Abandoned Mines Program

Safer Shafts for Towns Project – Cue Phase 1

Background

The Abandoned Mines Program was initiated following the enactment of the *Mining Rehabilitation Fund Act 2012* (MRF Act), which provides a source of funding to address abandoned mine features in WA. The Abandoned Mines Inventory (Inventory) records over 190,000 abandoned mine features within 10 kilometres of towns and 1 kilometre of major roads, including over 30,000 shaft features, largely resulting from the 'gold rush' era of Western Australia's mining history.

The Department of Mines, Petroleum and Exploration (DMPE) Abandoned Mines Program (AMP) commenced the Safer Shafts for Towns Project in 2022 with the key objective of reducing the risk to any single child that may be exposed to old mine shafts. The project also aims to enable opportunities for both employment of local Aboriginal people and the procurement of Aboriginal businesses through project implementation.

Pilot locations for the project were selected based on the number of known highest risk shafts that may be located within one (1) kilometre of a school. Cue has been selected as one of three pilot locations to trial the project.

Project brief

The Cue Phase 1 project area is the area within one (1) kilometre of the primary school (see Figure 1). Abandoned mine features which are included in the project area are all abandoned features that occur below ground and includes potential subsidence risk which may be a result of lateral workings or other associated disturbance. There are currently 486 abandoned mine features within the project area, identified as shafts, open stopes, costeans/trenches, adits, shallow workings, collapsed shafts and rehabilitated shafts, with two (2) of these features identified in highest risk shaft features on the Abandoned Mines Inventory.

The project is being delivered in three main stages and the indicative timeframe and progress is as follows:

Indicative Timing	Project Stage	Progress
2022 – 2024	Stage 1: feature survey and risk assessment	Completed
2025 – 2026	Stage 2: Engineering assessment and design	In progress
2027 – 2028	Stage 3: Remedial earthworks	Not commenced

The Stage 1 feature survey and risk assessment has been completed. This including mapping of previously unrecorded abandoned mine features (in the Inventory). Stakeholder engagement for this stage has been completed.

The Stage 2 engineering assessment and design is in progress. This will include geotechnical site investigations to assess abandoned mine features and develop rehabilitation options for all features or groups of features. Stakeholder engagement for this stage has commenced and will be on-going throughout this stage.

The Stage 3: Remedial earthworks will commence following the design of the rehabilitation option for each feature or groups of features. A post-works monitoring program of rehabilitated features will also be implemented. Stakeholder engagement for this stage is also proposed.

The project stage which includes proposed vegetation clearance activities is Part 2 intrusive geotechnical investigations in Stage 2. These vegetation clearance activities are described in more detail below.

Stage 2: Geotechnical engineering site investigations

DMPE has engaged WML Consultants Pty Ltd, a geotechnical engineering consultant, to undertake a detailed assessment of the abandoned mine features and make recommendations on rehabilitation options required to reduce the public safety risk of the abandoned mine features. Any previously unrecorded abandoned mine features will also be assessed.

The assessment will be undertaken on areas previously disturbed by mining activity and involves site investigations which will occur in two parts. For both parts of the site investigations, the use of existing roads and formed tracks will be utilised as far as practical to access areas to be investigated.

- Part 1 site investigations have been completed in August 2025 using non-intrusive investigation methods. This was completed using use aerial imagery, LiDAR drones, down-hole cameras, water tapes, electrical probes, and hand tools.

Based on the findings from the Part 1 site investigation, a Part 2 site investigation is required for some or all abandoned mine features.

- The Part 2 site investigation will involve ground disturbing (intrusive) methods around or within previously disturbed areas. The types of ground disturbance include:
    - Probing and pressure testing the base of abandoned mine shaft features using an excavator;
    - Clearing out rubbish and debris within abandoned mine shaft features using an excavator;

    - Excavation of test pits to validate competency and stability of rock mass; and
    - Auger drilling and RAB drilling (to depths of up to 3m) to validate ground conditions.
- The Part 2 site investigation is planned to commence on ground between 23 July 2026 to 12 August 2026. This involves intrusive ground disturbance within an Environmentally Sensitive Area (ESA) and clearing overgrown vegetation within selected areas of the site.

Intrusive ground disturbance within an Environmentally Sensitive Area

Intrusive ground disturbance is proposed within a mapped ESA; however, no vegetation clearance is proposed within the ESA.

The proposed disturbance activities are limited to auger borehole drilling and excavator ramming using a 15-tonne excavator. These activities involve probing and pressure testing at the base of identified features for geotechnical assessment purposes only. No native vegetation will be cleared as part of these works. Locations of the proposed disturbance activities are shown in Figure 2 (Appendix 1).

The ESA is listed for the protection of the threatened species *Eremophila rostrata* subsp. *rostrata*. Previous site visits identified the presence of this species, and the approximate locations of individuals were documented (refer to the attached shapefile of recorded locations).

The proposed works have been designed in accordance with the mitigation hierarchy, with impacts avoided where practicable. All known individuals of *Eremophila rostrata* subsp. *rostrata* will be avoided. No vegetation clearing or ground disturbance is proposed within areas supporting the species, and the proposed disturbance footprint does not intersect with any identified locations of the species.

Movement of personnel and equipment will be managed to ensure no encroachment into areas supporting the species, and access will be restricted to defined routes where required. On this basis, the proposed works are not expected to impact the ESA values or adversely affect the conservation of *Eremophila rostrata* subsp. *rostrata*.

Proposed vegetation clearance

Targeted vegetation clearance is proposed within selected areas of the site, as shown in Figure 3 (Appendix 1). The proposed clearing is limited in extent and will involve the removal of overgrown vegetation only where required. A 20-tonne excavator will be used to undertake the clearing works.

Areas of dense vegetation are generally consistent with land historically affected by underground mining activities. The proposed vegetation clearance is required to facilitate safe access and to enable detailed ground assessment, including the identification and

inspection of potential abandoned mine features that may currently be obscured by vegetation cover. The removed vegetation is proposed to be placed in-situ after the assessment.

No vegetation clearance is proposed outside the areas identified in Figure 3 (Appendix 1).

Results of Crown land search

A search of Crown land in relation to the proposed vegetation clearance areas has returned three (3) Crown land titles (Table 1), one (1) Crown land reserve (Table 2), and five (5) mining tenements (Table 3). Other land is unallocated Crown land.

Table 1 Crown Land Titles intersecting with Proposed Vegetation Clearance Areas

Title Identifier	Survey Document	Label Identifier	Land ID Number
LR3121/913	DP218691	258	3321316
LR3165/607	DP65923	304	3965072
LR3165/604	DP65923	301	3965069

Table 2 Crown Land Reserves intersecting with Proposed Vegetation Clearance Areas

Reserve Number	Reserve Class	Current Purpose	Responsible Agency	Vesting	Land Use
7273	C	COMMON	DPLH (SLSD)	MANAGEMENT ORDER SHIRE OF CUE	COMMON

Table 3 Mining Tenements intersecting with Proposed Vegetation Clearance Areas

Tenement ID	Type	Survey Status	Tenement Status
M 20/288	MINING LEASE	SURVEYED	LIVE
M 20/466	MINING LEASE	SURVEYED	LIVE
M 20/519	MINING LEASE	SURVEYED	LIVE
M 20/522	MINING LEASE	SURVEYED	LIVE
P 20/2342	PROSPECTING LICENCE	UNSURVEYED	LIVE

Spatial Information and Maps

Maps showing the area in relation to the Cue Phase 1 proposed vegetation clearance areas are provided in Appendix 1, these are:

- Figure 1: a map showing the project area
- Figure 2: a map showing proposed intrusive works within the ESA
- Figure 3: a map showing the proposed intrusive works within the proposed clearance areas
- Figure 4: a map showing Crown land titles and Crown land reserve
- Figure 5: a map showing mining tenements

Digital spatial data showing the area the subject of the proposed activity is provided in the spatial data files:

Shapefile	**Spatial data description**
CuePh1_AbandonedMineFeatures	Abandoned mine features that will be investigated for the project
CuePh1_ESA	Environmentally Sensitive Area
CuePh1_PlannedIntrusiveWorks	Planned intrusive works at each abandoned mine feature within the proposed vegetation clearance areas
CuePh1_ProjectArea	Cue Phase 1 Project Area (1km from the Cue Primary School)
CuePh1_ProposedClearance	Proposed vegetation clearance areas
Eremophila_rostrata	Approximate locations of *Eremophila rostrata* identified on 20 August 2025

Appendix 1 Figures

Appendix 2 List of Heritage Surveys completed in Project Area, obtained from the Aboriginal Cultural Heritage Inquiry System (ACHIS)

Aboriginal Cultural Heritage Inquiry System

List of Heritage Surveys

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Search Criteria

6 Heritage Surveys containing 6 Survey Areas in Shapefile - Cue_Primary_1km_buffer

Disclaimer

Heritage Surveys have been mapped using information from the reports and / or other relevant data sources. Heritage Surveys consisting of small discrete areas may not be visible except at large scales. Reports shown may not be held at the Department of Planning, Lands and Heritage (DPLH). Please consult report holder for more information. Refer to https://www.wa.gov.au/organisation/department-of-planning-lands-and-heritage/aboriginal-heritage for information on requesting reports held by DPLH.

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Access

Some reports are restricted.

Spatial Accuracy

The following legend strictly applies to the spatial accuracy of heritage survey boundaries as captured by DPLH.

Very Good	Boundaries captured from surveyed titles, GPS (2001 onwards) submitted maps georeferenced to within 20m accuracy.
Good / Moderate	Boundaries captured from GPS (pre 2001) submitted maps georeferenced to within 250m accuracy.
Unreliable	Boundaries captured from submitted maps georeferenced to an accuracy exceeding 250m.
Indeterminate	Surveys submitted with insufficient information to allow boundary capture.

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Aboriginal Cultural Heritage Inquiry System

List of Heritage Surveys

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Survey Report ID	Survey Area ID	Report Title	Report Authors	Year of Publication	Survey Program	Survey Type	Area Description	Spatial Accuracy	Field / Desktop
20424	17590	Report on a cultural heritage survey of several mining leases near Cue, WA	Webb, Esmee			Archaeological	The survey area comprises the following tenements, or parts thereof: M20/103, M20/293, M21/7, M21/44, M21/65, M21/69, M21/74. See figures 2 and 3 for details.	Very Good	Field and Desktop
20928	19886	Art and archaeology on Coodardy, Austin Downs and Noondie Pastoral Leases, West of Cue, WA	Gunn, R G			Archaeological	Incoportating Coodardy, Austin Downs and Noondie Pastoral Leases, West of Cue, WA		Field and Desktop
22081	19665	Jack Hills Iron Ore Project : roadwork required for haulage of iron ore Mt Hale to Cue	Murchison Metals Ltd			Archaeological/ Ethnographic	Mt Hale to Cue	Good	Field only
103051	16472	Main roads Department, WA : environmental and assessment study great Northern Highway, Mount Magnet	Ove Arup & Partners	1991		Archaeological/ Ethnographic	Great Northern Highway, Mount Magnet. Two sections of the Great Northern Highway in the vicinity of Wogarno, Mt Magnet and Cue as shown in figs. 2 and 3	Indeterminate	Field and Desktop
103459	15354	Rock art of the Cue Region : interim report to AIATSIS on fieldwork undertaken in respect of grant no 96/6175	Webb, Esmee			Archaeological	Rock art of the Cue Region. Survey of the area surrounding Walga Rock as shown in fig. 1	Unreliable	Field and Desktop
103528	14845	Aboriginal site survey : report of a survey for Aboriginal sites on proposed roadworks, Great Northern Highway, Cue-Nannine section	O'Connor, Rory.			Archaeological/ Ethnographic	Proposed roadworks, Great Northern Highway, Cue-Nannine section SLK 631.2 to 707.45, a total of 76.25 km. A corridor of 100m either side of the centreline was surveyed as shown in fig. 1	Very Good	Field and Desktop

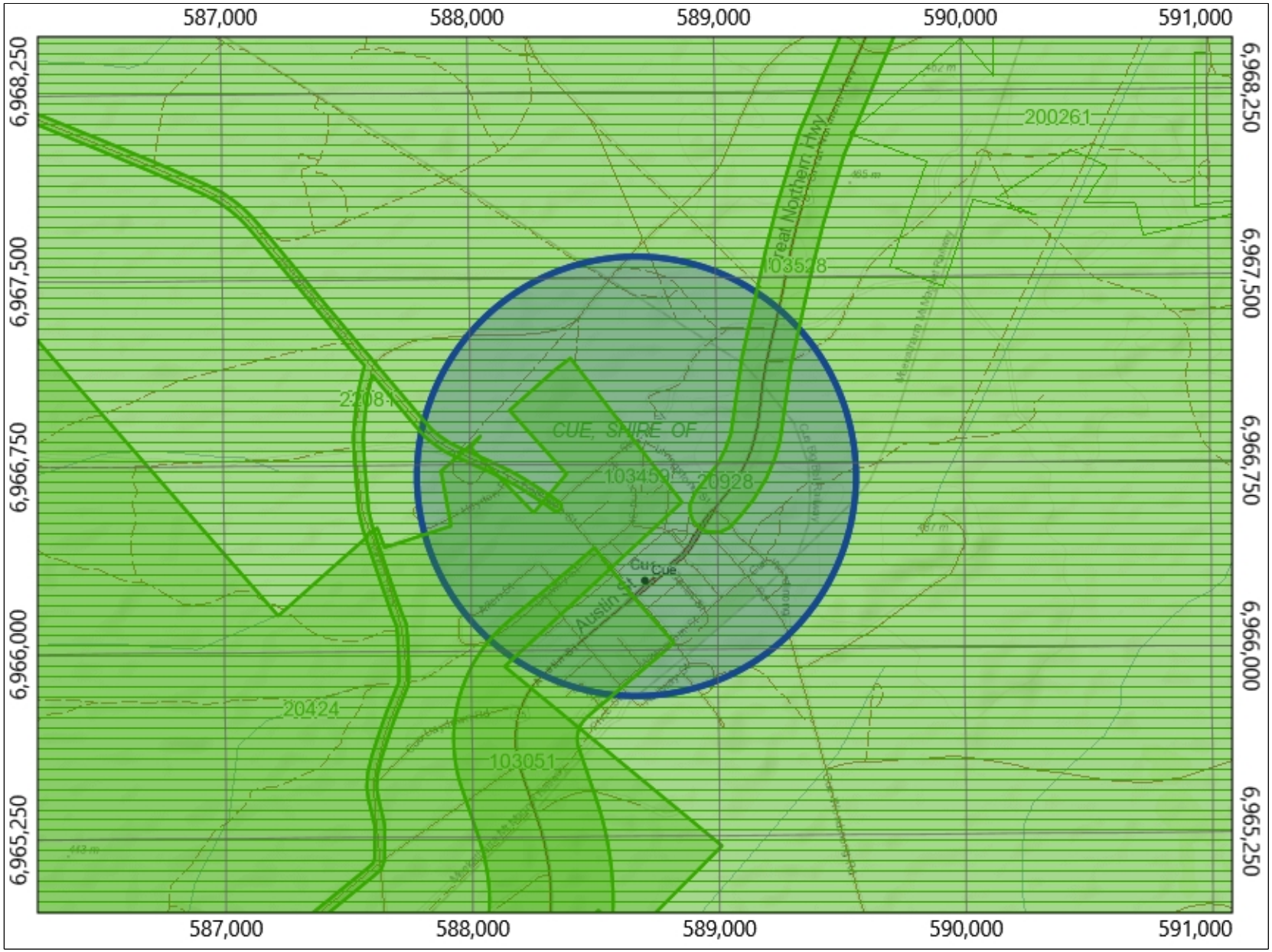
Department of **Planning, Lands and Heritage**

GOVERNMENT OF WESTERN AUSTRALIA

Aboriginal Cultural Heritage Inquiry System

Map of Heritage Survey Areas

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Legend

- Heritage Survey Area
- Search Area
- Aboriginal Community
  - *Permanent*
  - *Seasonal*
  - *Town Based*
- Town
- Road
- River
- Local Government Authority

0.87 kilometres

Map Scale 1 : 26,400

MGA Zone 50 (GDA2020)

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