Fauna and Flora Management Sub-plan

Western Sydney Airport – Surface and Civil Alignment Works

Project Name	Sydney Metro – Western Sydney Airport, Surface and Civil Alignment Works
Project Number	N81150
Revision Date	13/10/2022
Revision	E
Document Number	SMWSASCA-CPU-1NL-NL000-EV-PLN-000002

Document Approval

Rev.	Date	Prepared by	Reviewed by	Approved by	Remarks
A	17/05/2022	A. Zvirzdinas	S. Williams	V. Khosla	First Draft
B	25/07/2022	S. Harris	S. Williams	V. Khosla	See Revision Table
C	25/08/2022	S. Harris	S. Williams	V. Khosla	See Revision Table
D	16/09/2022	S. Williams	M. Watts	V. Khosla	See Revision Table
E	13/10/2022	S. Williams	M. Watts	V. Khosla	Issued For Construction
Signature					

Distribution and Authorisation

Document Control

The CPBUI JV Project Director is responsible for ensuring this plan is reviewed and approved. The Project Director is responsible for updating this plan to reflect changes to the project, legal and other requirements, as required.

The controlled master version will be maintained on TeamBinder. All circulated hard copies are deemed to be uncontrolled.

Amendments

The implementation of this Plan is under the authority of the CPBUI Delegated Authority Matrix. All Contract personnel will perform their duties in accordance with this Plan, supporting plans, and related procedures.

Revision Details

Rev.	Details
A	First Draft
B	In response to Sydney Metro and ER comments
C	In response to Sydney Metro, Independent Certifier and ER comments
D	In response to final ER comments prior to endorsement
E	In response to DPE comments

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Abbreviations and definitions

Refer to Definitions, Abbreviations and Acronyms, Sydney Metro – Western Sydney Airport Surface Civil and Alignment Works Package.

Table 1 – Abbreviations and definitions

Abbreviation	Description
BAM	NSW Biodiversity Assessment Methodology
BC Act	*Biodiversity Conservation Act 2016* (NSW)
Condition	Condition of Approval (SSI 10051)
CEMF	Sydney Metro Construction Environment Management Framework
CEMP	Construction Environmental Management Plan
CPB	CPB Contractors Pty Ltd
CPBUI JV	CPB Contractors and United Infrastructure Joint Venture
CSSI	Critical State Significant Infrastructure
DPE	Department of Planning and Environment
DPI	Department of Primary Industries
ECM	Environmental Control Maps
EEC	Endangered ecological communities
EES	NSW Environment, Energy and Science (now known as Environment and Heritage Group (EHG))
EIS	Environmental Impact Statement
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
ER	Environmental Representative nominated by the Proponent and approved by the Planning Secretary in accordance with Condition A27
EWMS	Environmental Work Method Statement
FM Act	*Fisheries Management Act 1994 (NSW)*
Hold point	A verification point that prevents work from commencing prior to approval from the appointed authority.
MIRRA	Monitoring, Inspections, Reporting, Review and Audit
OEH	NSW Office of Environment and Heritage (former – now EHG)
PCT	Plant community types
PESCP	Progressive Erosion and Sediment Control Plan
REMM	Revised Environmental Mitigation Measures
SCAW	Sydney Metro – Western Sydney Airport Surface Civil and Alignment Works Project
SEP	Site Environment Plan(s) (under the CEMF these are described as Environmental Control Maps)
TEC	Threatened ecological communities

Part A - Overview

1. Introduction

1.1. Purpose and application

This Construction Flora and Fauna Management Sub-plan (this Sub-plan) forms part of the Construction Environmental Management Plan (CEMP) within the NSW state jurisdiction for the Sydney Metro - Western Sydney Airport Surface Civil and Alignment Works (SCAW). CPB Contractors and United Infrastructure Joint Venture (herein referred to as CPBUI JV) were awarded the design and construction of the SCAW project by Sydney Metro in March 2022.

This Sub-plan describes how CPBUI JV will minimise and manage flora and fauna impacts throughout the delivery of SCAW off-airport project. These potential impacts will require management and mitigation in accordance with relevant legislation and government policies.

This Sub-plan is to be endorsed by the project Environmental Representative (ER) and submitted to the Planning Secretary for approval before the commencement of construction. Construction is not to commence until the CEMP and all required Sub-plans and Monitoring Programs have been endorsed by the ER and/or approved by the Department of Planning and Environment (DPE).

This Sub-plan has been prepared to address the requirements of the:

- Critical State Significant Infrastructure (CSSI) 10051 Planning Approval (dated 23 July 2021)
- Sydney Metro - Western Sydney Airport – CSSI Staging Report (Revision 6.0) (Staging Report)
- *AS/NZS ISO 14001:2016 Environmental Management Systems – Requirements with guidance for use*
- Sydney Metro Construction Environmental Management Framework (CEMF)
- Environmental Impact Statement (EIS) and Revised Environmental Mitigation Measures (REMMs) from Section 7 of the Submissions Report
- Contractual requirements, including the SCAW Design and Construction Deed and General and Particular Specifications
- Applicable legislation:
    - *Environmental Planning and Assessment Act 1979* (EP&A Act)
    - *Environment Protection and Biodiversity Conservation Act 1999 (*Cth*)* (EPBC Act),
    - *Biodiversity Conservation Act 2016* (NSW) (BC Act),
    - *Fisheries Management Act 1994* (NSW) (FM Act),
    - *Biosecurity Act 2015*.

1.2. Background

The Sydney Metro - Western Sydney Airport will become the transport spine for Greater Western Sydney, connecting communities and travellers with the new Western Sydney International (Nancy-Bird Walton) Airport (referred to as Western Sydney International) and the growing region.

The Sydney Metro - Western Sydney Airport EIS was prepared in October 2020 to assess the impacts of construction and operation of the Project and was placed on public exhibition between 21 October 2020 and 2 December 2020. The Project was declared a Critical State Significant Infrastructure (CSSI) Project and is listed in Schedule 5 of *State Environmental Planning Policy (State and Regional Development) 2011*.

The Sydney Metro - Western Sydney Airport was approved by the Minister for Planning and Public Spaces on 23 July 2021 (SSI 10051) under section 5.19 of the EP&A Act.

Further assessment of flora and fauna impacts was undertaken subsequent to exhibition of the EIS in the form of a Revised Biodiversity Development Assessment Report (Submissions Report Appendix G). The additional assessment considered the impacts on flora and fauna due to refinements in the project design and the results of additional flora and fauna surveys within the study area in Spring 2020. Follow up assessment of flora and fauna in the inaccessible areas was completed in November 2021.

1.3. Project description

The Project will be undertaken on Darug Country and will form part of the future Western Parkland City. The Project involves the construction and operation of a new 23km metro rail line that extends from the existing Sydney Trains suburban T1 western line (at St Marys) in the north to the Aerotropolis (at Bringelly) in the south. The alignment includes a combination of tunnels and civil structures, including viaducts, bridges, and surface and open-cut troughs between the two tunnel sections. The Project also includes six new metro stations, and a stabling and maintenance facility and operational control centre at Orchard Hills. The SCAW package is the second major contract package to be procured for the Project. The successful and timely completion of the SCAW package is critical to the subsequent construction activities and ultimate completion of the entire Project.

1.3.1. SCAW scope of works

The scope for the SCAW package includes approximately 10.6km of alignment up to the underside of track formation from Orchard Hills to the Western Sydney International (WSI) airport. This includes approximately:

- 3.6 kilometre of viaduct
  - 400 metres of viaduct over Blaxlands Creek
  - 660 metres of viaduct over the Patons Lane area and un-named creek
  - 2.5km of viaduct in the Luddenham Road area including across the Warragamba pipeline, at Luddenham Station, across Luddenham Road and across Cosgrove Creek
- 209 metres of bridges
  - A bridge, approximately 187m long, over the proposed M12 Motorway
  - A bridge, approximately 22m long, over the drainage swale on the WSI airport site
- 6.9km of at-grade alignment
  - 600m at Orchard Hills, south of Lansdowne Road
  - 1.6km alongside the stabling maintenance facility in Orchard Hills
  - 900m to the north of the Warragamba pipelines
  - 1.1km north of the proposed M12 motorway
  - 1.4km south of the proposed M12 Motorway on Elizabeth Derive
  - 1.3km within the Airport site from the northern boundary to the Airport Business Park Station
- Temporary and permanent access roads.

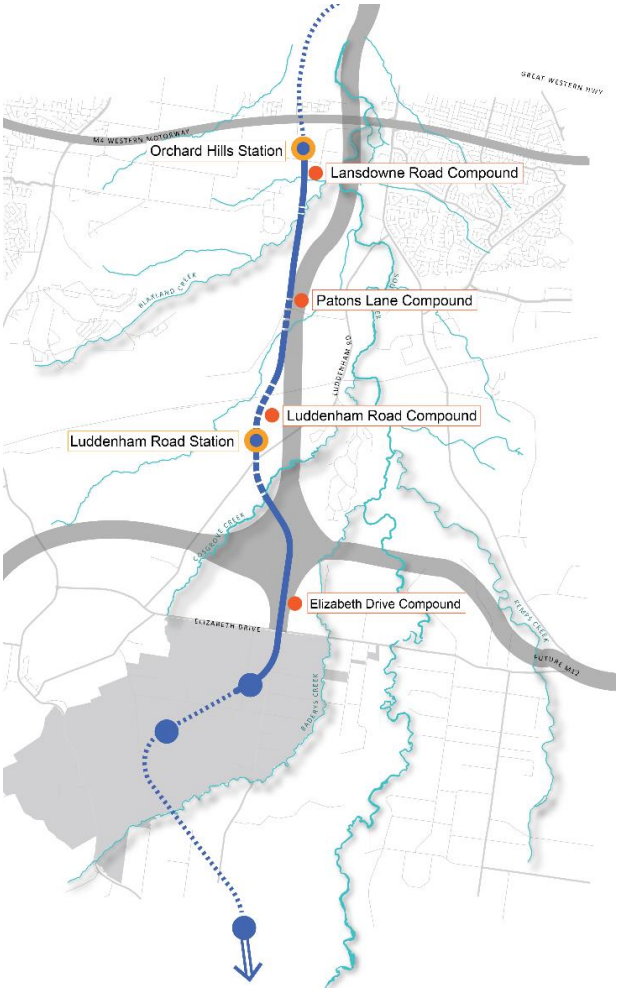

Figure 1 – SCAW Project scope

1.3.2. SCAW construction methodology

Activities that will be undertaken during construction are summarised in Table 2.

Table 2 – Activities during construction

Works	Activities
Early works	▪ Investigation works – survey, geotechnical, contamination and utilities ▪ Establishment of temporary ancillary facilities, construction site fencing, signage and lighting ▪ Pre-clearing vegetation surveys and setting up environmental 'no-go' zones ▪ Temporary stockpiling of imported spoil for the stabling and maintenance facility.
Earth works	▪ Installation of environmental controls ▪ Vegetation clearing ▪ Stripping, temporarily stockpiling and management of topsoil and unsuitable material ▪ Embankment and cutting construction, including the improvement layers/treatments, general fill, structural fill zone and capping layers ▪ Importation and reuse of fill materials ▪ Placing, compacting and finishing of rail alignment sub-base and base layers ▪ Dewatering and backfilling farm dams ▪ Preparation of piling pads.
Bridge works	▪ Installation of environmental controls ▪ Substructure construction from cast in-situ construction with the general sequence of: o Bored pile construction (mono pile) o Pile cap (four) construction with localised excavation at Luddenham Station o Pier and headstock construction ▪ Construction of the viaduct structures through the placement of precast concrete segments using a crawler crane ▪ Construction of two bridges using precast Super T4
Drainage works	▪ Construction of table drains ▪ Installation of culverts and other drainage structures ▪ Construction of temporary diversion channels ▪ Construction of temporary watercourse crossings such as causeways ▪ Installation of scour protection measures.

2. Structure of this Plan

2.1. Plan Purpose and Objectives

This CEMP Sub-plan forms part of the Project Management System (PMS). It is part of a suite of plans that together outline how the SCAW package will manage flora and fauna during construction to ensure an integrated approach to meeting contract requirements.

In addition to the Project Management Plan, other Project Plans that interface with this Sub-plan include:

- CEMP
- Quality Management Plan
- Soil and Water Management Sub-plan
- Sustainability Management Plan
- Waste Management Sub-plan
- Community Communication Strategy
- Emergency Response Plan
- Place Urban Design Corridor Landscape Plan

This plan has the following structure:

Part A: Overview	This section clearly defines: ▪ Section 1: Purpose, Background/Context, Objectives and Targets, Agency Consultation and Related Documents ▪ Section 2: Legal and Other Requirements ▪ Section 3: Existing Environment ▪ Section 4: Aspects and Impacts ▪ Section 5: Management Strategy / Controls
Part B: Implementation Plan	This section outlines in detail the key processes and systems to support implementation of environmental management outcomes for the project: ▪ Element 1: Training ▪ Element 2: Monitoring and Reporting ▪ Element 3: Auditing, Review and Improvement ▪ Element 4: Project Specific Requirements
Part C: Appendices	This section includes appendices and annexures providing additional detail that support this Sub-plan. Appendix C1 – Consultation Records Appendix C2 – Tree Clearing and Grubbing Procedure Appendix C3 – Fauna Handling Procedure Appendix C4 – Weed Management Procedure Appendix C5 – Farm Dam Dewatering Procedure Appendix C6 – Nest Box Strategy Appendix C7 – Pre-clearing inspection form Appendix C8 – Proposed clearing program Appendix C9 – SCAW Biodiversity Offset Credit Requirements

2.1.1. Other Related Documents

As a Sub-plan to the CEMP, Table 3 shows the interrelationships with other project plans and documents.

Table 3 – Interaction with other project documents

Document	Description
Sustainability Management Plan	Sets out the sustainability targets and management framework for the SCAW project including ecosystem clearing credits.
On Airport CEMP and Sub-Plans	Details requirements for environmental management on the Western Sydney Airport. This is a Sydney Metro document produced for the works being undertaken on Commonwealth Land
Waste Management Sub-plan	Details the measures to address green waste management
Community Communication Strategy	Sets out the communication protocols that will be applied to manage cumulative impacts
Soil and Water Management Sub-plan	Details the measures to address erosion and sediment control
Off-Airport Biodiversity Management Plan (EPBC Approval 2020/8687)	Details requirements for environmental management of Commonwealth biodiversity protected matters
Emergency Response Plan	This plan details the bushfire management procedures
Place Urban Design Corridor Landscape Plan	Describes the design of the permanent built elements and landscape design applicable to SCAW
Visual Amenity Management Sub-plan	Details the vegetation management process associated with worksite layouts

2.1.2. Objectives and Targets

The objectives for management of flora, fauna and biodiversity during the delivery of SCAW are aligned with those established through the EIS and set out in the CEMF.

The environmental performance outcomes in relation to flora, fauna and biodiversity in the Submissions Report applicable to SCAW are:

- Minimise, or where possible avoid, impacts on threatened flora and fauna species, and ecological communities listed under the BC Act and EPBC Act
- Culverts and bridges will be appropriately sized to maintain fauna habitat connectivity
- Maintain integrity and functionality of rail corridor fencing to minimise wildlife-train collision
- Re-establish native vegetation in accordance with the National Airports Safeguarding Framework principles and guidelines including Guideline C: Managing the Risk of Wildlife Strikes in the Vicinity of Airports (Australian Government, 2014), and
- Impacts on threatened ecological communities and threatened species are offset in accordance with the requirements of the NSW Biodiversity Assessment Method (OEH, 2018).

The objectives from Section 10.1 of the CEMF are addressed in Table 4 which are consistent with the performance objectives identified in the EIS Submissions Report.

CPBUI will implement the project requirements detailed in Section 7 and Element 4: Project Specific Requirements to achieve targets related to the management of flora and fauna impacts. Refer to Element 2: Monitoring and Reporting and Element 3: Auditing, Review and Improvement which details the environmental monitoring and auditing requirements to identify performance indicators.

Table 4: Objectives and targets

Objective	Target	Measurement Tool
Minimise impacts on flora and fauna	Controls are implemented to protect no-go zones and 100% of weekly environmental inspections are undertaken to review the controls	• Inspection records • Audit reports

Objective	Target	Measurement Tool
	Zero incidents relating to impacts on biodiversity	
Design waterway crossings to incorporate best practice principles	100% of SCAW waterway crossings are designed in consultation with DPI Fisheries incorporate best practice principles	Design Report/s
Retain and enhance existing flora and fauna habitat wherever possible	100% of nest boxes are installed prior to impacts upon existing hollow bearing trees 100% of trees to be removed by SCAW are identified 100% of habitat features are identified and retained	• Inspection records • Tree survey
Appropriately manage the spread of weeds and plant pathogens.	100% of pre-clearing inspections are undertaken Controls are implemented to prevent the spread of pathogens and 100% of weekly inspections are undertaken to review the controls	• Inspection records • Audit reports

2.1.3. Approval and Consultation

Agencies to be consulted for this Sub-plan are detailed in Table 5.

Table 5 – Sub Plan Agency Consultation

Subject	Agency Consultation
Flora and Fauna Management Sub-Plan (Condition C5)	DPE Environment, Energy and Science (EES), Department of Primary Industries (DPI) Fisheries, Relevant Councils (Penrith City Council, Liverpool City Council)

CPBUI JV have engaged with these agencies in developing and finalising this Sub-plan. Records of consultation in accordance with Condition A6 are provided in Table 6 and Appendix C1 – Consultation Records..

Table 6 – Log of engagement or attempted engagement with relevant stakeholders

Agency	Date	Person Contacted	Comment	Status
Penrith City Council	17/06/2022	Penrith City Council representative	CPBUI JV emailed the Flora and Fauna Management Sub-plan requesting comment	Closed
	04/07/2022	CPBUI JV representative	Response received from Penrith City Council via email. Comments addressed by CPBUI JV.	
Liverpool City Council	17/06/2022	Liverpool City Council representative	CPBUI JV emailed the Flora and Fauna Management Sub-plan requesting comment	Closed
			No written response received from Liverpool City Council as of 22/07/2022.	

Agency	Date	Person Contacted	Comment	Status
			A meeting held with representatives of Liverpool City Council, CPBUI and Sydney Metro was held on 28/06/2022 to discuss the SCAW project and environmental management. No issues were raised during the meeting that required addressing in this Sub-plan.	
DPI Fisheries	17/06/2022	DPI Fisheries representative	CPBUI JV emailed the Flora and Fauna Management Sub-plan requesting comment	Closed
	22/06/2022	CPBUI JV representative	Response received from DPI Fisheries via email providing comment on the Sub-plan	
DPE EHG	17/06/2022	DPE EHG representative	CPBUI JV emailed the Flora and Fauna Management Sub-plan requesting comment	Closed
	22/07/2022	CPBUI JV representative	Response received from DPE EHG via email. Comments addressed by CPBUI JV.	

In accordance with the Staging Report (Revision 6) this Sub-plan will be first endorsed by the ER as required by Condition C7, and then submitted to the Planning Secretary for approval at least one month before commencement of construction in accordance with Condition C9.

3. Legal and Other Requirements

3.1. Legislation

Key legislation relevant to flora and fauna management includes:

- *Environmental Planning and Assessment Act 1979* (EP&A Act).
- *Environment Protection and Biodiversity Conservation Act 1999 (*Cth*)* (EPBC Act),
- *Biodiversity Conservation Act 2016* (NSW) (BC Act),
- *Fisheries Management Act 1994* (NSW) (FM Act),
- *Biosecurity Act 2015*.

Refer to Section 4 the CEMP for further details of the relevant legislation.

3.2. Project Compliance Requirements

All works to be delivered for SCAW have been assessed and approved under the EP&A Act for the Critical State Significant Infrastructure (CSSI) application number 10051. The on-airport works are a controlled action under the EPBC Act relating to approval EPBC 2019/8541.

There are three (3) principal statutory schemes that govern the planning and assessment process for the SM-WSA project:

- Commonwealth:
  - SCAW works have been assessed and approved under the *Airports Act 1996* for works located on Commonwealth land within the boundary of the Western Sydney International Airport (on-airport).
  - SCAW works have been assessed and approved as a controlled action by the Department of Agriculture, Water and the Environment (DAWE) under Part 9 of the EPBC Act was obtained by Sydney Metro on 3 June 2021 (EPBC2020/8687) for the impacts on threatened species and communities and Commonwealth Land (off-airport).
- State:
  - SCAW works have been assessed and approved via number of applications under Division 5.2 of the EP&A Act and are classified as Critical State Significant Infrastructure (SSI 10051) (off-airport).

Detailed environmental assessments have been carried out to gain the necessary Commonwealth and State planning approvals.

Element 4: Project Specific Requirements contains a summary of the key compliance requirements relevant to flora and fauna management which are applicable to SCAW. This includes relevant Condition, REMMs, CEMF requirements, EPBC Act, EIS performance outcomes and contractual requirements.

3.3. Guidelines and Standards

Guidelines and standards relating to the management of flora, fauna and biodiversity include:

- Australian Standard AS 4373 Pruning of amenity trees
- Commonwealth Policy Statements on survey guidelines for Australia's threatened fauna including bats birds, frogs, fish, mammals and reptiles (Department of the Environment, Water, Heritage and the Arts, 2010, 2011)
- Framework for Biodiversity Assessment (OEH, 2014)
- Guidelines for vegetation management plans on waterfront land (NSW Office of Water, 2012)
- Hygiene Protocol for the Control of Disease in Frogs (DECC, 2008)
- NSW Biodiversity Offsets Policy for Major Projects (OEH, 2014)
- NSW Department of Primary Industries. 2003. Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings, Fairfull and Witheridge
- NSW Guide to Surveying Threatened Plants (OEH, 2016)
- Policy and Guidelines for Fish Friendly Waterway Crossings (DPI, 2004)

- Policy and Guidelines for Fish Habitat Conservation and Management (DPI, 2013)
- Recovering Bushland on the Cumberland Plain. Best practice guidelines for the management and restoration of bushland (DECC 2005)
- Significant Impact Guidelines 1.1 - Matters of National Environmental Significance (Department of Sustainability, Environment, Population and Communities, 2013)
- Significant Impact Guidelines 1.2 - Actions on, or impacting upon, Commonwealth land and Actions by Commonwealth agencies (Department of Sustainability, Environment, Population and Communities, 2013)
- Survey Guidelines for Australia's Threatened Orchids: Guidelines for detecting orchids listed as threatened under the EPBC Act 1999 (Department of Environment, 2013)
- Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities – Working Draft (NSW Department of Environment and Conservation, 2004)
- Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna - Amphibians (NSW Department of Environment and Climate Change 2009).

4. Roles and Responsibilities

4.1. CPBUI Staff

The roles and responsibilities of key CPBUI JV project personnel with respect to Soil and Water are detailed in Table 7 and are further detailed in Section 5.2.1 of the CEMP.

Table 7 – Key roles, authority and responsibility

Role	Authority and Responsibility
Project Director	▪ Managing the delivery of SCAW including overseeing planning approval and environmental management ▪ Authority to direct personnel and/or subcontractors to carry out actions to avoid or minimise unintended environmental impacts ▪ Act as the Contractor's Representative
Environmental Manager	▪ Oversee the implementation of all flora and fauna management initiatives ▪ Prepare and implement this Sub-plan ▪ Oversee monitoring, inspections and auditing ▪ Have the ability to stop works on environmental grounds ▪ Report any incidents or non-compliances to Sydney Metro and the ER
Environmental Advisor / Coordinator	▪ Assist the Environmental Manager in the day-to-day environmental management of SCAW ▪ Manage the on-ground application of flora and fauna management measures during construction (e.g. clearing limit delineation, coordinating pre-clearing surveys) ▪ Monitor and report on flora and fauna management during construction ▪ Have the ability to stop works on environmental grounds
Commercial Manager	▪ Ensure that relevant flora and fauna management requirements are considered in procuring materials and services
Senior Engineering Manager	▪ Ensure relevant flora and fauna management requirements are addressed in design development
Construction Manager and delegates	▪ Manage the delivery of the construction process in relation to flora and fauna management for their work activity in conjunction with the Environmental Manager and Environment Advisors/Coordinators ▪ Ensure compliance with this Sub-plan and associated procedures
Sustainability Manager/ Coordinator	▪ Track and report flora and fauna elements and clearing requirements against sustainability targets
Superintendents/ Site Supervisors	▪ Construction delivery in relation to environmental management and compliance in conjunction with the Environmental Manager ▪ Authority to direct personnel and/or subcontractors to carry out actions to avoid or minimize unintended environmental impacts
Project Manager Civil/Structures Project Engineers Site Engineers Supervisors	▪ Implement and monitor onsite environmental management and compliance measures across all sites in conjunction with environmental coordinators ▪ Undertake site inspections
Stakeholder and Community Engagement Manager	▪ Assist in response to and management of complaints relating to flora and fauna

4.2. Project Ecologist

A Project Ecologist(s) will be engaged for the duration of SCAW to provide advice and to supervise and lead the implementation of processes and management measures for ecologically sensitive activities. These activities will include:

- Pre-clearing processes, weed and pathogen management
- Fauna relocation and handling
- Supervising work in riparian zones
- Preparing post clearing survey reports.

The Project Ecologist(s) will demonstrate that they hold appropriate qualifications and all licenses relevant to the work being undertaken, in addition to specific experience in working in environmentally sensitive areas of a similar nature to SCAW.

4.3. Aquatic Ecologist

An Aquatic Ecologist(s) will be engaged for the duration of SCAW to provide advice and supervision of farm dam dewatering activities. These activities will include:

- Pre-clearance surveys of farm dams and wetlands
- Capture and removal of fauna in the aquatic and riparian zones
- Management of fauna during the dewatering of wetlands
- Supervising work in riparian zones
- Preparing post clearing and dewatering survey reports.

5. Existing Environment

5.1. Topography

The topography along the SCAW alignment is gently undulating (elevations ranging from 30-80m AHD), dominated by the valley and floodplain of South Creek and its tributaries. Localised topographic lows are associated with Blaxland Creek and other tributaries of South Creek. The topography to the east and west of the project is more elevated.

5.2. Land Use

The surrounding area is characterised by a predominantly cleared and disturbed rural landscape with interspersed stands of native vegetation, mostly located around waterways.

5.3. Vegetation Communities

Vegetation mapping and detailed floristic assessments prepared for the EIS and submissions report identified five plant community types (PCT) within the project area.

- PCT 724 - Broad-leaved Ironbark - Grey Box - Melaleuca decora grassy open forest on clay/gravel soils of the Cumberland Plain, Sydney Basin Bioregion
- PCT 835 - Forest Red Gum - Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain, Sydney Basin Bioregion
- PCT 849 - Grey Box - Forest Red Gum grassy woodland on flats of the Cumberland Plain, Sydney Basin Bioregion
- PCT 1071 - Phragmites australis and Typha orientalis coastal freshwater wetlands of the Sydney Basin Bioregion (currently only identified on-airport)
- PCT 1800 - Swamp Oak open forest on riverflats of the Cumberland Plain and Hunter Valley.

In addition, three non-native vegetation types were assigned to a miscellaneous ecosystem class, being:

- Miscellaneous ecosystem - highly disturbed areas with no or limited native vegetation
- Miscellaneous ecosystem - urban exotic/native landscape plantings
- Miscellaneous ecosystem - water bodies, rivers, lakes, streams (not wetlands).

Four terrestrial threatened ecological communities (TECs) listed under the BC Act were identified within the project area and are shown in Figure 2 and Figure 3:

- Cumberland Plain Woodland in the Sydney Basin Bioregion (associated with PCT 849)
- River-Flat Eucalypt Forest on Coastal Floodplains of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (associated with PCT 835)
- Shale Gravel Transition Forest in the Sydney Basin Bioregion (associated with PCT 724)
- Swamp Oak Floodplain Forest of the New South Wales North Coast, Sydney Basin and South East Corner Bioregions (associated with PCT 1800).

5.4. Connectivity

Significant biodiversity links are those that connect different areas of habitat, facilitating movement of threatened species across their distribution. Generally, habitat connectivity was limited to riparian corridors associated with the tributary of Blaxland Creek between Lansdowne Road and Blaxland Creek, Blaxland Creek, the unnamed watercourse to the south of Patons Lane and Cosgrove Creek.

5.5. Aquatic ecology

Table 8 details the waterways within the off-airport study area and their fish habitat and waterway classification under the FM Act. Waterways applicable to SCAW are illustrated in Figure 2 and Figure 3.

Table 8: Key fish habitat waterway classification

River/stream	Strahler order	KFH	Habitat sensitivity	Waterway classification
Blaxland Creek	4th	Yes	Type 2 - Moderate	Class 2 - moderate

River/stream	Strahler order	KFH	Habitat sensitivity	Waterway classification
Unnamed tributary of South Creek (DEOH land, Lot 1 DP242968)	4th	Yes	Type 2 – Moderate	Class 3 - moderate
Claremont Creek	4th	Yes	Type 2 Moderate	Class 2 - moderate
Cosgroves Creek	4th	Yes	Type 2 Moderate	Class 2 - moderate
Unnamed tributary of Badgerys Creek (Lot 26 DP2650)	3rd	Yes	Type 3 – Minimal	Class 4 - unlikely
South Creek	5th	Yes	Type 1 – Highly sensitive	Class 2 - moderate

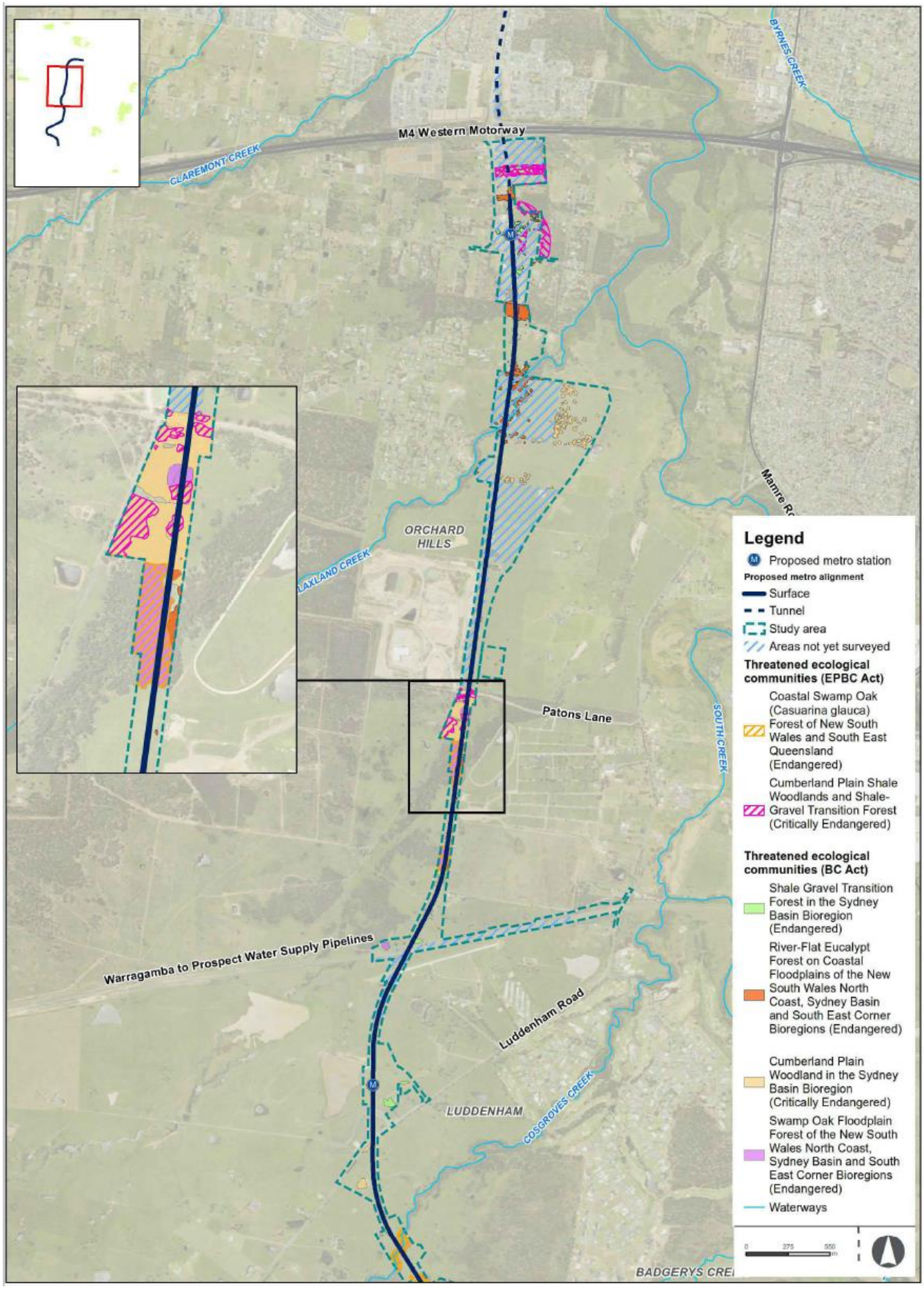

Figure 2 – TECs on SCAW project – Northern Portion

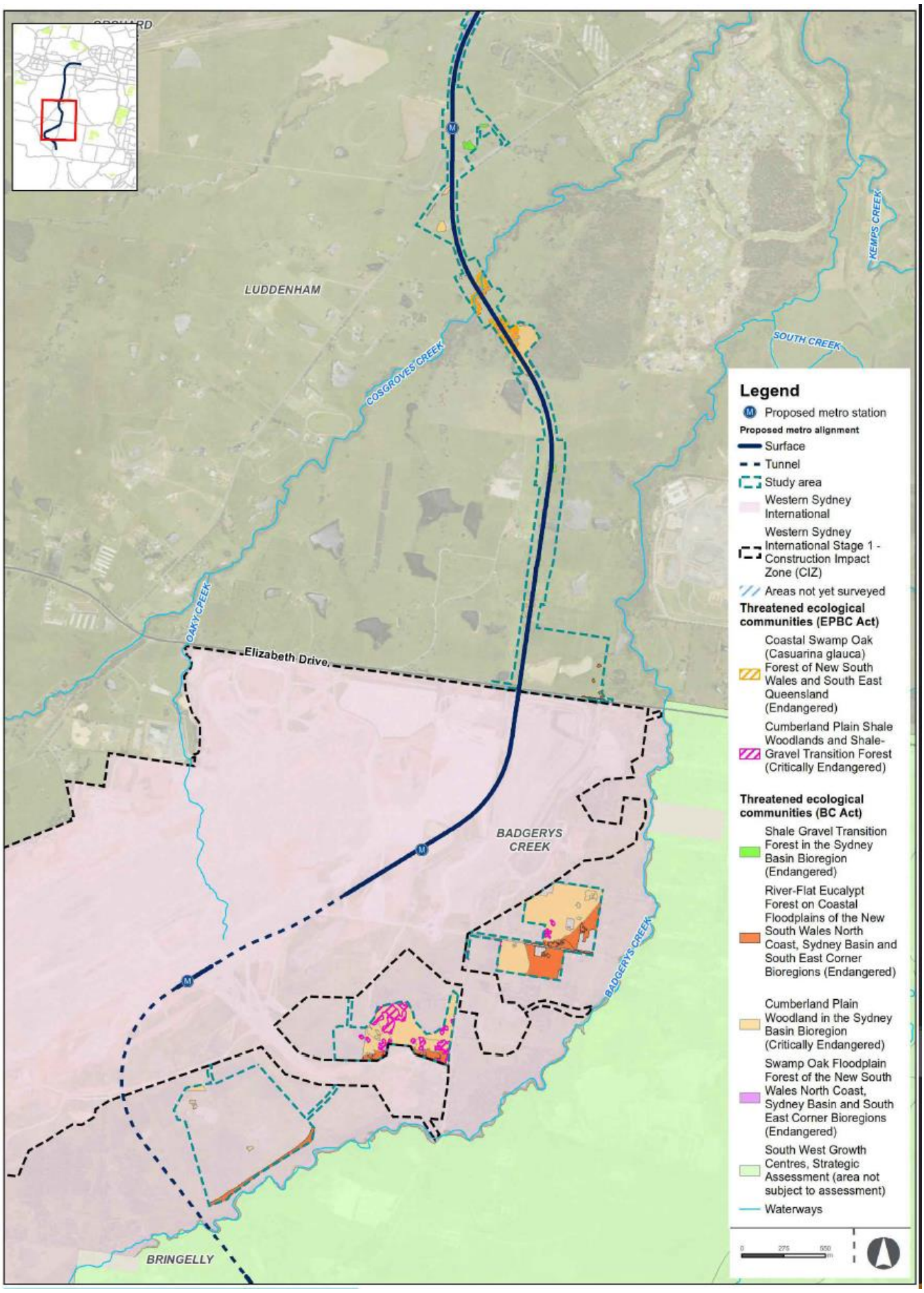

Figure 3 – TECs on SCAW project – Southern Portion

6. Environmental Aspects and Impacts

The key aspects and potential impacts in relation to the overall management of flora, fauna and biodiversity during SCAW are listed in Table 9.

Table 9 – Summary of overall aspects and potential impacts

Aspect	Potential Impact
Clearing of native vegetation	▪ Loss of native vegetation, including TECs and threatened plant species ▪ Loss of habitat, including threatened and listed migratory fauna species habitat ▪ Direct and indirect impacts to terrestrial, including threatened species ▪ Direct injury and mortality of fauna (including vehicle strike) ▪ Edge effects on adjacent native vegetation and habitat ▪ Fragmentation of habitats and wildlife corridors ▪ Impact on biological diversity through clearing of native vegetation
Works around and within watercourses	▪ Direct and indirect impacts to terrestrial and aquatic fauna, including threatened species ▪ Changes in water quality, aquatic habitat loss and instream barriers to movement of fauna
Dewatering of dams	▪ Direct and indirect impacts to aquatic fauna, including threatened species ▪ Spread of amphibian chytrid fungus
Construction noise and vibration, vehicle movements and light	▪ Direct injury and mortality of fauna (including vehicle strike) ▪ Noise, vibration, dust and light disturbance on nocturnal species habitat
Establishment of ancillary sites	▪ Invasion and spread of weeds and pests ▪ Loss of native vegetation, including TECs ▪ Edge effects on adjacent native vegetation and habitat ▪ Fragmentation of habitats and wildlife corridors
Demolition of built structures	▪ Loss of habitat, including threatened and listed migratory fauna species habitat ▪ Direct injury and mortality of fauna including Microchiropteran bat (microbats) species.
Excavation and drainage works	▪ Direct injury and mortality of fauna (including vehicle strike)
General earthworks near vegetation, disturbance of soils, consequential erosion and the mobilisation of sediment	▪ Edge effects on adjacent native vegetation and habitat ▪ Fragmentation of habitats and wildlife corridors ▪ Invasion and spread of weeds and pests ▪ Invasion and spread of pathogens and disease

6.1.1. Ongoing Environmental Risk Identification and Management

The ongoing identification and management of environmental risks and opportunities is a key consideration during all project risk assessment activities and is fully described in Section 3.3 of the CEMP

A Project Preliminary Environmental Risk Assessment has been conducted to identify key risks and control measures; to inform the preparation of the CEMP, Sub-plans and procedures; and to provide input into the Project Risk Register. The Project Risk Register is a dynamic document that will be reviewed and updated as the project progress.

Environmental risk assessments are completed at each stage of project planning and delivery, and each level of risk assessment is periodically reviewed. The key documents and activities underpinning ongoing environmental risk assessment are:

- Construction Area Plan (CAP) Risk Assessments
- Work Pack Risk Assessments
- Environmental Work Method Statements (EWMS)
- Pre-start Meetings.

7. Management Strategy

7.1. Design and Construction Techniques

The design of SCAW will maintain habitat connectivity through the installation of viaduct structures and fauna crossings across the riparian corridors associated with the tributary of Blaxland Creek between Lansdowne Road and Blaxland Creek, Blaxland Creek, the unnamed watercourse to the south of Patons Lane and Cosgrove Creek.

The key regional corridors at Blaxland Creek, the vegetation corridors at Patons Lane including the unnamed watercourse to the south of Patons Lane and Cosgrove Creek will be spanned by viaducts sections of SCAW. The viaduct design is the optimum fauna crossing solution for the above ground sections of the SM-WSA alignment. The height and extended width of the viaducts will not pose any impediment to the movement of target species including small and medium sized mammals and the Cumberland Plain Land Snail (if present).

A dedicated fauna crossing culvert will be installed at the Unnamed watercourse (tributary of Blaxland Creek) between Lansdowne Road and Blaxland Creek. This crossing is located at an embankment section of the SM-WSA. The SCAW design proposes to enlarge this fauna crossing from 1.5 metres in diameter to a to a 3.0m W x 1.5m H reinforced concrete box culvert.

Fauna furniture will be provided with shelter at the entrances to the crossing, particularly for small and medium sized mammals (e.g. vegetation, logs, rocks, leaf-litter, refuge pipes, escape poles, roofing tiles, and roofing iron). The viaduct at the fauna crossings will extend 3m high which will allow for the installation of fauna furniture to assist crossing by arboreal mammals. Details of the fauna furniture will be determined during detailed design based on site evaluation.

During construction, impacts to fauna and flora from clearing will be managed through the controls and management measures detailed in the following sections.

7.1.1. Environmental Procedures

The following environmental procedures have been developed to address the risks associated with management of flora and fauna for SCAW:

- Tree Clearing and Grubbing Procedure
- Fauna Handling Procedure
- Dam Dewatering Procedure
- Weed Management Procedure.

Additional controls relating to flora and fauna management, nest boxes, weed management and unexpected finds are detailed in the following sections.

7.1.2. Vegetation Clearing

When vegetation clearing cannot be avoided, the Tree Clearing and Grubbing Procedure **(Appendix C2 – Tree Clearing and Grubbing Procedure**) must be followed. The clearing and grubbing process will be implemented, requiring completion of a Pre-Clearing Inspection Checklist (**Appendix C7 – Pre-clearing inspection form**). Final checks and sign-off must be completed by the Environment Team after all checklist items have been completed. Other environmental aspects, such as weed management and sediment and erosion control, are also addressed using the Pre-Clearing Inspection Checklist.

Prior to any disturbance of vegetation, a Pre-Clearing and Grubbing Permit must be obtained. The pre-clearing inspection and Pre-Clearing and Grubbing Permit will be implemented as a Hold Point prior to any vegetation clearing. The Pre-Clearing and Grubbing Permit may be signed off by the Environmental Manager (or delegate) or the Project Director to authorise removal of vegetation. Operators involved in clearing activities must be advised of permit conditions and understand all applicable clearing requirements and boundary, documented by signing on to the permit. Nocturnal vegetation clearing works will be avoided. Targeted surveys for fauna species as identified in the EPBC2020/8687 Biodiversity Management Plan would be undertaken during pre-clearing inspection.

Disturbance area and clearing limits will be clearly delineated with flagging. Areas to be retained and adjacent habitat areas will be fenced off prior to works to prevent damage or accidental over clearing. No-go zones should be clearly identified with signage. Areas to be cleared/retained as per design is confirmed by survey and documented in the **Pre-Clearing Inspection Checklist**.

If any clearing of native vegetation is required, or removal of potential fauna habitat (e.g. hollow bearing trees), the project Ecologist will be present during clearing to assist with management of potential impacts to resident fauna and provide advice on opportunities to salvage habitat where feasible.

If habitat trees are identified, clearing will follow a two-stage process as follows:

- Non-habitat trees and other vegetation will be cleared first after sign-off of the pre-clearing inspection.
- Habitat trees will be cleared no sooner than 48 hours after non-habitat trees have been cleared, where feasible. The project Ecologist will be present on site during the clearing of habitat trees. Felled habitat trees will be left on the ground for 24 hours or inspected by the ecologist prior to further processing.

After clearing of native vegetation, a post clearance report, including any relevant Geographical Information System files, will be produced that validates the type and area of vegetation cleared including confirmation of the number of hollows impacted and the corresponding nest box requirements to offset these impacts.

Records of all clearing permits and inspections will be kept for the duration of construction.

CPBUI will identify opportunities for reuse of native trees and vegetation in accordance with Condition E12. Where it is not possible to reuse within the scope of the works, CPBUI will consult with NSW National Parks & Wildlife Service, Western Sydney Parklands Trust, Greater Sydney Local Land Services, Landcare groups, DPI Fisheries and any additional relevant government agencies to determine:

- Hollows, tree trunks (greater than 25-30 centimetres in diameter and 2-3 metres in length), mulch, bush rock and root balls salvaged from native vegetation impacted by the Works; and
- Collected plant material, seeds and/or propagated plants from native vegetation impacts by the Works.

The proposed clearing program for the project is contained in **Appendix C8 – Proposed Clearing Program**

7.1.3. Vegetation stabilisation and rehabilitation

Rehabilitation of areas will be undertaken in accordance with the Progressive Erosion and Sediment Control Plan (PESCP). The general SCAW scope of works will not include final landscape treatments which will be handed over to a follow-on contractor. CPBUI will assist Sydney Metro by allowing Seed Collectors on to site to undertake native vegetation seed collection and salvage program required by REMM FF11. Rehabilitation around waterways and riparian corridors will be undertaken following the removal of temporary works associated and will reuse native vegetation and timber as required by Condition E12 where practical and plantings will incorporate native species and seeds collected from the native vegetation seed collection and salvage program where practical.

7.1.4. Microbat Survey

Prior to demolition, removal or modification of dwellings and structures associated with the SCAW, a targeted microbat survey (including Eastern Coastal Free-tailed Bat, Large Bent-winged bat and Eastern False Pipistrelle) would be undertaken in accordance with 'Species credit' threatened bats and their habitats NSW survey guide for the Biodiversity Assessment Method (OEH, 2018). The survey objective is to collect data to determine the area of suitable habitat on the subject land which is used to calculate species credits.

Other human-made structures such as culverts and other under-road structures within the construction footprint will be surveyed for threatened microbats (e.g. particularly the Southern Myotis) in accordance with the Biodiversity Assessment Method (OEH, 2018). If threatened microbats are detected, a Microbat Management Plan will be developed and implemented by a suitably qualified bat specialist.

The requirement for a microbat survey will be implemented as a Hold Point prior to any demolition activities.

7.1.5. Fauna Handling

Any fauna that is encountered during construction will be managed in accordance with the fauna handling process, within the Fauna Handling Procedure (**Appendix C3 –Fauna Handling Procedure**

This is applicable to any fauna; however, it contains specific requirements for management of bats and snakes.

Any aquatic fauna encountered during the dewatering of farm dams will be handled and managed in accordance with the Farm Dam Dewatering Procedure (**Appendix C5 – Farm Dam Dewatering Procedure**).

7.1.6. Biodiversity Management

Direct impacts to areas of biodiversity value, including vegetation mapped as threatened ecological communities, native plant community types or aquatic habitat will be avoided and clearing in these areas minimised to only that which is required for construction.

Site Environmental Plans (SEP) or Environmental Control Maps (ECMs) for each SCAW worksite showing areas of environmental sensitivity, potential weed infestations identified in the EIS or during Pre-clearing Inspections, no-go zones, clearing limits and the project boundary. Information obtained from the Pre-clearing Inspections, such as the identification of unexpected flora, fauna species or weeds, areas of retained vegetation and no-go zones will be included where required. The SEPs/ECM will act as a Vegetation Management Plan as required under the CEMF, Section 10.2a(vii)

Before undertaking works in locations where these vegetation types are known to be present, the locations of these species and communities will be identified on SEPs/ECM, fenced on site, and avoided. CPBUI will endeavour to retain and enhance existing flora, fauna and aquatic habitat wherever possible on SCAW.

As detailed in Element 7 of the CEMP, all staff and subcontractors involved in delivery on-site must be made aware of the clearing limits and are prohibited to encroach on areas beyond the boundaries of the identified clearing limits. Where vegetation is identified for retention, this vegetation will be demarcated and protected on site.

Where impacts to threatened ecological communities or endangered species cannot be avoided, they will be quantified by CPBUI and offset by Sydney Metro in accordance with the requirements of the EPBC Act approval and NSW Biodiversity Offsets Policy for Major Projects (OEH, 2014) in agreement with DPE EHG.

Tracking of the approved biodiversity offsets (ecosystem credits and species credits) allowed for in the SCAW footprint and contained in Condition E4 will be monitored and tracked by the Environment Manager during construction. A register of the approved offset credits is contained in **Appendix C9 – SCAW Biodiversity Offset Credit Requirements.**

Sydney Metro is responsible for the requirements of Condition E4, E5, E6 and E7, and will offset any residual impacts to Key Fish Habitat in accordance with the Policy and Guidelines for Fish Habitat Conservation and Management (DPI, 2013 update) in accordance with Conditions E8, E9 and E10.

7.1.7. Unexpected Flora and Fauna Finds

A comprehensive survey of all vegetation was conducted during the EIS which identified threatened flora and fauna species and EECs pursuant to the *Biodiversity Conservation Act 2016*. An unexpected threatened species find would be either:

- Threatened flora individual(s) (including EEC) that were not known of at the time of the EIS
- Occurrence of a threatened species not assessed in the EIS.

All unexpected flora and fauna finds will be reported to Sydney Metro and the ER. If a new threatened species or ecological community is identified that was not assessed in the EIS, a Consistency Assessment will be prepared to assess the significance of the impacts to the species.

For unexpected threatened flora individual(s) that will be directly or indirectly impacted by the SCAW, the area will be protected and the potential for translocation as individuals or part of a soil translocation must be assessed by the project ecologist and documented in a translocation feasibility assessment. If

translocation is determined to be feasible (likely to result in survival of the individuals or part of a soil translocation), a Threatened Flora Translocation Plan will be prepared.

The Tree Clearing and Grubbing Procedure (**Appendix C2 – Tree Clearing and Grubbing Procedure**), the Fauna Handling Procedure (**Appendix C3 –Fauna Handling Procedure**) and the Dam Dewatering Procedure (**Appendix C5 – Farm Dam Dewatering Procedure**) outline the process to follow in the event of an unexpected species or EEC find during construction.

7.1.8. Tree Management

During design and construction, CPBUI will avoid removal of trees wherever possible. Where tree removal is unavoidable and not covered by the offsetting detailed in Section 7.1.6 above, a tree survey and report (Condition E13) will be provided by a qualified arborist. It will include the number, type, location and condition of trees, any visual amenity value, a discussion of options considered to avoid and ensure retained trees are stable and not damaged. This includes details of any proposed canopy or root pruning, root protection zone, excavation, site controls on waste disposal, vehicular access, materials storage and protection of public utilities.

The outcome of tree report/s will be incorporated into the applicable Place, Urban Design and Corridor Landscape Plan (required by Condition E79). Tree reports will be arranged as necessary as the works progress, if and when any tree removal is necessary. For each tree removed, two replacement trees will be planted by Sydney Metro.

7.1.9. Nest Boxes

Clearing activities for SCAW will result in the removal of hollow bearing trees that provide shelter and nesting sites for fauna. To compensate for the loss of habitat trees within the cleared area, CPBUI has developed a nest box replacement strategy (**Appendix C6 – Nest Box Strategy**) to outline the specific measures to be implemented to mitigate the impacts of vegetation clearing on hollow-dependent fauna.

The nest box strategy is based on the results of the pre-clearing inspection (Section 7.1.2) and prepared in consultation with the Project Ecologist. The strategy will include:

- Target species for the strategy
- Design and quantity of nest boxes according to the target species and number of hollows removed
- Types and location for installation of nest boxes
- Timing for installation - up to one month prior to clearing, where possible, to provide alternative shelter for hollow-dependent fauna displaced during clearing and following clearing once the abundance/density of tree hollows removed is confirmed
- A monitoring program
- Inspections of nest boxes for maintenance requirements and replacement where required.

The Tree Clearing and Grubbing Procedure (**Appendix C2 – Tree Clearing and Grubbing Procedure**), the Fauna Handling Procedure (**Appendix C3 –Fauna Handling Procedure**) and the Nest Box Strategy (**Appendix C6 – Nest Box Strategy**) outline the following processes to be followed relating to the installation of nest boxes:

- Pre-clearing and identification of hollows
- Protocols for clearing
- Fauna handling
- A guide on the installation of nest boxes
- Monitoring program

7.1.10. Weed and Pathogen Management

The EIS (Tech Paper 3 BDAR) identified a total of 22 exotic species listed as High Threat weeds under the BC Act, Priority Weeds for the Greater Sydney region under the Biosecurity Act or Weeds of National Significance (Australian Weeds Committee, 2020) are noted within the Badgerys Creek, Luddenham and Orchard Hills areas. The Biosecurity Act imposes obligations on occupiers of land to control priority weeds declared for their area.

Priority weeds would be managed in accordance with the Biosecurity Act. The seven Weeds of National Significance would be managed in accordance with the applicable NSW WeedWise guide, if encountered during SCAW. CPBUI will endeavour to appropriately manage the spread of weeds and plant pathogens by implementing all applicable mitigation measures. Weed identification will be undertaken in accordance with Appendix C2 – Tree Clearing and Grubbing Procedure.

Weed management will be completed prior to vegetation removal in accordance with the process outlined in the Weed Management Procedure (**Appendix C4 – Weed Management Procedure**). Ongoing weeding will occur throughout the construction phase, where required.

The EIS identified that construction activities, in general, have the potential to introduce or spread pathogens such as Phytophthora (*Phytophthora cinnamomi*), Myrtle Rust (*Uredo rangelii*) and Chytrid fungus (*Batrachochytrium dendrobatidis*) into native vegetation and habitats.

While farm dams provide habitat for some frogs, no threatened frogs are considered likely to occur, and chytrid fungus is therefore considered unlikely to have a significant impact. Notwithstanding, during pre-clearance inspection of farm dams and wetlands the aquatic ecologist will identify the likelihood of the risk of pathogens. Should risk of introduction and/or spread be identified specific mitigation measures or recommendations will be included in the pre-clearance inspection report and implemented during farm dam dewatering. In accordance with REMM FF10 refer to **Appendix C5 – Farm Dam Dewatering Procedure** for measures associated with the management of the introduction and spread of amphibian chytrid.

The SCAW activities may increase the risk of dispersal of Phytophthora and Myrtle rust, from soil disturbance, clearing activities and plant movement during construction.

During pre-clearing inspection (**Appendix C2 – Tree Clearing and Grubbing Procedure)** an assessment of the condition/health of vegetation to be removed will be undertaken to identify the likelihood of the presence of these pathogens. In the event the project ecologist identifies potential pathogen impacts specific mitigation measures will be included in the pre-clearing inspection report for implementation during clearing and grubbing activities.

Refer to the Soil and Water Management Sub-plan for additional mitigation measures such as management of contaminated material, stockpile management, plant and equipment inspections and stable site access.

7.2. Controls used to manage flora and fauna

Before works commence, adequate controls will be used to minimise potential impacts to flora, fauna and biodiversity, to ensure compliance and to reduce risk. Elimination of the hazard is the first preference of control, followed by engineering, then administrative controls. The key flora, fauna and biodiversity mitigation measures to be implemented during SCAW are listed in Table 10.

Table 10 – Flora, fauna and biodiversity controls

Control	Source	Responsible
Prior to any disturbance, clearing or grubbing activities, the following must be in place: ▪ A Pre-Clearing and Grubbing Permit ▪ No-go Zones for native or significant flora and fauna must be established, fenced/flagged and sign posted prior to commencement of clearing ▪ Where required, nest boxes will be installed ▪ The Project Ecologist will conduct a search for any wildlife that may need to be removed and relocated ▪ Release of a Hold Point.	CEMF 10.2(b)	Construction Manager Environmental Manager Environmental Coordinator
Pre-clearing inspection will be undertaken and will include: ▪ Identification of hollow bearing trees and other habitat features ▪ Identification of threatened flora and fauna ▪ A check on the physical demarcation of the limit of clearing ▪ An approved erosion and sediment control plan for the worksite.	CEMF 10.2(b)	Site Supervisor Environmental Coordinator Project Ecologist
Any waterway modifications and crossings will be designed to incorporate best practice principles in accordance with guidelines such as: • Managing Urban Stormwater: Soils and construction - Volume 1 (The “Blue book”), • NSW Department of Primary Industries. 2003. Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings, Fairfull and Witheridge • The Guidelines for Fish Habitat Conservation and Management (DPI (Fisheries NSW), 2013.)	Condition E8 REMM FF7	Design Manager
If a threat to an animal is evident onsite you must contact your supervisor and/or Environmental Coordinator immediately. Works may need to cease if the animal is in danger or harmed, until it has been relocated.	CEMF 10.1(a)	Site Supervisor
The local WIRES group and/or veterinarian will be contacted if any fauna is injured on site or requires capture and/or relocation.	CEMF 10.1(a)	Environmental Coordinator
The site speed limits must be obeyed at all times, especially areas where vehicle/fauna interactions are identified as high risk	Best practice	Site Supervisor
All plant should remain on haul roads/designated routes as much as possible so as to minimise damage to vegetation	Best practice	Site Supervisor

Control	Source	Responsible
No-go zones must be obeyed at all times without a Permit to Enter No-go Zone. Any damage to no-go zone fencing or signage must be reported to your supervisor or Environmental Coordinator immediately.	CEMF 10.3	Site Supervisor
Cleared/removed vegetation will be beneficially used either on or off the project where possible (e.g. for habitat, chipped for mulch and reused).	Condition E12	Construction Manager Environmental Manager
Boundaries of allowable disturbance areas are clearly marked and delineated.	CEMF 10.3	Site Supervisor
Equipment storage and stockpiling would be restricted to identified compound sites and already cleared land.	Best practice	Site Supervisor Environmental Coordinator
The use of artificial lighting and shading would be minimised where practicable in locations adjacent to remnant bushland that is intact condition	REMM FF6	Construction Manager Environmental Manager
Site offices, compounds and ancillary facilities will be located in areas where there is limited biodiversity values (eg cleared land) where practicable.	REMM FF1	Construction Manager Environmental Manager
Weed Management		
To prevent establishment or spread of weeds: ▪ Machinery will be cleaned before entering work sites ▪ Cleared weed material will be disposed of at a site licensed to receive green waste.	CEMF 10.3	Site Supervisor
Weed management is to be undertaken in areas affected by construction prior to any clearing works.	CEMF 10.3	Construction Manager
Training		
Induction must include information about: ▪ Flora and fauna on site ▪ Requirements for management of unexpected finds. ▪ Sensitivity of threatened fauna species ▪ Emergency and incident response/spill management (chemical spills, fire, injured fauna).	CEMF 3.11	Environmental Manager
Toolbox training on management of Fauna and Flora that will reinforce and reiterate information from inductions.	CEMF 3.11	Environmental Coordinator
Training in the environmental procedures developed for the management of flora and fauna, including Hold Points.	CEMF 3.11	Environmental Manager

7.3. Cumulative Impact Management

CPBUI will manage the potential for cumulative impacts via coordination and engagement with key stakeholders and other SSI projects in accordance with the Sydney Metro Construction Cumulative Impacts Management Plan (developed in accordance with REMM C1) and the SCAW Community Communications Strategy.

7.4. Monitoring

Inspection of sensitive areas and observation of activities with the potential to impact flora and fauna will occur for the duration of construction. Weekly and other routine inspections by the Sydney Metro Environmental Manager (or delegate) and project ER will occur throughout construction. The project requirements for monitoring are detailed in the Monitoring, Inspections, Reporting, Review and Audit (MIRRA) schedule and contained in Table 11.

Table 11 – Monitoring and inspections relevant to flora and fauna management

Monitoring/inspection	Frequency	Responsibility
Habitat clearance	As required for duration of clearance	Project Ecologist
Rehabilitation of site including retained vegetation	Weekly following commencement of rehabilitation	Environmental Manager (or delegate) under direction of Project Ecologist if required by the EPBC Biodiversity Management Plan
Pre-clearance inspection	Prior to vegetation clearance	Project Ecologist
Site inspections	Weekly	Environmental Manager (or delegate)
Visual surveillance (including exclusion zone fencing, erosion and sedimentation controls, stockpiles, threats to fauna or unexpected finds of flora and fauna, areas that have been subject to weed control)	Daily	Site Supervisors
Nest boxes	Post nest box installation (6-monthly)	Project Ecologist
Dam dewatering	Monitoring to be undertaken in accordance with the triggers and frequency in Appendix C5 – Farm Dam Dewatering Procedure	Project Ecologist
Weed and pathogen monitoring	Monitoring to be undertaken in accordance with the Appendix C2 – Tree Clearing and Grubbing Procedure and the Appendix C4 – Weed Management Procedure	Environmental Coordinator, Site Supervisor, Project Ecologist

Note: Environmental monitoring requirements are to be included in the MIRRA schedule as per project obligations and repeated in the Sub-plan if necessary.

Specific flora and fauna item prompts in the Environment and Sustainability Inspection Checklists contained in the Synergy Enablon Mobile App include:

- Are clearing limits marked onsite(e.g. flagged, fenced, sign-posted), and are visible to workers/plant operators?
- Are No-go Zones for flora and fauna (e.g. clearing boundaries, tree protection zones, threatened species protection areas) adequately maintained (e.g. maintained fencing/flagged, sign posted)?
- Are weed infested areas/stockpiles delineated and delineation controls being maintained?
- Have trees and vegetation to be retained been protected, with no sign of impact from construction? This includes storage/access within Vegetation Protection Zones.

PART B – IMPLEMENTATION

Elements and Expectations

Part B of this Sub-plan explains how potential flora, fauna and biodiversity impacts during SCAW will be minimised and managed. Compliance with all elements is required at all times to minimise the likelihood of causing unauthorised environmental harm and maximise the uptake of opportunities to reduce environmental impact.

Part B contains the following:

- **Environmental Elements and Expectations –** These describe what is required of CPBUI JV to implement the objectives of the Environment and Sustainability Policy Statement.
- **Element –** Key aspects for managing this function in delivering SCAW.
- **Expectation –** The outcomes achieved as part of each Element.
- **Requirements –** These are the specific actions required to demonstrate compliance with the Elements and Expectations.
- **Responsibility and Key Contributor –** Designation of responsibility for achieving compliance with the stated Expectation. Key contributors assist/contribute to achieving compliance.
- **Deliverables –** Tangible outcomes produced to demonstrate compliance with the environmental Elements and Expectations.

Element 1: Training

CPBUI JV will ensure that SCAW personnel can competently perform their duties and meet environmental obligations.

Expectations		How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Deliverables
1.1	All personnel have completed an induction containing relevant environmental information before they are authorised to work on the project	Induction presentation will include: ▪ The requirements of this Sub-plan ▪ Flora and fauna on site ▪ Requirements for management of unexpected finds ▪ Sensitivity of threatened fauna species (birds and bats) ▪ Weed and pathogen identification and control ▪ Emergency and incident response/spill management (chemical spills, fire, injured fauna).	**Senior HR Advisor** Environmental Manager Environmental Coordinators	Induction presentation Induction records
1.2	Toolbox talks are used to reinforce key management requirements and lessons learnt	Toolbox talks will be held regularly during site establishment and throughout construction. They will reinforce and reiterate information from inductions and address site-specific flora and fauna management.	**Environmental Manager** Site Supervisors	Toolbox presentations Toolbox records

Expectations		How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Deliverables
		High risk activities (as identified through the risk assessment process undertaken as detailed in Section 6.1.1) will be the subject of targeted environmental awareness training. Refer to Element 7 of the CEMP for full details on training and awareness.	Environmental Coordinators	

Element 2: Monitoring and Reporting

All staff, employees and subcontractors will actively drive compliant environmental performance of SCAW.

Expectations		How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Deliverables
2.1	Worksites are regularly inspected to ensure the adequacy of controls and compliance with the requirements of this Sub-plan	CPBUI JV will regularly review SCAW to ensure compliance with legal and contract requirements and to identify potential non-compliances before they occur, as below: ▪ Site inspection checklist will include reference to flora and fauna ▪ Details of inspections undertaken by the Site Supervisor will be logged in their respective site diaries and on Synergy ▪ ER inspections will include review of implementation of flora, fauna and biodiversity management and mitigation measures Monitoring associated with flora and fauna management is detailed in Section 7.4.	Environmental Manager **Site Supervisors** **Environmental Coordinators** ER	Environment and Sustainability Inspection Checklists Site Diary entries ER Reports Post Clearing Inspection Reports Monitoring Reports
2.2	Flora and fauna reporting	Flora and fauna management data will be collected and used for recording and reporting purposes including: ▪ Records of pre-clearing inspections undertaken; ▪ Records of the release of the pre clearing and/or pre demolition hold points and ▪ Records of ecological inspections undertaken. Further details of record keeping and documentation can be found in Part B Element 11 of the CEMP. The Design Report/s will detail the records of any avoided impacts through the design.	Environmental Manager Project Ecologist Design Manager	Pre-clearing inspection checklist Design Report/s Inspection checklists Site diary entries

Element 3: Auditing, Review and Improvement

CPBUI JV will continually improve its environmental systems and performance by monitoring and reviewing their effectiveness

Expectations		How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Deliverables
3.1	Audits are undertaken to ensure compliance with the requirements of this Sub-plan	Procedures for corrective actions are addressed in Element 3 of the CEMP. Audits will be performed in accordance with Element 12 of the CEMP and this Sub-plan and/or associated documents or procedures will be updated if required.	**Environmental Manager** Environmental Coordinators Sustainability Manager Environmental Representative	Audit Reports Corrective Action Reports
3.2	All non-compliances are reported and actioned	A flora, fauna and biodiversity non-compliance can generally be defined as a failure to comply with: ▪ Relevant environmental legislation ▪ Project Planning Approvals (Condition and EPBC Act Approval) ▪ Deed ▪ Flora and Fauna Management Sub-plan and related documents Where a non-compliance is raised as part of an audit or an incident or complaint investigation the audit, incident or complaint report may be used to close out the non-compliance and it is not necessary to raise a separate non-compliance reporting process. Corrective and Preventative Actions may also be raised in accordance with Element 3 of the CEMP.	**Environmental Manager** Sustainability Manager Environmental Coordinators Quality Manager	Audit Reports Corrective Action Reports

Element 4: Project Specific Requirements

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
Condition C1	Construction Environmental Management Plans (CEMPs) and CEMP Sub-plans must be prepared in accordance with the Construction Environmental Management Framework (CEMF) included in the documents listed in Condition A1 to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 will be implemented and achieved during construction.	This Sub-plan	**Environmental Manager**	Pre-construction
Condition C2	With the exception of any CEMPs expressly nominated by the Planning Secretary to be endorsed by the ER, all CEMPs must be submitted to the Planning Secretary for approval.	Section 2.1.3	**Environmental Manager**	Pre-construction
Condition C4	Any CEMP to be endorsed by the ER and then submitted to the Planning Secretary for approval no later than one (1) month before the commencement of construction	Section 2.1.3	**Environmental Manager**	Pre-construction
Condition C5	Of the CEMP Sub-plans required under Condition C1, the following CEMP Sub-plans must be prepared in consultation with the relevant government agencies identified for each CEMP Sub-plan. Details of issues raised by a government agency during consultation (as required by Condition A6) must be provided as part of the relevant CEMP Sub-Plan when submitted to the Planning Secretary / ER (whichever is applicable). Where a government agency(ies) request(s) is not included, the Proponent must provide the Planning Secretary / ER (whichever is applicable) justification as to why. **Flora and fauna** - DPIE EES, DPI Fisheries, and Relevant Councils	Section 2.1.3	**Environmental Manager**	Pre-construction

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
Condition C6	The CEMP Sub-plans must state how:			
	(a) the environmental performance outcomes identified in the documents listed in Condition A1 will be achieved;	Section 2.1.2 Element 4: Project Specific Requirements	**Environmental Manager**	Pre-construction
	(b) the mitigation measures identified in the documents listed in Condition A1 will be implemented;	Section 7 Element 4: Project Specific Requirements	**Environmental Manager**	Pre-construction
	(c) the relevant terms of this approval will be complied with; and	Element 4: Project Specific Requirements	**Environmental Manager**	Pre-construction
	(d) issues requiring management during construction (including cumulative impacts), as identified through ongoing environmental risk analysis, will be managed through SMART principles.	Section 6.1.1 Section 7.3 The performance during construction will be monitored against the objectives and targets (Section 2.1.2) and performance monitoring will be documented in accordance with Element 2: Monitoring and Reporting and at least on a 6-monthly basis as part of auditing requirements (refer to Element 12 of the CEMP).		Pre-construction
C7	With the exception of any CEMP Sub-plans expressly nominated by the Planning Secretary to be endorsed by the ER, all CEMP Sub-plans must be submitted to the Planning Secretary for approval.	Section 2.1.3	**Environmental Manager**	Pre-construction

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
Condition C9	Any of the CEMP Sub-plans to be approved by the Planning Secretary must be submitted to the Planning Secretary with, or subsequent to, the submission of the CEMP but in any event, no later than one (1) month before construction or where construction is staged no later than one (1) month before the commencement of that stage.	Section 2.1.3	**Environmental Manager**	Pre-construction
Condition C10	Construction must not commence until the CEMP and all CEMP Sub-plans have been approved by the Planning Secretary or endorsed by the ER (whichever is applicable), unless otherwise agreed by the Planning Secretary. The CEMP and CEMP Sub-plans, as approved by the Planning Secretary or endorsed by the ER (whichever is applicable), including any minor amendments approved by the ER, must be implemented for the duration of construction.	Section 2.1.3	**Environmental Manager**	Pre-construction
Condition C11	In addition to the relevant requirements of the CEMF, the Flora and Fauna CEMP Sub-plan must include but not be limited to:			
	(a) details of how the requirements of Conditions E11 are met;	Section 7.1.9 Appendix C6 – Nest Box Strategy	**Environmental Manager** Project Ecologist	Construction

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
	(b) details of a dewatering plan of farm dams including: (i) supervision of dewatering by a suitably qualified ecologist; (ii) a methodology for the transfer of native fauna species known to inhabit and/or use the dam; (iii) the location and suitability of the proposed relocation sites; and (iv) any potential impacts of relocating the fauna to the relocation sites;	Section Appendix C5 – Farm Dam Dewatering Procedure	**Environment Manager** Aquatic Ecologist	Construction
	(c) protocols for incidental finds of threatened species and ecological communities within the construction boundary.	Section 7.1.7 Appendix C2 – Tree Clearing and Grubbing Procedure Appendix C3 –Fauna Handling Procedure Appendix C5 – Farm Dam Dewatering Procedure	**Environmental Manager**	Construction
Condition E2	Clearing of native vegetation must be minimised to the greatest extent practicable with the objective of reducing impacts to threatened ecological communities and threatened habitat.	Section 7.1.6	**Site Supervisor** Environmental Manager	Construction
Condition E3	Impacts to plant community types must not exceed those identified in the documents listed in A1, unless otherwise approved by the Planning Secretary. In requesting the Planning Secretary's approval, an assessment of the additional impact(s) to plant community types and an updated ecosystem and / or species credit requirements under Condition E4 below, if required, must be provided,	Section 7.1.6 Appendix C2 – Tree Clearing and Grubbing Procedure	**Site Supervisor** Environmental Manager	Construction
Condition E4	Prior to impacts on the biodiversity values set out in Table 3 and Table 4, the number and classes of	Section 7.1.6 Appendix C2 – Tree Clearing and Grubbing Procedure	**Sydney Metro**	Pre-construction

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
	ecosystem credits and species credits (like-for-like) must be retired	Section 7.1.2 (Hold Point)		
Condition E5	The requirement to retire like-for-like ecosystem credits and species credits in Condition E4 may be satisfied by payment to the Biodiversity Conservation Fund of an amount equivalent to the number and classes of ecosystem credits and species credits.	Section 7.1.6	**Sydney Metro**	Pre-construction
Condition E6	Where evidence of compliance with the Ancillary rules: Reasonable steps to seek like-for-like biodiversity credits for the purpose of applying the variation rules has been provided to the Planning Secretary, variation rules may be applied to retire the relevant ecosystem credits and species credits as set out in the BAM Biodiversity Credit Report (Variation).	Section 7.1.6	**Sydney Metro**	Pre-construction
Condition E7	Evidence of the retirement of credits in satisfaction of Condition E4 or payment to the Biodiversity Conservation Fund in satisfaction of Condition E5 must be provided to the Planning Secretary prior to commencement of works.	Section 7.1.6 Section 7.1.2 (Hold Point)	**Sydney Metro**	Pre-construction
Condition E8	The Proponent must minimise impacts to Key Fish Habitat (KFH) as defined in Policy and Guidelines for Fish Habitat Conservation and Management (DPI, 2013 update). Residual impacts to KFH, following the implementation of habitat rehabilitation or other environmental compensation measures, must be offset at a ratio of 2:1 habitat offset requirement in accordance with the Policy and Guidelines for Fish Habitat Conservation and Management (DPI, 2013 update) and in consultation with DPI Fisheries	Section 7.2 (Design Report/s) Section 7.1.3 An Environmental Work Method Statement will be required to manage works where impacts to Key Fish Habitat have been identified (refer to Section 6of the CEMP for further detail regarding the ongoing risk identification process and construction planning)	**Design Manager** Environmental Manager	Pre-construction and Construction

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
Condition E9	Where offsets are required in accordance with Condition E8, payment of the habitat offset requirement must be made to the DPI Fish Conservation Trust Fund prior to the commencement of Work that impacts KFH.	Section 7.1.6 Section 7.1.2 (Hold Point)	**Environmental Manager**	Pre-construction
Condition E10	Where offsets are required in accordance with Condition E8, the Proponent must submit to the Planning Secretary a receipt confirming payment to the DPI Fish Conservation Trust Fund within one (1) month of making the payment.	Section 7.1.6 Section 7.1.2 (Hold Point)	**Environmental Manager**	Pre-construction
Condition E11	Nest Boxes must be installed one (1) month prior to any removal of existing tree hollows and/or the release of any captured hollow dependent fauna.	Section 7.1.9 Appendix C2 – Tree Clearing and Grubbing Procedure Appendix C6 – Nest Box Strategy Hold Points	**Environmental Manager** Project Ecologist	Pre-construction

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
Condition E12	**Re-use of Timber** Prior to vegetation clearing, the Proponent must identify where it is practicable for the CSSI to reuse native trees and vegetation that are to be removed. If it is not possible for the CSSI to reuse removed native trees and vegetation, the Proponent must consult with the relevant council(s), NSW National Parks & Wildlife Service, Western Sydney Parklands Trust, Greater Sydney Local Land Services, Landcare groups, DPI Fisheries and any additional relevant government agencies to determine if: (a) hollows, tree trunks (greater than 25-30 centimetres in diameter and 2-3 metres in length), mulch, bush rock and root balls salvaged from native vegetation impacted by the CSSI; & (b) collected plant material, seeds and/or propagated plants from native vegetation impacted by the CSSI, could be used by others in habitat enhancement and rehabilitation work, before pursuing other disposal options.	Section 7.1.2	**Environmental Manager**	Construction

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
Condition E13	Revegetation and the provision of replacement trees must be informed by a Tree Survey undertaken during detailed design. The Tree Survey must identify the number, type and location of any trees to be removed. The Tree Survey must be submitted to the Planning Secretary for information with the Place, Urban Design and Corridor Landscape Plan required under Condition E79. Where trees are to be removed, the Proponent must provide a net increase in the number of replacement trees at a ratio of 2:1, except trees that are offset under Condition E4. Replacement trees must have a minimum pot size consistent with the relevant authority's plans / programs / strategies for vegetation management, street planting, or open space landscaping, or as agreed by the relevant authority(ies). Note: For the purposes of this condition, the relevant authority is that State or local government authority that owns or manages the land on which the replacement trees will be planted.	Section 7.1.8	**Environmental Manager** Arborist	Construction

Revised Environmental Management Measures (REMMs)

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
REMM FF1	The Biodiversity Construction Environmental Management Plan (on-airport) and **Flora and Fauna Management Plan (off-airport)** would be prepared by a suitably qualified and experienced person to minimise and manage the clearing of native vegetation and habitat.by: • seeking to locate site offices, site compounds and ancillary facilities in areas where there are limited biodiversity values (e.g. cleared land) • delaying the removal of vegetation until absolutely necessary • avoiding the removal of hollow-bearing trees, where possible • using a qualified surveyor and suitably qualified ecologist to mark out exclusion zones and clearing/project boundaries prior to construction • providing contractors with regularly updated sensitive area maps (showing clearing boundaries and exclusion zones) • investigating opportunities for salvage and storage of felled native trees for potential use in landscape design The Biodiversity Construction Environmental Management Plan (on-airport) and Flora and Fauna Management Plan (off-airport) would be implemented throughout construction.	This Sub-plan	**Environmental Manager**	Pre-construction

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
REMM FF2	A Nest Box Strategy would be prepared to minimise habitat loss to hollow-dependent fauna in accordance with the Flora and Fauna Management Plan and would include the following requirements: • hollow-bearing trees would be marked/tagged and mapped prior to their removal. The size, type, number and location of nest boxes required would be based on the results of the pre-clearing survey • about 70 per cent of nest boxes would be installed about one month prior to any vegetation removal to provide alternate habitat for hollow-dependent fauna displaced during clearing	Appendix C2 – Tree Clearing and Grubbing Procedure Appendix C3 –Fauna Handling Procedure Appendix C6 – Nest Box Strategy	**Environmental Manager**	Construction
REMM FF4	A targeted microbat survey (including Eastern Coastal Free-tailed Bat, Large Bent-winged bat and Eastern False Pipistrelle) of dwellings and structures proposed for demolition, removal or modification would be undertaken in accordance with 'Species credit' threatened bats and their habitats NSW survey guide for the Biodiversity Assessment Method (OEH, 2018) prior to disturbance. Other human-made structures such as culverts and other under-road structures within the construction footprint would be surveyed for threatened microbats (e.g. particularly the Southern Myotis) in accordance with the Biodiversity Assessment Method (OEH, 2018). If threatened microbats are detected, a Microbat Management Plan would be developed as part of the Flora and Fauna Management Plan and implemented by a suitably qualified bat specialist.	Section 7.1.4 Appendix C3 –Fauna Handling Procedure	**Environmental Manager** Project Ecologist	Construction
REMM FF6	During construction, shading and artificial light impacts would be minimised in areas adjoining remnant bushland that is in intact condition	Site Inspection Checklist Section 7.2	**Environmental Manager**	Construction

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
REMM FF7	Fish passage and fish habitat associated with Cosgroves Creek and Blaxland Creek would be protected in accordance with the Policy and Guidelines for Fish Habitat Conservation and Management (DPI (Fisheries NSW), 2013	Section 7.2 Soil and Water Management Sub-plan (PESCP) As detailed in section 7.2 any waterway modifications and crossings will be designed to incorporate best practice principles in accordance with guidelines such as: • Managing Urban Stormwater: Soils and construction - Volume 1 (The “Blue book”), • NSW Department of Primary Industries. 2003. Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings, Fairfull and Witheridge • The Guidelines for Fish Habitat Conservation and Management (DPI (Fisheries NSW), 2013.) An Environmental Work Method Statement will be required to manage works in waterways or where impacts to Key Fish Habitat have been identified (refer to Section 6 of the CEMP for further detail regarding the ongoing risk identification process and construction planning)	**Environmental Manager** **Design Manager**	Pre-construction Construction

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
REMM FF8	A Dewatering Plan would be prepared and implemented for the dewatering of rural dams which are impacted as a result of the construction of the project. This would include measures to manage the transfer of native aquatic fauna, if required, prior to dewatering and removing of dams.	Appendix C5 – Farm Dam Dewatering Procedure	**Aquatic Ecologist** Environmental Manager	Construction
REMM FF10	The impact of Key Threatening Processes as a result of the project would be managed and minimised where possible through: ▪ implementation of weed management measures to prevent the introduction and spread of weeds including exotic vines and scramblers, Olea europaea (African Olive), Chrysanthemoides monilifera, Lantana camara, and exotic perennial grasses ▪ implementation of pathogen management measures to prevent the introduction and spread of pathogens including amphibian chytrid, Phytophthora implementa, and Exotic Rust Fungi of the order Pucciniales ▪ implementation of management measures to protect the riparian zone to ensure fish passage and protect fish habitat in accordance with the Policy and Guidelines for Fish Habitat Conservation and Management (DPI (Fisheries NSW,) 2013), and minimisation of vegetation removal within the riparian zone where possible.	Section 7.1.10 Section 7.2 Appendix C2 – Tree Clearing and Grubbing Procedure Appendix C5 – Farm Dam Dewatering Procedure Soil and Water Management Sub-plan (PESCP)	**Environmental Manager** Site Supervisor	Construction

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
REMM FF11	A native vegetation seed collection and salvage program would be developed prior to the commencement of construction and implemented during construction. The seed collection and salvage program would aim to target native species prioritising the Cumberland Plain Woodland species to be utilised in landscaping for the project where possible. Opportunities for use of collected and salvaged seed outside of the project would also be investigated.	Appendix C7 – Pre-clearing inspection form	**Sydney Metro**	Pre-construction

Construction Environmental Management Framework (CEMF)

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
CEMF 3.5a	Subject to Section 3.4(b) the Principal Contractors will prepare issue-specific environmental sub plans to the CEMP which address each of the relevant environmental impacts at a particular site or stage of the project. Issue specific sub plans will include as a minimum: vi. Flora and fauna management	This Sub-plan	Environmental Manager	Pre-construction
CEMF 10.1a	The following flora and fauna management objectives will apply to construction:			
	i. Minimise impacts on flora and fauna;	Section 7	**Site Supervisor** Environmental Manager	Construction
	ii. Design waterway modifications and crossings to incorporate best practice principles;	Section 7.1 Section 7.2	**Design Manager**	Design
	iii. Retain and enhance existing flora and fauna habitat wherever possible;	Section 7	**Environmental Manager** **Design Manager**	Design Construction

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
	iv. Appropriately manage the spread of weeds and plant pathogens; and	Appendix C2 – Tree Clearing and Grubbing Procedure Appendix C4 – Weed Management Procedure	**Site Supervisor** Environmental Manager	Construction
	v. For on-airport works, the Sydney Metro Western Sydney Airport Biodiversity CEMP will detail all fauna and flora management objectives and will be consistent with the WSA Biodiversity CEMP, including all appendices to the Biodiversity CEMP.	Section 2.1.1	**Sydney Metro** Environmental Manager	Construction
CEMF 10.2a	On-airport management of flora and fauna will be achieved through the implementation of the SM-WSA Biodiversity CEMP and Principal Contractors will develop and implement a Flora and Fauna Management Plan for off-airport works. Both plans will include as a minimum:	This Sub-plan On-Airport Biodiversity CEMP		
i.	The biodiversity mitigation measures as detailed in the planning approval documentation;	Element 4: Project Specific Requirements Element 4: Project Specific Requirements	**Environmental Manager**	Construction
ii.	The responsibilities of key project personnel with respect to the implementation of the plan;	Section 7.2 Section 7.1.1	**Environmental Manager**	Construction
iii.	Procedures for the clearing of vegetation and the relocation of flora and fauna;	Appendix C2 – Tree Clearing and Grubbing Procedure Appendix C3 –Fauna Handling Procedure	**Environmental Manager**	Construction
iv.	Details on the locations, monitoring program and use of nest boxes by fauna;	Appendix C6 – Nest Box Strategy	**Environmental Manager** Project Ecologist	Construction
v.	Procedures for the demarcation and protection of retained vegetation, including all vegetation outside and adjacent to the construction footprint, and the protection of retained vegetation within the environmental conservation zone on the airport site;	Appendix C2 – Tree Clearing and Grubbing Procedure On-Airport Biodiversity CEMP	**Environmental Manager**	Construction

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
vi.	Plans for impacted and adjoining areas showing vegetation communities; important flora and fauna habitat areas; locations where threatened species, populations or ecological communities have been recorded;	Section 7.1.6	**Environmental Manager**	Construction
vii.	Vegetation management plan(s) for sites where native vegetation is proposed to be retained;	Section 7.1.6	**Environmental Manager**	Construction
viii.	Identification of measures to reduce disturbance to sensitive fauna;	Appendix C3 –Fauna Handling Procedure Appendix C5 – Farm Dam Dewatering Procedure	**Environmental Manager**	Construction
ix.	Rehabilitation details, including identification of flora species and sources, and measures for the management and maintenance of rehabilitated areas (including duration of the implementation of such measures);	Section 7.1.3 Section 7.4 Element 2: Monitoring and Reporting Element 3: Auditing, Review and Improvement	**Environmental Manager**	Construction
x.	Weed and disease management measures focusing on early identification of invasive weeds and diseases. Protocols to address the effective management of these risks;	Section 7.1.10 Appendix C2 – Tree Clearing and Grubbing Procedure Appendix C4 – Weed Management Procedure	**Environmental Manager**	Construction
xi.	A procedure for dealing with unexpected threatened species identified during construction, including cessation of work and notification to the relevant government department for both on- and off-airport works. The procedure shall define how appropriate mitigation measures (including relevant relocation measures) and updating of ecological monitoring or off-set requirements;	Section 7.1.7	**Site Supervisor** Environmental Manager	Construction

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
xii.	Details on the methodology for vegetation mapping and survey;	Section 7.1.2 Appendix C2 – Tree Clearing and Grubbing Procedure	**Project Ecologist**	Construction
xiii.	Ecological monitoring requirements; and	Section 1.1	**Environmental Manager**	Construction
xiv.	Compliance record generation and management	Element 2: Monitoring and Reporting	**Environmental Manager**	Construction
CEMF 10.2b	Principal Contractors would undertake the following ecological monitoring as a minimum:			
	i. A pre-clearing inspection will be undertaken prior to any native vegetation clearing by a suitable qualified ecologist and the Contractor's Environmental Manager (or delegate). The pre-clearing inspection will include, as a minimum: ▪ Identification of hollow bearing trees or other habitat features; ▪ Identification of any threatened flora and fauna; ▪ A check on the physical demarcation of the limit of clearing; ▪ An approved erosion and sediment control plan for the worksite; and The completion of any other pre-clearing requirements required by any project approvals, permits or licences.	Appendix C2 – Tree Clearing and Grubbing Procedure	**Environmental Manager**	Construction
CEMF 10.2 b	ii. The completion of the pre-clearing inspection will form a HOLD POINT requiring sign-off from the Contractor's Environmental Manager (or delegate) and a qualified ecologist; and	Appendix C2 – Tree Clearing and Grubbing Procedure	**Environmental Manager** Project Ecologist	Construction

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
	iii. A post clearance report, including any relevant Geographical Information System files, will be produced that validates the type and area of vegetation cleared including confirmation of the number of hollows impacted and the corresponding nest box requirements to offset these impacts.	Appendix C2 – Tree Clearing and Grubbing Procedure	**Project Ecologist**	Construction
CEMF 10.2 c	The Principal Contractor's regular inspections will include a check on the ecological mitigation measures and project boundary fencing.	Section 7.4 Element 2: Monitoring and Reporting Visual Amenity Management Sub-plan	**Environmental Manager** Site Supervisor	Construction
CEMF 10.2 d	The following compliance records would be kept by the Principal Contractor: i. Records of pre-clearing inspections undertaken; ii. Records of the release of the pre-clearing hold point; and iii. Records of ecological inspections undertaken.	Element 2: Monitoring and Reporting	**Environmental Manager**	Construction
CEMF 10.3 a	a. The on-airport Biodiversity CEMP and the off-airport **Flora and Fauna Management Plan** will include the following flora and fauna mitigation measures as well as any relevant Conditions:			
	i. Areas to be retained and adjacent habitat areas will be fenced off prior to works to prevent damage or accidental over clearing;	Section 7.1.6 Appendix C2 – Tree Clearing and Grubbing Procedure	**Environmental Manager**	Construction
CEMF 10.3 a	ii. Clearing will follow a two-stage process as follows: ▪ Non-habitat trees will be cleared first after sign-off of the pre-clearing inspection; and ▪ Habitat trees will be cleared no sooner than 48 hours after non-habitat trees have been cleared. A suitably qualified ecologist will be present on site during the clearing of habitat trees. Felled	Appendix C2 – Tree Clearing and Grubbing Procedure	**Environmental Manager** **Project Ecologist**	Construction

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
	habitat trees will be left on the ground for 24 hours or inspected by the ecologist prior to further processing.			
CEMF 10.3 a	iii. Weed management is to be undertaken in areas affected by construction prior to any clearing works. Off-airport weed management will be undertaken in accordance with the NSW Noxious Weeds Act 1993. On-airport weed management will also be undertaken in accordance with the NSW Noxious Weeds Act 1993 and the NSW Biosecurity Act 2015, which is consistent with the approach adopted in the Western Sydney Airport Weed and Disease Management Plan (Appendix C of the Western Sydney Airport Biodiversity CEMP).	Appendix C4 – Weed Management Procedure	**Environmental Manager** **Project Ecologist**	Construction

EPBC Act Approval 2020/8687

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
EPBC 1	1. The approval holder must not clear outside the study area.	Section 7.1.6 Element 3: Auditing, Review and Improvement Appendix C2 – Tree Clearing and Grubbing Procedure	**Site Supervisor** Environmental Manager	Construction
EPBC 2	2. To minimise the impacts of the action on protected matters, the approval holder must not clear more than the specified amounts within the study area (see full condition for detail)	Appendix C2 – Tree Clearing and Grubbing Procedure Appendix C7 – Pre-clearing inspection form Section 7.1.6 Section 7.1.2 (Hold Point)	**Site Supervisor** Environmental Manager	Construction
EPBC 10	10. The approval holder must not commence the action unless the Minister has approved the Biodiversity Management Plan in writing.	Section 3.2 Appendix C2 – Tree Clearing and Grubbing Procedure Hold Points	**Environmental Manager** Sydney Metro	Construction
EPBC 15	15. Prior to the commencement of clearing of protected matters identified in condition 2 in each stage, as defined in the Staging Plan required under condition 12, the approval holder must: a. determine the offset requirement for protected matters identified in condition 2 to be cleared in that stage in accordance with the NSW Biodiversity Assessment Method and he process set out I the Biodiversity Offset Strategy required under condition 18. b. secure the required offsets for that stage.	Section 7.1.2 Section 7.1.6 Appendix C2 – Tree Clearing and Grubbing Procedure	**Sydney Metro** Environmental Manager	Construction

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
EPBC 20	20. The approval holder must not commence the action unless the Minister has approved the Biodiversity Offset Strategy in writing.	Appendix C2 – Tree Clearing and Grubbing Procedure Section 7.1.2 (Hold Points)	**Sydney Metro** Environmental Manager	Construction
EPBC 24	24. The approval holder must maintain accurate and complete compliance records.	Element 2: Monitoring and Reporting CEMP Element 11	**Sydney Metro** Environmental Manager	Construction
EPBC 25	25. If the Department makes a request in writing, the approval holder must provide electronic copies of compliance records to the Department within the timeframe specified in the request.	CEMP Element 11	**Sydney Metro** Environmental Manager	Construction
EPBC 27	27. The approval holder must ensure that any monitoring data (including sensitive ecological data), surveys, maps, and other spatial and metadata required under the Biodiversity Management Plan, is prepared in accordance with the Department's Guidelines for biological survey and mapped data (2018) and submitted electronically to the Department in accordance with the requirements of the plan.	Section 7.4 CEMP Element 11	**Sydney Metro** Environmental Manager	Construction
EPBC 28	28. The approval holder must prepare a compliance report addressing each condition of this approval for each 12-month period following the date of commencement of the action, or otherwise in accordance with an annual date that has been agreed to in writing by the Minister.	CEMP Element 11	**Sydney Metro** Environmental Manager	Construction
EPBC 29	29. The approval holder must notify the Department in writing of any: incident; non-compliance with the conditions; or non-compliance with the commitments made in plans.	CEMP Element 11	**Sydney Metro** Environmental Manager	Construction

No	Requirement	How we will meet the Expectations (minimum requirements)	Responsibility Key Contributor	Timing
EPBC 30	30. The approval holder must provide to the Department the details of any incident or non-compliance with the conditions or commitments made in plans	CEMP Element 11	**Sydney Metro** Environmental Manager	Construction
EPBC 31	31. The approval holder must ensure that independent audits of compliance with the conditions are conducted as requested in writing by the Minister.	If requested	**Sydney Metro** Environmental Manager	Construction

Part C Appendices

Appendix C1 – Consultation Records

Williams, Simon

From: Lauren Vallejo <Lauren.Vallejo@penrith.city>
Sent: Monday, 4 July 2022 1:56 PM
To: Williams, Simon; Michael Hall
Cc: Graham Knox
Subject: FW: Sydney Metro - WSA: Surface Civil and Alignment Works (SCAW) CEMP Consultation: Flora & Fauna Management Sub-plan
Attachments: CPB_SMWSA_SCAW_FFMP RevA.pdf; CPBUI - SCAW Agency Consultation Form RevA.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Michael
Hi Simon

RE: SCAW Flora & Fauna Sub-Plan

Council staff have reviewed the attached Flora & Fauna Sub-Plan submitted in support of the works under the SCAW contract.
The email below states that the documentation was to be received via TeamBinder, so as to provide comments directly. This was never received, nor a workflow created, so please accept this email as Penrith City Council's formal reply.

Overall, the Flora & Fauna Sub-Plan is sound, allowing flexibility depending on the outcomes of the pre-clearance surveys.
Council staff have no objections and raise no further comment.

Kind Regards
Lauren

Lauren Vallejo
Project Interface - Sydney Metro

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From: Williams, Simon <Simon.Williams@cpbcon.com.au>
Sent: Friday, 17 June 2022 3:40 PM
To: Lauren Vallejo <Lauren.Vallejo@penrith.city>
Cc: Khosla, Vishal <Vishal.Khosla@cpbuijv.com.au>; Chelvarajan, Theepan <Theepan.Chelvarajan@cpbcon.com.au>; Ross, Jennifer <Jennifer.Ross@cpbuijv.com.au>; Tim Solomon <Tim.Solomon@transport.nsw.gov.au>; Jeremy Slattery <Jeremy.Slattery@transport.nsw.gov.au>; Asha Pomery <Asha.Pomery3@transport.nsw.gov.au>; Graham Knox <Graham.Knox5@transport.nsw.gov.au>; 'Alex Gale' <Alex.Gale@hbi.com.au>
Subject: Sydney Metro - WSA: Surface Civil and Alignment Works (SCAW) CEMP Consultation: Flora & Fauna Management Sub-plan

EXTERNAL EMAIL: This email was received from outside the organisation. Use caution when clicking any links or opening attachments.

Dear Lauren

CPB Contractors United Infrastructure (CPBUI) joint venture have been awarded the Surface Civil and Alignment Works (SCAW) component of the Sydney Metro Western Sydney Airport Project (CSSI 10051).

Under Condition C5 of the Project Planning Approval, CPBUI, on behalf of Sydney Metro have a requirement to consult with **Penrith City Council** during the preparation of the Flora and Fauna Management Sub-plan.

C5 Of the **CEMP Sub-plans** required under **Condition C1**, the following **CEMP Sub-plans** must be prepared in consultation with the relevant government agencies identified for each **CEMP Sub-plan**. Details of issues raised by a government agency during consultation (as required by **Condition A6**) must be provided with the relevant **CEMP Sub-plan** when submitted to the Planning Secretary / **ER** (whichever is applicable). Where a government agency(ies) request(s) is not included, the Proponent must provide the Planning Secretary / **ER** (whichever is applicable) justification as to why.

	Required CEMP Sub-plan	Relevant government agencies to be consulted for each CEMP Sub-plan
(a)	Noise and vibration	Relevant Councils and WaterNSW (in relation to its assets)
(b)	Flora and fauna	DPIE EES, DPI Fisheries, and Relevant Councils
(c)	Soil and Water	DPI Fisheries, and Relevant Councils
(d)	Non-Aboriginal heritage	Relevant Councils, WaterNSW and Heritage NSW

***Note**: **CEMP Sub-plan(s)** may reflect the construction of the project through geographical activities, temporal activities or activity based staging.*

The consultation period for Council is 4 weeks and therefore we request all comments to be received back by Friday 15 July 2022. Comments received after this date may not be addressed in time and will be considered during future revisions.

To assist during your review of the Flora and Fauna Management Sub-plan we would like to provide an opportunity to meet and discuss the scope of the SCAW project and these documents. This meeting can be in a forum of your choice (ie. in person with other members of the SCAW project team, or via Teams with the Environment Manager). We will contact you directly within the first week of the review period to seek confirmation of a meeting.

Please find attached the Flora and Fauna Management Sub-plan and SCAW Document Comments Register.

A copy of the is correspondence will also be sent to you via the SCAW secure file transfer system Team Binder for you to submit your comments.

Should you have any questions please feel free to contact me on the numbers or email below.

Regards

Simon Williams
Environment Manager

2

SYDNEY METRO - WESTERN SYDNEY AIRPORT
SURFACE AND CIVIL ALIGNMENT WORKS

Level 5, 60 Miller St, Street North Sydney NSW 2060
T +02 9035 5007 **M** 0434 095 001
E Simon.Williams@cpbcon.com.au

Williams, Simon

From: Williams, Simon
Sent: Friday, 17 June 2022 3:44 PM
To: 'nelsonp@liverpool.nsw.gov.au'
Cc: Khosla, Vishal; Chelvarajan, Theepan; Ross, Jennifer; 'Tim Solomon'; 'Jeremy Slattery'; 'Asha Pomery'; 'Graham Knox'; 'Alex Gale'; 'WiafeC@liverpool.nsw.gov.au'
Subject: Sydney Metro - WSA: Surface Civil and Alignment Works (SCAW) CEMP Consultation: Flora & Fauna Management Sub-plan
Attachments: CPB_SMWSA_SCAW_FFMP RevA.pdf; CPBUI - SCAW Agency Consultation Form RevA.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Dear Peter

CPB Contractors United Infrastructure (CPBUI) joint venture have been awarded the Surface Civil and Alignment Works (SCAW) component of the Sydney Metro Western Sydney Airport Project (CSSI 10051).

Under Condition C5 of the Project Planning Approval, CPBUI, on behalf of Sydney Metro have a requirement to consult with **Liverpool City Council** during the preparation of the Flora and Fauna Management Sub-plan.

C5 Of the **CEMP Sub-plans** required under **Condition C1**, the following **CEMP Sub-plans** must be prepared in consultation with the relevant government agencies identified for each **CEMP Sub-plan**. Details of issues raised by a government agency during consultation (as required by **Condition A6**) must be provided with the relevant **CEMP Sub-plan** when submitted to the Planning Secretary / **ER** (whichever is applicable). Where a government agency(ies) request(s) is not included, the Proponent must provide the Planning Secretary / **ER** (whichever is applicable) justification as to why.

	Required CEMP Sub-plan	Relevant government agencies to be consulted for each CEMP Sub-plan
(a)	Noise and vibration	Relevant Councils and WaterNSW (in relation to its assets)
(b)	Flora and fauna	DPIE EES, DPI Fisheries, and Relevant Councils
(c)	Soil and Water	DPI Fisheries, and Relevant Councils
(d)	Non-Aboriginal heritage	Relevant Councils, WaterNSW and Heritage NSW

***Note**: **CEMP Sub-plan(s)** may reflect the construction of the project through geographical activities, temporal activities or activity based staging.*

The consultation period for Council is 4 weeks and therefore we request all comments to be received back by Friday 15 July 2022. Comments received after this date may not be addressed in time and will be considered during future revisions.

To assist during your review of the Flora and Fauna Management Sub-plan we would like to provide an opportunity to meet and discuss the scope of the SCAW project and these documents. This meeting can be in a forum of your choice (ie. in person with other members of the SCAW project team, or via Teams with the Environment Manager). We will contact you directly within the first week of the review period to seek confirmation of a meeting.

Please find attached the Flora and Fauna Management Sub-plan and SCAW Document Comments Register.

1

A copy of the is correspondence will also be sent to you via the SCAW secure file transfer system Team Binder for you to submit your comments.

Should you have any questions please feel free to contact me on the numbers or email below.

Regards

Simon Williams
Environment Manager

SYDNEY METRO - WESTERN SYDNEY AIRPORT
SURFACE AND CIVIL ALIGNMENT WORKS

Level 5, 60 Miller St, Street North Sydney NSW 2060
T +02 9035 5007 **M** 0434 095 001
E Simon.Williams@cpbcon.com.au

Meeting Minutes – SCAW Liverpool City Council CEMP Consultation

Location	Microsoft Teams	**Project**	Surface and Civil Alignment Works (SCAW)
Chair	Simon Williams	**Minutes**	Simon Williams
Date	30 June 2022	**Time**	10:00 – 10:50
Attendees	Peter Nelson – Liverpool City Council (LCC)	Stella Qu – LCC	
	Steven Tuntevski – LCC	Charlie Carabello – LCC	
	Karen Visman – LCC	Maruf Hossain – LCC	
	Tim Solomon – Sydney Metro (SM)	Asha Pomery – SM	
	Jennifer Ross – CPB United Infrastructure JV (CPBUI)	Joel Warne – CPBUI	
	Simon Williams – CPBUI		

Item	Meeting notes	Actions
Acknowledgment of Country	Acknowledged that the SCAW Project will be undertaken on the traditional lands of the Cabrogal People of the Dhurag Nation.	Nil
CPBUI overview	**CPB Contractors:** Australasian construction company of the CIMIC Group. Launched in January 2016 following the merger of the CIMIC Group construction businesses of Leighton Contractors and Thiess Construction **United Infrastructure:** A joint venture between Western Sydney Contractors Burton Contractors, JK Williams and Mulgoa Quarries **Recent Projects in Western Sydney** • Western Sydney Airport (Early Earthworks, Bulk Earthworks, Airside Pavements) • The Northern Road Stage 5 &6 • SUEZ Kemps Creek	Nil
SCAW project overview	• The Project forms part of the broader Sydney Metro network. It involves the construction and operation of a 23km new metro rail line that extends from the	Nil

Item	Meeting notes	Actions

	existing Sydney Trains suburban T1 Western Line (at St Marys) in the north and the Aerotropolis (at Bringelly) in the south. The alignment includes a combination of tunnels and civil structures, including viaduct, bridges, surface and open-cut troughs between the two tunnel sections.
	• The scope for the SCAW package includes approximately 10.6km of alignment up to the underside of track formation from Orchard Hills to the Western Sydney International (WSI) airport. This includes approximately:
	  • 3.6 kilometre of viaduct
	  • 205 metres of bridges
	  • 6.9km of at-grade alignment
	  • Temporary and permanent access roads
	• Key Major Project Interfaces are:
	  • Station Box and Tunnels (SBT) at Orchard Hills and WSI airport
	  • M12 Motorway at Elizabeth Drive
	  • WSI airport (on Commonwealth land)	

Planning approvals/ CEMP	• **Project Approvals**
	  • SSI 10051 approved by the Minister for Planning and Public Spaces on 23 July 2021
	  • EPBC Approval 2020/8687 by the Minister of Environment on 3 June 2021
	  • CPBUI Awarded project by Sydney Metro on 1 March 2022
	  • Staging Report (current revision 6)
	• **CEMP**
	  • Two staged approach
	• **Preparatory Works CEMP (commence in August 2022)**
	  • establishment of ancillary facilities for the stabling and maintenance facility (SMF) compound and the off-airport construction corridor compound at Elizabeth Drive
	  • temporary access road construction
		Nil

Item	Meeting notes	Actions
	• delivery of materials and equipment to site • stockpiling of imported material (sandstone) • **Main Excavation and Viaduct Works CEMP (commence in October 2022)** • viaducts and bridges construction • works within riparian zones • bulk excavation	
Overview of project risks to be managed on the SCAW Project:	○ **Erosion and sediment control** ○ Blaxland, Unnamed and Cosgroves Creek crossings ○ Viaduct crossings limit disturbance footprint ○ Water reuse strategy to reuse sediment basin water with construction – successful management on TNR 5&6 ○ **Dust** ○ Stockpiling activities ○ Successful management of bulk import of material on SM-WSA project ○ **Waste management** ○ Strategy to retain all onsite ○ **Traffic** ○ Cumulative impacts of traffic with other projects ○ **OOHW (viaduct crossing over roads)** ○ Key areas of proposed OOHW ○ Viaduct over Patons Lane (nearest sensitive receivers > 500m) ○ Viaduct over Luddenham Road (nearest sensitive receivers > 500m) ○ Bridge over the M12 (project safety considerations) (nearest sensitive receivers > 500m) ○ Bridge over Elizabeth Drive (nearest sensitive receivers > 500m)	Nil

Item	Meeting notes	Actions
CEMP Sub-plans and Monitoring Programs	**Details of CoA C5/C13: CEMP Sub-plans required to be prepared in consultation with Relevant Councils** ○ **Noise and Vibration** ○ Noise and Vibration Monitoring Plan (C13) ○ **Flora and Fauna** ○ **Soil and Water** ○ Surface water quality monitoring program (C13) ○ **Non-Aboriginal Heritage** ○ **Air quality monitoring program (C13)**	Nil
Consultation Questions Raised by Council	*1: Site Establishment Management Plan (Condition A18 and A22 including information as to how performance outcomes under Condition A1 are achieved)* **S. Williams (CPBUI)** – a site establishment management plan is not proposed to be used as part of the SCAW scope. The Preparatory CEMP will cover aspects of site establishment of compounds at Patons Lane and Elizabeth Drive. Other compounds would be established under the main CEMP	Nil
	2: If the proposal is to be staged, details as to how the staging is proposed (Condition A35) **S. Williams (CPBUI)** – A staging report prepared by Sydney Metro and provided to DPE. Is publicly available **T. Solomon (SM)** – Staging report is prepared and structured to address the Staging Report requirements of SSI 10051 conditions A10 to A16 and outlines how each of the packages (Advanced Enabling Works, SBT, SCAW and SSTOM) will be constructed. The SM-WSA Staging Report is publicly available on the Sydney Metro Document Library: https://www.sydneymetro.info/sites/default/files/2022-03/SMWSA-Staging-Report.pdf	Nil
	3. Construction Environmental Management Plan (Condition C5 a – Noise and Vibration, b – Flora and Fauna, c – Soil and Water, d – Non-aboriginal heritage) **S. Williams (CPBUI)** – note that these have all been provided for reference to LCC	Nil
	4. Construction Monitoring Programs (Condition C13 a – Noise and Vibration, b – Surface Water Quality and d – Air Quality)	Nil

Item	Meeting notes	Actions
	S. Williams (CPBUI) – note that these have all been provided within their relevant sub-plans for reference to LCC	
	5. OEMP – Flood Emergency Management Plan (Condition D3) **S. Williams (CPBUI)** – these are for operation of the SM-WSA project and not applicable to the scope of works for SCAW being undertaken by CPBUI. These would be prepared at a later date by others	Nil
	6. Reuse of timber (Condition E12) **S. Williams (CPBUI)** – the SCAW project will aim to reuse timer where ever practical within the project footprint to allow for fauna crossings. If required during construction, the CPBUI team would reach out to Councils and other agencies if other beneficial reuse options are required	Nil
	7. Critical State Significant Infrastructure flood impact management (Condition E17) **S. Williams (CPBUI)** – this condition is subject to detailed design and consultation with LCC would be undertaken at a later date if/when required by this condition.	Nil
	8. Noise mitigation - Operational Noise and Vibration Mitigation Measures, including both an Operational Noise and Vibration Review and provision of information relating to the design of noise barriers (Condition E58) **S. Williams (CPBUI)** – these are for operation of the SM-WSA project and not applicable to the scope of works for SCAW being undertaken by CPBUI. These would be prepared at a later date by others	Nil
	9. Place, Urban Design and Corridor Landscape Plan (PUDCLP) **J. Ross (CPBUI)** – Consultation is still being set up as the design progresses for the PUDCLP	Nil
	10. Detailed Site Investigation Report(s), Remediation Action Plan(s), Validation Report(s), Site Audit Statement(s) (Condition E97) **S. Williams (CPBUI**) – any consultation regarding this condition would be limited to providing Site Audit Statement if contamination is identified on land within the LCC LGA.	Nil at this stage.
Any other questions	**S. Tuntevski (LCC)** – who is the appropriate regulatory authorities for issues if Council or the community want to raise them during the project.	Nil

Item	Meeting notes	Actions
	S. Williams (CPBUI) – depending on the type of compliant and the location it will differ. NSW EPA will regulate all works on state jurisdiction for pollution complaints under an EPL. The Department of Planning and Environment (DPE) are also the regulatory authority for the CSSI. On-Airport the regulator will be the Airport Environment Officer (AEO) under the *Airports (Environment Protection) Regulations 1997* Site compounds will be set up with appropriate hording and details of the SCAW project with a 1800 number for community to make complaints/enquiries.	
	S. Qu (LCC) – will the SCAW project cover station fitouts and work around Bringelly and the Aerotropolis? **S. Williams (CPBUI)** – no these scopes would be covered in the SBT and SSTOM contracts	Nil

DPI Fisheries

Williams, Simon

From: Josi Hollywood <josi.hollywood@dpi.nsw.gov.au>
Sent: Wednesday, 22 June 2022 1:43 PM
To: Williams, Simon
Subject: FW: Sydney Metro - WSA: Surface Civil and Alignment Works (SCAW) CEMP Consultation: Flora & Fauna Management Sub-plan
Attachments: C22-382.pdf

Follow Up Flag: Follow up
Flag Status: Completed

CAUTION: This email originated from outside of the Organisation.

Good afternoon Mr Williams,
Please find attached DPI Fisheries advice in this matter.
Please contact me if I can be any further assistance.
Regards,
Josi

Josi Hollywood | Fisheries Manager – Coastal Systems Unit
NSW Department of Primary Industries | Fisheries
Block E, Level 3, 84 Crown Street, Wollongong NSW 2500
ALL MAIL TO: DPI Fisheries, Attn: R. Philps,1243 Bruxner Hwy, Wollongbar NSW 2477
T: +61 2 4222 8311 | M: +61 (0437 319 941) | E: *josi.hollywood@dpi.nsw.gov.au*

DPI Fisheries acknowledges that it stands on Country which always was and always will be Aboriginal land. We acknowledge the Traditional Custodians of the land and waters, and we show our respect for Elders past, present and emerging. We are committed to providing places in which Aboriginal people are included socially, culturally and economically through thoughtful and collaborative approaches to our work.

From: Melissa Coughran <melissa.coughran@dpi.nsw.gov.au> **On Behalf Of** DPI AHP Central Mailbox
Sent: Monday, 20 June 2022 12:34 PM
To: Josi Hollywood <josi.hollywood@dpi.nsw.gov.au>
Subject: FW: Sydney Metro - WSA: Surface Civil and Alignment Works (SCAW) CEMP Consultation: Flora & Fauna Management Sub-plan

Further information from Simon Williams as per our previous email.

Mel

From: Williams, Simon <Simon.Williams@cpbcon.com.au>
Sent: Friday, 17 June 2022 3:58 PM
To: DPI AHP Central Mailbox <ahp.central@dpi.nsw.gov.au>
Cc: Khosla, Vishal <Vishal.Khosla@cpbuijv.com.au>; Chelvarajan, Theepan <Theepan.Chelvarajan@cpbcon.com.au>; Ross, Jennifer <Jennifer.Ross@cpbuijv.com.au>; Tim Solomon <Tim.Solomon@transport.nsw.gov.au>; Jeremy Slattery <Jeremy.Slattery@transport.nsw.gov.au>; Asha Pomery <Asha.Pomery3@transport.nsw.gov.au>; Graham Knox <Graham.Knox5@transport.nsw.gov.au>; 'Alex Gale' <Alex.Gale@hbi.com.au>; Warne, Joel <Joel.Warne@cpbuijv.com.au>

Subject: Sydney Metro - WSA: Surface Civil and Alignment Works (SCAW) CEMP Consultation: Flora & Fauna Management Sub-plan

To whom it may concern,

CPB Contractors United Infrastructure (CPBUI) joint venture have been awarded the Surface Civil and Alignment Works (SCAW) component of the Sydney Metro Western Sydney Airport Project (CSSI 10051).

Under Condition C5 of the Project Planning Approval, CPBUI, on behalf of Sydney Metro have a requirement to consult with **DPI Fisheries** during the preparation of the Flora and Fauna Management Sub-plan.

C5 Of the **CEMP Sub-plans** required under **Condition C1**, the following **CEMP Sub-plans** must be prepared in consultation with the relevant government agencies identified for each **CEMP Sub-plan**. Details of issues raised by a government agency during consultation (as required by **Condition A6**) must be provided with the relevant **CEMP Sub-plan** when submitted to the Planning Secretary / **ER** (whichever is applicable). Where a government agency(ies) request(s) is not included, the Proponent must provide the Planning Secretary / **ER** (whichever is applicable) justification as to why.

	Required CEMP Sub-plan	Relevant government agencies to be consulted for each CEMP Sub-plan
(a)	Noise and vibration	Relevant Councils and WaterNSW (in relation to its assets)
(b)	Flora and fauna	DPIE EES, DPI Fisheries, and Relevant Councils
(c)	Soil and Water	DPI Fisheries, and Relevant Councils
(d)	Non-Aboriginal heritage	Relevant Councils, WaterNSW and Heritage NSW

***Note**: **CEMP Sub-plan(s)** may reflect the construction of the project through geographical activities, temporal activities or activity based staging.*

The consultation period for Government Agencies is 3 weeks and therefore we request all comments to be received back by Friday 8 July 2022. Comments received after this date may not be addressed in time and will be considered during future revisions.

To assist during your review of the Flora and Fauna Management Sub-plan we would like to provide an opportunity to meet and discuss the scope of the SCAW project and these documents. This meeting can be in a forum of your choice (ie. in person with other members of the SCAW project team, or via Teams with the Environment Manager). We will contact you directly within the first week of the review period to seek confirmation of a meeting.

Please find attached the Flora and Fauna Management Sub-plan and SCAW Document Comments Register.

A copy of the is correspondence will also be sent to you via the SCAW secure file transfer system Team Binder for you to submit your comments.

Should you have any questions please feel free to contact me on the numbers or email below.

*Please note we will also be in touch in the coming weeks regarding consultation with **DPI Fisheries** on the design of the watercourse crossings for the SCAW project required by Condition E14 of the Project Planning Approval.*

Regards

Simon Williams
Environment Manager

SYDNEY METRO - WESTERN SYDNEY AIRPORT
SURFACE AND CIVIL ALIGNMENT WORKS

Level 5, 60 Miller St, Street North Sydney NSW 2060
T +02 9035 5007 **M** 0434 095 001
E Simon.Williams@cpbcon.com.au

Department of Primary Industries

Our Ref: C22/382 **22 June 2022**

Your Ref: CSSI-10051

Mr Simon Williams
Environmental manger
CPB Contractors
(on behalf of Transport for NSW)
Level 5, 60 Miller Street
North Sydney NSW 2060
c/o: *simon.williams@cpbcon.com.au*

Mr Williams,

Consultation for the Sydney Metro Western Sydney Airport Project (CSSI-10051) – Condition C5 & C13 – Flora and Fauna Management Sub-plan

Thank you for your referral of 20/06/2022 seeking comment on the proposal from DPI Fisheries, a division of NSW Department of Primary Industries on the proposed works stated above.

DPI Fisheries is responsible for ensuring that fish stocks are conserved and that there is no net loss of key fish habitats upon which they depend. To achieve this, DPI Fisheries ensures that developments comply with the requirements of the *Fisheries Management Act 1994* (FM Act) (namely the aquatic habitat protection and threatened species conservation provisions in Parts 7 and 7A of the Act, respectively), and the associated *Policy and Guidelines for Fish Habitat Conservation and Management (2013)*. DPI Fisheries is also responsible for ensuring the sustainable management of commercial, recreational and Aboriginal cultural fishing, aquaculture, marine parks and aquatic reserves within NSW.

DPI Fisheries has reviewed the *Flora and Fauna Management Sub-plan* including the Dam Dewatering Procedure. It is noted that a s37 permit to relocate fish may be required by the ecologist undertaking the dam dewatering procedure.

DPI Fisheries looks forward to the opportunity to review temporary and permanent waterway crossing structures (Condition E14) as detailed design is developed.

If you require any further information, please contact me on (02) 4222 8311 or *josi.hollywood@dpi.nsw.gov.au*

Yours sincerely,

J. Hollywood

Josi Hollywood
Fisheries Manager, Coastal Systems Unit

DPI Fisheries
Mail to: R. Philps,1243 Bruxner Hwy, Wollongbar NSW 2477
Email: ahp.central@dpi.nsw.gov.au
ABN 20770707468

Williams, Simon

From: Janne Grose <Janne.Grose@environment.nsw.gov.au>
Sent: Friday, 22 July 2022 5:45 PM
To: Williams, Simon
Cc: Bethany Lane
Subject: RE: Re Sydney Metro - WSA: Surface Civil and Alignment Works (SCAW) CEMP Consultation: Flora & Fauna Management Sub-plan
Attachments: EHG response - Sydney Metro WSA -SCAW FFMP- 22 Jul 2022.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Simon

Please find attached a copy of the EHG response on the draft Flora and Fauna Management Plan for the Sydney Metro - WSA: Surface Civil and Alignment Works

Have a good weekend
kind regards from
Janne
22/7/2022

Janne Grose
Senior Conservation Planning Officer
Greater Sydney
Biodiversity & Conservation | Environment and Heritage
Department of Planning and Environment
T 02 8837 6017 | **E** janne.grose@environment.nsw.gov.au
Level 6, 12 Darcy Street, 4 Parramatta Square, Parramatta NSW 2150 | Locked Bag 5022
www.dpie.nsw.gov.au

The Department of Planning and Environment acknowledges that it stands on Aboriginal land. We acknowledge the traditional custodians of the land and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

From: Williams, Simon <Simon.Williams@cpbcon.com.au>
Sent: Tuesday, 19 July 2022 11:26 AM
To: Janne Grose <Janne.Grose@environment.nsw.gov.au>
Subject: RE: Re Sydney Metro - WSA: Surface Civil and Alignment Works (SCAW) CEMP Consultation: Flora & Fauna Management Sub-plan

Thanks Janne.

From: Janne Grose <Janne.Grose@environment.nsw.gov.au>
Sent: Tuesday, 19 July 2022 10:21 AM
To: Williams, Simon <Simon.Williams@cpbcon.com.au>
Subject: RE: Re Sydney Metro - WSA: Surface Civil and Alignment Works (SCAW) CEMP Consultation: Flora & Fauna Management Sub-plan

Hi Simon

Thanks for your email below. A draft EHG submission has been prepared and it has been reviewed by my manager but she has a few questions which we are currently working on to address.

As soon as we get these queries addressed I'll send it back to my manager for sign off and will send the signed copy to you.

kind regards from
Janne
19/7/2022

Janne Grose
Senior Conservation Planning Officer
Greater Sydney
Biodiversity & Conservation | Environment and Heritage
Department of Planning and Environment
T 02 8837 6017 | **E** janne.grose@environment.nsw.gov.au
Level 6, 12 Darcy Street, 4 Parramatta Square, Parramatta NSW 2150 | Locked Bag 5022
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From: Williams, Simon <Simon.Williams@cpbcon.com.au>
Sent: Tuesday, 19 July 2022 10:14 AM
To: Janne Grose <Janne.Grose@environment.nsw.gov.au>
Subject: RE: Re Sydney Metro - WSA: Surface Civil and Alignment Works (SCAW) CEMP Consultation: Flora & Fauna Management Sub-plan

Hi Janne,

Just wanted to follow up the status of your comments on the below

Regards

Simon Williams
Environment Manager

CPB CONTRACTORS | UNITED INFRASTRUCTURE
SYDNEY METRO - WESTERN SYDNEY AIRPORT
SURFACE AND CIVIL ALIGNMENT WORKS

Level 5, 60 Miller St, Street North Sydney NSW 2060
T +02 9035 5007 **M** 0434 095 001
E Simon.Williams@cpbcon.com.au

From: Williams, Simon
Sent: Friday, 8 July 2022 9:18 AM
To: Janne Grose <Janne.Grose@environment.nsw.gov.au>
Subject: RE: Re Sydney Metro - WSA: Surface Civil and Alignment Works (SCAW) CEMP Consultation: Flora & Fauna Management Sub-plan

Hi Janne,

Thank you for the update. I was just in the process of checking to see status of comments.

That will be fine if they can respond sometime next week.

Regards

Simon Williams
Environment Manager

SYDNEY METRO - WESTERN SYDNEY AIRPORT
SURFACE AND CIVIL ALIGNMENT WORKS

Level 5, 60 Miller St, Street North Sydney NSW 2060
T +02 9035 5007 **M** 0434 095 001
E Simon.Williams@cpbcon.com.au

From: Janne Grose <Janne.Grose@environment.nsw.gov.au>
Sent: Friday, 8 July 2022 9:14 AM
To: Williams, Simon <Simon.Williams@cpbcon.com.au>
Subject: Re Sydney Metro - WSA: Surface Civil and Alignment Works (SCAW) CEMP Consultation: Flora & Fauna Management Sub-plan

Thank you for your email below. One of our assessing officers is on leave this week due to the school holidays and does not return to work until 11 July.
EHG is intending to provide a response on the draft FFMP but will not be able to provide a response by CoB today and will send a response as soon as possible next week
kind regards from
Janne
8/7/2022

Janne Grose
Senior Conservation Planning Officer
Greater Sydney
Biodiversity & Conservation | Environment and Heritage
Department of Planning and Environment
T 02 8837 6017 | **E** janne.grose@environment.nsw.gov.au
Level 6, 12 Darcy Street, 4 Parramatta Square, Parramatta NSW 2150 | Locked Bag 5022
www.dpie.nsw.gov.au

The Department of Planning and Environment acknowledges that it stands on Aboriginal land. We acknowledge the traditional custodians of the land and we show our respect for elders past, present and emerging through thoughtful and collaborative approaches to our work, seeking to demonstrate our ongoing commitment to providing places in which Aboriginal people are included socially, culturally and economically.

From: Williams, Simon <Simon.Williams@cpbcon.com.au>
Sent: Friday, 17 June 2022 4:05 PM
To: Susan Harrison <Susan.Harrison@environment.nsw.gov.au>; Richard Bonner <Richard.Bonner@environment.nsw.gov.au>; OEH ROG Greater Sydney Region Planning Unit Mailbox <rog.gsrplanning@environment.nsw.gov.au>
Cc: Khosla, Vishal <Vishal.Khosla@cpbuijv.com.au>; Chelvarajan, Theepan <Theepan.Chelvarajan@cpbcon.com.au>;

Ross, Jennifer <Jennifer.Ross@cpbuijv.com.au>; Tim Solomon <Tim.Solomon@transport.nsw.gov.au>; Jeremy Slattery <Jeremy.Slattery@transport.nsw.gov.au>; Asha Pomery <Asha.Pomery3@transport.nsw.gov.au>; Graham Knox <Graham.Knox5@transport.nsw.gov.au>; 'Alex Gale' <Alex.Gale@hbi.com.au>; Warne, Joel <Joel.Warne@cpbuijv.com.au>
Subject: Sydney Metro - WSA: Surface Civil and Alignment Works (SCAW) CEMP Consultation: Flora & Fauna Management Sub-plan

Dear Susan and Richard

CPB Contractors United Infrastructure (CPBUI) joint venture have been awarded the Surface Civil and Alignment Works (SCAW) component of the Sydney Metro Western Sydney Airport Project (CSSI 10051).

Under Condition C5 of the Project Planning Approval, CPBUI, on behalf of Sydney Metro have a requirement to consult with **DPIE EES** (now assumed to be **DPE – Environment and Heritage Group (EHG)**) during the preparation of the Flora and Fauna Management Sub-plan.
now

C5 Of the **CEMP Sub-plans** required under **Condition C1**, the following **CEMP Sub-plans** must be prepared in consultation with the relevant government agencies identified for each **CEMP Sub-plan**. Details of issues raised by a government agency during consultation (as required by **Condition A6**) must be provided with the relevant **CEMP Sub-plan** when submitted to the Planning Secretary / **ER** (whichever is applicable). Where a government agency(ies) request(s) is not included, the Proponent must provide the Planning Secretary / **ER** (whichever is applicable) justification as to why.

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(a)	Noise and vibration	Relevant Councils and WaterNSW (in relation to its assets)
(b)	Flora and fauna	DPIE EES, DPI Fisheries, and Relevant Councils
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(d)	Non-Aboriginal heritage	Relevant Councils, WaterNSW and Heritage NSW

***Note**: **CEMP Sub-plan(s)** may reflect the construction of the project through geographical activities, temporal activities or activity based staging.*

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A copy of the is correspondence will also be sent to you via the SCAW secure file transfer system Team Binder for you to submit your comments.

Should you have any questions please feel free to contact me on the numbers or email below.

*Please note we will also be in touch in the coming weeks regarding consultation with **DPE – EHG** on the design of the watercourse crossings for the SCAW project required by Condition E14 of the Project Planning Approval.*

4

Regards

Simon Williams
Environment Manager

SYDNEY METRO - WESTERN SYDNEY AIRPORT
SURFACE AND CIVIL ALIGNMENT WORKS

Level 5, 60 Miller St, Street North Sydney NSW 2060
T +02 9035 5007 **M** 0434 095 001
E Simon.Williams@cpbcon.com.au

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Department of Planning and Environment

Our ref: DOC22/507414

Your ref: SSI-10051

Mr Simon Williams
CPB Contractors
Level 5, 60 Miller Street
North Sydney
NSW 2060

22 July 2022

Subject: Environment and Heritage Group comments on the post approval draft Fauna and Flora Management Plan (Rev A) – Surface and Civil Alignment Works for the Sydney Metro – Western Sydney Airport – SSI-10051

Dear Mr Williams

Thank you for the email of 17 June 2022 requesting advice on the draft Fauna and Flora Management Plan (FFMP) – Surface and Civil Alignment Works for this critical State significant infrastructure proposal (SSI-10051).

Please note on 1 April 2022, the Environment, Energy and Science Group (EES) changed its name to the Environment and Heritage Group (EHG) within Department of Planning and Environment. As required under the Conditions of Consent for this SSI, EHG has reviewed the draft FFMP and provides its comments and recommendations at Attachment A.

EHG considers that the requirements for the FFMP in the Conditions of Approval (CoA) have not been met. Part C of the CoA outlines the requirements in for the Construction Environmental Management and Construction Monitoring Programs. The list of requirements should be reviewed prior to the amendment of the Flora and Fauna Management Plan to ensure any updates to the FFMP comply with the CoA.

The FFMP submitted contains significant omissions of information which may increase the likelihood that the construction and operation works will have additional impacts on biodiversity not accounted for in the offset plans.

If you have any queries regarding this matter, please email rog.gsrplanning@environment.nsw.gov.au.

Yours sincerely

S. Harrison

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Attachment A

Subject: Environment and Heritage Group comments on the post approval draft Fauna and Flora Management Plan (Rev A) – Surface and Civil Alignment Works for the Sydney Metro – Western Sydney Airport – SSI-10051

The Environment and Heritage Group (EHG) has reviewed the draft Flora and Fauna Management Plan (FFMP) – Rev A (dated 17 May 2022) for this State Significant Infrastructure proposal (SSI) and provides the following comments.

The requirements for the FFMP in the Conditions of Approval (CoA) have not been met by this draft FFMP. Part C of the CoA outlines the requirements in for the Construction Environmental Management and Construction Monitoring Programs. The list of requirements should be reviewed prior to the amendment of the Flora and Fauna Management Plan to ensure any updates to the FFMP comply with the CoA.

Condition C1 states "Construction Environmental Management Plans (CEMPs) and CEMP Sub-plans must be prepared in accordance with the Construction Environmental Management Framework (CEMF) included in the documents listed in Condition A1 to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 will be implemented and achieved during construction".

The CEMF requirements are specific to ensure the avoidance of additional impacts which have not been approved by the consent. In this regard, the FFMP is required to contain enough detail so that the relevant project managers can ensure construction and operation works comply with this outcome. The FFMP submitted contains significant omissions of information which may increase the likelihood that the construction and operation works will have additional impacts on biodiversity not accounted for in the offset plans.

To progress the construction and operation program for Sydney Metro - Western Sydney Airport, this FFMP needs to be updated in accordance with the requirements in the CEMF. Further specific comments are provided by EHG below to guide the production of a complying FFMP.

Figures

EHG recommends scaled figures are included in the FFMP which clearly show:

- the proposed Surface and Civil Alignment works (SCAW) footprint
- the boundary of SSI-10051
- remnant native vegetation/EEC
- watercourses and top of bank
- riparian corridor widths
- the footprint of the regionally significant east-west regional corridor connection which links from the Nepean River via Mulgoa Nature Reserve near Glenmore Park to Surveyors Creek riparian corridor to the Orchard Hills defence lands across to South Creek and further east to Ropes Creek at Eastern Creek - Regional Corridor 17, Regional Corridor 18 along Blaxlands Creek and Regional Corridor 20 which leads along Patons Lane
- the proposed clearing boundary
- the defence lands boundary
- threatened flora and fauna species locations
- Cumberland Plain Lands Snail habitat
- farm dams and wetlands to be dewatered
- potential microbat roosting structures
- areas to be covered by the pre-clearing surveys.

1.1 Purpose and Application

Section 1.1 states "this Sub-plan is to be endorsed by the project Environmental Representative (ER) no later than one month before the commencement of construction. Construction is not to commence until the CEMP, and all required Sub-plans and Monitoring Programs have been endorsed by the ER and/or approved by DPE". According to Table 8 in the Staging Report for this SSI the FFMP for the SCAW is meant to have ER review and endorsement prior to submission to the Planning Secretary for review and approval (page 33 of 133). Therefore Section 1.1 should not include the 'or' in the "and/or approved by DPE" it should only include the 'and'.

1.3.1 SCAW Scope of Works

Section 1.3.1 of the FFMP refers to 3.6km of viaduct including 400m of viaduct over Blaxlands Creek but Table 2 refers to 3.5km of elevated viaduct including 350m of viaduct over Blaxlands Creek. The FFMP should clarify if the viaduct over Blaxlands Creek is 350m or 400m in length.

The scope of works lists temporary and permanent access roads, but it does not list temporary watercourse crossings which can cause impacts to stream stability and the aquatic and riparian environment if not appropriately constructed and located. Table 2 indicates activities that will be undertaken during construction include the construction of temporary watercourse crossings. If the temporary watercourse crossings form part of the SCAW scope of works, they should also be listed in section 1.3.1.

Table 2 - Activities during Construction

Table 2 indicates activities that will be undertaken during construction include the construction of temporary watercourse crossings such as causeways. Details need to be provided on the number and location of proposed temporary watercourse crossings. The temporary watercourse crossings need to be appropriately located and constructed to avoid stream erosion impacts and disturbance of remnant vegetation and habitat. Once no longer required for construction purposes the temporary crossings should be removed, stabilised and rehabilitated.

Condition E131 requires that drainage feature crossings (permanent and temporary watercourse crossings and stream diversions) and drainage swales and depressions must be carried out in accordance with relevant guidelines and designed by a suitably qualified and experienced person.

1.4.2 Agency Consultation

Section 1.4.2 states "Agencies to be consulted for this Sub-plan, incorporating the water quality and groundwater monitoring programs are detailed in Table 3" but no other reference to water quality and groundwater monitoring programs is included in the FFMP.

Table 4 includes DPE EES as an agency that is to be engaged in developing the FFMP. It is recommended this is amended to state 'DPE EHG (former EES)'

3.3 Aquatic Ecologist

Section 3.3 refers to farm dam dewatering and the dewatering of wetlands. The FFMP should clarify if wetlands are proposed to be dewatered or only farm dams. Details need to be provided on the number of dams and/or wetlands that are proposed to be dewatered and their location.

Groundwater Dependent Ecosystems

Section 6.8 of the FFMP for the Substation boxes and tunnelling works (SBT) indicates potential Groundwater Dependent Ecosystems (GDE's) occur within the SBT off-airport project footprint and one GDE could be potentially impacted by the proposed SBT construction works. The FFMP for the SCAW makes no reference to GDEs.

It is suggested the FFMP addresses this issue as to whether GDEs may be potentially impacted by the SCAW works and if so, includes details including a scaled plan which locates the GDEs and the boundary of the SCAW construction works.

4.4 Connectivity

Section 4.4 of the FFMP states that "generally, habitat connectivity was limited to riparian corridors associated with the tributary of Blaxland Creek between Lansdowne Road and Blaxland Creek, Blaxland Creek, the unnamed watercourse to the south of Patons Lane and Cosgrove Creek". EHG notes the FFMP makes no specific reference to the regionally significant east-west corridor connection which the rail alignment crosses.

Condition E14 requires that the proponent must design the watercourse crossing and the east-west regional corridor (Patons Lane) to achieve the objectives listed in Condition E14 while Condition E79(d) requires the design of watercourse crossing and east-west corridor movements to give to effect of Condition E14.

In its submissions on the EIS, draft Submissions Report, Submissions Report and draft conditions for this CSSI, EES recommended the east-west corridor connection is protected and improved. The east-west corridor is meant to link between the Nepean River via Mulgoa Nature Reserve near Glenmore Park to Surveyors Creek riparian corridor to the Orchard Hills defence lands across to South Creek and further east to Ropes Creek at Eastern Creek. EES advised the SSI should not sever the east-west corridor connection. EHG recommends the FFMP is amended to specifically refer to and address the east-west corridor.

6.1 Design and Construction Techniques

EES previously advised the rail alignment for this SSI crosses a regionally significant east -west corridor connection and that the SSI should not sever this corridor. While Section 6.1 of the FFMP states "the design of SCAW will maintain habitat connectivity through the installation of viaduct structures and fauna crossings across the riparian corridors associated with the tributary of Blaxland Creek between Lansdowne Road and Blaxland Creek, Blaxland Creek, the unnamed watercourse to the south of Patons Lane and Cosgrove Creek", it does not specifically refer to the east -west corridor connection. The FFMP should address the east-west corridor.

It is important the project maintains and improves the aquatic/ riparian environment and connectivity of these creeks. A diversity of local native vegetation should be able to grow under the viaduct structures.

It is noted a dedicated fauna crossing culvert is proposed to be installed at the unnamed watercourse (tributary of Blaxland Creek) between Lansdowne Road and Blaxland Creek. It is important this tributary and the downstream environment is not degraded by the project, particularly as the EIS for SSI-7127 for the Northern Road Upgrade – Mersey Road- Bringelly to Glenmore Parkway, Glenmore Park noted that the tributaries of Blaxland Creek at Orchard Hills are among the least disturbed catchments remaining in the Cumberland Plain and are regarded as possibly the most pristine creek system on Wianamatta Shale left in Western Sydney (page 316).

The EIS for the Northern Road Upgrade also outlined these tributaries are richer in aquatic macroinvertebrate genera than most other creeks of western Sydney and that the macroinvertebrate community of this catchment has a high representation of disturbance –sensitive species (Table 6.28, page 537). The FFMP should address where the proposed works are to be in relation to the pristine tributaries of Blaxland Creek as noted in the EIS for SSI-7127.

As noted above EHG recommends the FFMP includes scaled plans which overlay and clearly locate:

- the footprint of the regionally significant east-west corridor connection
- the watercourses and top of bank
- riparian corridor widths
- existing native vegetation /EEC
- the defence lands boundary
- the footprint of the proposed works, temporary and permanent crossings, and the viaduct/ culvert crossing.

Pre-clearing of Vegetation

EHG recommends the FFMP includes specific sections which deal with :

- tree hollow surveys (these surveys should be undertaken prior to the pre-clearing surveys) to identify and count the number of tree hollows and the required number of replacement nest boxes
- pre-clearing surveys
- pre-demolition surveys of buildings and structures.

These surveys are required to be undertaken prior to the removal of any vegetation. The FFMP should provide details on what these surveys/ inspections entail and when and where these surveys will be undertaken.

Tree hollow surveys need to be undertaken in advance of installing the replacement nest boxes which are to be installed 'up to one month prior to clearing'. The purpose of these surveys are to identify and mark hollow bearing trees and any other habitat features (stags, hollow logs , birds' nests or possum dreys)

Hollow bearing trees should be flagged and counted to indicate the number and type of replacement nest boxes to be identified, obtained and then installed one (1) month prior to any removal of existing tree hollows in accordance with Condition of approval E11.

Re-use of Native trees to be removed

In accordance with Condition E12, prior to clearing vegetation the proponent should identify where it is practicable to reuse native trees and vegetation to enhance habitat. If it is not possible to reuse all the removed native trees and vegetation, the proponent must consult with the relevant council(s), NSW National Parks & Wildlife Service (NPWS), Western Sydney Parklands Trust, Greater Sydney Local Land Services (LLS), Landcare groups, DPI Fisheries and any additional relevant government agencies to determine if:

(a) hollows, tree trunks (greater than 25-30cm in diameter and 2-3m in length), mulch, bush rock and root balls salvaged from native vegetation impacted by the CSSI; and

(b) collected plant material, seeds and/or propagated plants from native vegetation impacted by the CSSI,

could be used by others in habitat enhancement and rehabilitation work, before pursuing other disposal options.

It is unclear if the applicant has contacted local councils and other authorities to determine if there is an interest for the reuse of suitable timber. The FFMP should clarify this.

As advised in the EES submission on the draft Submissions Report (dated 31 March 2021) this detail including consultation with the community groups and their responses should be documented in the CEMP/FFMP. As noted by EES the reuse and salvage of tree trunks is important, particularly as the

Cumberland Plain Land Snail can be found under logs. The FFMP needs to address the importance of reusing and salvaging tree trunks, root balls etc.

Environmentally Sensitive Area exclusion zones
EHG notes Section 8.2 of the FFMP for the SBT works indicates that prior to the planned vegetation clearing, dam dewatering and pre-clearing surveys, the project area boundaries, and Environmentally Sensitive Area (ESA) exclusion zones must be identified and marked. It notes the Project area boundaries are shown on maps which include the ESA in Annexure D of the Project CEMP. The FFMP for the SCAW does not refer to such maps. It is suggested the FFMP addresses whether these maps also apply to the SCAW and if so include them in the FFMP as an appendix for ease of reference.

6.1.2 Vegetation Clearing
Section 6.1.2 of the FFMP notes that when vegetation clearing cannot be avoided, the Tree Clearing and Grubbing Procedure (Appendix C2 – Tree Clearing and Grubbing Procedure) must be followed. EHG recommends amendments are made to the Tree Clearing and Grubbing Procedure - Appendix C2 (see comments below for Appendix C2).

Reuse of Timber
Element 4 in the FFMP for Project Specific Requirements includes Condition E12 which relates to the Reuse of Timber and it refers to Section 6.1.2 of the FFMP. EHG recommends Section 6.1.2 is amended to specify that the reuse of native trees removed by the project should be used for habitat enhancement and rehabilitation work before pursuing other disposal options and that removed trees should only be mulched as a last resort.

Native vegetation seed collection
Section 6.1.2 notes "CPB will identify opportunities for reuse of native trees and vegetation in accordance with CoA E12". In relation to seed collection EHG notes EMM FF11 in the FFMP requires that a native vegetation seed collection and salvage program would be developed prior to the commencement of construction and implemented during construction. The earlier the seed is collected and propagated the more established the plants will be for use by the project in landscaping/revegetation.

The EES submission of 18 November 2020 on the EIS advised that seed collection should commence as soon as possible so that local native provenance plant species are available to be planted, and the trees are advanced and established in size to improve the urban tree canopy and local biodiversity. EES also previously recommended a suitably qualified bush regenerator is engaged to provide advice on the collection of local native seed. It is suggested Section 6.1.2 of the FFMP is amended to incorporate this.

6.1.3 Microbat Survey
Section 6.1.3 states "Prior to demolition, removal or modification of dwellings and structures associated with the SCAW, a targeted microbat survey would be undertaken in accordance with 'Species credit' threatened bats and their habitats NSW survey guide for the Biodiversity Assessment Method (OEH, 2018)". It notes "if threatened microbats are detected, a Microbat Management Plan will be developed and implemented by a suitably qualified bat specialist." The FFMP needs to provide details on the time frame for when the microbat surveys are proposed to be undertaken of the dwellings, structures culverts and other under-road structures. If microbats are found, enough time needs to be provided to allow for the preparation of a Microbat Management Plan (MMP) and consultation with EHG.

The MMP if required will include details on:

(i) measures to avoid and minimise impacts
(ii) details of potential impacts from construction
(iii) an adaptive management plan, which includes a decision-making framework that:
(a) defines performance criteria and thresholds, including 'impact trigger' and 'unacceptable impact' thresholds to be used as triggers for intervention, that are ecologically based and adhere to SMART principles
(b) details monitoring techniques, timing, duration and frequency/intensity and equipment to be used
(c) in the event that an impact trigger, unacceptable impact or other threshold is detected, the actions and mitigation measures to be implemented
(iv) ongoing monitoring and reporting requirements during construction and operation; and
(v) contingency measures to address impacts attributable to the construction of the CSSI

The plan must be developed in consultation with an appropriately qualified expert in microbat biology and behaviour, EHG, relevant council(s) and be submitted to the Planning Secretary for approval prior to work that may impact microbat species. The approved plan must be implemented during construction and operation of the CSSI

6.1.6 Unexpected Flora and Fauna Finds

Section 6.1.6 notes all unexpected threatened species will be reported to Sydney Metro and the ER. If a new threatened species is identified that was not assessed in the EIS, a Consistency Assessment will be prepared to assess the significance of the impacts to the species. The FFMP should include details on what a 'Consistency Assessment' entails.

6.1.7 Tree Management

Section 6.1.7 notes for each tree removed two replacement trees will be planted by Sydney Metro. It is recommended section 6.1.7 outlines where the replacement trees will be planted, and if the relevant authority that owns or manages the land considers it appropriate, use local provenance species. This is consistent with:

- the proposed collection, salvage and propagation of native seed referred to in this FFMP
- EES submissions on the EIS, RtS and draft conditions which recommended that landscaping/planting uses a diversity of local provenance native species from the relevant native vegetation community (or communities) that occurs, or once occurred in the locality of the proposed works rather than use exotic species or non-local native species
- Conditions E13 for the revegetation and provision of replacement trees and Condition E79(e)(ii) for landscaping which requires the "use of native species from the relevant native vegetation community (or communities), where identified as appropriate".

6.1.8 Nest Boxes

Section 6.1.8 states "the hollows: nest box replacement ratio will be 2: 1" but the Nest Box Strategy states "One nest box will be installed for each hollow to be removed". This inconsistency needs to be amended.

Element 4 in the FFMP for Project Specific Requirements includes Condition E11 that nest boxes must be installed one (1) month prior to any removal of existing tree hollows and/or the release of any captured hollow dependent fauna and it refers to Section 6.1.8 of the FFMP.

Table 8 indicates a pre-clearing inspection will be undertaken to identify the presence of hollow bearing trees and other habitat features. Surveys/ inspections of trees with hollows need to be

undertaken in advance of installing the replacement nest boxes (which according to Section 6.1.8 are to be installed 'up to one month prior to clearing'). The FFMP should provide details on when these tree hollow inspections are to occur so that the number and type of replacement boxes can be identified and then installed one month prior to the removal of existing tree hollows.

EHG recommends the pre-clearing surveys are undertaken 7 days prior to vegetation clearing and that the FFMP includes:

- the ecologist should check the tree hollows for the presence of native fauna
- once the tree hollows have been checked and it is verified that fauna are not present the tree hollows should be covered to ensure the hollows are not reoccupied prior to removal of the trees and/or the project ecologist endeavours to individually remove sections of a tree containing a hollow or other habitat features for relocation and reuse by the project
- where hollow dependent native fauna are found using tree hollows that are to be removed, compensatory tree hollows should be provided that is suitable for the species prior to removing the tree hollows and prior to the release of the hollow dependent fauna.

The provision of nest boxes and their installation should be undertaken in consultation with appropriately qualified and experienced experts on the fauna species that use or potentially use the tree hollows and the replacement nest boxes, including experts in microbat biology and behaviour.

Artificial hollows using a HollowHog tool (https://www.hollowhog.com.au/) may also be appropriate to use to provide replacement tree hollow habitat.

6.1.9 Weed Management

Section 6.19 states "ongoing weeding will occur throughout the construction phase, where required". The Weed Management Procedure implies ongoing weed management is to occur (periodic inspections to address weed regrowth), but it does not specify the time frame that ongoing weeding is to be undertaken and when it is proposed to cease.

EES recommended in its submission of 31 March 2021 on the draft Submissions Report and revised BDAR EES that a mitigation measure is included to address ongoing weed management/maintenance in areas disturbed by the project (including areas downslope of, and/or adjoining the disturbed areas) both during/ following construction until the disturbed areas are stabilised and/or rehabilitated. EHG recommends ongoing weeding / weed management continues after the completion of construction especially in areas that have been disturbed by construction works and/or areas that adjoin the disturbed areas and this includes in the vicinity of watercourses /riparian corridors/ corridor connections and areas adjoining remnant native vegetation.

Section 6.1.9 and the Weed Management Procedure should outline the duration that ongoing weed management is proposed to be undertaken from the completion of construction works.

It is noted Condition E80 requires ongoing operational maintenance of open space and landscaping which implies that this would also need to incorporate ongoing operational weed management.

Table 8 Flora, fauna and biodiversity controls

EHG recommends Table 8 is amended as follows.

Tree hollow surveys will be undertaken in advance of installing the replacement nest boxes which are to be installed 'up to one month prior to clearing'. The purpose of these surveys are to identify and mark hollow bearing trees and any other habitat features (stags, hollow logs , birds' nests or possum dreys).

"pre-clearing inspections and pre-demolition surveys will be undertaken to ~~identify the presence of~~:

- identify ***and mark*** hollow bearing trees and other habitat features ***such as stags, hollow logs***
- ***identify and mark roosting features such as birds' nests and possum dreys***
- ***undertake targeted microbat surveys of abandoned dwellings, structures, culverts and other under road structures within the construction footprint that are proposed for demolition***
- ***undertake inspections of farm dams and wetlands for native fauna prior to commencing dewatering***
- ***identify*** threatened flora and fauna ***and protected fauna***
- ***identify where it is practicable to salvage and reuse native tree trunks, tree hollows, root balls and vegetation that are to be removed to enhance habitat either within the project footprint or used by others offsite in habitat enhancement and rehabilitation work by councils, NPWS, Western Sydney Parklands Trust, Greater Sydney LLS, Landcare groups, DPI Fisheries and any additional relevant government agencies***
- ***identify potential release sites if fauna require capture and relocation during pre-clearing inspections and clearing***

The Tree hollow surveys and the pre-clearing inspections should confirm the number of tree hollows to be removed and the number and type of replacement nest boxes and/or artificial hollows to be installed.

It is unclear when the pre-clearing inspections are to occur prior to clearing. The FFMP should provide details on this. Also, details need to be provided as to when the inspections for microbats are to be undertaken prior to the demolition of existing buildings and structures. The pre-clearing inspections should be undertaken to not only identify the presence of threatened fauna, but all native fauna potentially impacted by the proposed clearing.

Table 8 states "cleared/removed vegetation will be beneficially used either on or off the project where possible (e.g., for habitat, chipped for mulch and reused)". EHG requests as noted above the FFMP outlines that native trees removed by the project should only be mulched as a last resort. The FFMP should outline that tree trunks greater than 25-30cm in diameter and 2-3m in length, root balls and tree hollows should be salvaged and reused as habitat for fauna in accordance with Condition E12.

6.3 Monitoring

Section 6.3 of the FFMP states the project requirements for monitoring are detailed in the Monitoring, Inspections, Reporting, Review and Audit (MIRRA) schedule and contained in Table 9. It is unclear if the MIRRA has been prepared and whether this will be attached as an appendix to the FFMP. Table 9 lists the monitoring and inspections relevant to flora and fauna management, but it should also include the monitoring of nest boxes.

Section 6.3 indicates inspection of sensitive areas and observation of activities with the potential to impact flora and fauna will occur for the duration of construction. The sensitive areas need to be identified in the FFMP on scaled maps. The rehabilitation of the site and the monitoring of the nest boxes should be undertaken for a longer period than during construction

The monitoring of site rehabilitation should continue until the site is stabilised and the vegetation established.

EHG recommends a long-term monitoring program is undertaken to evaluate the effectiveness of the nest boxes and that the monitoring covers all seasons (spring, summer, winter and autumn).

The nest boxes should also be monitored for any repair /maintenance /replacement requirements for a minimum of 5 years. At the end of the 5 years the proponent needs to provide the results of the nest box monitoring and their use or lack thereof to DPE and provide recommendations as to the ongoing use of the nest boxes and any future maintenance requirements.

The FFMP should include details on land ownership of the SCAW sites. If the land the subject of the FFMP will remain in Sydney Metro ownership then EHG recommends the FFMP take an adaptive management approach which responds to the results of the monitoring program, including the monitoring of nest boxes. Once the construction period is complete, the monitoring program can inform ongoing management actions. If the land the subject of this FFMP will not remain in Sydney Metro ownership at the completion of construction, then the monitoring program can end at the completion of construction.

EHG recommends the nest box monitoring includes details on:

- the number of nest boxes to be monitored
- the GPS locations of the nest boxes
- the characteristics of all nest boxes to be monitored / the native fauna species that the boxes are designed for
- the duration and frequency of monitoring
- how the nest boxes are to be monitored (e.g., visual checks, installation of wildlife cameras which are motion activated)
- the reporting of monitoring results
  - nest box installation details (date installed, direction the box entrance faces, height above ground)
  - the time of year, date and time that boxes are checked
  - what was found in the nest box – the species and the number of individuals
  - occupancy rates
  - frequency of use
  - pattern and timing of use
  - maintenance needs.

If the project also installs artificial hollows using a HollowHog tool (https://www.hollowhog.com.au/) to provide replacement tree hollow habitat the artificial hollows should also be monitored, and details provided on the number of artificial hollows installed and their location.

The full monitoring data should be made publicly available in annual reports and made available online and published in scientific literature. It is important that TfNSW makes its monitoring data available for other projects to benefit. If the data is collected under licence then this should be imported into BioNet which can then be used in the future.

Table 9: Monitoring and inspections relevant to flora and fauna management
Table 9 needs to be amended to include monitoring and inspections of nest boxes.

Part B Implementation

Element 2 Monitoring and reporting
Element 2 in Part B should include that compliance records will be retained and will include pre-clearing survey reports. EHG recommends evidence of the tree hollow surveys, pre-clearing surveys and inspections for fauna and any relocation of fauna is provided to DPE by the proponent prior to any

clearing of vegetation and demolition works commencing. The FFMP should address this. This recommendation is consistent with EES previous advice on the draft conditions for this SSI.

Part C Appendices

Appendix C2 –Tree Clearing and Grubbing Procedure

Pre-clearing Inspection
The Tree Clearing and Grubbing Procedure indicates that as part of the pre-clearing inspection the ecologist must "Mark habitat features, including trees containing hollows or nests". EHG recommends the procedure also includes the following:

- the ecologist is to check the tree hollows/habitat features for the presence of native fauna
- once the tree hollows/habitat features have been checked and it is verified that fauna are not present the tree hollows are to be immediately covered to ensure the hollows/habitat features are not reoccupied prior to removal of the trees and/or where fauna are not present in the tree hollow/ habitat feature the project ecologist will endeavour to individually remove sections of a tree containing a hollow or other habitat features for reuse by the project
- where hollow dependent native fauna are found using tree hollows that are to be removed
  - the fauna should be captured and relocated prior to felling the tree
  - compensatory tree hollows should be provided prior to removing the tree hollows and prior to the release of the hollow dependent fauna.

Remove Vegetation
The protocol for 'Remove Vegetation' includes that 'hollow bearing trees will be slowly pushed over to avoid damage to hollows'. It also includes that 'In some circumstances, sections of a tree containing a hollow or habitat may be individually removed prior to felling'. EHG recommends that the sections of the tree containing the tree hollow or habitat should be individually removed prior to felling and the Procedure is amended to include:

- the ecologist must endeavour to individually remove sections of a tree containing a hollow or other habitat features for relocation and reuse by the project prior to felling the tree
- trees with hollows should be lopped in such a way that the risk of injury or mortality to fauna is minimised, such as top-down lopping, with lopped sections gently lowered to the ground, or by lowering whole trees to the ground with the "grab" attachment of a machine.
- where it is not possible to remove a tree hollow/habitat feature prior to felling the tree, native fauna should first be removed before tree felling and the hollow bearing trees may then be slowly pushed over to avoid damage to hollows.

There are two point 3's 'under 'remove vegetation'. The second point 3 notes "Habitat features to be used for habitat enhancement or in rehabilitation works will be relocated to adjacent habitat (subject to landowner consent)". EHG requests this point also outlines that where native trees are removed by the project, tree trunks greater than 25-30cm in diameter and 2-3m in length, root balls and tree hollows should be salvaged and reused as habitat for fauna in accordance with Condition E12.

Point 4 should include that injured fauna is to be placed into the hands of a wildlife carer (please note only appropriately vaccinated personnel are to handle bats) and released on site once re-habilitated.

Appendix C4 – Weed Management Procedure
It is suggested this procedure specifies upfront that it applies to the management of weeds within the boundary of the works and to areas which adjoin but are located offsite outside the boundary of the works and the construction site.

The Procedure indicates ongoing weed management is to occur (periodic inspections to address weed regrowth) but it should outline the duration from the completion of construction works that ongoing weed management is proposed to be undertaken, for example is ongoing weed management proposed for a minimum of 2 -5 years, or is it proposed to be undertaken in perpetuity.

Appendix C5 – Farm Dam Dewatering Procedure

EHG recommends the procedure is amended under the heading 'Dewatering Supervision and Fauna Handling' to include the following additional text:

- Once dewatering is complete, ***the ecologist should inspect the sediment at the bottom of the dam for the presence of native (including tortoises and eels) and following this inspection*** an excavator should gently remove loose sediments from the bottom of the dam under the supervision of the ecologist.

Appendix C6 – Nest Box Strategy

Section 6.18 of the FFMP notes:

- CPB has developed a nest box replacement strategy (Appendix C6 – Nest Box Strategy) to outline the specific measures to be implemented to mitigate the impacts of vegetation clearing on hollow-dependent fauna
- the nest box strategy is based on the results of the pre-clearing survey.

To meet Condition E11 the nest boxes must be installed one (1) month prior to any removal of existing tree hollows and/or the release of any captured hollow dependent fauna. The nest box strategy states "nest boxes that are mitigating for known tree hollows (i.e., those identified during the Project BDAR and/or pre-clearing surveys) will be installed at least 30 days prior to the removal of the feature". The nest box strategy also indicates however that "the number of hollows on each hollow bearing tree will be confirmed during clearing supervision. If more hollows are identified, additional nest boxes will be installed at a ratio of one nest box per additional hollow identified".

The vegetation to be removed should be surveyed closer to the date that it is being cleared (i.e., the pre-clearing surveys should be undertaken within 7 days of any clearing).

EHG supports the confirmation of tree hollows identified during the Project BDAR and as part of the pre-clearing survey and the installation of additional nest boxes to account for any hollows initially missed in the survey for hollows. Even though this would not meet the 30-day requirement of Condition E11, it meets the intention of providing replacement habitat.

EHG recommends that the FFMP address how the initial survey of hollows and other habitat features will deliver on the Condition E11 and using the additional pre-clearance survey 7 days out from vegetation clearance is a safety measure to ensure no hollows have been missed. Any additional hollows identified during the pre-clearance survey must be replaced by a nest box before the tree hollow is felled.

The nest box strategy also notes if microbats are found utilising abandoned buildings as habitat, nest boxes will be installed in adjacent foraging habitat prior to demolition of the building. The number of nest boxes will be determined upon evaluation of the number of microbats using the structure, in consultation with the Project Ecologist. The FFMP needs to address when it is proposed to undertake the microbat surveys of the abandoned dwellings, structures, culverts and other under road structures. If microbats are found, enough time needs to be provided to allow for the preparation of a Microbat Management Plan (MMP) including consultation with EHG.

It is unclear what is proposed for microbats potentially using the abandoned buildings and structures as habitat if they do not use nest boxes. The MMP will need to address how abandoned buildings and structures will be demolished if microbats are utilising them as habitat and what actions are required to ensure minimal impacts to microbats. The MMP should have options for the relocation of any individuals found in preclearance /pre-demolition surveys.

The Strategy notes the nest boxes will be monitored annually for the duration of the SCAW Project. It also notes "monitoring will evaluate nest box use and the condition of nest boxes. Nest boxes that are deteriorating prior to the completion of construction will be repaired or replaced". It is unclear if ongoing monitoring of the nest boxes is proposed post construction, for the long term where it is appropriate or if it is only proposed up until the completion of construction. The FFMP needs to clarify this.

If monitoring of the nest boxes is only proposed during construction EHG does not consider this to be adequate. Nor does EHG consider the proposed replacement and maintenance of nest boxes only during the construction period is adequate. It is important that adequate preconstruction, construction and post construction monitoring is undertaken to confirm the species that will potentially use the nest boxes are using them. Contingency measures/corrective actions should also be put in place in case monitoring indicates the nest boxes are not effective.

As noted above under comments for Section 6.3, EHG recommends a long-term monitoring program is undertaken to evaluate the effectiveness of the nest boxes and that the monitoring covers all seasons (spring, summer, winter and autumn) and it is not just undertaken annually as annual inspections would not suffice.

Nest boxes should be monitored for any repair /maintenance /replacement requirements for a minimum of 5 years. At the end of the 5 years the proponent needs to provide the results of the nest box monitoring and their use or lack thereof to DPE and provide recommendations as to the ongoing use of the nest boxes and any future maintenance requirements.

If the land the subject of the FFMP remains in Sydney Metro ownership then EHG recommends the FFMP take an adaptive management approach which responds to the results of the monitoring program, including the monitoring of nest boxes. Once the construction period is complete, the monitoring program can inform ongoing management actions. If the land the subject of the FFMP will not remain in Sydney Metro ownership at the completion of construction, then where this applies the monitoring program should end at the completion of construction.

EHG recommends the Strategy is amended to include that the nest box monitoring includes details on:

- the number of nest boxes to be monitored
- the GPS locations of the nest boxes
- the characteristics of all nest boxes to be monitored / the native fauna species that the boxes are designed for
- the duration and frequency of monitoring
- how the nest boxes are to be monitored (e.g., visual checks, installation of wildlife cameras which are motion activated)
- the reporting of monitoring results
  - nest box installation details (date installed, direction the box entrance faces, height above ground)
  - the time of year, date and time that boxes are checked

- what was found in the nest box – the species and the number of individuals
- occupancy rates
- frequency of use
- pattern and timing of use
- maintenance needs

The full monitoring data should be made publicly available in annual reports and made available online and published in scientific literature. It is important that TfNSW makes its monitoring data available for other projects to benefit. If the data is collected under licence, then this should be imported into BioNet which can then be used in the future.

Appendix C7 – Pre-clearing inspection for native vegetation removal approval form
Section 6.1.2 states "If any clearing of native vegetation is required, or removal of potential fauna habitat (e.g., hollow bearing trees), the project Ecologist will be present during clearing to assist with management of potential impacts to resident fauna and provide advice on opportunities to salvage habitat where feasible". Based on the form provided in Appendix C7 it is unclear if the Ecologist would be present during clearing and EHG recommends the form is amended to clarify this and to include the following amendments:

2c ***Scaled*** map showing location of ***proposed*** clearing and physical demarcation on the limit of clearing [include approved project boundary and reference to relevant Staging Report maps], ***project footprint and extent of works, location of watercourses and riparian corridors***

3a Has an ecologist been consulted [attached report] ?
The ecologist must be present for the removal of any vegetation including tree hollows and any other habitat features

3e Is the vegetation hollow bearing and does it provide ***any other*** habitat ***(such as nests, dreys)*** for any ~~other~~ ***native*** species?

3f ***How many tree hollows are to be removed ?***
The ecologist must be present for the removal of any tree hollows and any other habitat features
Have ***an equivalent number of*** nest boxes been installed ***1*** month prior to any removal of existing tree hollows and/or the release of any captured hollow dependent fauna?

3g Have any threatened fauna been identified? ***Is so, what species?***

3h ***Has native seed been collected for plant propagation by the project?***

4f Detail consideration of re-use of native trees and vegetation and any subsequent consultation (required in accordance with CSSI planning approval ***– see Condition E12***)

End of Submission

Document Ref	Comment	CPBUI Response
General	The requirements for the FFMP in the Conditions of Approval (CoA) have not been met by this draft FFMP. Part C of the CoA outlines the requirements in for the Construction Environmental Management and Construction Monitoring Programs. The list of requirements should be reviewed prior to the amendment of the Flora and Fauna Management Sub-plan to ensure any updates to the FFMP comply with the CoA.	Noted. The Flora and Fauna Management Sub-plan has been prepared to address Condition C6 and C11. The Flora and Fauna Management Sub-plan has been updated with subsequent comments from Sydney Metro and the ER to comply with the CoA.
General	Condition C1 states “Construction Environmental Management Sub-plans (CEMPs) and CEMP Sub-plans must be prepared in accordance with the Construction Environmental Management Framework (CEMF) included in the documents listed in Condition A1 to detail how the performance outcomes, commitments and mitigation measures specified in the documents listed in Condition A1 will be implemented and achieved during construction”.	Noted. CPBUI have prepared the Flora and Fauna Management Sub-plan in accordance with the CEMF and it details how the performance outcomes, commitments and mitigation measures in relation to biodiversity will be implemented and achieved during construction.
General	The CEMF requirements are specific to ensure the avoidance of additional impacts which have not been approved by the consent. In this regard, the FFMP is required to contain enough detail so that the relevant project managers can ensure construction and operation works comply with this outcome. The FFMP submitted contains significant omissions of information which may increase the likelihood that the construction and operation works will have additional impacts on biodiversity not accounted for in the offset plans.	Noted. The Flora and Fauna Management Sub-plan has been updated with subsequent comments from Sydney Metro and the ER to comply with the CEMF.
General	EHG recommends scaled figures are included in the FFMP which clearly show: • the proposed Surface and Civil Alignment works (SCAW) footprint • the boundary of SSI-10051 • remnant native vegetation/EEC • watercourses and top of bank • riparian corridor widths • the footprint of the regionally significant east-west regional corridor connection which links from the Nepean River via Mulgoa Nature Reserve near Glenmore Park to Surveyors Creek riparian corridor to the Orchard Hills defence lands across to South Creek and further east to Ropes Creek at Eastern Creek - Regional Corridor 17, Regional Corridor 18 along Blaxlands Creek and Regional Corridor 20 which leads along Patons Lane • the proposed clearing boundary • the defence lands boundary • threatened flora and fauna species locations • Cumberland Plain Lands Snail habitat • farm dams and wetlands to be dewatered • potential microbat roosting structures • areas to be covered by the pre-clearing surveys.	Environmental risks, controls and accountabilities will be communicated to all relevant personnel through various platforms including Environmental Control Maps (ECMs) - referred to as Site Environmental Plan/s. Refer to Section 7.1.6 (Biodiversity Management) of the Flora and Fauna Management Sub-plan - '*Before undertaking works in locations where these vegetation types are known to be present, the locations of these species and communities will be identified on Site Environmental Plans (SEP)*'. SEPs are a progressive document and will be prepared using CPBUI GIS including current Project, construction footprint/s applicable to SCAW and current layers. The CPBUI GIS is updated where required based on current pre-clearing inspection data.
Section 1.1	Section 1.1 states “this Sub-plan is to be endorsed by the project Environmental Representative (ER) no later than one month before the commencement of construction. Construction is not to commence until the CEMP, and all required Sub-plans and Monitoring Programs have been endorsed by the ER and/or approved by DPE”. According to Table 8 in the Staging Report for this SSI the FFMP for the SCAW is meant to have ER review and endorsement prior to submission to the Planning Secretary for review and approval (page 33 of 133). Therefore Section 1.1 should not include the ‘or’ in the “and/or approved by DPE” it should only include the ‘and’.	Addressed - the Flora and Fauna Management Sub-plan has been revised to reflect the current revision of the Staging Report.
Section 1.3.1 SCAW scope of Works	Section 1.3.1 of the FFMP refers to 3.6km of viaduct including 400m of viaduct over Blaxlands Creek but Table 2 refers to 3.5km of elevated viaduct including 350m of viaduct over Blaxlands Creek. The FFMP should clarify if the viaduct over Blaxlands Creek is 350m or 400m in length. The scope of works lists temporary and permanent access roads, but it does not list temporary watercourse crossings which can cause impacts to stream stability and the aquatic and riparian environment if not appropriately constructed and located. Table 2 indicates activities that will be undertaken during construction include the construction of temporary watercourse crossings. If the temporary watercourse crossings form part of the SCAW scope of works, they should also be listed in section 1.3.1.	Addressed - Table 2 has been revised to ensure consistency with Section 1.3.1. Table 2 and Section 6 (Aspects and Impacts) reflect the activities the subject of the Flora and Fauna Management Sub-plan.
Table 2 Activities during construction	Table 2 indicates activities that will be undertaken during construction include the construction of temporary watercourse crossings such as causeways. Details need to be provided on the number and location of proposed temporary watercourse crossings. The temporary watercourse crossings need to be appropriately located and constructed to avoid stream erosion impacts and disturbance of remnant vegetation and habitat. Once no longer required for construction purposes the temporary crossings should be removed, stabilised and rehabilitated. Condition E131 requires that drainage feature crossings (permanent and temporary watercourse crossings and stream diversions) and drainage swales and depressions must be carried out in accordance with relevant guidelines and designed by a suitably qualified and experienced person.	The requirements of Condition E131 and REMM OFF2 are addressed in the Soil and Water Management Sub-plan. The requirements of E14 (design of watercourse crossings) is managed via design documentation and will be documented in the Place Urban Design Corridor Landscape Plan required under Condition E77. The Flora and Fauna Management Sub-plan addresses the requirements of FF10 and the requirement to implement management measures to protect the riparian zone.

Document Ref	Comment	CPBUI Response
Section 1.4.2 Agency consultation	Section 1.4.2 states “Agencies to be consulted for this Sub-plan, incorporating the water quality and groundwater monitoring programs are detailed in Table 3” but no other reference to water quality and groundwater monitoring programs is included in the FFMP. Table 4 includes DPE EES as an agency that is to be engaged in developing the FFMP. It is recommended this is amended to state ‘DPE EHG (former EES)’	Addressed - the Flora and Fauna Management Sub-plan has been revised to remove the incorrect reference to water quality and groundwater monitoring program.
Section 3.3 Aquatic ecologist	Section 3.3 refers to farm dam dewatering and the dewatering of wetlands. The FFMP should clarify if wetlands are proposed to be dewatered or only farm dams. Details need to be provided on the number of dams and/or wetlands that are proposed to be dewatered and their location.	The fauna habitat assessment in the revised BDAR (Section 6.2.4) refers to wetlands and dams 'Wetland habitat within the study area was comprised of several scattered agricultural dams and were mainly devoid of vegetation and considered to be in poor condition'. CPBUI has endeavoured to ensure consistent terminology from the EIS to SCAW CEMP and Sub-plans.
GDE	Section 6.8 of the FFMP for the Substation boxes and tunnelling works (SBT) indicates potential Groundwater Dependent Ecosystems (GDE’s) occur within the SBT off-airport project footprint and one GDE could be potentially impacted by the proposed SBT construction works. The FFMP for the SCAW makes no reference to GDEs. It is suggested the FFMP addresses this issue as to whether GDEs may be potentially impacted by the SCAW works and if so, includes details including a scaled plan which locates the GDEs and the boundary of the SCAW construction works.	The SCAW scope of works consists of surface works and would not impact on groundwater dependent ecosystems (GDEs). As such the Flora and Fauna Management Sub-plan has not identified the potential for impacts upon GDEs. SBT has addressed GDE's as the scope of this package involves tunnelling.
Section 4.4 Connectivity	"Section 4.4 of the FFMP states that “generally, habitat connectivity was limited to riparian corridors associated with the tributary of Blaxland Creek between Lansdowne Road and Blaxland Creek, Blaxland Creek, the unnamed watercourse to the south of Patons Lane and Cosgrove Creek”. EHG notes the FFMP makes no specific reference to the regionally significant east-west corridor connection which the rail alignment crosses. Condition E14 requires that the proponent must design the watercourse crossing and the east-west regional corridor (Patons Lane) to achieve the objectives listed in Condition E14 while Condition E79(d) requires the design of watercourse crossing and east-west corridor movements to give to effect of Condition E14. In its submissions on the EIS, draft Submissions Report, Submissions Report and draft conditions for this CSSI, EES recommended the east-west corridor connection is protected and improved. The eastwest corridor is meant to link between the Nepean River via Mulgoa Nature Reserve near Glenmore Park to Surveyors Creek riparian corridor to the Orchard Hills defence lands across to South Creek and further east to Ropes Creek at Eastern Creek. EES advised the SSI should not sever the eastwest corridor connection. EHG recommends the FFMP is amended to specifically refer to and address the east-west corridor.	The Flora and Fauna Management Sub-plan is addressing the management of construction impacts. The requirements of E14 (design of watercourse crossings) are managed via design documentation and will be documented in the Place Urban Design Corridor Landscape Plan (PUDCLP) required under Condition E77 which will address the requirements of Condition E79 including (d). In addition, the PUCLP will address REMM OFF1 and OFF2 - design requirements for wildlife connectivity and viaduct structures. It is noted that CPBUI hosted an information session on the 9th August 2022 to satisfy the consultation requirements under Condition E14 and invited EHG to attend. EHG declined the invitation and stated that they do not seek to have a consultation role in relation to the Condition E14. Notwithstanding the Flora and Fauna Management Sub-plan has since been revised to better reflect the performance outcomes and targets relating to the design of waterway crossings.
Section 6.1 Design and construction technique	EES previously advised the rail alignment for this SSI crosses a regionally significant east -west corridor connection and that the SSI should not sever this corridor. While Section 6.1 of the FFMP states “the design of SCAW will maintain habitat connectivity through the installation of viaduct structures and fauna crossings across the riparian corridors associated with the tributary of Blaxland Creek between Lansdowne Road and Blaxland Creek, Blaxland Creek, the unnamed watercourse to the south of Patons Lane and Cosgrove Creek”, it does not specifically refer to the east -west corridor connection. The FFMP should address the east-west corridor. It is important the project maintains and improves the aquatic/ riparian environment and connectivity of these creeks. A diversity of local native vegetation should be able to grow under the viaduct structures. It is noted a dedicated fauna crossing culvert is proposed to be installed at the unnamed watercourse (tributary of Blaxland Creek) between Lansdowne Road and Blaxland Creek. It is important this tributary and the downstream environment is not degraded by the project, particularly as the EIS for SSI-7127 for the Northern Road Upgrade – Mersey Road- Bringelly to Glenmore Parkway, Glenmore Park noted that the tributaries of Blaxland Creek at Orchard Hills are among the least disturbed catchments remaining in the Cumberland Plain and are regarded as possibly the most pristine creek system on Wianamatta Shale left in Western Sydney (page 316). The EIS for the Northern Road Upgrade also outlined these tributaries are richer in aquatic macroinvertebrate genera than most other creeks of western Sydney and that the macroinvertebrate community of this catchment has a high representation of disturbance – sensitive species (Table 6.28, page 537).	
Section 6.1 Design and construction technique	The FFMP should address where the proposed works are to be in relation to the pristine tributaries of Blaxland Creek as noted in the EIS for SSI-7127. It is noted above EHG recommends the FFMP includes scaled plans which overlay and clearly locate: • the footprint of the regionally significant east-west corridor connection • the watercourses and top of bank • riparian corridor widths	Section 7.1.6 (Biodiversity Management) of the Flora and Fauna Management Sub-plan requires that '*Before undertaking works in locations where these vegetation types are known to be present, the locations of these species and communities will be identified on Site Environmental Plans (SEP)*'. SEPs are a progressive document and will be prepared using CPBUI GIS including current Project, construction footprint/s applicable to SCAW and current

<table>
<tr><th>Document Ref</th><th>Comment</th><th>CPBUI Response</th></tr>
<tr><td></td><td>• existing native vegetation /EEC
• the defence lands boundary
• the footprint of the proposed works, temporary and permanent crossings, and the viaduct/ culvert crossing.</td><td>layers. The CPBUI GIS is updated where required based on current pre-clearing inspection data.</td></tr>
<tr><td>Pre-Clearing of Vegetation</td><td>"EHG recommends the FFMP includes specific sections which deal with:
• tree hollow surveys (these surveys should be undertaken prior to the pre-clearing surveys) to identify and count the number of tree hollows and the required number of replacement nest boxes
• pre-clearing surveys
• pre-demolition surveys of buildings and structures.
These surveys are required to be undertaken prior to the removal of any vegetation. The FFMP should provide details on what these surveys/ inspections entail and when and where these surveys will be undertaken. Tree hollow surveys need to be undertaken in advance of installing the replacement nest boxes which are to be installed ‘up to one month prior to clearing’. The purpose of these surveys are to identify and mark hollow bearing trees and any other habitat features (stags, hollow logs, birds’ nests or possum
dreys)
Hollow bearing trees should be flagged and counted to indicate the number and type of replacement nest boxes to be identified, obtained and then installed one (1) month prior to any removal of existing tree hollows in accordance with Condition of approval E11."</td><td>The Flora and Fauna Management Sub-plan has been revised to identify the applicable Environmental Procedures to follow regarding pre-clearing inspection and habitat identification and microbat management. Please find where the Flora and Fauna Management Sub-plan addresses the comment:<table><tr><td>tree hollow surveys (these surveys should be undertaken prior to the pre-clearing surveys) to identify and count the number of tree hollows and the required number of replacement nest boxes</td><td>Pre-clearing inspections and identification of habitat features is addressed in Appendix C2 Tree Clearing and Grubbing Procedure.</td></tr><tr><td>pre-clearing surveys</td><td>Pre-clearing inspections is addressed in Appendix C2 Tree Clearing and Grubbing Procedure.</td></tr><tr><td>pre-demolition surveys of buildings and structures.</td><td>The Flora and Fauna Management Sub-plan has subsequently been updated to include a section to address FF4 and a hold point. The requirement for a microbat survey will be implemented as a Hold Point prior to any demolition activities.</td></tr></table>The Flora and Fauna Management Sub-plan sufficiently identifies the pre-clearing and approval process and the process of installing nest boxes in accordance with Condition E11.</td></tr>
<tr><td>Re-use of native trees to be removed</td><td>"In accordance with Condition E12, prior to clearing vegetation the proponent should identify where it is practicable to reuse native trees and vegetation to enhance habitat. If it is not possible to reuse all the removed native trees and vegetation, the proponent must consult with the relevant council(s), NSW National Parks & Wildlife Service (NPWS), Western Sydney Parklands Trust, Greater Sydney Local Land Services (LLS), Landcare groups, DPI Fisheries and any additional relevant government agencies to determine if:
(a) hollows, tree trunks (greater than 25-30cm in diameter and 2-3m in length), mulch, bush rock and root balls salvaged from native vegetation impacted by the CSSI; and
(b) collected plant material, seeds and/or propagated plants from native vegetation impacted by the CSSI, could be used by others in habitat enhancement and rehabilitation work, before pursuing other disposal options.
It is unclear if the applicant has contacted local councils and other authorities to determine if there is an interest for the reuse of suitable timber. The FFMP should clarify this."</td><td rowspan="2">The Flora and Fauna Management Sub-plan has been revised to reflect the requirements of Condition E12. In accordance with Condition C10, the CEMP Sub-plans must be implemented for the duration of construction, The Flora and Fauna Management Sub-plan, Appendix C2 Tree Clearing and Grubbing Procedure provides the process to follow in regard to pre-clearing inspection, identification of vegetation to be removed and the identification of native vegetation that could be used as habitat enhancement. The outcomes of the engagement with local councils and other authorities (as detailed under Condition E12) will be managed in accordance with the Community Communications Strategy. It should be noted that CPBUI are yet to clear vegetation however compliance with Condition E12 will be managed via implementation of the Flora and Fauna Management Plan, Appendix C2 and the Community Communications Strategy.</td></tr>
<tr><td>Re-use of native trees to be removed</td><td>As advised in the EES submission on the draft Submissions Report (dated 31 March 2021) this detail including consultation with the community groups and their responses should be documented in the CEMP/FFMP. As noted by EES the reuse and salvage of tree trunks is important, particularly as the Cumberland Plain Land Snail can be found under logs. The FFMP needs to address the importance of reusing and salvaging tree trunks, root balls etc</td></tr>
<tr><td>Environmentally sensitive area exclusion zone</td><td>EHG notes Section 8.2 of the FFMP for the SBT works indicates that prior to the planned vegetation clearing, dam dewatering and pre-clearing surveys, the project area boundaries, and Environmentally Sensitive Area (ESA) exclusion zones must be identified and marked. It notes the Project area boundaries are shown on maps which include the ESA in Annexure D of the Project CEMP. The FFMP for the SCAW does not refer to such maps. It is suggested the FFMP addresses whether these maps also apply to the SCAW and if so include them in the FFMP as an appendix for ease of reference.</td><td>Environmental risks, controls and accountabilities will be communicated to all relevant personnel through various platforms including Environmental Control Maps (ECMs) - referred to as Site Environmental Plan/s. Refer to Section 7.1.6 (Biodiversity Management) of the Flora and Fauna Management Sub-plan - 'Before undertaking works in locations where these vegetation types are known to be present, the locations of these species and communities will be identified on Site Environmental Plans (SEP)'. SEPs are a progressive document and will be prepared using CPBUI GIS including current Project, construction footprint/s applicable to SCAW and current layers. The CPBUI GIS is updated where required based on current pre-clearing inspection data.</td></tr>
</table>

Document Ref	Comment	CPBUI Response
Section 6.1.2 vegetation and clearing	"Section 6.1.2 of the FFMP notes that when vegetation clearing cannot be avoided, the Tree Clearing and Grubbing Procedure (Appendix C2 – Tree Clearing and Grubbing Procedure) must be followed. EHG recommends amendments are made to the Tree Clearing and Grubbing Procedure - Appendix C2 (see comments below for Appendix C2). Reuse of Timber Element 4 in the FFMP for Project Specific Requirements includes Condition E12 which relates to the Reuse of Timber and it refers to Section 6.1.2 of the FFMP. EHG recommends Section 6.1.2 is amended to specify that the reuse of native trees removed by the project should be used for habitat enhancement and rehabilitation work before pursuing other disposal options and that removed trees should only be mulched as a last resort. Native vegetation seed collection Section 6.1.2 notes “CPB will identify opportunities for reuse of native trees and vegetation in accordance with CoA E12”. In relation to seed collection EHG notes EMM FF11 in the FFMP requires that a native vegetation seed collection and salvage program would be developed prior to the commencement of construction and implemented during construction. The earlier the seed is collected and propagated the more established the plants will be for use by the project in landscaping/revegetation. The EES submission of 18 November 2020 on the EIS advised that seed collection should commence as soon as possible so that local native provenance plant species are available to be planted, and the trees are advanced and established in size to improve the urban tree canopy and local biodiversity. EES also previously recommended a suitably qualified bush regenerator is engaged to provide advice on the collection of local native seed. It is suggested Section 6.1.2 of the FFMP is amended to incorporate this."	Refer to response below in relation to Appendix C2 Tree Clearing and Grubbing Procedure. Reuse of timber – The Flora and Fauna Management Sub-plan now Section 7.1.2 has been revised to better reflect the requirements of Condition E12 in conjunction with Appendix C2 Tree Clearing and Grubbing Procedure which includes provision for the reuse of habitat features for habitat enhancement or rehabilitation. Native vegetation seed collection – While Sydney Metro is ultimately responsible for the native seed collection program, CPBUI are facilitating access to the seed collector and a new Section 7.1.3 has been included in the Flora and Fauna Management Sub-plan to address the requirements of FF11.
Section 6.1.3 Microbat survey	"Section 6.1.3 states “Prior to demolition, removal or modification of dwellings and structures associated with the SCAW, a targeted microbat survey would be undertaken in accordance with ‘Species credit’ threatened bats and their habitats NSW survey guide for the Biodiversity Assessment Method (OEH, 2018)”. It notes “if threatened microbats are detected, a Microbat Management Sub-plan will be developed and implemented by a suitably qualified bat specialist.” The FFMP needs to provide details on the time frame for when the microbat surveys are proposed to be undertaken of the dwellings, structures culverts and other under-road structures. If microbats are found, enough time needs to be provided to allow for the preparation of a Microbat Management Sub-plan (MMP) and consultation with EHG. The MMP if required will include details on: (i) measures to avoid and minimise impacts (ii) details of potential impacts from construction (iii) an adaptive Management Sub-plan, which includes a decision-making framework that: (a) defines performance criteria and thresholds, including ‘impact trigger’ and ‘unacceptable impact’ thresholds to be used as triggers for intervention, that are ecologically based and adhere to SMART principles (b) details monitoring techniques, timing, duration and frequency/intensity and equipment to be used (c) in the event that an impact trigger, unacceptable impact or other threshold is detected, the actions and mitigation measures to be implemented (iv) ongoing monitoring and reporting requirements during construction and operation; and (v) contingency measures to address impacts attributable to the construction of the CSSI The plan must be developed in consultation with an appropriately qualified expert in microbat biology and behaviour, EHG, relevant council(s) and be submitted to the Planning Secretary for approval prior to work that may impact microbat species. The approved plan must be implemented during construction and operation of the CSSI"	Noted. This will be included if a Microbat Management Plan should one be required.
Section 6.1.6 unexpected finds	Section 6.1.6 notes all unexpected threatened species will be reported to Sydney Metro and the ER. If a new threatened species is identified that was not assessed in the EIS, a Consistency Assessment will be prepared to assess the significance of the impacts to the species. The FFMP should include details on what a ‘Consistency Assessment’ entails.	The CEMP (Element 5) addresses the change management process.
Section 6.1.7 tree management	"Section 6.1.7 notes for each tree removed two replacement trees will be planted by Sydney Metro. It is recommended section 6.1.7 outlines where the replacement trees will be planted, and if the relevant authority that owns or manages the land considers it appropriate, use local provenance species. This is consistent with:	The Flora and Fauna Management Sub-plan addresses the impacts associated with the SCAW package. CPBUI is not responsible for the landscaping/re-planting scope. This will be undertaken by the following contractor. CPBUI are responsible for undertaking a Tree Survey should any

Document Ref	Comment	CPBUI Response
	• the proposed collection, salvage and propagation of native seed referred to in this FFMP • EES submissions on the EIS, RtS and draft conditions which recommended that landscaping/planting uses a diversity of local provenance native species from the relevant native vegetation community (or communities) that occurs, or once occurred in the locality of the proposed works rather than use exotic species or non-local native species • Conditions E13 for the revegetation and provision of replacement trees and Condition E79(e) (ii) for landscaping which requires the “use of native species from the relevant native vegetation community (or communities), where identified as appropriate”."	trees be removed that are not offset under Condition E4. Should SCAW require the removal of any trees under Condition E13 and develop a Tree Survey Report, it will be submitted as part of the PUDCLP.
Section 6.1.8	Section 6.1.8 states “the hollows: nest box replacement ratio will be 2: 1” but the Nest Box Strategy states “One nest box will be installed for each hollow to be removed”. This inconsistency needs to be amended. Element 4 in the FFMP for Project	The Flora and Fauna Management Sub-plan has been revised to confirm the replacement ratio, and the cross referencing has been addressed.
Section 6.1.8	"Specific Requirements includes Condition E11 that nest boxes must be installed one (1) month prior to any removal of existing tree hollows and/or the release of any captured hollow dependent fauna and it refers to Section 6.1.8 of the FFMP. Table 8 indicates a pre-clearing inspection will be undertaken to identify the presence of hollow bearing trees and other habitat features. Surveys/ inspections of trees with hollows need to be undertaken in advance of installing the replacement nest boxes (which according to Section 6.1.8 are to be installed ‘up to one month prior to clearing’). The FFMP should provide details on when these tree hollow inspections are to occur so that the number and type of replacement boxes can be identified and then installed one month prior to the removal of existing tree hollows. EHG recommends the pre-clearing surveys are undertaken 7 days prior to vegetation clearing and that the FFMP includes: • the ecologist should check the tree hollows for the presence of native fauna • once the tree hollows have been checked and it is verified that fauna are not present the tree hollows should be covered to ensure the hollows are not reoccupied prior to removal of the trees and/or the project ecologist endeavours to individually remove sections of a tree containing a hollow or other habitat features for relocation and reuse by the project • where hollow dependent native fauna are found using tree hollows that are to be removed, compensatory tree hollows should be provided that is suitable for the species prior to removing the tree hollows and prior to the release of the hollow dependent fauna. The provision of nest boxes and their installation should be undertaken in consultation with appropriately qualified and experienced experts on the fauna species that use or potentially use the tree hollows and the replacement nest boxes, including experts in microbat biology and behaviour. Artificial hollows using a HollowHog tool (https://www.hollowhog.com.au/) may also be appropriate to use to provide replacement tree hollow habitat."	The Flora and Fauna Management Sub-plan (Appendix C2 and Appendix C6) sufficiently identifies the process in which pre-clear survey/inspection and tree hollow identification and nest box installation will be managed including the requirements of Condition E11. Appendix C7 provides the internal approval process between Sydney Metro and CPBUI for pre-clearing inspections. In addition, the Flora and Fauna Management Sub-plan sufficiently addresses the post clearing process, and post clearing reporting that facilitates the vegetation clearing activity. Therefore, it is considered that between the protocol provided in Appendix C2 and the two-staged clearing process, these generally address the recommendations made in this comment. The Flora and Fauna Management Sub-plan, Element 4 has been revised to include Project Ecologist. Further, the Flora and Fauna Management Sub-plan has been updated to include 'The Project Ecologist(s) will demonstrate that they hold appropriate qualifications and all licenses relevant to the work being undertaken, in addition to specific experience in working in environmentally sensitive areas of a similar nature to SCAW. Furthermore, the Appendix C6 has been revised to acknowledge that nest box type and size selected will be dependent on the species that that they are targeting (as indicated by a pre-clearing inspection).
Section 6.1.9 weed management	"Section 6.19 states “ongoing weeding will occur throughout the construction phase, where required”. The Weed Management Procedure implies ongoing weed management is to occur (periodic inspections to address weed regrowth), but it does not specify the time frame that ongoing weeding is to be undertaken and when it is proposed to cease. EES recommended in its submission of 31 March 2021 on the draft Submissions Report and revised BDAR EES that a mitigation measure is included to address ongoing weed management/maintenance in areas disturbed by the project (including areas downslope of, and/or adjoining the disturbed areas) both during/ following construction until the disturbed areas are stabilised and/or rehabilitated. EHG recommends ongoing weeding / weed management continues after the completion of construction especially in areas that have been disturbed by construction works and/or areas that adjoin the disturbed areas and this includes in the vicinity of watercourses /riparian corridors/ corridor connections and areas adjoining remnant native vegetation. Section 6.1.9 and the Weed Management Procedure should outline the duration that ongoing weed management is proposed to be undertaken from the completion of construction works. It is noted Condition E80 requires ongoing operational maintenance of open space and landscaping which implies that this would also need to incorporate ongoing operational weed management"	The Flora and Fauna Management Sub-plan addresses the duration of construction applicable to the SCAW package. CPBUI will undertake weed management in accordance with this Sub-plan until completion of the SCAW. Furthermore, the requirements of Condition E80 applicable to SCAW and the duration of SCAW will be identified in the PUDCLP. In terms of ongoing/long terms weed management – please refer to SM-WSA Staging Report for indicative timing of the Project and its staging, and in particular the activities associated with the Stations, Systems, Operations and Maintenance package of the Project.
Table 8 flora, fauna and biodiversity controls	"EHG recommends Table 8 is amended as follows. Tree hollow surveys will be undertaken in advance of installing the replacement nest boxes which are to be installed ‘up to one month prior to clearing’. The purpose of these surveys are to identify and mark hollow bearing trees and any other habitat features (stags, hollow logs , birds’ nests or possum dreys). “pre-clearing inspections and pre-demolition surveys will be undertaken to identify the presence of:	The Flora and Fauna Management Sub-plan sufficiently identifies and provides for the process of pre disturbance protocols. Now Table 10 (Biodiversity controls) specifically addresses 'prior to any disturbance' and lists the protocols ie. pe-clearing and grubbing permit, installation of nest box/s, release of hold point/s. In addition, this procedure addresses reuse of habitat features. Notwithstanding, the Flora and Fauna Management Sub-plan

Document Ref	Comment	CPBUI Response
	• identify and mark hollow bearing trees and other habitat features such as stags, hollow logs • identify and mark roosting features such as birds' nests and possum dreys • undertake targeted microbat surveys of abandoned dwellings, structures, culverts and other under road structures within the construction footprint that are proposed for demolition • undertake inspections of farm dams and wetlands for native fauna prior to commencing dewatering • identify threatened flora and fauna and protected fauna • identify where it is practicable to salvage and reuse native tree trunks, tree hollows, root balls and vegetation that are to be removed to enhance habitat either within the project footprint or used by others offsite in habitat enhancement and rehabilitation work by councils, NPWS, Western Sydney Parklands Trust, Greater Sydney LLS, Landcare groups, DPI Fisheries and any additional relevant government agencies • identify potential release sites if fauna require capture and relocation during pre-clearing inspections and clearing The Tree hollow surveys and the pre-clearing inspections should confirm the number of tree hollows to be removed and the number and type of replacement nest boxes and/or artificial hollows to be installed. It is unclear when the pre-clearing inspections are to occur prior to clearing. The FFMP should provide details on this. Also, details need to be provided as to when the inspections for microbats are to be undertaken prior to the demolition of existing buildings and structures. The pre-clearing inspections should be undertaken to not only identify the presence of threatened fauna, but all native fauna potentially impacted by the proposed clearing. Table 8 states "cleared/removed vegetation will be beneficially used either on or off the project where possible (e.g., for habitat, chipped for mulch and reused)". EHG requests as noted above the FFMP outlines that native trees removed by the project should only be mulched as a last resort. The FFMP should outline that tree trunks greater than 25-30cm in diameter and 2-3m in length, root balls and tree hollows should be salvaged and reused as habitat for fauna in accordance with Condition E12. "	(Section 7.1.2) has been revised to better reflect the requirements of Condition E12. The Flora and Fauna Management Sub-plan and the Tree Clearing and Grubbing Permit includes the identification of habitat features including hollows and nests. The Sub-plan has been updated to include a section to address REMM FF4 and now includes a hold point. The requirement for a microbat survey will be implemented as a Hold Point prior to any demolition activities. It is considered that the Appendix C5 Farm Dam Dewatering Procedure is clear that the protocol is implemented prior to dewatering activities.
Section 6.3 Monitoring	Section 6.3 of the FFMP states the project requirements for monitoring are detailed in the Monitoring, Inspections, Reporting, Review and Audit (MIRRA) schedule and contained in Table 9. It is unclear if the MIRRA has been prepared and whether this will be attached as an appendix to the FFMP. Table 9 lists the monitoring and inspections relevant to flora and fauna management, but it should also include the monitoring of nest boxes. Section 6.3 indicates inspection of sensitive areas and observation of activities with the potential to impact flora and fauna will occur for the duration of construction. The sensitive areas need to be identified in the FFMP on scaled maps.	The Flora and Fauna Management Sub-Plan, now Table 11, has been updated to include monitoring of nest boxes in accordance with the Nest Box Strategy and the requirements of the EPBC Off-Airport Biodiversity Management Plan. In response to the comment regarding identification of sensitive areas – please refer to previous comment detailing the process surrounding Site Environmental Plan/s.
Section 6.3 Monitoring	"The rehabilitation of the site and the monitoring of the nest boxes should be undertaken for a longer period than during construction. The monitoring of site rehabilitation should continue until the site is stabilised and the vegetation established. EHG recommends a long-term monitoring program is undertaken to evaluate the effectiveness of the nest boxes and that the monitoring covers all seasons (spring, summer, winter and autumn). The nest boxes should also be monitored for any repair /maintenance /replacement requirements for a minimum of 5 years. At the end of the 5 years the proponent needs to provide the results of the nest box monitoring and their use or lack thereof to DPE and provide recommendations as to the ongoing use of the nest boxes and any future maintenance requirements. The FFMP should include details on land ownership of the SCAW sites. If the land the subject of the FFMP will remain in Sydney Metro ownership then EHG recommends the FFMP take an adaptive management approach which responds to the results of the monitoring program, including the monitoring of nest boxes. Once the construction period is complete, the monitoring program can inform ongoing management actions. If the land the subject of this FFMP will not remain in Sydney Metro ownership at the completion of construction, then the monitoring program can end at the completion of construction EHG recommends the nest box monitoring includes details on: • the number of nest boxes to be monitored • the GPS locations of the nest boxes • the characteristics of all nest boxes to be monitored / the native fauna species that the boxes are designed for • the duration and frequency of monitoring • how the nest boxes are to be monitored (e.g., visual checks, installation of wildlife cameras which are motion activated)	The Flora and Fauna Management Sub-plan is addressing the management of flora and fauna impacts applicable to SCAW and for the duration of SCAW. CPBUI is responsible for rehabilitation of the SCAW disturbance and monitoring associated with the SCAW, during construction of the SCAW. CPBUI is not responsible for the rehabilitation of the site and/or monitoring post construction complete of the SCAW package. This will be undertaken by the following contractor. Refer to the SM-WSA Staging Report which addresses the follow-on packages and provides indicative timing of each package applicable to the Project.

Document Ref	Comment	CPBUI Response
	• the reporting of monitoring results - nest box installation details (date installed, direction the box entrance faces, height above ground) - the time of year, date and time that boxes are checked - what was found in the nest box – the species and the number of individuals - occupancy rates - frequency of use - pattern and timing of use - maintenance needs. If the project also installs artificial hollows using a HollowHog tool (https://www.hollowhog.com.au/) to provide replacement tree hollow habitat the artificial hollows should also be monitored, and details provided on the number of artificial hollows installed and their location. The full monitoring data should be made publicly available in annual reports and made available online and published in scientific literature. It is important that TfNSW makes its monitoring data available for other projects to benefit. If the data is collected under licence then this should be imported into BioNet which can then be used in the future. "	
Table 9 Monitoring and inspection	Table 9 needs to be amended to include monitoring and inspections of nest boxes.	The Flora and Fauna Management Sub-Plan, now Table 11, has been updated to include monitoring of nest boxes in accordance with the Nest Box Strategy and the requirements of the EPBC Off-Airport Biodiversity Management Plan.
Element 2	Element 2 in Part B should include that compliance records will be retained and will include preclearing survey reports. EHG recommends evidence of the tree hollow surveys, pre-clearing surveys and inspections for fauna and any relocation of fauna is provided to DPE by the proponent prior to any clearing of vegetation and demolition works commencing. The FFMP should address this. This recommendation is consistent with EES previous advice on the draft conditions for this SSI.	The Flora and Fauna Management Sub-plan Element 2 has been revised to include the requirements of CEMF Section 102(d).
Appendix C2 Tree clear and grub	Pre-clearing Inspection The Tree Clearing and Grubbing Procedure indicates that as part of the pre-clearing inspection the ecologist must “Mark habitat features, including trees containing hollows or nests”. EHG recommends the procedure also includes the following: • the ecologist is to check the tree hollows/habitat features for the presence of native fauna • once the tree hollows/habitat features have been checked and it is verified that fauna are not present the tree hollows are to be immediately covered to ensure the hollows/habitat features are not reoccupied prior to removal of the trees and/or where fauna are not present in the tree hollow/ habitat feature the project ecologist will endeavour to individually remove sections of a tree containing a hollow or other habitat features for reuse by the project • where hollow dependent native fauna are found using tree hollows that are to be removed - the fauna should be captured and relocated prior to felling the tree - compensatory tree hollows should be provided prior to removing the tree hollows and prior to the release of the hollow dependent fauna.	CPBUI consider that the Flora and Fauna Management Sub-Plan Appendix C2 Tree Clearing and Grubbing Procedure addresses these requirements. The procedure provides for the pre-clear inspection activities including marking of habitat trees and then allows for the two-staged approach (as per the CEMF) to clearing to allow for marked trees to be cleared last. In addition, the Tree Clearing and Grubbing Procedure indicates that where fauna has been identified, that it be captured and relocated as per the Appendix C3 Fauna Handling Procedure during the inspection activity. As per the requirements of Condition E11, nest boxes will be installed one (1) month prior to the removal of the existing tree hollow.
Appendix C2 Tree clear and grub	"Remove Vegetation The protocol for ‘Remove Vegetation’ includes that ‘hollow bearing trees will be slowly pushed over to avoid damage to hollows’. It also includes that ‘In some circumstances, sections of a tree containing a hollow or habitat may be individually removed prior to felling’. EHG recommends that the sections of the tree containing the tree hollow or habitat should be individually removed prior to felling and the Procedure is amended to include: • the ecologist must endeavour to individually remove sections of a tree containing a hollow or other habitat features for relocation and reuse by the project prior to felling the tree • trees with hollows should be lopped in such a way that the risk of injury or mortality to fauna is minimised, such as top-down lopping, with lopped sections gently lowered to the ground, or by lowering whole trees to the ground with the “grab” attachment of a machine. • where it is not possible to remove a tree hollow/habitat feature prior to felling the tree, native fauna should first be removed before tree felling and the hollow bearing trees may then be slowly pushed over to avoid damage to hollows.	CPBUI consider that the Flora and Fauna Management Sub-Plan Appendix C2 Tree Clearing and Grubbing Procedure addresses these requirements. The procedure provides for the pre-clear inspection activities including marking of habitat trees and then allows for the two-staged approach (as per the CEMF) to clearing to allow for marked trees to be cleared last. In addition, the Tree Clearing and Grubbing Procedure indicates that where fauna has been identified, that it be captured and relocated as per the Appendix C3 Fauna Handling Procedure during the inspection activity. The Flora and Fauna Management Sub-plan (Section 7.1.2) has been revised to better reflect the requirements of Condition E12. The Fauna Handling Procedure (located in Appendix C3) addresses the particular requirements relating to handling of bats.

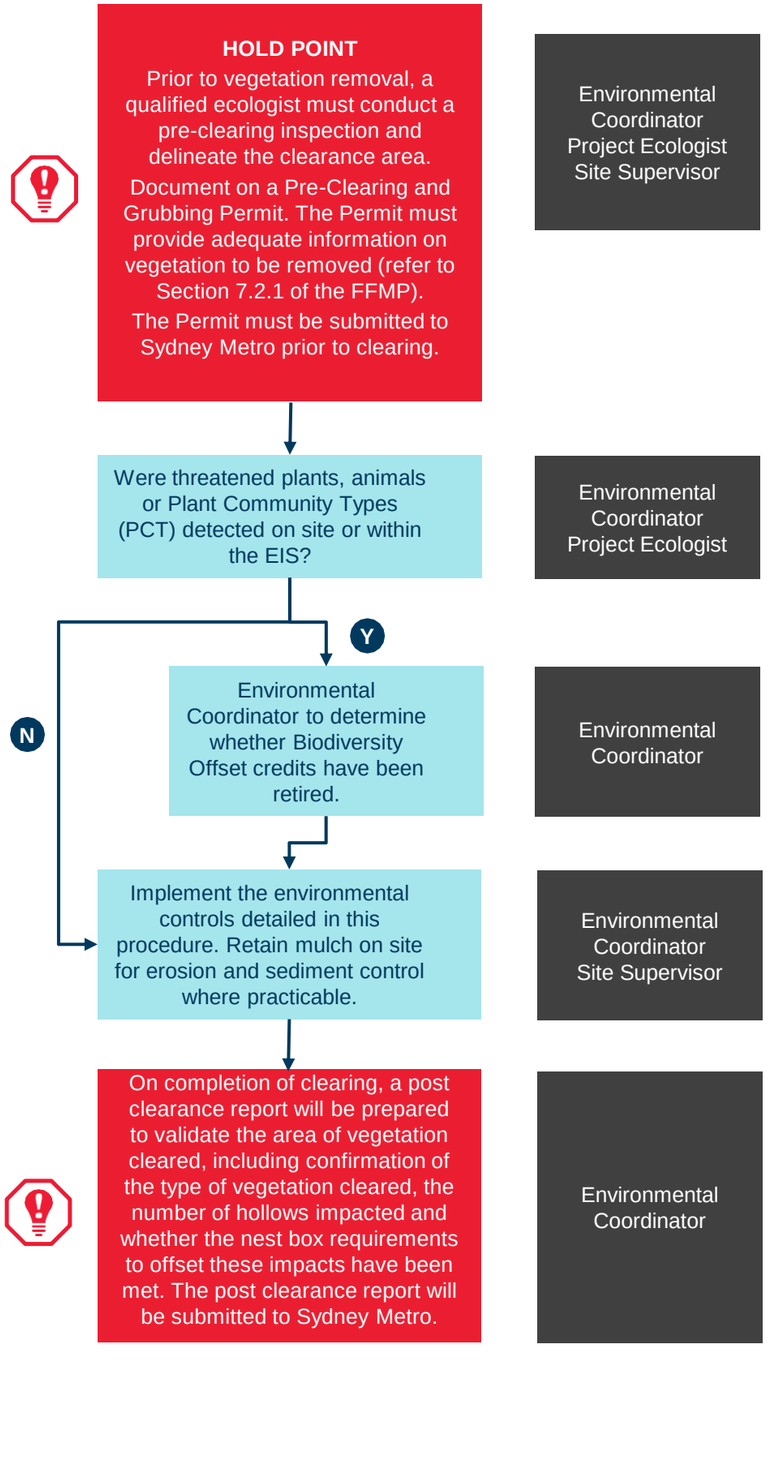
Document Ref	Comment	CPBUI Response
	There are two point 3's 'under 'remove vegetation'. The second point 3 notes "Habitat features to be used for habitat enhancement or in rehabilitation works will be relocated to adjacent habitat (subject to landowner consent)". EHG requests this point also outlines that where native trees are removed by the project, tree trunks greater than 25-30cm in diameter and 2-3m in length, root balls and tree hollows should be salvaged and reused as habitat for fauna in accordance with Condition E12. Point 4 should include that injured fauna is to be placed into the hands of a wildlife carer (please note only appropriately vaccinated personnel are to handle bats) and released on site once re-habilitated. "	
C4 weed management	"It is suggested this procedure specifies upfront that it applies to the management of weeds within the boundary of the works and to areas which adjoin but are located offsite outside the boundary of the works and the construction site. The Procedure indicates ongoing weed management is to occur (periodic inspections to address weed regrowth) but it should outline the duration from the completion of construction works that ongoing weed management is proposed to be undertaken, for example is ongoing weed management proposed for a minimum of 2 -5 years, or is it proposed to be undertaken in perpetuity."	The Flora and Fauna Management Sub-plan addresses the area within the SCAW construction footprint, for the duration of the delivery of SCAW in accordance with the SM-WSA Staging Report. The Flora and Fauna Management Sub-plan has been prepared in accordance with the Staging Report.
C5 farm dam dewatering	"EHG recommends the procedure is amended under the heading 'Dewatering Supervision and Fauna Handling' to include the following additional text: • Once dewatering is complete, the ecologist should inspect the sediment at the bottom of the dam for the presence of native (including tortoises and eels) and following this inspection an excavator should gently remove loose sediments from the bottom of the dam under the supervision of the ecologist."	The Appendix C5 Dam Dewatering Procedure is titled 'Aquatic Fauna Management' and this relates to all aquatic fauna and the protocol assigns responsibility to the ecologist for this activity, including pre, during and post dewatering activities.
C6 nest box	"Section 6.18 of the FFMP notes: • CPB has developed a nest box replacement strategy (Appendix C6 – Nest Box Strategy) to outline the specific measures to be implemented to mitigate the impacts of vegetation clearing on hollow-dependent fauna • the nest box strategy is based on the results of the pre-clearing survey. To meet Condition E11 the nest boxes must be installed one (1) month prior to any removal of existing tree hollows and/or the release of any captured hollow dependent fauna. The nest box strategy states "nest boxes that are mitigating for known tree hollows (i.e., those identified during the Project BDAR and/or pre clearing surveys) will be installed at least 30 days prior to the removal of the feature". The nest box strategy also indicates however that "the number of hollows on each hollow bearing tree will be confirmed during clearing supervision. If more hollows are identified, additional nest boxes will be installed at a ratio of one nest box per additional hollow identified". The vegetation to be removed should be surveyed closer to the date that it is being cleared (i.e., the pre-clearing surveys should be undertaken within 7 days of any clearing). EHG supports the confirmation of tree hollows identified during the Project BDAR and as part of the pre-clearing survey and the installation of additional nest boxes to account for any hollows initially missed in the survey for hollows. Even though this would not meet the 30-day requirement of Condition E11, it meets the intention of providing replacement habitat. EHG recommends that the FFMP address how the initial survey of hollows and other habitat features will deliver on the Condition E11 and using the additional pre-clearance survey 7 days out from vegetation clearance is a safety measure to ensure no hollows have been missed. Any additional hollows identified during the pre-clearance survey must be replaced by a nest box before the tree hollow is felled. The nest box strategy also notes if microbats are found utilising abandoned buildings as habitat, nest boxes will be installed in adjacent foraging habitat prior to demolition of the building. The number of nest boxes will be determined upon evaluation of the number of microbats using the structure, in consultation with the Project Ecologist. The FFMP needs to address when it is proposed to undertake the microbat surveys of the abandoned dwellings, structures, culverts and other under road structures. If microbats are found, enough time needs to be provided to allow for the preparation of a Microbat Management Sub-plan (MMP) including consultation with EHG"	CPBUI consider that Section 7.1.9 and Appendix C6 of the Flora and Fauna Management Sub-plan sufficiently addresses the process for tree hollow identification and nest box installation to address the requirements Condition E11. In addition, the Flora and Fauna Management Sub-plan addresses the requirements of FF4 and the triggers for the preparation of a Microbat Management Plan, and the process of undertaking a microbat survey should it be required.
C6 nest box	It is unclear what is proposed for microbats potentially using the abandoned buildings and structures as habitat if they do not use nest boxes. The MMP will need to address how abandoned buildings and structures will be demolished if microbats are utilising them as habitat and what actions are required to ensure minimal impacts to microbats. The MMP should have options for the relocation of any individuals found in preclearance /pre-demolition surveys. The Strategy notes the nest boxes will be monitored annually for the duration of the SCAW Project. It also notes "monitoring will evaluate nest box use and the condition of nest boxes. Nest boxes that are deteriorating prior to the completion of construction will be repaired or replaced". It is unclear if ongoing monitoring of the nest boxes is proposed post construction, for the long term where it is appropriate or if it is only proposed up until the completion of construction. The FFMP needs to clarify this. If monitoring of the nest boxes is only proposed during construction EHG does not consider this to be adequate. Nor does EHG consider the proposed replacement and maintenance of nest boxes only during the	The Flora and Fauna Management Sub-plan has been updated to include a section to address REMM FF4 and now includes a hold point. The requirement for a microbat survey will be implemented as a Hold Point prior to any demolition activities. In addition, the Flora and Fauna Management Sub-plan has been revised to confirm the triggers for the preparation of a Microbat Management Plan, and the process of undertaking a microbat survey should it be required. If microbats are identified, a Microbat Management Sub-plan will be prepared and implemented.

Document Ref	Comment	CPBUI Response
	construction period is adequate. It is important that adequate preconstruction, construction and post construction monitoring is undertaken to confirm the species that will potentially use the nest boxes are using them. Contingency measures/corrective actions should also be put in place in case monitoring indicates the nest boxes are not effective. As noted above under comments for Section 6.3, EHG recommends a long-term monitoring program is undertaken to evaluate the effectiveness of the nest boxes and that the monitoring covers all seasons (spring, summer, winter and autumn) and it is not just undertaken annually as annual inspections would not suffice. Nest boxes should be monitored for any repair /maintenance /replacement requirements for a minimum of 5 years. At the end of the 5 years the proponent needs to provide the results of the nest box monitoring and their use or lack thereof to DPE and provide recommendations as to the ongoing use of the nest boxes and any future maintenance requirements. If the land the subject of the FFMP remains in Sydney Metro ownership then EHG recommends the FFMP take an adaptive management approach which responds to the results of the monitoring program, including the monitoring of nest boxes. Once the construction period is complete, the monitoring program can inform ongoing management actions. If the land the subject of the FFMP will not remain in Sydney Metro ownership at the completion of construction, then where this applies the monitoring program should end at the completion of construction.	The Appendix C6 Nest Box Strategy provides for monitoring of the installed nest boxes for the duration of the delivery of SCAW. Refer to SM-WSA Staging Report for the activities included in future packages/stages."
C6 nest box	"EHG recommends the Strategy is amended to include that the nest box monitoring includes details on: • the number of nest boxes to be monitored • the GPS locations of the nest boxes • the characteristics of all nest boxes to be monitored / the native fauna species that the boxes are designed for • the duration and frequency of monitoring • how the nest boxes are to be monitored (e.g., visual checks, installation of wildlife cameras which are motion activated) • the reporting of monitoring results - nest box installation details (date installed, direction the box entrance faces, height above ground) - the time of year, date and time that boxes are checked - what was found in the nest box – the species and the number of individuals - occupancy rates - frequency of use - pattern and timing of use - maintenance needs The full monitoring data should be made publicly available in annual reports and made available online and published in scientific literature. It is important that TfNSW makes its monitoring data available for other projects to benefit. If the data is collected under licence, then this should be imported into BioNet which can then be used in the future."	"The Flora and Fauna Management Sub-plan is addressing the management of flora and fauna impacts applicable to SCAW and for the duration of SCAW. Appendix C6 Nest Box Strategy addresses monitoring for the duration of the SCAW and states that it will be further developed following completion of detailed design and completion of pre-clearing inspections for native vegetation removal. The CEMP Element 11 addresses document and record management as required by the CEMF. CPBUI is not responsible for the rehabilitation of the site and/or the long term monitoring. This will be undertaken by the following contractor / Sydney Metro. Refer to the SM-WSA Staging Report which addresses the follow on packages."
C7 pre-clear inspection for native veg approval form	"Section 6.1.2 states “If any clearing of native vegetation is required, or removal of potential fauna habitat (e.g., hollow bearing trees), the project Ecologist will be present during clearing to assist with management of potential impacts to resident fauna and provide advice on opportunities to salvage habitat where feasible”. Based on the form provided in Appendix C7 it is unclear if the Ecologist would be present during clearing and EHG recommends the form is amended to clarify this and to include the following amendments: 2c Scaled map showing location of proposed clearing and physical demarcation on the limit of clearing [include approved project boundary and reference to relevant Staging Report maps], *project footprint and extent of works, location of watercourses and riparian corridors* 3a Has an ecologist been consulted [attached report] ? The ecologist must be present for the removal of any vegetation including tree hollows and any other habitat features 3e Is the vegetation hollow bearing and does it provide any other habitat (such as nests, dreys) for any other native species? 3f How many tree hollows are to be removed ? The ecologist must be present for the removal of any tree hollows and any other habitat features Have an equivalent number of nest boxes been installed 1 month prior to any removal of existing tree hollows and/or the release of any captured hollow dependent fauna? 3g Have any threatened fauna been identified? Is so, what species? 3h Has native seed been collected for plant propagation by the project? 4f Detail consideration of re-use of native trees and vegetation and any subsequent consultation (required in accordance with CSSI planning approval – see Condition E12) "	The Flora and Fauna Management Sub-plan Appendix C2 Tree Clearing and Grubbing Procedure requires an ecologist to be present during clearing activities of habitat trees in accordance with the CEMF Section 10.3(a)(ii). The form in Appendix C7 requires clearing to be undertaken in accordance with the CEMF Section 10.3a(ii). The SMWSA Pre Clearing Inspection for native vegetation removal approval form captures the location and extent of clearing – which would capture location of watercourse if the vegetation to be removed is within a riparian zone. It should be noted that mapping submitted with this form would be extracted from CPBUI GIS including current Project, construction footprint/s applicable to SCAW and current layers. The CPBUI GIS is updated where required based on current pre-clearing inspection data. Sydney Metro is responsible for the native seed collection program. CPBUI are assisting and cooperating with Sydney Metro.

Appendix C2 – Tree Clearing and Grubbing Procedure

TREE CLEARING AND GRUBBING PROCEDURE

MANAGEMENT AND RESPONSIBILITY



PROTOCOL.

Delineate Vegetation to be Cleared or Trimmed

Environment Coordinator, Project Ecologist and Site Supervisor to delineate the area of vegetation to be cleared or trimmed based on the EIS and confirmed through survey. Install perimeter flagging/ fencing and “Environmental Exclusion Zone – No Access” signage (see below) around areas to be retained.

Pre-clearing inspection

Prior to vegetation removal, a suitable qualified ecologist must conduct a pre-clearing inspection and delineate the clearance area. As part of the pre-clearing inspection:

- Mark habitat features, including trees containing hollows or nests
- Conduct searches for threatened Cumberland Plain Land Snails (if the species is predicted to occur) and unexpected threatened species. Refer to Section 6.8.4 of the Preparatory CEMP if an unexpected threatened species is identified.
- Identify boundaries of PCT’s and threatened species polygons. If PCT’s or threatened species or threatened species polygons are present within the clearing footprint, works must stop until the Environmental Coordinator has confirmed the required biodiversity offset credits have been retired.
- Inspect for presence of fauna; capture and relocate in accordance with the Fauna Handling Procedure.
- Identify features that could provide roosts for microbats including abandoned buildings and survey as required
- Identify and mark Weeds of National Significance and Priority Weeds.
- Provide a risk assessment and mitigation measures (if any) to prevent the spread of pathogens such as *Phytophthora implementa,* and Exotic Rust Fungi
- Submit the Pre-Clearing and Grubbing Permit to the Environment Manager for approval and submission to Sydney Metro.

On completion of the pre-clearing inspection, maps depicting vegetation clearing boundaries and exclusion/no-go zones will be provided to the construction team through a toolbox talk or pre-start meeting. The meeting will also include discussion of clearing procedures, fauna handling and any weed identification and control measures.

Implement Environmental Controls

- Install erosion and sediment controls prior to grubbing works
- Separate topsoil from sub soil and green waste and stockpile for reuse onsite or offsite. Stockpiles are to be on hardstand or appropriately delineated and must not be compacted.

Remove Vegetation

DEFER VEGETATION REMOVAL UNTIL NECESSARY AND ONLY CLEAR VEGETATION WITHIN THE APPROVED PRE-CLEARING AND GRUBBING PERMIT

1. Trimming of threatened or endangered ecological communities will be conducted by an arborist.
2. All non-marked trees and features will be removed first. Groundcover habitat features that are not too large to be moved will be removed and searched. All remaining marked habitat trees will be knocked (gently tapped with construction equipment) at the end of each day of clearing and groundcover features such as logs will be gently rolled and searched for the presence of animals.
3. At least 48 hours after the clearance of non-marked vegetation, each habitat tree will be carefully removed in the presence of the project ecologist, and thoroughly searched for the presence of animals:
   - Marked trees will be shaken prior to felling using an excavator or similar equipment and then left for a specific period (determined by the project ecologist) to allow any fauna using the hollows to be observed.
   - Hollow-bearing trees will be slowly pushed over to avoid damage to hollows.
   - Fauna rescue personnel will instruct the equipment operators regarding how and which side to fell the trees so that hollows can be quickly checked. In some circumstances, sections of a tree containing a hollow or habitat may be individually removed prior to felling.
   - Felled habitat trees will be left on the ground for 24 hours or inspected by the project ecologist prior to further processing.
3. Habitat features to be used for habitat enhancement or in rehabilitation works will be relocated to adjacent habitat (subject to landowner consent).
4. Report any injured native fauna to the Environment Coordinator immediately. The Environment Coordinator will provide direction on relocation of the native fauna.
5. Mulch is to be reused on-site for erosion and sediment control, if practicable. Residual mulch is to be taken to a recycling facility. Mulch/ green waste containing herbaceous noxious weeds will be managed in accordance with the Weed Management Procedure. Disposal records will be retained.

Appendix C3 –Fauna Handling Procedure

FAUNA HANDLING PROCEDURE

MANAGEMENT AND RESPONSIBILITY

All personnel are to attend the project induction and toolbox talks. — Site Supervisor, Environmental Coordinator

FAUNA ENCOUNTERED

If any native fauna is encountered, stop work in the immediate area and contact the Environment Coordinator. — Site Supervisor, Environmental Coordinator

The Environment Coordinator is to:

1. In the case of a snake, contact the snake handler. The snake handler will relocate all snakes to a suitable location.
2. In the case of a bat*, contact the project ecologist to relocate the bat to a suitable location.

To minimise stress to fauna during relocation:

1. Ensure appropriate PPE (e.g. leather gloves) prior to attempting to handle fauna.
2. Cover larger animals with a towel or blanket and place in a cardboard box and/or hessian bag.
3. Place smaller animals in a cotton bag, tied at the top; keep the animal in a quiet, warm, ventilated and dark place.
4. If fauna is not injured, relocate to a suitable location. If cats or dogs are found, return to owner or local animal shelter.

— Site Supervisor, Site Engineer, Environmental Coordinator

INJURED FAUNA

For snakes and bats* that are seriously injured and require immediate attention, the appropriate rescue service, ecologist or snake handler will be called immediately. For all other native fauna, agreement will be made with the rescue agency if the animal will be collected or taken to animal hospital. — Site Supervisor, Environmental Coordinator, Environment Manager

Rescue Service Contact

WIRES	**1300 094 737**
RSPCA (Emergency Line)	**02 9770 7556**
Sydney Snake Catchers	**1300 599 938**
Small Animal Hospital - Ryde	**02 9889 0289**
Vet Hospital – St Marys	**02 98339321**
Vet Hospital – Orchard Hills	**02 47362027**
Vet Hospital – Rossmore	**02 96066984**

***Australian Bat Lyssavirus (ABL) Warning**

Australian Bat Lyssavirus is a rabies like virus that can infect humans if they are bitten or scratched by an infected bat. Bats that are symptomatic with the virus often behave as if injured, disorientated or unwell.

Under no circumstances should unvaccinated and untrained personnel approach, capture or handle Grey-Headed Flying Foxes or microbat species.

PROTOCOL

HANDLING PROCEDURE

1. If the animal cannot be handled (i.e. venomous snake or bats), the exact location of the animal is to be recorded and provided to the snake handler or project ecologist. All personnel and/or subcontractors are to be excluded from the vicinity.
2. If the animal requires immediate attention, as determined by the Environmental Coordinator in consultation with the project ecologist or fauna specialist (where required), a rescue service will be contacted.
3. In the event the rescue service cannot attend the site, the Environmental Coordinator will deliver the injured/captured animal (other than snakes or bats) to the animal service/shelter as soon as practical.
4. If the animal is a threatened species that was not previously identified, the Environment Manager is to notify the Principal and the ER. In consultation with relevant stakeholders, the Environment Manager and project ecologist will implement any corrective action and additional safeguards required. Refer to Section 6.8.4 of the Preparatory CEMP for additional details.

RELEASE PROCEDURE
(native fauna other than snakes or bats)

If the animal is not injured, the Environment Coordinator in consultation with the project ecologist (where required) may release the fauna into a suitable area in accordance with the following procedures:

1. The Environment Coordinator in consultation with the project ecologist is responsible for undertaking the release. Release sites should be identified during pre-clearing inspections.
2. Animals must be released in suitable habitat as close as possible to the original capture location where possible. Cumberland Plain Land Snails should be released in areas with thick leaf/ bark cover or areas with numerous fallen logs.
3. If the species is nocturnal, release should be carried out at dusk if practicable. Animals can be left in nest boxes at dusk and allowed to vacate them passively. The nest box can then be inspected in the morning.

DOMESTIC ANIMALS

If the animal is not aggressive, the Environmental Coordinator in consultation with the Community and Stakeholder Team to make arrangements for the animal to be returned to its or the local council animal shelter. If the animal is aggressive, the Environment Coordinator is to arrange for the local council animal control officer to collect the animal.

If the animal is injured and not aggressive, the Environment Coordinator will take the animal to the nearest vet.

REPORTING

Records of any fauna handling and release locations will be retained.

Threatened and Common Fauna that could be Encountered

Image	Name	EPBC Act Listing	BC Act Listing
	Southern Myotis *Myotis marcopus* *	Not Listed	Vulnerable
	Grey-headed Flying Fox *Pteropus poliocephalus* *	Vulnerable	Vulnerable
	Cumberland Plain Land Snail *Meridolum corneovirens**	Not Listed	Endangered
	Green and Golden Bell Frog *Litoria aurea* *	Vulnerable	Endangered
	Brush-tailed Possum *Trichosurus vulpecula* *	Not Listed	Not Listed
	Ring-tailed Possum *Pseudocheirus peregrinus* *	Not Listed	Not Listed
	Blue Tongue Lizard *Tiliqua scincoides* *	Not Listed	Not Listed
	Red-bellied Black Snake *Pseudechis porphyriacus* *	Not Listed	Not Listed
	Eastern Brown Snake* *Pseudonaja textilis*	Not Listed	Not Listed

* Images © Henry Cook AMBS Ecology and Heritage

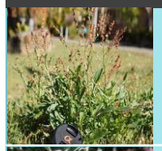
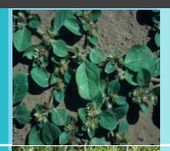
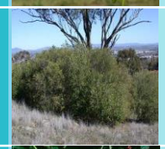
Appendix C4 – Weed Management Procedure

WEED MANAGEMENT PROCEDURE

MANAGEMENT AND RESPONSIBILITY

Have weeds been identified within the boundary of the Preparatory Works?	Environmental Coordinator Site Supervisor
Y: Environment Manager and Safety Manager approval required prior to use of non-glyphosate herbicide **N:** Landowner and Environment Manager approval required prior to use of herbicides outside of Preparatory Works boundary.	Environment Manager Site Supervisor
HOLD POINT Priority weed mapping and a pre-clearing inspection and Pre-Clearing and Grubbing Checklist must be completed prior to weed removal works.	Environmental Coordinator Project Ecologist
Herbicide application to be administered by authorised personnel in accordance with the SDS, SWMS, and the requirements of the Pesticides Act 1999.	Site Supervisor
STABILISATION OF AREA Following weed control, any bare soil areas will be assessed and appropriate mitigation measures implemented i.e. stabilisation, erosion & sediment controls etc.	Site Supervisor
DISPOSAL OF WEEDS • Disposal method to be determined by the Environment Coordinator and may include onsite encapsulation or transport to an appropriate green waste facility. • Weeds controlled with herbicide may be retained in-situ or mulched (removal and disposal is not required).	Environmental Coordinator Site Supervisor
ONGOING MANAGEMENT • Conduct periodic inspections to assess weed re-growth. • Methods such as hand weeding to be used around retained vegetation (onsite) and in adjacent vegetated areas (offsite), to protect vegetation from potential mechanical or chemical damage.	Environmental Coordinator Site Supervisor

WEEDS of NATIONAL SIGNIFCANCE AND PRIORITY WEEDS TO BE CONTROLLED

IMAGE*	WEED	SOLUTION	IMAGE*	WEED	SOLUTION
	Name: Sheep Sorrel *Acetosella vulgaris* WoNS: No HT Weed: Yes			Name: Khaki Weed (*Alternanthera pungens)* WoNS: No HT Weed: Yes	
	Name: Moth Vine *Araujia sericifera* WoNS: No HT Weed: Yes			Name: Asparagus Fern *Asparagus aethiopicus* WoNS: Yes HT Weed: Yes	
	Name: Bridal Creeper *Asparagus asparagoides* WoNS: Yes HT Weed: Yes			Name: Green Cestrum *Cestrum parqui* WoNS: No HT Weed: Yes	
	Name: African Love Grass *Eragrostis curvula* WoNS: No HT Weed: Yes			Name: Small-leafed Privet *Ligustrum sinense* WoNS: No HT Weed: Yes	
	Name: African Box Thorn *Lycium ferocissimum* WoNS: Yes HT Weed: Yes			Name: African Olive *Olea europaea* WoNS: No HT Weed: Yes	
	Name: Castor Oil Plant *Ricinus communis* WoNS: No HT Weed: Yes			Name: Blackberry *Rubus fruticosus* complex WoNS: Yes HT Weed: Yes	
	Name: Fireweed *Senecio madagascariensis* WoNS: Yes HT Weed: Yes			Name: Bathurst Burr *Xanthium spinosum* WoNS: No HT Weed: Yes	
	Name: *Lantana camara* WoNS: Yes HT Weed: Yes			Name:Boneseed *Chrysanthemoides monilifera* WoNS: Yes HT Weed: No	

* Images sourced from NSW WeedWise (https://weeds.dpi.nsw.gov.au/)

KEY

- Cut and paint herbicide treatment
- Hand weeding
- Scrape and paint herbicide treatment
- Spray with herbicide treatment

Appendix C5 – Farm Dam Dewatering Procedure

DAM DEWATERING PROCEDURE FOR AQUATIC FAUNA MANAGEMENT

MANAGEMENT AND RESPONSIBILITY

ASSESSMENT OF PROPOSED DAM DEWATERING SITE

Are all permits for water discharge valid in accordance with Water Reuse and Discharge Management Procedure?

Site Supervisor
Project Engineer
Environmental Coordinator

Y

N

Contact the Environmental Coordinator to obtain appropriate permits

Dam boundaries demarcated and Dam Dewatering Checklist completed

Environmental Coordinator
Environment Manager

Implement Environmental Controls (where required) in accordance with this procedure.

Site Supervisor
Environmental Coordinator

PROTOCOL.

Prior to Dewatering

- Sample water to determine whether aquatic variables are within parameters including pollutants, metals, turbidity, salinity and dissolved oxygen.
- Identify water discharge sites in accordance with the Water Reuse and Discharge Management Procedure.
- Engage the project ecologist to undertaken a conduct an inspection to identify potential fauna or Pathogen hazards such as the presence of waterbird nests or Chytrid Fungus.
- Inspection report to detail additional mitigation measures to be implemented (if any).
- Where possible, avoid the nesting season of waterbirds
- Identify a suitable fauna relocation site and undertake assessment of receiving site including water quality testing, determination of resident species inhabiting the waterbody assessment of risks to both resident and relocated fauna.
- Any wetland bird species nests will require relocation prior to dewatering. This is to be done in consultation with project ecologist.
- Ecologist to notify DPI Fisheries prior to the activity to identify if licensing requirement are triggered (https://www.dpi.nsw.gov.au/contact-us/local-office)

Dewatering Supervision and Fauna Handling

- All dewatering is to be supervised by project ecologist and undertaken progressively over a number of days to allow fauna to relocate.
- Inlet valve of water pump should be paced within a netted exclusion box to reduce risk of aquatic fauna being sucked into pump. Outlet valves should be visible to project ecologist so that they can be monitored for unexpected fauna capture.
- Pump should be set up within bund that prevents petrochemical spills from entering dam boundaries.
- Plastic storage tubs should be kept to store any rescued fauna, including native fish and freshwater turtles until relocation can be completed. Fauna should be stored in a shady location.
- If a threatened species is identified that was not previously recorded in the EIS, the Environment Manager is to notify the Principal and the ER. Refer to Section 6.8.4 of the Preparatory CEMP for additional details on unexpected threatened fauna process.
- All non-native vertebrate fauna, including Easter Gambusia (*Gambusia holbrooki*), will be separated out from native fauna and euthanised in accordance with the project ecologist's Ethics Permit (refer to Guide to Acceptable Procedures and Practices for Aquaculture and Fisheries Research, DPI 2017).
- If dewatering requires multiple days and the banks of the dam have a steep gradient, egress ramps will be built to assist in natural migration of mobile species such as freshwater turtles.
- Once dewatering is complete, an excavator should gently remove loose sediments from the bottom of the dam under the supervision of the ecologist.
- Dewatering should cease if signs of fauna distress, including fish struggling to breath, are observed.
- All personnel undertaking in-water work to ensure that decontamination processes are followed (ie. Equipment and boots vehicles to be thoroughly cleaned prior to relocation activities)

Fauna relocation

- Fauna should be taken to a suitable habitat within a reasonable time from capture. For native fish including eels, this should be within two hours of capture or if signs of distress are observed.
- Release of fish should be done using water acclimatisation. When at the release site, water from the dam or creek which is being used for release should be introduced into the holding container in 15-minute increments so that the fauna can acclimatise.
- Once released, the project ecologist should observe the fauna until they are comfortable that the animals are not in distress; any fauna that show signs of distress or injury should be taken to the nearest animal hospital or rescue service.
- Records of fauna capture and release should be retained including date / time, species, personnel and applicable licensing and any euthanised fauna

IMAGE	SPECIES
	Name: Long-finned Eel *Anguilla reinhardtii* Status: Native
	Name: Short-finned Eel *Anguilla australis* Status: Native
	Name: Tadpole Status: Native
	Name: Eastern Long-necked Turtle *Chelodina longicollis* Status: Native
	Name: Red-eared Slider *Trachemys scripta elegans* Status: Non-native Euthanasia: Veterinarian required for euthanasia **NOTE: All staff have a general biosecurity duty to report records of this species to DPE under the Biosecurity Act 2015**
	Name: European Carp *Cyprinus carpio* Status: Non-native Euthanasia: Ice Water and Clove Oil
	Name: Mosquito Fish or Eastern Gambusia *Gambusia holbrooki* Status: Non-native Euthanasia: Ice Water and Clove Oil

WIRES	**1300 094 737**
RSPCA (Emergency Line)	**02 9770 7556**
Sydney Snake Catchers	**1300 599 938**
Small Animal Hospital - Ryde	**02 9889 0289**
Vet Hospital – St Marys	**02 98339321**
Vet Hospital – Orchard Hills	**02 47362027**
Vet Hospital – Rossmore	**02 96066984**

Appendix C6 – Nest Box Strategy

This Nest Box Strategy will be further developed following completion of detailed design and completion of pre-clearing inspections for native vegetation removal.

Nest boxes will be installed as a mitigation measure for:

- Removal of tree hollows;
- Removal of structures where hollow using microbats have been detected;
- Removal of under-road structures where microbat shave been detected.

One nest box will be installed for each hollow to be removed. Nest boxes will also be installed for stags with deep fissures suitable for microbats.

Where possible, nest boxes will be installed within the nearest accessible area of vegetation close to the site where the hollow or other feature is located. If there is no vegetation available within the project footprint close to the hollow bearing tree locations, attempts will be made to identify and access vegetation outside of the project footprint for deployment. CPBUI will identify if opportunities exist to use nest boxes to improve habitat connectivity for hollow dwelling fauna. This could include locating nest boxes along drainage lines bisected by the SCAW Project.

Nest boxes that are mitigating for known tree hollows (i.e. those identified during the Project BDAR and/or pre-clearing surveys) will be installed at least 30 days prior to the removal of the feature.

The number of hollows on each hollow bearing tree will be confirmed during clearing supervision. If more hollows are identified, additional nest boxes will be installed at a ratio of one nest box per additional hollow identified. Nest boxes will be installed within one month of the identification of additional hollows.

If microbats are found utilising abandoned buildings as habitat, next boxes will be installed in adjacent foraging habitat prior to demolition of the building. The number of nest boxes will be determined upon evaluation of the number of microbats using the structure, in consultation with the Project Ecologist.

Nest box type and size will be dependent on the species that that they are targeting. The size of the nest box and its entrance will be determined based estimates of structure and size undertaken during pre-clearing surveys. Where possible, nest boxes will be installed at a similar height and aspect to those they are replacing. For tree hollows, nest boxes will be installed using a ratio of one box for each hollow removed.

Nest boxes will be made out of hard durable materials and will be installed utilising the Habisure method detailed in Figure 1.

Nest boxes will be monitored 6-monthly for the duration of the SCAW Project. Monitoring will be undertaken using ground-based observation and pole cameras. Monitoring will evaluate nest box use and the condition of nest boxes. CPBUI will endeavour to undertake monitoring events during spring where greater activity may be occurring and where the monitoring event is not deemed to disturb any resident fauna during breeding season. The data collected during nest box monitoring would be used to guide better use of the next box/s (ie. remove pest fauna) and facilitate a better conservation outcome.

Nest boxes that are deteriorating prior to the completion of construction will be repaired or replaced.

Landscaping associated with SCAW would utilise predominantly native vegetation endemic to the region, sourced from the local area through the seed collection and salvage program where possible.

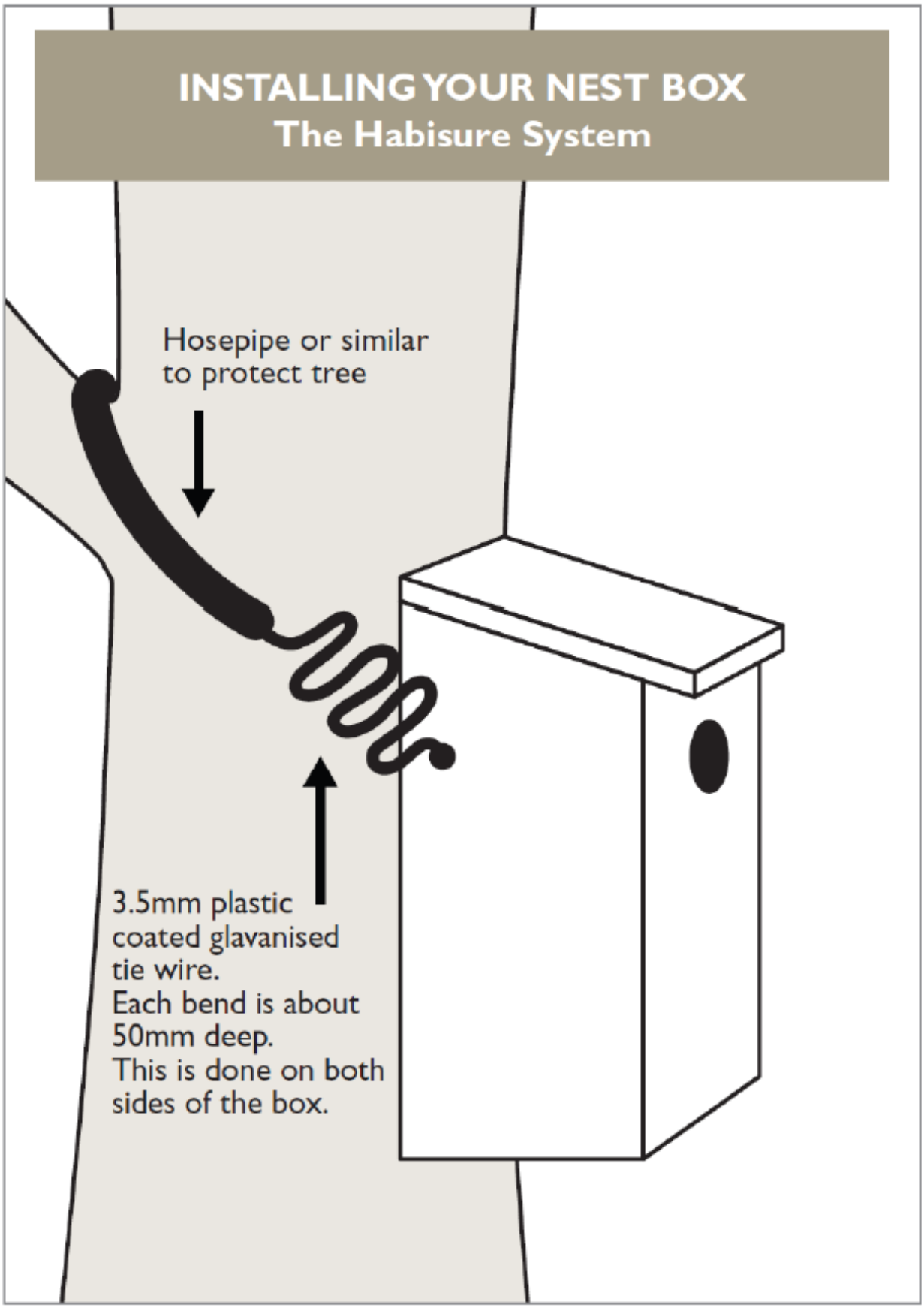


Figure 1 – Habisure © method for installing nest boxes (Source: Franks & Franks 2006)

Appendix C7 – Pre-clearing inspection form

Pre-Clearing Inspection Checklist

Project: Sydney Metro – Western Sydney Airport, Surface and Civil Alignment Works		**Site Location:**	
Area supervisor:		**Checklist completed by:**	
Preclearing Checklist Number:		**Clearing Start Date:**	
		Expected Completion Date:	
Planning Approval:	☐ **CSSI**	☐ **EPBC**	☐ **Airport Plan**

VEGETATION CLEARING LOCATIONS – ATTACH DRAWINGS / SKETCHES IF NECESSARY

		Y	N	Comments
1	Has the vegetation to be removed been clearly delineated?			
2	Has all trees / vegetation to be retained been identified and No-Go Areas sign posted & fenced off?			
3	Have habitat trees and nests been identified, recorded and appropriately marked? If so, list how identified:			
4	Have nest boxes been installed to offset habitat tree removal?			
4	Has the weed management strategy (including disposal) been communicated to site personnel? List pre-clearing weed management controls.			
5	Is there a risk of pathogens disturbance as a result of clearing works?			
6	Has an unexpected finds procedure for threatened or endangered species been communicated to site personal, including stop works, notification and revised approval requirements?			
7	Is the ecologist and/or fauna rescue personnel required to be present during clearing operations (e.g. for areas likely to contain threatened species/ protected environments)			
Vegetation Details				
1	Plant / Community Type to be removed:			
2	Area of disturbance / clearing (for offset tracking):			
3	Is any vegetation or material suitable for re-use? Has it been identified, recorded and appropriately marked?			
Additional comments/ requirements:				
Approval by Environmental Site Representative **Name:** **Signature:**		**Date:**		

Pre-Clearing and Grubbing Permit

SECTION 1 – REQUEST DETAILS			
Project	Sydney Metro – Western Sydney Airport – Surface and Civil Alignment Works		
Work Area		**Date**	
Area Supervisor		**Permit Expiry Date**	
Is the work area within the approved clearing boundary?	☐ Yes ☐ No	**Date disturbance to commence**	
Total disturbance area (ha)		**Work Pack Reference**	
Map	☐ Attached	**SWMS/EWMS Reference No**	
GPS Coordinates			
Pre-clearing Inspection Reference:			
Environmental Control Plan Reference:			
Are all other env approvals in place? (e.g. heritage, noise, comms notifications)			

SECTION 2 – PERMIT CONDITIONS				
		Area Supervisor to Complete		
		Date	Initial	Comments
2.1	Refer to completed **Pre-Clearing Inspection Checklist** for further requirements.			
2.2	Ground engaging equipment must be confirmed as weed free.			
2.3	Operators working in the area have been shown the clearing limits by Area Supervisor.			
2.4	Personnel undertaking works are appropriately trained and aware of environmental risks.			
2.5	Approved mulch storage locations are available, sign-posted and/or mapped and have been communicated to relevant workers			
2.6	Approved topsoil storage locations are available, sign-posted and/or mapped and have been communicated to relevant workers. Topsoil stockpiles to be less than 2m high.			
2.7	**Post Clearing Inspection Checklist** to be completed at completion of clearing			

SECTION 3 – PERMIT ISSUE (Completed by Permit Issuer)					
Permit Tracking Information	Permit #_____ Status: Received by Environmental Representative/Advisor: DD/MM/YY				
I confirm the work area is controlled and authorise work to proceed in strict accordance with the conditions stated in this Work Permit and associated Work Pack documents and Environmental Control Plans.					
Permit Issuer		**Signature**		**Date & Time**	

SECTION 4 – PERMIT ACCEPTANCE (Completed by Permit Holder)					
I confirm and accept the conditions stated in this Work Permit and associated work activity documents. I will ensure strict adherence to these conditions and all persons under my control will be advised accordingly.					
Permit Holder		**Signature**		**Date & Time**	

Equipment operators involved in clearing have been advised of all Permit conditions and understand limits of work and clearing controls.					
Name		**Signature**		**Date**	
Name		**Signature**		**Date**	
Name		**Signature**		**Date**	
Name		**Signature**		**Date**	
Name		**Signature**		**Date**	
Name		**Signature**		**Date**	
Name		**Signature**		**Date**	
Name		**Signature**		**Date**	

SECTION 5 – CLOSE OUT					
Project Environmental Representative Sign Off					
Name		**Signature**		**Date**	
Client Representative Sign Off (if needed)					
Name		**Signature**		**Date**	
Area Supervisor Sign Off					
Name		**Signature**		**Date**	

Appendix C8 – Proposed Clearing Program

Appendix C9 – SCAW Biodiversity Offset Credit Requirements

Vegetation Zone / Species Credit	SCAW Area (ha)	% of total area in SSI 10051	Number of Credits Associated With SCAW	Total area per PCT / species to be offset (ha)	Total credits per PCT / species to be offset	Area cleared to date (ha)*	Credits cleared to date	Permissible area remaining to cleared (ha)	Permissible credits to be able to be cleared
PCT 724 (Intact)	N/A	N/A	N/A	N/A	42	N/A	N/A	N/A	42
PCT 724 (Thinned)	4.03	58%	89.23	1.63		Nil	Nil	1.63	
PCT 724 (Scattered Trees)	1.38	98%	27.40	0.26		Nil	Nil	0.26	
PCT 835 (Intact)	1.34	100%	50.92	0.00	81	Nil	Nil	0.00	81
PCT 835 (Thinned)	3.78	86%	134.84	2.14		Nil	Nil	2.14	
PCT 835 (Scattered Trees)	0.40	81%	7.27	0.21		Nil	Nil	0.21	
PCT 849 (Thinned)	4.27	92%	166.77	1.23	56	Nil	Nil	1.23	56
PCT 849 (Scattered Trees)	1.27	80%	15.97	0.60		Nil	Nil	0.60	
PCT 1800 (Intact)	1.06	99%	35.60	0.87	97	Nil	Nil	0.87	97
PCT 1800 (Thinned)	4.29	100%	144.46	1.99		Nil	Nil	1.99	
Dillwynia tenuifolia	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Grevillea juniperina subsp. juniperina	2.63	99%	56.70	1.67	37	Nil	Nil	1.67	37
Pultenaea parviflora	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Southern Myotis	10.28	100%	292.00	4.32	123	Nil	Nil	4.32	37
Cumberland Plain Land Snail	2.07	40%	62.10	1.55	47	Nil	Nil	1.55	47