exposed for extended periods of time and would be revegetated as early as possible.	Contractor	Prior to and during remediation
SO5	Soils	Stockpiles of soil or fill would be covered or bunded and managed to prevent dust, erosion and sediment run off.	Contractor	Prior to and during remediation
SO6	Soils	Meteorological conditions will be monitored daily with remediation activities adjusted to suit conditions. During periods of high wind remediation will be suspended. During period of high rainfall (greater than or equal to 10 mm of rain within a 24 hours period) remediation will be suspended.	Contractor	Prior to and during remediation
SO7	Soils	Double handling of material will be avoided wherever possible, and material transfers optimised to limit time material is stockpiled or handled.	Contractor	During remediation
SO8	Soils	Stockpile location and compounds will be contained within the SMC lot boundary. The locations of stockpiles will be confirmed prior to commencement of remediation and described within the CEMP.	Contractor	Prior to remediation
SO9	Soils	Vehicle refuelling (if undertaken on site) will be undertaken using mobile refuelling vehicles equipped with spill containment equipment and a spill kit.	Contractor	During remediation
SO10	Soils	Equipment cleaning and maintenance will be undertaken in an appropriately controlled area to reduce the potential for contaminated materials to migrate offsite.	Contractor	During remediation
TT1	Traffic and transport	A Traffic Control Plan will be prepared and implemented as part of the CEMP. The TMP will be prepared in accordance with the Transport *Traffic Control at Work Sites Manual* (RTA, 2010) and *QA Specification G10 Control of Traffic* (Transport for NSW, 2008). The TMP will include:	Contractor	Prior to and during remediation

No.	Impact	Environmental safeguards	Responsibility	Timing
		• confirmation of haulage routes • measures to maintain access to local roads and properties • site-specific traffic control measures (including signage) to manage and regulate traffic movement • requirements and methods to consult and inform the local community of impacts on the local road network • access to the proposal including entry and exit locations and measures to prevent construction vehicles queuing on public roads • a response plan for any traffic incident related to the proposal • consideration of other developments that may be under construction to minimise traffic conflict and congestion that may occur due to the cumulative increase in construction vehicle traffic • monitoring, review and amendment mechanisms.		
TT2	Traffic and transport - Contaminated materials	The transportation of contaminated / remediation materials will be managed to maximise vehicle loads to minimise vehicle movements, where practicable.	Contractor	Prior to and during remediation
NV1	Noise and vibration	Works are to be undertaken within the standard construction working hours.	Contractor	Prior to and during remediation
NV2	Noise and vibration	If works are required outside of the standard construction working hours, the works are to be approved by Transport, and the *Construction Noise Strategy* applied including adoption and implementation of additional mitigation measures.	Contractor	Prior to and during remediation
NV3	Noise and vibration	During site inductions and toolbox talks, site workers (including relevant subcontractors and temporary workforce) should be made aware of the hours of construction and how to apply practical, feasible and reasonable measures to minimise noise and vibration when undertaking construction activities (including driving vehicles).	Contractor	Prior to and during remediation
NV4	Noise and vibration - Operation of plant and equipment	High noise generating activities will only be carried out in continuous blocks, not exceeding three hours each, with a minimum respite period of one hour between each block.	Contractor	During remediation
NV5	Noise and vibration - Operation of plant and equipment	Equipment which is used intermittently will be shut down when not in use.	Contractor	During remediation
NV6	Noise and vibration - Operation of plant and equipment	All engine covers will be kept close while equipment is operating.	Contractor	During remediation
NV7	Noise and vibration - Operation of plant and equipment	The site will be arranged to minimise noise impacts by locating potentially noisy activities away from the nearest receivers wherever possible.	Contractor	During remediation

No.	Impact	Environmental safeguards	Responsibility	Timing
NV8	Noise and vibration - Operation of plant and equipment	Plant and equipment will be maintained in accordance with manufacturers requirements and operated in a quiet and efficient manner	Contractor	During remediation
NV9	Noise and vibration - Operation of plant and equipment	Use of broadband reverse alarm in lieu of the traditional 'tonal' type reverse alarm	Contractor	During remediation
NV10	Noise and vibration - Operation of plant and equipment	Where possible avoid the generation of metallic impact noise and noise from the dropping of materials from heights.	Contractor	During remediation
NV11	Noise and vibration - Notification	Periodic notification (monthly letterbox drop/ email and website notification) detailing all upcoming construction activities delivered to sensitive receivers at least 7 days prior to commencement of relevant works.	Contractor	Prior to and during remediation
NV12	Noise and vibration - Notification	Community would be notified of any works occurring outside of standards construction hours in accordance with the CNVG.	Contractor	Prior to demolition works
AQ1	Air Quality Management Plan	An Air Quality Management Plan will be prepared and implemented as part of the CEMP. The Air Quality Management Plan will include, but not be limited to: • potential sources of air pollution • air quality management objectives consistent with any relevant published EPA and/or Office of Environment and Heritage (OEH) guidelines • mitigation and suppression measures to be implemented • methods to manage work during strong winds or other adverse weather conditions • a progressive rehabilitation strategy for exposed surfaces • air quality monitoring requirements and trigger responses.	Contractor	Prior to demolition works and during remediation
AQ2	Air Quality Management Plan	The Air Quality Management Plan will include the controls identified in the Interim Environmental Management Plan (Ramboll, 2022e) to mitigate potential exposure to lead.	Contractor	Prior to demolition and remediation works
AQ3	Air Quality Management Plan	Air quality monitoring would be undertaken in accordance with the Air Quality Management Plan.	Contractor	During remediation
AQ4	Air Quality Management Plan	All workers will be briefed on the requirements under the Air Quality Management Plan and CEMP.	Contractor	During remediation
AQ5	Air Quality Mitigation	In the event of a dust complaint, the following will be implemented: • stop work • identify dust source and review control measures • assess requirements for additional monitoring or investigation of impact	Contractor	During remediation

No.	Impact	Environmental safeguards	Responsibility	Timing
		• review trigger alert system to determine if unacceptable impact measured at site boundary.		
AQ6	Air Quality Mitigation	Works will cease immediately if it is apparent that dust generation could impact on nearby sensitive receivers, and suitable management measures would be applied. This may include the use of the water cart or an alternative dust suppressant, or waiting for more favourable weather conditions (less windy conditions).	Contractor	During remediation
AQ7	Air Quality Mitigation	Stockpiles will be covered when not required to be accessible for current remediation works.	Contractor	During remediation
AQ8	Air Quality Mitigation	All vehicles and trailers will be covered when transporting materials and waste off site.	Contractor	During remediation
AQ9	Air Quality Mitigation	All plant and machinery will have emission control devices complying with Australian design standards.	Contractor	During remediation
AQ10	Air Quality Mitigation	Excavation activities will be completed so that visible airborne dust is not generated.	Contractor	During remediation
AQ11	Air Quality Mitigation	As soon as practicable following completion of remediation and validation activities in an area, the surface will be sealed (application of grasses) to reduce the potential for erosion and sediment loss.	Contractor	During and post remediation
WM1	Waste	A Waste Management Plan (WMP) will be prepared and implemented as part of the CEMP. The WMP will include but not be limited to: • measures to avoid and minimise waste associated with the proposal • classification of wastes and management options (re-use, recycle, stockpile, disposal) in accordance with *Waste Classification Guidelines* (NSW EPA, 2014) • statutory approvals required for managing on- and off-site waste, or application of any relevant resource recovery exemptions • procedures for storage, transport and disposal • monitoring, record keeping and reporting. The WMP will align with the *Environmental Procedure - Management of Wastes on Transport for NSW Land* (Transport, 2014) and relevant Transport Waste fact sheets.	Contractor	Prior to demolition works and during remediation
WM2	Waste	Designated waste storage and stockpile area(s) will be established, and waste will be appropriately segregated and stored based on the waste stream, being demolition material, contaminated excavated material, or general solid waste.	Contractor	During remediation
WM3	Waste	All general solid waste generated onsite will be appropriately transported off site and disposed of at approved and licensed waste management facility.	Contractor	During remediation
WM4	Waste	The site waste tracking system will be set up and remediation personnel trained in its implementation prior to works commencing.	Contractor	During remediation
WM5	Waste	All remediation personnel will be informed during the site induction of the waste management hierarchy and the measures to be implemented.	Contractor	During remediation
WM6	Waste	Promotion of efficient resource use, waste avoidance and waste minimisation.	Contractor	During remediation
WM7	Waste	The waste storage and stockpile area(s) will be maintained in an organised condition, with waste material to be transported to and stockpiled in the designated storage area protected by appropriate controls and containment measures.	Contractor	During remediation

No.	Impact	Environmental safeguards	Responsibility	Timing
WM8	Waste	The waste storage and stockpile area(s) will be clearly signed to ensure correct placement of material and prevent further contamination.	Contractor	During remediation
WM9	Waste	The environmental controls and containment measures placed on waste stockpiles will be inspected and maintained as required on a weekly basis and after rain and strong wind events.	Contractor	During remediation
WM10	Waste	If unexpected materials are discovered, the materials are to be segregated into a stockpile and possible disposal options investigated.	Contractor	During remediation
WM11	Waste	No waste material will be left on site once the remediation works have been completed.	Contractor	During remediation
HH1	Human health	A worker health and safety plan will be developed and implemented as part of the CEMP in accordance with the following: • the measures detailed in the Interim Environmental Management Plan (Ramboll, 2022e), • SafeWork NSW *Lead Guidance,* • SafeWork NSW 2022 *Code of Practice Managing risks of hazardous chemicals in the workplace including the use of the hierarchy of control measures,* • *Managing individual exposure to lead in Australia - A guide to health practitioners* (Natinal Health and Medical Research Council, 2016), • *NSW EPA LeadSmart – Work Smart: tradespeople and Mining Industry Workers* (LeadSmart, 2016), • *Workplace Exposure Standards for Airborne Contaminants* (Safe Work Australia, 2024), • *Work Health and Safety Act 2011* and *Work Health and Safety Regulation 2017,* • *Code of Practice How to Manage and Control Asbestos in the Workplace (SafeWork NSW, 2022a),* and *Code of Practice How to Safely Remove Asbestos (SafeWork, 2022b).*	Contractor	Prior to demolition works and during remediation
HH2	Human health	Should any previously unidentified potentially hazardous material be identified during remediation, works will cease in the vicinity of the material and the potentially hazardous materials inspected by an experienced occupational hygienist.	Contractor	During remediation
HH3	Human health	Workers will remain in enclosed cabins of machinery when conducting remediation works.	Contractor	During remediation
HH4	Human health	All vehicles and machinery will have windows closed at all times and an operating cabin air circulation system (air conditioning) equipment with high efficiency filter, and good seals to eliminate cabin dust intrusion.	Contractor	During remediation
HH5	Human health	Workers outside the excavator shall be used minimally and on as need basis. These workers shall remain outside a 20 metres exclusion zone from the excavator, ideally upwind. If there is a need to be closer to the excavator (i.e. within 20 metre exclusion zone) workers will wear a P2 mask and a Type 5 single use disposable Tyvek suit.	Contractor	During remediation
AH1	Aboriginal heritage	The *Standard Management Procedure - Unexpected Heritage Items* (Transport, 2022) will be followed in the event that an unknown or potential Aboriginal object/s, including skeletal remains, is found during demolition or remediation. This applies where Transport does not have approval to disturb the object/s or where a specific safeguard for managing the disturbance (apart from the Procedure) is not in place.	Contractor	Prior to and during remediation
AH2	Aboriginal heritage	Work will only re-commence once the requirements of the *Standard Management Procedure - Unexpected Heritage Items* (Transport, 2022 have been satisfied.	Contractor	Prior to and during remediation

No.	Impact	Environmental safeguards	Responsibility	Timing
NAH1	Non-Aboriginal Heritage - The SMC heritage	A Non-Aboriginal Heritage Management Plan will be prepared and implemented as part of the CEMP. It will provide specific drafting guidance on measures and controls to be implemented to avoid and mitigate impacts to the SMC (heritage item I248) under the Queanbeyan-Palerang Regional LEP.	Contractor	Prior to demolition works
NAH2	Non-Aboriginal Heritage - The SMC heritage	An archival report is to be commissioned and provided to Queanbeyan Palerang Regional Council for their records.	Transport	Prior to demolition works
NAH3	Non-Aboriginal Heritage - The SMC heritage	Transport will consult the community and stakeholders on the historical interpretation of the SMC in the first half of 2025. This feedback will be used to: • Identify historical values; • determine how the historical values can be best interpreted; • identify issues and opportunities; and • determine a feasible historical interpretation option that reflects historical, cultural and community importance of the SMC. Feedback from the consultation will be used to identify themes and trends which we will consider when planning our interpretation work. While the preferred option is unknown at this time, a possible option identified through previous consultations is commissioning an interpretation sign to be erected at the SMC following its demolition and site remediation.	Transport	Prior to demolition works
NAH4	Unexpected Non-Aboriginal heritage	The *Standard Management Procedure - Unexpected Heritage Items* (Transport for NSW, 2015) will be followed if any unexpected heritage items, archaeological remains or potential relics of non-Aboriginal origin are encountered.	Contractor	Prior to and during remediation
NAH5	Unexpected Non-Aboriginal heritage	Work will only re-commence once the requirements of the *Standard Management Procedure - Unexpected Heritage Items* (Transport, 2022) have been satisfied.	Contractor	Prior to and during remediation
NAH6	Heritage consultation	Consultation with Council will occur prior to remediation works commencing in accordance with the requirements of Section 2.11(1)(a) of the Transport and Infrastructure SEPP due to the SMC being a local heritage item.	Transport	Prior to remediation
LV1	Landscape character and visual impact	Contractors and workers would keep the site clean and tidy during demolition and remediation works.	Contractor	Prior to and during remediation
LV2	Landscape and visual impact	All waste materials would be removed offsite following demolition and remediation. Vehicles will be inspected and cleaned if required to avoid tracking of dirt or mud onto public roads.	Contractor	Prior to and during remediation
SE	Socio-economic	A Communication Plan (CP) will be prepared and implemented as part of the CEMP to help provide timely and accurate information to the community during construction. The CP will include (as a minimum): • mechanisms to provide details and timing of proposed activities to affected residents, including changed traffic and access conditions, and • contact name and number for complaints.	Contractor	Prior to demolition works

No.	Impact	Environmental safeguards	Responsibility	Timing
		The CP will be prepared in accordance with the *Community Involvement and Communications Resource Manual* (RTA, 2008).		
UT1	Utilities	Prior to the commencement of works: • the location of existing utilities and relocation details will be confirmed following consultation with affected utility owner • further assessment will be undertaken if the scope or location of proposed utility relocation works falls outside of the assessed proposal scope and footprint.	Contractor	Prior to demolition works and during remediation

7.3 Licensing and approvals

No licencing or approvals have been identified for the proposal.

8. Conclusion

This section provides the justification for the proposal taking into account its biophysical, social and economic impacts, the suitability of the site and whether or not the proposal is in the public interest. The proposal is also considered in the context of the objectives of the EP&A Act, including the principles of ecologically sustainable development as defined in Section 193 of the *Environmental Planning and Assessment Regulation 2021*.

8.1 Justification

8.1.1 Social factors

Social impacts associated with the proposal are expected to be positive as it would result in the remediation of a significantly contaminated locality and bring the locality into compliance with human health criteria.

Social benefit would be generated through the incorporation of the site into the Captains Flat Heritage Trail – Pathway to Gold walking trail.

8.1.2 Biophysical factors

The proposal would result in the remediation of a locality subject to historical contaminating activities and therefore would result in a net benefit impact to the environment.

8.1.3 Economic factors

The proposal would have a minimal impact upon the local economy.

8.1.4 Public interest

The proposal is in the interest of the public, particulaty the community of Captains Flat, as it would result in the remediation of a contaminated locality.

8.2 Objects of the EP&A Act

Table 8-1 Objects of the *Environmental Planning and Assessment Act 1979*

Instrument	Requirement
1.3(a) To promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources.	The proposal promotes social and economic welfare of the community through the management and remediation of contaminated land.
1.3(b) To facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment.	Not relevant to the proposal.
1.3(c) To promote the orderly and economic use and development of land.	The proposal promotes the orderly and economic use of land through remediation practices.
1.3(d) To promote the delivery and maintenance of affordable housing.	Not relevant to the proposal.
1.3(e) To protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats.	The proposal would result in the protection of the environment through remediation activities that would bring the locality into compliance with the relevant health criteria.

Instrument	Requirement
1.3(f) To promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage).	Not relevant to the proposal.
1.3(g) To promote good design and amenity of the built environment.	Not relevant to the proposal.
1.3(h) To promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants.	Not relevant to the proposal.
1.3(i) To promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State.	Not relevant to the proposal.
1.3(j) To provide increased opportunity for community participation in environmental planning and assessment.	The community has been involved in the proposal via community information sessions and updates provided by Transport.

8.3 Conclusion

The proposed demolition and remedation of the former Stations Masters Cottage at Captains Flat is subject to assessment under Division 5.1 of the EP&A Act. The REF has examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed activity.

This has included consideration (where relevant) of conservation agreements and plans of management under the NPW Act, biodiversity stewardship sites under the BC Act, wilderness areas, areas of outstanding value, impacts on threatened species and ecological communities and their habitats, and other protected fauna and native plants. It has also considered potential impacts to matters of national environmental significance listed under the EPBC Act.

Significance of impact under NSW legislation

The proposal would be unlikely to cause a significant impact on the environment. Therefore, it is not necessary for an environmental impact statement to be prepared nor approval to be sought from the Minister for Planning under Division 5.2 of the EP&A Act. A Biodiversity Development Assessment Report or Species Impact Statement is not required. The proposal is subject to assessment under Division 5.1 of the EP&A Act. Consent from Council is not required.

Significance of impact under Australian legislation

The proposal is not likely to have a significant impact on matters of national environmental significance nor the environment of Commonwealth land within the meaning of the *Environment Protection and Biodiversity Conservation Act 1999 (*Commonwealth). A referral to the Australian Department of Climate Change, Energy, the Environment and Water is not required.

9. Certification

This review of environmental factors provides a true and fair review of the proposal in relation to its potential effects on the environment. It addresses to the fullest extent possible all matters affecting or likely to affect the environment as a result of the proposal.

Name:	Claire Whitehill
Position:	Senior Environmental Scientist
Company name:	Ramboll Australia
Date:	28 July 2025

I certify that I have reviewed and endorsed the contents of this REF and, to the best of my knowledge, it is in accordance with the EP&A Act, the EP&A Regulation and the Guidelines approved under Section 170 of the EP&A Regulation, and the information is neither false nor misleading. I accept it on behalf of Transport for NSW.

Name:	Vincent Gillies
Position:	Environment and Sustainability Manager
Transport region/program:	Assets and Operations, South
Date:	30/07/2025

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Terms and acronyms used in this REF

Table 10-1 Terms and acronyms used in this REF

Term / Acronym	Description
ACM	Asbestos containing materials
AHIMS	Aboriginal Heritage Information Management System
AMD	Acid Mine Drainage
BC Act	*Biodiversity Conservation Act 2016*
BDAR	*Biodiversity Development Assessment Report*
CEMP	Construction Environmental Management Plan
CIV	Capital Investment Value
CNVG	Construction Noise and Vibration Guideline
CP	Communication Plan
CRN	Country Regional Ne\ \work
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DSI	Detailed Site Investigation
EIA	Environmental impact assessment
EIL	Ecological-based investigations
EIS	*Environmental Impact Statement*
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	*Environmental Planning and Assessment Regulation 2021*
EPA	Environmental Protection Authority
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)*
EPL	*Environment Protection Licence*
Heritage Act	*Heritage Act 1977 (NSW)*
HIL	Health Investigation Level
HSL	Health screening levels
ICNG	Interim Construction Noise Guideline
LEP	Local Environmental Plan. A type of planning instrument made under Part 3 of the EP&A Act.
LGA	Local Government Area
mbgl	meteres below ground level
MNES	Matters of national environmental significance under the *Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)*
NEPM	National Environment Protection Measure
NML	Noise Management Levels
NP&W Act	*National Parks and Wildlife Act 1974*
NPfI	Noise Policy for Industry
NPW Act	*National Parks and Wildlife Act 1974*
POEO Act	*Protection of the Environment Operations Act 1997*
POEO Regulation	*Protection of the Environment Operations (waste) Regulation 2014*
Queanbeyan-Palerang Regional LEP	*Queanbeyan-Palerang Regional Local Environmental Plan 2022*
Ramboll	Ramboll Australia Pty Ltd

Term / Acronym	Description
RBL	Rating Background Level
REF	Review of Environmental Factors
SEPP	State Environmental Planning Policy. A type of planning instrument made under Part 3 of the EP&A Act.
SEPP (Resilience and Hazards)	State Environmental Planning Policy (Resilience and Hazards) 2021
SEPP (Transport and Infrastructure)	State Environmental Planning Policy (Transport and Infrastructure) 2021
SIS	*Species Impact Statement*
SMC	Station Master Cottage
SMF	synthetic mineral fibres
the site	The private residence containing the former Stations Master Cottage located at 2 Copper Creek Road, Captains Flat NSW.
Transport	Transport for NSW
VMP	Voluntary Management Plan
WMP	Waste Management Plan

Appendix A - Consideration of section 171 factors and matters of national environmental significance and Commonwealth land

Section 171 Factors

In addition to the requirements of the Guideline for Division 5.1 assessments (DPE 2022) and the Roads and Related Facilities EIS Guideline (DUAP 1996) as detailed in the REF, the following factors, listed in section 171 of the Environmental Planning and Assessment Regulation 2021, have also been considered to assess the likely impacts of the proposal on the natural and built environment.

Factor		Impact
a	***Any environmental impact on a community?*** The proposal would result in minor environmental impacts to the community during demolition activities such as noise, air quality, visual and traffic impacts as described in **Section 6** of this REF.	Negative Short-term Minor
b	***Any transformation of a locality?*** There would be the permanent visual change due to the demolition of the SMC. The proposal site would be temporarily transformed during demolition and remediation activities.	Minor Long-term
c	***Any environmental impact on the ecosystems of the locality?*** The proposal would have an effect on the local ecosystem from demolition and remediation activities such as noise, air quality and traffic impacts as described in **Section 6** of this REF.	Negative Short-term Minor
d	***Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality?*** The proposal would not reduce the aesthetic, recreational, scientific or other environmental quality. The proposal would make the land suitable for ongoing residential land use upon completion.	Positive Long-term Minor
e	***Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations?*** The proposal includes the demolition and removal of the Station Masters Cottage which is a locally listed heritage item.	Negative Long-term Minor
f	***Any impact on the habitat of protected fauna (within the meaning of the National Parks and Wildlife Act 1974)?*** The proposal would not impact the habitat of protected fauna as discussed in **Section 6.2** of this REF.	No impact
g	***Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?*** The proposal would not endanger any plant, animal or other species as discussed in **Section 6.2** of this REF.	No impact
h	***Any long-term effects on the environment?*** There are no expected long-term negative effects on the environment as the proposal involves remediation of any potential contamination. The long-term effects would be positive with the removal of contamination.	Positive Long-term impact
i	***Any degradation of the quality of the environment?*** The proposal would result in the remediation of the environment resulting in removal of contamination.	Positive Long-term Minor
j	***Any risk to the safety of the environment?*** There is a risk that the proposal could result in the spread of contamination and the contamination of soils and surface water. The risk is considered low with the implementation of proposed safeguards and management measures in this REF.	Negative Short-term Minor
k	***Any reduction in the range of beneficial uses of the environment?***	Positive Long-term Minor

Factor		Impact
	The proposal involves removal contaminated material and the remediation of that land in line with residential use criteria. Therefore, the proposal results in a beneficial use of the environment.	
l	**Any pollution of the environment?** Pollution to the environment may arise from air and noise emissions from vehicles and machinery or dust from ground disturbance works and potential contamination of soils and surface/ground waters. The risk of pollution is considered low with the implementation of the mitigation and management measures described in the REF.	Negative Short-term Minor
m	**Any environmental problems associated with the disposal of waste?** The management of contaminated material and wastes is considered in **Section 6.1** and **Section 6.8** of this REF. No environmental problems would arise with the implementation of the mitigation and management measures described in the REF.	Negative Short-term Minor
n	**Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply?** No resources likely to become in short supply are required for the proposal.	No impact
o	**Any cumulative environmental effect with other existing or likely future activities?** No cumulative impacts have been identified that are not able to be adequately managed such as noise, air and traffic impacts (refer to discussion in **Section 6.15** of the REF).	Negative Short-term Minor
p	**Any impact on coastal processes and coastal hazards, including those under projected climate change conditions?** The proposal does not impact on any coastal management areas.	No impact
q	**Applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1?** No impacts on local strategic planning statements, regional strategic plans or district strategic plans are identified for the proposal.	No impact
r	**Other relevant environmental factors.** No other environmental impacts are identified for the proposal.	In considering the potential impacts of this proposal all relevant environmental factors have been considered, refer to **Section 6** of this assessment.

Matters of National Environmental Significance and Commonwealth land

Under the environmental assessment provisions of the EPBC Act, the following matters of national environmental significance and impacts on Commonwealth land are required to be considered to assist in determining whether the proposal should be referred to the Australian Department of Climate Change, Energy, the Environment and Water .

A referral is not required for proposed actions that may affect nationally-listed threatened species, endangered ecological communities and migratory species. Impacts on these matters are still assessed as part of the REF in accordance with Australian Government significant impact criteria and taking into account relevant guidelines and policies.

Factor		Impact
a	Any impact on a World Heritage property?	Nil
b	Any impact on a National Heritage place?	Nil
c	Any impact on a wetland of international importance?	Nil
d	Any impact on a listed threatened species or communities?	Nil

Factor		Impact
e	Any impacts on listed migratory species?	Nil
f	Any impact on a Commonwealth marine area?	Nil
g	Does the proposal involve a nuclear action (including uranium mining)?	Nil
h	Additionally, any impact (direct or indirect) on the environment of Commonwealth land?	Nil

Appendix B - Statutory consultation checklists

Council related infrastructure or services

Development type	Potential impact	Yes / No	If 'yes' consult with	SEPP (Transport and Infrastructure) Section
Stormwater	Are the works likely to have a *substantial* impact on the stormwater management services which are provided by council?	No	N/A	Section 2.10
Traffic	Are the works likely to generate traffic to an extent that will *strain* the capacity of the existing road system in a local government area?	No	N/A	Section 2.10
Sewerage system	Will the works involve connection to a council owned sewerage system? If so, will this connection have a *substantial* impact on the capacity of any part of the system?	No	N/A	Section 2.10
Water usage	Will the works involve connection to a council owned water supply system? If so, will this require the use of a *substantial* volume of water?	No	N/A	Section 2.10
Temporary structures	Will the works involve the installation of a temporary structure on, or the enclosing of, a public place which is under local council management or control? If so, will this cause more than a *minor* or *inconsequential* disruption to pedestrian or vehicular flow?	No	N/A	Section 2.10
Road & footpath excavation	Will the works involve more than *minor* or inconsequential excavation of a road or adjacent footpath for which council is the roads authority and responsible for maintenance?	No	N/A	Section 2.10

Local heritage items

Development type	Potential impact	Yes / No	If 'yes' consult with	SEPP (Transport and Infrastructure) Section
Local heritage	Is there is a local heritage item (that is not also a State heritage item) or a heritage conservation area in the study area for the works? If yes, does a heritage assessment indicate that the potential impacts to the heritage significance of the item/area are more than minor or inconsequential?	Yes	Council (refer to **Section 6.11**)	Section 2.11

Flood liable land

Development type	Potential impact	Yes / No	If 'yes' consult with	SEPP (Transport and Infrastructure) Section
Flood liable land	Are the works located on flood liable land? If so, will the works change flood patterns to more than a *minor* extent?	No		Section 2.12
Flood liable land	Are the works located on flood liable land? (to any extent). If so, do the works comprise more than minor alterations or additions to, or the demolition of, a building, emergency works or routine maintenance?	No		Section 2.13

Note: Flood liable land means land that is susceptible to flooding by the probable maximum flood event, identified in accordance with the principles set out in the manual entitled Floodplain Development Manual: the management of flood liable land published by the New South Wales Government.

Public authorities other than councils

Development type	Potential impact	Yes / No	If 'yes' consult with	SEPP (Transport and Infrastructure) Section
National parks and reserves	Are the works adjacent to a national park or nature reserve, or other area reserved under the *National Parks and Wildlife Act 1974*, or on land acquired under that Act?	No	N/A	Section2.15
National parks and reserves	Are the works on land in Zone E1 National Parks and Nature Reserves or in a land use zone equivalent to that zone?	No	N/A	Section 2.15
Navigable waters	Do the works include a fixed or floating structure in or over navigable waters?	No	N/A	Section 2.15
Bush fire prone land	Are the works for the purpose of residential development, an educational establishment, a health services facility, a correctional centre or group home in bush fire prone land?	No	N/A	Section 2.15
Artificial light	Would the works increase the amount of artificial light in the night sky and that is on land within the dark sky region as identified on the dark sky region map? (Note: the dark sky region is within 200 kilometres of the Siding Spring Observatory)	No	N/A	Section 2.15
Defence communications buffer land	Are the works on buffer land around the defence communications facility near Morundah? (Note: refer to Defence Communications Facility Buffer Map referred to in section 5.15 of Lockhart LEP	No	N/A	Section 2.15

Development type	Potential impact	Yes / No	If 'yes' consult with	SEPP (Transport and Infrastructure) Section
	2012, Narrandera LEP 2013 and Urana LEP 2011.			
Mine subsidence land	Are the works on land in a mine subsidence district within the meaning of the *Mine Subsidence Compensation Act 1961*?	No	N/A	Section 2.15

Appendix C – AHIMS

AHIMS Web Services (AWS)
Search Result

Your Ref/PO Number : 2

Client Service ID : 888617

Tawna Krause

42a Watt Street
Newcastle East New South Wales 2300

Attention: Tawna Krause

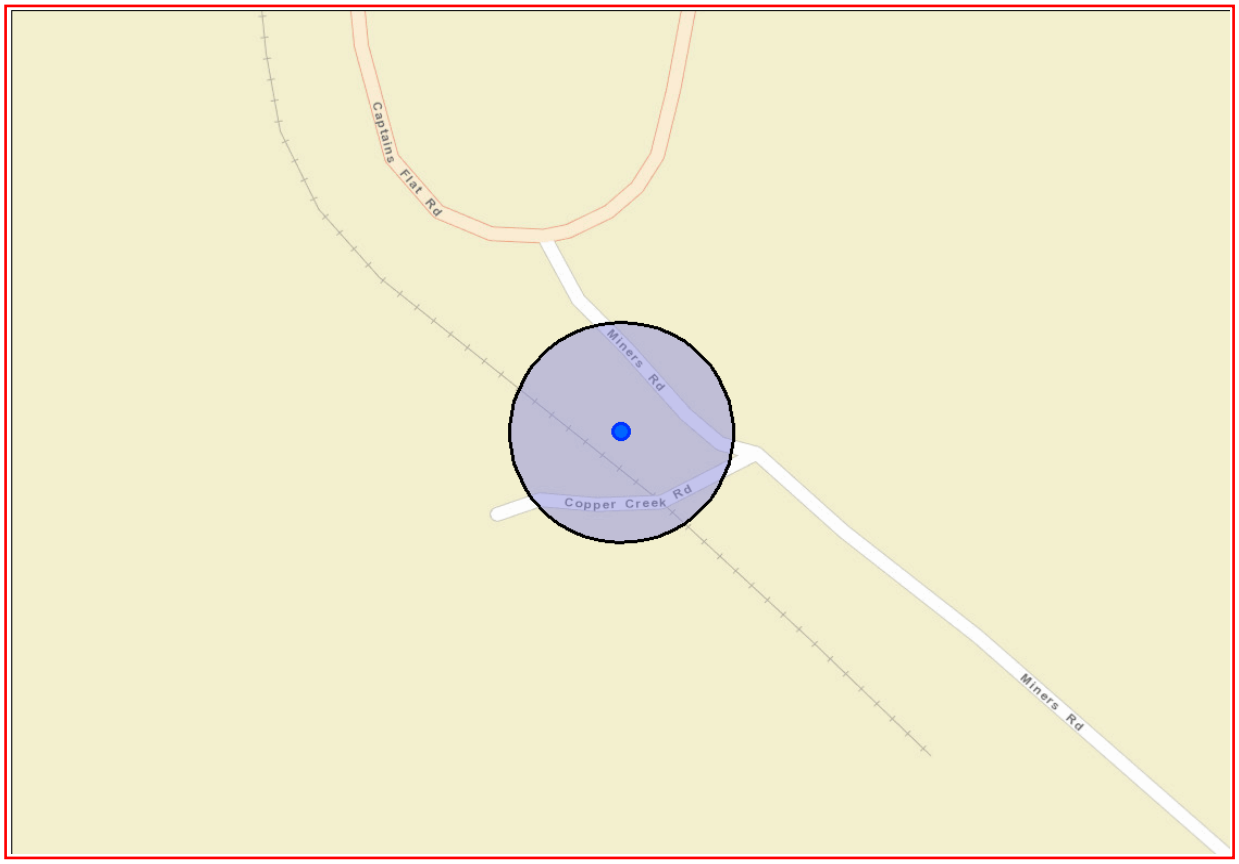
Email: tkrause@ramboll.com

Date: 02 May 2024

Dear Sir or Madam:

AHIMS Web Service search for the following area at Address : 2 COPPER CREEK ROAD CAPTAINS FLAT 2623 with a Buffer of 50 meters, conducted by Tawna Krause on 02 May 2024.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	**Aboriginal sites are recorded in or near the above location.**
0	**Aboriginal places have been declared in or near the above location. ***

If your search shows Aboriginal sites or places what should you do?

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

Important information about your AHIMS search

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

Level 6, 10 Valentine Ave, Parramatta 2150
Locked Bag 5020 Parramatta NSW 2124
Tel: (02) 9585 6345

ABN 34 945 244 274
Email: ahims@environment.nsw.gov.au
Web: www.heritage.nsw.gov.au

Appendix D – PACHCI

12th December 2024

Vincent Gillies
Environment & Sustainability Manager
Safety, Policy, Environment & Regulation
Transport for NSW

Dear Vince,

Preliminary assessment results for Captains Flat FSMC on Stage 1 of the *Procedure for Aboriginal cultural heritage consultation and investigation* (the procedure).

The project, as described in the Stage 1 assessment, was assessed as being unlikely to have an impact on Aboriginal cultural heritage.

The assessment is based on the following due diligence considerations:

- The project is unlikely to harm known Aboriginal objects or places.
- The AHIMS search did not indicate moderate to high concentrations of Aboriginal objects or places in the areas of tree removal.
- The study area does not contain landscape features that indicate the presence of Aboriginal objects, based on the Heritage NSW's *Due diligence Code of Practice for the Protection of Aboriginal objects in NSW* and the Transport for NSW's procedure.
- The cultural heritage potential of the study area appears to be reduced due to past disturbance.
- There is an absence of sandstone rock outcrops likely to contain Aboriginal art.

Your project may proceed in accordance with the environmental impact assessment process, as relevant, and all other relevant approvals.

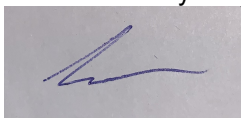
If the scope of your project changes, you must contact me and your regional environmental staff to reassess any potential impacts on Aboriginal cultural heritage.

Please ensure works stay close to the proposed site and away from nearby water sources (currently not in scope of work).

If any potential Aboriginal objects (including skeletal remains) are discovered during the course of the project, all works in the vicinity of the find must cease. Follow the steps outlined in the Transport for NSW's *Unexpected Archaeological Finds Procedure*.

For further assistance in this matter do not hesitate to contact me.

Yours sincerely



Layne Brown
Aboriginal Community and Heritage Partner - Southern, Aboriginal Engagement
Customer Strategy & Experience | Customer, Strategy & Technology
Transport for NSW
M 0447 678 619

Appendix E – Protected Matters Search Results

Australian Government

Department of Climate Change, Energy, the Environment and Water

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Please see the caveat for interpretation of information provided here.

Report created: 20-May-2025

Summary

Matters of National Environment Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance (Ramsar	4
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	2
Listed Threatened Species:	41
Listed Migratory Species:	8

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at https://www.dcceew.gov.au/parks-heritage/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Lands:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	18
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None
Habitat Critical to the Survival of Marine Turtles:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have

State and Territory Reserves:	None
Regional Forest Agreements:	1
Nationally Important Wetlands:	None
EPBC Act Referrals:	4
Key Ecological Features (Marine):	None
Biologically Important Areas:	None
Bioregional Assessments:	None
Geological and Bioregional Assessments:	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar Wetlands)	[Resource Information]
Ramsar Site Name	Proximity
Banrock station wetland complex	800 - 900km upstream from Ramsar site
Hattah-kulkyne lakes	600 - 700km upstream from Ramsar site
Riverland	700 - 800km upstream from Ramsar site
The coorong, and lakes alexandrina and albert wetland	800 - 900km upstream from Ramsar site

Listed Threatened Ecological Communities		[Resource Information]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.
Status of Vulnerable, Disallowed and Ineligible are not MNES under the EPBC Act.

Community Name	Threatened Category	Presence Text
Natural Temperate Grassland of the South Eastern Highlands	Critically Endangered	Community likely to occur within area
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	Community may occur within area

Listed Threatened Species		[Resource Information]

Status of Conservation Dependent and Extinct are not MNES under the EPBC Act.
Number is the current name ID.

Scientific Name	Threatened Category	Presence Text
BIRD		
Anthochaera phrygia		
Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour may occur within area

Scientific Name	Threatened Category	Presence Text
Aphelocephala leucopsis Southern Whiteface [529]	Vulnerable	Species or species habitat likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Callocephalon fimbriatum Gang-gang Cockatoo [768]	Endangered	Species or species habitat likely to occur within area
Calyptorhynchus lathami lathami South-eastern Glossy Black-Cockatoo [67036]	Vulnerable	Species or species habitat may occur within area
Climacteris picumnus victoriae Brown Treecreeper (south-eastern) [67062]	Vulnerable	Species or species habitat likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Melanodryas cucullata cucullata		
South-eastern Hooded Robin, Hooded Robin (south-eastern) [67093]	Endangered	Species or species habitat likely to occur within area
Neophema chrysostoma		
Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area
Polytelis swainsonii		
Superb Parrot [738]	Vulnerable	Species or species habitat may occur within area
Pycnoptilus floccosus		
Pilotbird [525]	Vulnerable	Species or species habitat may occur within area
Rostratula australis		
Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Stagonopleura guttata		
Diamond Firetail [59398]	Vulnerable	Species or species habitat likely to occur within area
FISH		
Maccullochella macquariensis		
Trout Cod [26171]	Endangered	Species or species habitat may occur within area
Maccullochella peelii		
Murray Cod [66633]	Vulnerable	Species or species habitat may occur within area
Macquaria australasica		
Macquarie Perch [66632]	Endangered	Species or species habitat may occur within area
FROG		
Litoria castanea		
Yellow-spotted Tree Frog, Yellow-spotted Bell Frog [1848]	Critically Endangered	Species or species habitat likely to occur within area
Litoria verreauxii alpina		
Alpine Tree Frog, Verreaux's Alpine Tree Frog [66669]	Vulnerable	Species or species habitat may occur within area
INSECT		

Scientific Name	Threatened Category	Presence Text
Synemon plana		
Golden Sun Moth [25234]	Vulnerable	Species or species habitat may occur within area
MAMMAL		
Chalinolobus dwyeri		
Large-eared Pied Bat, Large Pied Bat [183]	Endangered	Species or species habitat may occur within area
Dasyurus maculatus maculatus (SE mainland population)		
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
Petauroides volans		
Greater Glider (southern and central) [254]	Endangered	Species or species habitat may occur within area
Petaurus australis australis		
Yellow-bellied Glider (south-eastern) [87600]	Vulnerable	Species or species habitat likely to occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)		
Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Endangered	Species or species habitat known to occur within area
Pteropus poliocephalus		
Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
PLANT		
Calotis glandulosa		
Mauve Burr-daisy [7842]	Vulnerable	Species or species habitat may occur within area
Dodonaea procumbens		
Trailing Hop-bush [12149]	Vulnerable	Species or species habitat may occur within area
Eucalyptus aggregata		
Black Gum [20890]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
Leucochrysum albicans subsp. tricolor		
Hoary Sunray, Grassland Paper-daisy [89104]	Endangered	Species or species habitat likely to occur within area
Pomaderris pallida		
Pale Pomaderris [13684]	Vulnerable	Species or species habitat likely to occur within area
Prasophyllum petilum		
Tarengo Leek Orchid [55144]	Endangered	Species or species habitat likely to occur within area
Senecio macrocarpus		
Large-fruit Fireweed, Large-fruit Groundsel [16333]	Vulnerable	Species or species habitat may occur within area
Swainsona recta		
Small Purple-pea, Mountain Swainson-pea, Small Purple Pea [7580]	Endangered	Species or species habitat may occur within area
Thesium australe		
Austral Toadflax, Toadflax [15202]	Vulnerable	Species or species habitat likely to occur within area
REPTILE		
Aprasia parapulchella		
Pink-tailed Worm-lizard, Pink-tailed Legless Lizard [1665]	Vulnerable	Species or species habitat likely to occur within area
Delma impar		
Striped Legless Lizard, Striped Snake-lizard [1649]	Vulnerable	Species or species habitat likely to occur within area

Listed Migratory Species		[Resource Information]
Scientific Name	Threatened Category	Presence Text
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Hirundapus caudacutus		
White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area

Scientific Name	Threatened Category	Presence Text
[Motacilla flava](#) Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat may occur within area
[Calidris acuminata](#) Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
[Calidris ferruginea](#) Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
[Calidris melanotos](#) Pectoral Sandpiper [858]		Species or species habitat may occur within area
[Gallinago hardwickii](#) Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Lands [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Commonwealth Land Name	State
Communications, Information Technology and the Arts - Telstra Corporation Limited	
Commonwealth Land - Australian Telecommunications Commission [12334]	NSW

Listed Marine Species [Resource Information]

Scientific Name	Threatened Category	Presence Text
Bird		
[Actitis hypoleucos](#) Common Sandpiper [59309]		Species or species habitat may occur within area

Scientific Name	Threatened Category	Presence Text
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area overfly marine area
Bubulcus ibis as Ardea ibis Cattle Egret [66521]		Species or species habitat may occur within area overfly marine area
Calidris acuminata Sharp-tailed Sandpiper [874]	Vulnerable	Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area overfly marine area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]	Vulnerable	Species or species habitat may occur within area overfly marine area
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat likely to occur within area
Hirundapus caudacutus White-throated Needletail [682]	Vulnerable	Species or species habitat likely to occur within area overfly marine area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat may occur within area overfly marine area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area overfly marine area

Scientific Name	Threatened Category	Presence Text
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat may occur within area overfly marine area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area overfly marine area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat known to occur within area overfly marine area
Neophema chrysostoma Blue-winged Parrot [726]	Vulnerable	Species or species habitat may occur within area overfly marine area
Pterodroma cervicalis White-necked Petrel [59642]		Species or species habitat may occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat likely to occur within area overfly marine area
Rostratula australis as Rostratula benghalensis (sensu lato) Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area overfly marine area

Extra Information

Regional Forest Agreements [Resource Information]

Note that all areas with completed RFAs have been included. Please see the associated resource information for specific caveats and use limitations associated with RFA boundary information.

RFA Name	State
Southern RFA	New South Wales

EPBC Act Referrals [Resource Information]

Title of referral	Reference	Referral Outcome	Assessment Status
Not controlled action			
Improving rabbit biocontrol: releasing another strain of RHDV, sthrn two thirds of Australia	2015/7522	Not Controlled Action	Completed
INDIGO Central Submarine Telecommunications Cable	2017/8127	Not Controlled Action	Completed
Not controlled action (particular manner)			
Aerial baiting for wild dog control	2006/2713	Not Controlled Action (Particular Manner)	Post-Approval
INDIGO Marine Cable Route Survey (INDIGO)	2017/7996	Not Controlled Action (Particular Manner)	Post-Approval

Caveat

1 PURPOSE

This report is designed to assist in identifying the location of matters of national environmental significance (MNES) and other matters protected by the Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act) which may be relevant in determining obligations and requirements under the EPBC Act.

The report contains the mapped locations of:

- World and National Heritage properties;
- Wetlands of International and National Importance;
- Commonwealth and State/Territory reserves;
- distribution of listed threatened, migratory and marine species;
- listed threatened ecological communities; and
- other information that may be useful as an indicator of potential habitat value.

2 DISCLAIMER

This report is not intended to be exhaustive and should only be relied upon as a general guide as mapped data is not available for all species or ecological communities listed under the EPBC Act (see below). Persons seeking to use the information contained in this report to inform the referral of a proposed action under the EPBC Act should consider the limitations noted below and whether additional information is required to determine the existence and location of MNES and other protected matters.

Where data is available to inform the mapping of protected species, the presence type (e.g. known, likely or may occur) that can be determined from the data is indicated in general terms. It is the responsibility of any person using or relying on the information in this report to ensure that it is suitable for the circumstances of any proposed use. The Commonwealth cannot accept responsibility for the consequences of any use of the report or any part thereof. To the maximum extent allowed under governing law, the Commonwealth will not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on the contents of this report.

3 DATA SOURCES

Threatened ecological communities

For threatened ecological communities where the distribution is well known, maps are generated based on information contained in recovery plans, State vegetation maps and remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species

Threatened, migratory and marine species distributions have been discerned through a variety of methods. Where distributions are well known and if time permits, distributions are inferred from either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc.) together with point locations and described habitat; or modelled (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where little information is available for a species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc.).

In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More detailed distribution mapping methods are used to update these distributions when time permits.

4 LIMITATIONS

The following species and ecological communities have not been mapped and do not appear in this report:

- threatened species listed as extinct or considered vagrants;
- some recently listed species and ecological communities;
- some listed migratory and listed marine species, which are not listed as threatened species; and
- migratory species that are very widespread, vagrant, or only occur in Australia in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- listed migratory and/or listed marine seabirds, which are not listed as threatened, have only been mapped for recorded breeding sites; and
- seals which have only been mapped for breeding sites near the Australian continent

The breeding sites may be important for the protection of the Commonwealth Marine environment.

Refer to the metadata for the feature group (using the Resource Information link) for the currency of the information.

Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact us page.

Department of Climate Change, Energy, the Environment and Water
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Appendix F – Statement of Heritage Impact prepared by OzArk (OzArk, 2025)

View of the Station Masters residence (former), Item I251.

STATEMENT OF HERITAGE IMPACT

CAPTAINS FLAT STATION MASTER'S RESIDENCE

CAPTAINS FLAT

MAY 2025

Report prepared by

OzArk Environment & Heritage

for Transport for NSW

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DOCUMENT CONTROLS

Proponent	Transport for NSW
Document Description	Statement Of Heritage Impact. Captains Flat Station Master's Residence
File Location	OzArk Job No.
\Ramboll\Captains Flat Station Masters Office 2024\Report	4177

Document Status: V3.2 FINAL	Date: 21 May 2025
Draft V1: OzArk internal edits	V1.0: BC author 3/9/24
Draft V2: OzArk and client edits	V2.0: BC prepares for client release 3/9/24 V2.1: BC incorporates client comments 3/9/24 V2.2: BC incorporates TfNSW comments 5/10/24
Final V3.1: Final document	V3.0: BC incorporated TfNSW comments 11/5/25 V3.1 BD incorporated client comments and revised document 20/5/2025 V3.2: BC edit 21/5/25
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Acknowledgement

OzArk acknowledge the traditional custodians of the area on which this assessment took place and pay respect to their beliefs, cultural heritage, and continuing connection with the land. We also acknowledge and pay respect to the post-contact experiences of Aboriginal people with attachment to the area and to the Elders, past and present, as the next generation of role models and vessels for memories, traditions, culture and hopes of local Aboriginal people.

EXECUTIVE SUMMARY

OzArk Environment & Heritage (OzArk) has been engaged by Ramboll Australia Pty Ltd (Ramboll) on behalf of Transport for NSW (TfNSW) to complete a Statement of Heritage Impact (SOHI) for the Captains Flat Station Master's residence (the proposal). The proposal is within the Queanbeyan Palerang Regional Local Government Area at Lot 1 DP572636. The SOHI is necessitated by the proposed impact to a locally listed item, the Station Masters residence (former) that is listed in the Queanbeyan Palerang Regional Local Environmental Plan 2022 (Queanbeyan Palerang LEP) as Item I251.

An inspection of the study area was completed by OzArk Principal Archaeologist, Ben Churcher, on 24 June 2024.

As part of a larger remediation program, the Legacy Mines Program propose to undertake remediation works at the legacy Lake George Mine, located immediately west of the township of Captains Flat, New South Wales.

Mining operations (for silver, gold, copper, lead, and zinc) in the area commenced in the early 1880s with several small operations amalgamating to form Lake George Mine, which started production in 1939. Mining continued until 1962, when the Lake George Mine officially closed. The mine site is contaminated with metals and metalloids (including lead, arsenic, copper, and zinc) and sulphur and has undergone a succession of remediation works since 1972.

TfNSW has identified lead contamination in surface soils in the Captains Flat Railway Precinct, including within the grounds of the Station Masters residence (former).

This SOHI presents the eight options that were considered regarding the remediation of the study area and notes that Option 8 (demolish the assets, remediate the land to residential criteria, and to resume the vacant land into the rail corridor and form part of the *Captains Flat Heritage Trail – Pathway to Gold*) is the preferred option of TfNSW (**Table 3-1**).

This SOHI acknowledges that Option 8 (**Table 3-1**) will have a major impact on the heritage values of the Station Masters residence (former) (Item I251).

The proposed remediation works are subject to the environmental impact assessment and planning approval requirements of Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Division 5.1 of the EP&A Act specifies the environmental impact assessment requirements for activities undertaken by public authorities, such as TfNSW, which do not require development consent under Part 4 of the EP&A Act. Several State Environmental Planning Policies (Resilience and Hazards 2021, Transport and Infrastructure 2021, Resources and Energy 2021) are also applicable to the proposal. None of the SEPPs allow harm to a locally listed item without consultation with an applicable council who will consider the heritage conservation provisions in the LEP (Section 5.10) in their response.

As the preferred option will result in major harm to the heritage values of a locally listed item, consultation with the Queanbeyan Palerang Regional Council is required. The council must consider the effect of the proposed development on the heritage significance of the item or area concerned and will require this SOHI to be prepared that assesses the extent to which the carrying out of the proposed development would affect the heritage significance of the heritage item concerned.

Section B10.1.5 of the Palerang Development Control Plan (DCP) 2015 states that the retention of heritage items is a prime objective. The DCP notes that typically demolition will only be permitted where the existing condition poses a significant health or safety risk that is beyond reasonable economic repair.

Under Option 8, the demolition of the Station Masters residence (former) is proposed due to the need to remediate the site and make it safe for public use. As the study area presents a risk to public safety, demolition may be permitted under the DCP.

The following recommendations are made in relation to the Station Masters residence (former) (Item I251) following Option 8 in **Table 3-1**:

1. TfNSW must consult with the Queanbeyan Palerang Regional Council before the demolition of the Station Masters residence (former) (Item I251) can proceed. TfNSW must take into consideration any response to the notice that is received from the council within 21 days after the notice is given. The consultation with the Queanbeyan Palerang Regional Council must demonstrate evidence that the demolition is required on public health grounds.
2. The following mitigation against the loss of heritage values associated with Station Masters residence (former) will be followed:
    a. TfNSW will ensure that the Station Masters residence (former) is archivally recorded prior to demolition and an archival report provided to the Queanbeyan Palerang Regional Council for their records.
    b. TfNSW will commission a brief heritage interpretation plan to guide the heritage interpretation at the site following the structure's demolition.
3. No ground disturbing impacts or the storage of materials will occur within the heritage curtilage of the adjacent listed item: the Captains Flat Railway Goods Shed, Weighbridge, Gantry and Turntable (Item I266) (see **Figure 1-4** for the location of this curtilage).
4. It is assessed that there is a low potential for archaeological deposits or further unknown historic items with local or state heritage significance within the study area. However, if during the carrying out of the proposal, suspected significant historic items

are encountered, the work at that location must cease and the TfNSW *Unexpected heritage items procedure* (July 2022) must be followed.

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STATEMENT OF HERITAGE IMPACT (SOHI) COVER PAGE

Name of heritage item

OzArk Environment & Heritage (OzArk) has been engaged by Ramboll Australian Pty Ltd (Ramboll) on behalf of Transport for NSW (TfNSW) to complete a Statement of Heritage Impact (SOHI) for the Station Masters residence (former) at Captains Flat, New South Wales (the proposal).

Listing

The Station Masters residence (former) is listed in the Queanbeyan Palerang Regional Local Environmental Plan 2022 (LEP) as Item #I251.

Address and location

The heritage item is located at 2 Copper Creek Road, Captains Flat (Lot 1 DP572636) (**Figure 1-1**).

Statement of Heritage impact for:

The SOHI is necessitated by the proposed impact to a locally listed item, the Station Masters residence (former), Item I251.

Ramboll developed a Conceptual Site Model for the township of Captains Flat as a representation of contaminant sources, migration pathways, and potential receptors for potential contaminants related to the legacy Lake George Mine (Ramboll 2022a). Potential human health risks for lead in soil were considered to be high in a number of areas of Captains Flat including the rail corridor. Targeted assessment of the former Station Masters Cottage at 2 Copper Creek Road identified elevated concentrations of lead in soil around and beneath the cottage that represent drivers for remediation (Ramboll 2022b).

As part of a larger remediation program, the Legacy Mines Program propose to undertake remediation works at the legacy Lake George Mine, located immediately west of the township of Captains Flat, New South Wales. The purpose of the proposed remediation works is to reduce the risk of offsite contamination through airborne dust and surface erosion generating contaminated runoff from the continued oxidation of sulfidic mineral waste at Lake George Mine. The proposed remediation works are required to prevent potential environmental and human health risks to people accessing the site, to residents in the vicinity of the site and in the township of Captains Flat, and to aquatic ecosystems and downstream users of the Molonglo River.

TfNSW has identified lead contamination in surface soils in the Captains Flat Railway Precinct, including within the grounds of the Station Masters residence (former). TfNSW is planning to align remediation of the Captain's Flat Railway Precinct with those at the Lake George Mine.

Prepared by

This SOHI has been prepared by Ben Churcher, Principal Archaeologist and Director with contributions by Dr. Bernadette Drabsch, Heritage Consultant, OzArk Environment & Heritage.

Prepared for

OzArk has been engaged by Ramboll Australian Pty Ltd (Ramboll) on behalf of Transport for NSW (TfNSW).

Date

The final report was prepared on 21 May 2025.

Issue

This report is V3.2, which incorporates feedback from Transport for New South Wales (TfNSW).

1 THE HERITAGE ITEM

1.1 SITE DESCRIPTION

The heritage item is located at 2 Copper Creek Road, Captains Flat, New South Wales, 2623, within the Queanbeyan-Palerang Regional Local Government Area (LGA) (the study area) (**Figure 1-1**).

The Station Masters residence (former) sits adjacent to the Captains Flat railway precinct, which includes the railway station platform, station buildings, goods shed and gantry crane (**Figure 1-2**).

The village of Captains Flat contains 25 items listed by local councils under the Local Environment Plans under the Environmental Planning and Assessment Act, 1979 and State government agencies under s.170 of the Heritage Act.

Figure 1-1. Map showing the location of the heritage item.

Figure 1-2: Aerial showing a detail of the study area in relation to railway precinct.

1.1.1 Heritage item

The State Heritage Inventory (SHI) describes the Station Masters residence (former) as '*a single storey weatherboard house with centrally pitched hip roof and verandah under the main roof on two sides'*. However, this is not accurate as the building is better described as 'single storey weatherboard and fibrous cement sheet (fibro) house with centrally pitched hip roof and verandah under the main roof at the front' (**Figure 1-3**).

1.1.2 Heritage listings

A search of the Local heritage conservation area, Local heritage item, State agency s170 heritage and conservation register, State Heritage register, Commonwealth Heritage List, National Heritage List, World Heritage buffer zone and World Heritage List returned one listing (**Table 1-1**).

Table 1-1: Statutory heritage listings.

Listing type	Item name and document details	Listing number
Local heritage item	Station Masters residence (former), Captains Flat. Queanbeyan-Palerang Regional LEP 2022	LEP #I251

Additionally, the item is listed as item no. CF19 on the Heritage Inventory - Lake George, Molongo Valley & Burra (Plowman 2009) and is recorded by the Queanbeyan Palerang Regional Council as Heritage Item ID: 2921730, according to the State Heritage Inventory.

1.1.3 Site and its context

One item within the study area is listed in Schedule 5 of the Queanbeyan Palerang LEP 2022: the Station Masters residence (former); Item I251.

The Station Masters residence (former) dates to the opening of the railway line in 1939/1940 (**Figure 1-3**). The house is a typical construction for its period and consists of brick pier foundations and a timber and fibro structure with a hipped galvanised tin roof. The original structure was a simple, square building with a simple brick chimney.

The rear of the house has been extended in the past 20–30 years by the addition of an extra room and a large covered wooden deck. This addition does not appear in the 1961 aerial (**Figure 1-8**) and the materials used in its construction date it as a late twentieth century construction.

Original double hung sash windows remain at the front (southeast) and south-western sides of the house. External windows on the north-eastern side of the house have been replaced and all windows at the rear (northwest) are modern. The roof has been recently replaced, and the house looks to be in generally good repair.

The garden is unremarkable and consists of common plantings and large areas of lawn. A large colorbond shed has been built along the south-western boundary.

These is no evidence of former structures within the yard area of the Station Masters residence (former).

The Station Masters residence was sold in 1974.

Figure 1-3: Views of the Station Masters residence (former).

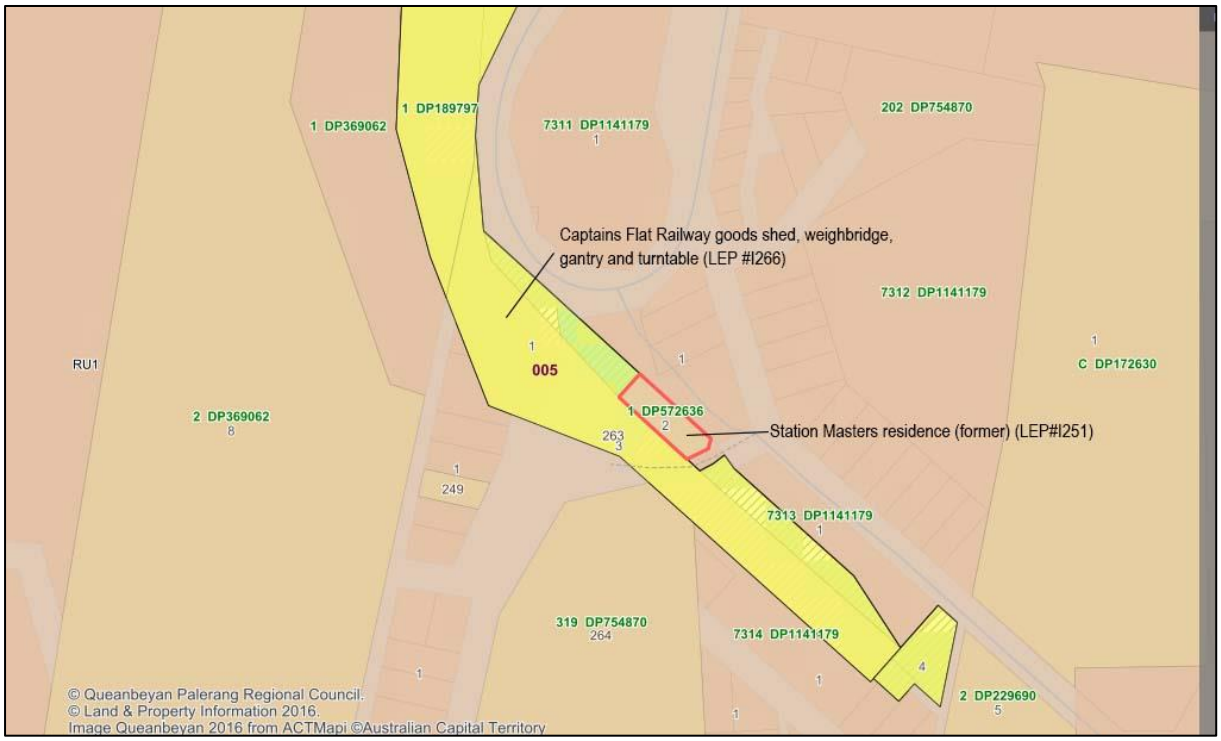
	
1. View of the residence to the northwest.	2. View of the front of the residence (view to northwest).

	
3. View to the southeast of the rear of the residence.	4. View south of the rear of the residence showing the more-recent extension.

The Captains Flat Railway Goods Shed, Weighbridge, Gantry and Turntable listed as Item I266 is directly adjacent to Item I251.

Figure 1-4 shows the LEP mapped heritage curtilages.

Figure 1-4: LEP listed heritage curtilages (QPRC on-line mapping).



1.1.4 The proposed works area

The proposed works (demolition) will take place within the study area demarcated in **Figure 1-2**.

1.2 SITE SUMMARY HISTORY

A comprehensive history Lake George Mine & Captains Flat 1858–1963 is presented in the Lake George Mine: Assessment of Cultural Heritage Values (Grinbergs 2006) and 'Riches beneath the Flat – A history of the Lake George Mine (LGM) at Captains Flat' (Mainwaring 2011). A summary of these documents is provided below and the documents listed above should be consulted for a more comprehensive account.

1.2.1 Documented history

The Captains Flat area had two brief periods of prosperity relating to mining. The town was one of the many gold mining prospects that had a moment of glory in the 1880s and more substantial base metal mines were established there in the 1880s. Prior to 1881 mining was intermittent and largely confined to alluvial mining along the Molonglo River. There was no town or village at the 'Flat', lonely miner's camps, and these would have been located along the Molonglo from the falls to Foxlow Station (Grinbergs 2006: 2). During the mid to late 1880s more substantial base metal mine were established there and an injection of English capital in 1896 raised hopes of prosperity and large processing facilities and a steam operated tramway were established. Unfortunately, the processing technology of the time could not handle the silver-lead-zinc sulphide ores and the mine closed in 1899 (Mainwaring 2011). The township of Captains Flat prospered during the 1880s, however the downturn in mining activities saw business prospects deteriorate. There were reports of a 'great exodus to other mining fields, in particular the West Wyalong goldfield. By 1911, Captains Flat was described as 'becoming less and less. One house after another was pulled down and taken away to Queanbeyan or elsewhere for erection' (Grinbergs 2006: 30).

The development of the 'selective flotation' process during the early twentieth century, particularly at Broken Hill, brought new hope for development of the ore bodies at Captains Flat. English capital came to the fore again and the company Lake George Mines Limited was floated in 1927 to develop the field. The onset of the Depression and negotiations over the construction of the branch railway line from Bungendore to Captains Flat delayed the start of production until 1939.The ore body of the Lake George Mine was highly complex and consisted of an admixture of lead zinc, copper and iron sulphides. During the 1940s the workforce numbers ranged between 439 to 456 people and the pollution of the Molonglo River was substantial (Grinbergs 2006: 13).

In 1948 mining operations were seriously curtailed by an industrial dispute over the lead bonus. The silver-lead-zinc mines of Broken Hill had paid the bonus to their men since 1925, but LGM had tried to distance itself from the practice. The industrial disputes continued to seriously disrupt production during 1949. By 1951 the main shaft was extended, a further shaft sunk and the number of employees increased to 595, with many new workers cottages completed. However, conditions in the township of Captains Flat were not considered ideal. Rev. Fr. M.J. Crow of St. Brigid's church made the following complaint:

> *We live in a village which offers few amenities, a place of small houses, which will shortly prove inadequate to accommodate four children, a filthy water supply, no dance hall, a picture theatre which sits 300 of a 2000 town population, unsealed streets, no sewerage and roads which make owning a car a dire liability* (Queanbeyan Age, 14 July 1953).

The importance of mining activities at Captains Flat during the post 1937 phase was significant. Grinbergs notes that 'it was one of the largest base metal mining fields in NSW, if not in Australia.

Due to the exhaustion of the ore reserves mining ceased in 1962 and the mining operations ceased. Grinbergs observes that:

> *'While mining may have ceased, a negative aspect of its legacy continued for many years in the form of pollution and contamination. During the life of the mines four million tons of ore were milled to produce zinc, pyrites, lead, copper and gold, and 2.5 million tons of mine waste were stockpiled in evaporation dams and slime dumps, which covered an area of 15 hectares. The dumps contained significant qualities of heavy metal and were extremely acidic, with very high levels of salinity. Over the years, the evaporation dams were continually built up with fresh material until the slime dumps reached considerable height. There were six slime dams, three of which were collectively called the northern dumps and three the southern dumps…. The level of pollution was aggravated by the collapse of mine waste dams in 1939, 1942 and 1945.*

To export goods from the mine, a railway line was surveyed on 15 December 1937 and construction commenced in February 1938, with 600 men employed. An article in the Sydney Mail (8 December 1937) notes the following:

> *The heavy motor traffic hauling the machinery and equipment necessitates reconditioning of the existing road, and a new railway line about twenty-two miles long is to be built by the Railway Commissioners, under an agreement with the company [Lake George Mines], early in the new year. This line will branch from the existing line at Bungendore and will enable the concentrates to be hauled direct to Port Kembla for further treatment.*

Figure 1-5: Goods train at Captains Flat station (n.d.) Source: Canberra & District Historical Society Inc.

The line opened for general traffic on 17 June 1940, and as noted in the article above, the main purpose of the railway had always been to serve the mine (**Figure 1-5**). Despite this, passengers were still carried and a separate station and platform was built to cater for the towns needs as distinct from the mine traffic and freight (**Table 1-2**). A rail motor took residents into Queanbeyan on Saturdays. Railway records for 1945 indicate that revenue for the line was primarily connected to the transportation of goods (Mainwaring 2011: 63).

Table 1-2: Revenue derived at Captains Flat railway station, 1945.

	Number	Revenue
Tickets sold	4,163	
Coaching		£3,244
Goods		£71,355
Livestock		£55
Mixed		£110
Total		£74,764

The company made use of the railway for the removal of mine tailings until the end of June 1963 and in November 1964 steps were taken to close the line as the remaining goods traffic was negligible. In January 1964 the Monday rail motor connection with the down Cooma Mail which also connected with the down Canberra Monaro and the up morning train from Canberra to Goulburn ceased. The goods service was reduced to once a week from 12 April 1964. During

1966-67 there was only a small amount of traffic handled, and the last train ran on 28 August 1968 (Grinbergs 2006: 46).

Sunday, 10 August 1969 saw the temporary re-opening of the line as the location for the railway scenes in the feature film, Ned Kelly, starring Mick Jagger. The special train scheduled for the film was hauled by Locomotive 1243. It was renumbered 176 for the film and fitted with a kerosene headlamp.

1.2.2 Previous physical changes

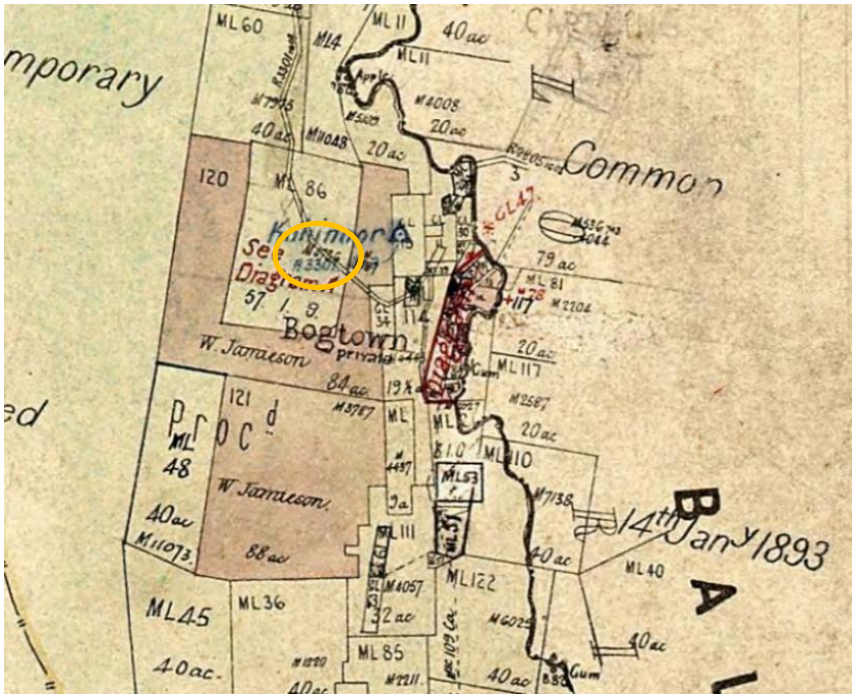
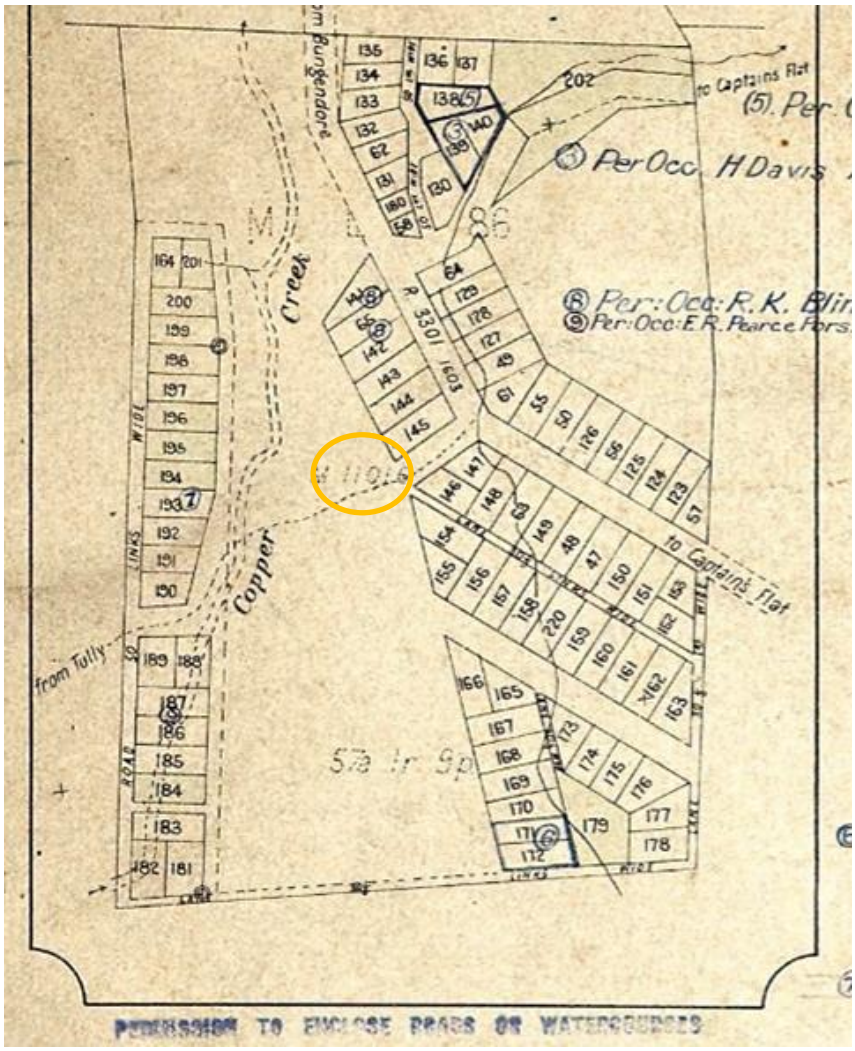
Parish maps dating back to 1892 have been consulted to determine if land allocations provided evidence that the Station Masters residence (former) was preceded by earlier buildings.

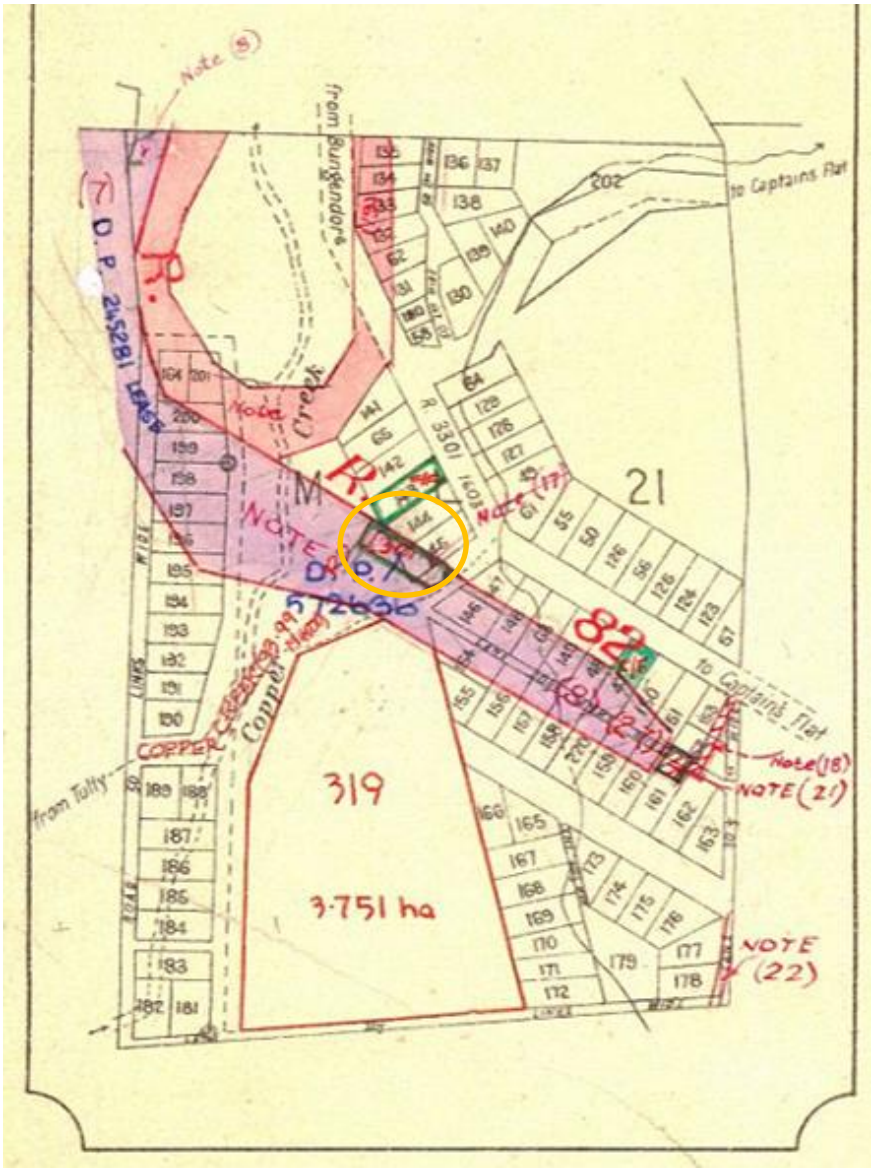
These maps show that in the late nineteenth century the area where the station master's residence would be built was an undeveloped mining lease (**Figure 1-6**). By the twentieth century, following the boom in building at Captains Flat between 1881 and 1899, the area around the Station Masters residence (former) was divided into many lots for future housing development. This lot layout did not consider a future railway corridor through this area. By 1928, a railway corridor had been proposed despite this being nine years prior to the resurveying of the railway line in 1937. The 1928 map shows that the rail corridor did not respect the earlier lot layout (that had not been developed at this stage) and a location where the Station Masters residence (former) would be built has been identified in the lot allocation. In 1942, following the railway opening two years previously, the cadastral layout of the area around the Station Masters residence (former) was formalised, although the remaining building lots were never developed.

Based on available evidence, it does not appear to have been any structures on the lot now occupied by the Station Masters residence (former) before the construction of the current fibro and weatherboard cottage in 1939/1940. The Braidwood Dispatch and Mining Journal (23 June 1939) records the following notice:

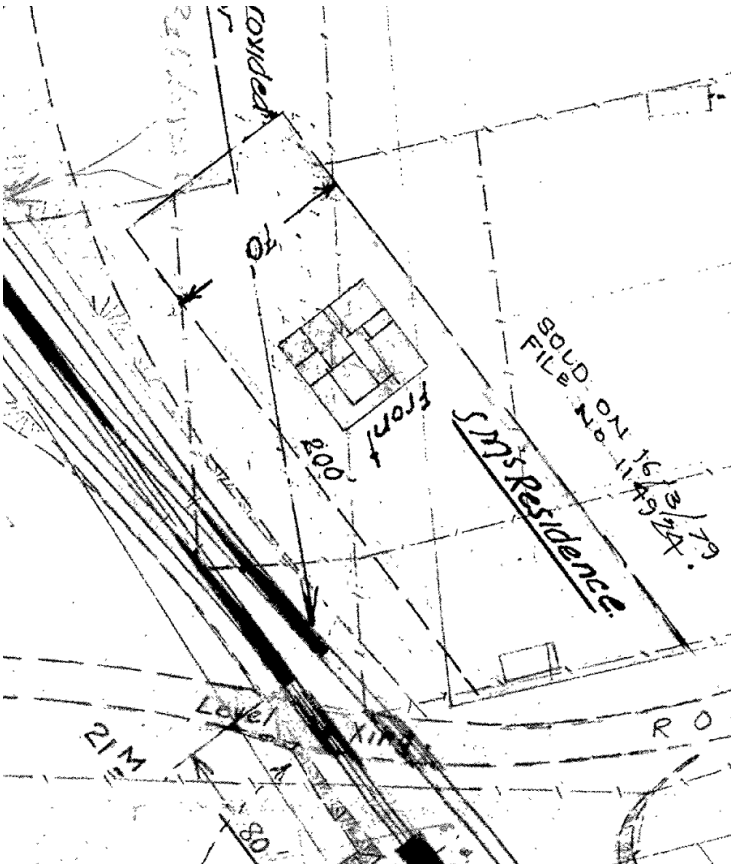
> *Tenders have been called for the erection of railway buildings at Captains Flat, marking another step towards the completion of the Bungendore-Captain Flat railway line. The specifications call for the construction of station buildings of weatherboard, goods shed of galvanised iron and asbestos, and a station master's residence of weatherboard and asbestos cement.*

Figure 1-6: Parish maps showing the area around the Station Masters residence (former) (source NSW Land Registry Services).

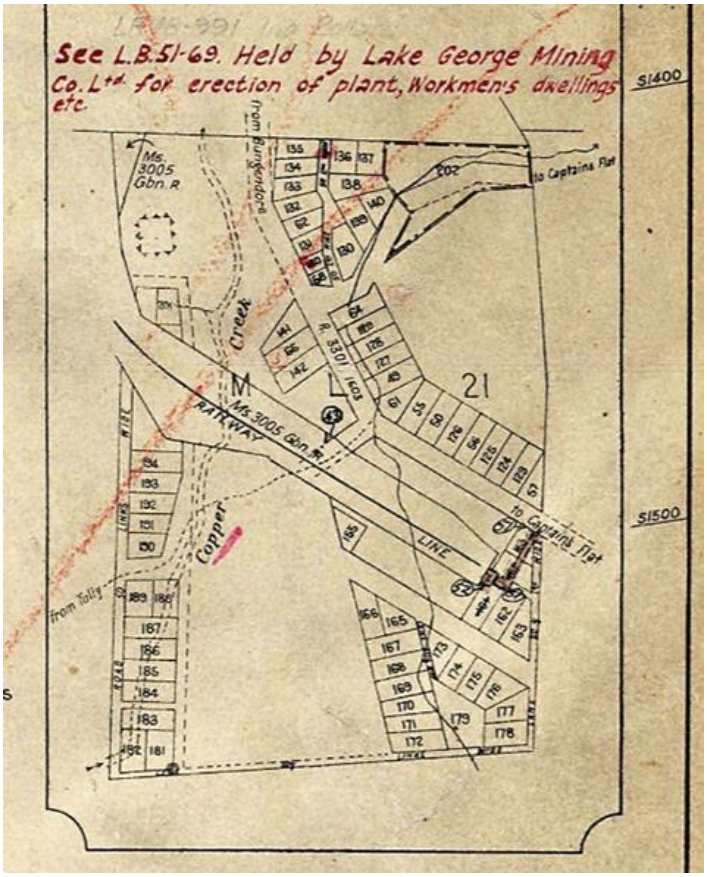
	1. 1892 parish map of the area around the Station Masters residence (former) (circled) showing the land to be part of mining lease 86.
	2. 1911 parish map of the lot layout around the Station Masters residence (former). At this time the future railway corridor was not considered in the layout of the lots. No building allocation is shown where the Station Masters residence is now located (circled).



3. 1928 parish map of the lot layout around the Station Masters residence (former) showing the formalisation of the railway corridor. The map also shows the site for the Station Masters residence selected (circled).



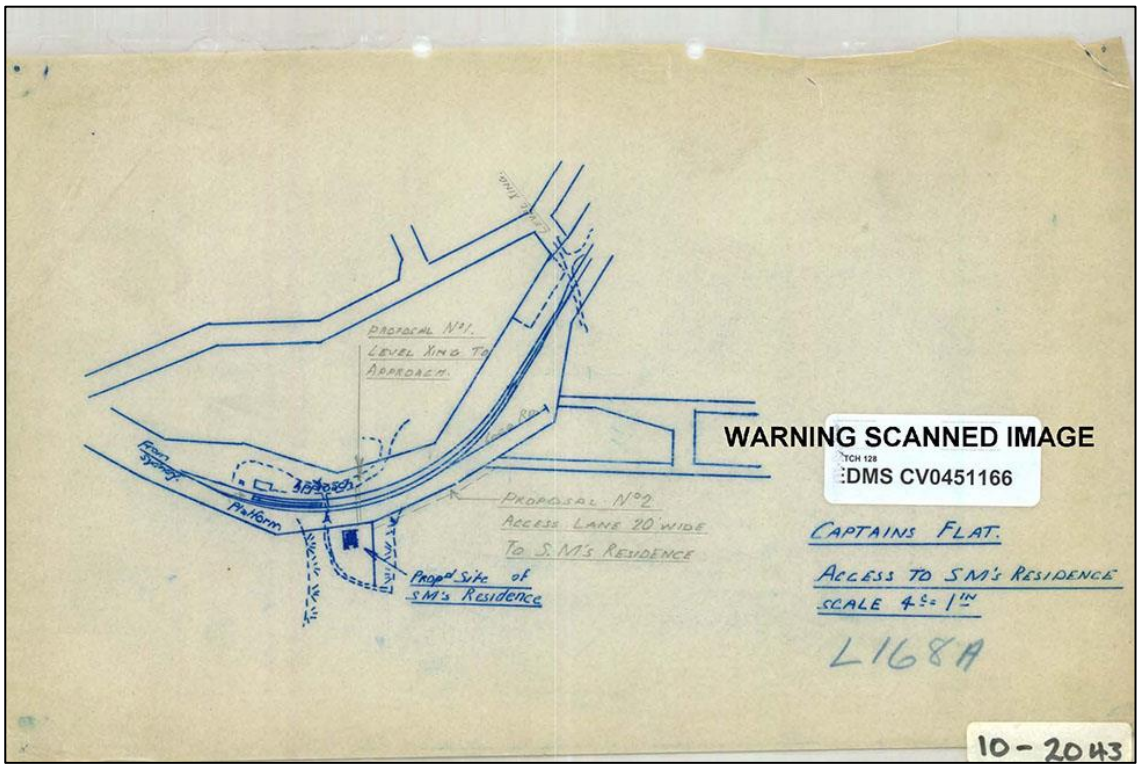
4. An excerpt from 1939 survey plan provided by TfNSW shows the Station Masters Residence including some indication that the original building excluded the rear covered deck now present (Department of Railways NSW 1939).



5. 1942 parish map of the lot layout around the Station Masters residence (former) showing the formalisation of the railway corridor and the remaining building lots. The Station Masters residence is marked as #43.

An undated plan supplied by TfNSW shows a proposed location for the station master's residence on the western side of the railway line and to the southwest of the railway platform (**Figure 1-7**).

Figure 1-7: Undated plan showing the proposed site of the station master's residence (source TfNSW).

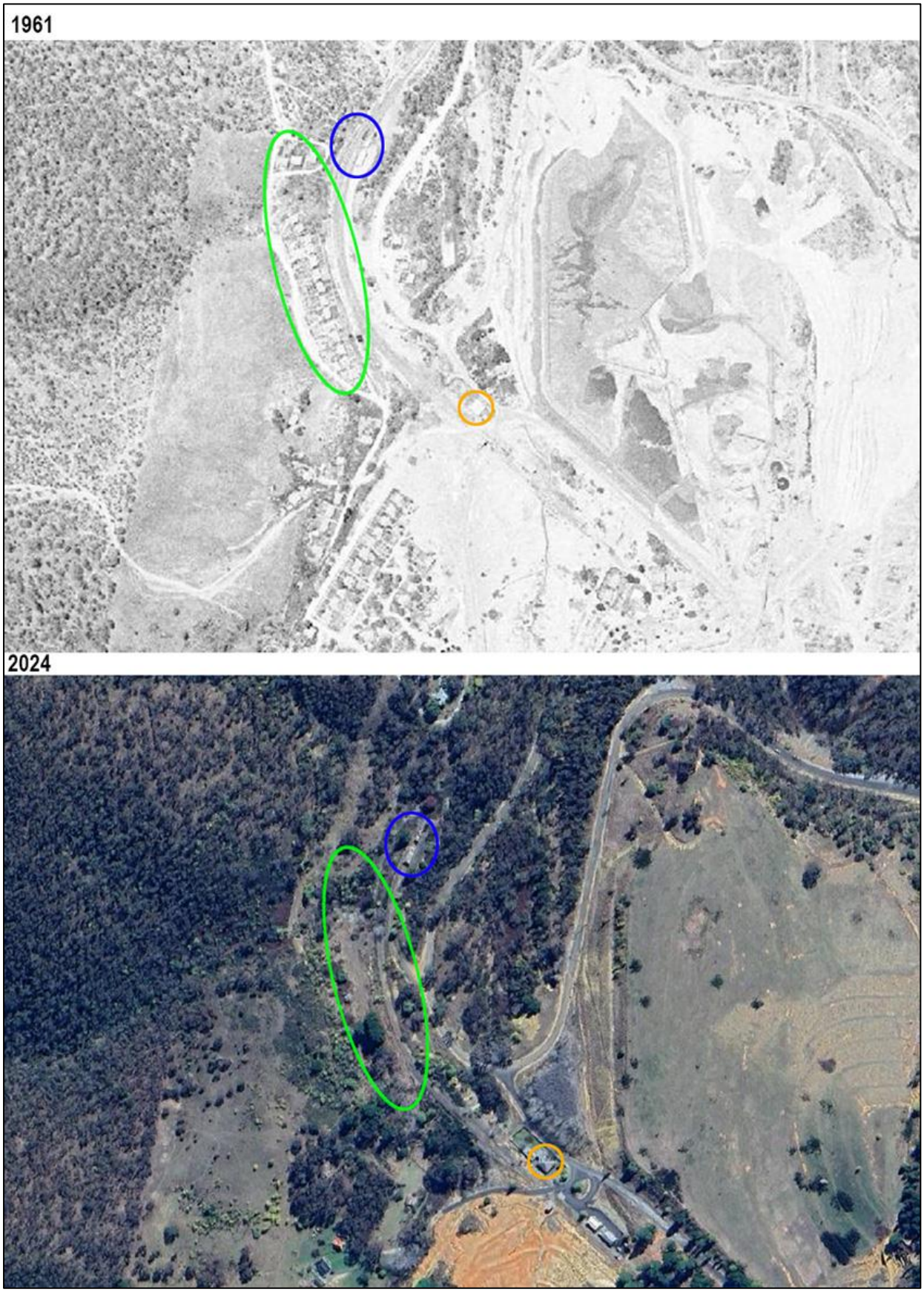


As the Station Masters residence (former) is not at this location today, the assumption is that at some point after the undated plan was drafted, the proposed location was changed and the current site selected, or that the structure has been moved. All evidence, however, suggests that the first option is the most plausible; the Station Masters residence (former) has not moved, and the current location is where the structure has always been located.

The Station Master's residence, into the 1960s, retained its original plan and existed in an industrial landscape of railways, mines, and roads. In more recent years, an extension and verandah has been added to the north of the house and a large shed has been constructed in the back yard (**Figure 1-3**).

A 1961 aerial (**Figure 1-8**) shows a structure identical in size and orientation to the Station Masters residence (former) within the study area (orange ellipse). There has also been no decrease in the number of structures associated with the railway platform (blue ellipse) between 1961 and 2024. However, a number of structures that were present on the western side of the railway line in 1961 are no longer present (green ellipse). This includes structures at the location indicated in **Figure 1-7** as the proposed site for the station master's residence and a row of what appear to be railway worker's cottages.

Figure 1-8: Composite showing the study area in 1961 and currently (source NSW Spatial Services and Google).



The Braidwood Dispatch and Mining Journal (3 June 1938) records the construction of these cottages, noting:

It is understood that extensive building operations are still being carried on at Captain's Flat, where 60 cottages are being erected for the workmen. As the 1961 aerial is taken 21 years after the construction of the Station Masters residence (former), it is implied that the Station Masters residence (former) has been at its current location since construction.

The location of the Station Masters residence and the close relationship it held with the surrounding rail paraphernalia is also confirmed by other photographs taken in the 1960s, which demonstrate that few changes have been made to the original residence. **Figure 1-9** shows the simple, square house with surrounding water tanks at rear, white walls and a light-toned tin roof. **Figure 1-10** shows the Station Masters residence with brown coloured walls and the light-toned tin roof. **Figure 1-11** shows the Station Masters residence with two-toned walls (brown on the weatherboards and cream fibro cement sheeting with a brown, possibly rusty, tin roof.

Figure 1-9: Photograph taken in 1962 showing the Station Masters residence in association with the rail yard with visitors in attendance for a touring train. Source: The Railway Archives.

Figure 1-10: Photograph taken in the 1960s showing the Station Masters residence with the light toned tin roof and walls painted brown. Souce: The Railway Archives.

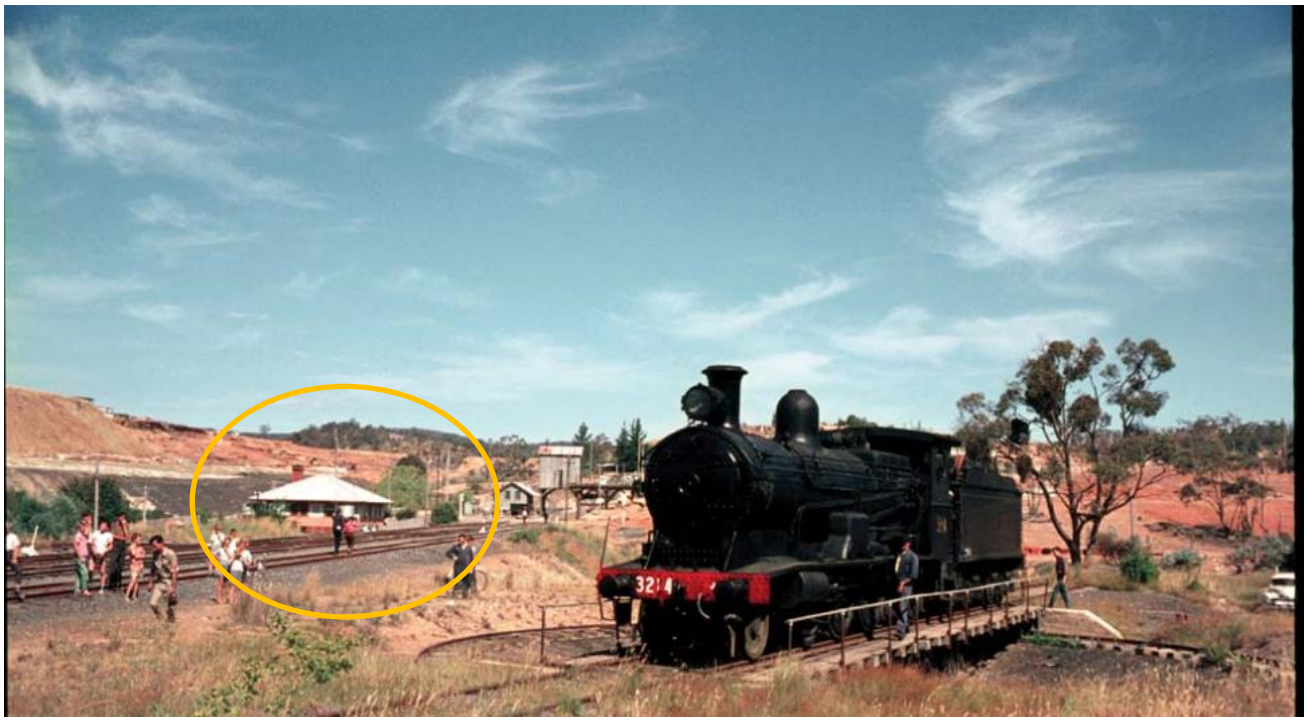


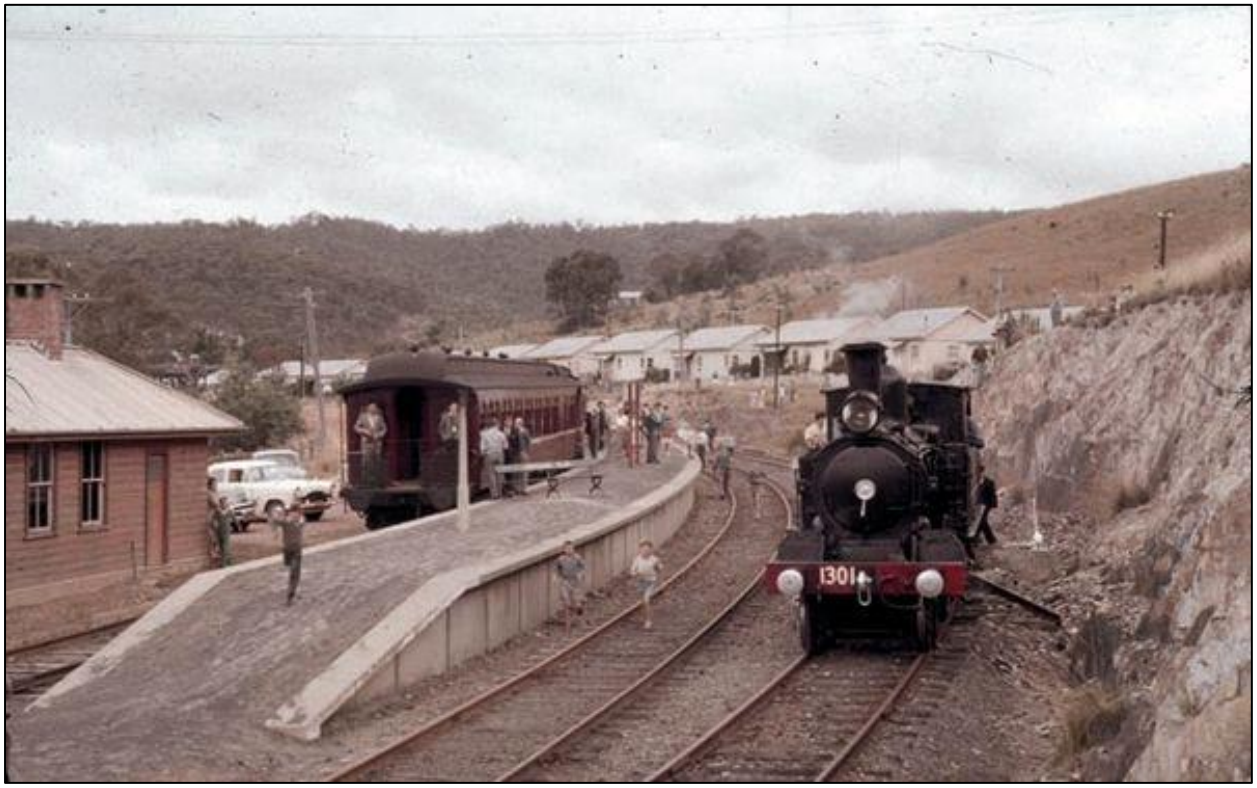
Figure 1-11: Photograph from 1960s showing the Station Masters residence and rail paraphernalia. Source: Dunedoo (Flicker).

The items near the Station Masters residence (former) relating to the railway and listed as part of the Captains Flat Railway Goods Shed, Weighbridge, Gantry and Turntable (Item I266) are an interpretable remnant of the former railway activity that took place in the area (**Figure 1-4**). The

Station Masters Residence (former) is part of this railway group and assists in interpreting the overall values of the railway precinct.

The Station Masters Residence (former), being constructed in 1939/1940, was built to facilitate the second mining phase at Captains Flat when a branch line was constructed to service the recently re-opened mine. As World War II had begun, the need to secure mineral supplies became paramount, and the new branch line assisted with the movement of raw materials. The industrial nature of the branch line is shown in the items that constitute the railway group at Captains Flat, the island platform, station building, turntable, station master's residence, and the weighbridge. These items were built to be purely functional and without adornment. The platform was without shelter, there was a simple weatherboard railway station building on the downside of the platform, and the station master's residence was a simple fibro and weatherboard cottage. As discussed above (**Section 1.2.1**), this was in keeping with rural rail developments of that time.

Figure 1-12: An enthusiast's special at Captain's Flat, January 1962. This view shows the island platform, station building, and a row of now-demolished workers cottages in the background.



1.2.3 Physical analysis

The Station Masters residence consists of a single storey square dwelling. The external walls feature weatherboards around the lower portion and fibrous cement sheets(fibro) feature in the upper portion. The residence has a centrally pitched hip roof and verandah under the main roofline at the front.

1.2.3.1 Comparative analysis

A brief review of other station master's residences documented within the Conservation Guide (Futurepast Heritage 2014) shows that the Station Masters residence (former) does not fit clearly into any of the predetermined categories for Heritage Railway Residences. The Conservation Guide reviews the dominant typology of station master residences, providing 11 recognised types within NSW. None of the Types match the architecture of the Captains Flat Station Masters residence (former), unless it is included in Type 11: 'one-off' buildings and pre-existing residential buildings').

As comparisons cannot be drawn with similar Station Masters residences, a wider review of station buildings is helpful. In Sharp's Masters' Thesis (1982) on 'The Railway Stations of New South Wales 1855 – 1980' he observes that during the 'Early Modern Period (1930–1944), engineers:

> *… employed materials in what appears to be a random pattern. After the cessation of the use of pre-cast concrete units in 1932, engineers used brick, timber and fibro sheeting in rural areas with much the same pattern occurring in metropolitan areas.*
>
> *The end of rail construction occurred in 1932. After that, the only lines opened until 1978 were those starting in 1939 between Sutherland and Cronulla, Bungendore and Captains Flat, St. Marys and Ropes Creek and Rutherford Racecourse and Rutherford, all within the Early modern period…. Not only did engineers use materials in a somewhat random pattern, they also treated floor plans in an inconsistent manner.*

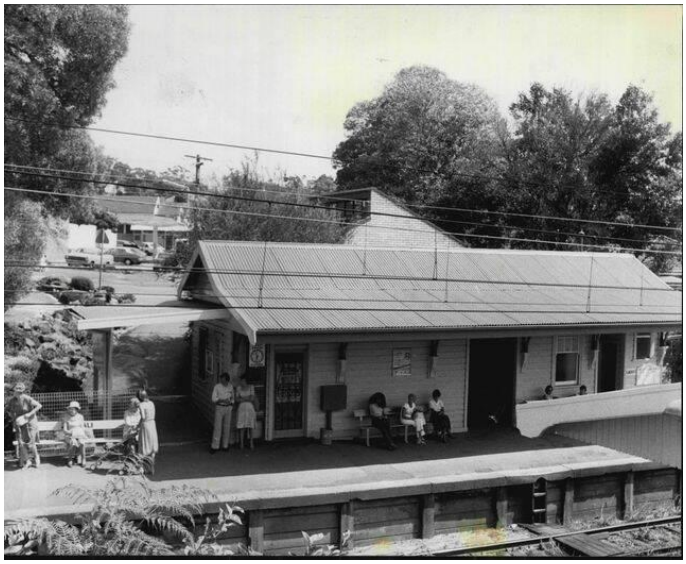
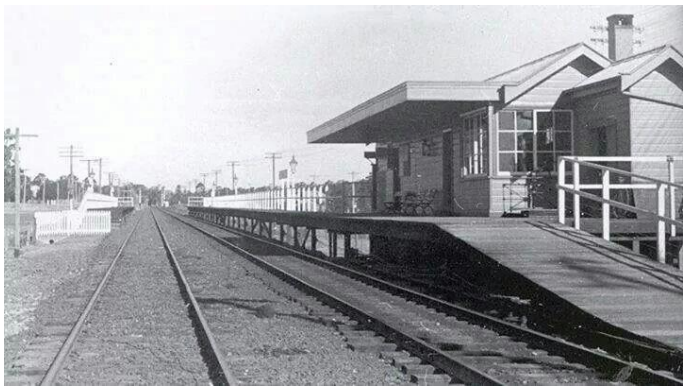
Sharp notes that the use of island platforms for branch line termini and an off-platform house like structure for the station at Captains Flat were considered 'bizarre' (Sharp 1982: Section 4.2: 60). He also makes the following observation, 'It was in the period from about 1939 that Beaver, as Acting Chief Civil Engineer, approved the erection of a number of structures in other than brick. The first example was in timber at Quakers Hill in early 1939. The next was the off-platform timber building at Captains Flat in 1940, followed by Dunheved, Ropes Creek, Leightonfield, Rutherford and Menindee in 1941. The final non brick structure was at Illabo in 1942… Beaver used weatherboards below the window sills and fibro sheeting above sills' (Sharp 1982: Section 4.2: 72).

Sharp proposes that the choice of materials may reflect the non-availability of manpower and materials during the second World War (Sharp 1982: Section 4.2: 72).

As the construction of that Station Masters residences reflected the same architectural trends of the other station buildings, it is possible to assess rareness through comparative analysis of the railway stations built in the same era, as listed by Sharp (**Figure 1-13**).

Figure 1-13: Comparative analysis of railway station buildings constructed during the Early Modern Period in NSW.

	Menindee railway station was also constructed in the Early Modern Period. It features similar weatherboard and fibro sheeting on walls, brick piers and a hipped roofline.
	Leightonfield Railway Station features weatherboards and the distinctive Early Modern Period railway building architectural features.
	Illabo railway station features a combination of weatherboards and fibro sheeting and a hipped roofline.

	Jannali Station showing the simple weatherboard construction of the Early Modern Period.
	Quakers Hill Station showing the architectural features of the Early Modern Period.

Comparative analysis shows that the Railway structures at Captains Flat are like those constructed elsewhere in NSW at that time. However, examples are limited reflecting the limited expansion of the railway lines at that time. While some station buildings were constructed out of brick, most were built from weatherboard and fibro sheeting and the architectural plans emphasised function rather than decorative features.

As noted above, the Captains Flat branch line came at the end of the NSW railway building program and most station master's residences date to earlier periods, principally the mid to late nineteenth century **(Figure 1-13**). This makes the 1939/1940 residence at Captains Flat a late example of a station master's residence. While most station master's residences were functional houses, those dating from earlier periods of rail development were often substantial buildings constructed of masonry with decorative features. While all are examples of the dominant building style of their day, the simple, utilitarian construction style of the Station Masters residence (former) at Captains Flat is notable and it is reflective of the Early Modern Period of railway architecture. As a limited number of railway buildings were constructed during this period (1939 – 1944), and fewer station master's residences, it makes the Station Masters residence (former) of Captains Flat an unusual example, however the architectural style itself is very common in the region.

2 SIGNIFICANCE ASSESSMENT

Heritage significance is the sum of the heritage values that a place or object has, as assessed against the NSW Heritage Council assessment criteria (DPE 2023b) and can represent, as set out in the Burra Charter (Article 1.2), the aesthetic, historic, scientific, social, or spiritual value for past, present or future generations.

Items of state heritage significance have values for the people of NSW, while items of local heritage significance have values important primarily to the local community.

A local heritage listing is included in a LEP or SEPP made under the *Environmental Planning and Assessment Act 1979* (EP&A Act).

For the significance of heritage elements near Station Masters residence (former), see Grinbergs 2006. These elements include the weigh station, turntable, railway lines, platform, and gantry that are part of the listing for the Captains Flat Railway Goods Shed, Weighbridge, Gantry and Turntable (Item I263). Grinbergs 2006 assigns exceptional significance (Criterion[a]) to the weigh station and turntable and moderate level of significance (Criterion[a]) for the railway lines, platform, and gantry. The weigh station is assessed as having exceptional significance under Criterion(c), while the turntable, railway lines, platform, and gantry are assessed as having low significance under Criterion(c). The weigh bridge is assessed as having an exceptional level of significance against Criterion(d) and Criterion(e).

Grinbergs 2006 does not assess the significance of Station Masters residence (former), and the residence is not mentioned in association with the railway elements noted above.

2.1 STATEMENT OF SIGNIFICANCE

The Station Masters residence (former) is a representative example of a building style frequently used in the post WWII era. Constructed on a timber frame, the fibro (upper register) and weatherboard (lower register) house is utilitarian and without embellishments. The original fabric is largely intact, although the rear of the house has been altered by the addition of an extension. There is no evidence of former structures around the Station Masters residence (former) that precede the current structure. A large Colourbond shed has been recently constructed in the back yard and a reasonably sympathetic addition with a large, covered verandah has been constructed at the rear of the house.

The Station Masters residence (former) has been assessed as having significance at a local level. The State Heritage Inventory (SHI) notes:

> *Captains Flat is a good example of a terminus station from the last period of country railway construction before the system started to contract around WWII. The station*

master's residence is a representative example from that era. Historic (a), aesthetic (c), social (d) and representative (g) heritage significance.

The item has been re-assessed (**Table 2-1**) using current assessment thresholds established by the NSW Heritage Council. This updated assessment shows that the Station Masters residence (former) has local heritage significance due to its historic values and representative heritage values, however, the item no longer meets the assessment criteria for aesthetic or social heritage values.

Table 2-1: Assessment of significance. The Station Masters residence (former).

NSW Heritage Council Criteria	Description	Comment
a) Historic	An item is important in the course, or pattern, of NSW's cultural or natural history (or the cultural or natural history of the local area).	The Station Masters residence (former) is of historical significance as a component of the extant railway items that illustrate the building of the Captains Flat line in the late 1930s. The style of the Station Masters residence (former) illustrates the industrial nature of the line and railway structures built during the Early Modern Period, where infrastructure was functional but without embellishment. The building is an integral part of the extant railway features at Captains Flat. The Station Masters residence (former) satisfies this criterion for local heritage significance.
b) Associative	An item has strong or special association with the life or works of a person, or group of persons, of importance in NSW's cultural or natural history (or the cultural or natural history of the local area).	The item does not have known historical association and the Station Masters residence (former) does not meet this criterion.
c) Aesthetic/Technical	An item is important in demonstrating aesthetic characteristics and/ or a high degree of creative or technical achievement in NSW (or the local area).	While representative of its period, the Station Masters residence (former) does not have aesthetic or technical significance. The Station Masters residence (former) does not meet this criterion.
d) Social	An item has strong or special association with a particular community or cultural group in NSW (or the local area) for social, cultural, or spiritual reasons.	The railway of which the Station Masters residence (former) was part of the social fabric of Captains Flat until the 1960s. However, since that time, the social value of the railway items has diminished. As it has a minor continuing social value to the local community, the Station Masters residence (former) does not satisfy this criterion.
e) Scientific	An item has potential to yield information that will contribute to an understanding of NSW's cultural or natural history (or the cultural or natural history of the local area).	While representative of vernacular 1940's architecture, the Station Masters residence (former) does not contain features that would provide further information about architecture or lifestyles during this period. There are no known or suspected archaeological deposits that could provide further information. As it has a very limited ability to provide further information, the Station Masters residence (former) does not satisfy this criterion.
f) Rarity	An item possesses uncommon, rare, or endangered aspects of NSW's cultural or natural history (or the cultural or natural history of the local area).	The Station Masters residence (former) is not a rare feature in the local area or region. As a simple, practical building style, similar buildings remain extant in nearby villages and towns. Given that the Station Masters residence (former) is not a rare feature in the landscape, the item does not satisfy this criterion.
g) Representativeness	An item is important in demonstrating the principal characteristics of a class of NSW's cultural or natural places; or cultural or natural environments (or a class of the local	The Station Masters residence (former) features an architectural style common to the 1940s in the Captains Flat and surrounding regions.

NSW Heritage Council Criteria	Description	Comment
	area's cultural or natural places; or cultural or natural environments).	However, it is also a representative of railway infrastructure of the Early Modern Period and demonstrates the emphasis on functional rather than decorative buildings built during WWII. Few station masters' residences were constructed at that time and few of the station buildings remain extant. As such, the Station Masters residence (former) does satisfy this criterion.

As shown in **Table 2-1**, a reassessment the Station Masters residence (former) demonstrates that the item meets the heritage criteria for (a) historical and (g) representativeness heritage values at a local level. The significance indicators implicit in the historic heritage value are detailed in **Table 2-2**. **Table 2-3** assesses the significance indicators associated with criterion (g), representativeness.

Table 2-2: Assessment of significance indicators for criterion (a) historic.

Significance indicator for criterion (a) historic	Local significance threshold
Association with an event, or series of events, of historical, cultural or natural significance	The item does not have historical associations.
Demonstration of important periods or phases in history	At a local level, the item represents the resurgence of the town of Captains Flat as an important mining town in NSW. The railway, which was completed in 1939/1940, serviced this growing town, not only for mining products, but for community transport and mail as well. At a local level, the elements of this railway including the Station Masters residence (former), turntable, tracks, weighbridge, platform, and goods shed, are a tangible link to an important phase of the Captains Flat's history. The item demonstrates an important period or phase in the history of the local area.
Association with important cultural phases or movements	On a local level, the linking of Captains Flat to the wider rail network places the railway at the end of a sustained period of railway expansion that began in the late nineteenth century. Within two decades of the Captains Flat line being opened, Lake George Mine closed, motor transport had replaced railway traffic and railways went into a decline. The operation of the Captains Flat railway served a social function for the residents and its role in goods transport, movement of people, and mail delivery would have been an intrinsic part of the social fabric of the community. The presence of only two stations on the 34 km Captains Flat to Bungendore line is a supporting factor for the priority for freight rather than passenger transport. This is also confirmed by the transport data of the time. The item, therefore, has association with an important phase of social development in the local area, as well as being part of the wider story of rail in NSW.
Demonstration of important historical, natural or cultural processes or activities	The Captains Flat railway was built to service the Lake George Mine at the start of WWII. The construction of the railway both demonstrates the need to secure mineral supplies for the war effort, as well as demonstrating, in its austerity, the requirement to be purely functional during the war years. The railway group consisting of a shelter-less platform, a wooden station building, a fibro and timber stationmaster's residence, and a wooden goods shed, all demonstrate that passenger services were of a lower priority on this line, compared to mineral extraction. The Station Masters residence (former) is an interpretable feature of the railway group and is an example of industrialisation associated with the key local historic processes and activities of the area and an example of civil infrastructure, transport and communications associated with the key local historical themes of the area.
Symbolism and influence of place for its association with an important historical, natural or cultural event, period, phase or movement	The Station Masters residence (former) does not possess symbolic meaning to the local community and had no notable influence on the physical or social outcomes in the local area

Table 2-3: Assessment of significance indicators for criterion (g) representativeness.

Significance indicator for criterion (g) representativeness	Local significance threshold
A class of places or objects that demonstrate an aesthetic composition, design, architectural style, applied finish or decoration of historical importance	The Station Masters residence (former) demonstrates a range of characteristics that are typical of the Early Modern Period of railway architecture
Representative of a class of places that demonstrate a construction method, engineering design, technology, or use of materials, of historical importance	The item clearly demonstrates the construction method and materials used for railway infrastructure during the Eary Modern Period, The item retains the majority of its original features, however, there have been several modifications made to the dwelling since construction.
Representative of a class of places that demonstrate an historical land use, environment, function, or process, of historical importance	The item is an intact example of purely functional railway buildings associated with the limitations of building materials and labour during WWII and railway lines constructed in partnership with mining activities.
Representative of a class of places that demonstrate an historical land use, environment, function, or process, of historical importance	The item is a variation of Station Masters residences, Type 11 and features a utilitarian architectural design.
Representative of a class of places that demonstrate an ideology, custom or way of life of historical importance	The item demonstrates in its fabric and functional design an ideology of frugalism that reflects the sentiments of the WWII period.

The Station Masters residence (former) (Item I251) is identified as locally significant. The primary values of this significance are the item's historic association to the town of Captains Flat and its railway and the items representativeness of railway infrastructure of the Early Modern Period.

The railway items, such as the Station Masters residence (former), turntable, station structure, and weighbridge, have significance to the residents of Captains Flat as a tangible link to the town's past mining activities and its role during WWII in securing needed raw materials. The simplicity of the items' designs speak to an austere period where functionality superseded design rendering the railway items as simple, cost-effective pieces of infrastructure without any embellishments.

The railway group remains intact and interpretable, and this enhances the heritage significance of the Station Masters Residence (former) due to its historical and visual association to the broader railway precinct.

The Station Masters residence (former) has limited heritage values in itself. The residence is without t aesthetic or social values and its value lies in the building's association with the railway group and its ability to assist in the interpretation of how the Captains Flat railway group looked and functioned as a group.

The updated statement of significance completed for the Station Masters residence (former) identifies that historic values and representativeness are the significant heritage elements of the item. As part of the railway group, the item can inform the public about the second phase of mining at Captains Flat and the final stages in the growth of railways in NSW. It was noted that, in terms of station master's residences, that the Station Masters residence (former) is a representative

example of this function of building due to its more recent construction and the frugality of its construction, however, the architectural style for a residence is not rare regionally.

The item has local heritage values. In terms of grading the heritage significance, the Station Masters residence (former) has a moderate level of significance as there are modified elements. However, there is a high degree of original fabric, and the item is readily interpretable allowing the item to demonstrate the place's heritage significance.

3 PROPOSED WORKS

3.1 THE PROPOSAL

OzArk has been engaged by Ramboll on behalf of TfNSW to complete a SOHI for the Station Masters residence (former). The proposal is within the Queanbeyan Palerang Regional LGA at Lot 1 DP572636 (**Figure 1-1**). The SOHI is necessitated by the proposed impact to a locally listed item, the Station Masters residence (former), Item I251.

As part of a larger remediation program, the Legacy Mines Program propose to undertake remediation works at the legacy Lake George Mine, located immediately west of the township of Captains Flat, New South Wales. The Review of Environmental Factors (REF) prepared by GHD (2022) on behalf of the Department of Regional NSW, notes that the site is heavily contaminated with metals and metalloids (including lead, arsenic, copper, and zinc) and sulphur. The purpose of the proposed remediation works is to reduce the risk of offsite contamination through airborne dust and surface erosion generating contaminated runoff from the continued oxidation of sulfidic mineral waste at Lake George Mine. The proposed remediation works are required to prevent potential environmental and human health risks to people accessing the site, to residents in the vicinity of the site and in the township of Captains Flat, and to aquatic ecosystems and downstream users of the Molonglo River. The proposed remediation works include site preparatory early works, fencing historic mining structures, strategic structural works, remediation earthworks, augmentation of surface water drainage, and revegetation across several key domains in the northern portion of LGM. Notably, the remediation program relates specifically to the mining infrastructure and surrounding environment and does not include any of the residential buildings previously associated with the mine, which are now under private ownership.

Similarly, Ramboll prepared a 'Lead Abatement Plan – Captains Flat Lead Management Plan – Former Preschool' on behalf of the Department of Regional NSW in 2023. The plan was prepared to address exposure risks from lead at the former preschool at 27 Foxlow Street, Captains Flat. It was identified that the potential for human health risks from exposure to lead in the soil was moderate to high in seven areas of Captains Flat. Risks were generally limited to the southern part of Captains Flat and public land near the northern bank of the Molonglo River and Foxlow Parklet. The plan recommended the removal of existing trees and fences and the excavation of the upper 0.1 m of soil and recapping of the surface.

TfNSW also identified lead contamination in surface soils in the Captains Flat Railway Precinct, including within the grounds of the Station Masters residence (former). TfNSW is planning to align remediation of the Captain's Flat Railway Precinct with those at the Lake George Mine.

Following consideration of several options, the preferred option of TfNSW (Option 8; **Table 3-1**) will involve the demolition of the Station Masters residence (former) (Item I251) and the removal of approximately 0.5 metres of contaminated soil from across the site (Lot 1 DP572636).

The proposed remediation works are subject to the Environmental Impact Assessment and planning approval requirements of Division 5.1 of the EP&A Act.

3.2 PROPOSED WORKS OPTIONS

In May 2023, TfNSW submitted a draft Voluntary Management Proposal (VMP) outlining how TfNSW intend to manage the contamination at the study area. The study area was declared significantly contaminated by the NSW Environmental Protection Authority (EPA) under the *Contaminated Land Management Act 1997* on the 20 September 2022 and this declaration requires the study area to be remediated to residential land use and the objective of the VMP is to achieve this requirement.

In July 2022, TfNSW commenced a Remediation Options Assessment (ROA) to identify and assess potential remediation methodologies which address the objectives and requirements of the VMP. During this process several constraints were identified which would impact on the ability to remediate to residential criteria and to retain the buildings.

Due to the constraints, TfNSW has conducted a future land use assessment (FLU) to identify and evaluate potential land use options and to recommend a preferred option. The assessment has determined the most suitable FLU for the study area is to demolish the assets, remediate the land to residential criteria, and to resume the vacant land into the rail corridor and form part of the *Captains Flat Heritage Trail – Pathway to Gold*. **Table 3-1** discusses the eight options that were considered in the FLU with the preferred option highlighted in blue.

Table 3-1: Evaluation of the options to remediate the study area.

Option	Discussion
1. Remediate to residential criteria and divest	This option was not evaluated as the property is not suitable for divestment under current procedures
2. Remediate to residential criteria and lease	This option would include the remediation of soils across the study area, including under the house, garage and sheds and removal of dust from inside the buildings. This option is considered high risk and will be the most expensive to remediate.
3. Remediate to commercial criteria and utilise for community lease (e.g. Men's Shed; Community Garden)	This option would include the remediation of soils across the study area and removal of dust from inside the buildings. Under this option, the contaminated soil under the buildings would remain in-situ. A Long-Term Environmental Management Plan (LTEMP) would be implemented to manage the residual risk to human health and the environment. This option would require a change to the permissible land use and or zoning along with the EPA amending the remediation criteria to commercial. As outlined above, this process will be time consuming and there are also risks that the land use / zoning change is not approved, and the EPA does not approve the change in remediation criteria.
4. Remediate to commercial criteria and utilise for commercial lease (e.g. café retail)	This option would include the remediation of soils across the study area and removal of dust from inside the buildings. Under this option, the contaminated soil under the buildings would remain in-situ. A LTEMP would be implemented to manage the residual risk to human health and the environment. This option would require a change to the permissible land use and or zoning along with the EPA amending the remediation criteria to commercial. As outlined above, this process will be time consuming and there are also risks that the land use / zoning change is not approved, and the EPA does not approve the change in remediation criteria.

Option	Discussion
5. Remediate to public open space criteria and utilise for recreational purposes (e.g. parks and gardens)	This option would include the remediation of soils across the study area and removal of dust from inside the buildings. Under this option, the contaminated soil under the buildings would remain in-situ. A LTEMP would be implemented to manage the residual risk to human health and the environment. This option would require a change to the permissible land use and or zoning along with the EPA amending the remediation criteria to public open space. This process will be time consuming and there are also risks that the land use / zoning change is not approved, and the EPA does not approve the change in remediation criteria.
6. Demolish the buildings and remediate to commercial / industrial criteria and resume into the rail corridor and form part of the Heritage Trail	This option was not evaluated as the commercial/industrial criteria is not suitable for the proposed land use of Heritage Trail.
7. Demolish the buildings and remediate to public open space criteria and resume into the rail corridor and form part of the Heritage Trail	This option would include the demolition of all buildings and infrastructure and remediation of soils across the study area. This option would require a change to the permissible land use and or zoning along with the EPA amending the remediation criteria to public open space. This process will be time consuming and there are also risks that the land use / zoning change is not approved, and the EPA does not approve the change in remediation criteria. It is noted that the criteria of public open space is in line with the remediation criteria for the rail corridor and will enable the study area to be included in the Heritage Trail. The study area would be established with parks and gardens including heritage interpretation to communicate the significance of the rail corridor and former residence to the community of Captains Flat.
8. Demolish the buildings and remediate to residential criteria and resume into the rail corridor and form part of the Heritage Trail	This option would include the demolition of all buildings and infrastructure and remediation of soils across the study area. No land use or zoning changes would be required for this option. It is noted that the criteria of residential is more stringent that the remediation criteria for the rail corridor and will enable the study area to be included in the Heritage Trail. The study area would be established with parks and gardens including heritage interpretation to communicate the significance of the rail corridor and former residence to the community of Captains Flat. As this option will achieve the remediation objectives in a timely manner and provide the asset back to the community with major social benefits, this option is regarded as the preferred option.

3.3 ASSESSMENT APPROACH

The SOHI will apply the *Guidelines for preparing a statement of heritage impact* (DPE 2023a). The International Council on Monuments and Sites' *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance* (Burra Charter), and the guide for *Assessing heritage significance. Guidelines for assessing places and objects against the Heritage Council of NSW criteria* (DPE 2023b).

3.4 LEGISLATIVE REQUIREMENTS

3.4.1 Applicable Legislation

3.4.1.1 Heritage Act 1977

The *Heritage Act 1977* (Heritage Act) is applicable to the current assessment. This Act established the Heritage Council of NSW (the Heritage Council). The Heritage Council's role is to advise the government on the protection of heritage assets, make listing recommendations to the Minister in relation to the State Heritage Register (SHR), and assess/approve/decline

proposals involving modification to heritage items or places listed on the SHR. Most proposals involving modification are assessed under Section 60 of the Heritage Act.

Automatic protection is afforded to 'items' of state significance, where items mean a place, building, work, relic, moveable object, or precinct. 'Relics' are defined as 'any deposit or material evidence relating to the settlement of the area that comprised New South Wales, not being Aboriginal settlement, and which holds state or local significance'. Excavation of land on which it is known or where there is reasonable cause to suspect that 'items' will be exposed, moved, destroyed, discovered, or damaged is prohibited unless approved under an excavation permit.

3.4.1.2 Environmental Planning and Assessment Act 1979

The primary law regulating land use in NSW is the EP&A Act. The Act is administered by the NSW Department of Planning, Housing and Infrastructure (DPHI). The Minister for Planning and Public Spaces is responsible for the Act.

The EP&A Act allows plans to be made to guide the process of development and to regulate competing land uses.

These are known as environmental planning instruments (EPIs).

The EP&A Act allows two types of EPIs to be made:

- LEPs
- State environment planning policies (SEPPs).

3.4.1.3 Queanbeyan Palerang Regional Local Environmental Plan 2022

All land, whether privately owned, leased, or publicly owned, is subject to the controls set out in the LEP. LEPs determine the form and location of new development and provide for the protection of open space and environmentally sensitive areas.

The heritage conservation objectives of the Queanbeyan Palerang LEP (Section 5:10) are as follows:

> *(a) to conserve the environmental heritage of the Queanbeyan-Palerang Regional local government area,*
>
> *(b) to conserve the heritage significance of heritage items and heritage conservation areas, including associated fabric, settings and views,*
>
> *(c) to conserve archaeological sites,*
>
> *(d) to conserve Aboriginal objects and Aboriginal places of heritage significance.*

3.4.1.4 Palerang Development Control Plan 2015

A Development Control Plan (DCP) is a document prepared by council which provides detailed guidelines for the design and assessment of proposed developments within an LGA. A DCP supports the LEP and must be consistent with the provisions and objectives of the prevailing LEP.

Unlike the LEP process, the DCP process is undertaken wholly by the council, and while the LEP remains the statutory document, the DCP contains guidelines that council will consult when considering a development application.

The Palerang DCP complements the Queanbeyan Palerang LEP. Section B10 of the Palerang DCP notes that: '*The former Palerang local government areas heritage is diverse and includes buildings, objects, monuments, Aboriginal places, gardens, bridges, landscapes, archaeological sites, relics, streets, industrial structures, routes of human movement, cultural landscapes and a conservation precinct*'*.*

Section B10 1.4 of the Palerang DCP notes that the proposed works require approval as '*alterations and additions to a heritage listed item require the lodgement of a development application and an assessment of the impact of the proposal on the heritage significance of the place, including historic, architectural, aesthetic, cultural, social, technological, landscape, archaeological or other features of the place including its setting.'*

Section B10 1.5 of the Palerang DCP notes the requirements associated with the demolition of a heritage listed place:

Objective

a) To retain heritage items

Control

1) Typically demolition will only be permitted where:

- *the building is so structurally unsound as to be beyond reasonable economic repair. The development application must include a professional structural assessment in support of demolition or*
- *the existing condition poses a significant health or safety risk that is beyond reasonable economic repair. The development application must include a professional structural or health assessment demonstrating that conservation is not a practical option or*
- *in the opinion of Council, the integrity of the built form and street elevations of an original building has been extensively and irreversibly diminished by unsympathetic alterations and additions.*

2) Except where a building presents an immediate threat to public safety, the total demolition of an identified dwelling shall not be permitted unless a development application for a replacement dwelling has been approved.

3) The partial demolition of original external building fabric of identified dwellings shall only be permitted in the context of permitted alteration or additions.

4) Alteration to, or demolition of, internal building fabric of identified dwellings may be permitted provided the external building fabric of the dwelling is not adversely affected.

3.4.2 Applicability to the proposal

- The Heritage Act protects items of state heritage value Listed on the SHR. There are no items listed on the SHR within the study area.
- The proposal will be assessed under Division 5.1 of the EP&A Act. In the case of the proposal, TfNSW will self-determine informed by a Review of Environmental Factors.
- The Station Masters residence (former) is listed as Item I248 in Schedule 5 of the Queanbeyan Palerang LEP.
- Consultation with council is required for any proposed harm to a listed building that has more than a minor or inconsequential impact to its heritage values.
- An objective of the Palerang DCP is to retain listed heritage buildings, although demolition may be considered if public safety is at risk.
- Applicable SEPPs (Transport and Infrastructure 2021, Resilience and Hazards 2021, and *Resources and Energy 2021*) do not permit major impacts to locally listed items, including demolition, without consultation with council.

4 HERITAGE IMPACT ASSESSMENT

An inspection of the study area was completed by OzArk Principal Archaeologist, Ben Churcher, on 24 June 2024. The inspection took place from publicly assessable locations and included an external view of the item only.

4.1 MATTERS FOR CONSIDERATION

Based on the options assessments undertaken by TfNSW (**Section 3.2**) the preferred option is to demolish the buildings and remediate the land to residential criteria and resume into the rail corridor and form part of the Heritage Trail (Option 8, **Table 3-1**). Table 2 in the *Guidelines for preparing a statement of heritage impact* (DPE 2023a: 8) lists considerations for specific types of work. Of the examples listed, 'demolition of a heritage item' is most applicable and will be addressed below. Other matters for consideration have been included as subheadings as per the recommendation of the DPE guidelines (DPE 2023a: 18)

Fabric and spatial arrangements: Impacts do not apply to this specific heritage value.

Setting, views and vistas: Impacts do not apply to this specific heritage value.

Landscape: Impacts do not apply to this specific heritage value.

Use: Impacts do not apply to this specific heritage value.

Demolition: Addressed in **Section 4.1.1.1**.

Curtilage: Impacts do not apply to this specific heritage value.

Moveable Heritage: Impacts do not apply to this specific heritage value.

Aboriginal cultural heritage: Impacts do not apply to this specific heritage value.

Historical archaeology: The assessment has demonstrated that there were no structures within the lot containing the Station Masters residence (former) (Item I251) prior to the current building (see **Section 1.2**). Therefore, it is unlikely that the lot will contain built archaeological remains. There remains the possibility of vernacular archaeological items associated with the use of the residence to be present, however, these items are unlikely to have heritage significance.

It is therefore assessed that archaeological deposits with local or state heritage significance will not be present in the study area.

Natural heritage: Impacts do not apply to this specific heritage value.

Conservation areas: Not applicable.

Cumulative impacts: The Station Masters residence (former) (Item I251) has an association with the Captains Flat Railway Goods Shed, Weighbridge, Gantry and Turntable (Item I266) both in function and history. The Station Masters residence (former) (Item I251) has a contributory

association with the heritage values of the Captains Flat Railway Goods Shed, Weighbridge, Gantry and Turntable (Item I266) and its removal will diminish the heritage values of the adjacent item in an indirect manner. The Station Masters residence (former) (Item I251) is not visually important, but as part of the railway group, it contributes to the interpretation of the functions and workings of the terminus railway station and the loss of any individual element diminishes the heritage landscape illustrating this mid-twentieth century railway group.

4.1.1.1 Considerations for specific works – demolition of a heritage item

If demolition is proposed, why is it necessary?

TfNSW propose to demolish the Station Masters residence (former) (Item I251) as it has been identified that the soil around the building poses a public health risk. To remediate this risk, it is proposed that 0.5 m of soil from across the lot in which the Station Masters residence (former) is located be removed.

The item is in good condition and could be retained, however, specialist advice indicates that without demolition and soil remediation, the site could not be used by the public due to soil contamination.

Have options for retention and adaptive re-use been explored? If yes, set out why these options have been discarded?

Yes. See **Section 3.2**. Options for the retention of the buildings has been explored but these options are considered to be high risk (i.e. the difficulty of removing all contamination) and very expensive.

Has technical advice for demolition been obtained?

The demolition will be of the entire building and as there is no significant fabric to conserve. As such, technical advice beyond this heritage assessment is not required.

Identify and include advice about how significant elements, if removed by the proposal, will be salvaged and reused.

The Station Masters residence (former) does not include significant elements that require conservation.

5 SUMMARY AND RECOMMENDATIONS

This SOHI presents the eight options that were considered regarding the remediation of the study area and notes that Option 8 (demolish the assets, remediate the land to residential criteria, and to resume the vacant land into the rail corridor and form part of the *Captains Flat Heritage Trail – Pathway to Gold*) is the preferred option.

This option will result in major harm to one item of local heritage significance: the Station Masters residence (former), Item I251.

The item has a historical association with a group of railway features that remain an interpretable feature at the town of Captains Flat in southern NSW. The item also represents an element of a terminus railway station constructed in the late 1930s primarily for the shipment of ore from the Lake George Mine. As a result, and likely due to the restrictions of material and labour during WWII, the item is functional and without embellishment. The Station Masters residence (former) (Item I251) is a utilitarian fibro and weatherboard cottage. This item illustrates both the industrial use of the Captains Flat railway, as well as the period of construction.

Because of the item's association with the history of the second phase of mining at Captains Flat, the item has local heritage significance.

An ideal heritage outcome is that the Station Masters residence (former) (Item I251) is retained and re-used (Options 2–5; **Table 3-1**). However, OzArk understands that demolition is the preferred option based on a series of analyses (see Option 8, **Section 3.2**). While this is understandable, it is also regretful as the Station Masters residence (former) (Item I251) is an integral part of the railway group, and the heritage landscape as a whole will be diminished by the removal of this structure.

It is acknowledged that TfNSW preferred Option 8 will result in major harm to one item of local heritage significance: the Station Masters residence (former), Item I251. The demolition of a locally listed item will require mitigation measures to compensate for the loss of heritage values.

In addition, it is assessed that the proposal will have a minor, indirect impact on the heritage values of the locally listed item 'the Captains Flat Railway Goods Shed, Weighbridge, Gantry and Turntable' listed as Item I266 as the historic association and current visual association between the two items will be lost. However, as the proposal will not harm significant fabric associated with Item I266, the indirect impact that the demolition of Item I251 will have on Item I266 is assessed as inconsequential.

5.1 INTERPRETATION

Interpretation of the cultural significance of the Station Masters residence (former) should be present at the site following its demolition and site remediation.

A brief heritage interpretation plan will be prepared to guide the interpretation, including its audience, the position and form of the interpretation, materials that may be used, and any text and/or historical sources that will be used.

5.2 RECOMMENDATIONS

The following recommendations are made in relation to the Station Masters residence (former) (Item I251) following Option 8 in **Table 3-1**:

1. TfNSW must consult with the Queanbeyan Palerang Regional Council before the demolition of the Station Masters residence (former) (Item I251) can proceed. TfNSW must take into consideration any response to the notice that is received from the council within 21 days after the notice is given. The consultation with the Queanbeyan Palerang Regional Council must demonstrate evidence that the demolition is required on public health grounds.
2. The following mitigation against the loss of heritage values associated with the Station Masters residence (former) will be followed:
    a. TfNSW will ensure that the Station Masters residence (former) is archivally recorded prior to demolition and an archival report provided to the Queanbeyan Palerang Regional Council for their records.
    b. TfNSW will commission a brief heritage interpretation plan to guide the heritage interpretation at the site following the structure's demolition.
3. No ground disturbing impacts or the storage of materials will occur within the heritage curtilage of the adjacent listed item: the Captains Flat Railway Goods Shed, Weighbridge, Gantry and Turntable (Item I266) (see **Figure 1-4** for the location of this curtilage).
4. It is assessed that there is a low potential for archaeological deposits or further unknown historic items with local or state heritage significance within the study area. However, if during the carrying out of the proposal, suspected significant historic items are encountered, the work at that location must cease and the TfNSW *Unexpected heritage items procedure* (July 2022) must be followed.

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