

# The Cumberland Plain Conservation Plan

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A conservation plan  
for Western Sydney to 2056

2022

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The version of the Cumberland Plain Conservation Plan (CPCP) submitted with the biodiversity certification application and referred to in the order conferring certification, is dated November 2021. The CPCP has been amended for publication to include some minor updates that do not change the scope of the CPCP or its commitments, some minor editorial changes, and to ensure accessibility requirements are met.

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## Acknowledgement of Country

The development of the Cumberland Plain Conservation Plan acknowledges more than 60,000 years of continuous Aboriginal connection to the land that makes up NSW.

This plan recognises that, as part of the world's oldest living culture, traditional Aboriginal and Torres Strait Islander owners and custodians of the Australian continent share a unique bond to Country – a bond forged through thousands of years of travelling across lands and waterways for ceremony, religion, trading and seasonal migration.

Aboriginal peoples maintain a strong belief that if we care for Country, it will care for us. The area covered by the Cumberland Plain Conservation Plan is cared for by 3 Aboriginal groups: the Darug, Dharawal and Gundungurra. Others, such as the Eora, Darkinjung, Wiradguri and Yuin maintain trade or other obligatory care relationships with the area. The Deerubbin, Gandangara and Tharawal Local Aboriginal Land Councils also have local land holdings and responsibilities towards Aboriginal peoples living in the area.

This significant connection to Country has played an important part in shaping this plan.

For Traditional Owners, Country takes in everything within the physical, cultural and spiritual landscape – landforms, waters, air, trees, rocks, plants, animals, foods, medicines, minerals, stories and special places. It includes cultural practice, kinship, knowledge, songs, stories and art, as well as spiritual beings and people: past, present and future.

# Contents

<b>Minister’s foreword</b> .....	<b>1</b>
<b>Executive summary</b> .....	<b>1</b>
<b>Introduction</b> .....	<b>1</b>
Strategic conservation planning in Western Sydney .....	1
The Cumberland Plain Conservation Plan.....	1
Legislative context.....	5
How to read this plan.....	7
<b>Scope</b> .....	<b>10</b>
CPCP Area .....	10
Conservation values.....	10
Development activities covered by the CPCP .....	11
Meeting the vision of the CPCP .....	13
Aboriginal cultural knowledge .....	17
Environmental trends .....	18
Supporting delivery of the Premier’s Priorities.....	19
<b>Development</b> .....	<b>21</b>
Western Sydney City Deal .....	22
Greater Sydney Region Plan and Western City District Plan.....	22
Future Transport Strategy 2056.....	22
Future urban development areas in Western Sydney .....	23
Development in the nominated areas .....	23
Categories of land under the CPCP.....	25
<b>Description of actions</b> .....	<b>35</b>
Urban and industrial development .....	36
Infrastructure .....	37
Intensive plant agriculture in the Agribusiness Precinct.....	39
Western Sydney major transport corridors .....	39
<b>The conservation program</b> .....	<b>47</b>
Addressing impacts .....	47
The conservation priorities method.....	49
The strategic conservation area.....	49
Deliverables of the conservation program .....	52
Protecting matters of national environmental significance .....	60
The CPCP commitments.....	62
<b>Implementation and assurance framework</b> .....	<b>86</b>
Governance .....	86
Funding.....	89
Implementation through planning controls.....	89
Compliance.....	90
Establishing conservation land as offsets.....	92
Evaluation.....	104

<b>Appendix A. Accessing EPBC approval for essential infrastructure development in the avoided land .....</b>	<b>107</b>
<b>Appendix B. The CPCP avoidance criteria .....</b>	<b>112</b>
<b>Appendix C. CPCP commitments .....</b>	<b>115</b>
<b>Appendix D. EPBC Act and BC Act matters to be offset through the CPCP .....</b>	<b>122</b>
<b>Appendix E. Species and TEC-specific mitigation measures .....</b>	<b>127</b>
<b>References .....</b>	<b>149</b>

## Figures

Figure 1. Priority conservation actions in the first 5 years of the CPCP .....	3
Figure 2. Draft Cumberland Plain Conservation Plan and sub-plans .....	4
Figure 3. Legislative process to deliver the vision of the CPCP .....	5
Figure 4. Cumberland Plain Conservation Plan Area and scope .....	12
Figure 5. Program logic to deliver the vision of the CPCP .....	13
Figure 6. Cumberland Plain Conservation Plan long-term outcomes.....	15
Figure 7. Hierarchy of strategic planning for the Western Parkland City .....	24
Figure 8. Greater Penrith to Eastern Creek Investigation Area .....	30
Figure 9. Western Sydney Aerotropolis.....	31
Figure 10. Wilton Growth Area .....	32
Figure 11. Greater Macarthur Growth Area.....	33
Figure 12. Indicative locations of the major transport corridors for Western Sydney .....	42
Figure 13. Strategic conservation area.....	51
Figure 14. The delivery of the conservation program .....	53
Figure 15. Location of the Georges River Koala Reserve and reserve investigation areas .....	54
Figure 16. Opportunities for stewardship agreements in the Razorback area .....	59
Figure 17: Implementation and assurance framework for the Plan .....	86
Figure 18 Governance framework for the CPCP .....	87
Figure 19. Selection steps for securing target TECs.....	98
Figure 20. Securing offsets for target species where more than one offset location is required .....	99
Figure 21. Detailed governance arrangements for offsets.....	101
Figure 22. The evaluation program .....	104

## Tables

Table 1. Biodiversity approvals being sought through the CPCP .....	11
Table 2. Area (in hectares) of identified land categories for each nominated area .....	29
Table 3. Cumulative impact thresholds for threatened ecological communities in the avoided land .....	38
Table 4. Western Sydney major transport corridors .....	40
Table 5. Summary of impacts based on the Cumberland Plain Assessment Report.....	48
Table 6 Roles and responsibilities for key delivery partners.....	88
Table 7. Cumulative impact thresholds for EPBC Act-listed TECs in the avoided land for each nominated area .....	110
Table 8. Compliance and reporting requirements .....	111
Table 9. Habitat features and connectivity - Threatened fauna risk mitigation.....	128
Table 10. Pest/domestic animal – Threatened fauna risk mitigation .....	130
Table 11. Human disturbance - Threatened fauna risk mitigation .....	131
Table 12. Disease – Threatened fauna risk mitigation.....	135
Table 13. Other threats – Threatened fauna risk mitigation .....	136
Table 14. Weed invasion – Threatened flora risk mitigation .....	137
Table 15. Altered fire regime – Threatened flora risk mitigation .....	138
Table 16. Human disturbance – Threatened flora risk mitigation .....	139
Table 17. Disease – Threatened flora risk mitigation.....	140
Table 18. General risk mitigation measures for threatened ecological communities .....	141
Table 19. General risk mitigation measures for other protected matters.....	142
Table 20. Habitat features and connectivity – Threatened fauna risk mitigation in major transport corridors .....	143
Table 21. Disease – Threatened fauna risk mitigation in major transport corridors.....	143
Table 22. Other – Threatened fauna risk mitigation in major transport corridors.....	143
Table 23. Tunnels – Threatened fauna risk mitigation in major transport corridors .....	144
Table 24. Weed invasion – Threatened flora risk mitigation in major transport corridors .....	144
Table 25. Hydrology – Threatened flora risk mitigation in major transport corridors.....	145
Table 26. Disease – Threatened flora risk mitigation in major transport corridors.....	145
Table 27. Tunnels – Threatened flora risk mitigation in major transport corridors .....	146
Table 28. General risk mitigation measures for threatened ecological communities .....	147

## Minister's foreword

The NSW Government's vision is for a thriving and liveable [Western Parkland City](#). We want people to love where they live and enjoy a lifestyle that allows them to get outside, be active and enjoy their great green spaces and local environments.

The Cumberland Plain Conservation Plan (the CPCP) is one of the largest strategic conservation plans to be undertaken in Australia and delivers on a commitment under the [Western Sydney City Deal](#). The CPCP will support the delivery of housing, jobs and infrastructure in the Western Parkland City while protecting the best of the remaining woodland habitat in Western Sydney and its rich variety of unique plants and animals, some of which are found nowhere else in the world.

The CPCP will support the delivery of around 73,000 homes planned for the Western Parkland City over the next 34 years. It will do this by providing the necessary state and federal biodiversity approvals for around 11,000 hectares of land inside 4 nominated areas, including the Western Sydney Aerotropolis and 4 major transport corridors.

I am committed to implementing the CPCP as a priority. This plan has 26 commitments and 131 actions. Together, these will help ensure the Western Parkland City can deliver new residential, commercial and industrial areas and major transport infrastructure while also avoiding, minimising and offsetting biodiversity impacts. They will do this in a way that can enhance the ecological connectivity of a fragmented landscape.

The CPCP will help establish new public reserves and private conservation land, connect important areas of habitat and help restore degraded landscapes.



The Honourable Anthony John Roberts MP  
Minister for Planning and Homes

By the time the CPCP is fully implemented, it will protect, connect and restore around 11,900 hectares of conservation land. This includes protecting at least 5,325 hectares of threatened native vegetation to offset development impacts. Under this plan we will also establish a dedicated reserve to protect and restore up to 1,830 hectares of koala habitat along the Georges River.

The NSW Government has already committed \$114 million in the first 5 years to fund priority actions such as purchasing land for future reserves including the Georges River Koala Reserve, restoring around 80 hectares of habitat, installing koala-exclusion fencing and taking other measures to protect koalas. We are also working with the Biodiversity Conservation Trust to encourage landholders to establish biodiversity stewardship agreements that will protect the critically endangered Cumberland Plain Woodland.

The CPCP also recognises Aboriginal people and their connection to Country. It commits to co-developing the Caring for Country – Aboriginal Outcomes Strategy for the Cumberland Plain Conservation Plan 2022-2032 with Western Sydney's Aboriginal community. This strategy will ensure we implement the CPCP in genuine partnership with the Traditional Custodians.

## Executive summary

The [Western Parkland City](#) is projected to grow from 740,000 people in 2016 to 1.1 million by 2036, to well over 1.5 million by 2056. A thriving, liveable Western Parkland City must be well planned to meet that growth. It should include dedicated areas to protect the many unique native plants and animals in the region, and publicly accessible open and green spaces that local communities can enjoy.

The Cumberland Plain Conservation Plan (CPCP) is a conservation plan for Western Sydney that identifies strategically important biodiversity areas within the Cumberland subregion to offset the biodiversity impacts of future urban development to facilitate a vibrant, green and liveable city.

The plan's vision is to 'support Western Sydney's biodiversity and growth'. It will support the delivery of infrastructure, housing and jobs for the people in the Western Parkland City while protecting important biodiversity through a program of conservation actions and commitments. This includes protecting, among others, the Southern Sydney koala population, the Cumberland Plain Land Snail, foraging habitat for the swift parrot and significant plants like the nodding geebung and spiked rice-flower. The CPCP represents one of the largest strategic conservation planning exercises ever undertaken in Australia

The CPCP has been developed to meet requirements for strategic biodiversity certification under the *Biodiversity Conservation Act 2016* (NSW) (BC Act) and strategic assessment under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act). It provides the biodiversity approvals required for new development in 4 nominated areas in Western Sydney and also supports the delivery of major transport infrastructure across the region.

The nominated areas are:

- [Greater Macarthur Growth Area](#)
- Greater Penrith to Eastern Creek Investigation Area
- [Western Sydney Aerotropolis](#)
- [Wilton Growth Area](#).

The CPCP is supported by 2 sub-plans:

- Sub-Plan A: Conservation Program and Implementation
- Sub-Plan B: Koalas

Each of the sub-plans focusses on important parts of implementing the CPCP. Sub-Plan A provides details on the complete conservation program of commitments and actions while Sub-Plan B provides further information on the conservation actions that will protect and conserve the Southern Sydney koala population.

Significant conservation planning has been undertaken to develop the CPCP. This has involved identifying the biodiversity values of the area, understanding and assessing the potential impacts of future growth on these values, and developing a conservation program that can achieve biodiversity outcomes through an enhanced network of conservation land to improve ecological resilience and function at a landscape scale and in perpetuity.

While the CPCP includes actions that will be implemented to 2056, the NSW Government has committed \$114 million to deliver priority actions over the first 5 years of the plan. This includes:

- a land purchase program to support the establishment of the Georges River Koala Reserve and to establish and expand other reserves

- commencing the restoration of koala habitat in priority areas including the Georges River Koala Reserve
- installation of crossings and fences in key areas to protect koalas and facilitate their safe movement.

Funding for the first 5 years also includes a number of partnership actions such as working with the Biodiversity Conservation Trust encouraging landholders to establish new biodiversity stewardship agreements, supporting the NSW Koala Strategy to carry out annual monitoring of koalas in south-western Sydney and partnering with the NSW Aboriginal Land Council to deliver a grant program that will provide cultural and conservation opportunities for Local Aboriginal Land Councils in Western Sydney. These actions are already underway through the early funding for the CPCP.

Early establishment of reserves and biodiversity stewardship sites will deliver an upfront strategic offset for the area's threatened ecological communities, species and their habitats. This includes creating biodiversity stewardship sites on land currently owned by the NSW Government and on other land in priority reserve areas if they become available for purchase. The priority reserves are the Georges River Koala Reserve, and 2 other reserves which are under investigation:

- the Gulguer Reserve Investigation Area
- the Confluence Reserve Investigation Area.

The Razorback area, in the south-west of the CPCP Area supports extensive areas of the critically endangered Cumberland Plain Woodland ecological community. This area has unique characteristics which present opportunities for conservation for landholders to benefit financially by establishing biodiversity stewardship agreements.

The conservation program over the longer-term includes supporting biodiversity conservation actions such as, managing and reducing threats to biodiversity, investing in research and community education and engagement initiatives.

New planning controls have been developed to support the CPCP. A new chapter in the *State Environmental Planning Policy (Biodiversity and Conservation) 2021* (Biodiversity and Conservation SEPP) will ensure that development in the nominated areas is consistent with the commitments and actions of the CPCP. The planning controls will protect important biodiversity within the nominated areas to minimise the impact of development on regional biodiversity values.

The CPCP is being developed for the people of Western Sydney. The Department of Planning and Environment (the department) is responsible for implementing the plan and will work closely with government and non-government partners to deliver the conservation program.

The major transport corridors program is administered by Transport for NSW, who are a project partner for the CPCP. The department's Environment and Heritage Group (EHG) is the regulator for the strategic biodiversity certification (under the BC Act). It is expected that EHG would continue to perform a role as the regulator throughout implementation of the CPCP.

An executive implementation committee has been established to oversee the implementation of the CPCP. This comprises executive-level representatives from government agencies, including DPE, the department's Environment and Heritage Group (as regulator), the Australian Department of Climate Change, Energy, the Environment and Water (as regulator), and Transport for NSW (as project partner),

The NSW Government will commission a comprehensive, independent review on the status of implementation of the CPCP and its outcomes every 5 years over the life of the plan. This report will be provided to the NSW Minister for the Environment and the Commonwealth Minister for the Environment and will be made publicly available.

# Cumberland Plain Conservation Plan

*Supporting Western Sydney's Biodiversity and Growth*

## 26 commitments



**National parks**  
and other reserves  
to protect  
biodiversity  
and create new  
green spaces



**Biodiversity  
stewardship  
sites** to protect  
important  
biodiversity



**Ecological  
restoration**  
will improve  
and enhance  
connectivity



**Research**  
to support  
evidence-based  
decisions



**An informed  
and engaged  
community**



**Managing  
landscape  
scale threats**

# Introduction



Cumberland Plain Woodland

# Introduction

## Strategic conservation planning in Western Sydney

The population of Western Sydney is projected to grow from 740,000 in 2016 to 1.1 million by 2036, and to well over 1.5 million by 2056. New city-shaping transport links and the [Western Sydney International \(Nancy-Bird Walton\) Airport](#) are being developed to substantially improve Western Sydney's connections to other parts of Sydney, wider Australia and beyond.

A thriving, green and liveable Western Sydney needs to include areas for the many native plants and animals in the region, and publicly accessible, open and green spaces for local communities.

Strategic conservation planning is a landscape-scale approach to assessing and protecting biodiversity up front in planning for large-scale development. This strategic approach allows for the streamlined delivery of housing and infrastructure while protecting regionally important land for conservation and publicly accessible green space. Using a landscape approach early in the planning process enables decision-makers to identify and protect the most important habitat for species' population viability and connectivity and incorporate that information into regional and local strategic plans and in planning and development controls. This approach has been used to develop the Cumberland Plain Conservation Plan.

## The Cumberland Plain Conservation Plan

The CPCP is part of the NSW Government's commitment to delivering the Western Parkland City, consistent with the Greater Sydney Commission's strategic vision described in its [Greater Sydney Region Plan: A Metropolis of Three Cities](#) and Western City District Plan. This includes providing the biodiversity approvals for development in Western Sydney's 4 nominated areas and 4 major transport corridors.

The CPCP has been developed to meet requirements for [strategic biodiversity certification](#) under the *Biodiversity Conservation Act 2016* (NSW) (BC Act) and [strategic assessment](#) under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act).

The vision of the CPCP is to 'support Western Sydney's biodiversity and growth'. This means it will support the planned and strategic delivery of infrastructure, housing and jobs for Western Sydney while protecting and maintaining important biodiversity areas. This includes protecting, among others, the Southern Sydney koala population, the Cumberland Plain land snail, foraging habitat for the swift parrot and significant plants like the nodding geebung and spiked rice-flower.

The CPCP will achieve this through a conservation program that includes 26 commitments and 131 actions designed to improve ecological resilience and protect biodiversity. The conservation program will seek to address impacts at a landscape scale. Understanding and protecting the environment at this scale will help safeguard Western Sydney's natural environment over the long term and in response to climate change.

The CPCP identifies important biodiversity areas in Western Sydney's nominated areas that will not be certified and where development will be limited. These areas are identified in the plan's mapping as 'avoided land' (see Figure 8 to Figure 11).

The CPCP also identifies areas suitable for development within the nominated areas. These areas are mapped as certified-urban capable land or certified-major transport corridors (see Figure 8 to Figure 11). Development in these areas will not require further biodiversity approvals under the BC Act and EPBC Act if development is in accordance with the CPCP. In addition, the CPCP is

seeking endorsement under the EPBC Act to approve sections of the 4 major transport corridors that are outside of the nominated areas but within the CPCP Area (see Figure 4).

The conservation program centres on securing conservation land to offset impacts of future development on biodiversity. Potential conservation land has been identified through the strategic conservation planning process. Conservation land will include new or additions to national parks and public reserves, investment in biodiversity stewardship sites on public or privately-owned land, direct purchase and retiring of species and ecosystem credits from the Biodiversity Offsets Scheme, and ecological restoration of the Cumberland subregion's native vegetation communities.

Conservation land will be prioritised from within or adjacent the strategic conservation area (see Figure 13), which has been identified as the area of greatest strategic value to deliver long-term conservation outcomes in the Cumberland subregion and which can offset the biodiversity impacts addressed by the plan.

The CPCP will be implemented through to 2056 and represents one of the largest strategic conservation planning exercises ever undertaken in Australia. It will provide an enduring conservation legacy for the people, plants and animals of Western Sydney.

The department has started some priority conservation actions that will be delivered in the first 5 years. These are described in Figure 1.

<b>\$114 million over 5 years for:</b>	
<b>On ground actions</b>	<b>Partnership actions</b>
 <p>Initiate the establishment of the Georges River Koala Reserve using government-owned land as first priority</p>	 <p>Establish a Biodiversity Stewardship Program in partnership with the Biodiversity Conservation Trust to encourage landholders to establish new biodiversity stewardship agreements and to purchase biodiversity credits to protect threatened species and vegetation</p>
 <p>Instigate a land purchase program to support the establishment of the Georges River Koala Reserve and to establish and expand other reserves</p>	 <p>Partner with the NSW Aboriginal Land Council to deliver a grant program for Western Sydney LALCs to provide conservation and cultural outcomes</p>
 <p>Install koala exclusion fencing in priority areas such as adjacent to fauna crossings to protect koalas from threats in the urban landscape</p>	 <p>Commence annual monitoring of koalas in South Western Sydney through the NSW Koala Strategy and conduct research on topics including disease, stress and population demographics as well as supporting training for veterinarians and koala carers</p>
 <p>Commence restoration of koala habitat including up to 80 hectares of koala habitat in priority areas including the Georges River Koala Reserve</p>	 <p>Partner with Western Sydney University to develop and implement a 35-year research strategy, including identifying research priority projects for the first four years</p>
 <p>Construct two fauna crossings for Appin Road at Ousedale and Kings Fall Bridge</p>	 <p>Partner with the Royal Botanic Gardens &amp; Domain Trust to deliver seed sourcing and seed banking guidance, to inform the CPCP restoration program</p>

**Figure 1. Priority conservation actions in the first 5 years of the CPCP**

## Structure of the Cumberland Plain Conservation Plan

This CPCP comprises 3 documents (as shown in Figure 2), each playing a key role in ensuring the success of strategic conservation planning for Western Sydney.

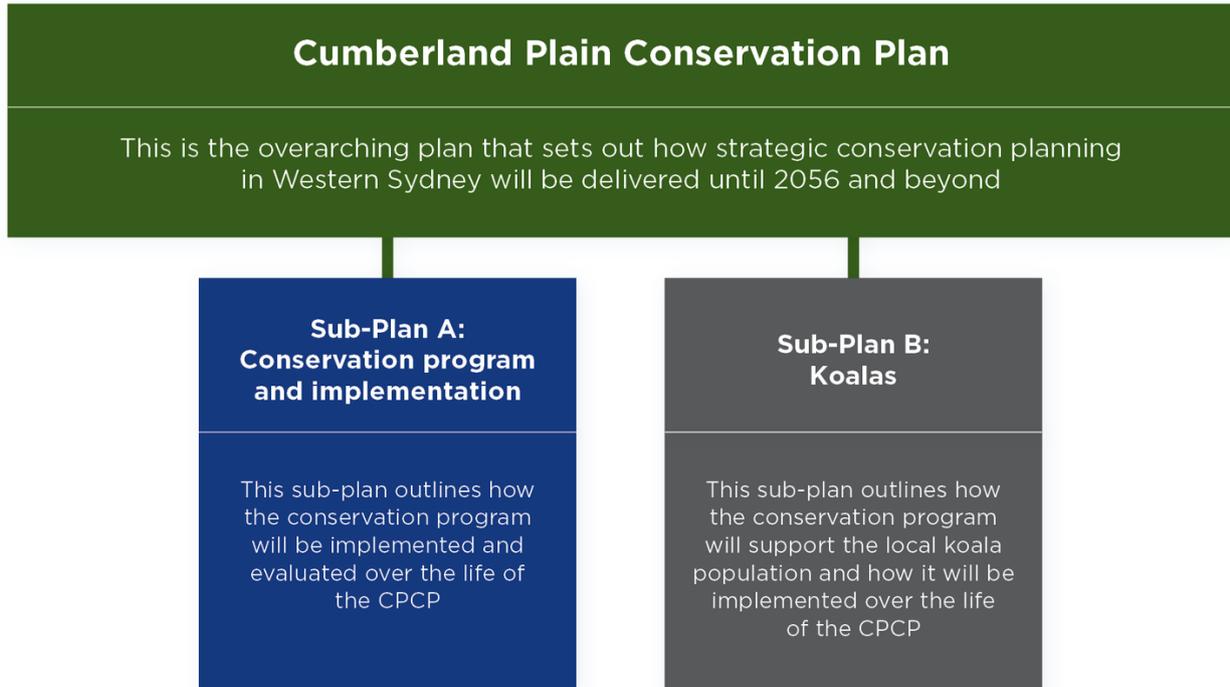
The overarching CPCP (this document) describes how development in nominated areas and major transport corridors will occur. It also details how impacts on biodiversity values will be addressed.

Two sub-plans provide further information on:

- the conservation program and its implementation, providing a complete picture of how the CPCP will meet its vision and objective (Sub-Plan A: Conservation Program and Implementation)
- protecting the koala population in Western Sydney and how the CPCP supports other government initiatives to protect koalas (Sub-Plan B: Koalas).

## The Cumberland Plain Assessment Report

A single report, the Cumberland Plain Assessment Report, assesses the direct, indirect, prescribed and cumulative impacts of development proposed in the nominated areas and major transport corridors facilitated by the CPCP. The assessment report meets statutory requirements under both the BC Act and EPBC Act. It is the central source of information used to develop the conservation program. As per the EPBC Act, the assessment report also determines the adequacy of the CPCP to avoid, mitigate and offset impacts from urban development and major transport corridors to EPBC matters.



**Figure 2. Draft Cumberland Plain Conservation Plan and sub-plans**

## Legislative context

The CPCP has been prepared to meet strategic biodiversity certification under the BC Act and strategic assessment under the EPBC Act. The key legislative steps taken to prepare the plan are outlined below in Figure 3 and described in the following sections.

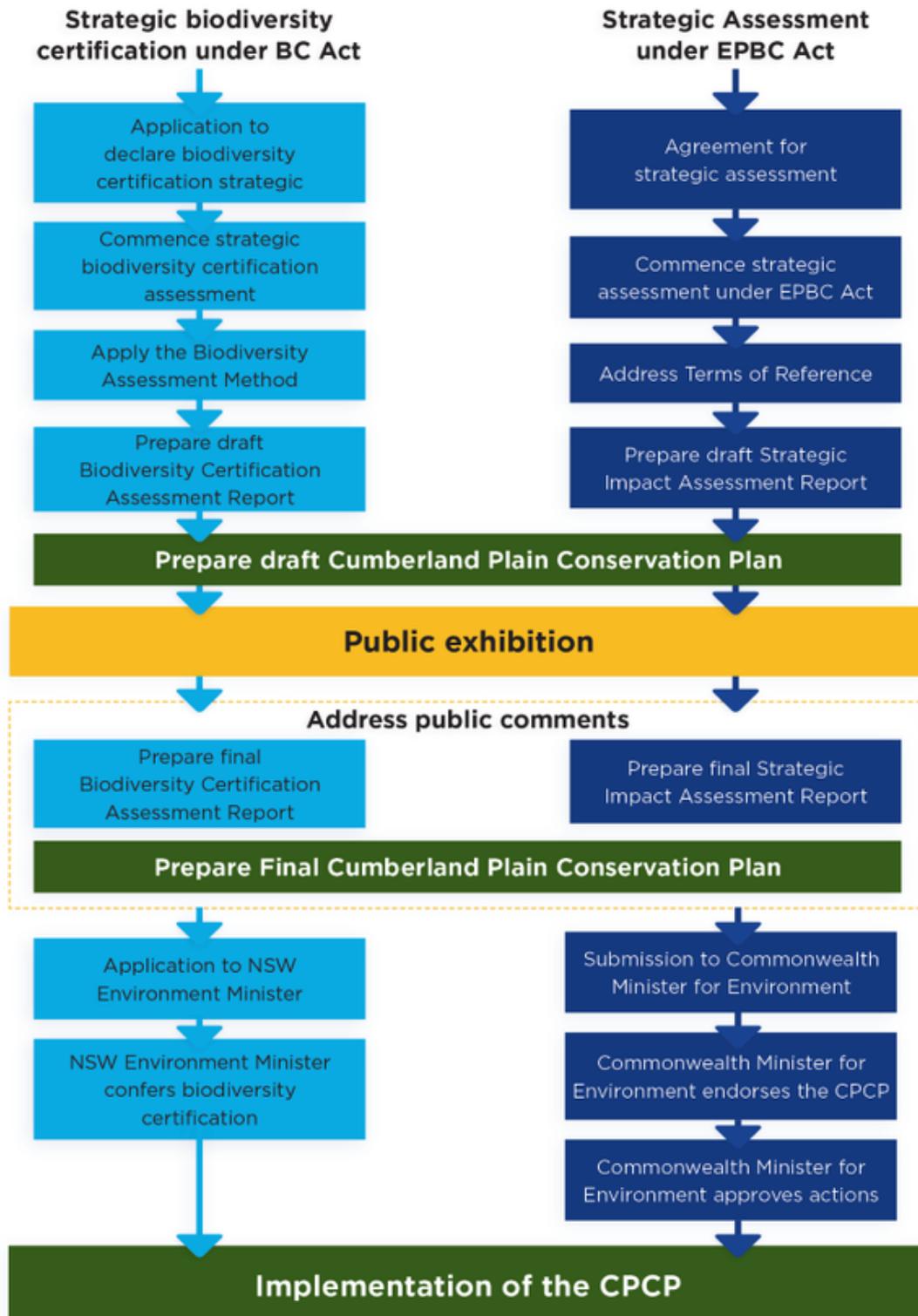


Figure 3. Legislative process to deliver the vision of the CPCP

## NSW strategic biodiversity certification

Biodiversity certification under Part 8 of the BC Act provides for a streamlined biodiversity assessment process for areas of land that are proposed for development. The process identifies areas that have approval for biodiversity impacts once certified, removing the need for a site-by-site biodiversity assessment before development begins. Areas can only be biodiversity certified if measures under that certification adequately address the likely impacts on biodiversity values. This involves identifying and implementing measures to avoid, minimise and offset the impacts of development.

Strategic biodiversity certification, as defined in Part 8.1 of the BC Act, is only available to planning authorities such as the Minister for Planning and Homes, the Secretary of the Department of Planning and Environment or a local council.

It supports significant regional development and planning processes and provides a mechanism to address the potential impacts on biodiversity during strategic land use planning. It encourages planning authorities to design their urban-capable land in a way that avoids and minimises impacts on biodiversity values through an approved conservation program.

The Minister for Planning and Homes is the approval holder for the strategic biodiversity certification sought through the CPCP.

## Strategic assessments under the EPBC Act

Strategic assessments are established under Part 10 of the EPBC Act. They are landscape-scale assessments that consider impacts on matters protected by national environmental law and associated with the implementation of a policy, plan or program. Strategic assessments are undertaken at a broader scale than project by project assessments. Like strategic biodiversity certification, strategic assessments are designed to streamline the assessment of impacts of actions and address cumulative impacts at the landscape scale early in the planning process.

Strategic assessments ensure that the impacts of development are avoided, mitigated and/or offset through the implementation of a policy, plan or program.

The matters for protection considered for assessment include 8 matters of national environmental significance (MNES):

- nationally threatened species and ecological communities
- migratory species
- World Heritage properties
- National Heritage places
- wetlands of international importance
- Commonwealth marine areas
- the Great Barrier Reef Marine Park
- water resources, in relation to coal seam gas development and large coal mine development.

In addition, the EPBC Act also regulates actions that occur or have an impact on Commonwealth land where there may be a significant impact on the environment (even if that significant impact is not on one of the 8 MNES).

Nuclear actions cannot be assessed under a strategic assessment.

The Great Barrier Reef Marine Park, Commonwealth marine environment, and water resources are not affected by the CPCP.

Once the CPCP is endorsed by the Commonwealth Minister for the Environment, the NSW Government can seek approval for the classes of actions described in the plan under Part 10 of the EPBC Act.

## How to read this plan

We have provided a brief description of each of the plan's sections below to help you understand the structure of the CPCP.

### Scope of the CPCP

This section introduces the context of the CPCP with descriptions of the environmental features of the CPCP Area, Aboriginal cultural connections and future environmental trends. It describes the NSW Government directions for development in the Western Parkland City and how the CPCP links with broader government policies and programs.

This section introduces the program logic that will guide implementation of the CPCP, and the 8 outcomes for environmental, social and economic values to be delivered over the long term in Western Sydney.

### Development

This section provides background on the planned growth in Western Sydney, including the context for the future urban development areas in Western Sydney.

It identifies the types of development that will be covered by the CPCP approval and explains the plan's land categories, including future development areas (the 'certified-urban capable land') and the areas avoided from development (the 'avoided land').

### Description of actions

This section describes the actions that will be taken under the Cumberland Plain Conservation Plan as it relates to section 146 of the EPBC Act.

It identifies the 4 classes of actions under the EPBC Act, and the associated legislation, regulation or guidelines that relate to the development to be included in an approval of a class of actions. The 4 classes of actions include urban and industrial development in the nominated areas; infrastructure in the nominated areas; intensive plant agriculture in the Western Sydney Aerotropolis Agribusiness Precinct, and Western Sydney major transport corridors.

### The conservation program

This section describes the conservation program. This program will avoid, minimise, mitigate and offset the impacts on biodiversity from the urban development and major transport corridors.

It identifies 26 commitments for conservation that are separated into 5 categories: avoiding and minimising impacts, mitigating indirect and prescribed impacts, conserving flora, fauna and habitat, managing landscape threats, and building knowledge and capacity.

### Implementation and assurance framework

This section details the implementation and assurance framework for the CPCP, which will ensure the plan delivers its intended outcomes, objective and vision.

It outlines the mechanisms that will be established for implementing the CPCP, including for governance and funding. The section covers the monitoring, evaluation and reporting framework

that will facilitate adaptive management throughout the life of the plan to 2056. This section also outlines the planning controls under the *Environmental Planning and Assessment Act 1979* that will protect high-value biodiversity identified through the CPCP.

## Appendices

The appendices provide key information for the delivery of the CPCP.

‘Appendix A. Accessing EPBC approval for essential infrastructure development in the avoided land’ sets out the requirements for essential infrastructure development in avoided land for approval under Part 10 of the EPBC Act.

‘

Appendix B. The CPCP avoidance criteria’ outlines the criteria used in the strategic conservation planning process to locate and design the certified-urban capable land in the nominated areas, with the aim of avoiding and minimising impacts on areas of high biodiversity values from development facilitated by the plan.

‘Appendix C. CPCP commitments’ contains a list of the 26 commitments, separated into 5 categories: development actions, conservation program, manage landscape threats, build knowledge and capacity, and governance and reporting. A list of actions intended to deliver each commitment is in Appendix A of Sub Plan A.

‘Appendix D. EPBC Act and BC Act matters to be offset through the CPCP’ provides a list of protected matters under the BC Act and EPBC Act (threatened ecological communities and threatened species) impacted by the CPCP and their associated offset requirements.

‘Appendix E. Species and TEC-specific mitigation measures’ outlines mitigation measures to address risks to threatened fauna, flora, threatened ecological communities and other protected matters from indirect and prescribed impacts. This is separated into risks from urban and industrial, infrastructure and intensive plant agriculture development and risks from major transport corridors. It identifies an implementation mechanism for each.

# Scope



Panoramic view of Wianamatta (South Creek) corridor

# Scope

## CPCP Area

The CPCP covers approximately 200,000 hectares and sits primarily within the Interim Biogeographic Regionalisation of Australia's (IBRA) Cumberland subregion<sup>1</sup> as well as some minor areas of the Sydney Cataract and Wollemi IBRA subregions (see Figure 4).

The geographic area covered by the plan (referred to as the CPCP Area) extends from north of Windsor to Picton in the south, and from the Hawkesbury-Nepean River in the west to the Georges River near Liverpool in the east. This includes parts of 8 local government areas – Wollondilly, Camden, Campbelltown, Liverpool, Fairfield, Penrith, Blacktown and Hawkesbury.

Three main water catchments drain the CPCP Area – Georges River catchment, Hawkesbury – Nepean catchment and Wianamatta (South Creek) sub-catchment. These form a broad branch-shaped pattern with an extensive network of tributaries across the region.

Existing land use is mainly freehold rural and residential land, with more than 75% of the remaining native vegetation in the Cumberland subregion in private ownership (DECCW 2010).

## Conservation values

### Threatened species and communities

The area covered by the CPCP contains some of the most fertile country in the Sydney Basin. It is also home to unique native plants and animals, including more than 100 threatened or migratory species.

Approximately 61,000 hectares of land retains some native vegetation, much of this being ecological communities or habitats for species that are listed as threatened under the BC Act and/or EPBC Act. Of the 40 plant community types (PCTs) in the area, approximately 30 are associated with listed threatened ecological communities or classified as 'over-cleared vegetation types' (that is, more than 70% cleared compared to the original extent) (Open Lines 2020). Some 13% of the pre-1750 extent of native vegetation remains in good condition.

Areas of remaining native vegetation are often of high conservation value as they may contain the only remaining habitat for species and ecological communities that occur only in the Cumberland subregion (Open Lines 2020). Approximately 10% of the existing native vegetation communities in the CPCP are protected in a reserve or under a biodiversity agreement (DPE 2018).

### Landscape connectivity

Landscape connectivity is important for biodiversity as it allows the linkage of habitats, species, communities and ecological processes. Once a landscape is fragmented, it is more prone to additional degradation.

Connectivity in the Cumberland subregion is already compromised. Once clearing levels exceed 70% of the landscape, biodiversity loss from fragmentation increases (DECCW 2010). This threshold has been surpassed in the Cumberland subregion. Fragmentation can be reduced and

<sup>1</sup> The Interim Biogeographic Regionalisation for Australia was developed by the Australian Government as a key planning tool to identify land for conservation. It has since become an improved spatial mapping and information source on vegetation communities and ecosystems across Australia.

reversed by enhancing connections. Extensions to already protected areas such as reserves and biodiversity stewardship sites, and establishing new protected areas build these connections.

The conservation program developed for the CPCP aims to enhance landscape connectivity across the CPCP Area while identifying site specific measures to ensure that the threatened species and ecological communities of the Cumberland subregion persist into the future.

## Development activities covered by the CPCP

The CPCP facilitates the delivery of areas nominated for urban development in Western Sydney. These nominated areas will be the key focus for development to 2056 and the centres of economic activity in Western Sydney. The nominated areas seeking approval through this plan under the BC Act and EPBC Act are:

- Greater Macarthur Growth Area
- Greater Penrith to Eastern Creek Investigation Area
- Western Sydney Aerotropolis
- Wilton Growth Area.

The CPCP excludes parts of Western Sydney Aerotropolis that overlap with the South West Growth Area, the Western Sydney International (Nancy-Bird Walton) Airport and the eastern part of Mamre Road Precinct.

The CPCP is also seeking biodiversity approvals for 4 major transport corridors planned to respond to the needs of Western Sydney over the next 40 years and identified in Future Transport Strategy 2056. These include the:

- potential future extension of Sydney Metro Greater West, south from Western Sydney Aerotropolis to Macarthur (except for those areas in the South West Growth Area)
- Western Sydney Freight Line
- Outer Sydney Orbital, between Box Hill and the Hume Motorway near Menangle
- M7/Ropes Crossing Link Road.

These 4 corridors are included in the CPCP for approval under the strategic assessment (EPBC Act). However, only the sections within the nominated areas (excluding the tunnels sections) are included in the strategic biodiversity certification (BC Act). See Table 1 and Figure 4 for details.

Not all major corridor projects identified in Future Transport 2056 for Western Sydney will obtain their biodiversity approvals through the CPCP. This includes Sydney Metro Greater West rail line between St Marys and the Aerotropolis, and major transport corridors identified in the existing North West and South West growth areas. These projects are subject to separate biodiversity approval processes.

**Table 1. Biodiversity approvals being sought through the CPCP**

Development	Strategic biodiversity certification (BC Act)	Strategic assessment (EPBC Act)
Urban development in nominated areas	Certified-urban capable land in nominated areas	Development in nominated areas subject to class of actions approval
Major transport corridors included in the CPCP	Major transport corridors within nominated areas (excluding the tunnels section) (identified in Figure 4)	Major transport corridors across the CPCP Area (identified in Figure 4)

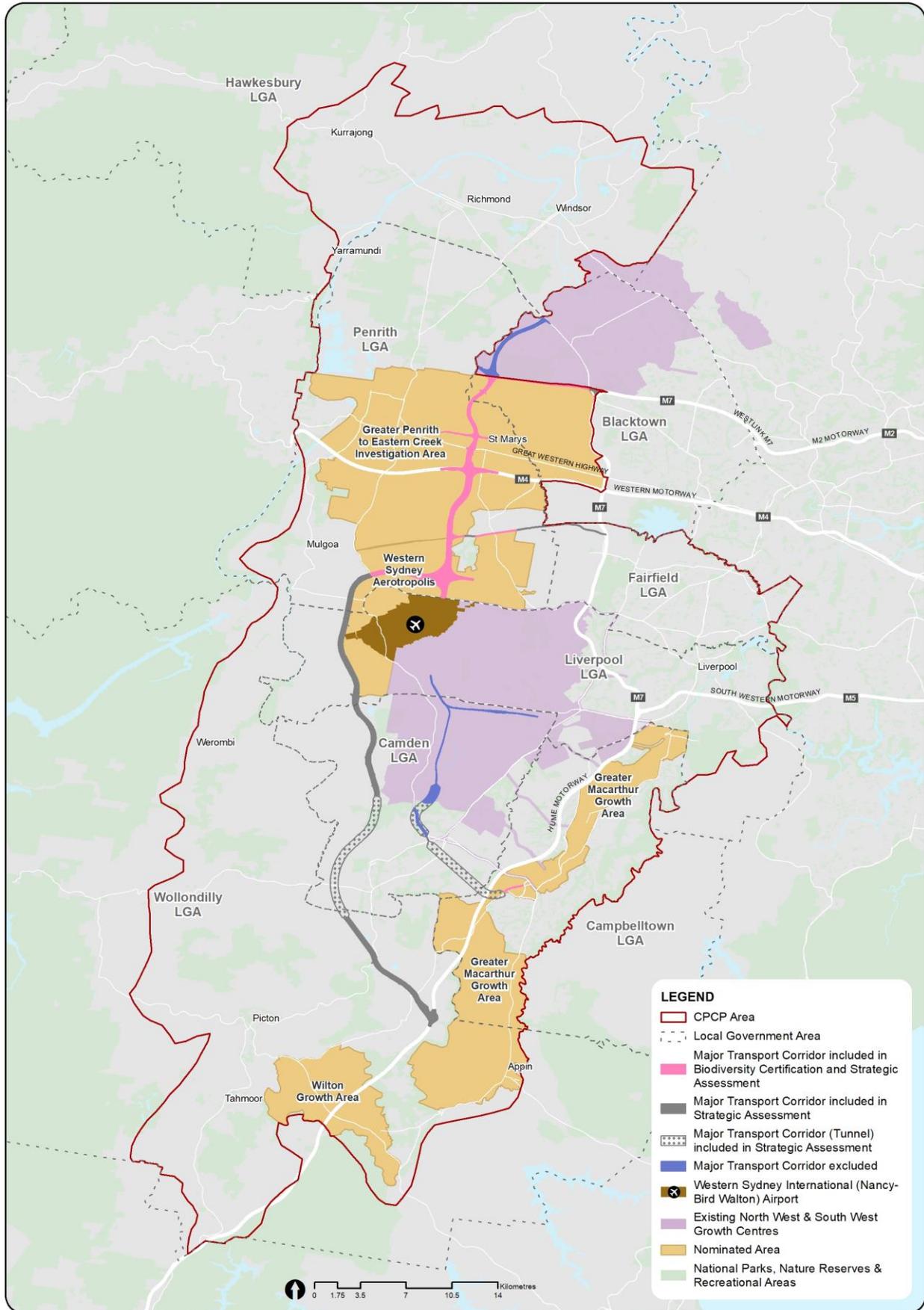
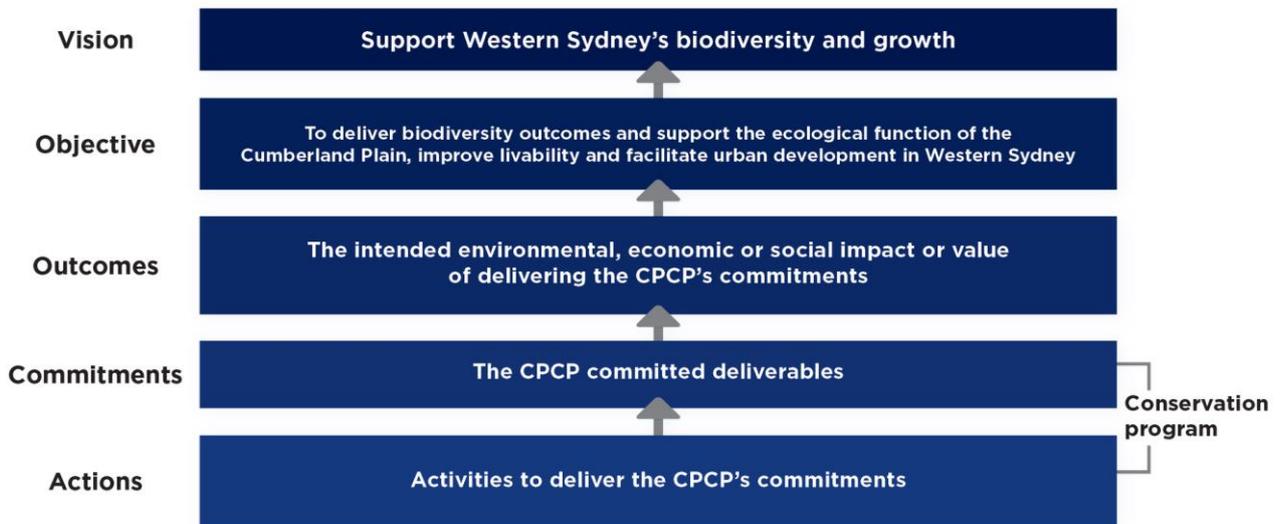


Figure 4. Cumberland Plain Conservation Plan Area and scope

## Meeting the vision of the CPCP

The CPCP is guided by a program logic (see Figure 5). All elements of the program logic (vision, objective, outcomes, commitments and actions) are outcome-oriented and link to each other to achieve the plan’s objective and vision.



**Figure 5. Program logic to deliver the vision of the CPCP**

The CPCP will deliver on-ground actions through a comprehensive conservation program to meet 8 long-term outcomes for environmental, social and economic values in Western Sydney. The outcomes are presented in Figure 6.

The plan’s priority is to establish conservation land through new or additions to existing national parks and reserves, biodiversity stewardship sites on public or private land, and enhancing the area of available habitat through ecological restoration of cleared or degraded land. A minimum of 90% of CPCP funding will be dedicated to establishing, protecting and improving the condition of conservation land.

The CPCP identifies 3 new public reserve sites in Western Sydney. These sites are critical to the protection of BC Act- and EPBC Act-listed threatened ecological communities and species, and to enhancing ecological connectivity across the landscape to protect biodiversity. These areas are the Georges River Koala Reserve, announced as an immediate priority of the CPCP, and 2 additional public reserves under investigation for feasibility – the Gulguer Reserve Investigation Area and the Confluence Reserve Investigation Area.

The CPCP will prioritise funds for land purchase within these 3 reserve areas in the first 5 years of implementation. Lots in the Georges River Koala Reserve identified for early transfer to NSW National Parks and Wildlife Service will be reserved within two years of the plan’s approval.

In addition, the department will work with the Biodiversity Conservation Trust to encourage landholders to establish new biodiversity stewardship agreements in areas such as Razorback. The Razorback area is dominated by Cumberland Plain Woodland in addition to other threatened ecological communities targeted for offsets under the CPCP. The area has unique characteristics that present opportunities for conservation and for landholders to benefit financially by establishing biodiversity stewardship agreements.

Over the long-term, the conservation program will purchase land in other suitable reserve sites, invest in biodiversity stewardship sites on public or private land, and restore native vegetation and habitat for over-cleared vegetation types to meet the CPCP's biodiversity offset targets. Other areas which have been identified for investigation include the Bargo area, which has potential for future reserves. This area has a significant proportion of Crown land and includes koala habitat protected under the CPCP.

The conservation program includes additional commitments across the themes of:

- development actions
- avoiding and minimising impacts
- mitigating indirect and prescribed impacts
- conserving flora, fauna and habitat
- managing landscape threats
- building knowledge and capacity
- governance and reporting.

The 26 commitments of the CPCP will be implemented over the life of the plan (to 2056) through a series of planned and managed actions that occur over varying timeframes. These commitments are listed in Appendix C. CPCP commitments and described throughout the plan. The full package of commitments and actions included in the conservation program is listed in Sub-Plan A: Conservation Program and Implementation.

## Implementation and assurance

The vision of the CPCP is ambitious. To meet it, a robust and flexible process is being established to secure biodiversity offsets to 2056, including an implementation and assurance framework with:

- clear governance arrangements, supported by an evaluation program
- ongoing tracking and reconciliation of development impacts and offsets secured
- conservation land selection steps to guide the purchase of offsets
- adaptive management steps to be implemented through the NSW planning system if offsets are not in line with development impacts.

A monitoring, evaluation and reporting program is being developed to track progress, using relevant indicators and key evaluation questions to inform adaptive management of the plan. The evaluation program will ensure that outcomes of the CPCP are achieved, the biodiversity and social benefits are delivered in perpetuity, and biodiversity offsets align with the staging of development. Public reporting will include annual updates on the implementation of the CPCP and independent, 5-yearly reviews on the effectiveness of the plan and its delivery.

The Department of Planning and Environment is responsible for delivering the CPCP and meeting regulatory requirements as the party to the strategic biodiversity certification (under section 8.9 of the BC Act) and meeting strategic assessment requirements (under section 146B of the EPBC Act). It must report to the Australian Government Department of Climate Change, Energy, the Environment and Water and to its own Environment Heritage Group (EHG) group, which is the regulator for the strategic biodiversity certification under the BC Act. The Department of Planning and Environment will work with multiple government and non-government stakeholders to ensure efficient and effective implementation of the CPCP. Further detail on governance is provided in the 'Governance' section on page 86.

The CPCP will be delivered over the next 3 decades to 2056. This timing aligns with implementation of the Greater Sydney Region Plan: A Metropolis of Three Cities (GSC 2018) and the [Future Transport Strategy 2056](#) (Transport for NSW 2018).

## Outcomes

### Environmental



1. The extent and condition of native vegetation and threatened ecological communities, increases and improves in the strategic conservation area in the Cumberland subregion.
2. Populations of targeted threatened species persist and the condition of suitable habitat improves in the strategic conservation area in the Cumberland subregion.
3. Condition of protected koala habitat is improved, connectivity between koala sub-populations is maintained, threats to koalas are managed and the koala population in South Western Sydney persists and thrives.
4. Areas of high biodiversity value in the nominated areas are protected and threats to species and ecological communities from increased urbanisation is managed.

### Social



1. The CPCP supports increased public access to green space to improve opportunities for recreation, wellbeing and social connection in the Cumberland subregion.
2. The CPCP supports increased stakeholder awareness and participation in relation to biodiversity conservation in the Cumberland subregion.
3. The CPCP supports economic participation for Aboriginal people, promotes Aboriginal culture and knowledge, and helps enable Traditional Custodians and Aboriginal people to maintain a distinctive cultural, spiritual, physical and economic relationship with land and waters in Western Sydney.

### Economic



1. Streamlined regulatory process including faster biodiversity and planning approvals for development in nominated areas.

Figure 6. Cumberland Plain Conservation Plan long-term outcomes

## Collaborating with the community and stakeholders

The department values input from stakeholders and the community. We undertook several engagement activities throughout the development of the CPCP which are outlined below.

### Community input in developing the CPCP

The CPCP People's Panel was established in 2018. The People's Panel comprised 18 randomly selected community members, with at least 2 people from each local government area in the plan.

Panel members attended a series of workshops, including a day trip to the nominated areas, where they were able to provide community views on the proposed conservation program and how it should be implemented. This process provided us with direct feedback from a demographically representative sample of the community, which informed development of the draft CPCP.

### Engagement with biodiversity conservation experts

In 2018, the NSW Government established the CPCP Community Reference Group. This group was chaired by the Total Environment Centre and comprised of representatives from a range of environmental, Aboriginal, landscape professional and scientific groups in Western Sydney.

The Community Reference Group provided independent expert advice to the department on the strategic conservation planning process and provided input to the development of the draft CPCP. The group represented community and stakeholder views on biodiversity conservation and comprised representatives from:

- Australian Institute of Landscape Architects
- Conservation Volunteers Australia
- Cumberland Land Conservancy
- Deerubbin Local Aboriginal Land Council
- Ecological Society of Australia
- Greening Australia
- Landcare NSW, Mulgoa Valley Landcare Group
- National Parks Association of NSW
- National Trust
- Nature Conservation Council of NSW
- Total Environmental Centre
- Western Sydney University, Hawkesbury Institute for the Environment.

### Engagement to develop the CPCP

Since 2018, we have engaged with key stakeholders to help inform and develop the CPCP. This included engaging with local councils, landholders, industry groups, environmental groups, local Aboriginal land councils, Aboriginal groups and members of the community.

We completed 6-months of early engagement from July to December 2019, to inform stakeholders about the CPCP and seek early feedback before statutory public exhibition. Consultation activities included targeted meetings, workshops and community drop-in sessions.

During early engagement we found a strong desire in the community to protect biodiversity, waterways and wetlands, with publicly accessible reserves being the preferred method to protect biodiversity in perpetuity. The community response highlighted the importance of protecting native vegetation corridors for wildlife movement and migration and preserving the rural character of

some nominated areas during development. Developers supported the planning certainty provided by the department's biodiversity approvals for nominated areas.

Public exhibition of the draft CPCP ran for 9 weeks from 26 August to 2 November 2020. This gave the community an opportunity to provide feedback on the draft plan through formal submissions. We reviewed all submissions and considered the feedback in preparing the final CPCP and supporting documents.

A [report on the early engagement \(PDF 6.83 MB\)](#) is available from the department's website. The What We Heard report from public exhibition is also available from the [department's website](#) and explains the changes made to the CPCP following exhibition feedback.

The NSW Government is committed to ongoing community engagement. The department is developing a communication and engagement strategy to support implementation of the CPCP. This will be reviewed every 5 years and updated as needed (Sub-Plan A: Commitment 25, action 7).

## Aboriginal cultural knowledge

The development of the CPCP acknowledges more than 60,000 years of continuous Aboriginal connection to the land that makes up NSW. Aboriginal people hold profound knowledge, understanding, obligation and custodianship of the landscape, often referred to as 'connection to Country'.

Through connection to Country, Aboriginal people have developed their own systems of knowledge and understanding of the surrounding ecology and biodiversity, which is representative of a living symbiotic relationship with the land and waters of their traditional homeland estates. This includes widespread systems of knowledge incorporating biodiversity, climate, land, culture and people.

### Aboriginal people of Western Sydney

Western Sydney has the largest concentration of Aboriginal people in Australia, with many families originating from homelands in wider NSW and throughout Australia.

The area covered by the CPCP is cared for by 3 Aboriginal groups: the Darug, Dharawal and Gundungurra. Other groups, such as Eora, Darkinjung, Wiradjuri and Yuin maintain trade or other obligatory care relationships with the area.

Local Aboriginal land councils, constituted under the NSW *Aboriginal Land Rights Act 1983*, are major landowners in local government areas covered by the CPCP. They are responsible for achieving the social, cultural and economic aspirations of Aboriginal people through those land holdings. Local Aboriginal land councils within the area covered by the CPCP include Tharawal, Deerubbin and Gandangara. Planning controls applied by the CPCP for the strategic conservation area and avoided land will not apply to any land owned or under claim by local Aboriginal land councils.

### Engaging and partnering with Aboriginal people

Engaging and partnering with Western Sydney's Aboriginal community and local Aboriginal land councils is an important component of implementing the CPCP. The plan commits to partnering with Aboriginal groups and communities to help them maintain a distinctive cultural, spiritual, physical and economic relationship with their land and waters in Western Sydney (Commitment 21).

We began engaging with local Aboriginal land councils in 2018 and conducted early engagement with Western Sydney's Aboriginal stakeholders and communities to help inform development of the

Plan in 2019 and 2020. This included open community events in Western Sydney, workshops with local Aboriginal land councils and walks on Country.

The feedback gained through this early engagement has supported the development of actions in the CPCP and a decision to develop and fund the Caring for Country – Aboriginal Outcomes Strategy for the Cumberland Plain Conservation Plan 2022-2032. During 2021, we engaged with Traditional Custodians, Aboriginal Land Councils, local communities, and Aboriginal businesses and service providers in Western Sydney to understand the priorities for this strategy.

The Caring for Country – Aboriginal Outcomes Strategy for the Cumberland Plain Conservation Plan 2022-2032 will be developed in collaboration with Aboriginal people in Western Sydney. The strategy will include a series of actions to be implemented over the life of the CPCP. The strategy aims to:

- recognise, celebrate and promote Aboriginal culture and heritage in Western Sydney with a focus on natural areas and protecting biodiversity
- recognise and embed the knowledge and connection that Aboriginal people have with Country into the implementation of the CPCP
- enable traditional custodians and interested Aboriginal groups to care for Country on new conservation land
- grow Aboriginal businesses and employment in the environmental sector.

The strategy is further described in the ‘Building knowledge and capacity’ section (see page 83).

## Environmental trends

### Adapting to a changing climate

Climate change is a serious and increasing threat to native species and ecosystems in Western Sydney. We expect it to be an ongoing challenge to the effectiveness of the CPCP and its commitments to secure ecological function.

The most significant natural hazards that will affect Western Sydney include bushfires, flooding and heatwaves. These natural hazards will be made worse by climate change, with wide-ranging impacts on biodiversity in the region. Climate change is likely to result in longer and more intense bushfire seasons, which will place additional pressure on the effectiveness of the plan’s conservation program.

Changes to bushfire patterns, temperature and rainfall were key considerations in designing the conservation program to help native species and ecosystems in Western Sydney adapt to climate change. Commitments to address increasing risks include funding research on the vulnerability of threatened species and ecological communities to climate change (Sub-Plan A: Commitment 22, actions 1 and 2) and more broadly, research on climate change adaptation as part of developing the Research Program Implementation Strategy (Sub-Plan A: Commitment 22, action 1).

The evaluation program will help to measure the success of the CPCP in enabling plants and animals to adapt and survive in a changing climate and inform adaptive management to respond to changing needs (Commitment 25).

## The urban heat island effect

Air temperatures in Western Sydney are expected to increase in the future because of climate change. This process will be made worse by the urban heat island effect, a phenomenon that occurs when large amounts of hard and dark-coloured surfaces such as roads and roofs cause localised warming. The urban heat island effect will become worse as urbanisation increases.

The NSW Government has implemented policies to address the urban heat island effect and increase resilience to climate change. [The Five Million Trees for Greater Sydney program](#) was introduced in 2018 with a target of completing the planting by 2030.

In 2019, the '[Greening our city](#)' Premier's Priority was announced to ensure 1 million of those trees were planted by 2022. This work involves reviewing the planning system to identify ways to increase the retention of mature trees, promote green cover and green spaces, and incentivise new tree planting and green cover projects, particularly in dense residential areas.

The CPCP will contribute to and support broader government efforts to mitigate the urban heat island effect by:

- introducing development controls specific to protecting biodiversity and other key environmental features in urban development areas (Commitment 2).
- strengthening the protection of areas of key biodiversity within the CPCP with a focus on securing new conservation land where biodiversity is protected in perpetuity (Commitments 8 to 14).

## Supporting delivery of the Premier's Priorities

The Premier's Priorities represent the NSW Government's commitment to significantly enhancing the quality of life of the people of NSW. The CPCP plays an important role in helping to deliver 2 priorities:

- [Greening our city](#) – increase the tree canopy and green cover across Greater Sydney by planting 1 million trees by 2022
- [Greener public spaces](#) – increase the proportion of homes in urban areas within 10 minutes' walk of quality green, open and public space by 10% by 2023.

The CPCP will contribute to these priorities by establishing and protecting new conservation land and through ecological restoration, increasing canopy cover and providing quality, green, open and public spaces. Further detail on this is provided in 'The conservation program' section of this document ('Reserves' on page 73 and 'Biodiversity stewardship sites' on page 74).

# Development



The CPCP will help to create livable communities which connect people with nature.

## Development

This section provides background on the planned growth in Western Sydney, including links with other NSW Government directions. It describes the context for future urban development areas in Western Sydney, including the hierarchy of strategic planning for the Western Parkland City.

This section identifies the land categories identified in the CPCP, including the areas in the nominated areas that will be certified for development under the *Biodiversity Conservation Act 2016* (NSW) (BC Act) and where approval for development will be sought under the *Environmental Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act). These areas are described as ‘certified-urban capable land’.

### Key terms used in the CPCP

#### Certified-urban capable land

This category identifies where future urban development is likely to occur, subject to other approvals. Certified-urban capable land will be subject to strategic biodiversity certification for development under Part 8 of the BC Act and class of actions approval under Part 10 of the EPBC Act. Development in these areas does not require further biodiversity assessment under the BC Act or EPBC Act, if consistent with the CPCP and its approvals.

#### Avoided land

This category identifies land with high biodiversity values that will be protected and is therefore not certified for future urban development. See page 25 for the complete definition of ‘avoided land’. Avoided land will be subject to development controls to avoid and minimise impacts on nationally and state-listed threatened species and ecological communities from development in the nominated areas, as required under the BC Act and EPBC Act.

#### Excluded land

Excluded land is land that has been excluded from the CPCP and for which NSW strategic biodiversity certification and approval through the federal strategic assessment will not be sought.

#### Strategic conservation area

The strategic conservation area represents areas with strategic biodiversity value that include threatened ecological communities and species and have important connectivity across the landscape and ecological restoration potential. The strategic conservation area will be used to identify potential conservation land for further investigation.

#### Biodiversity and Conservation SEPP

Planning controls will be introduced to support the CPCP through a new chapter of the *State Environmental Planning Policy (Biodiversity and Conservation) 2021* (referred to in this plan as the Biodiversity and Conservation SEPP). The purpose of the controls is to ensure that development in the nominated areas is consistent with the BC Act, the EPBC Act and the commitments and actions of the CPCP.

#### Essential infrastructure

Essential infrastructure is infrastructure to service and support urban and industrial development in the plan’s nominated areas. As defined in ‘Appendix A. Accessing EPBC approval for essential infrastructure development in the avoided land’, it includes development such as pipelines and pipeline corridors, roads and traffic, telecommunications and other communication facilities.

## Western Sydney City Deal

The Australian Government announced the formal approval of the Western Sydney International (Nancy-Bird Walton) Airport in December 2016. In March 2018, the NSW Government, together with the Australian Government and 8 Western Sydney councils, signed the Western Sydney City Deal. Under this deal, the NSW Government has committed to publish 5-year and 20-year housing targets for each local government area, to deliver the 185,000 new homes needed in the next 20 years.

Under the Western Sydney City Deal, the NSW and Australian governments committed to progress a strategic assessment under the EPBC Act to protect the environment and streamline environmental approvals for development. The CPCP supports that commitment and facilitates a streamlined environmental assessment process to reduce duplication between the NSW and Australian governments.

## Greater Sydney Region Plan and Western City District Plan

The Greater Sydney Region Plan: A Metropolis of Three Cities is a 40-year vision for a global metropolis of three cities incorporating land use planning, transport planning and infrastructure planning. The *Greater Sydney Region Plan* is guided by 10 overarching directions and 40 objectives for liveability, sustainability, productivity and infrastructure in Greater Sydney. Two core directions address sustainability and provide planning objectives that inform Cumberland Plain Conservation Plan:

- Objective 26 – A cool and green parkland city in the Wianamatta (South Creek) corridor
- Objective 27 – Biodiversity is protected, urban bushland and remnant vegetation is enhanced.

The CPCP supports the implementation of the Greater Sydney Region Plan for a Western Parkland City, and liveability planning priorities in the Western City District Plan, including:

- Planning Priority W13 – creating a Parkland City urban structure and identity, with Wianamatta (South Creek) as a defining spatial element
- Planning Priority W14 – protecting and enhancing bushland and biodiversity
- Planning Priority W16 – protecting and enhancing scenic and cultural landscapes.

## Future Transport Strategy 2056

The Western Sydney International (Nancy-Bird Walton) Airport is a transformative infrastructure project that will generate economic activity, provide employment opportunities closer to home for people in Western Sydney and meet Sydney's growing needs.

Following from the Future Transport Strategy 2056, the NSW Government is planning for the long-term transport needs of Western Sydney by identifying and protecting corridors of land that can be used to deliver transport infrastructure as needed.

The new airport and infrastructure corridors will drive transformational change in the Western Parkland City, supported by the strategic conservation planning approvals of the CPCP.

## Future urban development areas in Western Sydney

The nominated areas identified for development in the CPCP represent the strategic prioritisation and delivery of new precincts as part of the long-term growth of Greater Sydney.

Focusing development in these nominated areas maximises the efficiency of the urban form and increases opportunities to improve liveability and sustainability. Creating new urban centres will boost the local economy, create job opportunities and provide for high-quality education, recreation and housing developments to cater for current and future communities.

The locations of these areas have been determined through strategic planning processes and investigations. The 2 key strategic plans that informed the location of these areas include:

- [A Plan for Growing Sydney](#) (DPE 2014), which identifies the general location of the Wilton and Greater Macarthur growth areas and the Badgerys Creek airport precinct, which has been further defined by the department to become the Western Sydney Aerotropolis
- [Greater Sydney Region Plan](#) (GSC 2018), which identifies the general location of the Greater Penrith to Eastern Creek Urban Investigation Area and establishes a 40-year vision for Sydney as a global metropolis of 3 cities.

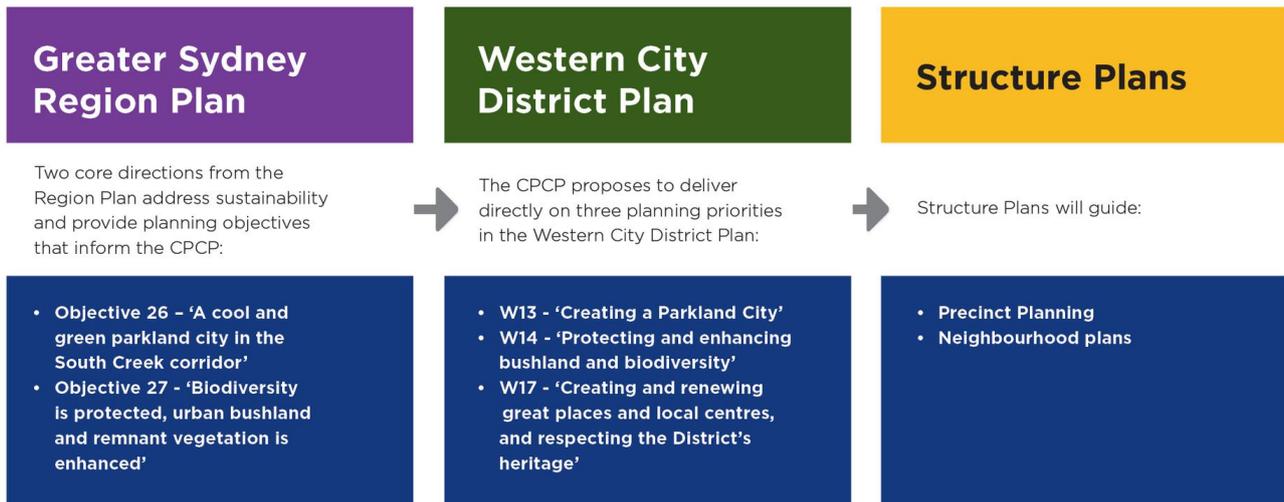
A Plan for Growing Sydney sets priorities and provides a direction for metropolitan planning. It identifies where to focus new housing and jobs, and how to target growth in strategic centres and transport gateways close to transport, and how to deliver social and economic outcomes. It sets the direction for subregional planning to accommodate Sydney's population growth to 2031. The strategy balances the need to accelerate housing production with a desire for high levels of amenity and the creation of strong and resilient communities within a highly liveable city. Particularly relevant for the CPCP is Goal 4, which is for 'a sustainable and resilient city that protects the natural environment and has a balanced approach to the use of land and resources' (DPE 2014, p94).

Objective 27 in the Greater Sydney Region Plan outlines how the NSW Government seeks to protect and manage biodiversity values across Greater Sydney, from national and state biodiversity conservation legislation to information such as biodiversity mapping. In giving effect to the Greater Sydney Region Plan, the Western Sydney District Plan includes an action (number 72) to protect and enhance biodiversity by supporting landscape-scale biodiversity conservation and the restoration of bushland corridors.

## Development in the nominated areas

Development in each nominated area is guided by a structure plan. Structure plans set the vision and strategic direction of each nominated area, consistent with the Greater Sydney Region Plan and district plans.

A structure plan is part of the strategic planning process for nominated areas. Structure plans identify areas of important biodiversity value and contain precinct planning principles, including for biodiversity considerations. These plans provide a line of sight from the Greater Sydney Region Plan through to planning at a precinct scale (see Figure 7). Structure Plans provide the direction for the relevant precinct plans that identify, at a more localised level, the permitted land uses and the location and phasing of infrastructure, as well as the development controls to guide the planning and design of the proposed development.



**Figure 7. Hierarchy of strategic planning for the Western Parkland City**

Delivery of key infrastructure in nominated areas will include green infrastructure such as conservation areas and open space, as well as public transport, roads, schools, medical facilities, community facilities, open space and utilities infrastructure. Structure plans are designed to be flexible to allow the NSW Government and local governments, in consultation with local communities, to respond over time to changing community expectations and new development directions, within the scope of the broader outcomes and constraints that have been identified for the area.

### Precinct plans

Precinct plans identify land uses, associated development and infrastructure at the finer scale, while ensuring considerations at the local level. Considerations include locating new homes and employment centres close to public transport, shops and services, and retaining and enhancing a community's character.

Precinct plans will be developed over time. Rezoning under each precinct plan will be implemented through the relevant place based environmental planning instrument, such as the Growth Centres SEPP or the Aerotropolis SEPP.

Precinct plans will need to be consistent with certified-urban capable land as mapped in the CPCP and will also protect the avoided land from more intensive development. Rezoning to support future urban development will only be allowed within the identified certified-urban capable land, and a ministerial direction will restrict the intensification of this development type on avoided land within nominated areas. Where the final certified-urban capable land under the CPCP is different to an earlier structure plan, this difference will be rectified in future precinct plans.

### Local strategic planning

To support a strategic-led planning framework in NSW, the CPCP informs precincts plans and strategic plans for relevant local government areas in Western Sydney. Strategic conservation planning at the landscape scale enables decision making for protecting the most important habitat for species early in the process through local strategic planning.

The department will work with local councils to integrate strategic conservation area mapping in local and regional planning. This would be done through local strategic planning statements, which guide the local plan-making process (Sub-Plan A: Commitment 14, action 3).

This could involve providing:

- mapping of the strategic conservation area for integrating in local council's local strategic planning statements
- input for the statements to guide land use planning for biodiversity conservation
- input for the statements for draft biodiversity conservation planning priorities
- input for the statements to guide local governments as they establish biodiversity stewardship agreements
- data from the plan to councils for adoption in biodiversity strategies, plans and planning for habitat corridors.

Local strategic planning statements have in turn informed the development of the CPCP through identification of precinct and master planning, local character statements, and local housing and infrastructure strategies.

The department will establish an implementation and compliance working group that includes representatives from all of the local councils covered by the CPCP (Sub-Plan A: Commitment 26, action 1). This will ensure local strategic planning, including local priorities, is embedded in the plan's decision-making framework. It will also enable ongoing consultation with local councils to guide implementation and ongoing adaptive management.

## Categories of land under the CPCP

### Certified-urban capable land

The structure plan for each nominated area will specify the boundaries of the certified-urban capable land. These boundaries identify where new development may occur in these nominated areas.

The department has used a strategic conservation planning approach to locate and design the certified-urban capable land in the nominated areas to avoid and minimise impacts on biodiversity values as part of developing the CPCP. This has been undertaken in accordance with the CPCP avoidance criteria (See

Appendix B. The CPCP avoidance criteria), which are consistent with:

- guidance provided under section 8 of the [Biodiversity Assessment Method](#)
- [Conservation measures in strategic applications for biodiversity certification](#) – Guidance for planning authorities (EES-DPIE, 2020)
- [terms of reference](#) for the strategic assessment.

The avoided land is mapped in Figure 8 to Figure 11. Certified-urban capable land will be subject to strategic biodiversity certification for development under Part 8 of the BC Act. Development in these areas does not require further biodiversity assessment under the BC Act, as long as the approved conservation program detailed in the CPCP is met. These areas are described in the CPCP as 'certified-urban capable land' and are identified in Figure 8 to Figure 11.

The Australian Government approval (under section 146B of the EPBC Act) will be sought for development that is taken in accordance with the CPCP. The CPCP requires development to be limited to the certified-urban capable land (except for essential infrastructure) and implemented consistent with the plan and class of actions approval obtained. The differences in the approval approaches are further explained in 'Box 1. State and federal approvals'.

Other approval processes under applicable NSW planning and assessment legislation are still needed prior to development proceeding.

## Box 1. State and federal approvals

### Biodiversity Conservation Act

Biodiversity certification under Part 8 of the BC Act is being sought as part of the strategic biodiversity certification for the 4 nominated areas and for the sections of the major infrastructure corridors within the nominated areas (except for proposed tunnels). Biodiversity certification will apply to the urban capable land and the major transport corridors in each nominated area. These are defined as 'certified-urban capable land' and 'certified-major transport corridors'.

Once certified, development can proceed in these areas without further NSW biodiversity approvals if the necessary development consent is obtained, prescriptions or conditions of approval are met, and any unavoidable impacts are addressed through the conservation program (see 'The conservation program' on page 47).

Development that occurs outside the certified land is not part of the biodiversity certification associated with the CPCP. Future development outside of certified land in any of the 4 nominated areas will need to seek separate biodiversity approvals under the BC Act or a formal modification to the strategic biodiversity certification. Development would also need to meet additional considerations set out in the planning controls that will apply through the Biodiversity and Conservation SEPP.

### Environment Protection and Biodiversity Conservation Act

The department is concurrently undertaking a strategic assessment under Part 10 of the EPBC Act for actions taken under the CPCP that may impact matters protected under Part 3 of the EPBC Act.

We are seeking Australian Government approval under section 146B of the EPBC Act for taking actions in accordance with an endorsed Plan. The classes of actions associated with urban development in the nominated areas are urban and industrial development, infrastructure, and intensive plant agriculture in the Western Sydney Aerotropolis Agribusiness Precinct.

Once endorsed under the EPBC Act, the CPCP will require development types described in the classes of action to be limited to the certified – urban capable land, except for certain essential infrastructure. Essential infrastructure must be consistent with the requirements in 'Appendix A. Accessing EPBC approval for essential infrastructure development in the avoided land' in order to be covered by the approval.

Land identified as excluded land in the CPCP is also excluded from the strategic assessment and Part 10 approval (EPBC Act).

In addition to the 3 classes of action for development in the nominated areas, the CPCP includes the Western Sydney major transport corridors class of actions, which include the 4 major transport corridors both within and outside of the nominated areas. EPBC Act approval (under Part 10) is being sought for these 4 major transport corridors, which are identified in Figure 12 and described in Development activities covered by the CPCP (see the section 'Description of actions' on page 35).

Development within the major transport corridors, and which is not described in the major transport corridors class of actions is not included in the approval for the CPCP and needs a separate EPBC Act approval for any potential significant impacts on matters of national environmental significance.

## Future modifications to the certified-urban capable land

The department may undertake a formal modification to the strategic biodiversity certification after the CPCP has been approved to account for any minor errors or inconsistencies in future developable areas (the certified-urban capable land) at a site scale (Sub-Plan A: Commitment 1, action 5).

Adjustments to the boundaries of the certified-urban capable land will only be applied in circumstances where:

- minor adjustments are identified at the site level
- updates are consistent with the avoidance criteria and supported by a Biodiversity Assessment Method (BAM) accredited assessor
- residual impacts to biodiversity, including matters of national environmental significance, are mitigated and offset in accordance with the Biodiversity Assessment Method (or equivalent) and EPBC Act Environmental Offsets Policy 2012 for any EPBC Act matters not covered by the BAM.

## Avoided land

In determining the certified-urban capable land for strategic biodiversity certification, the department first identified areas with important biodiversity through a strategic conservation planning process. These areas should be avoided in future development.

This land is described in the CPCP as 'avoided land'. Identifying and protecting avoided land will avoid and minimise the impacts to biodiversity from development in the nominated areas, as required under the BC Act and EPBC Act (this is further explained in the section 'Avoiding and minimising impacts' on page 62). The avoided land in each of the nominated areas is mapped in Figure 8 to Figure 11.

Future development in these areas will be subject to development controls, described in the section 'Development controls for avoided land', in addition to any existing and future applicable NSW legislation.

Biodiversity approvals through the CPCP, required under both the BC Act and EPBC Act, will not apply to the avoided land (with the exception of essential infrastructure, which will have EPBC Act approval).

## Additional infrastructure development in avoided land

EPBC Act approval is being sought for essential infrastructure development, such as utilities and local roads in the avoided land in the nominated areas, provided it is in accordance with Appendix A. Accessing EPBC approval for essential infrastructure development in the avoided land.

## Development controls for avoided land

Development controls to protect important biodiversity will be applied to avoided land in the CPCP. These controls will be applied through a new chapter of the Biodiversity and Conservation SEPP 2021. The controls require permission for the clearing of native vegetation. The consent authority must consider the impact of the proposed development on the biodiversity values of the land before granting consent for clearing.

A ministerial direction made under section 9.1 of the *Environmental Planning and Assessment Act 1979* will restrict future rezoning of land to more intensive land uses on avoided land and ensure that the proposed development in the new precincts is confined to the certified-urban capable land identified under the CPCP.

Councils must address and follow the section 9.1 directions in considering any planning proposals submitted to them.

### Certified–major transport corridors

Major transport corridors within nominated areas, with the exception of the tunnel sections (identified in Figure 4) will be certified for development under the BC Act.

Certified-major transport corridors have been strategically assessed and included in the CPCP for endorsement and subsequent approval under the EPBC Act.

### Major transport corridors (strategically assessed only)

Major transport corridors outside of nominated areas, and the tunnels both inside and outside of the nominated areas (identified in Figure 4) will not be certified under the BC Act through the CPCP.

All of the major transport corridors included in the CPCP (including tunnel sections) have been strategically assessed and included for approval under the EPBC Act.

### Excluded land

Excluded land is land that is excluded from NSW strategic biodiversity certification and strategic assessment under the EPBC Act. These areas will not receive any biodiversity approvals under the CPCP because the land:

- is already identified for urban use, such as, existing urban areas or has specific urban zoning, such as business, industrial, residential or special purpose (either already developed or to be developed)
- is in the nominated areas and already assessed as part of another development approval (such as Bingara Gorge), or is progressing through an alternative development assessment and biodiversity certification approval process (such as Mount Gilead and Menangle Park)
- has approved major projects in the avoided land
- is environmentally protected, including reserves and existing offset sites
- is Commonwealth land (such as the Defence Establishment Orchard Hills)
- has roads or easements that intersect with areas of high biodiversity value (the avoided land).

## Area of land categories

Table 2 presents the amount of land that is identified in the CPCP for each of the 4 land categories – certified–urban capable land, certified-major transport corridors, avoided land, and excluded land.

**Table 2. Area (in hectares) of identified land categories for each nominated area**

Nominated Area	Greater Macarthur	Greater Penrith to Eastern Creek	Western Sydney Aerotropolis	Wilton
Certified-urban capable land	2,865	1,700	3,965	1,720
Certified-major transport corridors	10	565	340	0
Avoided land	2,180	235	615	1,480
Excluded land	5,905	16,115	1,240	870
<b>Total</b>	<b>10,960</b>	<b>18,615</b>	<b>6,160</b>	<b>4,070</b>

## Maps of land categories

Maps of land categories for each nominated area are provided in Figure 8 through to Figure 11.

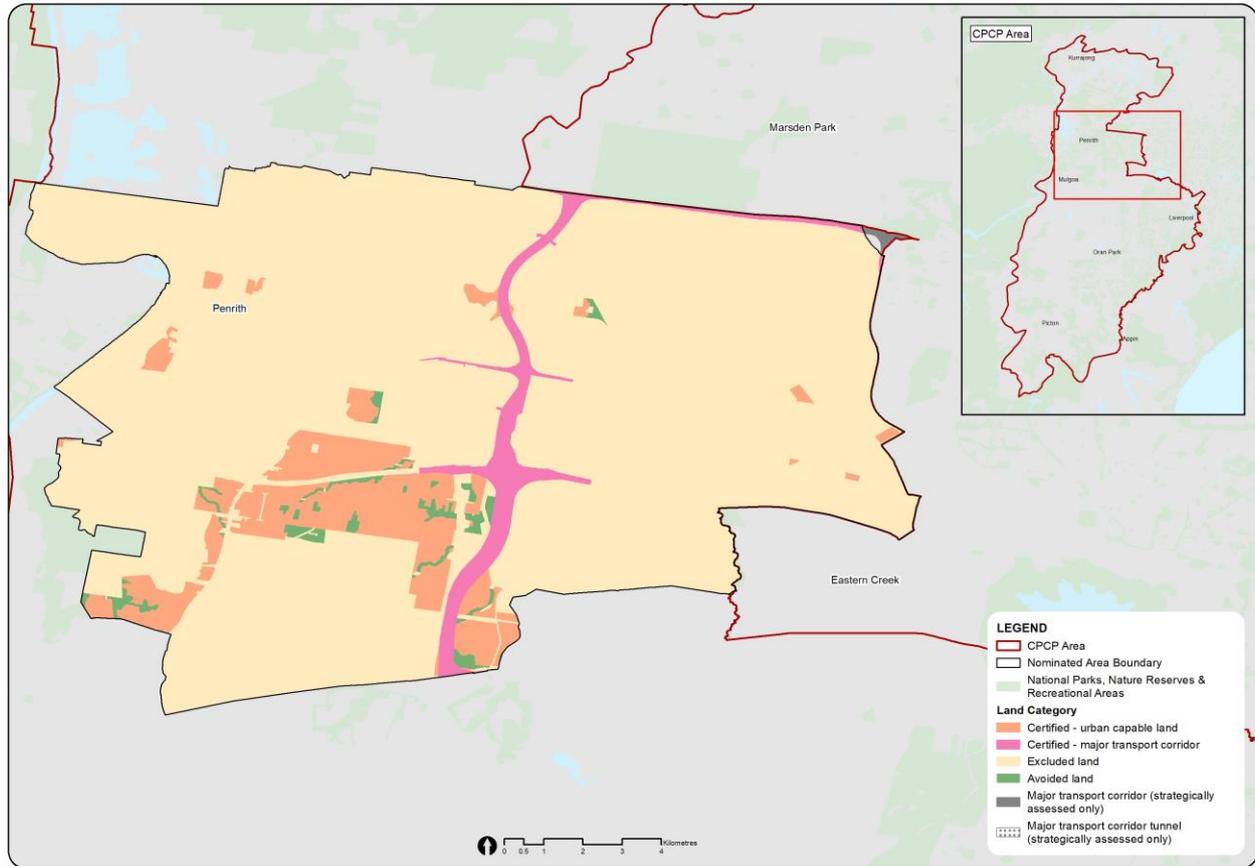


Figure 8. Greater Penrith to Eastern Creek Investigation Area

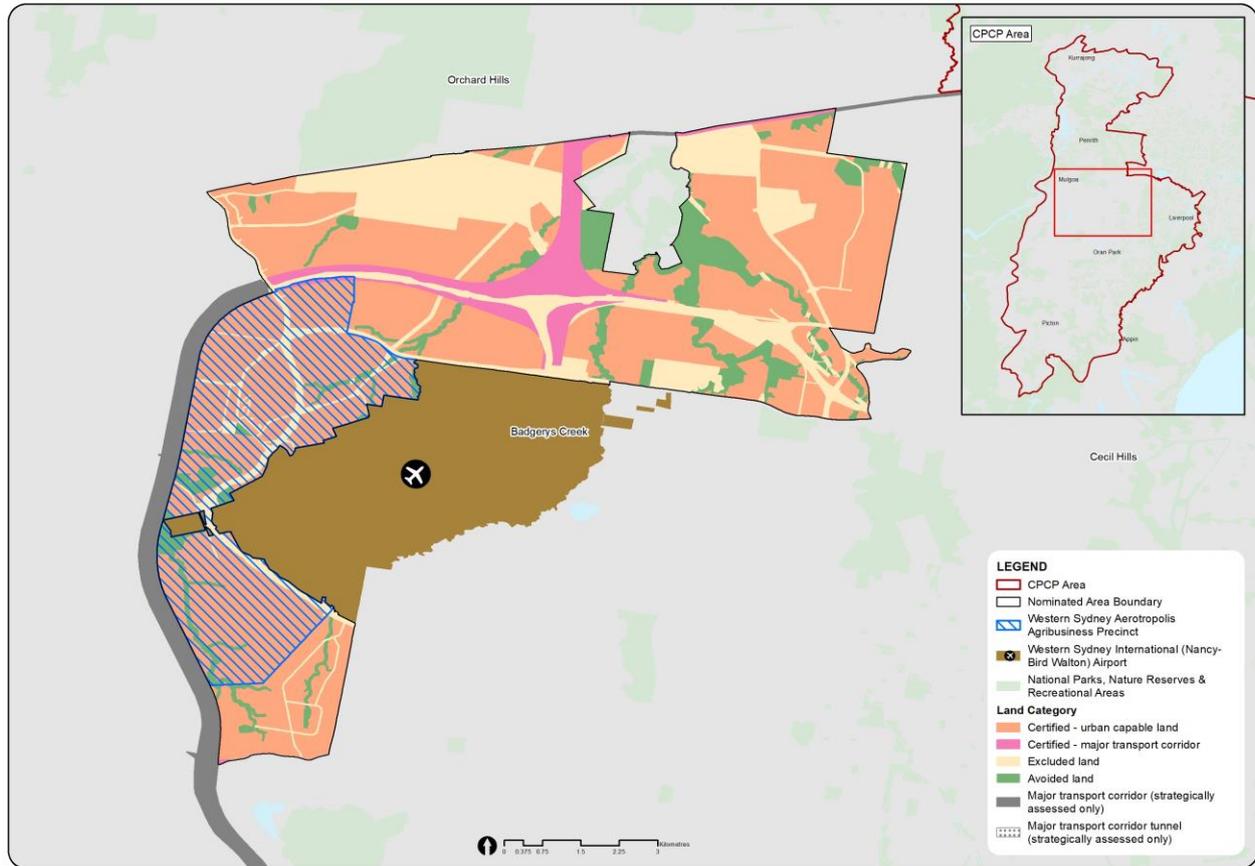


Figure 9. Western Sydney Aerotropolis

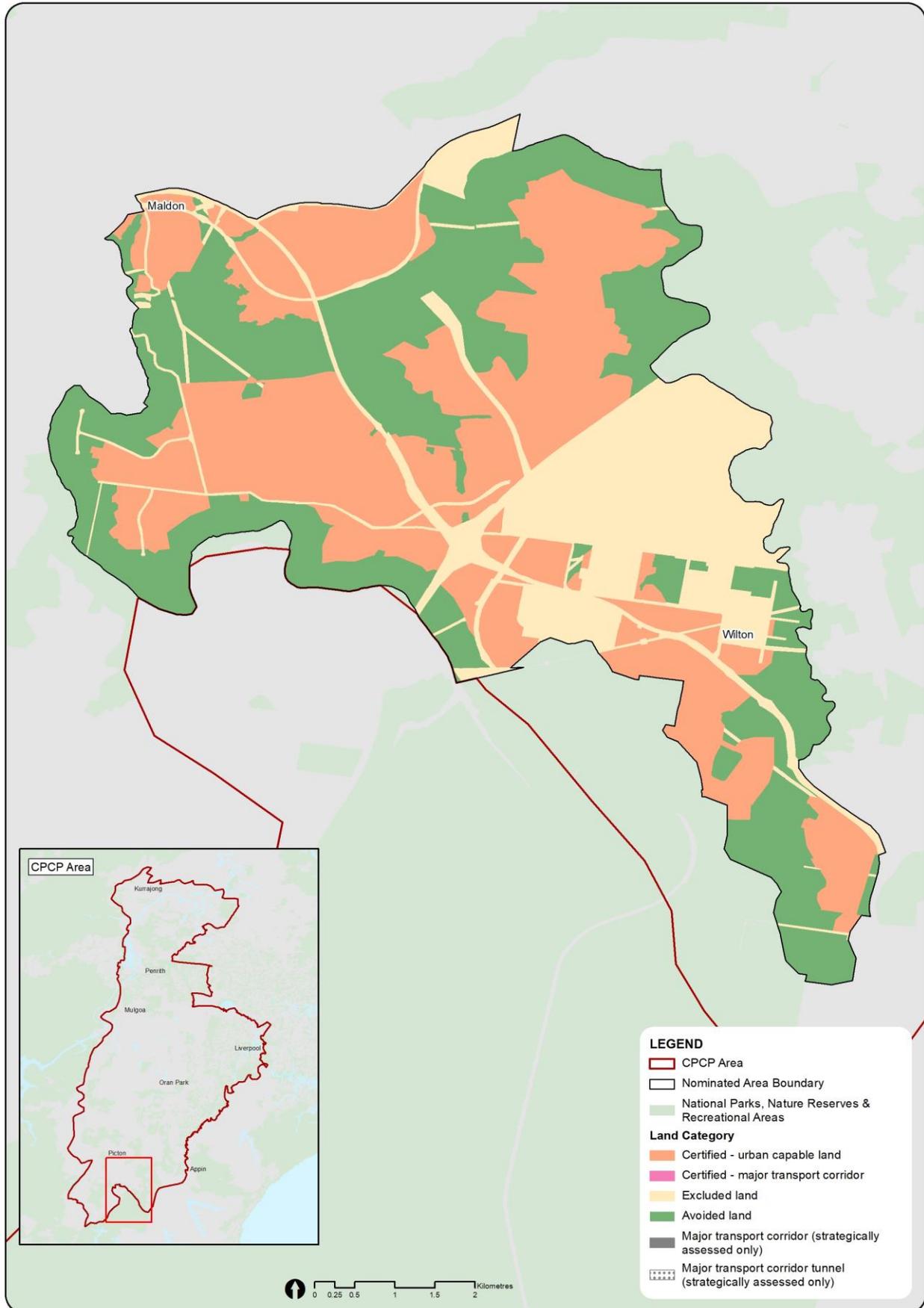


Figure 10. Wilton Growth Area

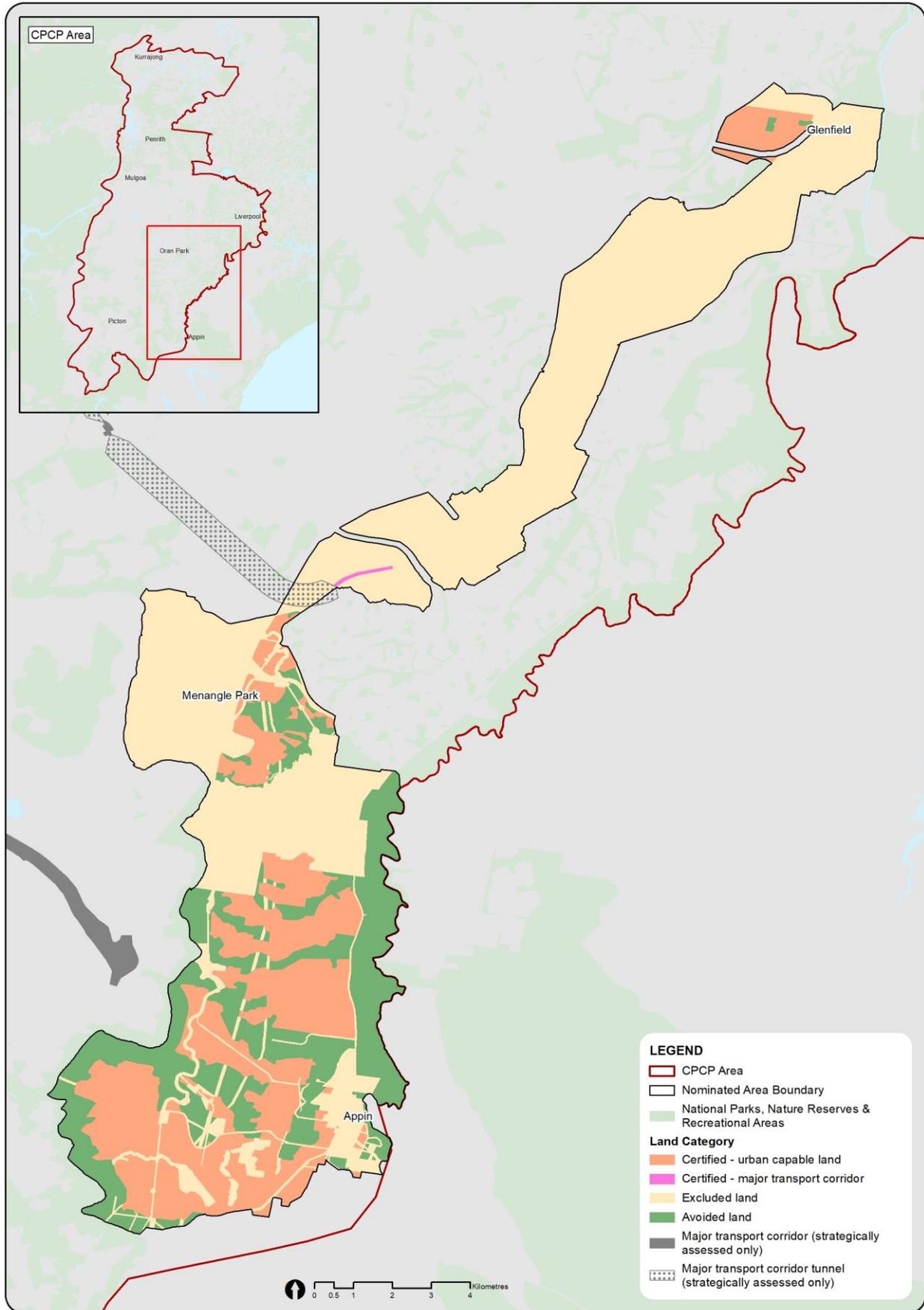


Figure 11. Greater Macarthur Growth Area

# Description of Actions



Warragamba Pipelines in Mamre Road

## Description of actions

This section describes the actions that will be taken under the Cumberland Plain Conservation Plan as it relates to section 146 of the EPBC Act. It details the development to be included in an approval of a class of actions. The classes of actions are:

- urban and industrial development in the nominated areas
- infrastructure in the nominated areas
- intensive plant agriculture in the Western Sydney Aerotropolis Agribusiness Precinct
- Western Sydney major transport corridors.

Inclusion of an action in the descriptions in the CPCP does not confirm that the use is appropriate under the National Airports Safeguarding Framework (NASF). An assessment against the NASF will need to be undertaken separate to the CPCP to ensure the use is appropriate in proximity to Western Sydney International (Nancy-Bird Walton) Airport.

### Note on legislation

The descriptions in the following sections reference provisions of the NSW environment planning and assessment legislation, state planning instruments, and biodiversity conservation legislation currently in force. Any future amendments to the legislation and planning instruments will be subject to transitional arrangements, where references to any provisions in the CPCP that are repealed will become references to the new equivalent provisions in force at the time.

Where the CPCP identifies potential future amendments, such amendments will be considered as part of EPBC Act endorsement and approval process. Where any provisions referred to in the CPCP are repealed and replaced with substantially equivalent new provisions, the references in the CPCP will be taken to be a reference to those new equivalent provisions.

### Note on future minor modifications to the certified-urban capable land

The boundary of certified-urban capable land can be changed through a modification to the CPCP strategic biodiversity certification under the BC Act.

Where a modification meets the CPCP modification criteria and is approved, the modified boundary will be considered the new certified-urban capable boundary for the purposes of EPBC Act endorsement and approval. Upon modification, the previous land category would cease to apply and the new land category applies instead.

Minor modifications to the certified-urban capable land boundary, for the purposes of EPBC Act endorsement and approval, can be applied if:

- modification meets CPCP modification criteria, including:
- minor adjustments are identified in an adjacent area; and
- modification does not include Commonwealth land (as defined in section 528 of the EPBC Act); and
- residual impacts to biodiversity, including matters of national environmental significance, are mitigated and offset in accordance with the Biodiversity Assessment Method (or equivalent) and EPBC Act Environmental Offsets Policy, 2012 for any EPBC Act matters not covered by the BAM.

## Urban and industrial development

Urban and industrial development will include new and proposed urban and industrial areas to support the broader planning directions in the nominated areas. Development included in this class of actions may include, but is not limited to:

- mixed residential, commercial and industrial development to provide houses, jobs, services, and open and recreational spaces
- major town centres with a full range of shops and public and private recreational facilities and services, along with smaller village centres and neighbourhood shops
- social infrastructure such as education facilities, cultural facilities, childcare services, sports facilities, entertainment facilities, places of public worship, libraries and community centres
- essential services such as health facilities and emergency services facilities
- general industrial facilities such as retail outlets, manufacturing industries, training facilities, information and technology facilities, light industries, high-tech industries, material supply centres and distribution centres
- supporting infrastructure for parks and public reserves such as environmental facilities, information and education facilities, kiosks, recreation areas, outdoor recreation facilities, water recreation structures
- agribusiness, including businesses associated with the production, processing, marketing and distribution of agricultural products. This includes biotechnology research and development, organisations involved in smart, high-tech farming practices, data centres, technical services for robotics and farm machinery, food processing, export enabling infrastructure and general administrative services
- wholesale markets, including retail, accommodation, and large distribution centres, trading floor and associated infrastructure such as cold stores, ripening rooms, treatment facilities and waste management
- advanced food manufacturing and logistics
- warehouse, freight and logistics, including distribution centres, freight transport facilities and heavy industrial storage establishments and storage premises
- airport and ancillary uses to support the delivery and operation of the new airport.

Urban and industrial development will be limited to the certified-urban capable land in the nominated areas, and includes any development permitted through residential (R), business (B), or industrial (IN) zones, consistent with the structure plan and precinct plans for each nominated area.

### Note on precinct plans

The proposed land use and zoning maps for each nominated area will be consistent with the boundaries of the certified-urban capable land and will protect the avoided land identified in the CPCP.

The structure plans and precinct plans made by the relevant planning authority under the *Environmental Planning and Assessment Act 1979* will need to be consistent with the land categories as mapped by the CPCP.

A new ministerial direction will be introduced to ensure future planning proposals within the precincts are consistent with the plan and protect the biodiversity.

## Infrastructure

Development in this class of actions may include development for the purposes of:

- electricity transmission or distribution networks
- gas pipelines
- road or road infrastructure facilities, including public transport facilities
- railways and rail infrastructure facilities
- water reticulation systems, water storage facilities, water treatment facilities, or a water supply system
- telecommunications facilities or telecommunication network
- stormwater management system
- resource recovery facility, waste disposal facility, waste or resource management facility and waste or resource transfer station
- organic waste and composting facilities
- koala-exclusion fencing as described in the Biodiversity and Conservation SEPP
- fauna crossings as described in the Biodiversity and Conservation SEPP

Related activities and developments associated with the delivery of infrastructure under this class of actions are set out in [State Environmental Planning Policy \(Infrastructure\) 2007](#). Development in this class of actions does not include activities described in the Western Sydney major transport corridors class of actions.

Infrastructure activities will generally be limited to certified-urban capable land within the nominated areas. It may be carried out by a proponent of essential infrastructure on avoided land if it is consistent with the requirements for essential infrastructure development (see 'Appendix A. Accessing EPBC approval for essential infrastructure development in the avoided land').

Requirements include the following:

- Environmental impacts of the activities must be considered under the Environmental Planning and Assessment Act, and an 'avoid, minimise and mitigate' process applied.
- Matters of national environmental significance must be considered through the 'avoid, minimise and mitigate' process and any relevant commitments of the CPCP specific to matters of national environmental significance are applied.
- The proponent must notify the department of the development.
- The development is not:
  - a classified road (under the *Roads Act 1993*)
  - Division 4.7 State Significant Development (Environmental Planning and Assessment Act)
  - Division 5.2 State Significant Infrastructure (Environmental Planning and Assessment Act)
  - Division 5.1 Road Activities (Environmental Planning and Assessment Act)

Essential infrastructure in the avoided land will also need to meet specific commitments for avoidance (Commitments 2.1 and 2.2). This includes limiting cumulative direct impacts to EPBC Act-listed threatened ecological communities over the life of the CPCP in accordance with the impact thresholds in Table 3.

Additionally, the biodiversity impacts of the activities will be assessed under the BC Act, if triggered, and an 'avoid, mitigate, offset' process will be applied.

**Table 3. Cumulative impact thresholds for threatened ecological communities in the avoided land**

Threatened ecological community (EPBC Act)	Greater Macarthur	Greater Penrith to Eastern Creek	Western Sydney Aerotropolis	Wilton
Coastal Swamp Oak ( <i>Casuarina glauca</i> ) Forest	Not present	0.10 hectares	0.50 hectares	Not present
Cooks River/Castlereagh Ironbark Forest in the Sydney Basin Bioregion	Not present	0.00 hectares	0.50 hectares	Not present
Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest	0.70 hectares	1 hectare	0.60 hectares	Not present
River-flat Eucalypt Forest	0.30 hectares	0.80 hectares	1.80 hectares	Not present
Shale Sandstone Transition Forest in the Sydney Basin Bioregion	23.80 hectares	Not present	Not present	16.50 hectares
Western Sydney Dry Rainforest and Moist Woodland on Shale	0.30 hectares	Not present	Not present	Not present

The department is introducing the Cumberland Plain Conservation Plan Guidelines for Infrastructure Development to be considered by essential infrastructure in the avoided land and infrastructure activities in the certified-urban capable land. This guideline will include objectives, controls and specific mitigation measures for indirect and prescribed impacts to threatened ecological communities, species and their habitat from activities as prescribed in 'Appendix E. Species and TEC-specific mitigation measures'

Infrastructure providers should also implement mitigation measures based on the outcomes of environmental assessment of detailed designs in accordance with the requirements of the NSW approval process, as well as published, best practice guidelines (Sub-Plan A: Commitment 5, action 7).

### Note on the responsibility of the approval holder

The approval holder, determined at the time of approval, will be responsible for notifying proponents of their obligations under the EPBC Act, monitoring the impacts of development, and monitoring compliance with the avoid, mitigate and offset commitments of the CPCP.

Every effort should be made to ensure that infrastructure development is limited to the certified-urban capable land. Any development outside of those areas will need to comply with 'Appendix A. Accessing EPBC approval for essential infrastructure development'

## Intensive plant agriculture in the Agribusiness Precinct

The Western Sydney International (Nancy-Bird Walton) Airport presents a unique opportunity to invest in agriculture and agribusiness industries. The Agribusiness Precinct in the Western Sydney Aerotropolis, located at the northern and western edges of the airport, will support and add value to the agricultural industry operations across the Western Parkland City.

Intensive plant agriculture activities approved under this class of actions may incorporate existing, new and proposed agricultural areas to help broader program planning in the Western Sydney Aerotropolis.

Development in these areas may include the following, provided they satisfy and meet the relevant objectives of the National Airport Safeguarding Framework:

- intensive plant agriculture, including protective cropping structures used primarily for horticultural applications to control specific environmental conditions and facilitate high-quality, high-quantity production of a defined fruit, vegetable or flower
- the cultivation of irrigated crops for commercial purposes (other than irrigated pasture or fodder crops)
- horticulture and viticulture.

Intensive plant agriculture will be limited to the Western Sydney Aerotropolis Agribusiness Precinct (see Figure 9).

## Western Sydney major transport corridors

The transport projects and associated major transport corridors for Western Sydney included for assessment in the CPCP are described in Table 4, along with their proposed staging. These corridors are the only major transport corridors that will be approved for developed through the CPCP, noting that they may be subsets of the full major transport corridors required for each transport project. The major transport corridors required for delivering these transport projects will be preserved by the NSW Government under relevant planning legislation and planning instruments.

Responsibility for developing and delivering transport infrastructure rests primarily with the NSW Government, specifically Transport for NSW and Sydney Metro. Local, state, or regional distributor roads that feed from and to this major infrastructure are not part of the major transport corridor program and will be established as part of the infrastructure class of actions or via separate planning processes.

For each of the identified transport projects in Table 4, development under this class of actions includes all activities associated with the design, construction, and operation of the major road or rail infrastructure facilities, including tunnels and tunnelling activities assessed and approved as NSW state-significant infrastructure or NSW state-significant development. This includes any such development on land within the mapped or preserved corridors identified in the CPCP, or on any other land required for the transport project along the general alignments shown in the plan, as identified under the NSW state-significant infrastructure approval or NSW state-significant development approval for each transport project. For the avoidance of doubt, this class of actions does not apply to transport activities assessed under Part 5, Division 5.1 of the NSW Environment Planning and Assessment Act 1979.

The design of the infrastructure and the exact staging of delivery are not yet determined and are subject to the legislated approvals process and funding.

**Table 4. Western Sydney major transport corridors**

Investigation timeframe	Transport project initiative	Purpose
<b>0–10 years</b>	Metro rail future extension from Western Sydney Aerotropolis to Macarthur (except for those areas in the South West Growth Area)	Provide for a future extension of the Metro south from the Aerotropolis (Bringelly) to Macarthur
<b>10–20 years</b>	Western Sydney Freight Line corridor	Provide for a future freight rail line to connect Port Botany and Western Sydney
<b>10–20 years</b>	Outer Sydney Orbital between Box Hill and the Hume Motorway near Menangle	Provide for a future north–south motorway and freight rail line
<b>20+ years</b>	M7/Ropes Crossing Link Road	Provide for a future east–west motorway linking the M7 to the future Outer Sydney Orbital at Ropes Crossing

The locations and general alignments of these major transport corridors are shown in Figure 12. Development will take place within a designated development footprint, primarily defined by infrastructure corridor widths. The infrastructure in these corridors will be subject to design definition, particularly regarding alignment within corridors, operations and the placement of transport equipment. In some circumstances, development activities may be necessary adjacent to the corridor, and in such circumstances the avoid, mitigate and offset hierarchy continues to apply to all actions. The final location and alignment of infrastructure within the corridor is subject to a future process of refinement following detailed planning and design.

Only activities described in the description for this class of actions are included in the CPCP for the purposes of EPBC Act endorsement and subsequent approval under the plan. This includes all activities associated with the design, construction and operation of major transport infrastructure assessed and approved as NSW state-significant infrastructure (under Division 5.2 of the NSW Environment Planning and Assessment Act 1979, or equivalent) and NSW state-significant development (under Division 4.7 of the NSW Environment Planning and Assessment Act 1979, or equivalent). These activities include, but are not limited to:

- vegetation clearing
- earthworks
- utility works
- landscaping
- erosion and sediment control
- laydown areas
- road and rail construction and operation
- tunnel construction and operation
- construction of supporting infrastructure such as stations, car parks and pedestrian access
- electricity infrastructure
- site offices and access roads
- dust and noise suppression
- stormwater management (including detention basins, ponds and dams)

- vehicle and train movements
- maintenance and upgrade activities
- installation and maintenance of traffic control and safety infrastructure.

The CPCP requires Transport for NSW to apply separate processes to meet avoidance commitments within the certified-major transport corridors versus the major transport corridors that have only been strategically assessed. These are described in the following sections.

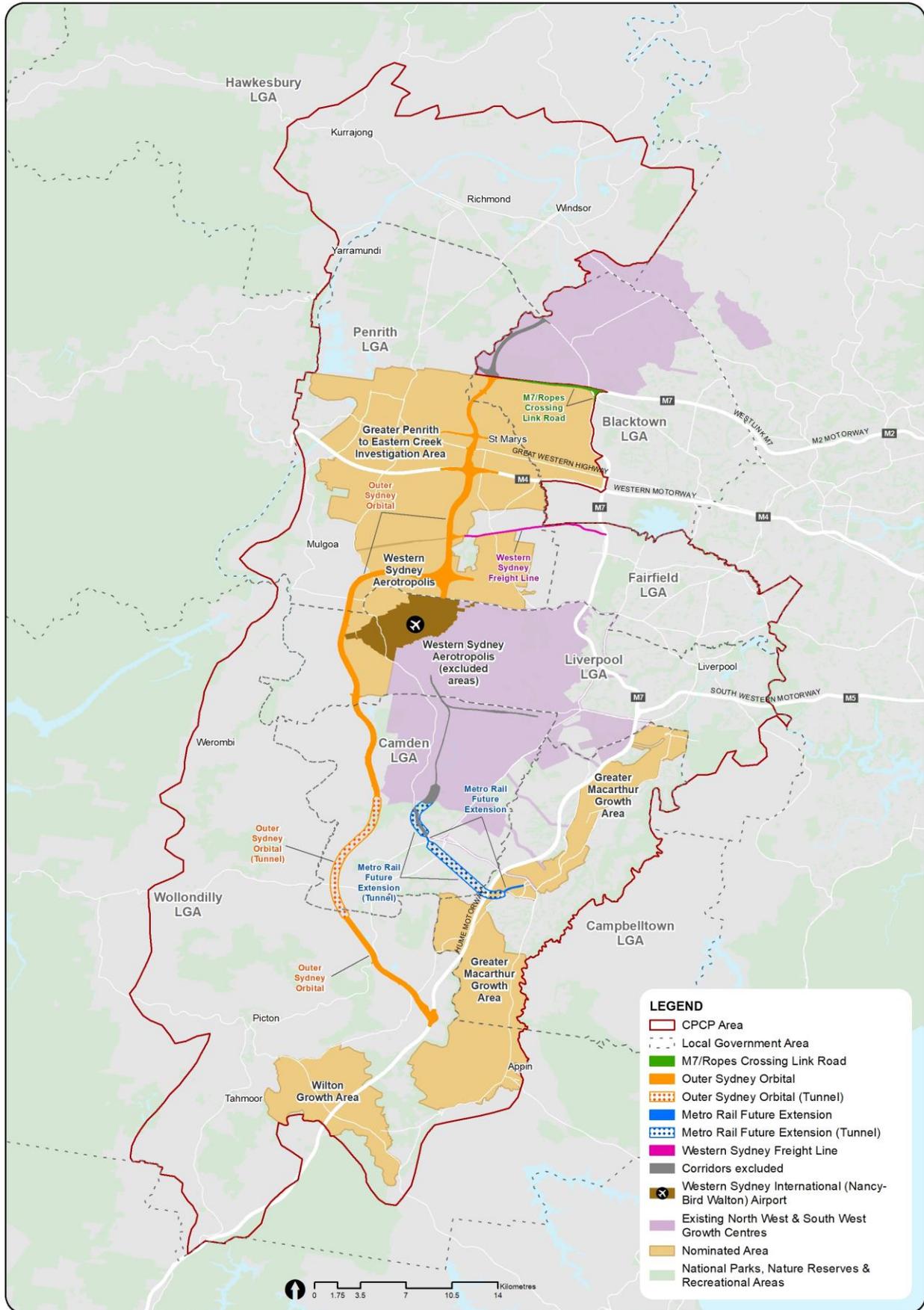


Figure 12. Indicative locations of the major transport corridors for Western Sydney

## Avoidance commitments for certified-major transport corridors

The CPCP requires Transport for NSW apply the plan's avoidance criteria (see 'Appendix B. The CPCP avoidance criteria') with specific consideration to matters identified in

commitment 3, during the strategic planning phase of each transport project to avoid impacts to threatened ecological communities, species and their habitats.

In the case that an action cannot feasibly or practically avoid impacts on an area of high environmental value, these impacts should be minimised as far as possible using design refinements to reduce overall impact.

Third-party activities within major transport corridors will not be included in the CPCP for EPBC Act endorsement and subsequent approval.

## Avoidance commitments for major transport corridors (strategically assessed only)

The CPCP requires Transport for NSW to avoid and minimise impacts to biodiversity within the strategically assessed-only major transport corridors, including the Outer Sydney Orbital and Metro Rail Future Extension tunnel sections. Transport for NSW will have to:

- undertake surveys to confirm biodiversity values, including matters of national environmental significance (MNES) during the strategic planning phase of each transport project to understand potential impacts
- include the biodiversity benefits of avoiding threatened ecological communities, species and their habitat as well as the costs of offsets into the evaluation of the route options (for example multi-criteria analysis)
- avoid and minimise impacts to biodiversity values, including MNES, in accordance with the Biodiversity Assessment Method (or equivalent) and with specific consideration to the protected matters identified in commitments 4.1, 4.2 and 4.3 during the environmental impact assessment phase of each transport project
- offset impacts to biodiversity values, including MNES, in accordance with the Biodiversity Assessment Method (or equivalent) and EPBC Act Environmental Offsets Policy 2012 for any EPBC Act matters not covered by the BAM.

Transport for NSW will report to the department and executive implementation committee on avoidance to biodiversity and MNES achieved in both the certified- and strategically assessed only major transport corridors.

For transport projects in the major corridors (strategically assessed only), Transport for NSW will also report on adjustments to transport corridor boundaries identified through the NSW state-significant infrastructure or NSW state-significant development approval (or equivalent), additional impacts outside of mapped corridors for EPBC Act-listed species, populations or ecological communities, and offsets to be secured under the NSW state-significant infrastructure or state-significant development approval and the EPBC Act Environmental Offsets Policy 2012, where relevant.

## Mitigation commitments

The CPCP requires Transport for NSW to apply mitigation measures to reduce impacts to MNES from the construction and operation of major transport infrastructure. The mitigation commitment

(Commitment 6) is detailed in Appendix C. CPCP commitments and specific mitigation measures are detailed in 'Appendix E. Species and TEC-specific mitigation measures'.

Mitigation measures include:

- assessing the impacts on biodiversity values, for major transport corridors (strategically assessed only), and on other environmental values (for both certified- and strategically assessed only- major transport corridors) based on detailed design.
- implementing specific mitigation measures prescribed in 'Appendix E. Species and TEC-specific mitigation measures' and identifying and implementing additional mitigation measures based on the outcomes of environmental assessment of detailed designs in accordance with the requirements of the state-significant infrastructure or state-significant development (or equivalent) approvals process, as well as published, best-practice guidelines, including but not limited to, the RMS Biodiversity Guidelines.
- applying further mitigation according to the Biodiversity Assessment Method (BC Act) (or equivalent) for major transport corridors (strategically assessed only), including the tunnels sections.
- identifying potential design options for major watercourse crossings to reduce disruption to connectivity and the risk to fauna of vehicle strikes.
- establishing baseline monitoring data and undertaking ongoing monitoring of high-value environmental areas, and reviewing and adjusting mitigation measures (where practical) in response to monitoring outcomes in accordance with the requirements of the state-significant infrastructure (or equivalent) approval.

Transport for NSW will report to the department and executive implementation committee on mitigation measures proposed to manage impacts of each infrastructure project, including proposed techniques, timing, frequency and responsibility for implementing each measure.

### Note on avoidance of MNES and offsetting impacts

The major transport infrastructure included for approval in the CPCP has not yet finalised implementing its avoidance of biodiversity values as the construction alignment for the corridors are not yet certain. We expect that further areas will be avoided as designs for the transport corridors are determined over the life of the plan.

The CPCP commits that Transport for NSW will apply measures to avoid and minimise impacts to threatened species, populations and communities within major infrastructure corridors described in the plan (as described in Commitments 3, 4, 4.1, 4.2 and 4.3).

For the certified major transport corridors, this includes providing to the department with a clearing reconciliation report within 60 days of clearing for each transport project. The reconciliation report will provide information on vegetation cleared, resulting direct impacts to threatened species habitat and threatened ecological communities, and a demonstration of how the CPCP avoidance criteria were applied. This will be used to inform the reconciliation accounting process to track impacts and offsets, including Transport for NSW's financial liability.

For the major transport corridors (strategically assessed only), the requirement for avoidance would be identified through the BC Act Biodiversity Assessment Method through the biodiversity certification assessment report or the biodiversity development assessment report and with specific consideration to the protected matters identified in commitments 4.1, 4.2 and 4.3. Where there is a residual impact to biodiversity values, including MNES, these should be offset in accordance with the Biodiversity Assessment Method (or equivalent) and EPBC Act Environmental Offsets Policy 2012.

### Note on the responsibility of the approval holder

At the time of writing this plan, any MNES occurring within the major transport corridors were assumed to be impacted, with corresponding offset targets.

In the case that avoidance can be achieved within the corridors, the approval holder, determined at the time of approval, will be responsible for ensuring Transport for NSW reports on development impacts and adjustments identified through a clearing reconciliation report. This will include specific reporting on realised impacts within the mapped or protected corridors identified in the CPCP for EPBC Act-listed species and ecological communities.

We will use this information to track impacts and adjust Transport for NSW's EPBC Act offset requirements through the reconciliation accounting process (Sub-Plan A: Commitment 4).

In the case that Transport for NSW meets the equivalent offset obligations for EPBC Act matters through a NSW state-significant infrastructure or NSW state-significant development approval (or equivalent), such as for impacts in major transport corridors (strategically assessed only), these will be counted against CPCP's offset targets. The approval holder, determined at the time of approval, will be responsible for ensuring Transport for NSW reports on offsets liable or secured under the state-significant infrastructure or NSW state-significant development approval for each of the transport projects across all 4 major transport corridors, including tunnels, in the CPCP. Adjustments to projected impacts to biodiversity (including MNES) and how offset requirements are met will be published regularly through the reporting framework, which includes annual updates and 5-yearly reviews.

# Conservation Program



Swift Parrots can be found in the CPCP area during autumn and winter when they migrate from Tasmania to feed.

# The conservation program

## Conservation program highlights

- Identify 4,510 hectares of high biodiversity land in the nominated areas to be avoided from development through upfront strategic conservation planning and apply development controls to these areas to minimise future impacts on biodiversity
- Protect, in perpetuity, a minimum of 5,325 hectares of impacted native vegetation communities within a conservation land and up to 11,900 hectares of conservation land to deliver in-perpetuity biodiversity outcomes, improve ecological resilience and connectivity, and increase the area of green space and reserves for the community to enjoy
- Secure important koala movement corridors by establishing the Georges River Koala Reserve and install up to 120 kilometres of koala-exclusion fencing and a safe crossing at Appin Road to protect koalas from increasing threats such as vehicle strike and dog attacks
- Prioritise and investigate the establishment of 2 new reserves in the Wollondilly and Hawkesbury local government areas – Gulguer Reserve Investigation Area and Confluence Reserve Investigation Area – and encourage landholders to enter into biodiversity stewardship agreements in areas such as Razorback
- Undertake ecological restoration of threatened ecological communities to reconstruct over-cleared vegetation types

The conservation program will direct the avoid, minimise, mitigate and offsetting of impacts on biodiversity from urban development and major transport corridors described in the CPCP. It has been developed to address the Cumberland Plain Assessment Report, which assessed the direct, indirect, prescribed and cumulative impacts of development. A summary of impacts from development under the CPCP is provided in Table 5. Summary of impacts based on the Cumberland Plain Assessment Report. A complete list of biodiversity values that will potentially be directly impacted by development is given in 'Appendix D. EPBC Act and BC Act matters to be offset through the CPCP'.

Significant conservation planning has been undertaken to inform the development of the conservation program and to identify what biodiversity values currently exist in the CPCP Area, where development should be located, and where conservation should be targeted for the greatest strategic benefit.

## Addressing impacts

The conservation program includes a set of commitments and actions to avoid, mitigate and offset the development impacts identified in the Cumberland Plain Assessment Report. Several inputs informed the commitments and actions. These include: the intended outcomes of the CPCP (see Figure 6), offset target methods to determine potential risk to threatened ecological communities and threatened species from future development, and the guiding principles and policies of agencies with regulatory responsibility for the CPCP.

The core commitment is to secure in perpetuity, a minimum of 5,325 hectares of target native vegetation in the Cumberland subregion through establishing or protecting conservation land (Commitment 8). Target native vegetation comprises threatened ecological communities that will be impacted by development under the CPCP. This target has been calculated to offset biodiversity impacts from development through the offset target methods (see 'Box 2. Offset target methods for threatened ecological communities and species').

Section 10.2 of the Biodiversity Assessment Method requires an assessment of whether development to be certified under the BC Act will result in Serious and Irreversible Impacts (SAIL) to any NSW listed threatened ecological communities or species. Serious and irreversible impact entities have been assessed in the Cumberland Plain Assessment Report in accordance with BAM requirements (see Chapter 25 of the assessment report), with the outcomes informing the conservation program.

**Table 5. Summary of impacts based on the Cumberland Plain Assessment Report**

Value or protected matter	Impact
Total impacts to native vegetation	1,753.6 hectares
Threatened ecological communities <sup>2</sup>	8 under BC Act 6 under the EPBC Act
Threatened species <sup>3</sup>	25 flora species 24 fauna species
Most impacted threatened ecological communities	Cumberland Plain Woodland (PCT 849/850) Shale Sandstone Transition Forest (PCT 1395) River-Flat Eucalypt Forest (PCT 835)
Target <sup>4</sup> species	<p><b>Flora species:</b></p> <p><i>Cynanchum elegans</i>  <i>Dillwynia tenuifolia</i>  <i>Grevillea juniperina subsp. juniperina</i>  <i>Hibbertia fumana</i>  <i>Hibbertia puberula</i>  <i>Marsdenia viridiflora subsp. viridiflora</i>  <i>Persoonia nutans</i>  <i>Pimelea spicata</i>  <i>Pultenaea parviflora</i>  <i>Pultenaea pedunculata</i></p> <p><b>Fauna species:</b></p> <p><i>Haliaeetus leucogaster</i>  <i>Hieraaetus morphnoides</i>  <i>Lathamus discolour</i>  <i>Lophoictinia isura</i>  <i>Meridolum corneovirens</i>  <i>Myotis Macropus</i>  <i>Phascolarctos cinereus</i></p>
Total area of vegetation in avoided land	3,610 hectares
Total avoided land in nominated areas	4,510 hectares

<sup>2</sup> While there is some overlap, threatened and ecological communities lists are maintained at both the federal and state level and include differences in the criteria used and approach to listings.

<sup>3</sup> Of the 49 threatened species, 48 species are listed under the BC Act, 28 species are listed under the EPBC Act and 27 species are listed under both.

<sup>4</sup> EPBC Act- and BC Act-listed species identified as being at risk of residual adverse impacts from the direct impacts of development under the CPCP

## Box 2. Offset target methods for threatened ecological communities and species

The offset target method for **threatened ecological communities** (TECs) used the amount of habitat for each TEC that will be impacted by development. The method was driven by 2 key principles:

1. Impacts on higher conservation status matters require more offsets than lower status matters.
2. Impacts on higher condition matters require more offsets than lower condition matters.

**Species offset targets** were developed for each EPBC Act- and BC Act-listed species likely to be at risk of residual adverse impacts from the direct impacts of development under the CPCP.

The method determined:

1. level of risk for EPBC Act listed species as determined by the assessment report
2. a set of criteria for BC Act-listed species to address risk of residual adverse impacts.

The Cumberland Plain Assessment Report provides further detail on these 2 methods.

## The conservation priorities method

We used a rigorous prioritisation process – referred to in the CPCP as the ‘conservation priorities method’ (DPIE 2019) – to identify and map areas of important biodiversity value, and potential conservation land that:

- best supports an ecologically functioning, connected landscape
- can simultaneously offset for direct, indirect, prescribed and cumulative impacts on biodiversity in line with the statutory requirements of the EPBC Act and the BC Act.

The output of this process resulted in the identification of the strategic conservation area. The conservation priorities method can be found in Appendix D of Sub-Plan A.

## The strategic conservation area

The strategic conservation area represents areas of important biodiversity value to the Cumberland subregion (see Figure 13). These areas include large remnants of native vegetation, areas with important connectivity across the landscape, and some areas with potential for ecological restoration. The strategic conservation area has been identified as the area of greatest strategic value to deliver long-term conservation outcomes in the Cumberland subregion and which contains vegetation communities needed to offset biodiversity impacts under the CPCP.

The strategic conservation area includes approximately 27,200 hectares. This area contains approximately 18,200 hectares of native vegetation, classified into plant community types (PCTs), including potential habitat for 49 threatened flora and fauna species, 8 BC Act-listed TECs and 6 EPBC Act-listed TECs impacted by development facilitated through the CPCP. The remaining areas include cleared land but with the potential to restore over-cleared vegetation types, including the target threatened ecological communities, to improve landscape connectivity and resilience.

The NSW Government will identify and prioritise suitable conservation land from within the strategic conservation area to offset biodiversity impacts over the life of the CPCP. Suitable areas will be protected as a national park or reserve or as biodiversity stewardship sites on public or private land. Not all of the strategic conservation area is expected to become conservation land. However, we expect that up to 11,900 hectares of land, or more than double the plan’s native vegetation offset target (5,325 hectares) will be added to the conservation land network through the plan. This will deliver increased green space and publicly accessible reserves for the

community to enjoy, as well as building ecological connectivity across the landscape through greater protections for biodiversity.

Some areas have been excluded from the strategic conservation area. This is where land is already protected as a national park or other conservation reserve or is an existing or future offset site (such as the Orchard Hills defence site). Other areas with biodiversity potential may have been excluded due to constraints, such as small lot sizes or not being compatible with a conservation land use. The complete method that was applied to identify the strategic conservation area is detailed in Appendix D in Sub Plan A.

### Selecting sites within the strategic conservation area

The selection of suitable offset sites will be guided by the CPCP conservation land selection steps. These steps prioritise direct offsets from within the strategic conservation area while allowing some flexibility in the case that offsets from within the strategic conservation area are not available. The order of the selection steps reflects geographical and ecological priorities to meet the plan's biodiversity offset targets.

Sites may also be selected from outside the strategic conservation area, but within the Cumberland subregion as a first step. This could include, for example, the purchase of biodiversity credits from existing biodiversity stewardship sites if those areas are contiguous with the strategic conservation area and would otherwise meet the criteria for a priority area. Further detail on how sites will be selected is in the section, 'Conservation land selection steps' on page 94.

The conservation priorities method will be reapplied every 5 years and the strategic conservation area updated to reflect any changes. This will align with the 5-yearly independent review of the CPCP and will ensure decisions are made using the best available data.

### Protections for the strategic conservation area

Managing development in the strategic conservation area will help protect threatened ecological communities and species and will enhance habitat connectivity across the Cumberland subregion.

The CPCP will introduce planning controls for the strategic conservation area that will minimise the impacts of development on biodiversity values and enhance the delivery of regional biodiversity outcomes.

Planning controls in the strategic conservation area will still allow landholders to submit new development applications. However, as part of the assessment process the consent authority will consider the region's biodiversity values and the impact of the proposed development on these values when assessing development applications.

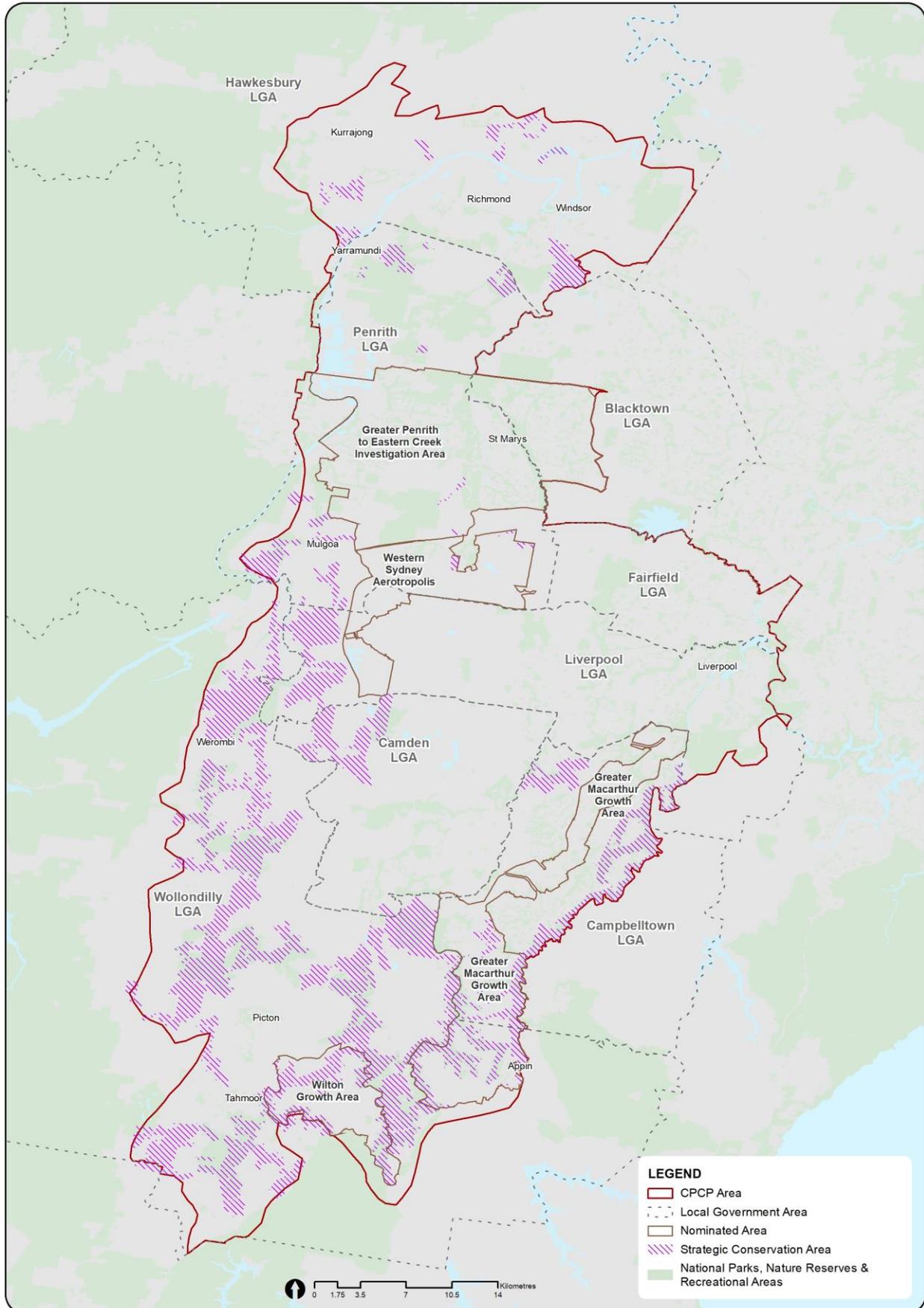


Figure 13. Strategic conservation area

## Deliverables of the conservation program

A priority commitment of the CPCP is to protect threatened ecological communities, species and habitat through a conservation land. At least 90% of the overall conservation program funding will be used to support and establish conservation land, including the purchase of new or existing biodiversity credits.

Conservation land will include the establishment of new and extensions to existing national parks or public reserves, and investments into biodiversity stewardship sites on public or private land.

Ecological restoration of cleared and degraded habitat will play an important role in conservation land, expanding the area of native vegetation, creating new habitat for threatened species and maximising ecological connectivity. This is particularly important for a fragmented landscape and for over-cleared vegetation types such as Cumberland Plain Woodland.

The NSW Government has committed \$114 million to deliver priority conservation actions over the first 5 years of the CPCP. This includes a land purchase program to support the establishment of the Georges River Koala Reserve and to establish and expand other reserves, commencing the restoration of koala habitat in priority areas, and installing crossings and fences in key areas to protect koalas and facilitate their safe movement.

It also includes a number of partnership actions such as working with the Biodiversity Conservation Trust to encourage landholders to establish new biodiversity stewardship agreements in areas such as Razorback.

These actions will deliver a strategic upfront biodiversity offset and help meet the plan's offset target for native vegetation communities.

Three new public reserve sites have been identified to protect threatened ecological communities, species and their habitats. These new reserves are critical to the protection of BC Act and EPBC Act-listed threatened ecological communities and species and to maximise landscape connectivity across the area of the CPCP. Proposed new reserves are the:

- Georges River Koala Reserve (Case Study 1)
- Gulguer Reserve Investigation Area (Case Study 2)
- Confluence Reserve Investigation Area (Case Study 3).

The Georges River Koala Reserve has been announced as a priority conservation action and 2 additional public reserves are under investigation (see Figure 15 for general locations). The Razorback area is dominated by the critically endangered Cumberland Plain Woodland in addition to other threatened ecological communities needed to meet CPCP offsets. It has unique characteristics that present opportunities for conservation and for landholders to benefit financially by establishing biodiversity stewardship agreements (see Case Study 4).

Other areas within the strategic conservation area have been identified for further investigation as future reserves, and to provide greater landscape connectivity. Bargo, in the south-west of the CPCP Area, has a high proportion of Crown land and includes important koala habitat.

Additional commitments of the CPCP focus on avoiding, minimising and mitigating impacts from development on biodiversity, managing key threats to biodiversity across the landscape, and building knowledge and capacity among the community and stakeholders through education, engagement and research. These commitments will be allocated up to 10% of conservation program funds over the life of the plan.

Climate change is likely to introduce additional threats and exacerbate ecosystem stressors such as fire, disease, pests and weeds. The conservation program will invest in climate change adaptation strategies for threatened species and ecological communities in the Cumberland subregion. Commitments include funding research to identify the most at-risk species and ecological communities, and identifying priority locations, such as climate refugia, to support the persistence and adaptation of at-risk species and ecological communities.

The section ‘Implementation and assurance framework’ commencing from page 86, describes how the conservation program will be delivered to meet the commitments of the CPCP. This includes CPCP governance arrangements, how progress will be tracked over time and how the assurance mechanisms, such as adaptive management, will deliver offsets in line with development. Figure 14 presents an overview of the conservation program and its delivery.

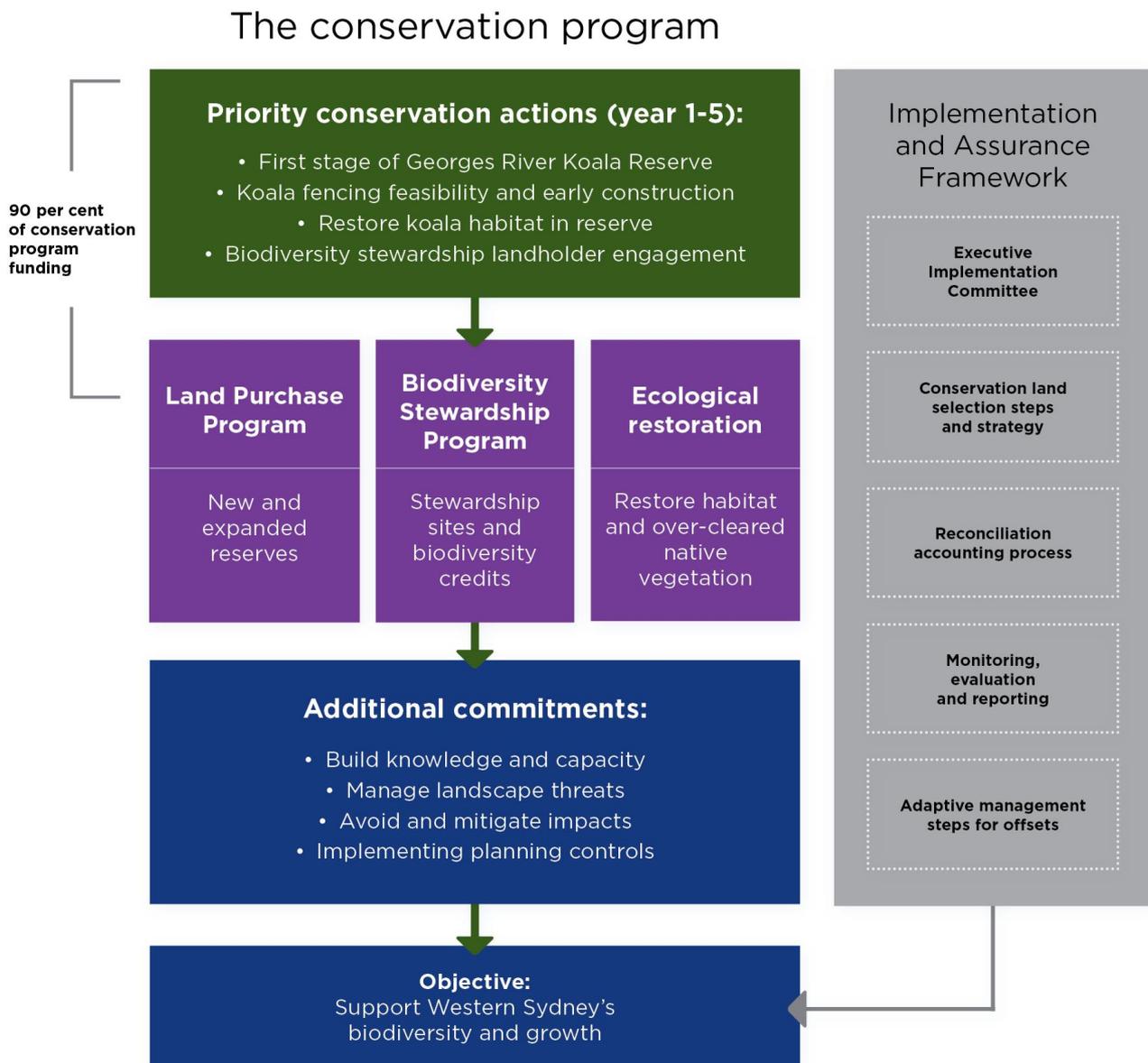


Figure 14. The delivery of the conservation program

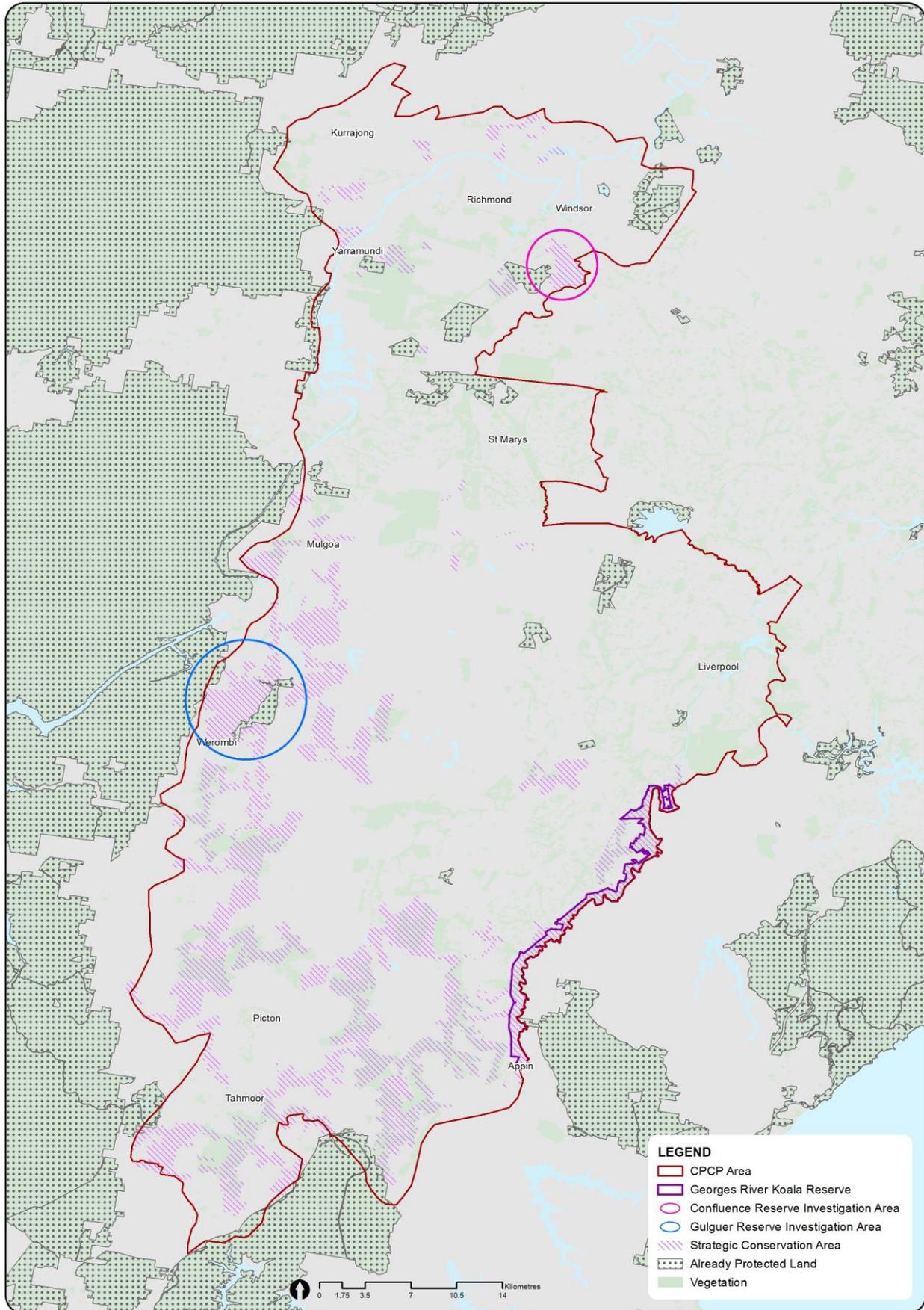


Figure 15. Location of the Georges River Koala Reserve and reserve investigation areas

## Case study 1. Georges River Koala Reserve

The conservation program will establish the Georges River Koala Reserve, the most important north–south koala movement corridor along the Georges River between Appin and Long Point (see Figure 15). The reserve will help koalas move safely between Campbelltown and the Southern Highlands and promote the genetic diversity of the species.

The establishment of the Georges River reserve was recognised in the Office of the NSW Chief Scientist & Engineer’s ‘[Advice on the protection of the Campbelltown koala population](#)’ (OSCE 2020) as essential to the persistence of what is referred to as the ‘Southern Sydney koala population’. The reserve will protect and manage up to 1,830 hectares of new conservation land (including areas of ecological restoration), which is more than twice the required offset target for koalas. The reserve will also give local communities accessible public space for recreation such as walking and educational opportunities. It may also provide opportunities for koala-based tourism.

### Implementation

Stage 1 of the reserve includes approximately 1,105 hectares of land. Preliminary lots of Stage 1a will be reserved under the *National Parks and Wildlife Act 1974* (NSW) by year 2, with the completion of the whole of Stage 1 expected by year 10. This land is along the upper Georges River between Appin and Kentlyn. The Office of Strategic Lands currently owns around 60% of the land within the proposed Stage 1 of the reserve and is in the process of creating biodiversity stewardship sites on these parcels of land where possible. Once agreements are in place, the department will purchase and retire the biodiversity offset credits generated to fund the ongoing management of the reserve.

We will need to purchase further land to establish the remaining sections of Stage 1. These lands, particularly along the western side of Appin Road, will be the focus of ecological restoration work to strengthen and widen the corridor. We will consult with affected landholders throughout the early years of the CPCP.

Stage 2 will comprise up to 725 hectares of additional land between Kentlyn and Long Point, which will be incorporated into the reserve by 2040. Office of Strategic Lands has significant land holdings in this area. However, further land needs to be purchased to complete the corridor. Some of this land is owned by local councils and local Aboriginal land councils. We will consult with these stakeholders, including about how biodiversity stewardship agreements could be established on some or all of their lands.

### Protection of threatened native vegetation and species

In addition to protecting important koala habitat, the Georges River Koala Reserve contains at least 1,540 hectares of native vegetation. Vegetation communities include target threatened ecological communities listed under both the BC Act and EPBC Act, including approximately 390 hectares of Shale Sandstone Transition Forest and 60 hectares of Cumberland Plain Woodland.

The proposed reserve also includes potential habitat for the following threatened species, amongst others:

- at least 1,830 hectares for koalas (target species and a key MNES)
- at least 1,545 hectares for little eagles (target species)
- up to 1,535 hectares for regent honeyeaters (a key MNES)
- up to 1,535 hectares for swift parrot (target species and a key MNES)
- at least 1,525 hectares for square-tailed kite (target species)
- at least 1,230 hectares for the southern myotis (target species)
- up to 960 hectares for the Cumberland Plain land snail (target species)
- at least 915 hectares for the grey-headed flying fox (a key MNES)

## Case Study 2. The Gulguer Reserve Investigation Area

The Gulguer Reserve Investigation Area covers about 1,850 hectares in the Warragamba region within the Wollondilly Local Government Area (see Figure 15). A reserve in this area will support the east–west connection between Burratorang State Conservation Area and Gulguer Nature Reserve and expand on the highly visited Bents Basin State Conservation Area.

Actions to establish a new reserve in this area will commence in the first 5 years. This will include creating biodiversity stewardship sites on land as it become available for purchase. The complete process to establish and gazette the reserve under the *NSW National Parks and Wildlife Act 1974* is unlikely to occur before year 20 of the CPCP.

### Current land uses

The current land uses in this area include livestock grazing, residential, and farming infrastructure. The land is predominately zoned as RU2 (rural landscape) and is mostly privately owned.

### Protection of threatened native vegetation

The reserve investigation area mainly lies on flat to moderately hilly terrain with several drainage lines dissecting the area. The investigation area contains up to 1,305 hectares of native vegetation comprising large patches in good to moderate condition in and adjacent to gullies, and scattered vegetation in lower areas. Vegetation communities include up to 635 hectares of Shale Sandstone Transition Forest and 180 hectares of Cumberland Plain Woodland in addition to some Western Sydney Dry Rainforest. These ecological communities are all listed as threatened under both the BC Act and EPBC Act.

At least 490 hectares of cleared land could potentially be reconstructed to promote the return of several threatened ecological communities and create habitat for associated species.

### Threatened species

The area includes potential habitat for threatened species, including at-risk species and key MNES, targeted for conservation by the CPCP. This includes but is not limited to:

- at least 1,325 hectares for little eagles (target species)
- at least 1,325 hectares for the southern myotis (target species)
- up to 1,325 hectares for square-tailed kites (target species)
- up to 1,270 hectares white-bellied sea-eagles (target species)
- up to 1,245 hectares for the swift parrot (target species and a key MNES)
- up to 1,245 hectares for the regent honeyeater (a key MNES)
- at least 840 hectares for the Cumberland Plain land snail (target species)

### Case Study 3. The Confluence Reserve Investigation Area

The Confluence Reserve Investigation Area lies in the Hawkesbury Local Government Area to the east of Londonderry (See Figure 15). The investigation area, much of which is flood prone, covers up to 580 hectares. It has been identified as a potential area for conservation and ecological restoration efforts due to its proximity to several existing nature reserves, thus improving local connectivity. It also offers the opportunity to link with the Wianamatta (South Creek) Corridor, which has been identified as a priority in the [Sydney 'green grid'](#).

Actions to establish a new reserve in this area will commence in the first 5 years and will include creating biodiversity stewardship sites on land as it become available for purchase. However, it will likely take much longer to complete the process to establish and gazette the reserve – up to year 15 of the CPCP.

#### Current land uses

The land is a combination of RU1 (Primary Production), RU4 (Primary Production Small Lots) and R5 (Large Lot Residential) zoning, with principal land uses being grazing and residential and farming infrastructure. The area is predominately privately owned.

#### Protection of threatened native vegetation

The area contains small patches of vegetation ranging from poor to good condition and contains around 60 hectares of River-Flat Eucalypt Forest, which has been newly listed as critically endangered under the EPBC Act, and 50 hectares of Freshwater Wetlands. Other threatened ecological communities listed under both the BC Act and EPBC Act are present in the area, including some Cooks River Castlereagh Ironbark Forest, Cumberland Plain Woodland and Shale Gravel Transition Forest.

#### Restoration opportunities

The area provides a significant ecological restoration opportunity, with up to 370 hectares of cleared land targeted for reconstruction. Communities likely to be restored include Cooks River/Castlereagh Ironbark Forest, River-Flat Eucalypt Forest and Cumberland Plain Woodland.

#### Threatened species

The area includes potential habitat for threatened species, including at-risk species and key MNES, targeted for conservation under the CPCP includes but is not limited to:

- at least 145 hectares for the southern myotis (target species)
- at least 145 hectares for the little eagle (target species)
- at least 145 hectares white-bellied sea-eagle (target species)
- at least 145 hectares for square-tailed kite (target species)
- at least 90 hectares for the Cumberland land snail (target species)
- up to 90 hectares for *Marsdenia viridiflora* subsp. *viridiflora* (target species)
- at least 75 hectares for *Pultenaea parviflora* (target species and a key MNES)
- up to 65 hectares for the swift parrot (target species and a key MNES)
- at least 65 hectares for the regent honeyeater (a key MNES)
- at least 65 hectares for the grey-headed flying fox (a key MNES)

## Case study 4. A focus on the Razorback area

The Razorback area is located north of Picton and south of Theresa Park, with Orangeville and Spring Creek to the west and Camden Park to the east (see Figure 15). The area has several features that make it appealing for conservation through a biodiversity stewardship agreement. These include:

- its proximity to already protected land, including the Blue Mountains World Heritage Area and Burratorang State Conservation Area
- its suitability for an east–west corridor linking important koala habitat to protected land
- its suitability for a north–south corridor linking Gulguer and Tahmoor
- its suitability for BIO Map cores and corridors
- that it contains several medium to large biobanking sites.

There is an opportunity to connect vegetation patches in the landscape in the Razorback area, providing a broader regional corridor. Establishing stewardship agreements in this area would strengthen the east–west corridor and reinforce a link to primary and secondary koala habitat in the south-east of the CPCP Area. Several threatened fauna species have been identified within this area, including the koala, Cumberland Plain land snail and the swift parrot.

This area is quite removed from the proposed urban development in the nominated areas and is not a priority area for planned growth. The land includes a high proportion of private ownership, which presents opportunities for landholders to benefit financially through biodiversity stewardship agreements.

The primary land uses in the area are grazing of native vegetation and modified pasture, limited cropping, and for residential and farming infrastructure.

### Vegetation

Several important flora species are present in this area, including *Pimelea spicata* and *Cynanchum elegans*. The area is dominated by Moist Shale Woodland (PCT 830), Cumberland Plain Woodland (PCT 850) and Western Sydney Dry Rainforest (PCT 877). Smaller areas of PCT 835 (equivalent to River-Flat Eucalypt Forest), a threatened ecological community newly listed as critically endangered under the EPBC Act, are present along the mapped drainage lines in the Razorback area.

### Restoration opportunities

The site contains significant restoration opportunities for River-Flat Eucalypt Forest (PCT 835), Cumberland Plain Woodland (PCT 850) and Shale Sandstone Transition Forest (PCT 1395).

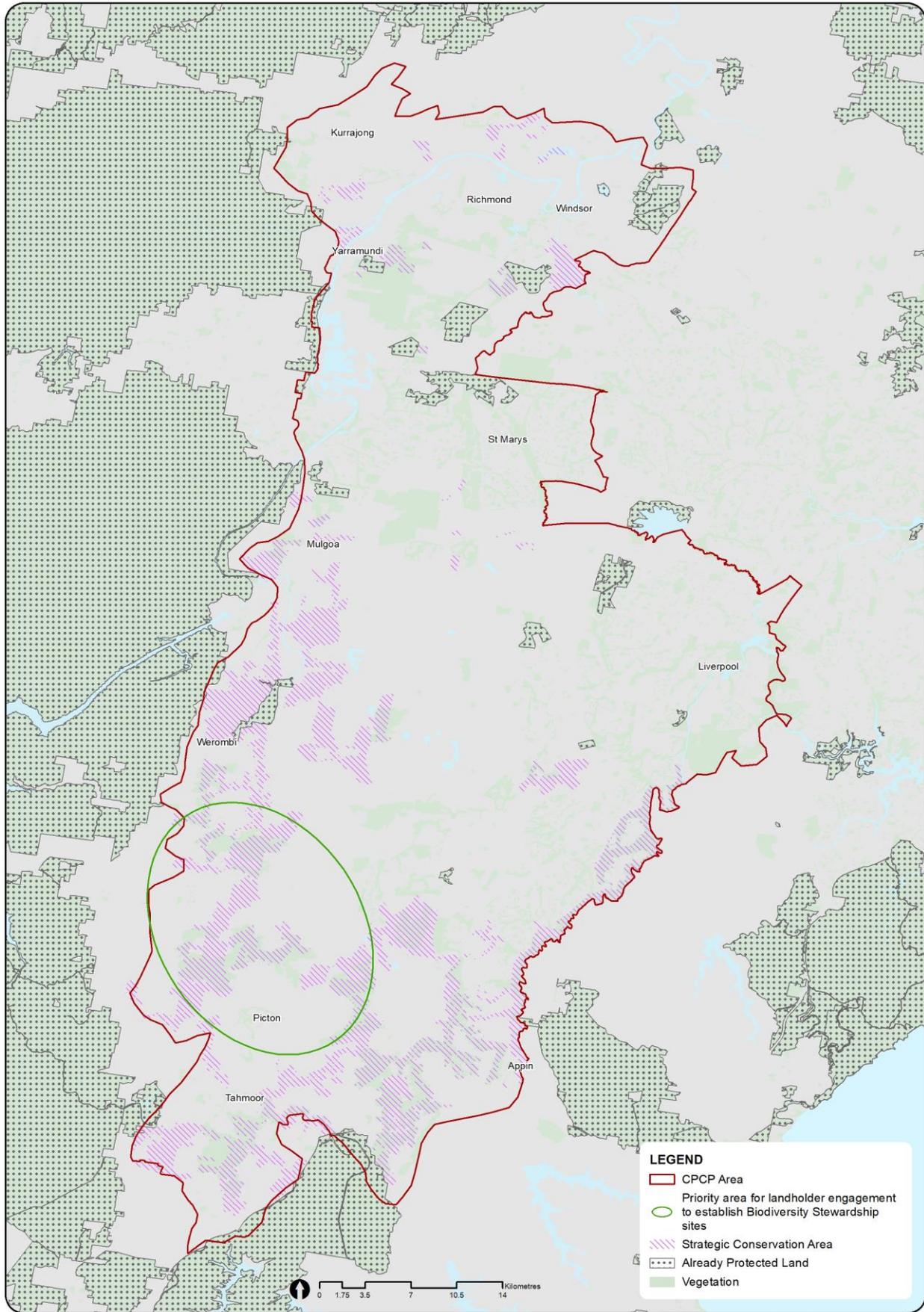


Figure 16. Opportunities for stewardship agreements in the Razorback area

## Protecting matters of national environmental significance

Landscape-scale conservation planning methods were used to account for the range of biodiversity values protected under NSW and federal biodiversity legislation and to determine important biodiversity areas to avoid from development and/or protect in perpetuity as offsets. The avoidance criteria, which include the consideration of MNES, are described in ‘

Appendix B. The CPCP avoidance criteria’. The conservation priorities method is in Appendix D of Sub-Plan A.

The conservation priorities method identified and mapped areas that have the potential to directly offset development impacts on both NSW-listed and nationally listed threatened species and ecological communities. It is from these areas that new conservation land will be established as a priority.

While many of the protected matters under the BC Act and the EPBC Act overlap, there are some differences between a nationally protected matter and a biodiversity value protected under the NSW BC Act. This is due to differences in their respective listing criteria and approach. The following case study (Case study 5: Protecting matters of national environmental significance) describes how matters of national environmental significance will be identified and protected through the conservation program and implementation.

## Case study 5: Protecting matters of national environmental significance

The full list of protected matters potentially relevant to the CPCP was identified through searches of existing databases, including the Protected Matters Search Tool. A categorisation method was applied to search results to identify matters requiring detailed assessment. This method was independently reviewed and is outlined in the Cumberland Plain Assessment Report.

The Category 1 MNES include 8 TECs, 20 fauna species and 23 flora species. Of these, the assessment report found potential impacts to 5 TECs, including the recently listed critically endangered River-flat Eucalypt Forest ecological community and 28 threatened flora and fauna species.

### Key matters of national environmental significance

Key MNES have been identified in consultation with the federal Department of Climate Change, Energy, the Environment and Water as being of national significance and a priority for protection through the Plan. The key MNES in the CPCP Area are:

- Shale Sandstone Transition Forest
- Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest
- River-flat Eucalypt Forest
- Cooks River Castlereagh Iron Bark Forest
- *Persoonia nutans*; *Pimelea spicata*; *Pultenaea parviflora*; green and golden bell frog; swift parrot; regent honeyeater; grey headed flying fox, and koala.

### Protecting matters of national environmental significance through planning controls:

Development controls for avoided land will seek to protect areas with high biodiversity value, including MNES. The controls will require consideration of impacts to MNES on avoided land. The Cumberland Plain Conservation Plan Guidelines for Infrastructure Development are being introduced to manage impacts to biodiversity, including MNES, from infrastructure development. This includes requirements for essential infrastructure development in the avoided land and mitigation requirements for infrastructure in the certified-urban capable land. Development controls within development control plans for nominated areas will be introduced to address direct and indirect impacts to MNES.

### Protecting matters of national environmental significance through the conservation program:

The strategic conservation area has the potential to offset all residual impacts to nationally threatened ecological communities and species as determined by the Cumberland Plain Assessment Report. Three reserve areas have been identified as a priority for establishment. These areas (presented in case studies 2 to 4) include habitat for several key MNES. In addition, the assurance mechanisms built into the delivery of the conservation program will ensure that the protection of MNES is prioritised, delivered and reported on. These mechanisms include:

- clear commitments to protect impacted EPBC Act-listed TECs and species (through an avoid, mitigate, offset hierarchy), including specific offset targets for TECs and target species
- conservation land selection steps that prioritise the protection of land with EPBC Act-listed TECs and species (and which prioritise the key MNES)
- an offsets reconciliation accounting process that will continually track development impacts with offsets and trigger an adaptive management response if offsets are not keeping pace
- an evaluation program that will include monitoring progress of the commitments and actions to meet outcomes for threatened ecological communities and species, evaluations of plan effectiveness and regular, publicly available reporting on progress and implementation.

## The CPCP commitments

Commitments sit within the conservation framework to deliver the CPCP's vision, objectives and long-term outcomes. They will be implemented over the life of the plan until 2056 through a series of planned and managed actions that have been set over varying timeframes, according to priority and feasibility.

The CPCP includes 22 commitments which will be delivered through the conservation program. Commitments have been divided into 5 categories. These are:

- avoiding and minimising impacts
- mitigating indirect and prescribed impacts
- conserving flora, fauna and habitat
- managing landscape threats
- building knowledge and capacity.

An additional 4 commitments relate to development actions, governance and reporting (Commitments 1, 24, 25 and 26). The complete list of commitments is given in 'Appendix C. CPCP commitments.

The list of BC Act and EPBC Act protected matters to which impacts will be offset is shown in 'Appendix D. EPBC Act and BC Act matters to be offset through the ', which also identifies which of the 49 species are target species under the CPCP and which species and TECs have been identified as serious and irreversible impact entities in accordance with the requirements of the Biodiversity Assessment Method.

Actions to deliver commitments are detailed in Sub-Plan A.



### Avoiding and minimising impacts

#### Urban development

Avoiding and minimising impacts on threatened biodiversity is a critical step in reducing the overall impacts of proposed developments and is required under both the BC Act and the EPBC Act as a first step in the assessment and approval process. The CPCP will deliver avoidance through strategic conservation planning for urban development in the nominated areas.

The department used avoidance criteria (see 'Appendix B. The CPCP avoidance criteria')

to identify areas of high biodiversity value where development will be avoided and to designate urban-capable land to be biodiversity certified in each nominated area. The urban-capable land within each nominated area will be biodiversity certified (under the BC Act) and approved for urban and industrial development (under the EPBC Act). This area is defined in the CPCP as 'certified-urban capable land'. The Cumberland Plain Assessment Report details the processes used to make these designations.

Avoided land also includes some non-vegetated land such as small wetlands and waterbodies, land that is strategically important to protect or enhance corridors, or small enclosed clearings that are surrounded by native vegetation. These areas were identified by applying the avoidance criteria, described in Appendix B.

Across the 4 nominated areas, the CPCP identifies 4,510 hectares of 'avoided land', which includes 3,610 hectares of native vegetation.

To support the protection of the avoided land, the Biodiversity and Conservation SEPP includes development controls to minimise impacts to biodiversity on the avoided land. A ministerial direction made under section 9.1 of the *Environmental Planning and Assessment Act 1979*, will restrict future rezoning of land to more intensive land uses on avoided land and ensure that the proposed development in the new precincts is confined to the certified-urban capable land identified by the CPCP. Further information on planning controls is provided in the 'Implementation through planning controls' section (on page 89).

While the certified-urban capable land has been approved for urban development, planning for essential infrastructure is in various stages for each of the 4 nominated areas. This means that additional, essential infrastructure development may be needed outside certified-urban capable land, within the areas identified as avoided land, in order to support the establishment of the new urban areas over the next 4 decades and beyond.

Every effort should be made to ensure that infrastructure development is limited to the certified-urban capable land. Where essential infrastructure development is required in the avoided land, it will need to comply with 'Appendix A. Accessing EPBC approval for essential infrastructure development in the avoided land'. This includes:

- specific requirements to avoid, minimise mitigate and offset impacts to MNES and other relevant EPBC Act matters
- specific commitments for avoidance (Commitments 2.1 and 2.2)
- cumulative impact thresholds for EPBC Act-listed threatened ecological communities listed in Table 3. Cumulative impact thresholds per EPBC Act TEC in the avoided land.

Essential infrastructure development in the avoided land will need all the required NSW biodiversity approvals. Where essential infrastructure development cannot meet the Cumberland Plain Conservation Plan Guidelines for Essential Infrastructure Development and requirements of the CPCP, the proponents will need to seek a separate approval under the EPBC Act.

Proponents or public authorities who access the strategic assessment approval under Part 10 of the EPBC Act will need to follow the notification and reporting requirements in the strategic conservation planning chapter of the Biodiversity and Conservation SEPP or the Environmental Planning and Assessment Regulation 2000.

The department will be responsible for notifying proponents of essential infrastructure of their obligations under the CPCP and will monitor the impacts of development or activities in the avoided land, including monitoring compliance with avoidance, mitigation and offset commitments 2, 2.1 and 2.2 (actions 4 and 5).

Where a commitment has identified a specific matter to be avoided, these are mapped in the Cumberland Plain Assessment Report and known flora populations will require confirmation of presence through survey or assessment.

### **Major transport corridors**

The major transport infrastructure included in the CPCP is yet to be constructed and so the final construction alignments for the corridors are not yet certain. Additional avoidance in these corridors could be achieved as designs for the infrastructure corridors are determined over the life of the plan.

The CPCP requires Transport for NSW to avoid and minimise impacts to biodiversity, including matters of national environmental significance (MNES) in developing the 4 major transport corridors. This includes:

- applying the avoidance criteria within the nominated areas or applying the BC Act Biodiversity Assessment Method (or equivalent) outside of the nominated areas during the strategic planning phase of each major transport project, with specific consideration to the matters listed in Commitment 3
- including the biodiversity benefits of avoiding threatened ecological communities, species and their habitat as well as the costs of offsets into the evaluation of the route options (for example multi-criteria analysis)
- locating Asset Protection Zones, if required, within the major transport corridors
- minimising impacts as far as possible using design refinements to reduce overall impact where impacts cannot feasibly or practically avoid

Transport for NSW will be required to report to the department and executive implementation committee on development impacts and adjustments identified through a Clearing Reconciliation Report (for certified-major transport corridors) or through the NSW state-significant infrastructure or NSW state-significant development approval (or equivalent) for each transport project within the major transport corridors (strategically assessed only), including the tunnels sections.

The department will use this information to track impacts through the reconciliation accounting process. Reporting on the impacts to biodiversity (including MNES) will be published regularly through annual updates and 5 yearly reviews.

The following commitments are specific to avoiding and minimising impacts on biodiversity and MNES from development under the CPCP.

Where a commitment has identified a specific matter to be avoided, these are mapped in the *Cumberland Plain Assessment Report* and will require confirmation of presence through survey or assessment. The Assessment Report includes a specific map as part of the assessment of tunnels (See the Chapter 36.6 of the Cumberland Plain Assessment Report).

## Commitments to avoid impacts on biodiversity and MNES

### Commitment 2

Avoid and minimise impacts of up to 4,510 hectares of high biodiversity value area (the avoided land) through strategic conservation planning in the nominated areas.

#### Commitment 2.1

Limit cumulative direct impacts<sup>5</sup> over the life of the CPCP from essential infrastructure to the following EPBC Act-listed threatened ecological community in the avoided land<sup>6</sup>:

- Shale Sandstone Transition Forest
- Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest
- River-Flat Eucalypt Forest
- Coastal Swamp Oak (*Casuarina glauca*) Forest
- Cooks River Castlereagh Ironbark Forest Western Sydney Dry Rainforest and Moist Woodland on Shale.

#### Commitment 2.2

Prioritise the avoidance of impacts from essential infrastructure in the avoided land to:

- known populations<sup>7</sup> of the following threatened flora species:
  - *Grevillea parviflora* subsp. *parviflora* (Small-flower grevillea)
  - *Persoonia bargoensis* (Bargo geebung)
  - *Persoonia nutans* (Nodding geebung)
  - *Genoplesium baueri* (Yellow gnat-orchid)
  - *Pimelea spicata* (Spiked rice-flower)
  - *Pultanea parviflora*
- protected koala habitat<sup>8</sup> within the Wilton and Greater Macarthur growth areas to maintain the function of koala movement corridors.

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### Commitment 3

Avoid and minimise impacts to threatened ecological communities, species and their habitat within certified-major transport corridors through detailed planning and design. This includes:

- avoiding areas of potential habitat<sup>9</sup> connectivity within riparian corridors where possible, particularly for the following species:
  - eastern pygmy possum
  - green and golden bell-frog
  - spotted-tailed quoll
  - squirrel glider
  - yellow-bellied glider

<sup>5</sup> Impact thresholds for each threatened ecological community per nominated area are listed in the CPCP (Table 3, Cumberland Plain Conservation Plan, page 42).

<sup>6</sup> Distributions of these TECs are mapped in the Cumberland Plain Assessment Report and will require confirmation of extent through survey or assessment

<sup>7</sup> Known populations are mapped in the Cumberland Plain Assessment Report and will require confirmation of extent through survey or assessment

<sup>8</sup> Protected koala habitat is mapped in the Cumberland Plain Assessment Report and the department's spatial viewer

<sup>9</sup> Potential habitat for fauna species are mapped in the Cumberland Plain Assessment Report

- avoiding known flora populations<sup>10</sup> within the Outer Sydney Orbital and M7/Ropes Crossing Link Road corridors where possible, particularly:
  - *Dillwynia tenuifolia*
  - *Grevillea juniperina* subs. *juniperina*
  - *Pultanea parviflora*
  - *Persoonia nutans*
- for the Outer Sydney Orbital, minimising where possible the placement of waterway crossing structures within riparian corridors, changes to waterway alignments, and bulk earthworks on adjacent floodplain areas.

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## Commitment 4

Avoid and minimise impacts on threatened ecological communities, species and their habitat within major transport corridors (strategically assessed only), including the Outer Sydney Orbital and Metro Rail Future Extension tunnel sections, in accordance with the:

- major transport corridors class of actions description, including the NSW state-significant infrastructure or NSW state-significant development approvals process (or equivalent)
- Biodiversity Assessment Method (BC Act) (or equivalent).

### Commitment 4.1

Avoid and minimise impacts to known flora populations<sup>11</sup> within the Outer Sydney Orbital and M7/Ropes Crossing Link Road corridors, including:

- *Dillwynia tenuifolia*
- *Grevillea juniperina* subs. *Juniperina*
- *Pultanea parviflora*
- *Cynanchum elegans*.

### Commitment 4.2

Avoid and minimise impacts where possible within and adjacent to the tunnel sections, including:

- known populations and habitat<sup>12</sup> of:
  - *Eucalyptus benthamii*
  - *Pomaderris brunnea*
  - *Pimelea spicata*
  - Cumberland Plain land snail
- known populations and habitat, and threatened ecological communities<sup>13</sup> within:
  - Mater Dei BioBank site within the Outer Sydney Orbital footprint near Camden
  - registered property agreement site within the Outer Sydney Orbital footprint at Camden Airport

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<sup>10</sup> Known flora populations are mapped in the *Cumberland Plain Assessment Report*

<sup>11</sup> Known flora populations are mapped in the *Cumberland Plain Assessment Report* and will require confirmation of presence through survey or assessment

<sup>12</sup> Known populations and habitat of listed species are mapped in the *Cumberland Plain Assessment Report* and will require confirmation of extent through survey or assessment. The Assessment Report includes a specific map as part of the assessment of tunnels (See the *Cumberland Plain Assessment Report*, Chapter 36.6)

<sup>13</sup> Known populations and habitat of listed species and distribution of listed TECs are mapped in the *Cumberland Plain Assessment Report* and will require confirmation of extent through survey or assessment. The assessment report includes a specific map as part of the assessment of tunnels (see *Cumberland Plain Assessment Report*, Chapter 36.6)

- Metro offset site within the footprints for the Outer Sydney Orbital and Metro Rail Future Extension near Harrington Park
- Nepean River and associated riparian corridor within the Outer Sydney Orbital footprint
- Camden Golf Club at Narellan adjacent to the footprint for the Metro Rail Future Extension
- Mount Annan Botanic Gardens within the footprint for the Metro Rail Future Extension.

### **Commitment 4.3**

Avoid and minimise impacts where possible to environmental values within Commonwealth land sites<sup>14</sup>, including known populations and habitat and threatened ecological communities, and existing infrastructure and services, at:

- Camden Airport
- Western Sydney University (Campbelltown Campus)
- 12 Werombi Road, Grasmere NSW.

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<sup>14</sup> The assessment report includes a specific map as part of the assessment of tunnels (See the Cumberland Plain Assessment Report, Chapter 36.6)



## Mitigating indirect and prescribed impacts

The development of the nominated areas and major transport corridors may have indirect or prescribed impacts in addition to the direct impacts on biodiversity from clearing native vegetation.

Indirect impacts are defined as those not directly associated with clearing for development but arise from vegetation clearing and changes in land-use patterns.

Prescribed impacts are impacts on biodiversity values that do not comprise direct clearing of native vegetation and are listed in Clause 6.1 of the Biodiversity Conservation Regulation (NSW).

Understanding and addressing indirect and prescribed impacts resulting from the development identified in the CPCP is a requirement under the EPBC Act and the BC Act. The *Cumberland Plain Assessment Report* has assessed these potential impacts on threatened ecological communities, species and habitat, including serious and irreversible impact entities (refer to Chapter 15 of the assessment report for indirect impacts, Chapter 24 for prescribed impacts, and Chapter 25 for an assessment of serious and irreversible impacts).

### Development requirements to mitigate potential impacts on biodiversity

The CPCP sets out measures to mitigate indirect and prescribed impacts to biodiversity resulting from future development in the certified lands of the CPCP Area. These mitigation measures address indirect and prescribed impacts to specific threatened ecological communities (TECs) and threatened species identified by the Cumberland Plain Assessment Report. Appendix E. Species and TEC-specific mitigation measures lists these mitigation measures and identifies which development they apply to, mechanisms for implementation, the biodiversity matter affected and relevant nominated areas or location where they apply.

Mitigation measures will apply to certified-urban capable land and certified-major transport corridors within the nominated areas to address indirect impacts from development to biodiversity in or adjacent to certified land. These will be implemented as development requirements through the planning system by applying:

- a development control plan (DCP) template to guide state-led DCPs for nominated areas
- the Cumberland Plain Conservation Plan Mitigation Measures Guidelines for nominated areas that do not have a state-led DCP in place – Greater Macarthur Growth Area and Greater Penrith to Eastern Creek Investigation Area.

Development applications in certified-urban capable land or certified major transport corridors will need to address the plan's mitigation measures.

Two broad types of development controls will be implemented through State-led DCPs to protect biodiversity values and address the mitigation measures:

- general environmental controls that will benefit the environment, including biodiversity values (described in Chapter 15 of the Cumberland Plain Assessment Report).
- specific controls that apply to specific species and TEC specific locations or broader nominated areas (described in 'Appendix E. Species and TEC-specific mitigation measures').

The Mitigation Measures Guidelines apply the same mitigation measures to address threatened ecological species and species that would otherwise be implemented through state-led DCPs in

accordance with 'Appendix E. Species and TEC-specific mitigation measures'. It does not include general environmental controls included in the DCP Template.

In addition, the department will:

- audit growth area DCPs to ensure the controls in the CPCP DCP template are incorporated in accordance with the DCP requirements for each growth area
- monitor the implementation of the development controls through approval conditions by the relevant consent authority and if monitoring finds that development controls are not being implemented, review and redraft new controls to update relevant state DCPs and re-educating councils to ensure stronger consideration of the controls through their assessment process
- provide ongoing support to councils in the application of DCP controls within the nominated areas, including sharing knowledge, maps and data

### **Mitigation measures for infrastructure activities**

The department will introduce the Cumberland Plain Conservation Plan Guidelines for Infrastructure Development that includes mitigation measures for indirect and prescribed impacts to biodiversity from infrastructure activities (including essential infrastructure) assessed under Part 5.1 of the *Environment Planning and Assessment Act 2000* in accordance with 'Appendix E. Species and TEC-specific mitigation measures' and for some Part 4 activities that are essential infrastructure in the avoided land.

These will include, for example, minimising the spread of weeds and other pathogens and minimising human disturbance to certain threatened species populations.

### **Minimising impacts to threatened species on public land**

The Cumberland Plain Assessment Report has recommended actions be undertaken to manage disturbance and indirect impacts to threatened species on public land (Sub-Plan A: Commitment 5; Action 8). These mitigation measures are detailed in 'Appendix E. Species and TEC-specific mitigation measures'.

The department will consult with the relevant public land manager at these sites to minimise disturbance and impacts to these threatened species in accordance with Appendix E.

### **Mitigating impacts on the Southern Sydney koala population**

The Southern Sydney koala population is one of 2 known populations in the Cumberland subregion. It occurs within and near the Wilton and Greater Macarthur growth areas. As the area becomes more urbanised, these koalas will be exposed to increasing threats, including dog attack, vehicle strikes, fire and climate change.

To mitigate these impacts, the conservation program will install koala-exclusion fencing between important koala habitat and the certified-urban capable land to protect koalas living near urban areas. Exclusion fencing will separate koalas from future urbanised areas in the Wilton and Greater Macarthur growth areas and will be installed along sections of Appin Road to protect koalas from vehicle strike.

In some circumstances, exclusion fencing may not be suitable in nominated areas due to land topography, the existence of waterways or creeks, or a site being a heritage-listed area. Development requirements to protect koalas in Wilton and Greater Macarthur growth areas apply to all certified-urban capable land adjacent to koala habitat, and where no exclusion fencing is installed between koala habitat and certified-urban capable land. These requirements are outlined in the Cumberland Plain Conservation Plan DCP Template and Mitigation Measures Guidelines.

Precinct design requirements apply to certified-urban capable land in Wilton Growth Area and Greater Macarthur Growth Area to protect koala habitat.

The koala-specific development controls are included in 'Appendix E. Species and TEC-specific mitigation measures', which lists mitigation measures to be adopted in nominated areas or precinct-specific DCPs where koalas are present. For further details on all koala-specific mitigation actions under the CPCP, including the installation of koala fencing, see Sub-Plan B.

### **Mitigating impacts from major transport corridors**

The construction and operation of major transport corridors could have indirect and prescribed impacts on biodiversity. Transport for NSW will, in accordance with the CPCP, assess the impacts on biodiversity and other environmental values based on detailed design and implement mitigation measures in accordance with published, best practice guidelines.

In addition, Transport for NSW must undertake ongoing monitoring of high-value environmental areas and review and adjust mitigation measures (where practical) in response to monitoring outcomes.

The Cumberland Plain Assessment Report has identified specific recommendations to manage and mitigate indirect and prescribed impacts from the operation and construction of major transport corridors. These are listed in Appendix E.

For major transport corridors (strategically assessed only), including the tunnels sections, Transport for NSW will be required to apply further mitigation according to the Biodiversity Assessment Method (BC Act) (or equivalent) identified through the NSW state-significant infrastructure or state-significant development approval (or equivalent).

Transport for NSW will report to the department and executive implementation committee on mitigation measures proposed to manage impacts of each infrastructure project, including proposed techniques, timing, frequency and responsibility for implementing each measure.

### **Mitigating impacts on heritage places**

There are 4 World/and or National Heritage Places identified within 10km of the CPCP Area.

- The Greater Blue Mountains World Heritage Area, which is listed as both a World Heritage property and National Heritage Place
- Parramatta Female Factory and Institutions Precinct which is listed as a National Heritage Place
- Old Government House and Government Domain which is listed as both a World Heritage property and National Heritage Place
- Ku-ring-gai Chase National Park which is listed as a National Heritage Place.

The EPBC Act establishes a range of protections for World Heritage and National Heritage sites. Direct and indirect impacts to these sites in the form of loss, damage or notable alternation to their world or national heritage values from the CPCP are negligible. The Greater Blue Mountains World Heritage Area is adjacent to the western boundary of the CPCP, and lies 1 kilometre from the nearest nominated area, Greater Penrith to Eastern Creek Investigation Area. The other sites are further from the development footprints and are unlikely to be impacted. The sites have been assessed in detail in the Cumberland Plain Assessment Report.

### **Mitigating impacts on Commonwealth land**

Commonwealth land is a matter protected under section 26 of the EPBC Act. The potential direct, indirect and facilitated impacts from urban and industrial development, infrastructure, intensive

plant agriculture and the major transport corridors on the environment of Commonwealth land was assessed in developing the CPCP.

There are 12 known Commonwealth land sites in the area covered by the CPCP. Three of the sites occur within the nominated areas: 2 in the Greater Penrith to Eastern Creek nominated area and one in Greater Macarthur nominated area. None of these sites will be directly impacted by development under the CPCP.

One site will be directly impacted by development outside the nominated areas – by the major transport corridors. Furthermore, 3 other sites – at Western Sydney University, Camden Airport, and a small site near Grasmere – may also be directly impacted by the tunnels associated with the transport corridors. The tunnels extend under these sites and some disturbance to the land surface within these sites may be necessary for construction activities and permanent infrastructure.

The remaining Commonwealth land sites are distantly located from the development footprints of the nominated areas and major transport corridors and the risk of indirect and facilitated impacts was assessed as low.

The CPCP includes commitments to avoid, minimise and mitigate impacts on Commonwealth land sites. This includes:

- a specific mitigation measures to manage impacts to surface water flows and water quality of Blaxland Creek from adjacent development in Appendix E.
- avoiding and minimising impacts where possible to environmental values within Commonwealth Land sites at the surface of the tunnels footprint during the environmental impact assessment phase of each transport project.

These commitments were considered in the Cumberland Plain Assessment Report as adequately addressing the risks of impacts to the environmental values of the sites.

Further information about the assessment of indirect and prescribed impacts from development in the CPCP can be found in the Assessment Report (refer to Chapter 15 of the assessment report for indirect impacts, Chapter 24 for prescribed impacts, and Chapter 35 for Commonwealth land impact assessment).

The following commitments are specific to mitigating indirect and prescribed impacts from development under the CPCP, as determined through the Cumberland Plain Assessment Report.

## Commitments to mitigate indirect and prescribed impacts

### Commitment 5

Mitigate indirect and prescribed impacts from urban and industrial development, infrastructure, and intensive plant agriculture on threatened ecological communities, species and their habitat. This includes:

- meeting specific mitigation requirements for threatened ecological communities, species and their habitat in accordance with Appendix E of this plan

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### Commitment 6

Mitigate indirect and prescribed impacts on threatened ecological communities, species and their habitat within major transport corridors, including the Outer Sydney Orbital and Metro Rail Future Extension tunnel sections, in accordance with the:

- major transport corridors class of actions description, including the NSW state-significant infrastructure or NSW state-significant development approvals process (or equivalent) for certified-major transport corridors
- major infrastructure corridors class of actions description and the Biodiversity Assessment Method (BC Act) (or equivalent) for non-certified major transport corridors (strategically assessed only)
- specific mitigation measures to address impacts on biodiversity values prescribed in Appendix E.

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### Commitment 7

Mitigate indirect and prescribed impacts from urban, industrial, infrastructure development on the Southern Sydney koala population to best-practice standards and in line with advice from the Office of the NSW Chief Scientist & Engineer and in accordance with Appendix E of this Plan.



## Conserving flora, fauna and habitat

The 'conserve flora, fauna and habitat' category of commitments will protect threatened ecological communities, species and their habitats through establishing conservation land in priority, strategic locations to enhance long-term resilience and ecological function. Protecting new conservation land is integral to delivering the conservation outcomes. Larger remnants of vegetation communities are better able to support resilient populations of species and are less susceptible to 'edge effects', catastrophic events, and the expected impacts of climate change (DECCW 2010).

We will achieve in-perpetuity protection of biodiversity through new or additional national parks, nature reserves, and local council- or community-based biodiversity reserves, and biodiversity stewardship sites on public or private land.

Conservation land will be selected from the strategic conservation area, or directly adjacent, in accordance with the plan's conservation land selection steps and implementation strategy. These are detailed in the section 'Establishing conservation land as offsets' (on page 92).

Actions to conserve flora, fauna and habitat can also include the purchase and retiring of biodiversity credits from biodiversity stewardship sites not established under the CPCP, where those sites meet the selection steps and offset requirements as set out in the plan. Direct purchase of credits would contribute to the offset targets for threatened ecological communities or target species and can ensure that all landholders with a biodiversity stewardship agreement in place can benefit from the CPCP.

The offset target for native vegetation is a minimum of 5,325 hectares comprised of threatened ecological communities impacted by development under the plan. This target meets the requirements for approval of the CPCP. However, the resulting area of conservation land established under the CPCP will likely be much greater than just meeting the offset target. Collectively, up to 11,900 hectares could be protected within conservation land to deliver in perpetuity biodiversity outcomes, improved ecological resilience and connectivity and increased green space and publicly accessible reserves for the community to enjoy.

The reason for this is that lands purchased or put under biodiversity stewardship agreements may contain more land and some non-target native vegetation. For many new reserves or national parks, additional land may also be required for compatible open space and recreational use. The Georges River Koala Reserve will add a significant amount of conservation land to protect important koala habitat above that required to meet the offset target for koala habitat.

### Reserves

Reserves are a vital measure of the conservation program to protect, manage and conserve biodiversity in Western Sydney. Reserves are recognised as the foundation of biodiversity protection as they ensure the largest and most intact remnants of vegetation are protected in perpetuity.

Public reserves are also important for providing public access to green space for existing and new residents of Western Sydney. Expanding the reserve network will improve opportunities for recreation, wellbeing and social connection, and support liveability in the Western Parkland City.

Conservation land established through the conservation program will include both new reserves and additions to existing reserves. The term 'reserves' in the CPCP can refer to national parks, nature reserves, state conservation areas, regional parks (all managed by National Parks and

Wildlife Service), council reserves and community-based reserves, as long as they have secure (on-title) agreements in place and will be managed for conservation in perpetuity.

The Georges River Koala Reserve, once established, will secure priority habitat corridors in the Cumberland subregion to support connectivity for ecological communities and species, including the koala (see Case study 1. Georges River Koala Reserve).

The Gulguer Reserve Investigation Area (see Case Study 2. The Gulguer Reserve Investigation Area) could provide an east–west corridor between existing protected lands in the Warragamba area. It aims to extend Gulguer Nature Reserve and Bents Basin State Conservation Area and connect them with the Burratorang State Conservation Area. This extended reserve would create an important biodiversity corridor and increase public access to green spaces that are currently heavily used.

The Confluence Reserve Investigation Area (see Case Study 3. The Confluence Reserve Investigation Area), near Windsor Downs Nature Reserve, would support the east-west corridor in the existing Londonderry reserve network. This area also includes Agnes Banks, Wianamatta, and Castlereagh nature reserves. The proposal includes opportunities for ecological restoration of up to 370 hectares of native vegetation communities, including those targeted for protection under the CPCP. This would make it the largest restoration project in the plan and would include the protection and restoration of habitat for the River-flat Eucalypt Forest, which is listed as endangered under the BC Act and newly listed as a critically endangered ecological community under the EPBC Act.

Land tenure across the area covered by the CPCP is mostly freehold, meaning land will be purchased for reserves from private landholders over time. Areas that are best protected through the national parks system will likely have a long implementation phase to allow voluntary acquisition. Smaller reserves, or additions to existing reserves, may be easier to acquire and establish. The complexity of the land purchase process will depend on how many lots and landholders are involved in negotiations for each proposed reserve.

We are developing a land purchase strategy to set an agreed process for land purchases to deliver the offsets required (Sub-Plan A: Commitment 8, action 7). Further detail on the land purchase strategy is given in the section ‘How land will be purchased’ on page 102 and in Sub-Plan A.

Should Aboriginal land claims exist on potential sites within a reserve proposal, the claimed areas will not be considered for inclusion in the reserve until the claim is resolved.

Biodiversity stewardship agreements will be established over parcels of land, where possible, as they are purchased under the program. Having a stewardship agreement in place will ensure that funding for ongoing active management of reserve sites is secured in perpetuity.

### **Biodiversity stewardship sites on public or private land**

A biodiversity stewardship agreement is a cooperative agreement between a landholder and the NSW Government to establish a biodiversity stewardship site on their land. Biodiversity stewardship agreements will be a primary mechanism to protect conservation land. More than 75% of the remaining native vegetation in the Cumberland subregion is privately owned (Open Lines 2020).

Establishing biodiversity stewardship sites on private land is particularly useful when the land has fragmented patterns of ownership (such as in the CPCP Area). Managing conservation land as stewardship sites can offer opportunities to expand the range of natural values that are protected while providing buffers and corridors to already protected areas (OEH 2018).

Biodiversity stewardship sites can also be established on public land, for example on smaller parcels of council-owned land, where that land is continually managed under a biodiversity stewardship agreement.

In a biodiversity stewardship agreement, the landholder voluntarily enters into the agreement and manages the area in accordance with an agreed management plan. Biodiversity stewardship agreements are registered on the title of a property and provide in-perpetuity protection of the site's biodiversity values with a secure, ongoing source of funding. Through the establishment of a biodiversity stewardship agreement, the economic value of the biodiversity attributes on the land can be realised, potentially providing monetary gain to protect and manage the environment.

The Biodiversity Conservation Trust (the BCT) is the delivery partner for the biodiversity stewardship program. The BCT will work with landholders to protect target vegetation and habitat through biodiversity stewardship agreements, in line with the principles, selection steps and offset requirements set out in the CPCP, and the conservation land implementation strategy.

This will also include direct purchase of biodiversity credits from biodiversity stewardship sites not established under the CPCP where those sites meet the selection steps and offset requirements as set out in the plan. This approach would benefit all landowners with a suitable biodiversity stewardship agreement and could lead to an improved ecological outcome through investing in biodiversity stewardship sites in the CPCP Area, which in some cases could lead sites from passive management into active management.

The BCT will be encouraging landholders to establish new biodiversity stewardship agreements in suitable areas within the strategic conservation area, such as Razorback. The Razorback area is dominated by Cumberland Plain Woodland in addition to other threatened ecological communities that are targeted for offsets in the CPCP. The Razorback area has unique characteristics that present opportunities for conservation and for landholders. Landholders may be able to benefit financially by establishing biodiversity stewardship agreements (see Case study 4. A focus on the Razorback area).

## **Ecological restoration**

Historically, vegetation in Western Sydney has been cleared for agriculture and more intensive land uses. This has resulted in extensive fragmentation of the remaining native vegetation, reduced connectivity and overall loss of ecological resilience.

Ecological restoration can play a critical role in improving connectivity between remnant habitat patches, expanding the remnants and replacing some areas of over-cleared vegetation communities. This is particularly important for a fragmented landscape such as the CPCP Area and for over-cleared vegetation types such as Cumberland Plain Woodland.

The department commissioned a trend analysis as part of the Cumberland Plain Impact Assessment Report. This involved a process to gather ecological information from recognised experts on how one of the plant communities that makes up Cumberland Plain Woodland responds to management. The analysis indicated high intensity management of conservation land, such as active restoration, had significant potential to improve Cumberland Plain Woodland even when the ecological community is in poor condition. It also demonstrated that high intensity management, combined with early implementation of offsets, would not only compensate for the impacts of development on Cumberland Plain Woodland, but would greatly help to reverse the long-term decline in extent and condition of Cumberland Plain Woodland in the subregion from landscape scale threats. The trend analysis has been published as part of the Cumberland Plain Assessment Report (Part 8: Supporting documents – Supporting Document D).

To realise this benefit, the conservation program will invest in and encourage active restoration of more degraded sites, with actions ranging from assisted regeneration to reconstruction. The aim is setting sites on a trajectory toward benchmark diversity, structure and function. Ecological reconstruction under the CPCP is defined as restoration of the areas within the strategic conservation area that are identified as either cleared or degraded, but with the potential to bring back to a recognisable target threatened ecological community or to enhance landscape connectivity.

The CPCP has defined the term 'reconstruction' to monitor and track ecological restoration efforts to meet the plan's native vegetation targets.

Reconstruction efforts will focus on:

- target threatened ecological communities where there is a shortfall in established conservation land
- expanding the habitat area for targeted threatened species
- enhancing connectivity with neighbouring reserves and neighbouring areas of high biodiversity value.

Where reconstruction is implemented for the target threatened ecological communities, only up to a maximum of 25% of the cumulative offset target for native vegetation (up to 1,330 hectares) can be contributed and reconciled as an offset.

Ecological restoration projects (including reconstruction) will be limited to conservation land established under the CPCP.

Conservation land established as a biodiversity stewardship agreement will need to comply with the required management actions for a stewardship site. Required or active restoration management actions will be determined by the Biodiversity Conservation Trust (BCT) in accordance with their [Restoring Native Vegetation guidelines](#). Activities will include native vegetation management (restoring or rehabilitating native vegetation, retaining and managing regrowth and nutrient control), pest animal control and weed management.

The BCT conducts annual monitoring and reporting to demonstrate how annual payments have been used to manage the land in accordance with the management plan. The BCT will also undertake monitoring in accordance with the BCT's Ecological Monitoring Module. This will include baseline and ongoing monitoring of structural and functional attributes, species composition and secondary responses by fauna.

Where an ecological restoration project (including reconstruction) will commence on conservation land prior to a biodiversity stewardship agreement, it will be critical to monitor the restoration site over time to determine whether goals are being met and to inform future management decisions. The objective for restoration of these sites aligns with the plan's broader restoration objective of setting sites on a trajectory toward benchmark diversity, structure and function and eventually achieve a self-sustaining ecosystem.

A restoration working group is being established to guide the restoration activities of the plan including preparing a restoration implementation strategy. The strategy will establish best practice principles and methodologies to:

- identify the range of restoration activities and what will be undertaken through the CPCP
- ensure the long-term sustainability of restoration considers genetic diversity
- identify considerations for restoration potential and constraints of land

- provide reference to guidelines for restoration, including the NSW BCT guidelines for restoring native vegetation undertaken in a biodiversity stewardship site
- develop a seed-procurement approach
- reference research needs being considered through the Research Program Implementation Strategy (Commitment 22, action 1).

### Protecting threatened flora and fauna

The Cumberland Plain Assessment Report determined that 49 species protected under either the BC Act, EPBC Act or both, may be impacted by the urban and transport development facilitated by the CPCP (Open Lines 2020).

Species-specific offset targets were developed for 17 of those species where residual adverse risks from development through the CPCP were assessed as being high. A risk-based approach was undertaken due to the inherent level of uncertainty in the baseline data both for species habitat and species records.

The determination of what species required offsets was based on:

- for EPBC Act-listed species – individual assessments of the level of risk of residual adverse impacts directly from development under the CPCP for each species, provided in in the Cumberland Plain Assessment Report
- for BC Act-listed species – a set of criteria that aims to address the risk of residual adverse direct impacts

BC Act-listed species needing offsets were considered to be candidate species credit species subject to the following direct impacts from the development:

- greater than 5% of records in the nominated areas  
or
- greater than 5% of potential habitat in the nominated areas  
or
- greater than 1% of potential habitat in the nominated areas for entities subject to serious and irreversible impacts or endemic or largely endemic species.

The 17 target species are identified in Commitment 9.

For 15 of these species, a specified number of offset locations is used as the target. An 'offset location' is a site where one or more populations and habitat of the species has been confirmed as being present through surveys or an expert report. Offset location sites may be a reserve or a biodiversity stewardship site.

For a biodiversity stewardship site, this means credits representing a reasonable proportion of habitat and/or number of individuals of a local population of the threatened species are purchased and retired against the offset targets.

For 2 species considered at-risk, the swift parrot and the koala, offset targets for habitat were considered more appropriate. For the swift parrot, the offset target is an area of 'potential foraging habitat', including a smaller subset of important habitat as defined under the Biodiversity Assessment Method. For the koala, the offset target is an area of important habitat (primary, secondary and tertiary corridors as defined in the Cumberland Plain Assessment Report).

Achieving the species targets will be guided by the conservation land selection steps. These steps prioritise the acquisition of species credits by establishing conservation land in the CPCP Area, but also allow the direct purchase of species credits from within the Cumberland subregion or across

NSW. In certain circumstances where direct acquisition of land-based offsets cannot be secured, the program will allow the implementation of a conservation action if it will directly benefit the impacted species. This is further detailed in the section 'Conservation land selection steps' (on page 94).

Potential habitat for all 49 species that may be impacted by development under the CPCP will be protected through securing the threatened ecological community targets within conservation land, as in many cases species habitat and areas of threatened ecological communities will overlap. The reconciliation accounting process will track the plan's progress in securing potential habitat for species in addition to the specific offset targets for at-risk species.

## Commitments to conserve flora, fauna and habitat

### Commitment 8

Protect a minimum of 5,325 hectares of native vegetation<sup>15</sup> in the Cumberland subregion to conserve biodiversity values in perpetuity in accordance with the conservation land selection steps, which may require up to 11,900 hectares of conservation land.

#### Commitment 8.1

This target includes minimum areas of the following EPBC Act-listed threatened ecological communities:

- 675 hectares of Shale Sandstone Transition Forest
- 665 hectares of Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest
- 570 hectares of River-flat eucalypt forest of eastern Australia
- 125 hectares of Cooks River Castlereagh Ironbark Forest
- 20 hectares of Coastal Swamp Oak Forest
- 0.2 hectares of Western Sydney Dry Rainforest and Moist Woodland on Shale.

#### Commitment 8.2

This target includes minimum areas of the following BC Act-listed threatened ecological communities:

- 2,885 hectares of Cumberland Plain Woodland
- 1,455 hectares of Shale Sandstone Transition Forest
- 505 hectares of River-Flat Eucalypt Forest
- 285 hectares of Shale Gravel Transition Forest
- 115 hectares of Cooks River Castlereagh Ironbark Forest
- 70 hectares of Swamp Oak Floodplain Forest
- 10 hectares of Freshwater Wetlands on Coastal Floodplains
- 0.2 hectares of Moist Shale Woodland.

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### Commitment 9

Protect threatened species likely to be at risk of residual adverse impacts from development under the CPCP (target species) in accordance with the conservation land selection steps.

This includes securing offsets to protect known locations for the following target threatened species:

- flora species:
  - 2 offset locations for *Cynanchum elegans*
  - 3 offset locations for *Dillwynia tenuifolia*
  - 3 offset locations for *Grevillea juniperina* subsp. *juniperina*
  - 1 offset location for *Hibbertia fumana*
  - 1 offset location for *Hibbertia puberola*
  - 2 offset locations for *Marsdenia viridiflora* subsp. *viridiflora*

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<sup>15</sup> While there is overlap between the TEC targets listed in commitments 8.1 and 8.2, there are differences in the listings between EPBC Act-listed and BC Act-listed TECs, such as differences in approach and criteria. Therefore, the BC Act-listed TECs in Commitment 8.2 incorporate targets for EPBC Act-listed TECs.

- 2 offset locations for *Persoonia nutans*
- 3 offset locations for *Pimelea spicata*
- 2 offset locations for *Pultenaea parviflora*
- 2 offset locations for *Pultenaea pedunculata*
- fauna species:
  - 1 offset location for *Haliaeetus leucogaster*
  - 1 offset location for *Hieraaetus morphnoides*
  - 1 offset location for *Lophoictinia isura*
  - 3 offset locations for *Meridolum corneovirens*
  - 1 offset locations for *Myotis macropus*

This includes securing habitat for the following target threatened fauna species:

- 4,410 hectares of potential foraging habitat for *Lathamus discolor* (including 100 hectares of *Lathamus discolor* important habitat as defined under the BAM)
- 705 hectares of important habitat<sup>16</sup> for *Phascolarctos cinereus* as defined in the Cumberland Plain Assessment Report.

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### Commitment 10

Establish a reserve to protect the north–south koala movement corridor along the Georges River between Appin and Long Point.

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### Commitment 11

Establish at least 2 new reserves in addition to the Georges River Koala Reserve that will protect threatened communities, species and habitat that are targeted for protection through the CPCP.

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### Commitment 12

Protect koala corridors in the Cumberland subregion, including those along the Nepean River, Georges River, Cataract River and Ousedale Creek.

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### Commitment 13

Deliver and support ecological restoration activities in conservation land including ecological reconstruction of up to a maximum of 25% of the offset target for native vegetation (Commitment 8).

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### Commitment 14

Minimise impacts from development on biodiversity values in the strategic conservation area.

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<sup>16</sup> Important koala habitat is the term used to describe primary, secondary and tertiary corridors, as defined in the Cumberland Plain Assessment Report. It is the area that is critical to the long-term viability of koalas (primary corridors) as well as the areas (if enhanced) that would support the population (secondary and tertiary corridors).



## Managing landscape threats

Increased urbanisation brings increased threats to biodiversity, such as habitat loss, weed invasion, pest animals and disease. Reducing and managing threats to the area's biodiversity in a strategic and coordinated manner will be essential to achieving the objective to deliver biodiversity outcomes and support the ecological function of the Cumberland subregion.

The CPCP commits to addressing key strategic priorities to manage and reduce landscape threats to biodiversity in the conservation land established by the plan. The assessment report has identified that weeds, pest animals, fire, disease and climate change will be the most significant threats to the persistence of threatened species and threatened ecological communities in the Cumberland subregion. This section gives are specific commitments to address and manage landscape threats.

'Case study 6: Implementing a fire management strategy' presents a short overview of the scope of the Fire Management Strategy to be developed as an action under the CPCP (Sub-Plan A: Commitment 17, action 3).

Further detail on each of the commitments to manage landscape threats to biodiversity and how they will be implemented can be found in Sub-Plan A.

### Case study 6: Implementing a fire management strategy

Fire is a natural feature of the environment and is essential to the survival of some plant and animal communities. Inappropriate fire regimes, however, can damage environmental values.

Bushfire is a major determinant of the distribution and abundance of plants and animals. The timing, frequency and intensity of fires determine to what extent nutrient cycles, erosion patterns and hydrological regimes are adversely impacted by a fire event.

A conservation action of the CPCP is to develop and implement a fire management strategy that aligns with National Parks and Wildlife Service and Rural Fire Service fire strategies to protect biodiversity values, property and people. The strategy will aim to manage fire regimes in existing and new conservation land such as national parks and reserves to maintain and enhance biodiversity over time.

For each nominated area in Western Sydney, a range of fire management strategies will be developed that could include fuel reduction, fire trails, detection and cooperative arrangements. Where urban boundaries and conservation land align, fuel reduction programs and fire trail maintenance will be designed and implemented in consultation with relevant stakeholders to best protect life, property, natural and cultural assets.

## **Commitments to manage landscape threats**

### **Commitment 15**

Manage priority weeds in strategic locations in the Cumberland subregion to reduce threats to land secured within the strategic conservation area.

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### **Commitment 16**

Manage priority pest animals in strategic locations in the Cumberland subregion to reduce threats to land protected within the strategic conservation area.

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### **Commitment 17**

Manage fire in strategic locations in the Cumberland subregion to support the maintenance of biodiversity values on conservation land.

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### **Commitment 18**

Support new or existing programs to control key diseases affecting threatened species and ecological communities in the Cumberland subregion.

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### **Commitment 19**

Support existing or new programs to help threatened species and ecological communities adapt to the impacts of climate change in the CPCP Area.



## Building knowledge and capacity

The CPCP is underpinned by a range of supporting commitments that aim to enhance conservation outcomes by increasing the capacity of the community to participate in biodiversity conservation or through enhancing the scientific knowledge base on threatened ecological communities, species and their management.

Activities such as education and extension services will increase awareness of biodiversity and encourage participation in conservation activities. Research will enhance our knowledge of threatened species and improve our understanding of threats and land management issues. Together, these programs will help to inform the adaptive management needed to achieve the conservation vision for Western Sydney.

The development of the CPCP acknowledges more than 60,000 years of continuous Aboriginal connection to the land that makes up NSW. Aboriginal people hold profound knowledge, understanding, obligation and custodianship of the landscape, often referred to as 'connection to Country'. Through this connection to Country, Aboriginal people have developed systems of knowledge and an understanding of ecology and biodiversity that represent a living symbiotic relationship with the land and waters of their traditional homelands.

The CPCP commits to ongoing engagement with Aboriginal communities in Western Sydney to help maintain Aboriginal people's distinctive cultural, spiritual, physical and economic relationships with their land and waters in Western Sydney (Commitment 21). To deliver this, the department will partner with Western Sydney's Aboriginal communities such as Traditional Custodians, Aboriginal land councils and other interested Aboriginal people and groups to support the implementation of the CPCP by collaboratively developing the Caring for Country – Aboriginal Outcomes Strategy for the Cumberland Plain Conservation Plan 2022-2032 (Commitment 21, action 2). Case study 7 presents a short overview of the scope of the strategy.

Further detail on each of the commitments to build knowledge and capacity and how they will be implemented can be found in Sub-Plan A.

### Commitments to build knowledge and capacity

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#### Commitment 20

Provide opportunities for the residents of Western Sydney to learn about and actively participate in biodiversity conservation including koala conservation.

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#### Commitment 21

Partner with Aboriginal groups and communities to help maintain a distinctive cultural, spiritual, physical and economic relationships with their land and waters in Western Sydney.

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#### Commitment 22

Invest in research priorities that will support the implementation of the CPCP and help to deliver the plan's outcomes.

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#### Commitment 23

Support rehabilitation measures to help maintain koala health and welfare.

## Case study 7. Partnering with Western Sydney Aboriginal communities

We recognise that engaging and partnering with Western Sydney's local Aboriginal land councils (LALCs) and Aboriginal communities is an important part of successfully delivering the CPCP.

The department will continue to work and partner with Western Sydney's Aboriginal communities, groups and leaders to collaboratively develop and implement the Caring for Country – Aboriginal Outcomes Strategy for the Cumberland Plain Conservation Plan 2022-2032.

To support implementation of the strategy, we propose to establish an Aboriginal advisory group to provide advice on delivery of the strategy, and actively engage and empower Aboriginal groups and communities to help deliver the strategy and the CPCP.

The Aboriginal Outcomes Strategy will support economic participation for Aboriginal people and cultural outcomes under the CPCP to ensure Aboriginal people are at the forefront of implementing the plan. The strategy will support co-design of specific actions together with Aboriginal groups and communities in Western Sydney to:

- recognise, celebrate and promote Aboriginal culture and heritage with a focus on natural areas and protecting biodiversity
- recognise and embed into the CPCP the knowledge and connection that Aboriginal people have with Country
- enable traditional custodians and interested Aboriginal groups to care for Country on new conservation land
- grow Aboriginal businesses and employment in the environmental sector.

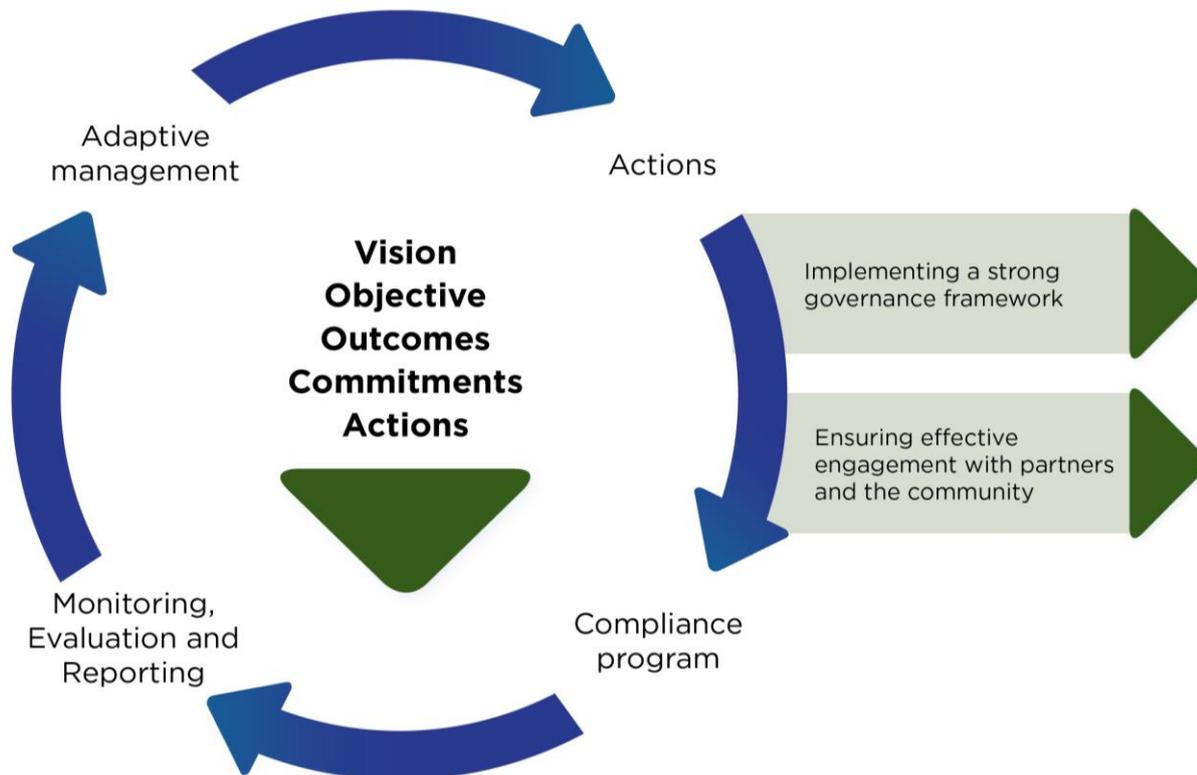
# Implementation and Assurance



Bents Basin is a popular spot for recreation in Western Sydney.

## Implementation and assurance framework

The Implementation and assurance framework (see Figure 17) has been designed to ensure successful implementation of the CPCP and provide assurance to the many stakeholders with an interest in the Cumberland subregion that the plan will deliver on its intended outcomes, objective and vision.



**Figure 17: Implementation and assurance framework for the Plan**

## Governance

The NSW Minister for Planning and Homes is the approval holder for strategic biodiversity certification (BC Act) and likely the approval holder for strategic assessment under Part 10 of the EPBC Act (although this will be determined at time of class of actions approval).

The Department of Planning and Environment is the responsible agency for implementing the CPCP and meeting regulatory requirements.

The major transport corridors program is administered by Transport for NSW, who are a project partner for the CPCP.

The department's responsibilities will include:

- central coordination and management of implementation, including reporting to ensure consistency with the monitoring, evaluation and reporting framework
- contract and grant management
- preparing reports for publication
- managing potential compliance breaches.

The department will work with delivery partners and technical working groups, including government and non-government entities and other stakeholders, to ensure efficient and effective implementation of the CPCP. Service level agreements or memorandums of understanding are being established with key agency and delivery partners to support the fulfilment of specific commitments. The department will also be responsible for periodically reporting to approval bodies, relevant NSW and Commonwealth ministers, and the public on the progress of implementation.

The department has established an executive implementation committee with executive-level representatives from key government agencies to ensure the plan’s commitments are fulfilled and its outcomes delivered through oversight of the monitoring, evaluation, reporting and adaptive management processes.

The executive implementation committee will be the key decision-making authority to determine the appropriate course of action on matters raised, or whether issues need to be escalated for ministerial attention. Governance arrangements may be subject to change by agreement of the executive implementation committee.

Figure 18 shows the detailed governance framework for the CPCP, including its delivery partners and working groups.

The roles and responsibilities of the key partners are detailed in Table 6.

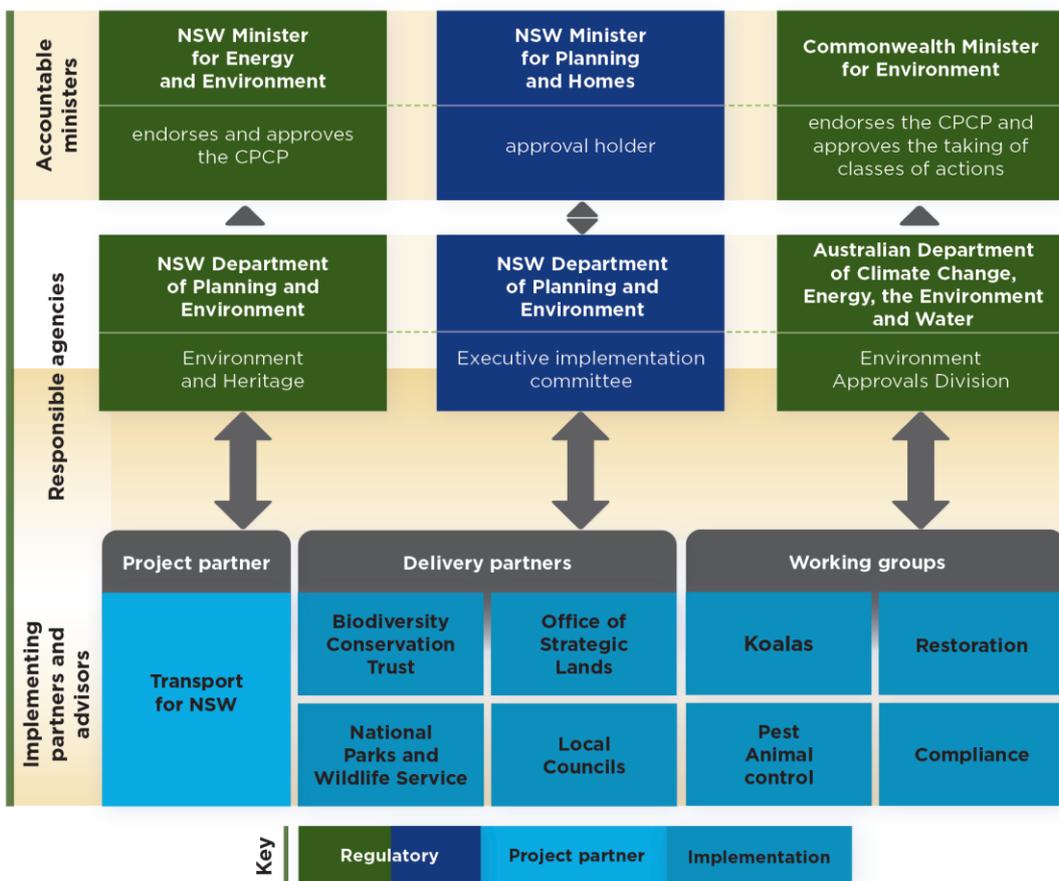


Figure 18 Governance framework for the CPCP

**Table 6 Roles and responsibilities for key delivery partners**

<b>Delivery partners</b>	<b>Role</b>
<b>NSW National Parks and Wildlife Service</b>	The NPWS will be the long-term manager of future reserves and national parks created under the <i>National Parks and Wildlife Act 1974</i> (NSW).
<b>Office of Strategic Lands</b>	OSL will be the key delivery partner for land purchases for reserves established through the CPCP.
<b>Biodiversity Conservation Trust</b>	The BCT will deliver the biodiversity stewardship program for the CPCP.
<b>Councils</b>	Councils will play a role in delivering the on-ground conservation program, including managing council reserves; monitoring compliance and ensuring conservation is embedded in local planning controls. This includes following section 9.1 directions when considering any planning proposals submitted to them.
<b>Community organisations</b>	Community organisations could manage smaller parcels of conservation land.
<b>Private landholders</b>	Private landholders can enter into biodiversity stewardship agreements to manage conservation on their land.

## Councils as delivery partners

The department has an ongoing commitment to work with local councils and communities to ensure the successful implementation of the CPCP.

Local councils are key delivery partners for implementing the Plan's conservation program. This includes supporting the commitments to manage landscape threats, build knowledge and capacity and protect high-value sites through biodiversity stewardship agreements or council reserves.

Local councils will have opportunities to partner with the department to deliver the implementation strategies and climate adaptation programs (Commitments 16, 18, 19, 20) and will be involved in their governance through the establishment of the Implementation and Compliance working group (Sub-Plan A: Commitment 26, action 1). One of the key tasks of the working group is to guide the department in the preparation of a compliance strategy.

The department will provide funding to councils to deliver actions in the implementation strategies through funding agreements with individual councils or contestable grants programs for all councils in the CPCP Area. Local councils could establish reserves or biodiversity stewardship sites on council owned land, allowing local councils to access in perpetuity funding for managing biodiversity values in new reserves. Where the land is purchased or transferred by the state government, local councils and other delivery partners will be consulted to determine the long-term land managers of the future reserve. Where the land is privately owned and proposed for koala-exclusion fencing, the councils can be approached in discussion with private landholders to resolve long-term management and maintenance.

The CPCP will provide support to local councils by establishing 3 full-time community engagement officer roles (Sub-Plan A: Commitment 20, action 2), 6 compliance officers (Sub-Plan A: Commitment 26, action 3), and extension services (Sub-Plan A: Commitment 26, action 4).

Further information on local councils' role and the support the department will provide for the implementation of the CPCP can be found in Sub Plan A.

## Funding

Funding is needed to implement the conservation program over the life of the plan. The NSW Government has already committed \$114 million in the first 5 years to implement priority actions within the conservation program.

The department is responsible for implementing the CPCP over its life to 2056. This includes ensuring funding is available to implement the conservation program and that actions are tracked, reported on and accounted for. The government is providing upfront funding to support the priority actions. Program costs will be recovered over time through contributions collected from residential, commercial and industrial developers in the 4 Western Sydney nominated areas.

As a partner to the CPCP, Transport for NSW is responsible for funding a proportion of the conservation program in line with their offset obligations for the 4 major transport corridors. Transport for NSW has already committed \$20 million toward the implementation and will provide the further funding ahead of its works. Funding provided to the department will be in accordance with a formal agreement established between Transport for NSW and the department.

The department will regularly review resourcing requirements to ensure it can adapt to changing circumstances and ensure the plan succeeds in delivering its conservation program over the long term.

## Implementation through planning controls

The CPCP is supported by a range of planning controls under the *Environmental Planning and Assessment Act 1979*. These will protect identified high-value biodiversity in Western Sydney and support the delivery of the plan.

The department has prepared a new chapter of the Biodiversity and Conservation SEPP 2021 to support the implementation of strategic conservation planning and provide certainty that the commitments and actions of the CPCP to protect, enhance and restore biodiversity in Western Sydney will be delivered.

The objectives of the strategic conservation planning chapter include:

- ensuring development in the nominated areas is consistent with state and federal government biodiversity approvals
- facilitating appropriate development on biodiversity certified areas within the nominated areas
- identifying and protecting areas of high-value biodiversity within the nominated areas
- minimising impacts from future development in areas with high-value biodiversity.

The new chapter of the Biodiversity and Conservation SEPP includes controls to protect avoided land and minimise impacts of future development on areas identified in the Strategic Conservation Area. These include:

- controls that protect vegetation on avoided land and require a consent authority to consider the impact on biodiversity values before granting consent for development on avoided land
- controls to minimise impacts on land identified as strategic conservation area, including a requirement for consent authorities to consider the impact of proposed development on

regionally significant biodiversity and the importance of the site for landscape connectivity or ecological restoration

- clauses to support the identification, management and acquisition of sites that have been proposed for future public land conservation (such as public reserves and new or additional national parks) to offset development impacts and help meet the plan's commitments
- controls within development control plans and Cumberland Plain Conservation Plan Guidelines for Mitigation Measures to mitigate indirect and prescribed impacts from development within nominated areas, including specific controls to address threats to koalas
- Cumberland Plain Conservation Plan Guidelines for Infrastructure Development to manage impacts on biodiversity in the avoided land from infrastructure development
- a ministerial direction under section 9.1 of the *Environmental Planning and Assessment Act 1979* to protect areas identified as having strategic biodiversity value, protect avoided land and ensure that development in the nominated areas is consistent with the BC Act and the EPBC Act approvals.

There is some land owned or under claim by local Aboriginal land councils in the strategic conservation area and identified as avoided land. No development controls will apply to this land.

### Role of local councils in implementing local planning controls

Local councils are responsible for assessing and approving development applications within the CPCP Area. As consent authorities for local development, local councils assess development applications and ensure consistency with the certification requirements for development, including planning controls applied through the Biodiversity and Conservation SEPP, a Section 9.1 ministerial direction for planning proposals, and development controls within specific DCPs for nominated areas.

Local councils, as infrastructure providers, are also the determining authority for infrastructure development assessed under Part 5 of the Environmental Planning and Assessment Act.

The department will provide guidance to local councils covered by the CPCP when the planning controls and infrastructure guidelines come into force.

The department will provide ongoing support to local councils in the application of DCP controls within the nominated areas, including the sharing of knowledge, maps and data (Sub-Plan A: Commitment 5, action 3). The department has already provided integrated data sets for the strategic conservation area to councils for use in local and regional planning, including local strategic planning statements.

## Compliance

A compliance strategy will be developed and funded as part of the reporting requirements for development. It will be facilitated through the CPCP (Commitment 26). The compliance strategy will:

- identify relevant compliance mechanisms
- set out compliance monitoring and auditing priorities and processes
- set out a decision-making framework for taking compliance action
- set out procedures and protocols for taking compliance action
- identify roles and responsibilities for compliance.

A compliance and implementation working group is being established. It will comprise representatives of the department, councils and other relevant stakeholders.

## Monitoring and reporting on compliance with the CPCP

Development in nominated areas and major transport corridors must be undertaken in accordance with the CPCP and any conditions of approval.

Development will be staged over the life of the CPCP, and in some cases may require further assessment and approval through applicable NSW legislation.

Monitoring compliance with regulatory approvals under the EPBC Act and BC Act will be carried out to ensure that development is consistent with the endorsed CPCP (EPBC Act approval) and certification order (BC Act approval) (Sub-Plan A: Commitment 1, Action 2). At a minimum, monitoring to ensure that development is consistent with the CPCP will include:

- regular auditing and reporting of infrastructure delivery
- auditing growth area development control plans for the nominated areas where they apply and monitoring the implementation of the Mitigation Measures Guidelines
- annual updates on progress
- a 5-yearly review of implementation.

The department will be responsible for carrying out monitoring and auditing requirements and for reporting to the executing implementation committee.

Reporting on compliance will be an important part of the evaluation program to ensure potential compliance breaches are adequately managed. Compliance reporting will be included in all facets of the reporting framework including regular reporting to the executive implementation committee, yearly, published updates and the independent 5-yearly review.

The department will prepare reports every two-and-a-half years on any identified breaches with commitments and approval conditions, such as auditing development consent conditions and environmental management plans (Sub-Plan A: Commitment 26, action 6). This will form part of the ongoing process review that will be done every two-and-a-half years (Sub-Plan A: Commitment 25, action 6).

Where non-compliance is identified, the department will implement the process detailed in 'Box 3. Audit and compliance process'.

### Box 3. Audit and compliance process

The monitoring report identifies a deviation from, or non-compliance with, a CPCP commitment.

The regulator reviews the deviation or non-compliance and considers its importance in terms of impacts on protected matters.

The regulator advises that either the deviation or non-compliance:

- is minor or trivial or didn't occur and no further action is required
- requires corrective action.

If corrective action is needed, the department or other party will be provided with an opportunity to correct the non-compliance.

## Establishing conservation land as offsets

The department recognises the inherent uncertainty in delivering a conservation program of this scale over a relatively long timeframe. To address risk and uncertainty, the department has developed several methods to oversee, track and establish conservation land as biodiversity offsets over the life of the CPCP. They are:

- a series of steps and principles to guide the selection of conservation land, while providing some flexibility in delivery
- a reconciliation accounting process to reconcile biodiversity offsets acquired through the CPCP with development impacts throughout the life of the plan to 2056
- adaptive management steps to align the securing of biodiversity offsets with development.

Implementing these methods will ensure the conservation targets for threatened ecological communities and threatened flora and fauna are met over the large timeframe and spatial scale of the conservation program. The methods will also provide certainty that impacts to biodiversity will be offset commensurate with development impacts.

These methods will be subject to an independent 5-yearly review to ensure they remain effective in delivering the commitments and outcomes.

The following sections detail these methods.

In addition, the department will develop a 'conservation land implementation strategy' to guide the process for selecting, purchasing and establishing land identified through strategic conservation planning.

The implementation strategy will include:

- priorities for selecting conservation land (the conservation lands selection steps)
- interim targets and proposed timeframes for establishing conservation land through either the reserve or biodiversity stewardship program
- proposed mechanisms for securing priority conservation lands
- suitable land managers for priority conservation lands
- the process for purchasing land for new reserves
- the process for establishing new stewardship sites
- information on how the department will reconcile offsets and impacts over the life of the CPCP.

The strategy will be developed as a priority action in year 1 to deliver the conservation land commitments.

## Principles for establishing conservation land

A set of overarching principles will guide implementation decisions for purchasing conservation land through the CPCP reserve program or through the biodiversity stewardship program. This includes decisions by the executive implementation committee, the department and the conservation land delivery partners.

Regular reviews of conservation program implementation will consider how offset sites delivered through the respective biodiversity stewardship and reserve programs are meeting the principles.

The principles are as follows:

1. Conservation land protects the large patches of vegetation that are in better or the best available condition, recognising the importance of new sites to contribute to the protected area network.
2. Conservation land works efficiently together at site, local and regional scales to enhance ecological connectivity and landscape function in the long term and in a changing climate.
3. Work on conservation land includes active ecological restoration of degraded areas of the landscape to provide a biodiversity gain and ecological reconstruction of target TECs where there is a shortfall based on reconciliation accounting. Effort should focus on protecting and restoring corridors, enhancing ecological connectivity and providing vegetative buffers to core patches of intact vegetation.
4. Conservation land protects and manages habitat for impacted threatened species and TECs in accordance with commitments and actions (direct offsets).
5. The selection of new reserves takes into consideration species adaptation needs in a changing climate, including consideration of changing distribution patterns and habitat requirements.
6. Biodiversity resilience is improved through seeking to establish conservation land early in the CPCPs implementation, including purchasing available reserve sites, purchasing and retiring existing biodiversity credits or through securing new biodiversity stewardship agreements with willing landowners.
7. Data underpinning the strategic conservation area is reviewed every 5 years to ensure that decision-making is supported by up-to-date and accurate information.
8. The implementation of conservation land will keep pace with the rate of development and demonstrates value for money.

## Conservation land selection steps

The conservation land selection steps will be used to identify, select and secure offsets through the reserve or biodiversity stewardship program or to direct the purchase and retiring of biodiversity credits.

Some of the offset targets in the CPCP may be challenging to meet as many of the target ecological communities and species have limited extent or habitat remaining in the Cumberland subregion. The CPCP allows flexibility in reaching those targets through the conservation land selection steps (see Box 4: Conservation land selection steps).

The order of the conservation land selection steps reflects geographical and ecological priorities to meet offset targets and prioritise connectivity across the landscape. Under a scenario where offsets can't be secured from within the strategic conservation area; or in cases where like-for-like species and threatened ecological community offsets are unlikely to be secured, the selection steps allow for offsets to be secured from outside the strategic conservation area, or alternate offsets from outside or within the CPCP Area (see Figure 19).

These selection steps, in addition to the offset requirements for alternate offsets (see Box 6), have been developed according to the limitations provided in the Biodiversity Conservation Regulation 2016 (NSW). They have been refined to prioritise the biodiversity and connectivity of the Cumberland subregion, with many of the threatened ecological communities targeted as offsets under the CPCP already restricted to within the Cumberland subregion and its immediate surrounds. Retaining presence of species in the Cumberland or adjacent subregions is also prioritised.

Flexibility to secure offsets for threatened ecological communities outside of the CPCP Area, or as alternate offsets, is capped to a maximum of 20% of the overall offset target for native vegetation over the life of the plan and only after appropriate action has been taken to secure a like-for-like offset.

In addition to meeting offset targets for threatened ecological communities, the department will seek to acquire direct species credits in accordance with the conservation land selection steps and offset requirements for target species (see also Box 6). This will ensure that offsets can be secured for threatened species as a priority if habitat does not become available as a new conservation land. A ruleset for moving through the target species offset requirements has been developed for where more than one offset location is required for a target species (see Figure 20). Where multiple offset locations are required for a species, the sequencing of flexibility steps commences 5 years later for each successive offset location requirement. As an example, for an endangered species with a target of 3 offset locations:

- the first offset location can move to step 2 (anywhere in NSW) at Year 5
- the second offset location can move to step 2 at Year 10
- the third offset location can move to step 2 at Year 15

The department is establishing formal agreements with delivery partners to secure offsets and will be responsible for ensuring delivery partners meet these requirements. The Biodiversity Conservation Trust will follow these steps when implementing the biodiversity stewardship agreement program. The department must also follow these steps when developing reserve proposals with future land managers.

These steps will be assessed as part of the 5-yearly review for implementing the CPCP and updated if found not effective in delivering the conservation program objective and targets.

## Box 4: Conservation land selection steps

- 1a. Secure target threatened ecological community (target TECs<sup>17</sup>) offsets from within priority areas of the strategic conservation area (see 'Box 5. Criteria to identify priority areas'), or sites contiguous with the priority areas which otherwise meet the criteria for priority areas, with a preference for (in order):
    - i. target TECs with the greatest impact, based on the 2019 impact assessment (Cumberland Plain Woodland, Shale Sandstone Transition Forest, River-Flat Eucalypt Forest)
    - ii. target TECs that have the highest percentage cleared status (as identified in the NSW BioNet Vegetation Classification database for the corresponding PCTs)
    - iii. target TECs and species habitat where there is a shortfall in offsets against development impacts, based on offset reconciliation accounting:
      - this includes the selection of cleared or degraded sites that can be restored to a target TEC or species habitat with an offset shortfall
    - iv. areas that provide potential habitat for the target species or for the following EPBC Act-listed key species:
      - grey headed flying fox
      - regent honeyeater
      - green and golden bell frog
    - v. areas with additional conservation benefits (that is, connectivity; riparian habitat; refugia for threatened species; and adjacency to existing protected areas).
  - 1b. Secure species offset locations or area of habitat for target species<sup>18</sup> according to the offset requirements in 'Box 6 of CPCP'
  2. Secure target TEC offsets from elsewhere within the strategic conservation area following the same ecological criteria specified in step 1 of these selection steps.
- The following steps only apply to the biodiversity stewardship program and are subject to the offset requirements in Error! Reference source not found..**
3. Secure offsets for target TECs outside the strategic conservation area but within the Cumberland subregion or adjacent subregions
  4. Secure offsets for target TECs anywhere else they occur in NSW, following the ecological criteria identified in step 1(a)(i-v) of these selection steps
  5. Secure alternate native vegetation (i.e. vegetation not consistent with like-for-like offsets for target TECs) according to the offset requirements (see Box 6 of CPCP).

<sup>17</sup> Target TECs are threatened ecological communities with a direct offset target in the CPCP

<sup>18</sup> Target species are threatened species with a direct offset target in the CPCP

### Box 5. Criteria to identify priority areas

Priority areas will be determined during implementation and will include:

- presence of target native vegetation
- presence of larger areas of remnant native vegetation
- areas where habitat for multiple species overlap
- presence of important species populations<sup>19</sup>
- presence of habitat for species most impacted by development
- areas avoided for biodiversity within the nominated areas
- areas owned by Office of Strategic Lands, the NSW Government or local government
- areas adjacent to existing conservation land (for example, biodiversity stewardship agreement sites and reserves for biodiversity purposes such as national parks)
- land that enables connectivity through the landscape.

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<sup>19</sup> 'important population' is defined as per Commonwealth EPBC Act MNES Significant Impact Guidelines 1.1

## Box 6. Offset requirements for target TECs and target species

### Threatened ecological communities

Alternate native vegetation can only be used as an offset once appropriate action has been taken to obtain offsets for target TECs following steps 1 to 4 of the conservation land selection steps (including all like-for-like<sup>20</sup> credits that make up the relevant TEC)

Where using alternative native vegetation as an offset, the alternate native vegetation used must be part of a TEC and preference should be for plant community types of the same Class first, then of same Formation, to those in the target TEC.

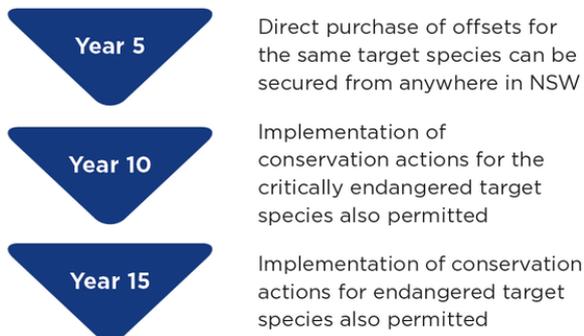
A maximum of 20% of the cumulative offset targets for TECs can be secured outside of the Cumberland subregion over the life of the CPCP or as alternate offsets (either within the CPCP Area or outside).

Geographic preference should first be the Cumberland and adjacent subregions – then the Sydney Basin bioregion – then anywhere in NSW

### Threatened species

**Step 1.** Direct acquisition of offsets for target species from start of CPCP implementation (year 1) from within the Cumberland subregion or adjacent sub regions

#### Critically endangered and endangered species



#### Vulnerable species



If at year 30, the conservation program is still not on track to meet target species offsets, direct purchase of offsets for any species of the same kingdom and of the same or higher threat status within the Cumberland or adjacent subregions is permitted.

<sup>20</sup> Like-for-like is defined under the Biodiversity Regulation 2016 (NSW) and seeks to ensure biodiversity impacts are offset with biodiversity that is very similar to the biodiversity that is being impacted.

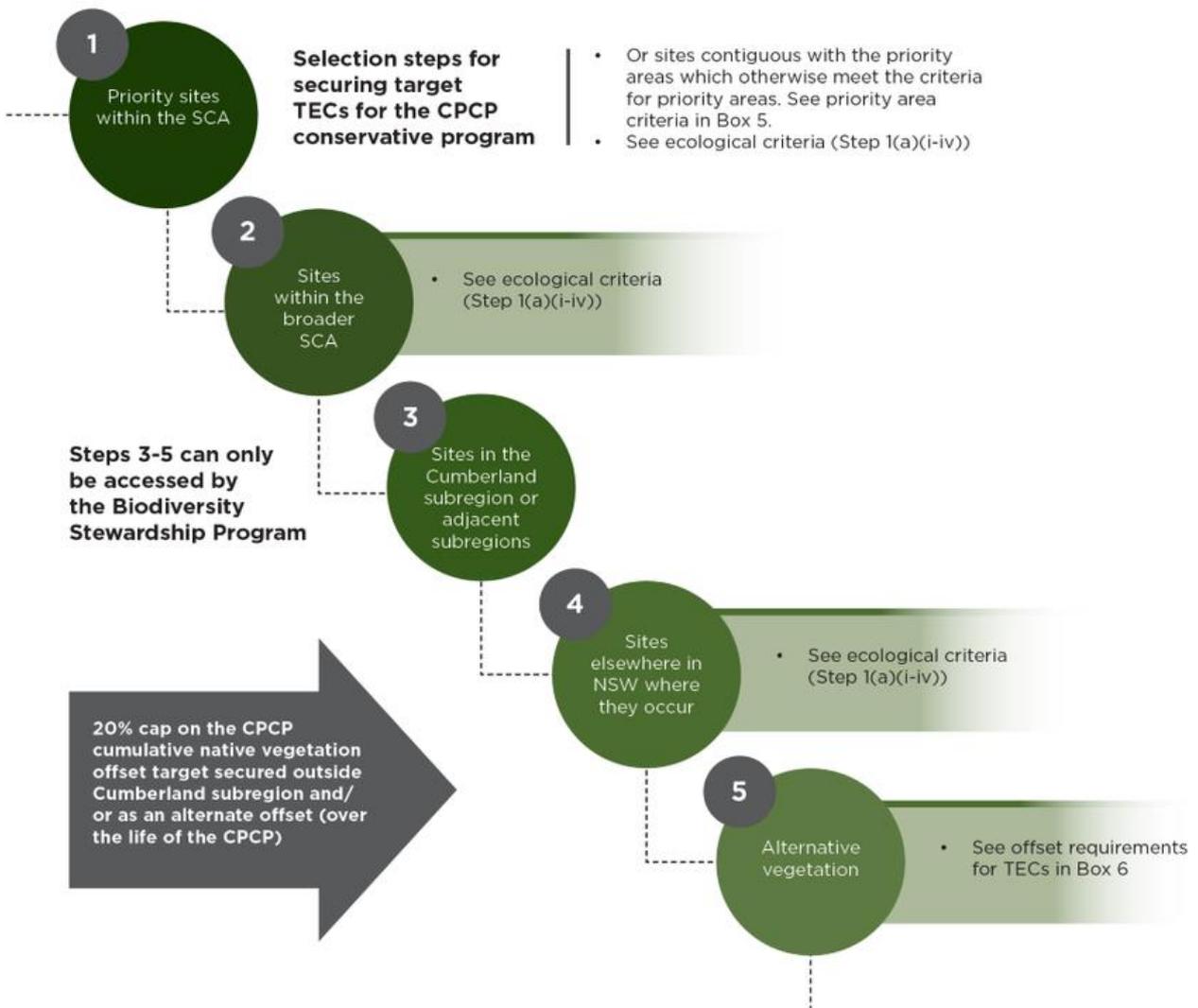
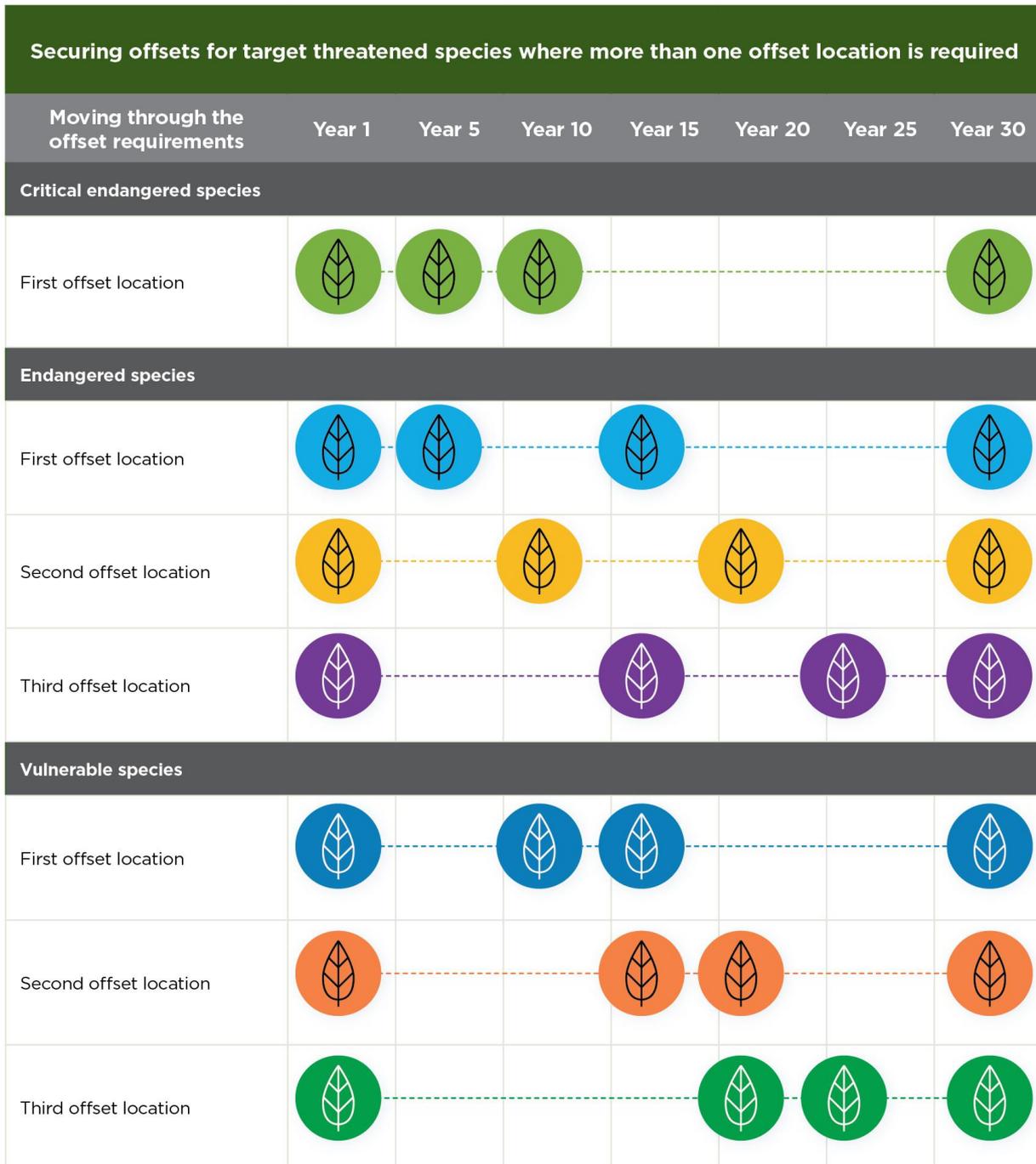


Figure 19. Selection steps for securing target TECs



**Figure 20. Securing offsets for target species where more than one offset location is required**

### Reconciliation of offsets and impacts

The evaluation program, described in Sub-Plan A will monitor and report on the plan’s progress in delivering offsets and will include an ongoing reconciliation accounting process to reconcile the establishment of conservation land or direct purchase of credits with development impacts throughout the life of the CPCP to 2056.

The reconciliation accounting process will provide a reliable mechanism to facilitate reporting on targets and commitments and inform the selection of offsets sites. It will also be used to determine when adaptive management steps may be required if development impacts are exceeding the delivery of conservation land.

Reconciliation outputs will be provided to the executive implementation committee to support decision-making and will inform evaluation and reporting on the plan's outcomes and commitments.

### Collecting data on offsets

The department has assessed biodiversity impacts, measured in credits, to inform the offset targets for the CPCP. The offset target methods are described in 'Box 2. Offset target methods for threatened ecological communities and species' (on page 49).

The department will purchase and retire biodiversity credits from biodiversity stewardship sites and creating or extending reserves to offset the impacts of development. Additional offsets secured through the plan will include direct purchase of species or ecosystem credits where appropriate and conservation actions for threatened species in the case that species credits cannot be acquired.

The reconciliation accounting process will track progress in achieving the offset targets for species and threatened ecological communities as part of the biodiversity assessments undertaken for creating biodiversity stewardship sites or through other assessment methods where land is not secured under a stewardship agreement. While not required to specifically meet the offset commitments, the department will monitor offsets secured in credits to report against progress towards the Biodiversity Certification Assessment Report (BCAR) ecosystem credit balance.

If offsets are not being adequately secured for the individual threatened ecological communities and species targets, it will trigger a response to prioritise those offsets through the reserve, biodiversity stewardship agreement or ecological restoration programs (see step 1a(iii) in 'Box 4: Conservation land selection steps').

### Collecting data on impacts

The reconciliation accounting process will track impacts through monitoring the delivery of development in the nominated areas and through monitoring the development of transport projects in the major transport corridors.

Residential, commercial and infrastructure data will be collated from the department's existing [Metropolitan Housing Monitor](#) and newly established [Greater Sydney Urban Development Program Dashboard](#), which gather and publicly report live data on a range of development indicators including the estimated dwelling potential, number of lots sold and available, and the number of completed dwellings in released and rezoned precincts. Similarly, transport infrastructure development will be tracked by Transport for NSW and reported regularly to the department.

The CPCP also facilitates EPBC Act approval of essential infrastructure development in the avoided land up to a certain impact threshold. Approved impact thresholds for EPBC Act-listed TECs are detailed in Table 3. Public authorities and other proponents of essential infrastructure development must notify the department of any planned essential infrastructure development in the avoided land, which can then be tracked against these impact thresholds through the evaluation program. These impacts have not been considered as part of the offset targets and conservation program and are not required for the reconciliation accounting process. However, proponents will need to notify the department on how offsets to EPBC Act matters will be met through the relevant NSW approval, if required.

In addition to the site-scale collection of impact data, the department will monitor annual clearing and changes in vegetation extent across the nominated areas, including the certified-urban capable land, certified-major transport corridors and the avoided land. This data will be captured through remote sensing methods.

Impact data will be collectively incorporated into the evaluation program to inform decision-making in relation to program delivery (for example offsets prioritisation), tracking progress against commitments and triggering adaptive management for offsets if required.

### Adaptive management steps for offsets

Adaptive management may be required if offsets are not tracking in line with development impacts. Adaptive management steps have been developed to provide certainty on how this would occur (see Figure 21).

The adaptive management steps will be triggered for consideration by the executive implementation committee when the total area of target threatened ecological communities within a conservation land is less than 80% of the total offset liability to that time.

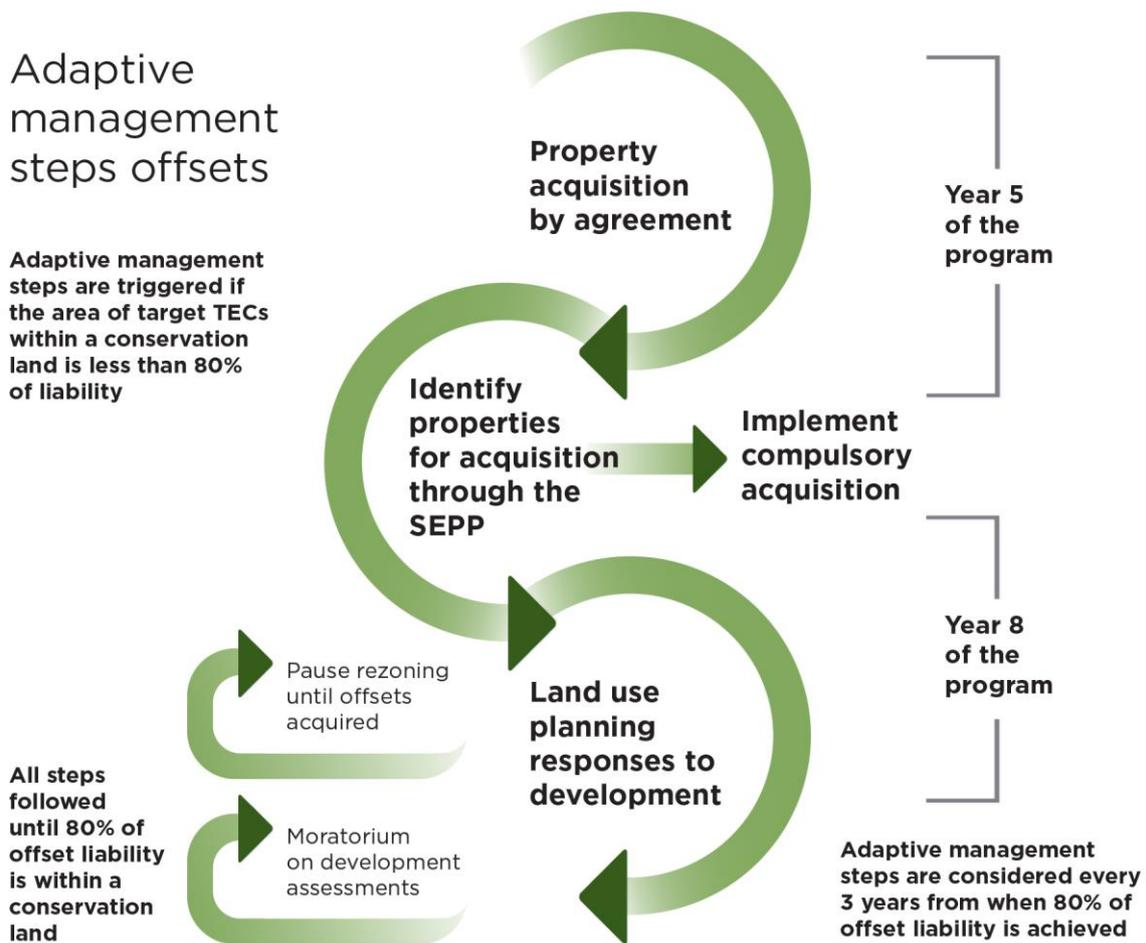


Figure 21. Detailed governance arrangements for offsets

### Determining the adaptive management offset liability

The amount of offset liability needed to trigger the adaptive management steps will be determined using an average ratio of 3.5:1 applied to the total area in hectares of native vegetation cleared in certified-urban capable land and in certified-major transport corridors. This applies an average offsets-to-impact ratio for tracking purposes to assist with decisions on adaptive management. This ratio will be reviewed for its effectiveness as part of the regular reviews of the CPCP.

The offset liability ratio has been determined based on the plan's offset target method, which applied a higher ratio to impacted native vegetation of higher condition or threat status to determine the amount of offset target for each protected matter—see 'Box 2. Offset target methods for threatened ecological communities and species'. The offset liability ratio differs in that it applies an average ratio across all the impacts.

Importantly, this will give a total amount of native vegetation (in hectares) to be offset – not an amount for each impacted TEC or species. This method aligns with the strategic nature of delivering the conservation program, while ensuring that the executive implementation committee can maintain oversight of whether the CPCP is on track in delivering offsets and apply adaptive management when required.

The amount of target native vegetation within a conservation land versus the offset liability to that time will be determined through the reconciliation accounting process.

The department, with the oversight of the executive implementation committee, will retain responsibility for implementing the adaptive management steps. The steps that will be considered and implemented until a balance has been achieved are:

1. property acquisition by agreement
2. compulsory acquisition of property
3. land-use planning responses to development.

### **How land will be purchased**

Land identified as suitable for conservation could be prioritised for purchase if offsets are not meeting the staged delivery of housing and infrastructure. A land purchase strategy is being developed to set an agreed process for land purchases, and to ultimately deliver the offsets required under the CPCP (Sub-Plan A: Commitment 8, action 7).

Generally, the land purchase program will be phased and involve voluntary acquisition measures. This reflects the long duration of the CPCP. If acquisition is triggered through the adaptive management steps described above, a more targeted approach may be used, such as through 'property acquisition by agreement' or through compulsory acquisition. The department would consult with members of the community and key stakeholders before any decision on compulsory acquisition was made. Box 7 describes the various methods of land purchases and acquisition being considered under the CPCP.

### **Land use planning responses relating to development**

Based on the department's advice, the executive implementation committee may choose to recommend further actions to meet the offset liability, including recommending development be temporarily constrained (a pause point). This advice would be provided to the Minister for Planning (as the CPCP approval holder).

The Minister for Planning, based on the committee's advice, can pause development through the planning system by delaying the release of additional precincts (if zoning has not yet occurred) or applying regulatory or statutory mechanisms to temporarily stop development applications from being assessed (if zoning has occurred)

It should be noted that the independent 5 yearly review may also make recommendations in relation to the progress of development delivery and the conservation program independent of the executive implementation committee.

## Timing for adaptive management steps for offsets

Adaptive management steps will not be considered in the first five years of the conservation program to allow for time for the initial set up and implementation of the CPCP. However, in the case that offsets are significantly lagging within the first five years, the executive implementation committee can decide to initiate them earlier, if there is an agreed reason to do so.

Where the area of target native vegetation within a conservation land contains less than 80% of the offset liability after year five, the executive implementation committee would be triggered to consider adaptive management steps, commencing with voluntary acquisition (property acquisition by agreement).

There would be at least another three years before the final adaptive management step (land use planning responses) would be considered if target native vegetation within a conservation land is still less than 80% of the offset liability. This step would be considered no earlier than year eight.

Land use planning responses will be in place until the conservation land program can contribute to a minimum of 80% of the plan's offset liability at that time.

The adaptive management steps (starting from 1 to 3) are reconsidered on a three-yearly basis from the time the conservation land program reaches 80% of its liability.

### Box 7. Proposed land purchase mechanisms

All of the below mechanisms will be subject to due diligence checks, including independent valuation advice.

#### Open market purchase

Land that is on the market for sale and has been identified as a suitable purchase for the CPCP can be purchased on a voluntary basis through a negotiated sale with the landholder. The Office of Strategic Lands will make an offer to purchase based on the market value of the land.

#### Active purchase

The Office of Strategic Lands may actively engage with landowners and express an interest to purchase their land, for example, by sending letters to landowners or by door-knocking. If a landowner decided to sell, negotiations with the Office of Strategic Lands would begin.

#### Property acquisition by agreement

Where land is identified for acquisition, the Office of Strategic Lands would contact the landowner and organise a meeting to explain the process, along with the landowner's rights and obligations. The Office of Strategic Lands would then arrange due diligence advice, including a valuation of the land and encourage the landowner to seek their own independent advice.

Once the Office of Strategic Lands makes an offer of purchase to the landowner, a minimum 6-month period to reach an agreement would begin.

#### Compulsory acquisition

Compulsory acquisition is a legislative process under the *Land Acquisition (Just Terms Compensation) Act 1991* (NSW). The Act sets out the process the relevant acquisition authority must follow when it is necessary to compulsorily acquire land. The process provides the means for resolving disputes around the amount of compensation payable to the landowner.

## Evaluation

Implementing the CPCP will require regular monitoring against the environmental, social and economic outcomes, evaluation to inform the use of adaptive management, and public reporting to government and the community on progress in delivering the conservation program and achieving its outcomes. The department is developing a comprehensive evaluation program (see Figure 22) that will assess the progress of the plan and support its implementation.

The evaluation program plan is being developed to meet NSW Government guidelines for program evaluation. The evaluation program will be supported by an integrated monitoring program and evaluation database that will collect and store information across the key environmental, social and economic indicators of the CPCP.

Further detail on the evaluation program can be found in Sub-Plan A.



Figure 22. The evaluation program

## Reporting

The department is committed to assurance reporting, including annual progress updates on the outputs, outcomes and commitments of the CPCP. The department will also collate finer-scale conservation program and project reporting from relevant delivery partners more frequently to support implementation decisions and adaptive management.

A comprehensive, independent review of the status of the CPCP, its implementation and interim outcomes will also be prepared every 5 years. This report will be approved by the NSW Minister for Planning and Homes and be provided to the NSW Minister for the Environment and the Commonwealth Minister for the Environment.

The progress updates and the 5-yearly report, as well as other relevant data and information, will be made publicly available via the [department's website](#) and published in accordance with the NSW Government's accessibility requirements. They will remain available throughout the life of the plan.

An internal process review will be conducted at the mid-term point in between independent reviews, every two-and-a-half years, over the life of the plan. This report will be provided to key delivery partners and stakeholders (Sub-Plan A: Commitment 25, action 6).

## Adaptive management

Adaptive management is critical to achieving the plan's outcomes. It will allow for management of risk and uncertainties across the approximately 200,000 hectare CPCP Area and throughout the life of the CPCP to 2056.

Large-scale changes that could have an impact on the effective implementation of the CPCP include unpredicted climate variation and changing economic or social variables. Other changes may include the conservation status of individual species or plant communities, local events such as fires, floods and disease, changes in administration or the roles and responsibilities of delivery agencies and stakeholders, and new technology.

Adaptive management will use the data sourced through monitoring and reporting, and the findings of program and process evaluation to determine if actions need to be revised to more effectively fulfil the commitments. Importantly, where evaluation suggests a commitment or outcomes is not tracking as planned, it will trigger a review and potential modification to the required action or delivery of action.

Incorporating adaptive management into the delivery mechanisms will manage against risk and ensure continual improvement of implementation practices.

While the outcomes and commitments will be fixed, the actions may be adaptively managed over time to respond to changes such as those outlined above. To ensure the commitments continue to deliver to 2056, changes to the proposed actions could be made in cases where:

- targets and commitments are not being met
- the conservation program logic does not adequately translate into the desired outcomes
- external factors arise that affect the assumptions, logic or delivery of the CPCP.

# Appendices



*Grevillea juniperina* subsp. *juniperina*,  
one of the threatened species that can  
be found in Wianamatta Regional Park

## Appendix A. Accessing EPBC approval for essential infrastructure development in the avoided land

This section sets out the requirements for essential infrastructure development in the avoided land, to access the CPCP approval under Part 10 of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act). The avoided land is mapped in Figure 8 through to Figure 11 of the Cumberland Plain Conservation Plan.

The requirements are designed to ensure that essential infrastructure development continues to avoid, minimise, mitigate and offset impacts on matters of national environmental significance and other relevant EPBC Act matters, as required, consistent with the conservation outcomes of the CPCP.

The CPCP requirements for essential infrastructure detail:

- infrastructure activities that meet the CPCP definition of ‘essential infrastructure’
- requirements for avoiding, minimising, mitigating and offsetting impacts
- reporting and compliance measures
- roles and responsibilities.

The intended audience for these requirements includes planning and approval authorities, such as the department and local councils; public authorities and other proponents that deliver essential infrastructure.

### What is essential infrastructure?

#### Essential infrastructure in the avoided land

Planning for infrastructure is in various stages for each of the plan’s nominated development areas (nominated areas). While the strategic conservation planning process has identified the most suitable areas for development in each nominated area, the department recognises that additional, essential infrastructure development may be needed outside the certified-urban capable land to support growth over the next 4 decades and beyond.

Essential infrastructure, as defined by the CPCP includes:

- electricity generating works or solar energy systems
- electricity transmission or distribution
- pipelines and pipeline corridors
- roads and traffic
- sewerage systems
- stormwater management systems
- telecommunications and other communication facilities
- waste or resource management facilities
- water supply systems
- koala exclusion fencing as described in the Biodiversity and Conservation SEPP
- fauna crossings as described in the Biodiversity and Conservation SEPP

## Criteria for essential infrastructure development

Essential infrastructure development in avoided land must also be:

- essential infrastructure designed to service and support urban and industrial development within nominated areas of the Western Parkland City
- wholly or mostly within the nominated areas

It must also be:

- local development, under Part 4 (Division 4.3) of the *Environmental Planning and Assessment Act 1979*
- or
- Part 5 activities (Division 5.1) under the *Environmental Planning and Assessment Act 1979* (except for road activities).

**It does not include:**

- state-significant development
- state-significant infrastructure
- classified roads
- defined as 'Division 5.1 Road Activities' in the *Environmental Planning and Assessment Act 1979*.

## Planning, assessment and implementation

Essential infrastructure may be carried out on avoided land if:

- environmental impacts of the activities are considered under the *Environmental Planning and Assessment Act*, and an 'avoid, minimise and mitigate' process is applied
- MNES are considered through the 'avoid, minimise and mitigate' process and any relevant MNES-specific requirements of the CPCP are applied (Commitments 2.1, 2.2 and 5)
- the biodiversity impacts of the activities will be assessed under the Biodiversity Conservation Act, if triggered, and an 'avoid, mitigate, offset' process will be applied
- the proponent has notified the department of the development.

### Planning mechanism for implementation

Essential infrastructure will be managed through the NSW planning and approvals framework as current at the time of the project.

The department is introducing the Cumberland Plain Conservation Plan Guidelines for Infrastructure Development, which will be gazetted under the NSW Environmental Planning and Assessment Regulation 2000 to direct infrastructure activities under Part 5 of the NSW *Environmental Planning and Assessment Act 1979* to take them into account when assessing impacts. The State Environmental Planning Policy (Strategic Conservation Planning) also directs local development under Part 4 of the Environmental Planning and Assessment Act to take the Cumberland Plain Conservation Plan Guidelines for Infrastructure Development into consideration.

These guidelines identify the avoid, minimise, mitigate and offset requirements for matters of national environmental significance (MNES,) consistent with the strategic assessment approval and the commitments and actions (see 'Box 8: Planning, assessment and implementation requirements').

Where legislative requirements and processes may alter over time, all essential infrastructure projects will be planned, assessed and delivered to an equivalent standard in line with current legislation at the time to meet the commitments and conservation outcomes.

### Box 8: Planning, assessment and implementation requirements

To be consistent with the strategic assessment approval, essential infrastructure must be consistent with all the objectives and biodiversity matters as follows.

#### Objectives are to:

1. locate essential infrastructure in the certified–urban capable land in the nominated areas, where possible
2. design and site essential infrastructure to avoid or minimise environmental impacts
3. avoid or minimise direct impacts on EPBC Act-listed threatened ecological communities, known populations of threatened flora species and koala habitat protected under the CPCP
4. minimise or mitigate indirect and prescribed impacts on threatened ecological communities, species, and their habitats to best practice standards
5. minimise or mitigate indirect and prescribed impacts on the Southern Sydney koala population to best practice standards.

#### Biodiversity matters are to:

1. Design and site essential infrastructure to avoid adverse impacts on biodiversity. Where adverse impacts cannot feasibly or practicably be avoided, minimise impacts by refining design elements.
2. Avoid or minimise impacts on the following EPBC Act-listed threatened ecological communities:
  - Shale Sandstone Transition Forest
  - Cumberland Plain Woodlands and Shale-Gravel Transition Forest
  - River-Flat Eucalypt Forest
  - Coastal Swamp Oak (*Casuarina glauca*) Forest
  - Cooks River Castlereagh Ironbark Forest
3. Avoid or minimise direct impacts to populations of threatened flora species, prioritising avoiding impacts to known populations of:
  - *Grevillea parviflora* subsp. *parviflora* (Small-flower grevillea)
  - *Persoonia bargoensis* (Bargo geebung)
  - *Persoonia nutans* (Nodding geebung)
  - *Genoplesium baueri* (Yellow gnat-orchid)
  - *Pimelea spicata* (Spiked rice-flower)
  - *Pultanea parviflora*
4. Avoid or minimise direct impacts to koala habitat protected under the CPCP
5. Design infrastructure within the Wilton and Greater Macarthur Growth Areas to avoid impacts on koala habitat protected by the CPCP and maintain the function of koala movement corridors
6. Implement specific mitigation measures to address indirect and prescribed impacts on the Southern Sydney koala population. This includes:
  - installing koala-exclusion fencing during construction, and
  - maintaining the integrity of any existing koala-exclusion fencing
7. Develop and implement mitigation measures to address indirect and prescribed impacts on threatened ecological communities, threatened species and their habitats during construction and operation of infrastructure. Refer to Appendix E of the CPCP for appropriate mitigation measures
8. Fulfil biodiversity offset requirements under the BC Act and/or any other relevant legislation.

## Notification requirements

Proponents who are accessing the CPCP's Part 10 approval under Part 2 of the Cumberland Plain Conservation Plan Guidelines for Infrastructure Development are required to follow the notification requirements in the strategic conservation planning chapter of the Biodiversity and Conservation SEPP and the NSW Environmental Planning and Assessment Regulation 2000.

This includes, notifying the department in writing of the intention to carry out works under the Part 10 approval on avoided land. This notification must include:

- a plan of proposed works
- an ecology report that includes quantified impacts on threatened ecological communities, species, and their habitats, and impacts on matters of national environmental significance
- how the guidelines have been addressed
- ongoing mitigation measures.

A proponent must notify the department of any modification to the infrastructure if there is an increase or decrease in biodiversity impacts after the notification.

Appendix A of the Cumberland Plain Conservation Plan Guidelines for Infrastructure Development includes a consistency statement template to use when notifying the department of essential infrastructure activities on the avoided land.

## Impact thresholds to EPBC Act-listed TECs in the avoided land

Part 10 approval will apply to essential infrastructure in the avoided land up to the impacts listed in Table 7. The department is responsible for monitoring impacts to these threatened ecological communities (TECs) and notifying proponents of essential infrastructure when thresholds have been reached.

**Table 7. Cumulative impact thresholds for EPBC Act-listed TECs in the avoided land for each nominated area**

Threatened ecological communities (EPBC Act)	Greater Macarthur	Greater Penrith to Eastern Creek	Western Sydney Aerotropolis	Wilton
Coastal Swamp Oak ( <i>Casuarina glauca</i> ) Forest	Not present	0.10 hectares	0.50 hectares	Not present
Cooks River/Castlereagh Ironbark Forest in the Sydney Basin Bioregion	Not present	0.00 hectares	0.50 hectares	Not present
Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest	0.70 hectares	1.00 hectare	0.60 hectares	Not present
River-flat Eucalypt Forest	0.30 hectares	0.80 hectares	1.80 hectares	Not present
Shale Sandstone Transition Forest in the Sydney Basin Bioregion	23.80 hectares	Not present	Not present	16.50 hectares
Western Sydney Dry Rainforest and Moist Woodland on Shale	0.30 hectares	Not present	Not present	Not present

## Roles and responsibilities

The department will be responsible for notifying proponents of their obligations under the EPBC Act, monitoring the impacts of development, and compliance with avoidance, mitigation and offset commitments under the CPCP.

Compliance and reporting responsibilities fall across both the proponent of that development and the department.

### Compliance and audit

The compliance and reporting measures to ensure development is consistent with these requirements are presented in Table 8. This includes the roles and responsibilities of the department and proponent of essential infrastructure.

Both the department (through the executive implementation committee) and the Australian Government’s Department of Climate Change, Energy, the Environment and Water will regularly monitor and audit processes to inform statutory reporting on the CPCP or reviews into the Part 10 EPBC Act approvals over time.

If a non-compliance is identified, the Commonwealth Minister for Environment has the discretion to revoke the relevant approval.

**Table 8. Compliance and reporting requirements**

Role	Compliance and reporting responsibilities
<b>Proponent</b>	<b>Proponent</b> must notify the department where an essential infrastructure project, applicable to these requirements, will impact on MNES, or other relevant EPBC Act matters in avoided land. The notification should demonstrate how compliance with these requirements has been achieved
<b>Department of Planning and Environment</b>	<b>The department will:</b> <ul style="list-style-type: none"> <li>• notify proponents of their obligations under the EPBC Act, including information on how proponents should be meeting these requirements</li> <li>• monitor the impacts of development on avoided land, including tracking impacts to EPBC-listed TEC with a cumulative impact threshold approved through the CPCP (refer to Table 7. Cumulative impact thresholds for EPBC Act-listed TECs in the avoided land for each nominated area)</li> <li>• monitor compliance with the avoidance, mitigation and offset commitments under the CPCP, relevant to these requirements (refer to <b>Commitments 2.1, 2.2, 5 and 7</b>)</li> <li>• notify proponents when impacts thresholds for EPBC Act-listed TECs have been reached and consider further actions within the planning system</li> <li>• provide annual updates to the Australian Government’s Department of Climate Change, Energy, the Environment and Water</li> <li>• undertake monitoring and audit of infrastructure construction and operation as required to ensure adequate mitigation measures are being applied.</li> </ul>

## Appendix B. The CPCP avoidance criteria

### Avoidance of biodiversity values

Strategic conservation planning is a landscape-scale approach to assessing and protecting biodiversity up-front in planning for large-scale development. The department has used this approach to locate and design the certified-urban capable land for nominated areas in the CPCP. It will also be used by Transport for NSW to design the infrastructure alignments within each of the major transport corridors.

This process aims to avoid and minimise impacts on biodiversity values and has been undertaken consistent with:

- section 8 of the Biodiversity Assessment Method (BAM)
- the 'Conservation measures in strategic applications for biodiversity certification - guidance for planning authorities' (EES-DPIE, 2020)
- the strategic assessment terms of reference.

Avoiding and minimising impacts on biodiversity values is an important part of the planning and assessment process. It is a critical step in limiting the effects of the proposed development and reducing the need for the conservation program to offset those impacts. It also provides opportunities to protect important areas of remaining biodiversity by applying the conservation program's commitments and actions – such as biodiversity stewardship agreements – on avoided land.

It is also fundamental to demonstrating that the commitments and actions proposed for strategic biodiversity certification adequately address the impacts of the proposed development under section 8.7 of the BC Act (see Part 7 of the Act). Documenting the process is a requirement of the terms of reference for strategic assessment under EPBC Act.

### Definition of avoidance

Land that has been avoided from development up-front through the strategic conservation planning process under the CPCP is referred to as 'avoided land'. The process used to determine the location of avoided land referred to as 'avoidance'.

Land has been avoided under the CPCP where it has identified biodiversity value in line with the avoidance criteria, including the presence of threatened ecological communities, plant community types or threatened species and (see 'Box 9: Avoidance criteria').

Under the BAM, avoidance refers to land that is suitable for development and included in the biodiversity certification process but has been avoided because of its biodiversity value. Land not impacted because it is not suitable for development, even where it has been avoided for its biodiversity value, is not considered to have been avoided under the BAM.

In accordance with the BAM, the Cumberland Plain Assessment Report determines avoidance outcomes for specific biodiversity values on the basis of the amount of land avoided because of its biodiversity value. It does not consider land avoided from the certification process for other purposes.

This includes land considered unsuitable for urban development because it is:

- a riparian buffer, consistent with the *Water Management Act 2000* (NSW)
- state-protected land with a slope of more than 18 degrees

- existing protected land, including reserves and offset sites
- Commonwealth land, such as the Defence Establishment Orchard Hills
- land zoned for public recreation (Zone RE 1 under the standard instrument prescribed by the Standard Instrument (Local Environmental Plans) Order 2006).

As such, the Cumberland Plain Assessment Report describes and quantifies both ‘avoided for biodiversity values’ as per the BAM and ‘avoided for other purposes’ land considered unsuitable for development.

For the purposes of the CPCP, land avoided from development and not subject to biodiversity certification is defined in the CPCP as the ‘avoided land’. This area includes land that has high biodiversity value and that was identified by applying the avoidance criteria (described below). This area could also include some land of high biodiversity value that is not considered suitable for development under the BAM (such as steep slopes and some riparian corridors).

## Development of avoidance criteria

Criteria were developed to help identify priorities for avoiding biodiversity values (see ‘Box 9: Avoidance criteria’). These criteria provided detailed guidance, consistent with guidance provided in the BAM, to inform decisions about the location and design of the urban capable land. These decisions were made in a series of workshops attended by the department’s precinct planners and ecologists. Applying the avoidance criteria identified land within the nominated areas of high biodiversity value.

The avoidance criteria identified priorities for avoidance within 3 main categories:

- threatened ecological communities (TECs) and plant community types (PCTs)
- threatened species
- ecological processes.

Applying the avoidance criteria results in avoided land that includes non-vegetated areas such as small wetlands and waterbodies, land that is strategically important to protect or enhance corridors, or small enclosed clearings that are surrounded by native vegetation.

## Calculating avoidance outcomes

The following method is used to calculate avoidance outcomes for specific biodiversity values – for example, a threatened ecological community (TEC), – within the nominated areas:

- Step 1. Determine the total existing area of each biodiversity value, in hectares.
- Step 2. Determine the total area impacted by urban development for each biodiversity value.
- Step 3. Determine the total area impacted by transport for each biodiversity value.
- Step 4. Determine the area of each biodiversity value within land unsuitable for urban development.
- Step 5. Determine the area avoided because of its biodiversity value, by subtracting the sum of the amounts from steps 2, 3 and 4 from the amount in Step 1.

During public exhibition, some landholders provided site-specific information and requested a review of the avoided land mapping. The department made changes where land met one or more of the following change criteria:

- creeks and water features mapped incorrectly, to be updated to match the topography and vegetation indicating movement of water through the landscape

- on-site data collected by accredited assessors supported updating the boundaries
- there was no net change to impact of threatened ecological communities, serious and irreversible impacts entities or vegetation in an intact condition state
- there was no impact on an identified landscape corridor
- authorised clearing had occurred (the relevant council reviews cleared areas and determines if the clearing was permitted – the urban-capable land boundary was not changed if the clearing was unauthorised).

In addition, based on new advice from the NSW Chief Scientist & Engineer (May 2021), land avoided from development in areas adjacent to mapped koala corridors was increased where needed to meet the average minimum corridor width recommended in the advice. Further information on the method applied can be found in Biosis 2021.

### Box 9: Avoidance criteria

#### (a) TECs and PCTs

1. Critically endangered ecological communities (CEECs) or PCTs  $\geq 90\%$  cleared in large patches and in good condition, or serious and irreversible impact entities (TECs)
2. EECs or PCTs  $\geq 70\%$  to  $< 90\%$  cleared in large patches and in good condition
3. PCTs  $\geq 50\%$  to  $< 70\%$  cleared in large patches and in good condition
4. PCTs  $< 50\%$  cleared in large patches and in good condition

#### (b) Threatened species

1. Known habitat (as indicated by BioNet records or recent survey data) for critically endangered species, serious and irreversible impacts entities (species), Saving Our Species (SOS) species polygons (where species-specific habitat is present), or large populations of threatened species (relative to typical size for that species), or known primary koala habitat
2. Known habitat (as indicated by BioNet records or recent survey data) for endangered species or known secondary koala habitat
3. Known habitat (as indicated by BioNet records or recent survey data) for vulnerable species

#### (c) Ecological processes

1. Land identified as priority conservation land, BIO Map core areas, or important local habitat corridors for key species including koalas
2. Land identified as BIO Map regional corridors or as areas that provide significant opportunities to support important local habitat corridors for key species, including koalas
3. Areas identified on the Biodiversity Values Map

#### (d) Boundary rationalisation

Consider removing:

- small nodes or isolated patches of features identified in (a), (b) or (c) if future land use change will lead to significant edge effects and low viability over the timeframe identified, and there is no feasible opportunity to enhance connectivity and extent
- corridors that do not link important areas of habitat, including 'blind corridors'.

## Appendix C. CPCP commitments

### Development actions

#### Commitment 1

Development will be undertaken in accordance with the CPCP and any conditions of approval.

This applies to the following classes of actions:

- urban and industrial
- infrastructure
- intensive plant agriculture
- major transport corridors

### Conservation program

Commitments to avoid and minimise impacts

#### Commitment 2

Avoid and minimise impacts of up to 4,510 hectares of high biodiversity value area (the avoided land) through strategic conservation planning in the nominated areas.

##### Commitment 2.1

Limit cumulative direct impacts<sup>21</sup> over the life of the CPCP from essential infrastructure to the following EPBC Act-listed threatened ecological community in the avoided land<sup>22</sup>:

- Shale Sandstone Transition Forest
- Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest
- River-Flat Eucalypt Forest
- Coastal Swamp Oak (*Casuarina glauca*) Forest
- Cooks River Castlereagh Ironbark Forest Western Sydney Dry Rainforest and Moist Woodland on Shale.

##### Commitment 2.2

Prioritise the avoidance of impacts from essential infrastructure on avoided land to:

- known populations<sup>23</sup> of the following threatened flora species:
  - *Grevillea parviflora* subsp. *parviflora* (small-flower grevillea)
  - *Persoonia bargoensis* (Bargo geebung)
  - *Persoonia nutans* (Nodding geebung)
  - *Genoplesium baueri* (Yellow gnat-orchid)
  - *Pimelea spicata* (Spiked rice-flower)
  - *Pultanea parviflora*
- protected koala habitat<sup>24</sup> within the Wilton and Greater Macarthur growth areas to maintain the function of koala movement corridors.

<sup>21</sup> Impact thresholds for each threatened ecological community per nominated area are listed in the CPCP (Table 3, Cumberland Plain Conservation Plan, page 42).

<sup>22</sup> Distributions of these TECs are mapped in the Cumberland Plain Assessment Report and will require confirmation of extent through survey or assessment

<sup>23</sup> Known populations are mapped in the Cumberland Plain Assessment Report and will require confirmation of extent through survey or assessment

<sup>24</sup> Protected koala habitat is mapped in the Cumberland Plain Assessment Report and the department's spatial viewer

### Commitment 3

Avoid and minimise impacts to threatened ecological communities, species and their habitat within certified-major transport corridors through detailed planning and design. This includes:

- avoiding areas of potential habitat<sup>25</sup> connectivity within riparian corridors where possible, particularly for the following species:
  - eastern pygmy possum
  - green and golden bell-frog
  - spotted-tailed quoll
  - squirrel glider
  - yellow-bellied glider
- avoiding known flora populations<sup>26</sup> within the Outer Sydney Orbital and M7/Ropes Crossing Link Road corridors where possible, particularly:
  - *Dillwynia tenuifolia*
  - *Grevillea juniperina* subs. *juniperina*
  - *Pultanea parviflora*
  - *Persoonia nutans*
- for the Outer Sydney Orbital, minimising where possible the placement of waterway crossing structures within riparian corridors, changes to waterway alignments, and bulk earthworks on adjacent floodplain areas.

### Commitment 4

Avoid and minimise impacts on threatened ecological communities, species and their habitat within major transport corridors (strategically assessed only), including the Outer Sydney Orbital and Metro Rail Future Extension tunnel sections, in accordance with the:

- major transport corridors class of actions description, including the NSW state-significant infrastructure or NSW state-significant development approvals process (or equivalent)
- Biodiversity Assessment Method (BC Act) (or equivalent).

#### Commitment 4.1

Avoid and minimise impacts to known flora populations<sup>27</sup> within the Outer Sydney Orbital and M7/Ropes Crossing Link Road corridors, including:

- *Dillwynia tenuifolia*
- *Grevillea juniperina* subs. *Juniperina*
- *Pultanea parviflora*
- *Cynanchum elegans*.

<sup>25</sup> Potential habitat for fauna species are mapped in the Cumberland Plain Assessment Report

<sup>26</sup> Known flora populations are mapped in the Cumberland Plain Assessment Report

<sup>27</sup> Known flora populations are mapped in the *Cumberland Plain Assessment Report* and will require confirmation of presence through survey or assessment

## Commitment 4.2

Avoid and minimise impacts where possible within and adjacent to the tunnel sections, including:

- known populations and habitat<sup>28</sup> of:
  - *Eucalyptus benthamii*
  - *Pomaderris brunnea*
  - *Pimelea spicata*
  - Cumberland Plain land snail
- known populations and habitat, and threatened ecological communities<sup>29</sup> within:
  - Mater Dei BioBank site within the Outer Sydney Orbital footprint near Camden
  - registered property agreement site within the Outer Sydney Orbital footprint at Camden Airport
  - Metro offset site within the footprints for the Outer Sydney Orbital and Metro Rail Future Extension near Harrington Park
  - Nepean River and associated riparian corridor within the Outer Sydney Orbital footprint
  - Camden Golf Club at Narellan adjacent to the footprint for the Metro Rail Future Extension
  - Mount Annan Botanic Gardens within the footprint for the Metro Rail Future Extension.

## Commitment 4.3

Avoid and minimise impacts where possible to environmental values within Commonwealth land sites<sup>30</sup>, including known populations and habitat and threatened ecological communities, and existing infrastructure and services, at:

- Camden Airport
- Western Sydney University (Campbelltown Campus)
- 12 Werombi Road, Grasmere NSW.

## Commitments to mitigate indirect and prescribed impacts

### Commitment 5

Mitigate indirect and prescribed impacts from urban and industrial development, infrastructure, and intensive plant agriculture on threatened ecological communities, species and their habitat. This includes:

- meeting specific mitigation requirements for threatened ecological communities, species and their habitat in accordance with Appendix E of the CPCP

### Commitment 6

Mitigate indirect and prescribed impacts on threatened ecological communities, species and their habitat within major transport corridors, including the Outer Sydney Orbital and Metro Rail Future Extension tunnel sections, in accordance with the:

<sup>28</sup> Known populations and habitat of listed species are mapped in the *Cumberland Plain Assessment Report* and will require confirmation of extent through survey or assessment. The Assessment Report includes a specific map as part of the assessment of tunnels (See the *Cumberland Plain Assessment Report*, Chapter 36.6)

<sup>29</sup> Known populations and habitat of listed species and distribution of listed TECs are mapped in the *Cumberland Plain Assessment Report* and will require confirmation of extent through survey or assessment. The Assessment Report includes a specific map as part of the assessment of tunnels (See the *Cumberland Plain Assessment Report*, Chapter 36.6)

<sup>30</sup> The Assessment Report includes a specific map as part of the assessment of tunnels (See the *Cumberland Plain Assessment Report*, Chapter 36.6)

- major transport corridors class of actions description, including the NSW state-significant infrastructure or NSW state-significant development approvals process (or equivalent) for certified-major transport corridors
- major infrastructure corridors class of actions description and the Biodiversity Assessment Method (BC Act) (or equivalent) for non-certified major transport corridors (strategically assessed only)
- specific mitigation measures to address impacts on biodiversity values prescribed in Appendix E of the CPCP.

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### Commitment 7

Mitigate indirect and prescribed impacts from urban, industrial, infrastructure development on the Southern Sydney koala population to best practice standards and in line with advice from the Office of the NSW Chief Scientist & Engineer, and in accordance with Appendix E of the CPCP.

Conserving flora, fauna and habitat

### Commitment 8

Protect a minimum of 5,325 hectares of native vegetation<sup>31</sup> in the Cumberland subregion to conserve biodiversity values in perpetuity in accordance with the conservation land selection steps, which may require up to 11,900 hectares of conservation land.

#### Commitment 8.1

This target includes minimum areas of the following EPBC Act-listed threatened ecological communities:

- 675 hectares of Shale Sandstone Transition Forest
- 665 hectares of Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest
- 570 hectares of River-flat eucalypt forest of eastern Australia
- 125 hectares of Cooks River Castlereagh Ironbark Forest
- 20 hectares of Coastal Swamp Oak Forest
- 0.2 hectares of Western Sydney Dry Rainforest and Moist Woodland on Shale.

#### Commitment 8.2

This target includes minimum areas of the following BC Act-listed threatened ecological communities:

- 2,885 hectares of Cumberland Plain Woodland
- 1,455 hectares of Shale Sandstone Transition Forest
- 505 hectares of River-Flat Eucalypt Forest
- 285 hectares of Shale Gravel Transition Forest
- 115 hectares of Cooks River Castlereagh Ironbark Forest
- 70 hectares of Swamp Oak Floodplain Forest
- 10 hectares of Freshwater Wetlands on Coastal Floodplains
- 0.2 hectares of Moist Shale Woodland.

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<sup>31</sup> While there is overlap between the TEC targets listed in commitments 8.1 and 8.2, there are differences in the listings between EPBC Act-listed and BC Act-listed TECs, such as differences in approach and criteria. Therefore, the BC Act-listed TECs in commitment 8.2 incorporate targets for EPBC Act-listed TECs.

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## Commitment 9

Protect threatened species likely to be at risk of residual adverse impacts from development under the CPCP (target species) in accordance with the CPCP conservation land selection steps.

This includes securing offsets to protect known locations for the following target threatened species:

- flora species
  - 2 offset locations for *Cynanchum elegans*
  - 3 offset locations for *Dillwynia tenuifolia*
  - 3 offset locations for *Grevillea juniperina* subsp. *juniperina*
  - 1 offset location for *Hibbertia fumana*
  - 1 offset location for *Hibbertia puberola*
  - 2 offset locations for *Marsdenia viridiflora* subsp. *viridiflora*
  - 2 offset locations for *Persoonia nutans*
  - 3 offset locations for *Pimelea spicata*
  - 2 offset locations for *Pultenaea parviflora*
  - 2 offset locations for *Pultenaea pedunculata*
- fauna species
  - 1 offset location for *Haliaeetus leucogaster*
  - 1 offset location for *Hieraaetus morphnoides*
  - 1 offset location for *Lophoictinia isura*
  - 3 offset locations for *Meridolum corneovirens*
  - 1 offset locations for *Myotis macropus*;

This includes securing habitat for the following target threatened fauna species:

- 4,410 hectares of potential foraging habitat for *Lathamus discolor* (including 100 hectares of *Lathamus discolor* important habitat as defined under the BAM)
- 705 hectares of important habitat<sup>32</sup> for *Phascolarctos cinereus* as defined in the Cumberland Plain Assessment Report.

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## Commitment 10

Establish a reserve to protect the north–south koala movement corridor along the Georges River between Appin and Long Point.

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## Commitment 11

Establish at least 2 new reserves in addition to the Georges River Koala Reserve that will protect threatened communities, species and habitat that are targeted for protection through the CPCP.

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## Commitment 12

Protect koala corridors in the Cumberland subregion, including those along the Nepean River, Georges River, Cataract River and Ousedale Creek.

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<sup>32</sup> Important koala habitat is the term used to describe primary, secondary and tertiary corridors, as defined in the Cumberland Plain Assessment Report. It is the area that is critical to the long-term viability of koalas (primary corridors) as well as the areas (if enhanced) that would support the population (secondary and tertiary corridors).

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**Commitment 13**

Deliver and support ecological restoration activities in conservation land including ecological reconstruction of up to a maximum of 25% of the plan's offset target for native vegetation (Commitment 8).

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**Commitment 14**

Minimise impacts from development on biodiversity values in the strategic conservation area.

## Managing landscape threats

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**Commitment 15**

Manage priority weeds in strategic locations in the Cumberland subregion to reduce threats to land secured within the strategic conservation area.

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**Commitment 16**

Manage priority pest animals in strategic locations in the Cumberland subregion to reduce threats to land protected within the strategic conservation area.

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**Commitment 17**

Manage fire in strategic locations in the Cumberland subregion to support the maintenance of biodiversity values on conservation land.

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**Commitment 18**

Support new or existing programs to control key diseases affecting threatened species and ecological communities in the Cumberland subregion.

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**Commitment 19**

Support existing or new programs to help threatened species and ecological communities adapt to the impacts of climate change in the CPCP Area.

## Building knowledge and capacity

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**Commitment 20**

Provide opportunities for the residents of Western Sydney to learn about and actively participate in biodiversity conservation including koala conservation.

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**Commitment 21**

Partner with Aboriginal groups and communities to help maintain a distinctive cultural, spiritual, physical and economic relationships with their land and waters in Western Sydney

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**Commitment 22**

Invest in research priorities that will support the implementation of the CPCP and help to deliver the outcomes.

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**Commitment 23**

Support rehabilitation measures to help maintain koala health and welfare.

## Governance and reporting

**Commitment 24**

Establish governance arrangements including roles, responsibilities and funding to ensure the efficient and effective implementation of the CPCP.

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**Commitment 25**

Implement an evaluation program for the CPCP that sets out requirements for monitoring, evaluation, reporting and adaptive management.

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**Commitment 26**

Implement a compliance program to ensure compliance with the CPCP and conditions of approval.

## Appendix D. EPBC Act and BC Act matters to be offset through the CPCP

Table 1 Plant community types (PCTs) and threatened ecological communities

PCT no.	PCT name	TEC name (BC Act)	NSW legislative status	BC Act impact (ha)	TEC name (EPBC Act)	EPBC legislative status	EPBC impact(ha)
724	Broad-leaved ironbark – grey box – <i>Melaleuca decora</i> grassy open forest on clay/gravel soils of the Cumberland Plain, Sydney Basin Bioregion	Shale Gravel Transition Forest	Endangered	108.3	Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest	Critically endangered	180.3
849	Grey box – forest red gum – grassy woodland on flats of the Cumberland Plain, Sydney Basin Bioregion	Cumberland Plain Woodland <sup>34</sup>	Critically endangered	677.2	Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest	Critically endangered	Included in above row
850	Grey box – forest red gum – grassy woodland on shale of the southern Cumberland Plain, Sydney Basin Bioregion	Cumberland Plain Woodland <sup>34</sup>	Critically endangered	254.3	Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest	Critically endangered	Included in above row
725	Broad-leaved ironbark – <i>Melaleuca decora</i> – shrubby open forest on clay soils of the Cumberland Plain, Sydney Basin Bioregion	Cooks River Castlereagh Ironbark Forest <sup>34</sup>	Endangered	37.6	Cooks River/ Castlereagh Ironbark Forest	Critically endangered	30.9
781	Coastal freshwater lagoons of the Sydney Basin Bioregion and South East Corner Bioregion	Freshwater Wetlands	Endangered	4.2	no equivalent listing	Not listed	0.0
835	Forest red gum – rough-barked apple – grassy woodland on alluvial flats of the Cumberland Plain, Sydney Basin Bioregion	River-flat Eucalypt Forest	Endangered	185.9	River-flat Eucalypt Forest <sup>33</sup>	Critically endangered	159.2
830	Forest red gum – grey box – shrubby woodland on shale of the southern Cumberland Plain, Sydney Basin Bioregion	Moist Shale Woodlands	Endangered	0.0	Western Sydney Dry Rainforest and Moist Woodland on Shale	Critically endangered	0.0

<sup>33</sup> The 'River-flat eucalypt forest on coastal floodplains of NSW' was designated as a critically endangered threatened ecological community under the EPBC Act in December 2020.

PCT no.	PCT name	TEC name (BC Act)	NSW legislative status	BC Act impact (ha)	TEC name (EPBC Act)	EPBC legislative status	EPBC impact(ha)
1395	Narrow-leaved ironbark – broad-leaved ironbark – grey gum – open forest of the edges of the Cumberland Plain, Sydney Basin Bioregion	Shale Sandstone Transition Forest <sup>34</sup>	Critically endangered	459.8	Shale Sandstone Transition Forest in the Sydney Basin Bioregion	Critically endangered	180.7
1800	Swamp oak – open forest on river flats of the Cumberland Plain and Hunter valley	Swamp Oak Forest	Endangered	26.2	Coastal Swamp Oak ( <i>Casuarina glauca</i> ) Forest of NSW and south-east Queensland ecological community	Endangered	8.0
<b>TOTALS</b>	-	-	-	<b>1,753.6</b>	-	-	<b>559.1</b>

<sup>34</sup> These TECs are identified in the Cumberland Plain Assessment Report as serious and irreversible impact entities in accordance with the BAM

Table 2 Threatened species

No.	Species name	Common name	Credit class (BC Act)	Type	EPBC Status	BC Status
1	<i>Acacia bynoeana</i>	Bynoe's Wattle, Tiny Wattle	Species	Shrub	Vulnerable	Endangered
2	<i>Acacia pubescens</i>	Downy Wattle, Hairy Stemmed Wattle	Species	Shrub	Vulnerable	Vulnerable
3	<i>Allocasuarina glareicola</i> <sup>36</sup>	-	Species	Shrub	Endangered	Endangered
4	<i>Anthochaera phrygia</i>	Regent Honeyeater	Species/Ecosystem	Bird	Critically endangered	Critically endangered
5	<i>Botaurus poiciloptilus</i>	Australasian Bittern	Ecosystem	Bird	Endangered	Endangered
6	<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	Species/Ecosystem	Bird	Not listed	Vulnerable
7	<i>Calyptorhynchus lathamii</i>	Glossy Black-Cockatoo	Species/Ecosystem	Bird	Not listed	Vulnerable
8	<i>Cercartetus nanus</i>	Eastern Pygmy-possum	Species	Mammal	Not listed	Vulnerable
9	<i>Chalinolobus dwyeri</i> <sup>36</sup>	Large-eared pied bat, large pied bat	Species	Mammal	Vulnerable	Vulnerable
10	<i>Cynanchum elegans</i> <sup>37</sup>	White-flowered wax plant	Species	Epiphytes and climbers	Endangered	Endangered
11	<i>Dasyurus maculatus maculatus</i> (SE mainland population)	Spotted-tail quoll, spot-tailed quoll, tiger quoll (southeastern mainland population)	Ecosystem	Mammal	Endangered	Vulnerable
12	<i>Dillwynia tenuifolia</i> <sup>37</sup>	-	Species	Shrub	Not listed	Vulnerable
13	<i>Epacris purpurascens</i> var. <i>purpurascens</i>	-	Species	Shrub	Not listed	Vulnerable
14	<i>Eucalyptus benthamii</i>	Camden white gum, Nepean river gum	Species	Tree	Vulnerable	Vulnerable
15	<i>Grevillea juniperina</i> subsp. <i>Juniperina</i> <sup>37</sup>	Juniper-leaved grevillea	Species	Shrub	Not listed	Vulnerable
16	<i>Grevillea parviflora</i> subsp. <i>parviflora</i>	Small-flower grevillea	Species	Shrub	Vulnerable	Vulnerable
17	<i>Haliaeetus leucogaster</i> <sup>35</sup>	White-bellied sea-eagle	Species/Ecosystem	Bird	Not listed	Vulnerable
18	<i>Heleioporus australiacus</i>	Giant burrowing frog	Species	Amphibian	Vulnerable	Vulnerable

No.	Species name	Common name	Credit class (BC Act)	Type	EPBC Status	BC Status
19	<i>Hibbertia fumana</i> <sup>35</sup>	-	Species	Shrub	Not listed	Critically endangered
20	<i>Hibbertia puberula</i> <sup>37</sup>	-	Species	Shrub	Not listed	Endangered
21	<i>Hieraaetus morphnoides</i> <sup>35</sup>	Little eagle	Species/Ecosystem	Bird	Not listed	Vulnerable
22	<i>Lathamus discolor</i>	Swift parrot	Species/Ecosystem	Bird	Critically Endangered	Endangered
23	<i>Litoria aurea</i> <sup>36</sup>	Green and golden bell frog	Species	Amphibian	Vulnerable	Endangered
24	<i>Lophoictinia isura</i> <sup>35</sup>	Square-tailed kite	Species/Ecosystem	Bird	Not listed	Vulnerable
25	<i>Marsdenia viridiflora</i> subsp. <i>viridiflora</i> <sup>37</sup> – endangered population	<i>Marsdenia viridiflora</i> subsp. <i>viridiflora</i> – endangered population	Species	Epiphytes and climbers	Not listed	Endangered
26	<i>Maundia triglochinos</i>	-	Species	Herbs and forbs	Not listed	Vulnerable
27	<i>Melaleuca deanei</i>	Deane's melaleuca	Species	Shrub	Vulnerable	Vulnerable
28	<i>Meridolum corneovirens</i> <sup>37</sup>	Cumberland Plain land snail	Species	Invertebrate	Not listed	Endangered
29	<i>Micromyrtus minutiflora</i> <sup>36</sup>	-	Species	Shrub	Vulnerable	Endangered
30	<i>Myotis Macropus</i> <sup>37</sup>	Southern myotis	Species	Mammal	Not listed	Vulnerable
31	<i>Ninox strenua</i>	Powerful owl	Species/Ecosystem	Bird	Not listed	Vulnerable
32	<i>Persicaria elatior</i>	Tall knotweed	Species	Herbs and forbs	Not listed	Vulnerable
33	<i>Persoonia bargoensis</i>	Bargo geebung	Species	Shrub	Vulnerable	Endangered
34	<i>Persoonia hirsuta</i>	Hairy geebung, hairy persoonia	Species	Shrub	Endangered	Endangered
35	<i>Persoonia nutans</i> <sup>37</sup>	Nodding geebung	Species	Shrub	Endangered	Endangered
36	<i>Petauroides volans</i>	Greater glider	Species	Mammal	Vulnerable	Not listed
37	<i>Petaurus norfolcensis</i>	Squirrel glider	Species	Mammal	Not listed	Vulnerable
38	<i>Phascolarctos cinereus</i>	Koala	Species/Ecosystem	Mammal	Endangered	Vulnerable

<sup>35</sup> These species are identified as both target species in the CPCP and serious and irreversible impact entities in the Cumberland Plain Assessment Report

No.	Species name	Common name	Credit class (BC Act)	Type	EPBC Status	BC Status
39	<i>Pimelea curviflora</i> var. <i>curviflora</i>	-	Species	Shrub	Vulnerable	Vulnerable
40	<i>Pimelea spicata</i> <sup>37</sup>	Spiked rice-flower	Species	Shrub	Endangered	Endangered
41	<i>Pomaderris brunnea</i>	Rufous pomaderris	Species	Shrub	Vulnerable	Endangered
42	<i>Pommerhelix duralensis</i>	Dural land snail	Species	Invertebrate	Endangered	Endangered
43	<i>Pseudophryne australis</i> <sup>36</sup>	Red-crowned toadlet	Species	Amphibian	Not listed	Vulnerable
44	<i>Pteropus poliocephalus</i>	Grey-headed flying fox	Species/Ecosystem	Mammal	Vulnerable	Vulnerable
45	<i>Pterostylis saxicola</i>	Sydney plains greenhood	Species	Orchid	Endangered	Endangered
46	<i>Pultenaea parviflora</i> <sup>37</sup>	-	Species	Shrub	Vulnerable	Endangered
47	<i>Pultenaea pedunculata</i> <sup>37</sup>	Matted bush-pea	Species	Shrub	Not listed	Endangered
48	<i>Rostratula australis</i>	Australian painted snipe	Ecosystem	Bird	Endangered	Endangered
49	<i>Tyto novaehollandiae</i>	Masked owl	Species/Ecosystem	Bird	Not listed	Vulnerable

<sup>36</sup> These species are identified in the Cumberland Plain Assessment Report as serious and irreversible impact entities in accordance with the BAM

<sup>37</sup> These species are identified as target species in the CPCP with a direct offset

## Appendix E. Species and TEC-specific mitigation measures

In the following tables:

- GPEC = Greater Penrith to Eastern Creek Investigation Area
- WSA = Western Sydney Aerotropolis
- GMAC = Greater Macarthur Growth Area
- WTN = Wilton Growth Area
- CPCP = Cumberland Plain Conservation Plan

## Urban and industrial, infrastructure and intensive plant agriculture

Mitigation measures to address residual risks to threatened fauna

**Table 9. Habitat features and connectivity - Threatened fauna risk mitigation**

Development	Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
<ul style="list-style-type: none"> <li>• <b>Urban &amp; industrial</b></li> <li>• <b>Infrastructure (including essential infrastructure)</b></li> <li>• <b>Intensive plant agriculture</b></li> </ul>	Retain large trees (including dead trees but excluding noxious weeds) (≥50cm DBH) during precinct planning where possible and avoid impacts to soil within the dripline of these trees during construction.	<p>Large trees within urban landscapes are likely to be important for the persistence of several species within the subregion. Microbats benefit directly through roosting opportunities and indirectly through foraging opportunities.</p> <p>Flying foxes and nectivorous birds benefit directly through foraging opportunities (high volumes of nectar). Owls and raptors benefit indirectly through large trees providing habitat for prey species.</p>	<p><b>Microbats:</b> southern myotis, little bent-winged bat, eastern coastal free-tailed bat, large bent-winged bat, yellow-bellied sheath-tail bat, eastern false pipistrelle, greater broad-nosed bat</p> <p><b>Flying foxes and nectivorous birds:</b> grey-headed flying fox, regent honeyeater, swift parrot, little lorikeet, painted honeyeater, black-chinned honeyeater</p> <p><b>Owls and raptors:</b> barking owl, powerful owl, masked owl, little eagle, white-bellied sea eagle, square-tailed kite, spotted harrier</p>	5	DCP template Mitigation Measures Guideline CPCP Guidelines for Infrastructure Development	Yes	Yes	Yes	Yes	NA
<ul style="list-style-type: none"> <li>• <b>Urban &amp; industrial</b></li> <li>• <b>Infrastructure (including essential infrastructure)</b></li> <li>• <b>Intensive plant agriculture</b></li> </ul>	Retain areas of high density proteaceae shrubs where possible, particularly along riparian corridors.	Proteaceae shrubs such as banksias are a favoured foraging resource for the species and the species is likely to use riparian corridors as habitat or for moving between other areas of suitable habitat.	eastern pygmy-possum	5	DCP template Mitigation Measures Guideline CPCP Guidelines for Infrastructure Development	Yes	Yes	Yes	Yes	NA

Development	Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
<ul style="list-style-type: none"> <li>• <b>Urban &amp; industrial</b></li> <li>• <b>Infrastructure (including essential infrastructure)</b></li> <li>• <b>Intensive plant agriculture</b></li> </ul>	Undertake pre-construction surveys prior to removal or disturbance (seasonally dependent, before torpor) to human made structures to ensure any roosting habitat for microbat species including mine shafts, storm water tunnels, old or derelict buildings, bridges and culverts, are retained where possible.	Minimises the potential impacts of urban development to human-made structures that may be used by microbats for roosting or breeding	eastern coastal free-tailed bat, little bent-winged bat, large bent-winged bat, southern myotis, yellow-bellied sheath-tail-bat	5	DCP template Mitigation Measures Guideline CPCP Guidelines for Infrastructure Development	Yes	Yes	Yes	Yes	NA
<ul style="list-style-type: none"> <li>• <b>Urban &amp; industrial</b></li> </ul>	Design subdivision layout including perimeter roads and asset protection zones should reduce impacts on and protect areas of koala habitat.	Minimises the potential impacts of precinct operation to koala habitat	koala	7	DCP template Mitigation Measures Guideline	NA	NA	Yes	Yes	NA
<ul style="list-style-type: none"> <li>• <b>Urban &amp; industrial</b></li> </ul>	Do not plant koala feed trees, as listed in <i>Koala SEPP Schedule 2 Koala use tree species</i> in open space and recreation areas.	Koala feed trees and/or endangered ecological communities are contained to open space and recreational areas in precinct design in certified urban-capable land	koala	7	DCP template Mitigation Measures Guideline	NA	NA	Yes	Yes	NA

Table 10. Pest/domestic animal – Threatened fauna risk mitigation

Development	Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
<ul style="list-style-type: none"> <li>• <b>Urban &amp; industrial</b></li> <li>• <b>Infrastructure (including essential infrastructure)</b></li> <li>• <b>Intensive plant agriculture</b></li> </ul>	Modify pest control techniques implemented during construction and operation of the development and under the pest control strategy to reduce the risk of secondary poisoning (e.g. from Pindone or second-generation rodenticides).	Risk of pest control measures causing secondary poisoning of raptors	white-bellied sea-eagle, little eagle, square-tailed kite, spotted harrier	<b>5 and 16</b>	<b>Nominated areas:</b> DCP template Mitigation Measures Guideline CPCP Guidelines for Infrastructure Development <b>Strategic conservation area:</b> Pest animal implementation strategy	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>	Strategic conservation area
<ul style="list-style-type: none"> <li>• <b>Urban &amp; industrial</b></li> </ul>	Where permitted and appropriate, contain domestic cats and dogs in new residential areas during operation of the development at the urban/bushland interface consistent with relevant Council guidelines.	Increased numbers of domestic cats and dogs associated with urban development increases the threat of predation to native animals	eastern pygmy-possum, spotted-tailed quoll	<b>5</b>	DCP template Mitigation Measures Guideline	<b>No</b>	<b>No</b>	<b>Yes</b>	<b>Yes</b>	<b>NA</b>
<ul style="list-style-type: none"> <li>• <b>Urban &amp; industrial</b></li> </ul>	Dog-proof fenced areas are to be designated within open space and public recreation areas	Provides protection to fauna, including koala, up-front in precinct design for public spaces	koala	<b>7</b>	DCP template Mitigation Measures Guideline	<b>NA</b>	<b>NA</b>	<b>Yes</b>	<b>Yes</b>	<b>NA</b>
<ul style="list-style-type: none"> <li>• <b>Urban &amp; industrial</b></li> </ul>	Dog-proof fencing is a design requirement for each residential lot in accordance with Council requirements	Provides protection to fauna, including, koala up-front in precinct design for residential areas	koala	<b>7</b>	DCP template Mitigation Measures Guideline	<b>NA</b>	<b>NA</b>	<b>Yes</b>	<b>Yes</b>	<b>NA</b>

Table 11. Human disturbance - Threatened fauna risk mitigation

Development	Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
<ul style="list-style-type: none"> <li>Urban &amp; Industrial</li> <li>Infrastructure (including essential infrastructure)</li> <li>Intensive plant agriculture</li> </ul>	<p>Establish a 100 m minimum setback for development around flying fox camps.</p> <p>The setback area should be maintained free of flying fox roosting habitat.</p>	Minimises disturbance to known populations	grey-headed flying fox	5	DCP template Mitigation Measures Guideline CPCP Guidelines for Infrastructure Development	Yes	Yes	Yes	Yes	NA
<ul style="list-style-type: none"> <li>Urban &amp; industrial</li> <li>Infrastructure (including essential infrastructure)</li> <li>Intensive plant Agriculture</li> </ul>	<p>Raptor nests require a 500 m circular setback from nest locations in undisturbed bushland or 250 m for nests adjacent to existing development.</p> <p>Owl nests require a 100 m circular setback from nest locations</p>	Minimises disturbance to known populations	little eagle, white-bellied sea eagle, square-tailed kite, spotted harrier, barking owl, powerful owl, masked owl.	5	DCP template Mitigation Measures Guideline CPCP Guidelines for Infrastructure Development	Yes	Yes	Yes	Yes	NA
<ul style="list-style-type: none"> <li>Urban</li> </ul>	<p>Work with NSW DPI – Fisheries to address risk of illegal and incidental recreational fishing capture along stretches of known habitat for Macquarie perch in Erskine Creek, Glenbrook Creek, Georges River and Cordeaux River.</p> <p>Consult with relevant resource managers on installing signs/ interpretive displays at appropriate sites used to access fishing locations at Erskine Creek, Glenbrook Creek, Georges River and Cordeaux River to help with identification and awareness of threats</p>	Minimises the risk of increased recreational fishing affecting the species due to larger urban populations associated with urban development	Macquarie perch	5	Consultation with NSW DPI – Fisheries, local councils and other public agencies	No	No	No	No	Erskine Creek Glenbrook Creek Georges River Cordeaux River

Development	Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
<ul style="list-style-type: none"> <li>• <b>Urban &amp; industrial</b></li> <li>• <b>Infrastructure (including essential infrastructure)</b></li> </ul>	Undertake site assessment and pre-clearance survey prior to removal of vegetation and undertake koala survey and implement translocation plan if required.	At pre-construction phase of development, translocation plan and koala survey protects any koala on site	koala	7	DCP template Mitigation Measures Guideline CPCP Guidelines for Infrastructure Development	NA	NA	Yes	Yes	NA
<ul style="list-style-type: none"> <li>• <b>Urban &amp; industrial</b></li> <li>• <b>Infrastructure (including essential infrastructure)</b></li> </ul>	Erect temporary protective fencing around areas identified for conservation on or adjoining the site at pre-construction phase to ensure adequate protection is in place during construction.	At the pre-construction phase of development, temporary protective fencing prevents koala entering the construction site	koala	7	DCP template Mitigation Measures Guideline CPCP Guidelines for Infrastructure Development	NA	NA	Yes	Yes	NA
<ul style="list-style-type: none"> <li>• <b>Infrastructure (including essential infrastructure)</b></li> </ul>	Where planned linear infrastructure such as gas and electricity transmission crosses existing koala-exclusion fencing, consider appropriate access treatments such as gates to ensure integrity of koala-exclusion fencing.	Minimises indirect impacts to koala populations due to urban development. This action is consistent with a critical action for this species under Chief Scientist & Engineer's Koala Report (2020)	koala	7	CPCP Guidelines for Infrastructure Development	NA	NA	Yes	Yes	NA
<ul style="list-style-type: none"> <li>• <b>Infrastructure (including essential infrastructure)</b></li> </ul>	Where public road infrastructure crosses koala corridors, ensure: <ul style="list-style-type: none"> <li>• exclusion fencing is in place to prevent koalas from entering the road</li> <li>• suitable koala connectivity structures are installed to protect corridor integrity.</li> </ul>	As per critical actions for this species under the Chief Scientist & Engineer's Koala Report (2020), maintains connectivity in koala corridors and separation of koalas from landscape threats including traffic.	koala	7	CPCP Guidelines for Infrastructure Development	NA	NA	Yes	Yes	NA

Development	Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
<ul style="list-style-type: none"> <li>• <b>Urban &amp; industrial</b></li> <li>• <b>Infrastructure (including essential infrastructure)</b></li> </ul>	Implement a tree-felling protocol to avoid impacts to koalas in trees that are to be cleared.	Protects koalas when clearing a site by identifying trees that have koalas in them	koala	7	DCP template Mitigation Measures Guideline CPCP Guidelines for Infrastructure Development	NA	NA	Yes	Yes	NA
<ul style="list-style-type: none"> <li>• <b>Urban &amp; industrial</b></li> <li>• <b>Infrastructure (including essential infrastructure)</b></li> </ul>	Manage roadside vegetation adjacent to koala habitat areas to minimise height of ground cover and increase visibility of any roadside fauna. Mow turfed areas, mechanically trim low ground covers.	Visibility of koala in roadside vegetation is enhanced along motorways and roadsides for koalas crossing roadways	koala	7	DCP template Mitigation Measures Guideline	NA	NA	Yes	Yes	NA
<ul style="list-style-type: none"> <li>• <b>Urban &amp; industrial</b></li> <li>• <b>Infrastructure (including essential infrastructure)</b></li> </ul>	Have an onsite ecologist present throughout the duration of pre-clearance surveys and clearing works.	Protects koalas in trees identified to be cleared on site	koala	7	DCP template Mitigation Measures Guideline CPCP Guidelines for Infrastructure Development	NA	NA	Yes	Yes	NA

Development	Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
<ul style="list-style-type: none"> <li>• <b>Urban &amp; industrial</b></li> <li>• <b>Infrastructure (including essential infrastructure)</b></li> </ul>	<p>Implement the following traffic-calming measures for all development not subject to wildlife- and koala-exclusion fencing.</p> <p>Apply speed limit restrictions on local roads for areas adjacent to open space and land identified as avoided under CPCP.</p> <p>Signpost perimeter roads and roads adjacent to wildlife habitat areas in accordance with Austroads, RMS technical guidelines, council guidelines and relevant Australian standards.</p> <p>Install traffic-calming devices such as speed humps and audible surfacing along perimeter roads adjacent to wildlife habitat.</p>	Protects koalas adjacent to or along motorways, roads and development	koala	7	DCP template Mitigation Measures Guideline CPCP Guidelines for Infrastructure Development	NA	NA	Yes	Yes	NA
<ul style="list-style-type: none"> <li>• <b>Urban &amp; industrial</b></li> <li>• <b>Infrastructure (including essential infrastructure)</b></li> </ul>	Install koala-friendly road design structures such as underpasses, fauna bridges and overpasses consistent with any approval conditions. Consider and apply RMS Biodiversity Guidelines.	Protects koalas along motorways and roads	koala	7	DCP template Mitigation Measures Guideline CPCP Guidelines for Infrastructure Development	NA	NA	Yes	Yes	NA

Table 12. Disease – Threatened fauna risk mitigation

Development	Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
<ul style="list-style-type: none"> <li>Urban &amp; industrial</li> <li>Infrastructure (including essential infrastructure)</li> <li>Intensive plant agriculture</li> </ul>	Incorporate best-practice site hygiene protocols to manage the potential spread of pathogens, such as <i>Phytophthora</i> and myrtle rust within or adjacent to potential habitat for relevant species.	Minimises the spread of pathogens due to construction activities adjacent to potential habitat for the species	greater glider	5	DCP template Mitigation Measures Guideline CPCP Guidelines for Infrastructure Development	Yes	Yes	Yes	Yes	NA
<ul style="list-style-type: none"> <li>Urban &amp; industrial</li> <li>Infrastructure (including essential infrastructure)</li> </ul>	Strictly enforce vehicle wash down points for machinery, equipment and tyres prior to entering and leaving the construction site. Use hygiene procedures in instances where vegetation pathogens known to affect koala trees may be spread	Minimises the risk of the spread of pathogens due to construction activities adjacent to potential habitat for the species	koala	7	DCP template Mitigation Measures Guideline CPCP Guidelines for Infrastructure Development	NA	NA	Yes	Yes	NA
<ul style="list-style-type: none"> <li>Urban &amp; industrial</li> <li>Infrastructure (including essential infrastructure)</li> </ul>	Make sure all vehicles, machinery, maintenance equipment, tyres and work boots are free of mud, soil and vegetation prior to entering and leaving a development construction site.	Minimises the spread of pathogens and disease during the construction and/or operation phase of a development	koala	7	DCP Template Mitigation Measures Guideline CPCP Guidelines for Infrastructure Development	NA	NA	Yes	Yes	NA

Table 13. Other threats – Threatened fauna risk mitigation

Development	Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
<ul style="list-style-type: none"> <li>Urban &amp; industrial</li> </ul>	Consult with relevant land managers to implement critical actions for Cumberland Plain land snail under the Save our Species program (EES, 2020) on public land adjacent to urban development during construction and operation of the development, taking into account relevant guidance in the weed control implementation strategy and the fire management strategy.	Minimises indirect impacts to Cumberland Plain land snail adjacent to urban capable land	<p>Cumberland Plain land snail</p> <p>Key indirect impacts/threats to be managed are:</p> <ul style="list-style-type: none"> <li>weed invasion</li> <li>inappropriate fire regimes</li> <li>removal of fallen logs for firewood and slashing of habitat</li> </ul>	5	<p>Consultation with local councils and other public agencies</p> <p>Weed control implementation strategy</p> <p>Fire management strategy</p>	Yes	Yes	Yes	Yes	NA
<ul style="list-style-type: none"> <li>Urban &amp; industrial</li> <li>Infrastructure (including essential infrastructure)</li> <li>Intensive plant agriculture</li> </ul>	Implement 'open structure design' when designing structures such as roads adjacent to known populations of Cumberland Plain land snail where possible, consistent with the critical actions for this species under the Save our Species program (EES 2020)	Prevents creation of isolated patches of habitat in the nominated areas consistent with a critical action for this species under the Save our Species program (EES 2020)	Cumberland Plain land snail	5	DCP template Mitigation Measures Guideline	Yes	Yes	Yes	Yes	NA
<ul style="list-style-type: none"> <li>Urban &amp; industrial</li> </ul>	Signpost areas adjoining koala habitat with signage indicating koalas are in the area, the permitted/prohibited activities, and associated penalties that apply for non-compliance.	Promotes permitted activities and educates public in areas adjoining koala habitat	koala	7	DCP template Mitigation Measures Guideline	NA	NA	Yes	Yes	NA

## Mitigation measures to address residual risks to flora

Table 14. Weed invasion – Threatened flora risk mitigation

Development	Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
<ul style="list-style-type: none"> <li>• <b>Urban &amp; industrial</b></li> <li>• <b>Infrastructure (including essential infrastructure)</b></li> <li>• <b>Intensive plant agriculture</b></li> </ul>	Manage weeds for flora populations and habitat adjacent to urban and infrastructure development during construction and operation of the development, considering relevant guidance in the weed control implementation strategy.	Minimises indirect impacts to flora populations and habitat adjacent to major infrastructure corridors	<i>Dillwynia tenuifolia</i> <i>Pultenaea parviflora</i> <i>Persoonia nutans</i>	5 and16	DCP template Mitigation Measures Guideline CPCP Guidelines for Infrastructure Development Weed control implementation strategy	Yes	Yes	No	No	NA
As above	As above	As above	<i>Pultenaea pedunculata</i>	5 and16	As above	No	No	Yes	No	NA
As above	As above	As above	<i>Grevillea parviflora</i> subsp. <i>parviflora</i> (important pop. no. 104)	5 and16	As above	No	No	No	Yes	NA

Table 15. Altered fire regime – Threatened flora risk mitigation

Development	Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
• <b>Urban &amp; industrial</b>	Consult with managers of land containing known populations or habitat for relevant species to mitigate indirect impacts from fire during construction and operation of the development, considering guidance in the fire management strategy	Minimises indirect impacts to flora populations and habitat adjacent to urban-capable land	<i>Dillwynia tenuifolia</i> <i>Grevillea juniperina</i> subsp. <i>juniperina</i> <i>Pultenaea parviflora</i>	5 and 18	Consultation with local councils and other public agencies Fire management strategy	Yes	Yes	No	No	NA
As above	As above	As above	<i>Persoonia nutans</i>	5 and 18	As above	Yes	No	No	No	NA
As above	As above	As above	<i>Pultenaea pedunculata</i>	5 and 18	As above	No	No	Yes	No	NA
As above	As above	As above	<i>Grevillea parviflora</i> subsp. <i>parviflora</i> (important pop. no. 104)	5 and 18	As above	No	No	No	Yes	NA
As above	As above	As above	<i>Persoonia bargoensis</i>	5 and 18	As above	No	No	Yes	Yes	NA

Table 16. Human disturbance – Threatened flora risk mitigation

Development	Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
<ul style="list-style-type: none"> <li>• <b>Urban &amp; industrial</b></li> <li>• <b>Infrastructure (including essential infrastructure)</b></li> <li>• <b>Intensive plant agriculture</b></li> </ul>	<p>Consult with land managers of land containing known populations or habitat for relevant species to mitigate indirect impacts from human disturbance during construction and operation of the development, including controlling public access, managing maintenance activities such as mowing and slashing, and managing rubbish dumping.</p> <p>Additionally, for <i>Pimelea spicata</i> ensure weed management activities involving the use of herbicides will minimise risks and maintain the species</p>	Minimises indirect impacts to flora populations and habitat adjacent to urban-capable land	<i>Dillwynia tenuifolia</i> <i>Grevillea juniperina</i> subsp. <i>Juniperina</i> <i>Pultenaea parviflora</i>	5 and 5.3	Consultation with local councils and other public agencies	Yes	Yes	No	No	NA
As above	As above	As above	<i>Persoonia nutans</i>	5 and 5.3	As above	Yes	No	No	No	NA
As above	As above	As above	<i>Grevillea parviflora</i> subsp. <i>parviflora</i> (important pop. no. 104)	5 and 5.3	As above	No	No	No	Yes	NA
As above	As above	As above	<i>Pultenaea pedunculata</i> <i>Genoplesium baueri</i> (important pop. 21)	5 and 5.3	As above	No	No	Yes	No	NA
As above	As above	As above	<i>Persoonia bargoensis</i> <i>Melaleuca deanei</i> <i>Pterostylis saxicola</i>	5 and 5.3	As above	NA	NA	Yes	Yes	NA
As above	As above	As above	<i>Pimelea spicata</i>	5 and 5.3	As above	Yes	Yes	Yes	Yes	NA

Development	Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
<ul style="list-style-type: none"> <li>• <b>Urban &amp; industrial</b></li> <li>• <b>Infrastructure</b></li> </ul>	Undertake fire hazard management within the asset protection zone at this location to protect existing <i>Pimelea spicata</i> individuals and is sympathetic ongoing recruitment of new individuals of this species	Protects an important population of <i>Pimelea spicata</i> located within the asset protection zone at this location	<i>Pimelea spicata</i>	5	Mitigation Measures Guideline CPCP Guidelines for Infrastructure Development	NA	NA	Yes	NA	Population 532 in GMAC identified in Cumberland Plain Assessment Report (Lots 3002, 3003 and 3004, DP 802845 and Lot 2000 DP 790848)

Table 17. Disease – Threatened flora risk mitigation

Development	Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
<ul style="list-style-type: none"> <li>• <b>Urban &amp; industrial</b></li> <li>• <b>Infrastructure (including essential infrastructure)</b></li> <li>• <b>Intensive plant agriculture</b></li> </ul>	Incorporate best-practice site hygiene protocols to manage the potential spread of pathogens, such as Phytophthora and myrtle rust adjacent to potential habitat for relevant species.	Minimises the risk spreading pathogens due to construction activities adjacent to potential habitat for the species	<i>Persoonia bargoensis</i>	5	DCP template Mitigation Measures Guideline CPCP Guidelines for Infrastructure Development	No	No	Yes	Yes	NA
As above	As above	As above	<i>Persoonia nutans</i>	5	As above	Yes	Yes	No	No	NA

## Mitigation measures to address residual risks to threatened ecological communities

Table 18. General risk mitigation measures for threatened ecological communities

Development	Mitigation measure	Rationale for measure	Ecological community	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
<ul style="list-style-type: none"> <li>Urban &amp; industrial</li> <li>Infrastructure (including essential infrastructure)</li> <li>Intensive plant agriculture</li> </ul>	When implementing mitigation measures to manage indirect impacts to Cooks River/ Castlereagh Ironbark Forest, undertake mitigation in accordance with Best Practice Guidelines: Cooks River/ Castlereagh Ironbark Forest (NSW DECC, 2008) within and adjacent to the TEC.	Minimises the risk of several types of indirect impact on the TEC adjacent to urban development	Cooks River/ Castlereagh Ironbark Forest (NSW & Cth)	5	DCP template CPCP Guidelines for Infrastructure Development	No	Yes (Kemps Creek)	No	No	NA
<ul style="list-style-type: none"> <li>Urban &amp; industrial</li> <li>Infrastructure (including essential infrastructure)</li> <li>Intensive plant agriculture</li> </ul>	Incorporate best-practice site hygiene protocols to manage the potential spread of pathogens, such as <i>Phytophthora</i> and myrtle rust adjacent to potential habitat for relevant TECs	Minimises the risk of spreading pathogens due to construction activities for urban development adjacent to TECs	Cooks River/ Castlereagh Ironbark Forest (NSW & Cth)	5	DCP template Mitigation Measures Guideline CPCP Guidelines for Infrastructure Development	No	Yes (Kemps Creek)	No	No	NA
As above	As above	As above	Cumberland Plain Woodland (NSW & Cth)	5	As above	Yes	Yes	No	No	NA
As above	As above	As above	River-flat Eucalypt Forest (NSW)/ Coastal Floodplain Eucalypt Forest (Cth)	5	As above	Yes	Yes	Yes	Yes	NA
As above	As above	As above	Shale Gravel Transition Forest (NSW)	5	As above	Yes	Yes (Kemps Creek)	No	No	NA
As above	As above	As above	Shale Sandstone Transition Forest (NSW & Cth)	5	As above	No	No	Y	Y	NA

Development	Mitigation measure	Rationale for measure	Ecological community	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
As above	As above	As above	Swamp Oak Floodplain Forest (NSW)/Coastal Swamp Oak Forest (Cth)	5	As above	Yes	Yes	No	No	NA

### Mitigation measures to address residual risks to other protected matters

**Table 19. General risk mitigation measures for other protected matters**

Development	Mitigation measure	Rationale for measure	Protected matter	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
<ul style="list-style-type: none"> <li>• <b>Urban &amp; industrial</b></li> <li>• <b>Infrastructure (including essential infrastructure)</b></li> </ul>	Ensure development adjacent to the southern and western boundaries of Commonwealth land comprising the Orchard Hills Defence Establishment mitigates impacts to surface water flows and the water quality of Blaxland Creek	Minimises the risk of indirect impacts from hydrological disturbance on an important waterway on Commonwealth land that occurs adjacent to urban development	Commonwealth land	5	Mitigation Measures Guideline CPCP Guidelines for Infrastructure Development	Yes	No	No	No	Orchard Hills Defence Site

## Major transport corridors

### Mitigation measures to address residual risks to threatened fauna

**Table 20. Habitat features and connectivity – Threatened fauna risk mitigation in major transport corridors**

Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
Incorporate artificial breeding and roosting habitat (e.g. bat boxes, structural cavities) in the design of bridges associated with the major infrastructure corridors in accordance with relevant guidelines or standards.	Minimises the potential impacts of the major infrastructure corridors to human-made structures that may be used by microbats for roosting or breeding	eastern coastal free-tailed bat, little bent-winged bat, large bent-winged bat, southern myotis, yellow-bellied sheathtail bat	6	State-significant infrastructure assessment and approval	NA	NA	NA	NA	All major transport corridors within and outside nominated areas

**Table 21. Disease – Threatened fauna risk mitigation in major transport corridors**

Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
Incorporate best-practice site hygiene protocols to manage the potential spread of pathogens, such as <i>Phytophthora</i> and myrtle rust within or adjacent to potential habitat for relevant species	Minimises the risk of spreading pathogens due to construction activities adjacent to potential habitat for the species	greater glider	6	State-significant infrastructure assessment and approval	NA	NA	NA	NA	All major transport corridors within and outside nominated areas

**Table 22. Other – Threatened fauna risk mitigation in major transport corridors**

Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
Consult with relevant land managers to manage indirect impacts to known populations and habitat for Cumberland Plain land snail on public land adjacent to major infrastructure corridors during construction and operation of the development, taking into account relevant guidance in the weed control implementation strategy and the fire management strategy.	Minimises indirect impacts to Cumberland Plain land snail adjacent to major infrastructure corridors	Cumberland Plain land snail Key indirect impacts/threats to be managed are: <ul style="list-style-type: none"> <li>weed invasion</li> <li>inappropriate fire regimes</li> <li>removal of fallen logs for firewood and slashing of habitat</li> </ul>	6	Consultation with local councils and other public agencies	NA	NA	NA	NA	All major transport corridors within nominated areas

**Table 23. Tunnels – Threatened fauna risk mitigation in major transport corridors**

Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
Manage the threat of inadvertent impacts on adjacent habitat of the species.	Minimises the risk of indirect impacts during tunnel construction and operation	Cumberland Plain land snail	6	State-significant infrastructure assessment and approval	NA	NA	NA	NA	Metro Rail Future Extension tunnel

Mitigation measures to address residual risks to flora

**Table 24. Weed invasion – Threatened flora risk mitigation in major transport corridors**

Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
Manage weeds for flora populations and habitat adjacent to major infrastructure corridors during construction and operation of the development, considering relevant guidance in the weed control implementation strategy.	Minimises indirect impacts to flora populations and habitat adjacent to major infrastructure corridors	<i>Dillwynia tenuifolia</i> <i>Pultenaea parviflora</i> <i>Persoonia nutans</i>	6 and15	State-significant infrastructure assessment and approval	NA	NA	NA	NA	Outer Sydney Orbital in Wianamatta Regional Park M7/Ropes Crossing link Road
As above	As above	<i>Grevillea juniperina</i> subsp. <i>juniperina</i>	6 and15	State-significant infrastructure assessment and approval	NA	NA	NA	NA	Outer Sydney Orbital in GPEC M7/Ropes Crossing link Road Western Sydney Freight Line
As above	As above	<i>Cynanchum elegans</i>	6 and15	State-significant infrastructure assessment and approval	NA	NA	NA	NA	Outer Sydney Orbital at Cobbity

Table 25. Hydrology – Threatened flora risk mitigation in major transport corridors

Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
Manage hydrology impacts to relevant flora species and habitat adjacent to major infrastructure corridors during construction and operation of the development.	Minimises the risk of hydrological impacts to the species	<i>Cynanchum elegans</i>	6	State-significant infrastructure assessment and approval	NA	NA	NA	NA	Outer Sydney Orbital at Cobbity

Table 26. Disease – Threatened flora risk mitigation in major transport corridors

Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
Incorporate best-practice site hygiene protocols to manage the potential spread of pathogens, such as Phytophthora and myrtle rust adjacent to potential habitat for relevant species.	Minimises the risk of spreading pathogens due to construction activities adjacent to potential habitat for the species	<i>Persoonia nutans</i>	6	State-significant infrastructure assessment and approval	NA	NA	NA	NA	Outer Sydney Orbital in Wianamatta Regional Park

**Table 27. Tunnels – Threatened flora risk mitigation in major transport corridors**

Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
Manage key threats to the species, including: <ul style="list-style-type: none"> <li>hydrological disturbance</li> <li>spread of weeds</li> <li>spread of infection/disease</li> <li>soil erosion and sedimentation</li> <li>ground settling or subsidence</li> </ul>	Minimises the risk of indirect impacts during tunnel construction and operation	<i>Eucalyptus benthamii</i>	6	State-significant infrastructure assessment and approval	NA	NA	NA	NA	Outer Sydney Orbital tunnel
As above	Minimises the risk of indirect impacts during tunnel construction and operation	<i>Pimelea spicata</i>	6	State-significant infrastructure assessment and approval	NA	NA	NA	NA	Metro Rail Future Extension tunnel
As above	Minimises the risk of indirect impacts during tunnel construction and operation	<i>Pomaderris brunnea</i>	6	State-significant infrastructure assessment and approval	NA	NA	NA	NA	Outer Sydney Orbital tunnel

## Mitigation measures to address residual risks to threatened ecological communities

Table 28. General risk mitigation measures for threatened ecological communities

Mitigation measure	Rationale for measure	Species	Commitment	Implementation mechanism	GPEC	WSA	GMAC	WTN	Other location
When implementing mitigation measures to manage indirect impacts to Cooks River/Castlereagh Ironbark Forest, undertake mitigation in accordance with Best Practice Guidelines: Cooks River/Castlereagh Ironbark Forest (NSW DECC, 2008) within and adjacent to the TEC.	Minimises the risk of several indirect impact types on the TEC adjacent to urban development and major infrastructure corridors	Cooks River/Castlereagh Ironbark Forest (NSW & Cth)	6	State-significant infrastructure assessment and approval	NA	NA	NA	NA	Outer Sydney Orbital at Wianamatta Regional Park
Incorporate best-practice site hygiene protocols to manage the potential spread of pathogens, such as <i>Phytophthora</i> and myrtle rust adjacent to potential habitat for relevant TECs.	Minimises the risk of spreading pathogens due to construction activities for urban development or major infrastructure adjacent to TECs	Cooks River/Castlereagh Ironbark Forest (NSW & Cth)	6	State-significant infrastructure assessment and approval	NA	NA	NA	NA	Outer Sydney Orbital at Wianamatta Regional Park
As above	As above	Cumberland Plain Woodland (NSW & Cth)	6	State-significant infrastructure assessment and approval	NA	NA	NA	NA	Outer Sydney Orbital adjacent to WSA Western Sydney Freight Line
As above	As above	River-flat Eucalypt Forest (NSW)/Coastal Floodplain Eucalypt Forest (Cth)	6	State-significant infrastructure assessment and approval	Yes	Yes	Yes	Yes	
As above	As above	Shale Gravel Transition Forest (NSW)	6	State-significant infrastructure assessment and approval	NA	NA	NA	NA	Outer Sydney Orbital at Wianamatta Regional Park
As above	As above	Swamp Oak Floodplain Forest (NSW)/Coastal Swamp Oak Forest (Cth)	6	State-significant infrastructure assessment and approval	NA	NA	NA	NA	Outer Sydney Orbital in GPEC

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Bark of a Forest Red Gum (*Eucalyptus tereticornis*)

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