

Appendix B7

Construction Cultural Heritage Management Sub- plan

M12 Motorway West

Project number:	N81151
Document number:	M12WCO-CPBGGJV-ML1-HE-PLN-000001
Revision date:	22/10/2024
Revision:	02

Details of Revision Amendments

Document Control

The Project Director is responsible for ensuring that this plan is reviewed and approved. The Project Director is responsible for updating this plan to reflect changes to construction, legal and other requirements, as required.

Amendments

Any revisions or amendments must be approved by the Project Director and/or client before being distributed / implemented.

Revision Details

Rev	Date	Reviewed By	Details
A	18/02/2022	G. Bolton	First Draft
B	06/05/2022	G. Bolton	Second draft addressing Arcadis/TfNSW review comments
C	02/06/2022	A. Zvirzdas	Third draft addressing Arcadis/TfNSW comments on Rev B. For ER review and approval
D	06/07/2022	A. Zvirzdas	Fourth draft addressing Arcadis/TfNSW/ER comments on Rev CB. New document number added.
00	28/07/2022	A. Zvirzdas	First Controlled Issue
E	07/02/2023	P. Matevski	Six-monthly revision
01	22/03/2023	A. Brajliah	Second Controlled Issue
02	22/10/2024	A. Brajliah	Annual review

Document Review

Position	Name	Signature	Date
Project Director	Nick Fryday		22/10/2024

Distribution of controlled copies

Copy no.	Issued to	Version



Table of Contents

Details of Revision Amendments.....	ii
Document Control	ii
Amendments	ii
Revision Details	ii
Document Review	ii
Distribution of controlled copies.....	ii
Table of Contents	iii
Acronyms and Abbreviations	v
1 Introduction	10
1.1 Context.....	10
1.2 Background.....	10
1.3 Scope of the Plan	10
1.4 Environmental Management System overview	11
1.4.1 CCHMP preparation, endorsement and approval.....	11
1.4.2 Interactions with other Management Plans	11
1.5 Consultation	12
1.5.1 Consultation for preparation of the CCHMP	12
1.5.2 Ongoing consultation during Construction.....	12
2 Purpose and Objectives.....	13
2.1 Purpose.....	13
2.2 Objectives	13
2.3 Targets.....	13
3 Environmental Requirements.....	14
3.1 Relevant Legislation and Guidelines	14
3.1.1 Legislation	14
3.1.2 Guidelines and Standards.....	14
3.2 Ministers Conditions of Approval	15
3.3 Revised Environmental Management Measures	17
3.4 TfNSW QA Specifications.....	18
3.5 Key reference documents.....	18
3.5.1 Additional heritage assessments.....	18
4 Existing Environment.....	20
4.1 Aboriginal Cultural Heritage.....	20
4.1.1 Aboriginal Cultural Heritage Sites	20
4.2 Non-Aboriginal Cultural Heritage	23
4.2.1 Non-Aboriginal Heritage Items	23
5 Environmental Aspects and Impacts	28
5.1 Construction Activities	28
5.2 Aboriginal Heritage Impacts	28



5.3	Non-Aboriginal Heritage Impacts.....	30
6	Environmental Mitigation and Management Measures.....	33
6.1	Aboriginal Heritage.....	33
6.1.1	Active Avoidance	33
6.1.2	Passive Avoidance.....	34
6.1.3	Active Protection.....	34
6.1.4	Salvage Collection	34
6.1.5	Salvage Excavation	34
6.1.6	Aboriginal Heritage Interpretation Framework and Plan	34
6.2	Non-Aboriginal Heritage	35
6.2.1	Archival Photographic Recording	35
6.2.2	Non-Aboriginal Heritage Interpretation Framework and Plan	35
6.2.3	Archaeological Salvage Excavations	35
6.3	Unexpected Heritage Finds and Human Remains Procedure.....	36
6.4	Exclusion Zones.....	36
6.4.1	Safe Working Distances for Potential Use Zones.....	36
6.5	Management Measures.....	39
7	Compliance Management	44
7.1	Roles and Responsibilities	44
7.2	Training.....	44
7.3	TfNSW QA Hold Points	44
7.4	Inspections and monitoring.....	45
7.5	Auditing.....	45
7.6	Reporting and Identified Records	45
8	Review and Improvement	46
8.1	Continuous Improvement	46
8.2	CCHMP Update and Amendment.....	46
	Appendix A - Unexpected Heritage Finds and Human Remains Procedure	47
	Appendix B - Secondary CoAs and REMMs.....	54
	Secondary CoAs	55
	Secondary REMMs	58

Acronyms and Abbreviations

Abbreviations	Expanded text
ACHAR	Aboriginal Cultural Heritage Assessment Report
Aboriginal place	An Aboriginal Place is an area declared by the Minister administering the Act to be of special significance with respect to Aboriginal culture
Aboriginal objects	Aboriginal objects include any deposit, object or material evidence (not being a handicraft made for sale), including Aboriginal remains, relating to the Aboriginal habitation of NSW, before or concurrent with occupation by Non-Aboriginal people, as defined in Section 5 of the NPW Act
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
AR	Amendment Report
ARSR	Amendment Report to the Submissions Report
ASO	Aboriginal Site Officers
CCHMP	Construction Cultural Heritage Management Sub-plan
CEMP	Construction Environmental Management Plan
CFFMP	Construction Flora and Fauna Management Sub-plan
CNVMP	Construction Noise and Vibration Management Sub-plan
CoA	Condition of Approval
Construction	Includes all activities required to construct the CSSI as described in the documents listed in Condition A1, including commissioning trials of equipment and temporary use of any part of the CSSI, but excluding Low Impact Work which is carried out to complete prior to the approval of the CEMP, works approved under a Site Establishment Management Plan, approved under a Consistency Assessment, demolition of acquired residential houses, structures and sheds, and works specified in Appendix B and approved under an environmental management plan(s) in accordance with Condition A24.
CPBGG JV	CPB Contractors and Georgiou Group Joint Venture
CSEP	Community and Stakeholder Engagement Plan
CSSI	Critical State Significant Infrastructure
DAWE	Former Commonwealth Department of Agriculture, Water and the Environment
DCCEEW	Commonwealth Department of Climate Change, Energy, Environment and Water
DEC	Former NSW Department of Environment and Conservation
DECCW	Former NSW Department of Environment, Climate Change and Water
DITRDC	Commonwealth Department of Infrastructure, Transport, Regional Development and Communications
DPC Heritage	Former NSW Heritage Department of Premier and Cabinet (Heritage)



Abbreviations	Expanded text
DPHI	NSW Department of Planning, Housing and Infrastructure (formerly NSW DPE which has now been split into NSW DCCEEW and NSW DPHI, with all planning functions falling to DPHI)
DPI	Department of Primary Industries
DPIE	Former NSW Department of Planning, Industry and Environment
DUAP	Former Department of Urban Affairs and Planning
EAD	Environmental Assessment Documentation
EES	Former Environmental, Energy and Science Group (now EHG)
EHG	Environment and Heritage Group
EIS	Environmental Impact Statement
Environmental Assessment Documentation	<p>The set of documents that comprise the Division 5.2 Approval:</p> <ul style="list-style-type: none"> • Roads and Maritime Services (October, 2019) M12 Motorway, Environmental Impact Statement (EIS) • Transport for NSW (October, 2020) M12 Motorway, Submissions Report (the Submissions Report) • Transport for NSW (October, 2020) M12 Motorway, Amendment Report (AR) • Transport for NSW (December, 2020) M12 Motorway, Amendment Report submissions report (ARSR) • Transport for NSW (March, 2021) The M12 Motorway Amendment Report Submissions Report – Amendment (ARSR amendment) • WSP (October, 2021) M12 Motorway – West Package Detailed Design Consistency Assessment • GHD (October, 2021) M12 Motorway – Central Package Detailed Design Consistency Assessment • Arcadis (June, 2022) M12 Motorway – Sydney Water Crossings Consistency Assessment • Arcadis (July, 2022) M12 Motorway – Design Boundary Changes Consistency Assessment • Arcadis (August, 2022) M12 Motorway – Minor Change Consistency Assessment for Proposed Change to the M12 Motorway Project (M12 Central) Arcadis (August, 2022) M12 Motorway – Minor Change Consistency Assessment). • Arcadis (September/August, 2023) M12 Motorway – - Devonshire Road Temporary Roundabout Consistency Assessment • WSP (September, 2023) M12 Motorway – - Elizabeth Drive Connections Consistency Assessment • TfNSW (September, 2023) M12 Motorway – Minor Consistency Assessment M12 West demolition of structures as 752 Luddenham Road • Arcadis (October, 2023) M12 Motorway – East Minor Consistency Assessment • TfNSW (October, 2023) M12 Motorway – Minor Consistency Assessment M12 East AF9 Power Supply



Abbreviations	Expanded text
	<ul style="list-style-type: none"> TfNSW (October, 2023) M12 Motorway – Minor Consistency Assessment M12 East Cecil Road Laydown Area TfNSW (October, 2023) M12 Motorway – Minor Consistency Assessment M12 East Temporary Construction Signage Arcadis (December, 2023) M12 Motorway Project (M12 East) Sites 48, 50 and 51 Arcadis (January, 2024) M12 Motorway – Minor Consistency Assessment M12 Central Water Tower Access Road <p>The documents that comprise the EPBC referral:</p> <ul style="list-style-type: none"> Submission #3486 – The M12 Motorway Project between the M7 Motorway, Cecil Hills and The Northern Road, Luddenham, NSW Notification of referral decision and designated proponent - controlled action; date of decision 19 October 2018; ID: 2018-8286.
Environmental Representative	A suitably qualified and experienced person independent of project design and construction personnel employed for the duration of construction. The principal point of advice in relation to all questions and complaints concerning environmental performance.
EP&A Act	<i>NSW Environmental Planning and Assessment Act 1979</i>
EPA	NSW Environment Protection Authority
EPBC Act	<i>Commonwealth Environmental Protection and Biodiversity Conservation Act 1999</i>
ER	Environmental Representative
EWMS	Environmental Work Method Statement
ESM	Environment and Sustainability Manager (TfNSW)
ESR	Environmental Site Representative (CPBGG JV)
Heritage Act	<i>NSW Heritage Act 1997</i>
Heritage item	A place, building, work, relic, archaeological site, tree, movable object or precinct of heritage significance, that is listed or may be eligible to be listed under one or more of the following registers: the State Heritage Register under the <i>Heritage Act 1977</i> (NSW), a state agency heritage and conservation register under Section 170 of the <i>Heritage Act 1977</i> (NSW), a Local Environmental Plan under the EP&A Act, the World, National or Commonwealth Heritage lists under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth), and/ or an Aboriginal object or Aboriginal place as defined in section 5 of the <i>National Parks and Wildlife Act 1974</i> (NSW)
Heritage Council of Australia	Commonwealth Heritage Council
HIF	Heritage Interpretation Framework
HIP	Heritage Interpretation Plan
Hold Point	A point beyond which a work process must not proceed without express written authorisation from Roads and Maritime
JAJV	Jacobs Arcadis Joint Venture
ICOMOS	International Council on Monuments and Sites



Abbreviations	Expanded text
KCE	Kemps Creek East
LALC	Local Aboriginal Land Council
LLEP	Liverpool Local Environmental Plan
LIWMS	Low Impact Work Method Statement
M7 Motorway (MOD 6 Widening)	Refers to the State Significant Infrastructure project (SSI-663-MOD 6) to construct and operate an additional lane in both directions within the existing median of the M7 Motorway, south of the Kurrajong Road overhead bridge at Prestons to the M7 Motorway bridge at Richmond. This project interacts with the M12 East stage at the M7 interchange.
M7 Widening	Shorthand term for M7 Motorway (MOD 6 Widening)
M7-M12 Integration Project	The M7-M12 Integration project incorporates the following:
MGA	Map Grid of Australia – MGA is a metric rectangular grid system (i.e. east and north),
NASF	National Airports Safeguarding Framework
Non-Aboriginal Work	A Non-Aboriginal building or standing structure. This may include tram tracks, kerbing, historic road pavement, fences, sheds or building foundations.
NPW Act	<i>National Parks and Wildlife Act 1974</i>
NSW DCCEEW	NSW Department of Climate Change, Energy, the Environment and Water (formerly NSW DPE which has now been split into NSW DCCEEW and NSW DPHI)
OCS	Overarching Communication Strategy
OCEMP	Overarching Construction Environmental Management Plan
OEH	NSW Office of Environment and Heritage, now Heritage NSW
PACHCI	Procedure for Aboriginal Cultural Heritage Consultation and Investigation (Roads and Maritime, 2011)
PAD	Potential Archaeological Deposit
Planning Secretary	Secretary of the NSW Department of Infrastructure, Planning and Environment, or delegate
PLEP	Penrith Local Environmental Plan
POEO Act	<i>NSW Protection of the Environment Operations Act 1997</i>
Primary CoA/REMMs	CoA/REMMs that are specific to the development of this Plan
Project	M12 Motorway West
RAP	Registered Aboriginal Parties
REMM	Revised Environmental Management Measures
Relic	Evidence of past human activity which has local or state heritage significance. It may include items such as bottles, utensils, remnants of clothing, crockery, personal effects, tools, machinery and domestic or industrial refuse



Abbreviations	Expanded text
RIAR Group	Regions, Industry, Agriculture and Resources Group (a part of DPE)
Roads and Maritime	Former NSW Roads and Maritime Services. Now Transport for NSW
RTA	Roads and Traffic Authority. Former NSW Roads and Maritime Services. Now Transport for NSW
SEARs	Secretary Environmental Assessment Requirements
Secondary CoA/REMMs	CoA/REMMs that are related to, but not specific to, the development of this Plan
SS	Sustainability Strategy
TfNSW	Transport for New South Wales
Unexpected heritage find	A potential heritage item or place discovered but not identified in the documents listed in the Environmental Assessment Documentation, where assessment is required to determine if the item has heritage significance, or is an Aboriginal object or human remains. Unexpected heritage finds does not include confirmed human remains
Work	Any physical work to build or facilitate the building of the CSSI, including low impact work, environmental management measures and utility works. However, it does not include activities that inform or enable detailed design of the CSSI and generate noise that is no more than 5 dB(A) above the rating background level at any sensitive receiver.
WSIA	Western Sydney International Airport
WSP	Western Sydney Parklands

1 Introduction

1.1 Context

This Construction Cultural Heritage Management Sub-plan (CCHMP or Plan) forms part of the Construction Environmental Management Plan (CEMP) for the M12 Motorway West Project (the Project). The CPB Contractors and Georgiou Group Joint Venture (CPBGG JV) has been awarded the M12 West (construct only contract) – between The Northern Road, Luddenham and about 250 metres east of Badgerys Creek.

An Overarching Construction Environmental Management Plan (OCEMP) has been prepared by TfNSW to address the requirements of the Minister's Conditions of Approval (CoA), and the environmental management measures listed in the Project Environmental Assessment Documentation, all applicable legislation and Transport for New South Wales (TfNSW) specifications. The OCEMP was approved by DPIE on 21/12/2021.

This CCHMP has been prepared by CPBGG JV to address the requirements of the OCEMP, all relevant TfNSW specifications, specific licence and permit conditions.

1.2 Background

An Environmental Impact Statement (EIS) was prepared for the M12 Motorway project to describe and assess the Project and recommend management measures to address impacts. The EIS was exhibited by the NSW Department of Planning, Industry and Environment (DPIE) for 34 days from 16 October 2019 to 18 November 2019 to give the community and stakeholders the opportunity to provide comment.

Additional assessments have since been undertaken:

- M12 West Minor Consistency Assessment for the demolition of structures as 752 Luddenham Road required to address the need for the demolition of structures within Ancillary Facility 11. Whilst this ancillary facility is already located within the construction footprint and was previously assessed in the M12 Motorway Amendment Report, the demolition and disposal of structures in this location required assessment; approved in September 2023.
- M12 West Minor Consistency Assessment for the temporary amendment to the construction footprint to facilitate the construction of Variable Message Sign (VMS) infrastructure scope on The Northern Road (TNR), Luddenham NSW. While the VMS scope had been previously assessed in the M12 Motorway Amendment Report, the works area had not been included as a part of the M12 West construction footprint and required inclusion; approved in August 2024.

The Project must be carried out generally in accordance with the EIS, Submissions Report, AR, ARSR and the ARSR – Amendment, M12 West and Central CA, M12 West Demolition of Structures as 752 Luddenham Road CA. These documents are collectively referred to as the Environmental Assessment Documentation (EAD). The CSSI must also be carried out in accordance with all procedures, commitments, preventative actions, performance outcomes and mitigation measures set out in the EAD as required by NSW CoA A2.

As part of EIS development, detailed Aboriginal and Non-Aboriginal heritage cultural heritage assessments were prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued by NSW DPIE. The Aboriginal cultural heritage assessment was included in the EIS as Appendix I. The Non-Aboriginal heritage assessment was included in the EIS as Appendix J.

Further heritage assessment was undertaken subsequent to exhibition of the EIS as a part of the Amendment Report. Appendix E and Appendix F of the Amendment Report addressed Aboriginal heritage and Non-Aboriginal heritage respectively. Revised Environmental Management Measures (REMMs) and research and excavation methodologies were provided within the Amendment Report and ARSR. Where applicable, the REMMs from the Amendment Report and ARSR have been included in this CCHMP. Section 1.3 of the Construction Environmental Management Plan (CEMP) provides a detailed Project description.

1.3 Scope of the Plan

The scope of this CCHMP is to describe how CPBGG JV propose to manage potential Aboriginal and Non-Aboriginal heritage impacts during construction of the Project.

Early Works, as defined in the EIS Section 5.24.4 do not fall within the scope of the CPBGG JV CEMP and Sub-plans. Archaeological and cultural salvage and/or testing will be undertaken in areas identified of heritage value prior to construction impact of those heritage values. These will be undertaken by others as low impact work in accordance with the Archaeological Salvage Strategy or Low Impact Work Method Statement (LIWMS).

Furthermore, operational Aboriginal and Non-Aboriginal heritage impacts and operation measures do not fall within the scope of this CCHMP and therefore are not included within the processes contained within the CCHMP.

1.4 Environmental Management System overview

The Environmental Management System (EMS) for the Project is described in Section 1.5 of the CEMP. This CCHMP forms part of the environmental management framework for the Project, as described in Section 1.5 of the CEMP.

EWMS will be prepared by the CPBGG JV Environmental Site Representative (ESR) and reviewed by the TfNSW Environment and Sustainability Manager (ESM) (or delegate) and independent Environmental Representative (ER) prior to the commencement of the construction activities to which they apply. Construction personnel undertaking a task governed by an EWMS will undertake the activity in accordance with the mitigation and management measures identified in the EWMS.

Used together, the CEMP, strategies, procedures and EWMS form management guides that clearly identify required environmental management actions for reference by TfNSW and CPBGG JV.

The review and document control processes for this CCHMP are described in Section 3.12 and 3.13 of the CEMP. TfNSW will review this plan to confirm consistency with the requirements of this CEMP and specifications.

1.4.1 CCHMP preparation, endorsement and approval

This CEMP sub plan will be approved by the CPBGG JV Project Director and ESR prior to submission to TfNSW.

The CEMP and Sub-Plans will go through a review and update process as described in section 3.1 of TfNSW Specification G36 to ensure the CEMP and associated documents have been developed in accordance with the OCEMP. TfNSW will provide the CEMP to the ER for approval. Construction is not to commence until the CEMP, sub-plans and monitoring programs have been approved by the ER.

A hold point shall be submitted in accordance with G36 Section 3.1 - Preparation and submission of CEMP. TfNSW shall consider the documents prior to authorising the release of the Hold Point. TfNSW may request additional information for inclusion in the CEMP before authorising the release of the Hold Point.

Construction of the M12W Package did not commence prior to the approval of this Sub-Plan, as part of the M12W CEMP.

1.4.2 Interactions with other Management Plans

This Plan has the following interrelationships with other management plans and documents:

- The Construction Flora and Fauna Management Plan (Appendix B2 of the CEMP) detailing exclusions zone establishment and clearing and flagging protocols
- Heritage sites to be retained within construction worksites will be detailed on the Sensitive Area Plans as detailed in Appendix A6 of the CEMP
- The Sustainability Management Framework addresses the requirement to manage heritage items where reasonable and feasible
- Consultation between CPBGG JV, TfNSW, stakeholders, the community and relevant agencies will be undertaken in accordance with the Overarching Communication Strategy (OCS) prepared by TfNSW to address the requirements of NSW CoA B1 and B2 and the Community and Stakeholder Engagement Plan (CSEP)
- Unexpected Heritage finds and Human Remains Procedure

- Results of archival recordings, detailed salvage and/or test archaeological investigations included in heritage reports.

1.5 Consultation

1.5.1 Consultation for preparation of the CCHMP

TfNSW consulted with the following government agencies and stakeholders through the development of the OCEMP and Overarching CCHMP in accordance with NSW CoA C4 (f):

- Heritage Council of NSW
- Heritage NSW
- WaterNSW
- Fairfield City Council
- Penrith City Council
- Liverpool City Council
- Registered Aboriginal Parties (RAPs).

Additionally, TfNSW provided the Unexpected Heritage Finds and Human Remains Procedure to Registered Aboriginal Parties (RAPs) for review and comment.

This CCHMP has been written in accordance with the TfNSW overarching CCHMP and no external consultation was required for its development.

1.5.2 Ongoing consultation during Construction

Ongoing consultation between CPBGG JV, TfNSW, and stakeholders, the community and relevant agencies regarding the management of Aboriginal and Non-Aboriginal heritage values within the Project area will be undertaken during the construction of the Project as required. The process for the consultation will be documented in the OCS and CSEP.

2 Purpose and Objectives

2.1 Purpose

The purpose of this CCHMP is to describe how Aboriginal and Non-Aboriginal heritage will be protected and managed during construction of the Project.

2.2 Objectives

The key objective of the CCHMP is to ensure that Aboriginal and Non-Aboriginal cultural heritage impacts are managed appropriately throughout the construction of the Project and consider the mitigation and management measures referred to in:

- The Environmental Assessment Documentation
- NSW Conditions of Approval granted to the Project on 23 April 2021
- TfNSW QA Specifications G36
- Overarching CEMP (OCEMP)
- All relevant legislation and other requirements described in Section 3.1 of this Plan.

To achieve this objective, CPBGG JV will:

- Facilitate engagement with the local Aboriginal community in partnership to appropriately manage the Aboriginal cultural heritage values associated with the Project
- Where required - undertake detailed salvage and/or test archaeological investigation of the site in accordance with the correct procedures and salvage or excavation methodologies
- Ensure appropriate controls and procedures are implemented during construction activities to avoid or minimise potential adverse impacts to Aboriginal and Non-Aboriginal heritage along the Project corridor
- Ensure appropriate measures are implemented to address the requirements of the CoA and the REMMs detailed in this Plan
- Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements as described in Section 3.1 of this CCHMP.

2.3 Targets

Targets for the management of Aboriginal and Non-Aboriginal cultural heritage impacts during the Project include:

- Ensure full compliance with the relevant legislative requirements, CoA and environmental management measures
- Avoid or minimise disturbance, possible damage to heritage items or loss of Aboriginal and Non-Aboriginal heritage cultural heritage
- Follow correct procedures and ensure notification of any Aboriginal heritage objects/places uncovered during construction
- Provide appropriate archival photographic recording of Non-Aboriginal heritage items impacted by the Project (if not previously undertaken as Early works)
- Ensure training is provided in the form of inductions to all Project personnel on heritage items, protection measures and unexpected heritage items procedures before they begin work on site
- Minimise impacts on, and complaints from, the community and stakeholders.

3 Environmental Requirements

3.1 Relevant Legislation and Guidelines

3.1.1 Legislation

Legislation considered during the development of this Plan includes:

- *Environmental Planning and Assessment Act 1979* (EP&A Act)
- *National Parks and Wildlife Act 1974* (NPW Act)
- *Heritage Act 1977* (Heritage Act)
- *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Commonwealth).

Relevant provisions of the above legislation are identified in the register of legal requirements included Appendix A1 of the CEMP.

3.1.2 Guidelines and Standards

The main guidelines, specifications and policy documents relevant to this CCHMP include:

- TfNSW Specification G36 – Environmental Protection (Management System)
- *Procedure for Aboriginal Cultural Heritage Consultation and Investigation* (Roads and Maritime Services, 2011)
- *Cultural Heritage Guidelines* (Roads and Maritime, November 2015)
- *Standard Management Procedure: Unexpected Heritage Items* (Roads and Maritime, November 2015)
- *Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land, and actions by Commonwealth agencies* (Department of Sustainability, Environment, Water, Population and Communities, 2013)
- *Commonwealth Heritage Management Principles* (Department of the Environment and Water Resources, 2007)
- *NSW Government Policy on Aboriginal Participation in Construction* (released 1 May 2015, updated 1 August 2016)
- *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Office of Environment and Heritage (OEH), 2010)
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (OEH, 2010)
- *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH, 2011)
- *Altering Heritage Assets* (Heritage Office and DUAP, 1996)
- *Archaeological Assessment Guidelines* (NSW Heritage Office and NSW Department of Urban Affairs and Planning, 1996)
- *Assessing Heritage Significance* (NSW Heritage Office, 2001)
- *Assessing Significance for Historical Archaeological Sites and "Relics"* (NSW Heritage Branch, Department of Planning, 2009)
- *Photographic Recording of Heritage Items Using Film or Digital Capture* (Heritage Branch, 2006)
- *The Burra Charter: The Australia ICOMOS Charter for Places of Cultural Significance* (2013).
- *How to prepare archival records of heritage items* (NSW Heritage Office, 1998).

TfNSW contract specifications are a key source of environmental protection management processes relevant to this CCHMP. The contract specifications set out environmental protection requirements, including Hold Points that must be complied with during construction of the Project. A Hold Point is a point beyond which a work process must not proceed without express written authorisation from TfNSW.

3.2 Ministers Conditions of Approval

The primary NSW CoA relevant to the development of this Plan are listed in Table 3-1. A cross reference is also included to indicate where the CoA is addressed in this Plan or other Project management documents. Secondary NSW CoA's are included in Appendix B.

Table 3-1 Primary CoA

CoA No.	Condition Requirements	Document Reference
A5	Where the terms of this approval require a document or monitoring program to be prepared or a review to be undertaken and submitted to the Planning Secretary, and the terms of this approval require the document, monitoring program or review to be prepared/undertaken in consultation with identified parties, evidence of the consultation must be submitted to the Planning Secretary with the relevant document, monitoring program or review. The evidence must include:	Section 1.5 OCEMP and Overarching CCHMP
	(a) Documentation of the engagement with the party identified in the condition of approval that has occurred before submitting the document for approval;	
	(b) A log of the dates of engagement or attempted engagement with the identified party;	
	(c) Documentation of the follow-up with the identified party where engagement has not occurred to confirm that they do not wish to engage or have not attempted to engage after repeated invitations;	
	(d) Outline of the issues raised by the identified party and how they have been addressed; and	
	(e) A description of the outstanding issues raised by the identified party and the reasons why they have not been addressed.	
C4	The following CEMP Sub-plans must be prepared in consultation with the relevant government and other agencies identified for each CEMP Sub-plan. Details of all information requested by an agency during consultation must be provided to the Planning Secretary as part of any submission of the relevant CEMP Sub-plan, including copies of all correspondence from those agencies as required by Condition A5. (f) Heritage (including Aboriginal and non-Aboriginal) – Heritage Council of NSW, Heritage NSW, WaterNSW and relevant Council(s).	Section 1.5 OCEMP and Overarching CCHMP
C5	The CEMP Sub-plans must state how:	
	(a) The environmental performance outcomes identified in the documents listed in Condition A1 will be achieved;	Section 8
	(b) The mitigation measures identified in the documents listed in Condition A1 will be implemented;	Section 6
	(c) The relevant terms of this approval will be complied with; and	Section 3.2 Section 3.3
	(d) Issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed through SMART (Specific, Measurable, Achievable, Realistic and Timely) principles. .	Section 6
E31	An Unexpected Heritage Finds and Human Remains Procedure must be prepared to manage unexpected heritage finds in accordance with any guidelines and standards prepared by the Heritage Council of NSW or Heritage NSW. The Procedure must be prepared in consultation with heritage NSW and form part of the Heritage CEMP Sub-plan required by Condition C4.	OCHMP Section 6.3 Appendix A

E32	<p>The Unexpected Heritage Finds and Human Remains Procedure, as submitted to the Planning Secretary, must be implemented for the duration of Work.</p> <p>Note: Human remains that are found unexpectedly during the carrying out of Work may be under the jurisdiction of the NSW State Coroner and must be reported to the NSW Police immediately.</p>	<p>OCHMP</p> <p>Section 6.3</p> <p>Appendix A</p>
E33	<p>Where previously unidentified Aboriginal objects are discovered, all work must immediately stop in the vicinity of the affected area. Works potentially affecting the previously unidentified objects must not recommence until Heritage NSW has been informed. The measures to consider and manage this process must be specified in the Unexpected Heritage Finds and Human Remains Procedure required by Condition E31 and include registration in the Aboriginal Heritage Information Management System (AHIMS).</p>	<p>OCHMP</p> <p>Section 6.3</p> <p>Appendix A</p>

3.3 Revised Environmental Management Measures

The primary REMMs relevant to the development of this Plan are listed in Table 3-2 below. A cross reference is also included to indicate where the REMM is addressed in this Plan or other Project management documents. Secondary REMMs are included in Appendix B.

Table 3-2 Primary REMMs

ID	Measure/requirement	Timing	Document Reference
AH01	A Construction Cultural Heritage Management Plan (CCHMP) will be developed for the project in consultation with the project RAPs and EESG. The CCHMP will include:	Prior to construction	Section 1.5 OCEMP and Overarching CCHMP
	<ul style="list-style-type: none"> An unexpected finds procedure for the discovery of Aboriginal ancestral remains, Aboriginal objects or new Aboriginal sites consistent with TfNSW Standard Management Procedure Unexpected Heritage Items (Roads and Maritime, 2015). This procedure will also outline requirements to manage unexpected human remains finds in accordance with NSW statutory requirements, and relevant guidelines and standards prepared by EESG. The Procedure will outline the process for consulting with the RAPs in the event that previously unidentified Aboriginal heritage is discovered. 		Appendix A - Unexpected Heritage Finds and Human Remains Procedure
	<ul style="list-style-type: none"> Procedures for the management and curation of salvaged Aboriginal objects 		Overarching CCHMP
	<ul style="list-style-type: none"> Detailed locations and installation procedures for fencing and protective coverings 		Section 6.4 Section 6.1.1 Section 6.1.3
	<ul style="list-style-type: none"> Details of permissible activities inside protected Aboriginal areas 		Section 6.4
	<ul style="list-style-type: none"> Procedures for consideration of heritage aspects within site inductions and toolbox talks for construction workers and supervisors. 		Section 7.2
NAH01	A Construction Cultural Heritage Management Plan (CCHMP) will be prepared for the project as part of the CEMP in consultation with Heritage NSW. The CCHMP will include as a minimum:	Prior to construction	Section 1.5 OCEMP and Overarching CCHMP
	<ul style="list-style-type: none"> A list, plan and maps with GIS layers showing the location of identified heritage items both within, and near, the construction footprint 		Section 4.2
	<ul style="list-style-type: none"> A significance assessment and statement of significance for each item 		Section 4.2
	<ul style="list-style-type: none"> Protocols and procedures including inductions and toolbox talks for all contractors and sub-contractors working in the area to be informed of all exclusion zones, the elements and their significance, to prevent accidental damage or encroachment 		Section 7.2
	<ul style="list-style-type: none"> Protocols and procedures to be implemented during construction to avoid or minimise impacts on items of heritage significance including protective fencing 		Table 6-2 and Section 6.4
	<ul style="list-style-type: none"> The TfNSW Unexpected Heritage Items Procedure (Roads and Maritime, 2015) which would be followed in the event that unexpected heritage finds are uncovered during construction. 		Appendix A - Unexpected Heritage Finds and Human Remains Procedure

3.4 TfNSW Specifications

The TfNSW specifications set out the minimum requirements for the detailed outcomes in terms of quality or performance expected in the finished product for construction projects and are relevant to various construction activities on work sites to minimise impacts to the environment. The TfNSW Specifications are Project contract documents and are not publicly accessible.

The relevant TfNSW specifications for the development of this CCHMP are:

- TfNSW G36 – Environmental Protection.

3.5 Key reference documents

The key reference documents for Aboriginal and Non-Aboriginal heritage within and adjacent to the Project corridor are:

- Aboriginal heritage specifically:
 - Exhibited EIS Section 7.5 and Appendix I – Technical working paper: Aboriginal Cultural Heritage Assessment Report
 - AR – Appendix E Aboriginal Heritage Supplementary Technical Memorandum
- Non-Aboriginal heritage specifically:
 - Exhibited EIS Section 7.6 and Appendix J – Technical working paper: Non-Aboriginal Heritage Assessment Report
 - AR – Appendix F – Non-Aboriginal Heritage Supplementary Technical Memorandum.

The Project boundary and relevant heritage data is shown on the Sensitive Area Plans included in Appendix A6 of the CEMP.

3.5.1 Additional heritage assessments

Particular heritage items were not previously captured within the EIS, RS, AR, ARSR and ARSR - Amendment, following adjustments to the construction footprint. Additional heritage assessments and investigations have therefore been undertaken following the EIS and Amendment Report exhibitions. The assessments and investigations are ongoing and are likely to be completed during construction. These currently include:

- M12 Motorway: Haul Road and Fleurs Radio Telescope Non-Aboriginal Consistency Assessment (Artefact, 2021). The additional survey works found:
 - Fabric associated with the former location of Fleurs Synthesis Telescope antenna 'X3'
 - Fabric associated with the former location of Fleurs Synthesis Telescope antenna 'X4'
 - A concrete pad between antennas 'X3' and 'X4' likely to have been equipment for control and power
 - Sub-surface cables, power supply, and compressed air hoses
 - Sections of the former vehicle access track to antennas 'X3' and 'X4'
- M12 West Design Consistency Assessment – EIS Boundary Adjustment Review Aboriginal Cultural Heritage (KNC, 2021). Additional assessment found:
 - The identified changes to Aboriginal heritage impacts from the 80% detailed design can be considered consistent with the approved Project. The Aboriginal heritage REMMS are considered appropriate for the construction footprint amendments.
- M12 West Design Consistency Assessment - Non-Aboriginal Heritage (Artefact, 2021). Additional assessment found:
 - There would be no changes to the degree of impact to the four non-Aboriginal heritage items located within M12 West.
- M12 West and Central Consistency Assessment – Sydney Water Utility Crossings Aboriginal Cultural Heritage (KNC, 2022). Additional assessment found:
 - The identified changes to Aboriginal heritage impacts from the Sydney Water utility crossing works are consistent with the approved Project and the REMMs are to be maintained and implemented for the Sydney Water work areas within the extended project construction

boundary, including Active Protection (protective fencing), Salvage collection and/or Salvage excavation as required

- M12 West and Central Design Consistency Assessment – Boundary Changes Aboriginal Cultural Heritage (KNC, 2022). Additional assessment found:
 - The identified changes to Aboriginal heritage impacts from the proposed boundary adjustments at Sites 1-11 are consistent with the approved project and the management measures to be implemented as detailed in Table 6-1 and Table 6-2 as required for Aboriginal sites CCE T3 and CCW
 - The identification of additional Aboriginal archaeological site Mamre Road Kemps Creek AFT 1 (AHIMS 45-5-5478) within Site 8a requires management measures to be implemented as detailed in Table 6-1 and Table 6-2
- M12 West and Central Design Consistency Assessment - Non-Aboriginal Technical Assessment – McMaster's Farm/Field Station Building 1 (Artefact, 2022). Additional assessment found:
 - That the impacts of the proposed design changes at McMaster's Farm/Field Station are consistent with the previously approved impacts
- M12 West and Central Minor CA - Pre-Works Aboriginal Heritage Clearance Memo - Minor adjustments to M12 Central construction boundary (KNC, 2022). Additional assessment found:
 - The identified changes to Aboriginal heritage impacts from the proposed boundary adjustments are considered consistent with the approved project. However, management measures, as detailed in Table 6-1 and Table 6-2, must be implemented

Where relevant to the West Stage of the M12, these assessments have been incorporated into this Plan with reference to additional impacts on particular heritage items. This Plan will continue to be updated following the outcomes of the assessments and investigations for each heritage item.

4 Existing Environment

The following section summarises the heritage values within and adjacent to the Project corridor, based on information contained in the Environmental Assessment Documentation and Heritage assessments as detailed in Section 3.5.1.

4.1 Aboriginal Cultural Heritage

4.1.1 Aboriginal Cultural Heritage Sites

Field surveys and test excavations carried out to inform the Environmental Assessment Documentation determined there is a continuous but variable distribution of Aboriginal objects across the construction footprint and detailed investigation area. While much of the landscape has been subjected to high levels of ground disturbance, resulting from excavation and quarrying activities, and intensive clearing and farming, a total of 10 Aboriginal cultural heritage sites were identified within the construction footprint for the West project, as listed in Table 4-1.

Most of the Aboriginal cultural heritage sites consist of broad distributions of Aboriginal stone artefacts associated with major creeks; these watercourses provided water, food sources, and cultural significance for Aboriginal groups. These sites are expected to extend well into comparable landscapes outside of the construction footprint. These locations can be seen for the West project area in Figure 4-1.

The assessment significance criteria used to determine the significance for each Aboriginal cultural heritage site was based Australia International Council on Monuments and Site (ICOMOS) Burra Charter (Australia ICOMOS, 2000) in the Environmental Assessment Documentation. The criterion includes:

- Social value
- Historical value
- Scientific value
- Aesthetic value
- Spiritual value.

These values together, provided an “overall statement of significance” for each Aboriginal cultural heritage site as detailed in Table 4-1.

Table 4-1 Aboriginal cultural heritage sites located in the construction footprint

Site Name	Description	Overall statement of significance
45-5- 3804 (Isolated artefact 4)	Stone artefact site (single artefact)	Low
45-5- 4747 (M12A1)	Surface stone artefact site	Low
45-5- 4786 (TNR-AFT-14)	Single stone artefact, not be relocated during project fieldwork. Site is located within TNR PAD. No other artefacts were discovered in the PAD; therefore, site remains as a single stone artefact	Low
Cosgroves Creek West (CCW)	PAD on the western side of Cosgroves Creek in the vicinity of trotting tracks with exposed artefacts.	Moderate
Cosgroves Creek East T1 (CCE T1)	PAD on a low dividing ridge east of Cosgroves Creek. Continuous with Cosgroves Creek East T2.	Moderate
Cosgroves Creek East T2 (CCE T2)	PAD on a low rise over a second-order tributary. Continuous with Cosgroves Creek East T1 and T3.	Moderate
Cosgroves Creek East T3 (CCE T3)	PAD on high ground distant from watercourses. Continuous with Cosgroves Creek East T2.	Moderate
Badgerys West B (BWB)	PAD on a prominent hillock and low ridge overlooking South Creek. Incorporates 45-5-4747	Moderate
Badgerys Creek West (BCW)	PAD on floodplain and gentle slopes of Badgerys Creek adjacent to Elizabeth Drive	High
Badgerys Creek East (BCE)	PAD on floodplain of South Creek. Continuous with South Creek West T1.	High

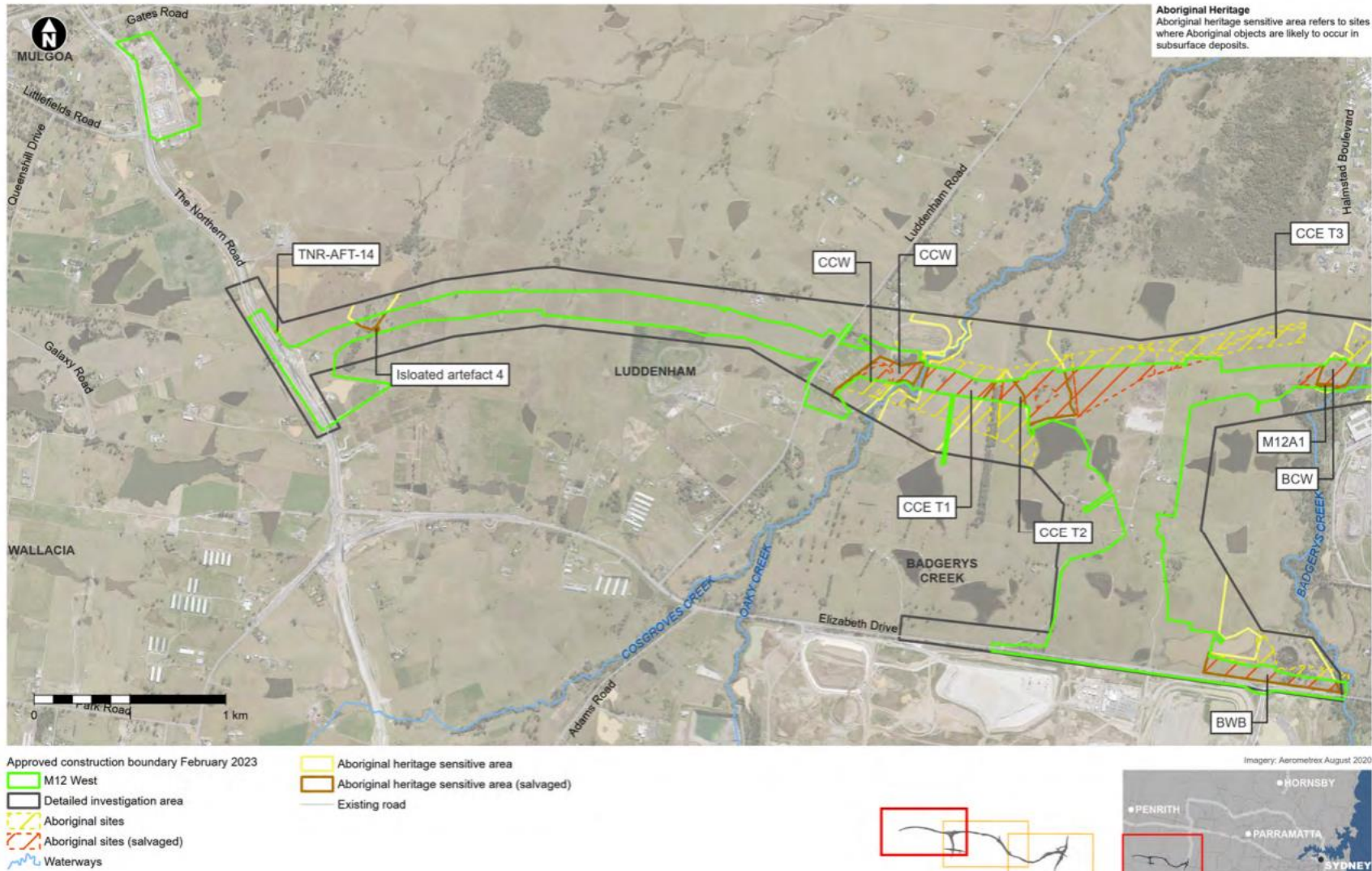


Figure 4-1 Location of Aboriginal heritage sites across the Project

Site: 11/000003 Path: C:\Users\jg2217\BARRACLOUGH\BARRACLOUGH - M12 Motorway CCHMP - 20.0000303606.2282\MapManagement\FIGURES\FIGURE 4-1_20230101 Created by: GIC | GAB | RB

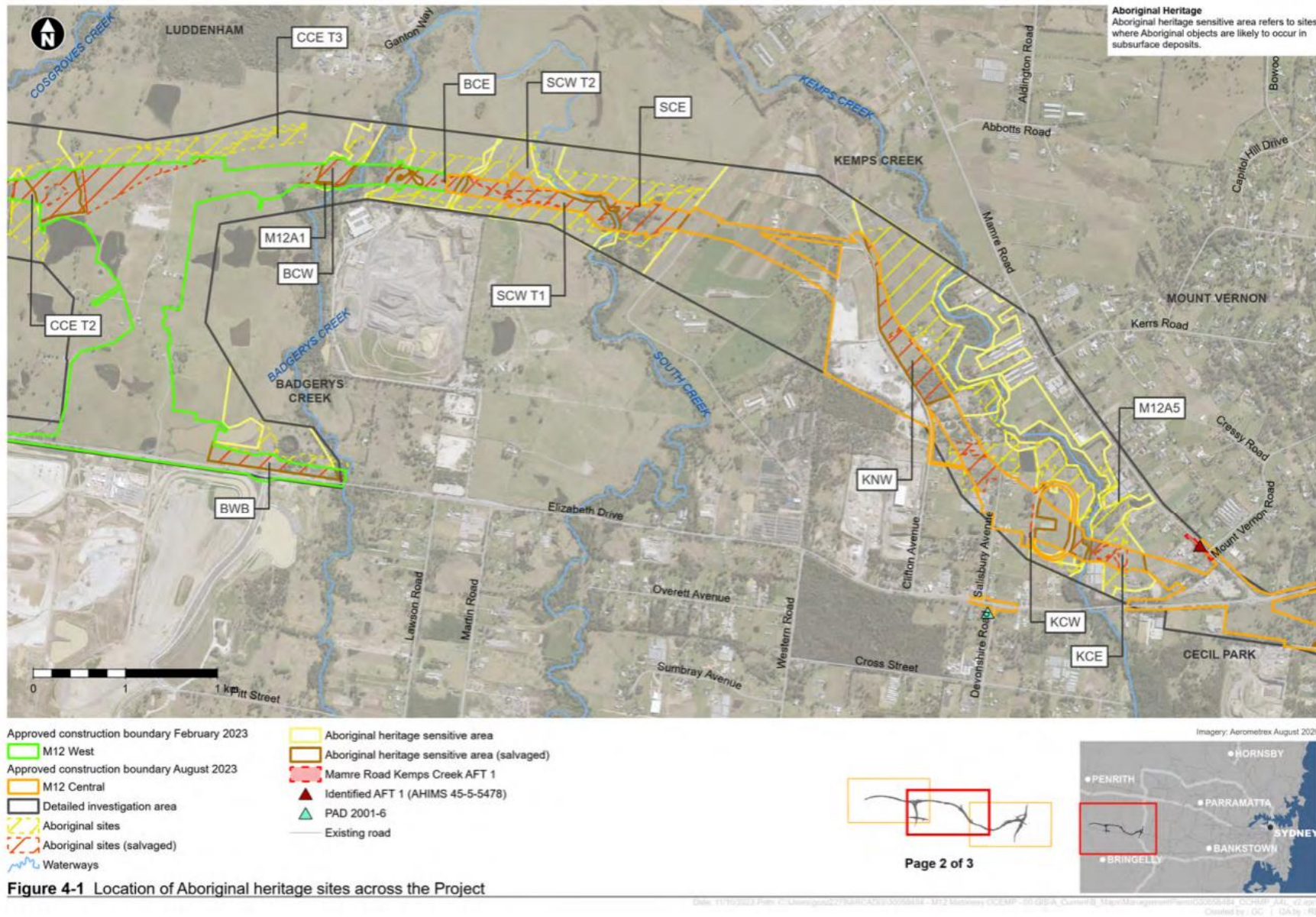






Figure 4-1 Location of Aboriginal heritage sites across the Project

4.2 Non-Aboriginal Cultural Heritage

4.2.1 Non-Aboriginal Heritage Items



Five (5) registered or potential heritage sites were considered to occur within the M12 West Project corridor assessed in the EIS. These items are listed in Table 4-2 and mapped in Figure 4-2.

Table 4-2 Description of heritage items of significance, within and immediately adjacent to the Project (EIS)

Heritage item name	Description and significance	Photographs
Registered heritage items		
Item 1: McGarvie Smith Farm (Penrith Local Environmental Plan (PLEP) 857)	<p>The McGarvie Smith Farm overlaps with the study area on Lot 62 DP 1087838 and Lot 63 DP 1087838. The heritage item is located inside the Project's construction footprint. It was surveyed on 14 November 2017 (Survey Area No. 5).</p> <p>During the field survey, a number of farm buildings, silo, concrete remnants, timber posts, sheds, dams, earth ditches and other features were noted.</p> <p>The farm is assessed as being of State significance.</p>	 <p>Example of the farms onsite (Farm 2, facing southwest)</p>  <p>Silo and concrete remnants, facing west</p>
Item 2: Fleurs Radio Telescope Site (PLEP 832)	<p>The Fleurs Radio Telescope intersects with the study area on Lot 21 DP 258414. The South Creek 1 and 2 heritage items are about 80 metres north of the construction footprint. The site was surveyed on the 20 and 21 October 2017 by Wallis Heritage Consulting (Gorman 2018).</p> <p>During the field survey a number of buildings, remains of antennas, antenna footing trenches, concrete plinths, concrete pads, cabling, signal boxes, fabrics and demolition material were noted.</p> <p>The area around the Fleurs site is mostly grazing and farmhouses and the land is zoned low lying rural/commercial.</p> <p>The site is considered to have State and potentially National significance</p>	 <p>South Creek 1 Antenna Complex signal box (Wallis Heritage Consulting, 2018)</p>  <p>South Creek 1 Antenna complex, antenna trench looking east (Wallis Heritage Consulting, 2018)</p>



Heritage item name	Description and significance	Photographs	
Item 3: Luddenham Road Alignment (PLEP 843)	<p>Luddenham Road bisects the study area for about 347 metres. It was surveyed on 16 November 2017 (Survey Area No. 12). The heritage item is located inside the construction footprint.</p> <p>Within the study area, Luddenham Road comprises modern asphalt with no remnants of the original road visible. The road is located within the original cadastral location with road reserve either side. Luddenham Road is considered to have local historical significance</p>		
Identified during previous heritage assessments			
Item 6: McMaster Field Station/McMaster Farm	<p>The McMaster Farm also known as McMaster Field Station, is located on Lot 101 DP848215 and was surveyed between 13 and 15 November 2017 (Survey area no. 4). The heritage item is located inside the Project's construction footprint.</p> <p>During the field survey a number of buildings, silos, animal pens and stockyards, dams, ditches, concrete remnants, bricks and earthworks were noted.</p> <p>The field station/ farm is assessed as being of State significance.</p>		
		Building 3, facing south	Silo 1, facing southeast

Heritage item name	Description and significance	Photographs	
<p>Item 10: Exeter Farm Archaeological Site (Artefact Scatter and Trees)</p>	<p>This heritage item is located inside the study area and partially within the construction footprint. During the field survey, a row of trees forming a hedge that may be Osage-orange trees (<i>Maclura pomifera</i>) were observed. The Osage-orange was traditionally used in hedges for stock management and in colonial gardens. No buildings are visible however an angled depression is visible both on the ground and on the 1947 aerial image. East of the trees, an artefact scatter was noted, situated within a large depression in the ground. The artefact scatter comprises bricks, metal, ceramic and glass across an area about 50 metres wide. Exeter Farm Archaeological Site is considered to have local historical significance</p>	 <p>Part of the scenic landscape adjacent to the study area, facing northwest</p>	 <p>Part of scenic landscape adjacent to the study area, facing southeast</p>

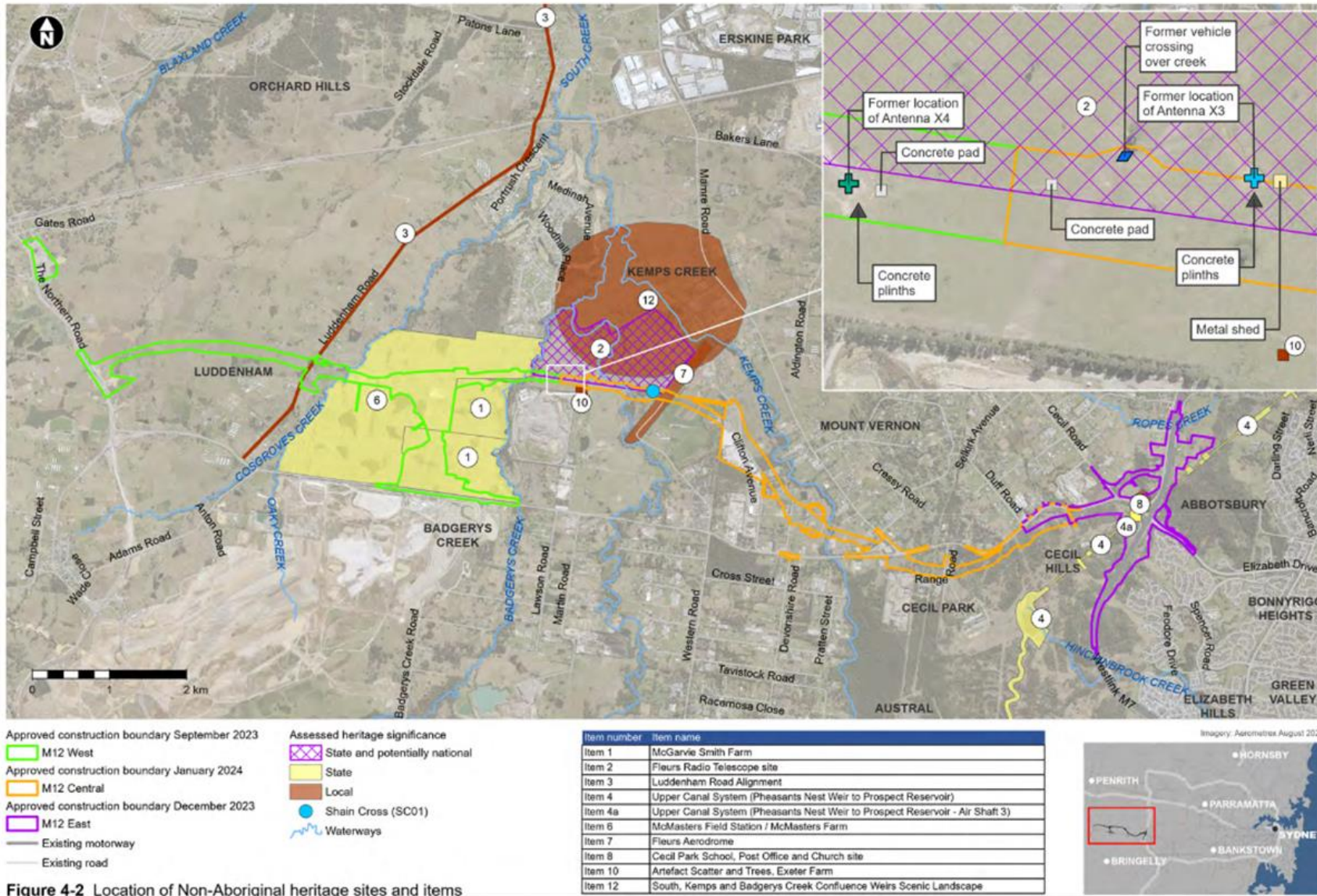


Figure 4-2 Location of Non-Aboriginal heritage sites and items

5 Environmental Aspects and Impacts

5.1 Construction Activities

Key aspects of construction of the Project that could result in adverse impacts to Aboriginal and Non-Aboriginal heritage include:

- Early works including non-substantial construction activities such as services relocations
- Planned salvage of Aboriginal and Non-Aboriginal heritage items
- Initial clearing and/or grubbing of vegetation
- Initial removal of topsoil
- Construction of ancillary facilities and site compounds and spoil / mulch and / or equipment stockpile areas
- Temporary access roads during construction
- Earthworks and excavations during construction
- Drainage infrastructure upgrades
- Bridge construction
- Demolition of existing structures
- Construction of pavements.

Refer also to the Aspects and Impacts Register included in Appendix A2 of the CEMP.

5.2 Aboriginal Heritage Impacts

Ten Aboriginal cultural heritage sites are located within the construction footprint for M12 West. The impact assessment identified the following sites within the construction footprint:

- Six sites would be subjected to partial harm
- Four sites would be subjected to total harm

A summary of the impacts on each Aboriginal cultural heritage site located within the construction footprint is provided in Table 5-1 below.

Table 5-1 Aboriginal heritage site impacts

Site Name	AHIMS ID	Registered AHIMS sites	Assessed significance of site	Type of harm	Degree of harm	Consequence of harm
Sites within the construction footprint						
CCW	TBC	-	Moderate	Directly harmed (5 ha)	Partial	Partial loss of value; site estimated to extend to the north and south of the construction footprint for about 1 km
CCE T1	TBC	-	Moderate	Directly harmed (4.5 ha)	Partial	Partial loss of value; site estimated to extend to the north and south of the construction footprint for about 1 km
CCE T2	TBC	-	Moderate	Directly harmed (6.6 ha)	Partial	Partial loss of value; site estimated to extend to the north and south of the construction footprint for about 1 km
CCE T3	TBC	-	Moderate	Directly harmed (20 ha)	Partial	Partial loss of value; very diffuse background scatter estimated to extend to the north and south of the construction footprint for about 1 km
BWB	TBC	-	Moderate	Directly harmed (1.7 ha)	Partial	Partial loss of value; site estimated to extend to the north of the construction footprint several hundred metres
BCW	TBC	-	High	Directly harmed (1.4 ha)	Total	Total loss of value
BCE	TBC	45-5-0528 (Fleurs 2) 45-5-4750 (M12 A3) 45-5-4748 (M12 A2)	High	Directly harmed (5.8 ha)	Partial	Partial loss of value; site estimated to extend to the north of the construction footprint for about 0.8 km
M12A1	45-5-4747	45-5-4747	Low	Directly harmed (0.02 ha)	Total	Total loss of value
Isolated artefact 4	45-5-3804	45-5-3804	Low	Directly harmed	Total	Total loss of value
TNR-AFT-14	45-5-4786	45-5-4786	Low	Directly harmed	Total	Total loss of value

5.3 Non-Aboriginal Heritage Impacts

The EAD found that of the five (5) heritage items within or adjacent to the Project corridor are subject to physical impacts as a result of the Project. Following the implementation of management measures, the Project would have a major impact on two (2) items, a minor impact on one (1) item, and a negligible impact on two (2) items these are:

- Major heritage impact:
 - Item 1: McGarvie Smith Farm
 - Item 6: McMaster Field Station
- Minor heritage impact:
 - Item 2: The Fleurs Radio Telescope Site.
- Negligible heritage impact:
 - Item 3: Luddenham Road Alignment
 - Item 10: Exeter Farm Archaeological Site

Table 5-2 includes a summary of the anticipated impacts to Non-Aboriginal heritage items resulting from the Project.



Table 5-2 Summary of potential impacts on Non-Aboriginal heritage items

Item	Listing	Significance	Proposed activities	Potential impacts	Heritage significance and implications
Item 1: McGarvie Smith Farm	PLEP 857	Listed under Penrith LEP as Local, but assessed as State for the purpose of this EIS	Construction of dual carriageway motorway with two lanes in each direction and access road to the planned Western Sydney International Airport at Badgerys Creek	The Project would bisect the entire site and result in the demolition of five buildings and one silo: <ul style="list-style-type: none"> McGarvie Smith Farm 6 McGarvie Smith Farm 7 McGarvie Smith Farm 8 Shed 1 Shed 2. 	Major impact The proposed works within McGarvie Smith Farm would be of medium-large scale and moderate intensity, with the demolition of the buildings and silo being permanent and irreversible. The M12 Motorway would bisect the farm resulting in ongoing impacts during the operation of the Project. The level of impact on the heritage items overall would be major.
Item 2: The Fleurs Radio Telescope Site	PLEP 832	Listed under Penrith LEP as Local, but assessed as State and potentially National for the purpose of this EIS	Construction of dual carriageway motorway with two lanes in each direction	The Project would impact remnants of the Fleurs Radio Telescope site including concrete pads, subsurface cables and one pole of the Shain Cross (SC01). The project has salvaged the site, which involved approximately 15 metres worth of various telescope cables being taken into possession by CSIRO. The concrete plinths insitu on the site are pending survey and investigation to determine their significance.	Minor impact The proposed works within Fleurs Radio Telescope site would be at a localised scale and low intensity, with the demolition of the of the Shain Cross and a concrete pad between antennas X ₃ and X ₄ used for equipment control and power that would be permanent and irreversible. Operational impacts on the site may occur due to the proximity of vibration and traffic fumes on the significant fabric, however the specific impacts at this stage are unknown. The level of impact on the heritage item overall would be minor.
Item 3: Luddenham Road Alignment	PLEP 843	Listed under Penrith LEP as Local	Construction of dual carriageway motorway with two lands in each direction.	No physical impacts as there is little or no original physical road fabric or associated features within study area to be impacted.	Negligible impact
Item 6: McMaster Field Station	N/A	Not currently listed but assessed in this report as State for the purpose of this EIS	Construction of grade-separated interchanges including associated ramps, with access road to the planned Western Sydney International Airport at Badgerys Creek	The Project would bisect the landscape of the McMaster Farm overall as the dual carriageway and interchange would be located within the property. Some modified landscape elements would be destroyed by the project. A potential construction laydown area overlaps with the complex of buildings on the property, and may be reused as construction offices and facilities.	Major impact The proposed works within McMaster Field Station would be of medium-large scale and moderate intensity, with some of the changes being permanent and irreversible. The landscape of the heritage item would be impacted by the construction of the project. Operational impacts would be applicable as the Project bisects the heritage item. The level of impact on the heritage item overall would be major.



Item	Listing	Significance	Proposed activities	Potential impacts	Heritage significance and implications
Item 10: Exeter Farm Archaeological Site	N/A	Not currently listed but assessed as local for the purpose of this EIS	Construction of dual carriageway motorway with two lands in each direction.	Currently located 50 metres south of the Construction Footprint and therefore no impact.	Negligible impact

6 Environmental Mitigation and Management Measures

Environmental mitigation and management measures for the management of cultural heritage on the project is to be managed through application of SMART (Specific Measurable, Achievable, Realistic and Timely) Principles.

6.1 Aboriginal Heritage

Aboriginal heritage sites across the Project will be managed as outlined in Table 6-1, noting that salvage for any heritage sites within the construction footprint has been undertaken. Refer to the following sections for further detail on each management strategy and refer to Figure 4-1 for areas that have been salvaged.

Table 6-1 Management strategies for Aboriginal heritage sites

Management strategy	Strategy description	M12 West
Active avoidance	Carry out investigations during detailed design to maximise the retention of intact cultural deposits, particularly those within the CHRP and sites located under the elevated structures over Badgerys Creek and South Creek.	<ul style="list-style-type: none"> BCW
Passive avoidance	No active protection measures required due to a lack of direct impacts or low archaeological significance.	-
Active protection	Protection provided in the form of fencing along the edge of the construction footprint closest to the site with signage notifying construction personnel to avoid ground impacts.	<ul style="list-style-type: none"> CCW CCE T1 CCE T2 CCE T3 BWB BCW
Active protection	Protection will be provided in the form of an exclusion zone and appropriate barrier / fencing along the portion of AHIMS site 45-5-2721 (PAD-OS-77) that extends into the construction footprint, with visible signage notifying construction personnel to avoid ground impacts.	-
Salvage collection	Salvage collection is warranted at those Aboriginal cultural heritage sites in the construction footprint where stone artefacts were recorded on the surface. Salvage collection is to record MGA coordinates of each artefact by GPS and relevant artefact attributes consistent with the broader archaeological salvage analysis. Salvage collection will be carried out by a suitably qualified archaeologist.	<ul style="list-style-type: none"> Isolated Artefact 4 TNR-AFT-14 M12A1
Salvage excavation	Salvage excavation is warranted at those Aboriginal cultural heritage sites that were assessed as having high scientific and high overall significance. Salvage excavation will be carried out by a suitably qualified archaeologist.	<ul style="list-style-type: none"> CCW BWB BCW
Archaeological Test excavation	If construction restrictions result in impacts to area of PAD associated with AHIMS site 45-5-2721 (PAD-OSOS-7), archaeological test excavation is required, to be conducted in accordance with Requirement 16a of the <i>Code of Practice for Investigation of Aboriginal Objects in NSW</i> (DECCW 2010), <i>Stage 2 Aboriginal Cultural Heritage Consultation and Investigation (PACHCI)</i> (Roads and Maritime 2011) and in consultation with RAPs. This will only be a requirement if avoidance cannot be achieved.	-

6.1.1 Active Avoidance

Active avoidance involves the retention of heritage sites located between elevated structures over Badgerys Creek. This will be achieved through detailed design with the objective to maximise the retention of intact, cultural deposits in the zone between bridge pylons.

Active avoidance strategies to be employed in proximity of heritage sites include:

- Fencing exclusion areas (see Section 6.4)
- Minimising construction areas
- Locating and designing haulage and other access roads to minimise disturbance of soils

- Covering cultural deposits with geotextile fabric and clean fill to reduce the potential for inadvertent damage.

Maximising protection is particularly important in the zone within 100 metres of creeks. Sites for active avoidance management are listed in Table 6-1.

6.1.2 Passive Avoidance

Sites nominated for passive avoidance do not require specific management measure because they are either located a sufficient distance outside of the construction footprint.

Sites for passive avoidance are listed in Table 6-1.

6.1.3 Active Protection

Sites that are partially impacted by the Project require active protection for those parts of each site that are located outside of the construction footprint, where sites are estimated to continue outside of the construction footprint.

Protection measures will include installation of temporary fencing around the portion of the site that is located outside of the construction footprint, with the erection of signage for construction personnel to avoid ground disturbance (see Section 6.4).

Sites requiring active protection through fencing and exclusion areas are listed in Table 6-1. Exclusion zones are detailed in Section 6.5.

6.1.4 Salvage Collection

Salvage collection was required at sites in the construction footprint where stone artefacts have been recorded on the surface. Salvage collection of recorded artefacts within the construction footprint was undertaken prior to construction by a suitably qualified archaeologist engaged by TfNSW as detailed in the Aboriginal Cultural Salvage Strategy (see Overarching CCHMP). At a minimum, salvage collection involved the recording of MGA GPS coordinates for each artefact and relevant artefact attributes. The results of the salvage collection are currently being documented in an Aboriginal Cultural Heritage Report which will be issued to the RAPs for endorsement, and Planning Secretary after the completion of the salvage work. The report will be issued no later than 12 months after the final analysis and identification and development of a final repository for finds.

Sites requiring salvage collection are listed in Table 6-1.

6.1.5 Salvage Excavation

The archaeological salvage program for the Project was completed in July 2022. Salvage excavation was undertaken prior to by a suitably qualified archaeologist engaged by TfNSW and nominated site officers for the relevant RAP. The details of salvage excavation methodology including procedures for the management and curation of salvaged Aboriginal objects are included in the Aboriginal Cultural Salvage Strategy (see Overarching CCHMP). All archaeological fieldwork is now complete.

The results of the salvage excavation will be documented in an Aboriginal Cultural Heritage Report which will be issued to the RAPs for endorsement, and Planning. The report will be issued no later than 12 months after the final analysis, identification, and development of a final repository for finds.

Sites that required salvage excavation are listed in Table 6-1.

CPBGG JV liaised with TfNSW prior to commencement of any works to ensure that all necessary salvage excavation works had been conducted. Where Salvage works were ongoing in an area, active protection may have been installed in accordance with section 6.1.3 following consultation with TfNSW and the Heritage consultant undertaking the salvage works.

6.1.6 Aboriginal Heritage Interpretation Framework and Plan

Two Heritage Interpretation Framework (HIF) and Plans for Aboriginal and Non-Aboriginal heritage will be prepared for the Project on behalf of TfNSW to fulfil the requirements of NSW CoA E27. Non-Aboriginal HIP is detailed in Section 6.2.2.

The Aboriginal HIF has been prepared by Balarinji Indigenous Design and Strategy on behalf of TfNSW. Consultation was conducted with the following organisations and agencies:

- Aboriginal Cultural Heritage Advisory Committee
- Local Aboriginal Land Council/s
- Fairfield City Council
- Penrith City Council
- Liverpool City Council.

The Aboriginal HIP includes interpretation measures that will improve community awareness of Aboriginal cultural heritage values. This will be an Aboriginal artwork interpretation strategy and plan for Aboriginal cultural heritage sites surrounding the Project. The HIFs will also be provided to WSIA and Sydney Metro Western Sydney Airport to assist in guiding opportunities for integration of heritage values into their Project design.

6.2 Non-Aboriginal Heritage

6.2.1 Archival Photographic Recording

A suitably qualified heritage consultant will be engaged by TfNSW to prepare an archival photographic recording of heritage sites in accordance with the Heritage Information Series: How to prepare archival records of heritage items (NSW Heritage Office, 1998) and Photographic Recording of Heritage Items Using Film or Digital Capture (Heritage Branch, 2006). This will include both buildings and landscape features such as dams, and earthworks. The recording will include a detailed map showing the location of the features.

Sites requiring archival photographic recording in the West Project are:

- Item 1: McGarvie Smith Farm (Penrith LEP 857)
- Item 2: The Fleurs Radio Telescope Site (Penrith LEP 832)
- Item 6: McMaster Field Station

Archival Recording of the below ground features (eg. cables) at Fleurs Radio Telescope Site is the responsibility of CPBGG JV once these works are undertaken.

6.2.2 Non-Aboriginal Heritage Interpretation Framework and Plan

A Heritage Interpretation Framework and Plan has been prepared for the Project by Extent Heritage on behalf of TfNSW to fulfil the requirements of NSW CoA E27 as they relate to Non-Aboriginal heritage. The HIF includes consideration of elements to enable the continued interpretation and understanding of heritage values within the M12 corridor. This will be carried out with the following organisations and agencies:

- Heritage NSW
- Department of Defence
- Veterans Groups
- Fairfield City Council,
- Penrith City Council
- Liverpool City Council.

The HIFs will also be provided to WSIA and Sydney Metro Western Sydney Airport to assist in guiding opportunities for integration of heritage values into their Project design.

The Non-Aboriginal HIP will include:

- Interpretation measures that will improve community awareness of the history of the Fleurs Radio Telescope and Fleurs Aerodrome as well as determine suitable locations for the presentation of information that are publicly accessible.
- Interpretation measures that will improve community awareness of the history and use of the McMaster's Farm/Field Station and the original building complex at the site, and specifically identifying Building 1 which is proposed for demolition.

6.2.3 Archaeological Salvage Excavations

Any required Archaeological salvage excavations will be carried out with a suitably qualified archaeologist present to confirm that the significance of artefacts and remains are in line with the findings of the test excavations already completed. To date, salvage of Item 2 (Fleurs Radio Telescope Site) has been completed under the supervision of a suitably qualified archaeologist.

6.3 Unexpected Heritage Finds and Human Remains Procedure

An Unexpected Heritage Finds and Human Remains Procedure (Appendix A) will be implemented for the duration of all Works. This procedure was prepared by a suitably qualified and experienced heritage specialist in accordance with relevant guidelines and standards through consultation with NSW Heritage and the Heritage Council of NSW. The procedure was submitted to the Planning Secretary for information no later than one month before the commencement of construction.

Note: Human remains that are found unexpectedly during the carrying out of Work may be under the jurisdiction of the NSW State Coroner and must be reported to the NSW Police immediately.

6.4 Exclusion Zones

CPBGG JV will install exclusion zones by fencing or other means to demarcate heritage items to be retained (including those located outside of the Project boundary) or protected before commencement of works. These exclusion zones will restrict access by personnel and vehicles into sensitive areas. Exclusion zones will be mapped out by a qualified surveyor in accordance with the Flagging Protocol in the Construction Flora and Fauna Management Plan (CFFMP) and TfNSW G40 specification.

CPBGG JV will install environmental protection area signage on exclusion zone fencing at regular intervals agreed to by the TfNSW ESM (or delegate). This fencing will be regularly inspected to ensure the fencing has not been damaged. If damaged, the exclusion zone will be rectified immediately. The fencing will only be removed following agreement by the TfNSW ESM (or delegate).

Exclusion zones will be established around key Aboriginal heritage items/areas as detailed in Section 6.1.1 and Section 6.1.3 and for the Non-Aboriginal heritage sites including:

- Item 6: McMaster Field Station
- Item 2: Fleurs Aerodrome.

The Sensitive Area Plans within the CEMP (Appendix A6) will show the location of exclusion zones. Exclusion zones for Aboriginal heritage areas are mapped in Figure 6-1.

Exclusion zones may only be entered in agreement with TfNSW ESM (or delegate) to enhance biodiversity values such as landscape and/or weed management, to undertake vibration monitoring or other pedestrian surveys (e.g. biodiversity survey, etc), or under the advice of a suitably qualified and experienced built heritage expert.

6.4.1 Safe Working Distances for Potential Use Zones

The following structures have the potential to be within the safe working distances for sensitive structures (Group 3 from DIN 4150). A detailed survey will be completed to determine the potential for vibration impacts and to define appropriate criteria for each heritage item. Sensitive items that require survey in the West Project identified in the EIS include:

- Item 1: McGarvie Smith Farm
- Item 2: Fleurs Radio Telescope Site
- Item 6: McMaster Field Station

Vibration monitoring will be carried out when vibration intensive tasks are occurring within the minimum working distances to heritage structures.

Where the monitoring identifies exceedances in the relevant criteria, or where impacts are identified, additional mitigation measures will be identified and implemented to appropriately manage impacts. These measures may include delineating additional exclusion areas around structures to restrict high-vibration activities occurring too close to sensitive structures.

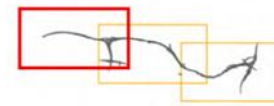
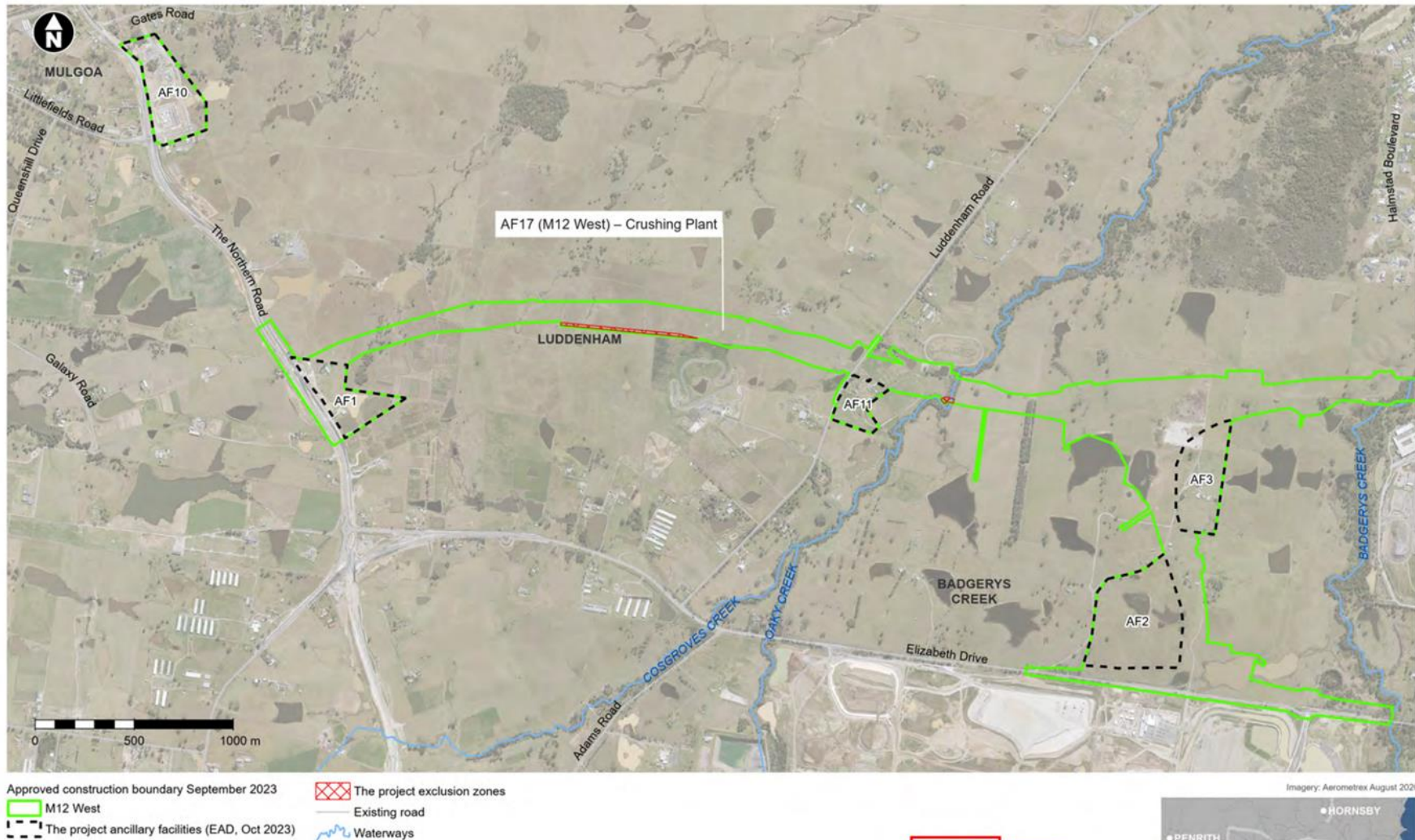


Figure 6-1 Exclusion zones for the Project (including heritage)

Date: 14/12/2023 Path: C:\Users\g04227\BANCAD\303606\12 - M12 Motorway OCEMP - 00\05-A_Current\8_MapManagement\Panel\303606\05A4_M12_OCEMP_A4L_v2.aprx
Created by: GC / GA by: RB

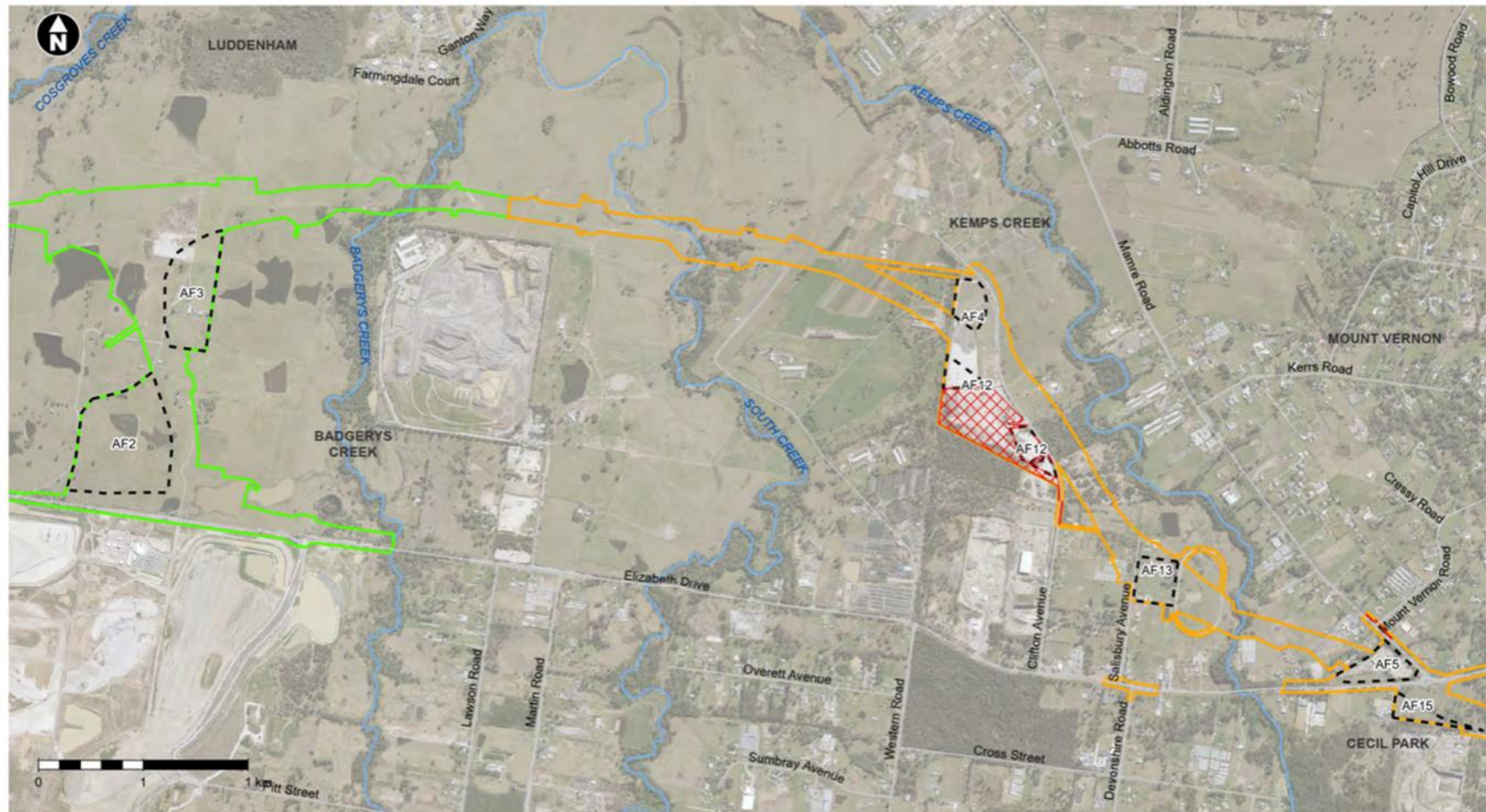


Figure 6-1 Exclusion zones for the Project (including heritage)



6.5 Management Measures

Management actions prescribed by this CCHMP aim to avoid and minimise impacts on Aboriginal and Non-Aboriginal heritage values and are summarised in Table 6-2.

Table 6-2 Management and mitigation measures of relevance to heritage

ID	Management Measure	When to implement	Responsibility for implementation	Reference or source	Evidence of implementation
CH01	At least 10 working days prior to commencing Physical Work on Site in or near an environmentally sensitive area (including heritage sites), prepare an EWMS which includes the details of the environmental protection measures to be implemented at that location. Clearly delineate the environmentally sensitive area and signpost the locations and boundaries. EWMS's will be submitted to TfNSW under G36 Hold Point 3.2.4.	During construction	ESR Superintendent	TfNSW G36	Sensitive Area Maps Site inspection/ photographs EWMS
CH02	A detailed Aboriginal Cultural Salvage Strategy must be prepared in consultation with the RAPs and EESG before any archaeological or cultural salvage is undertaken within the CSSI boundary. All salvage collections and excavations will be carried out by a suitably qualified and experienced Archaeologist using methods determined in consultation with the EESG and Project RAPs.	Prior to construction	TfNSW Archaeologist	AH02	Aboriginal Cultural Salvage Strategy
CH03	Following completion of all salvage works associated with heritage items, an Aboriginal Cultural Heritage Report must be prepared in accordance with relevant guidelines and in consultation with Project RAPs and EESG. The Report will document all results of the salvage activities including analysis of artefacts from collections and excavations and management of all artefact finds.	Prior to construction	TfNSW Heritage Consultant	AH02	Aboriginal Cultural Heritage Report
CH04	Impacts on identified Aboriginal cultural heritage sites will be minimised where feasible in consultation with a suitably qualified and experienced archaeologist. Measures considered will include (but not be limited to) focusing protection measures on the zone within 100 metres of creeks and should consider opportunities to cover the original cultural deposits with temporary protective barriers such as geotextile fabric and a layer of clean fill.	Detailed design, prior to construction and during construction	ESR Superintendent Archaeologist	AH03	EWMS Aboriginal Cultural Heritage Report
CH05	An Unexpected Heritage Finds and Human Remains Procedure (refer to Appendix A), must be prepared in consultation with Heritage NSW. The Procedure must be submitted to the Planning Secretary, and be implemented for the duration of Work.	Prior to and during construction and operations	TfNSW Project Manager ESR Superintendent	CoA E31, & E32	Unexpected Heritage Finds and Human Remains Procedure (Appendix A)
CH06	Where previously unidentified Aboriginal objects are discovered, all work must immediately stop in the vicinity of the affected area. Works potentially affecting the previously unidentified objects must not recommence until Heritage NSW has been informed. The Unexpected Heritage Finds and Human Remains Procedure must detail the measures to consider and manage this process as required by Condition	Prior to and during construction and operations	All workers ESR Superintendent TfNSW	CoA E33	Unexpected Heritage Finds and Human Remains Procedure (Appendix A)



ID	Management Measure	When to implement	Responsibility for implementation	Reference or source	Evidence of implementation
	E31 and include registration in the Aboriginal Heritage Information Management System (AHIMS).				
CH07	If human remains are found unexpectedly during the carrying out of Work, NSW Police should be notified immediately and the Unexpected Heritage Finds and Human Remains Procedure shall be implemented.	Prior to and during construction and operations	ESR Superintendent TfNSW	CoA E31, E32 & E33	Written correspondence
CH08	An investigation will be carried out during detailed design to minimise impacts on the CHRP site where feasible. Noting this was completed prior to construction.	Detailed design and prior to construction	TfNSW	AH04	Aboriginal Cultural Heritage Report
CH09	Salvage collection of surface artefacts will be carried out as detailed in Section 6.1.4 and Aboriginal Cultural Salvage Strategy.	Prior to construction	TfNSW Project Manager ESR Archaeologist	AH06	Aboriginal Cultural Heritage Report
CH10	Salvage excavation will be carried out as detailed in Section 6.1.5 and Aboriginal Cultural Salvage Strategy.	Prior to construction	TfNSW Project Manager ESR Archaeologist	AH07	Aboriginal Cultural Heritage Report
CH11	Exclusion fencing shall be implemented for heritage sites occurring within the construction footprint as detailed in Section 6.1.3 and section 6.4	Prior to and during construction	ESR Superintendent	AH08 AH10 (amended)	Sensitive Area Plans Site inspection/ photographs
CH12	Archival photographic recordings will be undertaken for Non-Aboriginal heritage sites/items as detailed in Section 6.2.1. Additionally, photographic archival recordings of remaining above-ground elements of the Fleurs Radio-telescope site will be documented and will be included in the archival recording report as per REMM NAH05 (amended).	Prior to construction	TfNSW Archaeologist	NAH04 NAH05 (amended) NAH06 NAH07 NAH08	Report provided by Archaeologist
CH13	All extant elements of the Fleurs Radio Telescope site (Item 2, Penrith LEP 832) such as telescopes, associated infrastructure and rubbish mounds situated outside the construction footprint will be left intact.	Detailed design and prior to construction	ESR Superintendent	NAH05 (amended)	Sensitive Area Plans Site inspection/ photographs
CH14	Ground penetrating radar, or other remote sensing survey techniques, will be carried out under the supervision of a suitably qualified and experienced archaeologist before any ground disturbance within the heritage curtilage of the Fleurs Radio Telescope Site contained within the construction footprint to identify any sub-surface cables.	Prior to ground disturbance at the Fleurs Radio Telescope Site	TfNSW Heritage Consultant ESR Project Manager	NAH05 (amended)	Report prepared by Heritage Specialist EWMS, which is to include the review and incorporation of any management measures

ID	Management Measure	When to implement	Responsibility for implementation	Reference or source	Evidence of implementation
	<p>A report will be prepared by the Heritage Consultant to record the outcomes of the remote sensing survey and recommend management measures for any sub-surface cables or structures found during the survey. CPBGG JV must review the outcomes of the remote sensing survey and undertake the management measures required within the remote sensing report.</p> <p>Additionally, if sub-surface components are unexpectedly identified during ground penetrating radar surveys which have not been identified as part of the Non-Aboriginal Heritage Consistency Assessment, additional assessment and management will be required and undertaken by CPBGG JV following direction by TfNSW.</p>				required within the remote sensing report
CH16	CPBGG JV will be responsible for (with advice from TfNSW Overarching Archival Recording Contractor) the retrieval of samples and the safe storage of samples, of each type of cable / compressed air hose along the cable alignment between antennas X3 and X4 with supervision by a heritage specialist in accordance with requirements listed in NAH05 (amended).	Prior to ground disturbance at the Fleurs Radio Telescope Site	TfNSW Heritage Consultant ESR Project Manager	NAH05 (amended)	Report prepared by Heritage Consultant
CH17	A potential use zone will be established around the McMaster Farm group of buildings, including a suitable buffer zone, and no construction activities will take place within this zone. The potential use zone will include safe working distances as outlined in Section 6.4.1	Prior to construction	ESR Superintendent Heritage Consultant	NAH07	Report provided by Heritage Consultant
CH18	Before occupying or utilising heritage buildings for potential use, a dilapidation survey will be carried out and a heritage architect will be engaged to advise on proposed modifications and management measures to avoid and minimise impact on the buildings	Prior to use of building	Project Engineer Project Manager Archaeologist	NAH07	Written report
CH19	Impacts on Non-Aboriginal heritage items will be avoided or minimised where reasonable and feasible. Where impacts are unavoidable, works will be carried out in accordance with the measures for individual Non-Aboriginal heritage items outlined in REMM's NAH04 to NAH11.	Prior to construction and during construction	Project Manager ESR Superintendent	NAH03	Sensitive Area Plans Site inspection/ photographs
CH21	<p>The following structures have the potential to be within the safe working distances for sensitive structures (Group 3 from DIN 4150):</p> <ul style="list-style-type: none"> Item 1: McGarvie Smith Farm Item 2: Fleurs Radio Telescope Site Item 6: McMaster Field Station <p>A detailed survey will be completed to determine the potential for vibration impacts and to define appropriate criteria for each heritage item. Vibration monitoring will be carried out when vibration intensive tasks are occurring within the minimum working distances to heritage structures.</p>	Prior to construction and during construction	ESR Project Engineer Heritage Consultant Noise and Vibration Consultant	NV11 Section 6.4.1	Report prepared by Heritage Consultant

ID	Management Measure	When to implement	Responsibility for implementation	Reference or source	Evidence of implementation
	Where the monitoring identifies exceedances in the relevant criteria, or where impacts are identified, additional mitigation measures will be identified and implemented to appropriately manage impacts.				
CH22	Post and rail fencing of heritage significance from the Luddenham Road Alignment within the construction footprint will be avoided. Where avoidance is not practicable, a suitability qualified heritage specialist will be consulted with.	During construction	TfNSW ESR Superintendent Heritage Specialist	NAH11	Report prepared by Heritage Specialist
CH17a	<p>Where retaining concrete plinths in-situ during construction is not practicable, following instruction from TfNSW, CPBGG JV will temporarily remove and store them. Survey will be undertaken providing details of their position and orientation relative to each other. Opportunities for re-establishing the concrete plinths on site close to their original location and/or as part of the interpretative display for the Radio Telescope site will be investigated. If re-established, the survey information collected prior to their removal must be used to ensure that the plinths are located in the same orientation and arrangement.</p> <p>Prior to removal of the concrete plinths, CPBGG JV is to determine whether any of the plinths are used as state survey marks. If so, compliance with the preservation of survey infrastructure requirements in TfNSW specification G71 is required. It is noted TS7279 is located on one of the plinths at X3.</p>	Prior to construction and during construction	TfNSW Project Manager ESR Heritage Specialist	REMM AH05 (amended)	Report prepared by Heritage Specialist
CH24	Consultation will be undertaken with neighbouring land owners and with personnel who will be undertaking work on other projects within the vicinity of the M12 Motorway construction footprint to ensure they are aware of any exclusion zones or sensitive areas identified for the Project.	Prior to construction and during construction	TfNSW Project Manager ESR	CEMP	Project induction

7 Compliance Management

7.1 Roles and Responsibilities

The Project organisational structure and overall roles and environmental responsibilities are outlined in Section 3.3 of the CEMP. Specific responsibilities for the implementation of heritage management are detailed in Section 6 of this Plan.

All salvage collections and excavations will be undertaken by TfNSW prior to construction, with the exception of salvage works required at Fleurs, Luddenham Road (if impacted) and any unexpected finds encountered during the works. The works will be carried out by a suitably qualified experienced archaeologist appointed for managing Aboriginal and Non-Aboriginal heritage items. A suitably qualified heritage consultant will also be engaged to prepare an archival photographic recording of impacted Non-Aboriginal heritage sites.

7.2 Training

To ensure that this Plan is effectively implemented, all site personnel (including Sub- Contractors) will undergo site induction training relating to heritage management issues before construction commencing. The induction training will address elements related to heritage items and values, including:

- Existence and requirements of this CCHMP, and all plans and procedures prepared under the CCHMPs
- Relevant legislation, regulations
- Incident response, management and reporting
- Environmentally sensitive locations and exclusion zones
- Site flagging protocol
- Boundaries for land disturbance
- General heritage management measures
- All requirements of Appendices contained within this CCHMP.

Targeted training in the form of toolbox talks or specific training will also be provided to personnel with a key role in environmental management or those undertaking an activity with a high risk of environmental impact. Site personnel will undergo refresher training at not less than six monthly intervals.

The ER will review and approve the induction and training program prior to the commencement of construction and monitor implementation.

Daily pre-start meetings conducted by the Foreman/ Site Supervisor will inform the site workforce of any environmental issues relevant to heritage that may be impacted by, or impact on, the day's activities.

Further details regarding staff induction and training are provided in Section 3.5 of the CEMP.

7.3 TfNSW Specification Hold Points

TfNSW specifications set out environmental protection requirements and include Hold Point processes. A Hold Point is a point beyond which a work process must not proceed without express written authorisation from TfNSW. Key Hold Points relevant to this CCHMP are identified in Table 7-1.

Table 7-1 Heritage TfNSW Hold Points

Hold Point Clause	Description	Document Reference
TfNSW G36 Section 4.13	At least 10 working days prior to commencing Physical Work on Site in or near an environmentally sensitive area, prepare an EWMS which includes the details of the environmental protection measures to be implemented at that location in accordance with G40/E (Flagging Protocol). Clearly delineate the environmentally sensitive area and signpost the locations and boundaries.	Table 6-2 0

7.4 Inspections and monitoring

The ESR will conduct regular inspections of sensitive areas, exclusion zones and activities with the potential to impact Aboriginal and Non-Aboriginal heritage for the duration of the Project. TfNSW will also conduct independent inspections to confirm compliance with heritage management requirements.

Requirements and responsibilities in relation to monitoring and inspections are documented in Section 3.9 and Appendix A8 of the CEMP.

7.5 Auditing

Audits (both internal and external) will be undertaken to assess the effectiveness of environmental controls, compliance with this Sub plan, CoA and other relevant approvals, licenses and guidelines.

Audit requirements are detailed in Section 3.9.3 of the CEMP.

7.6 Reporting and Identified Records

Reporting requirements and responsibilities are documented in Section 3.9, 3.11 and Appendix A8 of the CEMP. This includes the preparation and submission to the TfNSW and Environmental Report for each month by the 10th day of the following month. The monthly Environmental Report will include the following:

- Archaeological salvage or excavations
- Unexpected Heritage Items

Specific reporting requirements associated with heritage salvage are outlined in Table 7-2.

Table 7-2 Reporting requirements relevant to heritage management

Report	Frequency	Responsibility
Aboriginal Cultural Heritage Report	The report will be issued no later than 12 months after the final analysis, identification and development of a final repository for finds.	TfNSW Project Manager TfNSW ESM (or delegate) Project Archaeologist through consultation with Project RAPs and Heritage NSW
Archival Recording Heritage Report	Within 12 months of completing the heritage related work described in the environmental assessment documents.	TfNSW Project Manager TfNSW ESM (or delegate) Heritage consultant

CPBGG JV will maintain accurate records substantiating all construction activities associated with the Project or relevant to the CoAs, including measures taken to implement this CCHMP. Records will be made available to the DPHI and Commonwealth Department of Agriculture, Water and the Environment (DAWE) upon request, within the timeframe nominated in the request.

In addition, key identified records relevant to this CCHMP as specified by TfNSW G36 are identified in Table 7-3.

Table 7-3 Identified Records

Identified Records Clause	Description	Document Reference
TfNSW G36 Clause 3	CPBGG JV Environmental Management Plan (CEMP), Plans and Sub-plans, procedures and EWMS	Table 6-2



8 Review and Improvement

8.1 Continuous Improvement

Continuous improvement of this Plan will be achieved by the ongoing evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement. The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of environmental management and performance
- Identify environmental risks not already included in the risk register
- Determine the cause or causes of non-conformances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies
- Verify the effectiveness of the corrective and preventative actions
- Document any changes in procedures resulting from process improvement
- Make comparisons with objectives and targets.

The ESR will be responsible for ensuring Project environmental risks are identified and included in the risk register and appropriate mitigation measures implemented throughout the construction of the Project as part of the continuous improvement process. The process for ongoing risk identification and management during construction is outlined in Section 3.2.1 of the CEMP.

8.2 CCHMP Update and Amendment

The processes described in Section 3.8, 3.10 and 3.12 of the CEMP may result in the need to update or revise this Plan. This will occur as needed.

Any revisions to the CCHMP and other Sub-plans will be in accordance with the process outlined in Section 3.13 of the CEMP.

A copy of the updated Plan and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure.

Appendix A - Unexpected Heritage Finds and Human Remains Procedure

This Unexpected Heritage Items Procedure was developed for the Project to provide a consistent method for managing unexpected heritage items (both Aboriginal and non-Aboriginal) that are discovered during TfNSW activities. The Procedure includes TfNSW's heritage notification obligations under the *Heritage Act 1977 (NSW)*, *National Parks and Wildlife Act 1974 (NSW)*, *Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Cth)* and the *Coroner's Act 2009 (NSW)*.

The discovery of an 'unexpected heritage item' may include:

- Aboriginal objects
- Historic (non-Aboriginal) heritage items
- Human skeletal remains

The following guidelines and policies were referenced during the drafting of the Procedure:

- *Assessing heritage significance* (NSW Heritage Office, 2001)
- *Photographic recording of heritage items using film or digital capture* (NSW Heritage Office, 2006)
- *Skeletal remains: Guidelines for management of human skeletal remains* (NSW Heritage Office, 1988)
- *Due diligence code of practice for the protection of Aboriginal objects in NSW* (OEH, 2010)
- *Aboriginal cultural heritage consultation requirement for proponents* (OEH, 2010)
- *Code of practice for the archaeological investigation of Aboriginal objects in NSW* (OEH, 2010)
- *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH, 2011)

The Procedure was prepared by two suitably qualified and experienced heritage specialists:

- Greta Logue, former Environment Officer (Heritage) with Roads and Maritime Services. Greta has a B.Sc. Hons (Archaeology), M.Sc. Hons (Forensic Anthropology, PG Diploma (Environment Law) and at the time of preparation of the procedure had 10 years professional heritage experience
- Daniel Percival, Environment Officer (Heritage) with Roads and Maritime Services. Daniel has a BA Hons (Archaeology) (First Class) with over 10 years professional heritage experience

The Procedure was prepared in consultation with the Heritage Council of NSW and Heritage NSW as part of the CCHMP for consultation purposes, as required by NSW CoA E31, E32 and E33.

During the consultation process, the Heritage Council of NSW and OEH indicated their support for the Procedure as being appropriate to manage the discovery of unexpected heritage items during Construction of the Project (refer Annexure A of this CCHMP). The Procedure includes the requirement that consultation with Registered Aboriginal Parties will be undertaken in the event that previously unidentified Aboriginal heritage is discovered.

Attachment 1 to this Unexpected Heritage Items Procedure contains additional information that describes the process to be followed in the event that suspected human remains are discovered



during construction.

Attachment 2 is the procedure for handling Aboriginal human remains in accordance with NSW-CoA outlines the procedure for handling Aboriginal human remains in accordance with NSW CoA E31, E32 and E33.



Attachment 1 Unexpected Aboriginal and non-Aboriginal heritage finds procedure

The following procedure has been prepared to accompany the CCHMP. This section outlines the tasks that will be carried out following the discovery of an unexpected heritage item. Figure D-1 outlines the procedure in summary.

This procedure has been prepared in based on the content and processes outlined in the *Unexpected Heritage Items: Heritage Procedure 02* (RMS, 2015) and has been updated to be specific to construction. The RMS procedure was prepared by suitably qualified professionals in consultation with Heritage NSW.

In accordance with the *Unexpected Heritage Items Procedure* (RMS, 2015), different procedures will be put in place dependent on the items classification. The Unexpected Heritage finds procedure identifies three types of heritage items listed and classified as follows:

1. *Relic: Evidence of past human activity which has local or state heritage significance. It may include items such as bottles, utensils, remnants of clothing, crockery, personal effects, tools, machinery and domestic or industrial refuse*
2. *Aboriginal object: May include a shell midden, stone tools, bones, rock art or a scarred tree*
3. *Work: A building or standing structure. This may include tram tracks, kerbing, historic road pavement, fences, sheds or building foundations.*

Step 1. Stop work, protect item, and inform Environmental Site Representative

If an unexpected heritage item is encountered during excavation/construction activities:

- Stop all work in the immediate area of the item and notify the Project Manager or Environmental Site Representative (or delegate)
- The Project Manager or site supervisor will be responsible for establishing a 'no-go zone' around the item, using high visibility fencing where practicable
- The item will be inspected, documented and photographed using 'Unexpected Heritage Item Recording Form 418'
- The Project Manager or Environmental Site Representative will engage a suitably qualified heritage specialist to identify whether the item is likely a 'relic', 'Aboriginal object' or 'work'. If the item is determined to be a 'work', and it is possible to continue works without causing further disturbance, works will continue, and the completed Form 418 will be submitted to the relevant TfNSW Staff within 24 hours
- TfNSW Environment and Sustainability Manager will advise Project Manager whether TfNSW has an approval or safeguard in place (apart from this procedure) to impact on the item. If yes, work will recommence in accordance with the approval, permit or appropriate safeguard and no further action will be required
- The Project Manager or Site Supervisor will liaise with Traffic Management Centre where the delay is likely to affect traffic flow

Item will be reported as a 'Reportable Event' in accordance with the TfNSW Environmental Incident Classification and Reporting Procedure.

Step 2. Contact and engage and archaeologist and, where required, an Aboriginal site officer

- A suitably qualified and experienced archaeological consultant will be engaged to assess the find
- Where the item is likely to be an Aboriginal object, an Aboriginal Site Officer (ASO) will also be engaged to assess the find
- The archaeological consultant (and ASO, if relevant) will be provided with the photographs.

Step 3. Preliminary assessment and recording of the find



- Should the archaeologist (and ASO, if relevant) determine from the photographs that no site inspection is required because no archaeological constraint exists, such advice will be provided in writing and confirmed by the Project Manager or Site Supervisor
- Site access will be arranged for the archaeologist (and ASO, if relevant) to inspect the item as soon as practicable
- Subject to the archaeologist assessment (and ASO's assessment, if relevant), work will recommence at a set distance from the item
- Should the archaeologist (and ASO, if relevant) provide advice after the site inspection and preliminary assessment that no archaeological constraint exists, such advice should be provided in writing and confirmed by the Project Manager or Site Supervisor
- Should it be required, additional specialist technical advice will be organised

Should the item be identified as a relic, heritage item or an Aboriginal object the archaeologist will formally record them.

- Heritage NSW could be notified informally by telephone at this stage by the archaeologist or project manager. Any verbal conversations with Heritage NSW will be noted on project file for future reference
- If a relic, heritage item or Aboriginal object has been identified, the archaeologist will notify:
 - Heritage NSW (and formally register the site on the Aboriginal Heritage Information Management System (AHIMS) as required).

Step 4. Prepare an archaeological or heritage management plan

- An archaeological or heritage management will need to be prepared in the event of unexpected Aboriginal or non-Aboriginal heritage find
- Registered Aboriginal Parties will be consulted in the event of an unexpected Aboriginal heritage find
- The archaeological consultant will prepare an archaeological or heritage management plan (with input from the ASO and RAPs, where relevant) with consideration to the any heritage sub-plans, any conditions of heritage approvals, Minister's Conditions of Approval, and heritage assessment documentation
- The archaeologist will submit this plan as a letter, brief report or email to the Project Manager or Site Supervisor outlining all relevant archaeological or heritage issues
- The Project Manager or Site Supervisor will review the archaeological or heritage management plan.

Step 5. Notify Regulator (if required)

- The archaeological or heritage management plan will be reviewed to confirm if Heritage NSW notification is required
- If yes, a notification letter will be prepared
- The draft notification letter, archaeological or heritage plan and the site recording form will then be sent to TfNSW Environment and Sustainability Manager for review and amended where appropriate
- The signed notification letter, archaeological or heritage management plan and site recording form will be submitted to Heritage NSW, DPHI
- A copy of the final signed notification letter, archaeological or heritage management plan and the site recording form will be kept on file by the Project Manager or Site Supervisor and a copy sent to the TfNSW Environment and Sustainability Manager.

Step 6. Implement archaeological or heritage management plan

- The archaeological or heritage management plan will be modified to take into account any additional advice resulting from notification and discussions with Heritage NSW



- The archaeological or heritage management plan will be implemented. Where impact is expected, this will include such things as a formal assessment of significance and heritage impact assessment, preparation of excavation or recording methodologies, consultation with registered Aboriginal parties, obtaining heritage approvals etc, if required
- Where heritage approval is required, the Environmental Site Representative will be contacted for further advice and support material
- It will then be assessed whether heritage impact is consistent with the project approval
- Where statutory approval is not required and where recording is recommended by the archaeologist, sufficient will be allowed for this to occur.

Step 7. Review CCHMP, CEMP and CoA

- The CCHMP will be updated as appropriate with any changes resulting from final heritage management (e.g. retention of heritage item, salvage of item). The updated CCHMP will incorporate additional conditions arising from any heritage approvals, and Aboriginal community consultation if relevant
- Any changes to the CCHMP will be included in site induction material site workers will be updated during toolbox talks
- Where statutory approval is not required and where recording is recommended by the archaeologist, sufficient time will be allowed for this to occur.

Step 8. Resume work

- CPBGG JV will seek written clearance to resume project work from TfNSW Environment and Sustainability Manager and the archaeologist (and Heritage NSW)
- Archaeological excavation/heritage reporting and other heritage approval conditions will be completed in the required timeframes. This includes artefact retention repositories, conservation and/or disposal strategies.

All heritage/archaeological assessments, heritage location data and its ownership status will be forwarded to the TfNSW Environment and Sustainability Manager. They will ensure all heritage items in TfNSW ownership and/or control are considered for the Roads and Maritime S170 Heritage and Conservation Register.

On discovering something that could be an unexpected heritage item ('the item'), the following procedure (Figure D-1) must be followed.

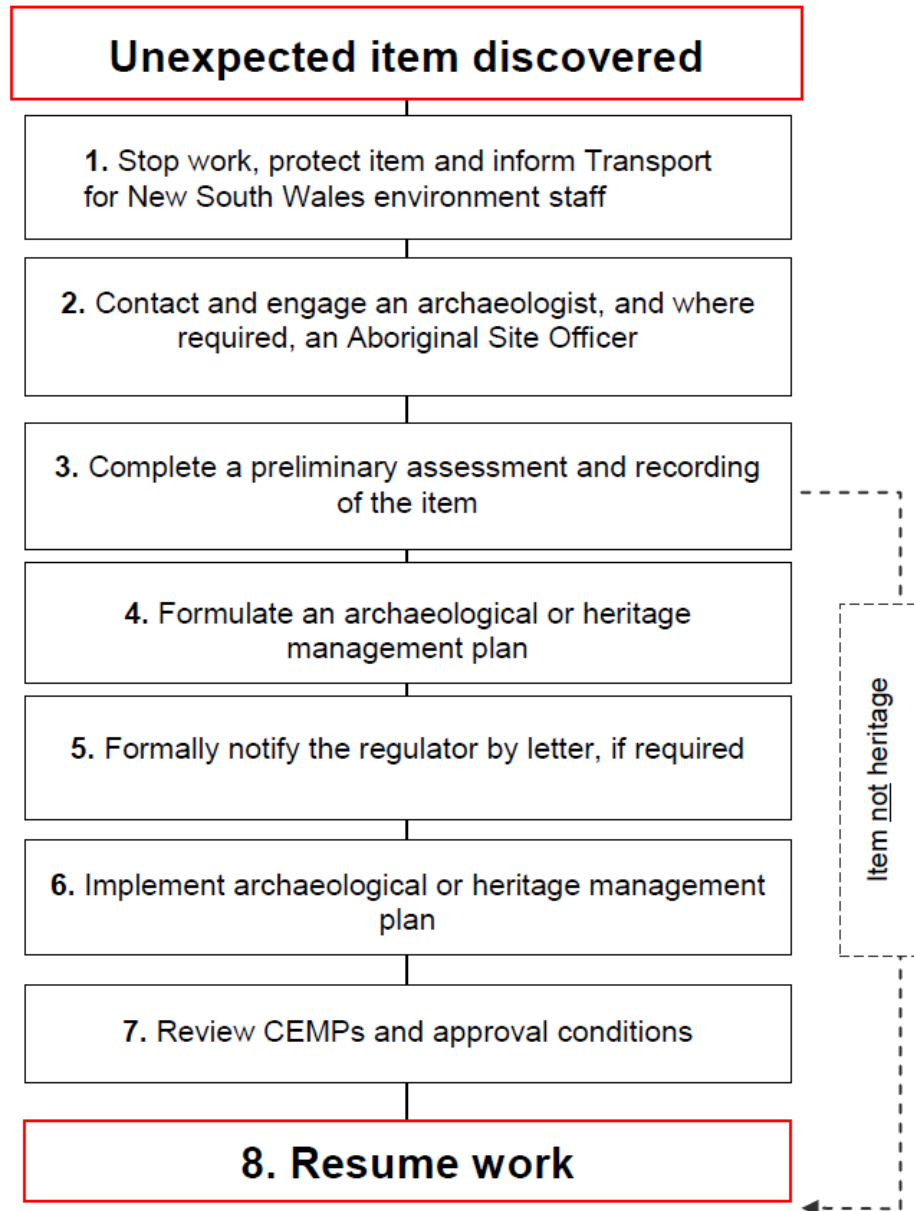


Figure D-1 Overview of steps to be undertaken on the discovery of an unexpected heritage item



Attachment 2 - Unexpected Human Remains Procedure

This attachment outlines the procedure for handling Aboriginal human remains in accordance with NSW-CoA, the *Skeletal Remains – Guidelines for the Management of Human Skeletal Remains under the Heritage Act 1977* (NSW Heritage Office 1998) and the *Aboriginal Cultural Heritage Standards and Guidelines Kit* (NPWS 1997).

If construction activity reveals possible Aboriginal human skeletal material (remains), the following procedure is to be followed:

1. Identify whether the remains are animal bones, ceramics or material before proceeding with this Procedure.
2. As soon as remains are exposed, immediately halt all work at that location and immediately notify the TfNSW Environment and Sustainability Manager (or delegate) or Construction Contractor Project Manager on site to allow assessment and management
3. Secure the site
4. Contact police as the discovery of human remains triggers a process which assumes that they are associated with a crime. The NSW Police will retain carriage of the process until such time as the remains are confirmed to be Aboriginal or historic. If the remains are identified as being non-human, skip to Step 8.
5. Notify DPHI, as the approval authority, when human remains are found
6. Once the police process is complete and if remains are not associated with a contemporary crime contact DPHI. DPHI will determine the process, in consultation with Heritage NSW and/or the Heritage Office as appropriate
7. If the remains are identified as Aboriginal, secure the site and notify NSW DCCEEW via the Environment Line and notify all RAPs or Aboriginal stakeholders in writing. NSW DCCEEW will act in consultation with Heritage NSW as appropriate. Notify Heritage NSW in writing according to NSW DCCEEW instructions. Work may not recommence until Heritage NSW have been notified. Formally register the site on the AHIMS as required).
8. If the remains are identified as Non-Aboriginal (historical) remains, secure the site and contact the NSW DCCEEW. NSW DCCEEW will act in consultation with the Heritage Division as appropriate. Notify the Heritage Division in writing according to NSW DCCEEW instructions.
9. Once the police process is complete and if the remains are identified as not being human and the appropriate clearances have been given, work can recommence.



Appendix B - Secondary CoAs and REMMs

Secondary CoAs

CoA No.	Condition Requirements	Document Reference
A7	References in the terms of this approval to any guideline, protocol, Australian Standard or policy are to such guidelines, protocols, Standards or policies in the form they are in as at the date of this approval.	Section 3.1.2
C9	Any of the CEMP Sub-plans may be submitted to the Planning Secretary for approval along with, or subsequent to, the submission of the CEMP but in any event, no later than one (1) month before the commencement of construction.	Section 1.4.1
C10	Construction must not commence until the CEMP and all CEMP Sub-plans have been approved by the Planning Secretary, unless otherwise agreed by the Planning Secretary. The CEMP and CEMP Sub-plans, as approved by the Planning Secretary, including any minor amendments approved by the ER, must be implemented for the duration of construction. Where construction of the CSSI is staged, construction of a stage must not commence until the CEMP and sub-plans for that stage have been endorsed by the ER and approved by the Planning Secretary.	Section 1.4.1
E25	Construction and operation of the CSSI should aim to not diminish the potential of the following heritage items for nomination to the State Heritage Register beyond the impacts to significance already identified in the documents listed in Condition A1: McGarvie Smith Farm, McMaster Field Station and Fleurs Radio Telescope Site.	Section 6.2
E26	An experienced and qualified heritage specialist(s) must prepare and/or endorse the:	OCHMP
	(a) Heritage Interpretation Plan required by Condition E27	Section 6.1
	(b) Archival photographic digital recording required by Condition E28; and	Section 6.2
	(c) Heritage Report required by Condition E29.	
E27	A Heritage Interpretation Plan must be prepared that identifies and interprets the key heritage values and stories of the heritage items impacted by the CSSI. The Heritage Interpretation Plan must include but not be limited to:	OCHMP
	(a) Integration of heritage themes and values in the design of the CSSI; design elements (form and fabric) and themes for the CSSI;	Section 6.2.2 Section 6.1.6
	(b) Design elements (form and fabric) and themes for the CSSI;	



CoA No.	Condition Requirements	Document Reference
	<p>(c) Consideration of the design concepts for Western Sydney International Airport and Sydney Metro Western Sydney Airport</p> <p>(d) Opportunities for design responses for Aboriginal and non-Aboriginal heritage.</p> <p>The Heritage Interpretation Plan must be provided to Western Sydney International Airport and Sydney Metro Western Sydney Airport to assist in guiding opportunities for integration of heritage themes and values into their design.</p> <p>The Heritage Interpretation Plan must be prepared in accordance with the <i>Interpreting Heritage Places and Items: Guidelines</i> (NSW Heritage Office, 2005), and in consultation with Heritage NSW, Aboriginal Cultural Heritage Advisory Committee, LALC and relevant council(s).</p> <p>The Plan must be implemented and inform the Place, Design and Landscape Plan required by Condition E69.</p> <p>The Heritage Interpretation Plan must be submitted to the Planning Secretary and Heritage NSW for information prior to finalising the Place, Design and Landscape Plan required by Condition E69.</p> <p>Note: Nothing in this condition prevents the Proponent from preparing separate Heritage Interpretation Plans for Aboriginal and Non-Aboriginal Heritage.</p>	
E28	Archival photographic digital recording must be undertaken as outlined in the documents listed in Condition A1 for all listed heritage items and for all sites assessed to have heritage significance which will be affected by the CSSI. The recordings must be undertaken prior to the commencement of Work which may impact the items. The recordings must include buildings, structures and landscape features and detailed maps showing the location of features. The archival recording must be prepared in accordance with <i>How to Prepare Archival Records of Heritage Items</i> (NSW Heritage Office, 1998) and <i>Photographic Recording of Heritage Items Using Film or Digital Capture</i> (NSW Heritage Office, 2006).	OCHMP Section 6.2.1
E29	Following completion of all Work described in the documents listed in Condition A1 in relation to heritage items, a Heritage Report including the details of archival recordings, further historical research either undertaken or to be carried out and archaeological excavation (with artefact analysis and identification of a final repository for finds), must be prepared in accordance with any guidelines and standards required by the Heritage Council of NSW and Heritage NSW. <i>Note: Nothing in this condition prevents the Proponent from preparing separate Heritage Reports for Aboriginal and Non-Aboriginal Heritage.</i>	OCHMP Section 6.1.4 Section 6.1.5 Section 6.2.1 Appendix A
E30	The Heritage Report must be submitted to the Planning Secretary and Heritage NSW for information within 12 months of completing all Work described in the documents listed in Condition A1 in relation to heritage items. Copies of the Heritage Report must also be provided to relevant local libraries and relevant local historical societies.	OCHMP Section 6.1.4



CoA No.	Condition Requirements	Document Reference
		Section 6.1.5 Section 6.2.1 Appendix A
E42	The Proponent must conduct vibration testing during vibration generating activities that have the potential to impact on heritage items to identify minimum working distances to prevent cosmetic damage. In addition, vibration monitoring must be undertaken during construction for relevant remaining Fleurs Radio Telescope structures, the Upper Canal (in consultation with WaterNSW) and McMaster Farm and McGarvie-Smith Farm group of remaining buildings. In the event that the vibration testing and attended monitoring shows that the preferred values for vibration are likely to be exceeded, the Proponent must review the construction methodology and, if necessary, implement additional mitigation measures.	CNVMP
E43	Advice from a heritage specialist must be sought on methods and locations for installing equipment used for vibration, movement and noise monitoring at heritage-listed structures.	CNVMP
E44	Before conducting at-property treatment at any heritage item identified in the documents listed in Condition A1, the advice of a suitably qualified and experienced built heritage specialist must be obtained and implemented to ensure such work does not have an adverse impact on the heritage significance of the item.	Table 6-2 CH23
E45	All Work undertaken for the delivery of the CSSI, including that undertaken by third parties (such as utility relocations), must be coordinated to ensure respite periods are provided. The Proponent must:	CNVMP
	(a) Reschedule any work to provide respite to impacted noise sensitive land user(s) so that the respite is achieved in accordance with Condition E47; or	
	(b) Where respite outlined in Condition E47 cannot be achieved, consider the provision of alternative respite or mitigation to impacted noise sensitive land user(s); and	
	(c) Provide documentary evidence to the ER in support of any decision made by the Proponent in relation to respite or mitigation.	
	The consideration of respite must also include all other CSSI, SSI and SSD projects which may cause cumulative and/or consecutive impacts at receivers affected by the delivery of the CSSI.	



CoA No.	Condition Requirements	Document Reference
E76	The Proponent must offer pre-construction surveys to the owners of surface and sub-surface structures and other relevant assets identified at risk from vibration, including all listed heritage items and buildings/structures of heritage significance as identified in the documents listed in Condition A1. Where the offer is accepted, the survey must be undertaken by a suitably qualified and experienced engineer and/or building surveyor prior to the commencement of vibration- generating works that could impact on the structure/asset. The results of each survey must be documented in a Pre-construction Condition Survey Report and the report must be provided to the owner of the item(s) surveyed no later than one (1) month before the commencement of all other potentially impacting works	CNVMP

Secondary REMMs

ID	Measure/requirement	Timing	Document Reference
AH03	Impacts on identified Aboriginal sites will be minimised where feasible in consultation with a suitably qualified and experienced archaeologist. Measures considered will include (but not be limited to): <ul style="list-style-type: none"> Designing and locating bridges (including bridge pylons), haulage routes and other access roads to minimise potential disturbance of soils where feasible Focusing protection measures on the zone within 100 metres of creeks including consideration of opportunities to cover the original cultural deposits in temporary protective barriers such as geotextile fabric and a layer of clean fill. 	Detailed design, prior to construction and during construction	Section 6.1.1
AH05	Investigations will be carried out during detailed design to determine the feasibility of retaining cultural deposits between the pylons of bridges or elevated structures at the following sites: <ul style="list-style-type: none"> BCW BCE SCW T1 SCW T2 	Prior to construction	Section 6.1.4 Table 6-1 Aboriginal Cultural Salvage Strategy



ID	Measure/requirement	Timing	Document Reference
	<ul style="list-style-type: none"> SCE. <p>This will include covering the original cultural deposits beneath temporary protective barriers where feasible such as geotextile fabric and a layer of clean fill material.</p>		
AH06	<p>Salvage collection of surface artefacts will be carried out at the following sites:</p> <ul style="list-style-type: none"> BCE SCW T2 KCW PCP8 CHRP RR M12A1 Isolated artefact 4 TNR-AFT-14. 	Prior to construction	Section 6.1.4 Table 6-1 Aboriginal Cultural Salvage Strategy
AH07	<p>Salvage excavation will be carried out at the following sites:</p> <ul style="list-style-type: none"> CCW BWB BCW SCW T1 SCW T2 SCE KCW CHRP. <p>The methodology and extent of excavations required for the above sites will be in accordance with site specific requirements outlined in the ACHAR prepared for the project.</p>	Prior to construction	Section 6.1.4 Table 6-1 Aboriginal Cultural Salvage Strategy



ID	Measure/requirement	Timing	Document Reference
NAH03	Impacts on Non-Aboriginal heritage items will be avoided or minimised where reasonable and feasible. Where impacts are unavoidable, works will be carried out in accordance with the measures for individual Non-Aboriginal heritage items outlined in measures NAH04 to NAH12.	Detailed design, prior to construction and during construction	Table 6-2 CH17
NAH04	<ul style="list-style-type: none"> A suitably qualified heritage consultant will be engaged to prepare an archival photographic recording of the site in accordance with the <i>Heritage Information Series How to prepare archival records of heritage items</i> (NSW Heritage Office, 1998). This will include both buildings and landscape features such as dams, and earthworks. The recording will include a detailed map showing the location of the features. 	Detailed design and prior to construction	Section 6.2.1
	<ul style="list-style-type: none"> Options will be investigated to provide funding support to the property's current owner to prepare a thematic heritage study of CSIRO and other agricultural research stations, including both McGarvie Smith Farm and McMaster Field Station, and other relevant agricultural research stations and similar facilities located in NSW. The thematic study will include a review of the role of such properties in veterinary research, association with agricultural, pastoral and animal husbandry groups, use of pioneering methods and practices and contribution to the development of farming in Australia. In the event that landowners do not prepare this study, TfNSW will engage a heritage specialist to do so. 	Detailed design and prior to construction	OCHMP
NAH05 (amended)	<ul style="list-style-type: none"> All extant elements of the radio telescopes and associated infrastructure, including rubbish mounds situated outside the construction footprint will be left intact 	Detailed design and prior to construction	Table 6-2 CH13
	<ul style="list-style-type: none"> Ground penetrating radar, or other remote sensing survey techniques, will be carried out under the supervision of a suitably qualified and experienced archaeologist before any ground disturbance within the heritage curtilage of the Fleurs Radio Telescope Site contained within the construction footprint to identify any sub-surface cables: 		Table 6-2 CH14
	<ul style="list-style-type: none"> If additional sub-surface Fleurs Synthesis Telescope (FST) components are unexpectedly identified during ground penetrating radar survey which have not been discussed as part of the consistency assessment, then additional assessment and management would be required. This would include, but may not be limited to, archival survey and recording 		
	<ul style="list-style-type: none"> Measures will be included in the CCHMP to describe how the heritage values of the site will be conserved and managed during construction 		Section 6.2



ID	Measure/requirement	Timing	Document Reference
	<ul style="list-style-type: none"> TfNSW will engage a suitably qualified heritage consultant to prepare an archival photographic recording of the impacted areas of the property, in accordance with DPC (Heritage) guidelines (Heritage Council of NSW 2006) The archival recording report will include but not be limited to: 		Section 6.2.1
	<ul style="list-style-type: none"> Prior to construction TfNSW will consult with relevant interested organisations (such as CSIRO, Universities, amateur telescopic organisations, local heritage bodies and other special interest groups) to determine if there is interest in retaining sub-surface cabling (including details on the type and length cabling to be retained) or other structures identified during archival recording, remote sensing or any unexpected additional cables found during construction. 	Prior to construction	Overarching CCHMP
	<ul style="list-style-type: none"> The M12 West and M12 Central Contractor will (with advice from TfNSW Overarching Archival Recording Contractor) be responsible for the following: 	Prior to construction and during construction	Table 6-2 CH14, CH14a
	<ul style="list-style-type: none"> Retrieval of a sample of each type of cable / compressed air hose along the cable alignment between antennas X3 and X4 with supervision by a heritage specialist. This will include retrieval of 1-2m (or a length directed by TfNSW following consultation with stakeholders) of each type of cable / compressed air hose including the relevant attachment. The selection of the types and length of cables / hose to be collected will include consideration of the following: 		
	<ul style="list-style-type: none"> Physical review of the cables / hose types visible at South Creek 3 Antenna Complex, South Creek 4 Complex, and South Creek 5 Antenna Complex 		
	<ul style="list-style-type: none"> Any additional information identified through remote sensing survey of the cable alignment 		
	<ul style="list-style-type: none"> Discussion with archival recording or other relevant heritage specialists where required 		
	<ul style="list-style-type: none"> Outcomes from the consultation undertaken by TfNSW with interested parties 		
	<ul style="list-style-type: none"> Cable samples will be collected, with consideration given to potentially contaminated materials, such as asbestos and PCBs. Appropriate WHS measures will be implemented in accordance with the Contractor's WHS Plan 		



ID	Measure/requirement	Timing	Document Reference
	<ul style="list-style-type: none"> ○ Cable samples will be tagged, including exact location by description and relevant coordinates of the cabling prior to its extraction 		
	<ul style="list-style-type: none"> ○ Safe storage of cable samples until collection by interested parties. If samples are unclaimed by interested parties within three months, they will be appropriately disposed of at a licensed landfill by the contractor 		
	<ul style="list-style-type: none"> ● Where cabling is not impacted by construction works, it can remain in-situ, otherwise the contractor is responsible for appropriate disposal 		
	<p>Concrete plinths:</p> <ul style="list-style-type: none"> ● Prior to construction, the contractor must establish an exclusion zone around the concrete plinths at South Creek 3 Antenna Complex (Central) and South Creek 5 Antenna Complex (West) to protect against inadvertent impacts during construction. 	Prior to construction	Table 6-2 CH20, CH21
	<ul style="list-style-type: none"> ● If leaving the plinths in situ during construction is not practicable, they will be removed and stored temporarily with survey information providing details of their position relative to each other and orientation. The Contractor will then investigate opportunities for re-establishing the concrete plinths on site close to their original location and/or as part of the interpretative display for the Radio Telescope site. If re-established, the survey information collected prior to their removal must be used to ensure that the plinths are located in the same orientation and arrangement. 		
	<ul style="list-style-type: none"> ● Prior to removal of the concrete plinths, the Construction Contractor is to identify whether any of the plinths are used as state survey marks. The contractor must comply with the preservation of survey infrastructure requirements in TfNSW specification G71. It is noted TS7279 is located on one of the plinths at X3. 		
NAH11	<p>Item 3: Luddenham Road Alignment</p> <p>Where post and rail fencing of heritage significance is identified within the construction footprint, TfNSW will seek to avoid directly impacting such features. Where avoidance is not practicable, Transport for NSW will seek to minimise and mitigate impact in consultation with a suitably qualified heritage specialist.</p>	Detailed design, prior to construction and during construction	Table 6-2 CH19



ID	Measure/requirement	Timing	Document Reference
NAH07	<ul style="list-style-type: none"> A suitably qualified heritage consultant will be engaged to prepare an archival photographic recording of the impacted area, in accordance with DPC (Heritage) guidelines (Heritage Council of NSW 2006) (Heritage Council of NSW 2006). This will include both buildings and landscape features such as dams, and earthworks. The recording will include a detailed map showing the location of the features. 	Detailed design, prior to construction and during construction	Section 6.2.1
	<ul style="list-style-type: none"> Options will be investigated to provide funding support to property's current owner to prepare a thematic heritage study of CSIRO and other agricultural research stations, including both McMaster Field Station and McGarvie Smith Farm, and other relevant agricultural research stations and similar facilities located in NSW. The thematic study will include a review of the role of such properties in veterinary research, association with agricultural, pastoral and animal husbandry groups, use of pioneering methods and practices and contribution to development of farming in NSW and Australia. In the event that landowners do not prepare this study, TfNSW will engage a heritage specialist to do so. 	Prior to construction	Overarching CCHMP
	<ul style="list-style-type: none"> A potential use zone will be established around the McMaster Farm group of buildings, including a suitable buffer zone, and no construction activities will take place within this zone. This zone will be incorporated into the construction heritage management plan (CHMP). The potential use zone will include safe working distances to be adhered to for heritage structures as outlined in Appendix K. Before occupying or utilising the buildings, a dilapidation survey will be carried out and a heritage architect will be engaged to advise on proposed modifications and management measures to avoid and minimise impact on the buildings. 		Section 6.4.1 Table 6-2 CH15 CH16
NV11	<p>The following structures have the potential to be within the safe working distances for sensitive structures (Group 3 from DIN 4150):</p> <ul style="list-style-type: none"> Item 1: McGarvie Smith Farm Item 2: Fleurs Radio Telescope Site Item 4: Upper Canal System Item 6: McMaster Field Station Item 7: Fleurs Aerodrome Item 13 Upper Canal System, including air shaft 3. 	Prior to construction and during construction	Section 6.4.1



ID	Measure/requirement	Timing	Document Reference
	A detailed survey will be completed to determine the potential for vibration impacts and to define appropriate criteria for each heritage item. Vibration monitoring will be carried out when vibration intensive tasks are occurring within the minimum working distances to heritage structures. Where the monitoring identifies exceedances in the relevant criteria, or where impacts are identified, additional mitigation measures will be identified and implemented to appropriately manage impacts.		