

Sydney Metro – Western Sydney Airport

Off-airport Biodiversity Staging Plan

May 2022

Sydney Metro – Western Sydney Airport

Off-airport Biodiversity Staging Plan

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Accepted on behalf of Sydney Metro by Hugh Chapman

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Definitions and Abbreviations

All terminology in this report is taken to mean the generally accepted or dictionary definition, except where defined in any applicable planning approvals. Relevant acronyms, abbreviations and terms used throughout this report are explained in the Table below.

Acronym / term	Term
AEW	Advanced and Enabling Works
Airports Act	<i>Airports Act</i> 1996
BAM	Biodiversity Assessment Method
BAMC	Biodiversity Assessment Method Calculator
BCF	Biodiversity Conservation Fund
BDAR	Biodiversity Development Assessment Report
EPBC BOS	EPBC Biodiversity Offset Strategy
BSA	Biodiversity Stewardship Agreement
CoA	Conditions of Approval
DAWE	Department of Agriculture, Water and the Environment
DECCW	NSW Department of Environment, Climate Change and Water (former)
DoP	NSW Department of Planning (former)
DPIE	Department of Planning, Industry and Environment
EPBC	<i>Environmental Protection and Biodiversity Conservation Act</i> 1999
EP&A Act	<i>Environmental Planning and Assessment Act</i> 1979 (NSW)
FAW	Finishing Auxillary Works
LGA	Local Government Area
MNES	Matters of national environmental significance
PCT	Plant Community Type
SBT	Station Boxes and Tunnelling
SCAW	Surface and Civil Alignment Works
SM	Sydney Metro
SMWSA	Sydney Metro – Western Sydney Airport
SSTOM	Stations, Systems, Trains, Operations and Maintenance
TBM	Tunnel boring machine
TfNSW	Transport for New South Wales
WSA	Western Sydney Airport

Certification Page

DECLARATION OF ACCURACY

I declare that:

1. To the best of my knowledge, all the information contained in, or accompanying this Management Plan^[1] Sydney Metro – Western Sydney Airport Off-airport Biodiversity Staging Plan is complete, current and correct.
2. I am duly authorised to sign this declaration on behalf of the approval holder.
3. I am aware that:
 - a. Section 490 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) makes it an offence for an approval holder to provide information in response to an approval condition where the person is reckless as to whether the information is false or misleading.
 - b. Section 491 of the EPBC Act makes it an offence for a person to provide information or documents to specified persons who are known by the person to be performing a duty or carrying out a function under the EPBC Act or the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth) where the person knows the information or document is false or misleading.
 - c. The above offences are punishable on conviction by imprisonment, a fine or both.

Signed

Full name and position

Hugh Chapman
Director of Environment, Sustainability & Planning - SMWSA

Organisation

Sydney Metro

Date

08/02/2022

^[1] Sydney Metro – Western Sydney Airport Off-airport Biodiversity Staging Plan, Version 0.5, February 2022

1. Introduction

1.1 Purpose of this report

This plan has been prepared and structured to address the Staging Plan requirements in accordance with Conditions of Approval (CoA) 12 to 14 of the off-airport EPBC Approval (EPBC 2020/8687).

Updates will be made as required, particularly following any changes to the delivery strategy. If the Sydney Metro – Western Sydney Airport EPBC off-Airport Biodiversity Staging Plan (the Staging Plan) is updated the latest version will be submitted to the Minister for the Environment for approval.

1.2 Background

Sydney Metro – Western Sydney Airport (the project) will be located within the Penrith and Liverpool Local Government Areas (LGAs) and will involve the construction and operation of a new metro railway line around 23 kilometres in length between the T1 Western Line at St Marys in the north and the Aerotropolis Core precinct in the south (the area to be called Bradfield). This will include a section of the alignment which passes through and provides access to Western Sydney International (Nancy-Bird Walton) Airport (Western Sydney International), currently under construction.

This Staging Plan covers the component of the project located to the north of Western Sydney International being the off-airport action from St Marys to Elizabeth Drive under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), hereafter referred to as 'the action'.

Key operational features of the project are shown on Figure 1 and an overview of the approved action off-airport is shown in Figure 2.

Key operational features of the action include:

- around 4.3 kilometres of twin rail tunnels (generally located side by side) between St Marys (the northern extent of the project) and Orchard Hills
- a cut-and-cover tunnel around 350 metres long (including tunnel portal), transitioning to an in-cutting rail alignment south of the M4 Western Motorway at Orchard Hills
- around 10 kilometres of rail alignment between Orchard Hills and Western Sydney International (the southern extent of the proposed action), consisting of a combination of viaduct and surface rail alignment
- three new metro stations:
 - St Marys (providing interchange with the existing Sydney Trains suburban rail network)
 - Orchard Hills
 - Luddenham Road
- grade separation of the track alignment at key locations including:
 - where the alignment interfaces with existing infrastructure such as the Great Western Highway, M4 Western Motorway, Lansdowne Road, Patons Lane, the Warragamba to Prospect Water Supply Pipelines, Luddenham Road, the future M12 Motorway, Elizabeth Drive, Derwent Road and Badgerys Creek Road
 - crossings of Blaxland Creek, Cosgroves Creek, Badgerys Creek and other small waterways to provide flood immunity for the project
- modifications to the existing Sydney Trains station and rail infrastructure at St Marys (where required) to support interchange and customer transfer between the new metro station and the existing Sydney Trains suburban rail network
- a stabling and maintenance facility and operational control centre located to the south of Blaxland Creek and east of the proposed metro track
- new pedestrian, cycle, park-and-ride and kiss-and-ride facilities, public transport interchange infrastructure, road infrastructure and landscaping as part of the station precincts.

The project will also include:

- turnback track arrangements (turnbacks) at St Marys to allow trains to turn back and run in the opposite direction
- additional track stubs to the east of St Marys Station to allow for potential future extension of the line to the north and south respectively without impacting future metro operations
- an integrated tunnel ventilation system including a services facility at Claremont Meadows
- all operational systems and infrastructure such as crossovers, rail sidings, signalling, communications, overhead wiring, power supply, lighting, fencing, security and access tracks/paths
- retaining walls at required locations along the alignment
- environmental protection measures such as noise barriers (if required), on-site water detention, water quality treatment basins and other drainage works.

Off-airport project components south of the airport

The off-airport components of the project also includes twin rail tunnels and associated operational systems and infrastructure south of Western Sydney International, a metro station, a services facility, turnbacks and additional track stubs.

The projects off-airport components south of Western Sydney International are subject to a separate approval process and not considered further within this Staging Report.

On-airport project components

The on-airport components of the project will include the track alignment and associated operational systems and infrastructure within Western Sydney International, two metro stations and a tunnel portal.

The on-airport components are subject to a separate approval process and not considered further within this Staging Report.

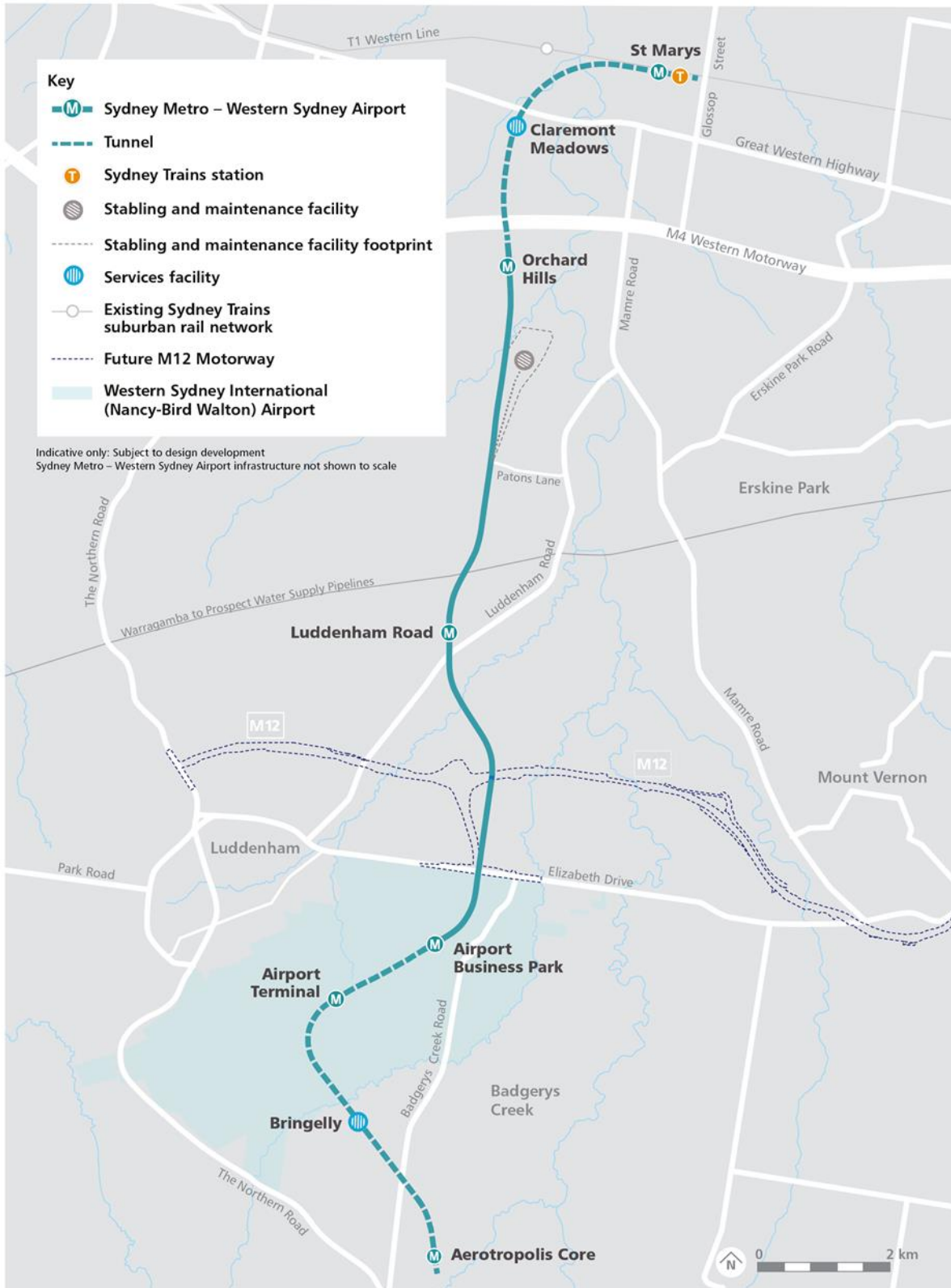


Figure 1: Project overview (indicative subject to detailed design)

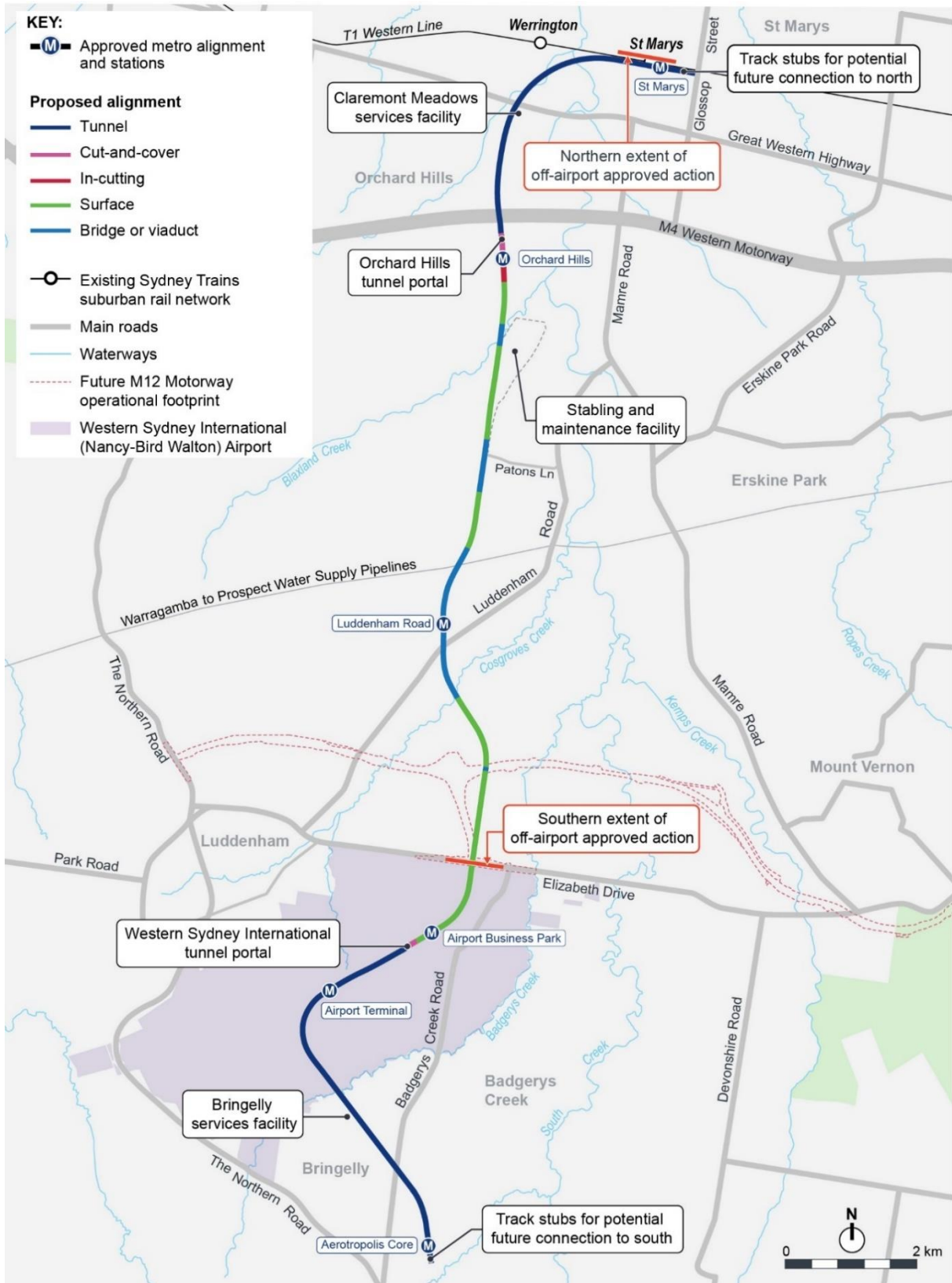


Figure 2: Overview of approved action off-airport

1.3 Compliance matrix

Table 1 cross-references sections in this plan that address each condition of approval relating to the Staging Plan.

Table 1: Relevant Staging Plan requirements from the EPBC Conditions of Approval (EPBC 2020/8687)

Conditions of approval	Detail	How the condition has been addressed
12	The approval holder must submit to the Minister, for approval, a Staging Plan in relation to the construction of the action, prior to commencement of the action.	This document is the Staging Plan in relation to construction of the action. Requirements prior to start of works are outlined in Section 5.1
13	The approval holder must implement the Staging Plan approved by the Minister.	This document is the Staging Plan in relation to construction of the action. Requirements prior to start of works are outlined in Section 5.1.
14	The Staging Plan must set out:	
	a) how the construction of the action will be staged, including details of clearing and other activities to be carried out in each stage;	Details of the construction stages are outlined in Section 3.2.
	b) mapping and delineation of the spatial location of each stage; and	A map showing the location of each biodiversity offset area is in Section 3.4.
	c) the planned timing of when construction of each stage will commence and finish.	Indicative timing for each stage is outlined in Section 3.3.

1.4 EPBC Biodiversity Offset Strategy for off-airport lands

Sydney Metro have completed a EPBC Biodiversity Offset Strategy (EPBC BOS) for off-airport lands (Sydney Metro, 2021a), in accordance with CoA 18, 19, 20 and 21 of the EPBC Approval (EPBC 2020/8687).

The overall objective of the EPBC BOS is to provide:

- a method for offsetting project impacts (including EPBC Act listed biodiversity) which cannot be avoided, minimised or mitigated
- a strategy consistent with the principles of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Environmental Offsets Policy to meet the project's off-airport biodiversity credit obligations identified in the Revised BDAR and Threatened Flora pre-clearance surveys (Sydney Metro, 2021b)
- address the requirements of the Conditions of Approval (EPBC 2020/8687) specifically Condition 18, 19, 20 and 21.

The project has been designed to avoid and minimise potential biodiversity impacts off-airport where possible, including by maximising spans of bridges and viaducts over riparian vegetation (Blaxland Creek/Cosgrove Creek) and areas with connectivity value (Lansdowne Road/ Patons Lane). The siting of construction sites and use of riparian buffer zones will also minimise impacts to biodiversity.

Where measures to avoid and mitigate impacts are not feasible or cost effective, then offset strategies can be used to compensate the residual impacts of the development on biodiversity. The biodiversity offset strategies for the action are:

- the purchase and retirement of existing biodiversity credits currently available on the biodiversity credit register

- through making a payment into the Biodiversity Conservation Fund.

The EPBC BOS includes:

- the maximum number and class of biodiversity credits that may be required to offset the impacts of the action on biodiversity values, which has considered: the quantum identified in the SMWSA EPBC Act Final Environmental Impact Assessment of off-airport proposed action (EPBC 2020/8687) (Sydney Metro, 2021c); the Revised Biodiversity Development Assessment Report (Revised BDAR) (Sydney Metro, 2021d) for the off-airport component of the project; and results from the Threatened Flora pre-clearance surveys (Sydney Metro, 2021b)
- a process for quantifying the impacts to biodiversity based on the final design of the action and quantifying the final number and class of biodiversity credits required to offset the residual impacts of action on protected matters
- details of how the credit requirement to offset the impacts from each stage of construction (as defined in this document) will be determined and reported
- how the offset requirements will be satisfied, including the timeframes by which offsets must be secured in relation to each stage of construction as defined within the EPBC off-Airport Biodiversity Staging Plan.

Sydney Metro will implement the approved EPBC BOS and the approved Staging Plan until a competition report is provided to the Approver.

2. Legislative, planning and policy context

2.1 Sydney Metro – Western Sydney Airport planning approvals

The three principal statutory schemes that govern the planning and assessment process for the project are:

- the *Environmental Planning and Assessment Act 1979* (NSW) (EP&A Act) - applies to works located on State land outside the boundary of Western Sydney International (off-airport)
- the *Airports Act 1996* (Cth) (Airports Act) - applies to works located within the boundary of Western Sydney International (on-airport)
- the *Environmental Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act):
 - for works located north of Western Sydney International (off-airport), assessment and approval is required under Part 8 and 9 of the EPBC Act to address impacts on listed threatened species and communities and Commonwealth land
 - for the lands located south of Western Sydney International (off-airport), impacts on matters of national environmental significance (MNES) and Commonwealth land have already been assessed and approved under a strategic assessment in accordance with Part 10 of the EPBC Act.

Figure 3 shows the statutory approval regime applicable to different areas of the project areas.

This plan addresses requirements under the EPBC Act for the works located north of Western Sydney International, as detailed in Table 1.

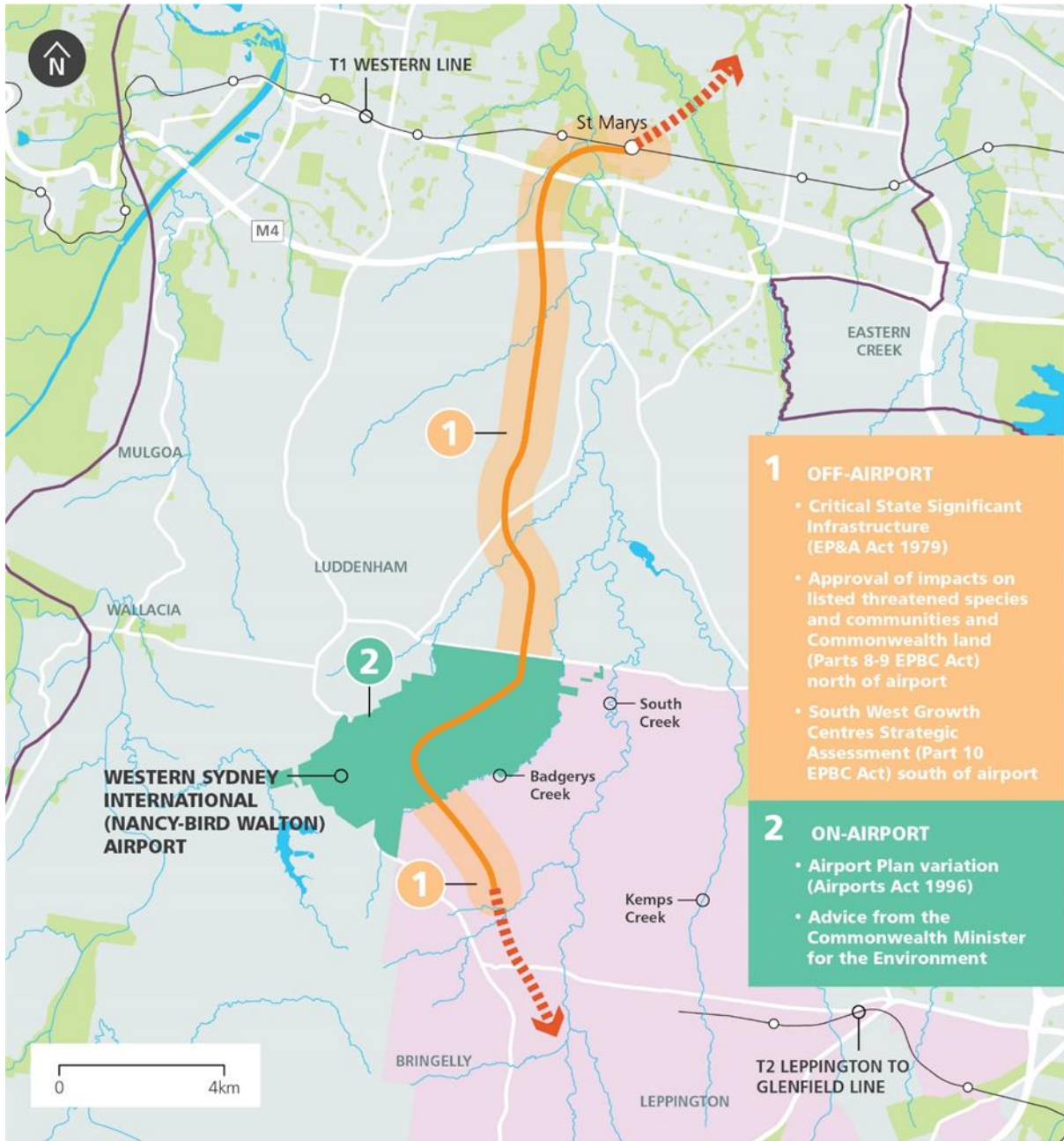


Figure 3: Sydney Metro Western Sydney Airport Planning Approval Strategy

3. Project Staging

3.1 Overview

The delivery strategy for SMWSA continues to be refined following feedback received from stakeholder and industry consultation.

Delivery strategy

Sydney Metro Western Sydney Airport will be delivered by multiple delivery partners (Principal Contractors). The delivery strategy outlines how Sydney Metro will engage with the market to deliver the project in consideration of sequencing, timing and duration, geographic presence, funding, risk, construction methodology and market-related constraints (refer Figure 4).

Each delivery partner and Sydney Metro are responsible for complying with relevant requirements of any planning approvals that apply to the project, including the EPBC Approval. An allocation of responsibilities is defined in contracts between Sydney Metro and delivery partners.

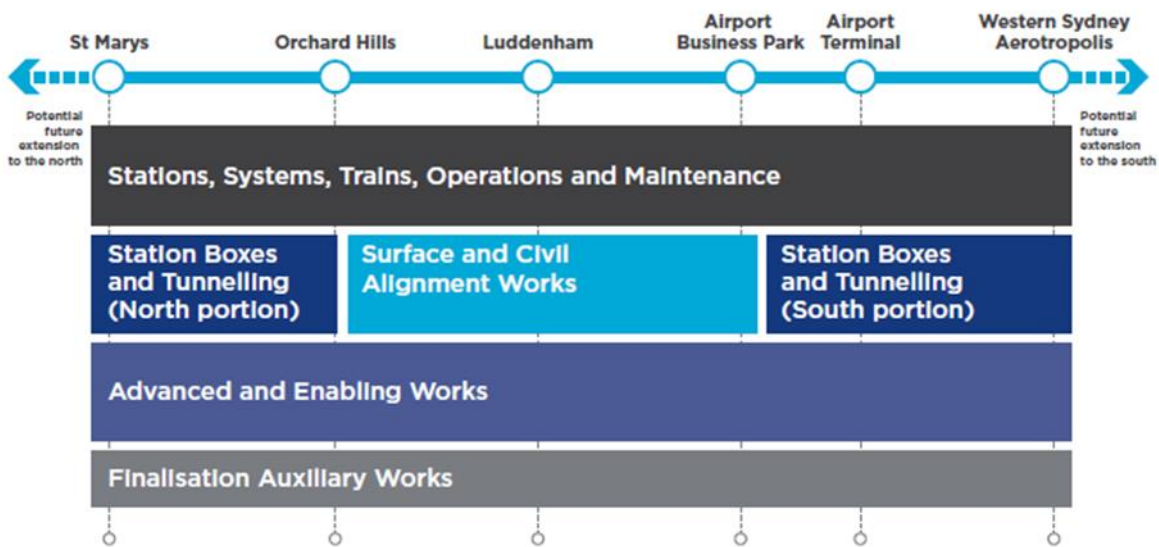


Figure 4: Sydney Metro Western Sydney Airport delivery strategy

3.2 Construction stages

The sections below detail the off-airport scope of works for each construction package, as relevant to the EPBC Approval (EPBC 2020/8687).

3.2.1 Advanced and Enabling Works (AEW)

Enabling works for the project are required to establish key construction sites and facilitate construction activities. The majority of the enabling works will commence in advance of the main construction works, such as tunnelling and station excavation, while some enabling works will continue concurrently with the main construction works.

The following will be undertaken in the AEW package of works off-airport:

- preparatory works such as site investigation, demolition, and modifications to the existing road network
- vegetation clearing works will be undertaken to facilitate construction however, construction of the AEW stage does not involve the clearing of EPBC Act listed vegetation or impacts for which biodiversity offsets are required EPBC Approval (EPBC 2020/8687) and as such are not considered further in this document.
- power supply for tunnel boring machines (TBMs) from Claremont Meadows Substation to Orchard Hills Intermediate Services Facility, with associated underbores under the M4 Motorway at Kent Road
- construction power supply for St Marys and Claremont Meadows Services Facility

- stormwater diversion at St Marys adjacent to the railway station
- some demolition works
- concurrent management of work sites
- utility adjustments as required to facilitate the project.

Utility infrastructure (such as road, water, power or other utilities) may also be undertaken under separate assessment and planning approvals in support the broader Western Parkland City and could be used by the project for construction or operational purposes. These works are not considered within the AEW scope that is documented within this Staging Plan.

3.2.2 Station Box and Tunnelling (SBT)

The SBT stage includes construction of:

- around 4.3 kilometres of twin rail tunnels (generally located side by side) between St Marys (the northern extent of the proposed action) and Orchard Hills, plus associated portal dive structures and tunnel support activities
- station box excavations with temporary ground support at St Marys, Orchard Hills, and one intermediate service facilities at Claremont Meadows.

The tunnel and excavation method will be driven by ground conditions likely to be encountered during construction, the project design and program. The methodology described below is indicative and will be developed by the construction contractor(s) when appointed.

Tunnel excavation methodologies for the project will include:

- bored tunnels for the St Marys to Orchard Hills alignment
- other techniques including the use of road-headers or excavators to excavate non-standard sections of tunnels including cross-passages and tunnel stubs.

Vegetation clearing works will be required within the footprint of the SBT site to facilitate construction including clearing of: Cumberland Plain Shale Woodlands and Shale- Gravel Transition Forest (PCT 724 and 849); and *Pultenaea parviflora*. Clearing works for SBT will occur at St Marys, Claremont Meadows and Orchard Hills.

3.2.3 Surface and Civil Alignment Works (SCAW)

The project will include the construction of bridges and viaducts to cross floodplains, watercourses and existing and proposed permanent infrastructure. The following will be undertaken in the SCAW package of works:

- approximately 3.7 kilometres of viaduct structures in three sections
- approximately 6.7 kilometres of formation for the support of on grade railway track in six sections including embankments and cuttings:
 - M12 Rail Overbridge, including foundations, bearings, abutments and superstructure
 - Western Sydney Airport drainage swale overbridge, including foundations, bearings, abutments, transitions, superstructure and interfaces with the M12, Elizabeth Drive and Airport access roads
- civil work for the stabling and maintenance facility at Orchard Hills including earthworks
- temporary and permanent access roads

It is anticipated the viaducts and bridges will be constructed using cast in-situ concrete piles, columns and headstocks with precast girders between the columns. The precast viaduct and bridge sections will be manufactured and stored at a dedicated precast facility within Western Sydney International. The precast sections will be transported via trucks on the road network.

The viaduct and bridge construction method will include:

- substructure construction, likely to be from cast in-situ concrete in the following sequence:
 - bored pile construction
 - pile cap construction including localised excavation

- pier or column construction
- headstock construction
- construction of the superstructure, likely through the placement of precast concrete segments (typically through the use of a viaduct gantry or crane).

Cast in-situ construction may be employed where the design or the presence of existing infrastructure precludes the use of precast bridge or viaduct segments.

Earthworks (for example, cuttings and embankments) will also be required at locations along the project alignment to achieve required levels for the surface track alignment.

Additionally, vegetation clearing works will be required within the footprint of the SCAW site to facilitate construction. These works will include clearing of: Coastal Swamp Oak (*Casuarina glauca*) Forest of New South Wales and South East Queensland ecological community (PCT 1800); Cumberland Plain Shale Woodlands and Shale- Gravel Transition Forest (PCT 849); and *Grevillea juniperina subsp. Juniperina*. Clearing works will occur between Orchard Hills and Badgerys Creek.

3.2.4 Stations, Systems, Trains, Operations and Maintenance (SSTOM)

The following will be undertaken in the SSTOM package of works:

- station fit out, precinct and transport integration works
- finishing works and testing and commissioning
- operation of the Western Sydney Airport metro service.

Vegetation clearance is not anticipated to form part of the SSTOM scope of works as clearing will have been completed during earlier construction stages.

3.2.5 Finishing Auxiliary Works (FAW)

The FAW stage is still being developed at the time of this report, however the FAW stage of the project does not include any biodiversity offset requirements as all vegetation clearing will have been completed during earlier construction stages.

3.2.6 Operation stages

Staged operation is not currently proposed.

The SSTOM stage is the only stage of the project with an operational component (i.e. the project comprises of only one operational stage). The operational stage of the project does not include any biodiversity offset requirements as all vegetation clearing will have been completed during earlier construction stages.

3.3 Indicative timing

Indicative timing for clearing of each construction stage is outlined in Table 2. Clearing of stages may be done sequentially or concurrently. Where done concurrently the biodiversity offset obligations will be satisfied for all areas that are to be cleared. In either case, biodiversity offset retirement requirements will be met prior to commencement of construction of that stage.

Each construction stage has differing levels of biodiversity impact. Offset obligations for each stage are detailed in the EPBC BOS (Sydney Metro, 2021a).

Construction of the project is scheduled to commence in late 2021 and be complete by the end of 2025.

Table 2: Indicative timeframes for each stage (timing is subject to change)

Stage	Construction commencement date	Construction completion date
AEW	<i>Q4 2021</i>	<i>Q2 2022</i>
SBT	<i>Q1 2022</i>	<i>Q4 2024</i>
SCAW	<i>Q3 2023</i>	<i>Q2 2025</i>
SSTOM	<i>Q4 2024</i>	<i>Q4 2025 (operation ongoing)</i>

Note:

- **Bold** indicates completed dates
- *Italics* indicates indicative future dates that are subject to change

3.4 Location of each stage

The location of each stage is shown in Figure 5 and Figure 6.

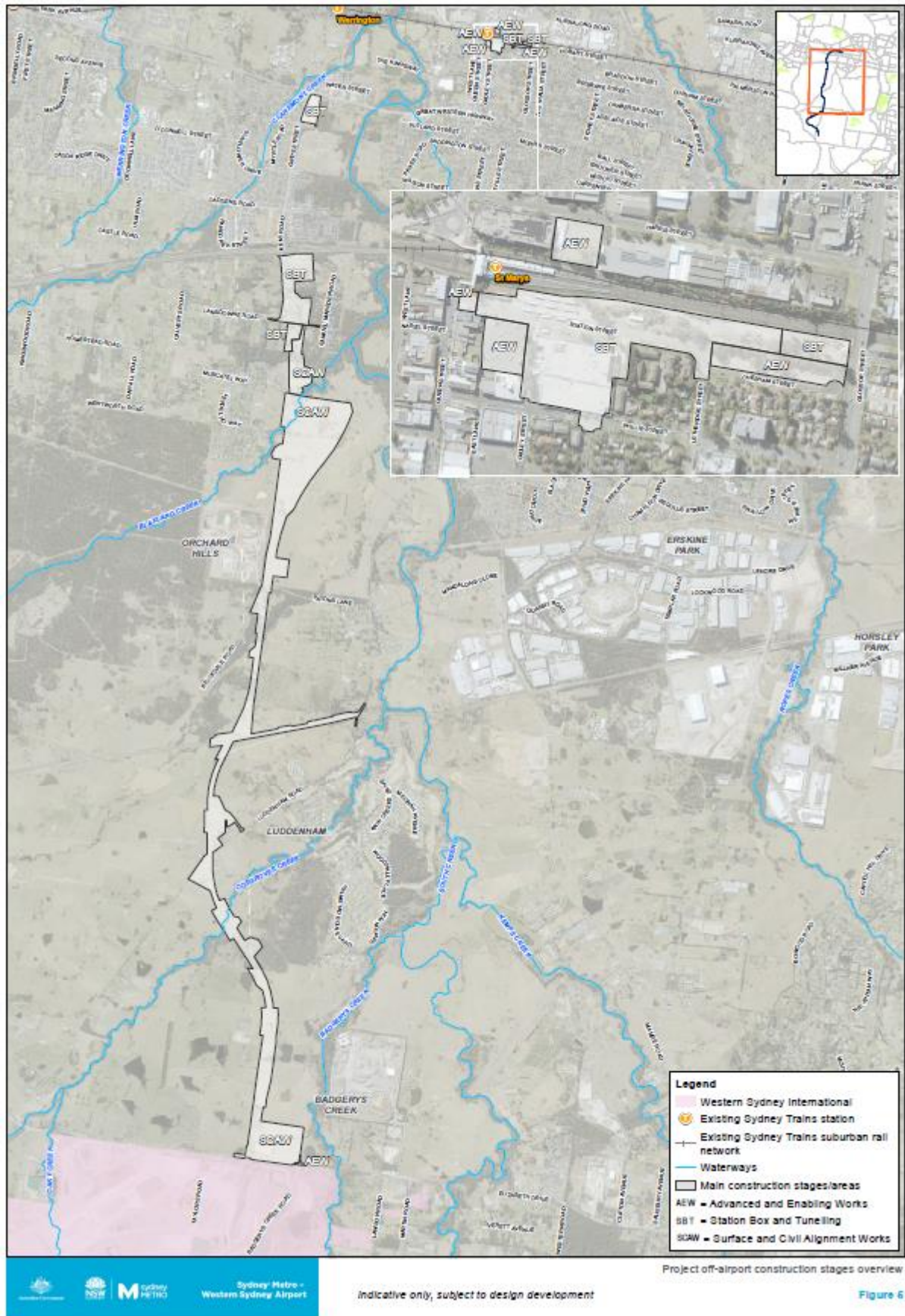


Figure 5: Project off-airport construction stages overview

Sydney Metro – Western Sydney Airport
Off-airport Biodiversity Staging Plan



Figure 6a: Project off-airport construction stages/areas and biodiversity values to be offset

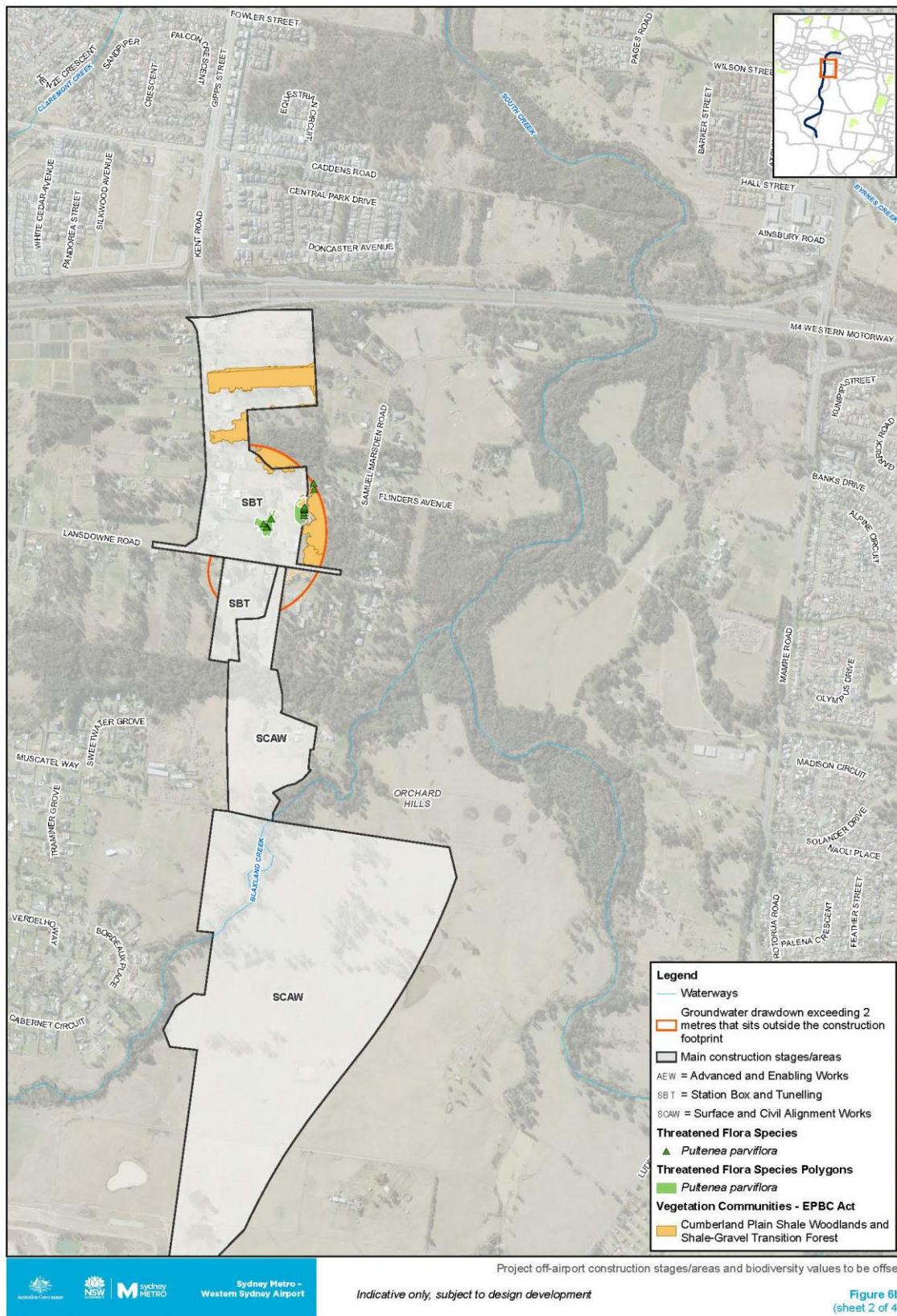


Figure 6b: Project off-airport construction stages/areas and biodiversity values to be offset

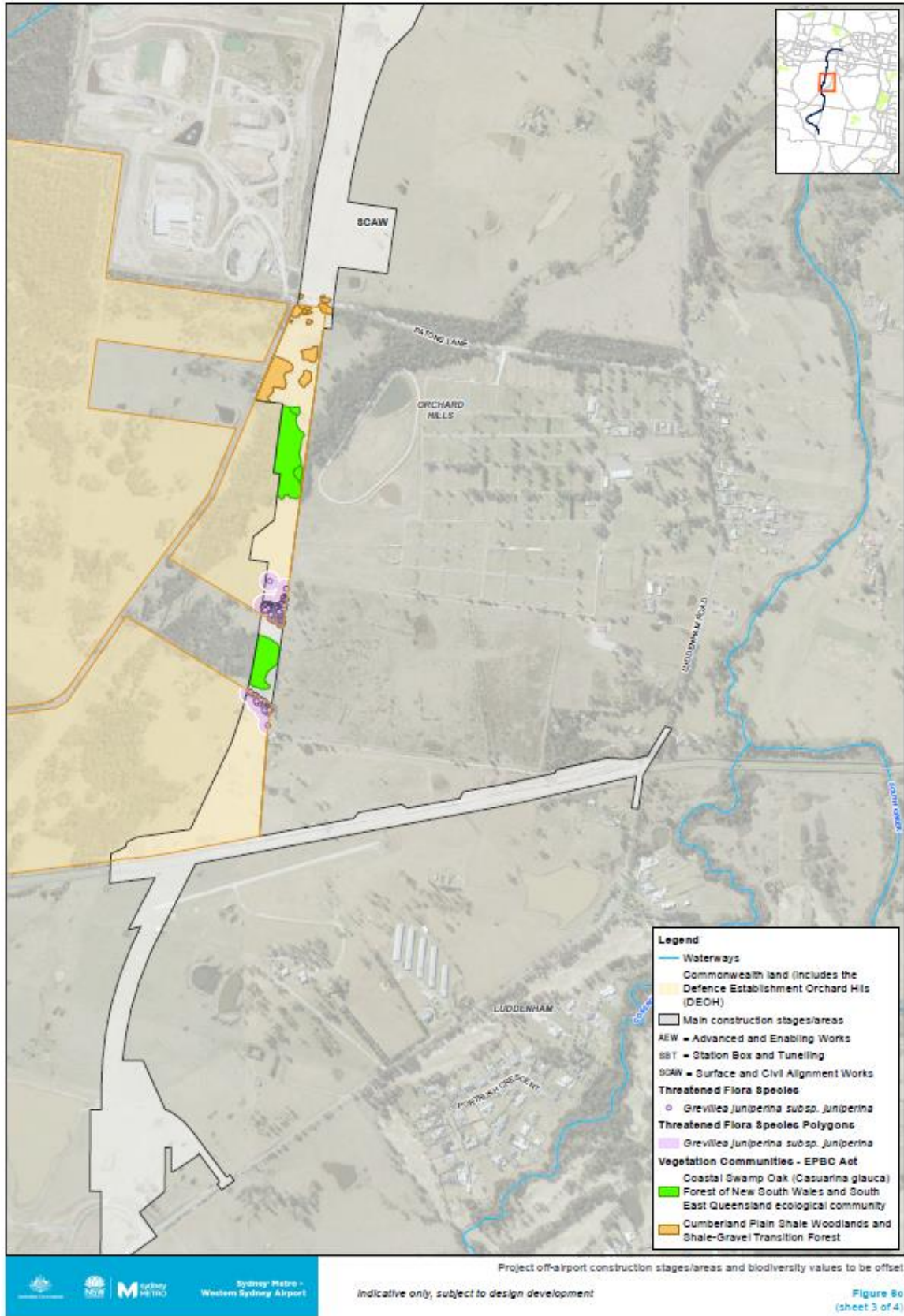


Figure 6c: Project off-airport construction stages/areas and biodiversity values to be offset

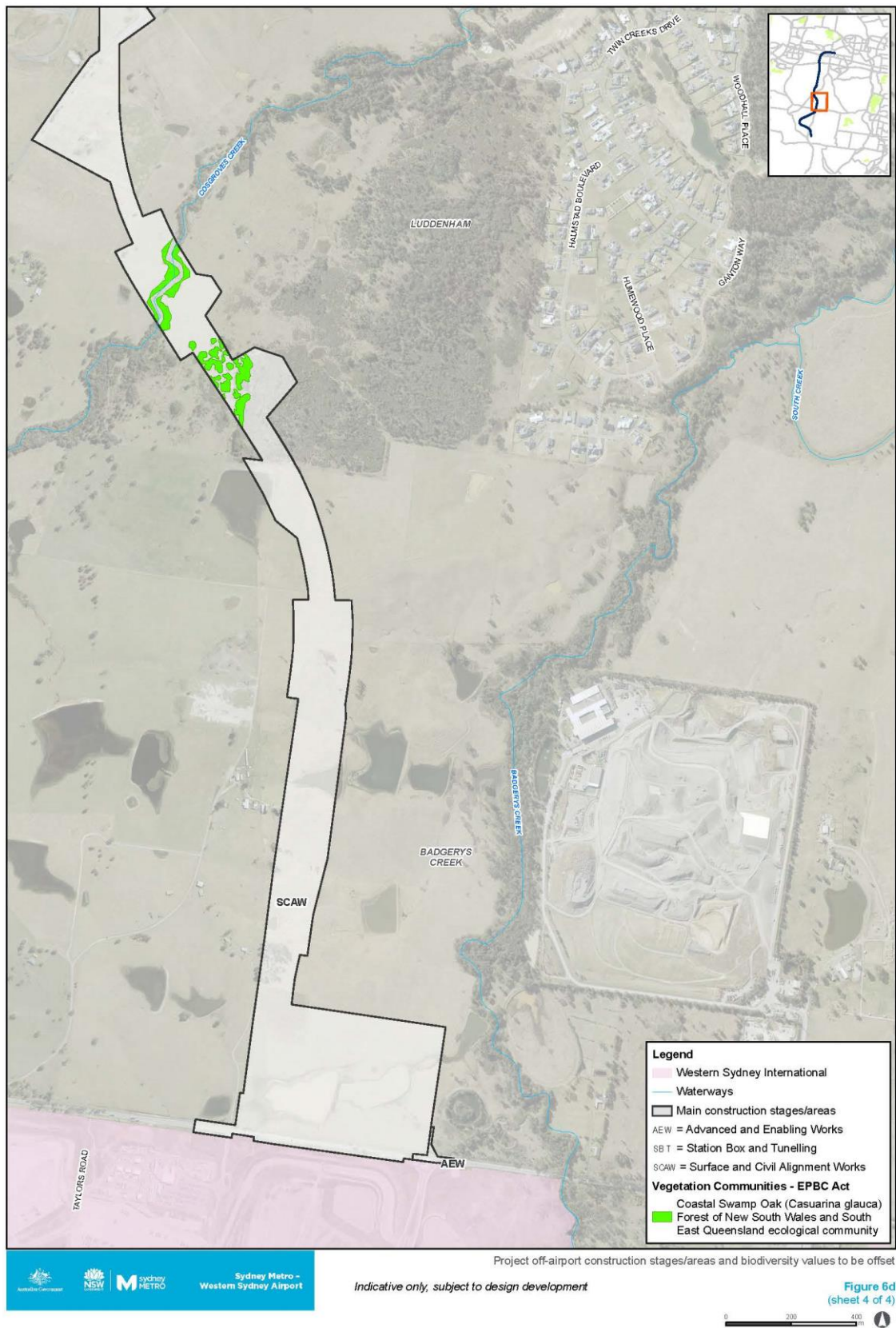


Figure 6d: Project off-airport construction stages/areas and biodiversity values to be offset

4. Project offset requirements

4.1 Biodiversity offset requirements

The biodiversity offset requirements as reported in the Revised BDAR and updated following Threatened flora pre-clearance surveys have been quantified using BAM 2017 and calculated using the Biodiversity Assessment Method Calculator (BAM-C).

Residual impacts that are not able to be managed through mitigation will be offset in accordance with the NSW Biodiversity Assessment Method (BAM) based on the Biodiversity Assessment Method Calculator (BAMC) calculations for both ecosystem and species credits. The BAM is an endorsed framework under the EPBC Act. Ecosystem and species credits were assessed in the Revised BDAR (Sydney Metro, 2021d) and further refined based on the results of the Threatened Flora pre-clearance surveys completed in November 2021 (Sydney Metro, 2021b).

The biodiversity offset requirements for the project have been divided into:

- on-airport ecosystem and species credits (refer to the on-airport Rail BOS and Airport Biodiversity Staging Report). These credit requirements are not considered further in this report
- off-airport ecosystem and species credits which meet the BC Act criteria (outlined in Section 4.1.1), including MNES
- off-airport ecosystem and species credits which meet the EPBC Act criteria (outlined in Section 4.1.2 and the off-airport EPBC BOS).

4.1.1 Total ecosystem and species credits requirements assessed in the Revised BDAR and Threatened flora pre-clearance surveys, including MNES

The Revised BDAR and Threatened Flora pre-clearance surveys have assessed impacts within the off-airport construction footprint north of Western Sydney International and calculated that the following State biodiversity credits will be required for the off-airport component of the project:

- up to 848 ecosystem credits which includes:
 - up to 246 ecosystem credits for PCT 724 - Broad-leaved Ironbark -Grey Box -Melaleuca decora grassy open forest on clay/gravel soils of the Cumberland Plain, Sydney Basin Bioregion
 - up to 217 ecosystem credits for PCT 835 - Forest Red Gum - Rough-barked Apple grassy woodland on alluvial flats of the Cumberland Plain, Sydney Basin Bioregion
 - up to 204 ecosystem credits for PCT 849 - Grey Box -Forest Red Gum grassy woodland on flats of the Cumberland Plain, Sydney Basin Bioregion
 - up to 181 ecosystem credits for PCT 1800 - Swamp Oak open forest on river-flats of the Cumberland Plain and Hunter valley.
- up to 539 species credits which includes:
 - up to 21 species credits for *Dillwynia tenuifolia*
 - up to 57 species credits for *Grevillea juniperina subsp. juniperina* (Juniper-leaved Grevillea)
 - up to 10 species credits for *Pultenaea parviflora*
 - up to 159 species credits for *Meridolum corneovirens* (Cumberland Plain Land Snail)
 - up to 292 species credits for *Myotis Macropus* (Southern Myotis).

4.1.2 EPBC ecosystem and species credits requirements

The Revised BDAR assessment of PCTs and corresponding BAM-C calculation of residual ecosystem credit requirement to be offset was determined against each individual vegetation zone of similar condition, in accordance with BAM. However, not all PCT vegetation zone areas being offset in accordance with BAM meet the minimum condition and area criteria thresholds for the corresponding EPBC Act Threatened ecological communities as the Revised BDAR assesses both EPBC Act and BC Act listed PCTs and species.

Therefore, for the purposes of this Staging Plan, the offset credit requirement for impacted EPBC Act listed Threatened ecological communities has been determined, as a proportion of the total credit

liability for corresponding PCTs being offset across the project, in accordance with BAM. Similarly, the species offset credit requirements for the BC Act listed *Grevillea juniperina subsp. juniperina* included within the Revised BDAR was calculated for the total area of impact across the off-airport components of the project.

The following Commonwealth biodiversity credits will be required for the off-airport component of the project:

- up to 317 ecosystem credits which includes:
 - up to 105 ecosystem credits for PCT 724 - Broad-leaved Ironbark -Grey Box -Melaleuca decora grassy open forest on clay/gravel soils of the Cumberland Plain, Sydney Basin Bioregion
 - up to 46 ecosystem credits for PCT 849 - Grey Box -Forest Red Gum grassy woodland on flats of the Cumberland Plain, Sydney Basin Bioregion
 - up to 166 ecosystem credit for PCT 1800 - Swamp Oak open forest on river-flats of the Cumberland Plain and Hunter valley
- up to 10 species credits for *Pultenaea parviflora*.

Additionally the following credits are required for impacts to biodiversity on Commonwealth land:

- up to 15 species credits for *Grevillea juniperina subsp. juniperina* on the Defence Establishment Orchard Hills site.

Further reduction to biodiversity impacts will be considered through implementation of mitigation measures FF1, FF10 and FF11 as detailed in the Sydney Metro – Western Sydney Airport EPBC Act Final Environmental Impact Assessment of off-airport proposed action (EPBC 2020/8687) (Sydney Metro, 2021c), as well as development of construction planning, and detailed design.

The maximum number of Commonwealth ecosystem credits and species credits required by the off-airport component of the project and the process for quantifying the impacts to biodiversity based on the final design of the action is detailed in the EPBC BOS (Sydney Metro, 2021a). The EPBC BOS also details the ecosystem and species credits requirements for each stage of construction.

4.2 Biodiversity offset process

The EPBC BOS seeks to purchase available Biobanking biodiversity credits or pay into the Biodiversity Conservation Fund.

4.2.1 Purchase and retirement of existing biodiversity credits

4.2.1.1 Credit purchase

The NSW Biodiversity Offsets Scheme provides for conservation of offset sites under a biodiversity stewardship agreement (BSA). Sydney Metro can purchase biodiversity credits from a BSA site to meet their offset requirement.

To purchase credits Sydney Metro must:

- identify 'like-for-like' credits in the market through the NSW Biodiversity Offset Scheme public registers or other means such as reverse tenders. The like-for-like ecosystem credit class options for each biodiversity offset credit obligation are summarised in Table 12.12 of the Revised BDAR (Sydney Metro, 2021d)
- negotiate a sale agreement with the vendor
- purchase the appropriate credits from the vendor and start the transfer process as outlined in section 4.2.1.2.

4.2.1.2 Credit transfer

Once sale of the biodiversity credits has been agreed the credits will need to transfer from the vendor to Sydney Metro.

To transfer biodiversity credits the following must occur:

- complete and submit the transfer form including any accompanying documentation to NSW Department of Planning, Industry and Environment (DPIE)

- pay the transfer fee. This may also include a payment towards the total fund deposit for the stewardship site which the vendor pays
- DPIE will process the application and the credit owner will be notified when the transfer has been approved
- the Biodiversity Offset Scheme public registers will be updated.

4.2.1.3 Credit retirement

Before development works start the credits must be retired to offset impacts from a project on biodiversity values.

To retire biodiversity credits the following must occur:

- complete and submit the retirement form including any accompanying documentation to DPIE
- pay the retirement fee
- DPIE will process the application and the credit owner will be notified when retirement of the credits has been completed
- within three months of retiring credits the approval holder must submit evidence of the retirement to the Department of Agriculture, Water and the Environment (DAWE).

Retired credits are removed from the market and can no longer be traded. Once the necessary credits have been retired for a particular stage Sydney Metro can proceed with project works for that stage in accordance with their approval.

4.2.2 Purchase of credits from the Biodiversity Conservation Fund

The NSW Biodiversity Offset Scheme provides an option of making a payment into the Biodiversity Conservation Fund (BCF) which is managed by the Biodiversity Conservation Trust (BCT). The responsibility for delivering credit requirements is then transferred to the BCT.

Sydney Metro will make a payment into the BCF prior to the commencement of construction of the relevant construction stage where this option is implemented.

To retire credits through the BCF Sydney Metro must:

- use the offsets payment calculator to determine the cost of the credit obligation
- pay this amount into the BCF. The BCT is then responsible for identifying and securing the credit obligation
- within three months of purchasing credits the approval holder must submit evidence of the purchase to DAWE.

Payment into the fund is available as an option as soon as a development has been approved and there is a legal requirement to retire credits.

Once the offsets requirement for a particular stage have been paid for Sydney Metro can proceed with project works for that stage in accordance with their approval.

5. Compliance

Sydney Metro will implement the Staging Plan that has been approved by the Minister.

5.1 Start of works

Sydney Metro will not commence the action, as defined in EPBC Act referral 2020/8687, until:

- this Staging Plan has been submitted to, and approved by, the Minister for Environment
- the EPBC BOS has been submitted to, and approved by, the Minister for Environment
- the Biodiversity Management Plan has been submitted to, and approved by, the Minister for Environment.

Additionally where works will involve impacts to vegetation, credits will be retired, or payment made to the BCF before works for a stage commence.

5.2 Review and update of the Staging Plan

A review of this Staging Plan is to be conducted in the following instances:

- changes to delivery strategy: As Sydney Metro Western Sydney Airport progresses it is possible that the delivery strategy will change such that the stages outlined in this report also change. Where this occurs, Sydney Metro will undertake a review to confirm how planning approval requirements apply to new or modified stages and subsequently update this Staging Plan if required
- changes to the project that relate to biodiversity requirements
- if recommended by an independent audit
- at the request of DAWE (if reasonable)
- within one month of changes to the EPBC BOS that are not minor or administrative in nature.

If any changes are required to the Staging Plan as a result of a review, this report will be updated and submitted to the Minister for further approval. Revisions to the Staging Plan, if required, must be authorised by SMWSA in accordance with the Sydney Metro delegation's schedule.

5.3 Reporting

5.3.1 Report of retirement or purchase

In accordance with CoA 17, within three months of retiring, or purchasing, credits Sydney Metro will submit evidence of the retirement, or purchase, to the DAWE.

5.3.2 Reporting on the final offset obligations

The final quantification of and delivery of offset liability in accordance with BAM will be determined based on a vegetation clearing report supporting the final design and construction planning. During design development for the project the biodiversity impacts, offset obligations and credit calculations will be reviewed, and if necessary updated.

The EPBC BOS (Sydney Metro, 2021a) provides details of how the credit requirement related to each stage of construction will be determined and reported.

5.3.3 Completion report

In accordance with CoA 40, within 20 business days after the completion of the action, the approval holder must notify DAWE in writing and provide completion data.

Completion data includes:

- an environmental report detailing how the conditions of the EPBC Approval (EPBC 2020/8687) have been met
- shapefiles of the study area shown in the EPBC Act Final Environmental Impact Assessment of off-airport proposed action and Revised BDAR with a comparison to the actual total cleared areas

- details of the total area and type of vegetation cleared within the study area
- final quantification of biodiversity offset requirements.

6. References

NSW Department of Environment, Climate Change and Water (DECCW) and Department of Planning (DoP), 2010, Sydney Growth Centres Strategic Assessment Program Report,

Sydney Metro, 2021a, EPBC Biodiversity Offset Strategy for off-airport lands, Unpublished report prepared by M2A

Sydney Metro, 2021b, Sydney Metro Western Sydney Airport – St Marys to Elizabeth Drive, NSW EPBC Approval (2020/8687) Conditions 3-5 flora pre-clearance surveys, unpublished memo prepared by M2A

Sydney Metro, 2021c, SMWSA EPBC Act Final Environmental Impact Assessment of off-airport proposed action (EPBC 2020/8687), prepared by M2A, Available:
<https://www.sydneymetro.info/sites/default/files/2021-11/EPBC-Act-Final-Off-Airport-EIA-Vol-2-App-A.pdf>

Sydney Metro 2021d, Sydney Metro – Western Sydney Airport, Revised Biodiversity Development Assessment Report, prepared by M2A, Available:
<https://www.sydneymetro.info/sites/default/files/2021-11/EPBC-Act-Final-Off-Airport-EIA-Vol-2-App-A.pdf>