



**APA Group**  
Port Kembla to Wilton Gas Pipeline  
Scoping report

December 2019

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# 1. Introduction

## 1.1 Purpose

APA Group (APA) proposes to develop a buried, steel, high-pressure gas pipeline approximately 37 kilometres in length between Port Kembla and Wilton in NSW (the project). The gas pipeline will provide a connection from the recently approved Port Kembla Gas Terminal to APA's existing Moomba to Sydney Pipeline network located east of the town of Wilton on the south-western fringe of the Sydney metropolitan area.

The Port Kembla Gas Terminal comprises development of a liquefied natural gas (LNG) import terminal being developed by Australian Industrial Energy (AIE). The Port Kembla Gas Terminal was approved by the NSW State government in April 2019 with the capacity to deliver up to 300 TJ of gas a day into the transmission network.

Since the original approval was granted, AIE's customers have expressed that their gas demands during peak season (typically between April and September) exceed the volume approved in the current consent. As a result, AIE have lodged a modification to the original development consent which seeks to increase the number of annual LNG cargoes received at the terminal.

In response to this demand, APA is now working with AIE to develop a gas transmission solution for the PKGT that will provide a new pipeline connection between the Port Kembla Gas Terminal and the existing Moomba to Sydney Pipeline network. The new pipeline will provide for flexibility of supply to Sydney, regional NSW and interstate via the existing gas transmission network.

The Moomba to Sydney Pipeline network is owned and operated by APA and comprises a 1,300 kilometre bi-directional mainline between Moomba in South Australia and Wilton to the south-west of Sydney. The pipeline system also includes a number of laterals connecting regional NSW, ACT and Victoria.

The project preliminary route options and their regional location are shown in Figure 1-1.

The purpose of this scoping report is to provide preliminary information on the project and its potential environment impacts in support of a request for Secretary's environmental assessment requires (SEARs) under the *Environmental Planning and Assessment Act 1979*.

## 1.2 Scope

This scoping report has been developed in accordance with the Department of Planning, Industry and Environment guideline *Scoping an Environmental Impact Statement*<sup>1</sup>. It includes a description of the project, the statutory framework, stakeholder engagement completed to date and proposed ongoing engagement, relevant environmental matters, potential impacts and appropriate level of assessment in the environmental impact statement (EIS).

## 1.3 Structure

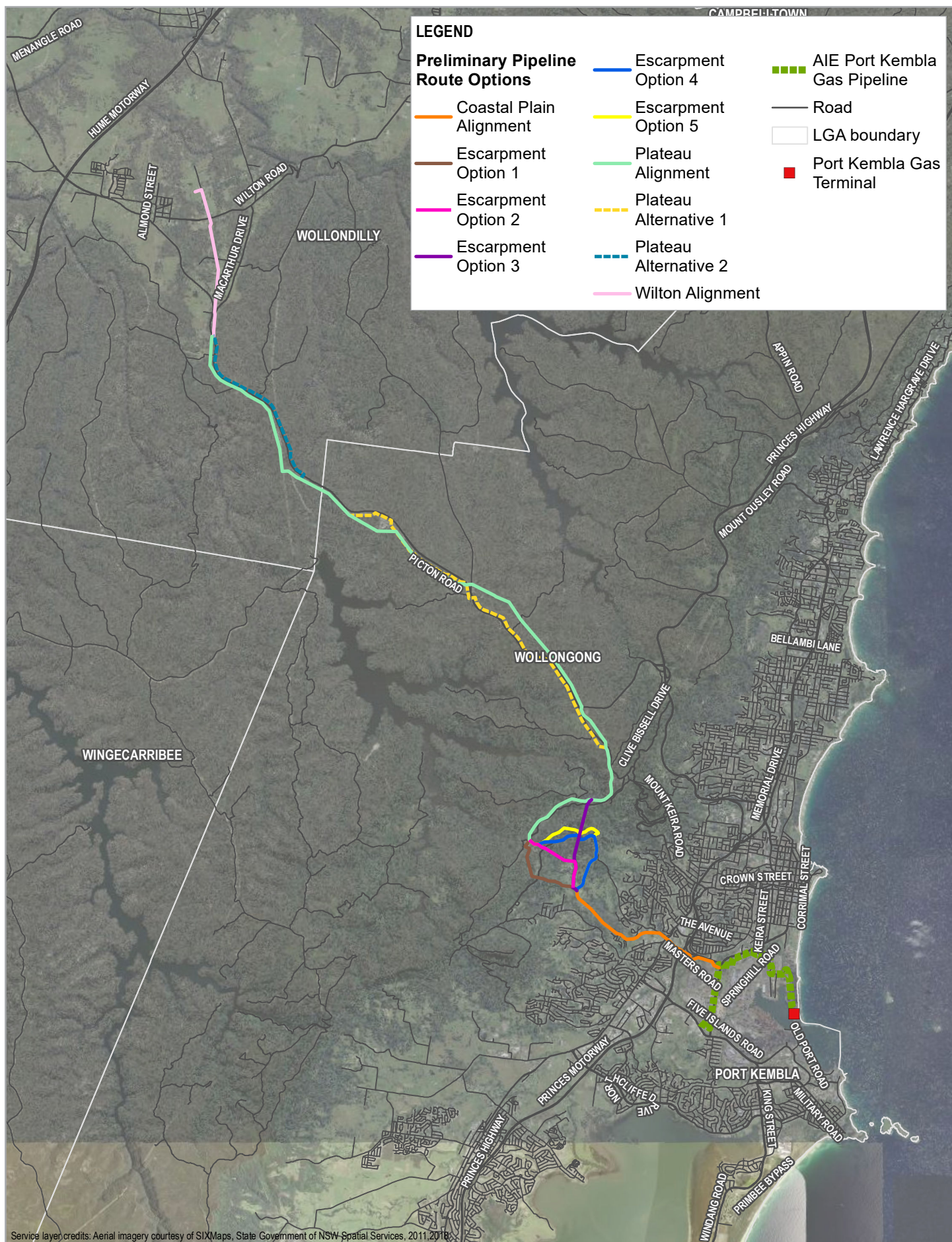
The structure and content of this scoping report is as follows:

- Section 2 — Description of the existing environment in the region of the project

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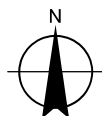
<sup>1</sup> Department of Planning, Industry and Environment 2019, *Scoping an Environmental Impact Statement*, Draft Environmental Impact Assessment Guidance Series June 2017, <https://www.planning.nsw.gov.au/-/media/Files/DPE/Guidelines/guideline-3-draft-scoping-an-environmental-impact-statement-2017-06.pdf>

- Section 3 — Description of the project including design, construction and operation
- Section 4 — Description of the statutory framework including approval requirements
- Section 5 — Outline of current and planned stakeholder engagement activities
- Section 6 — Preliminary environmental assessment of the project
- Section 7 — Conclusion.



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Kilometers

Map Projection: Transverse Mercator  
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Regional location

FIGURE 1-1



## 2. Existing environment

### 2.1 Overview

The preliminary route options traverse the Sydney Basin Bioregion. The eastern section of the preliminary route options, west from Port Kembla through the suburb of Figtree, traverses predominantly cleared and developed residential, commercial and industrial land. Native vegetation and fauna habitat occurs as fragmented patches of vegetation in an industrial, urban and peri-urban matrix. The preliminary route options then ascend the Illawarra Escarpment, including crossing the Illawarra Escarpment State Conservation Area (SCA), with multiple preliminary route options identified in this area.

Heading west from the Illawarra Escarpment, the preliminary route options traverse the Metropolitan Special Area, managed by Water NSW, which comprises predominantly undisturbed bushland on the Woronora Plateau. Existing disturbance in this area is generally restricted to access roads and electricity and gas easements. The preliminary route options then continue northwest to the township of Wilton, with the main land use being private farm land.

The preliminary route options are adjacent to or overlap existing easements for much of their length. Key environmental features in the region are described in the following sections.

### 2.2 Biodiversity

Database searches have identified in the order of 125 threatened flora and fauna species listed under the NSW *Biodiversity Conservation Act 2016* (BC Act) and/or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) recorded within a 5 km buffer of the preliminary route options. In addition, four ecological communities listed under the BC Act and/or EPBC Act have been mapped as on or adjacent to the preliminary route options. Surveys will be undertaken to determine the species and communities present and likely to be impacted.

The most notable biodiversity features for the Project are listed below.

- Coastal Upland Swamps ecological community (Endangered, BC Act and EPBC Act). This community occurs extensively on the Woronora Plateau and some direct impacts from the Project may be unavoidable.
- Shale Sandstone Transition Forest ecological community (Critically endangered, BC Act and EPBC Act). This community is common to the east of Wilton and some direct impacts from the Project may be unavoidable.
- Illawarra Subtropical Rainforest ecological community (Endangered, BC Act; Critically endangered, EPBC Act). Remnant patches of this community occupy the foothills of the Woronora Plateau and the Illawarra coastal plains, and some direct impacts from the Project may be unavoidable.
- Illawarra Lowlands Grassy Woodland ecological community (Endangered, BC Act; Critically endangered, EPBC Act). Remnant patches of this community occupy the foothills of the Woronora Plateau and the Illawarra coastal plains, and some direct impacts from the Project may be unavoidable.
- Koala (Vulnerable, BC Act and, EPBC Act). A substantial resident koala population is located in the Wilton area. The population is continuous with the koalas of Campbelltown and is linked through a habitat corridor that runs through Appin to Wilton and down to Avon Dam and Bargo. The koalas north of Picton Road to Campbelltown are part of the only population in the State that is disease free.

- Littlejohn's Tree Frog (Vulnerable, BC Act and EPBC Act). This species breeds in the upper reaches of permanent streams and perched swamps and is known to occur in the Cordeaux and Cataract catchments.
- Eastern Pygmy Possum (Vulnerable, BC Act). This species is associated with a range of habitats and is known to occur in woodland and heath habitats near swamps on the Woronora Plateau.
- Giant Dragonfly (Vulnerable, BC Act). This species is associated with permanent swamps and has potential to occur in upland swamp habitat on the Woronora Plateau.
- Large-eared Pied Bat (Vulnerable, BC Act and EPBC Act). This species roosts in tunnels, mine shafts and in crevices associated with rocky outcrops.
- Broad-headed Snake (Endangered, BC Act; Vulnerable, EPBC Act). This species is associated with rocky outcrops and habitat is likely to be present across the Woronora Plateau.
- Cumberland Plain Land Snail (Endangered, BC Act). This species is associated with grassy woodlands on the Cumberland Plain. Suitable habitats occur to the east of Wilton.
- Green and Golden Bell Frog (Endangered, BC Act; Vulnerable, EPBC Act). A population is known to occur at Port Kembla.
- *Epacris purpurascens* var. *purpurascens* (Vulnerable, BC Act). A substantial population is located in the Wilton area in Shale Sandstone Transition Forest. There are numerous records along Picton Road to the south of Wilton in shale transitional habitats.
- Prickly Bush-pea (Vulnerable, BC Act and EPBC Act). A large number of records occur on the Woronora Plateau and along firetrails and powerline easements in woodland and wet heath habitats on sandstone.
- Small-flowered Grevillea (Vulnerable, BC Act and EPBC Act). A substantial population is located in the Wilton area in Shale Sandstone Transition Forest. There are numerous records along Picton Road to the south of Wilton in shale transitional habitats.
- Scrub Turpentine (Critically endangered, BC Act). This species is associated with rainforest, rainforest margins and wet sclerophyll forest habitats. It has been recorded in rainforest habitats on the foothills of the Woronora Plateau.

## 2.3 Cultural heritage

The Wodi Wodi are the Aboriginal custodians of the Illawarra who spoke a variant of the Dharawal language. Dharawal speakers lived and live in the country from Botany Bay and Campbelltown in the north through the Nepean, Wollondilly, Georges, and Cataract water catchments, west to Moss Vale and south to the Shoalhaven River and Jervis Bay.

Archaeological evidence indicates Aboriginal people have been resident in the Illawarra for at least 20,000 years. Archaeological sites have been recorded across the entire project area, including many shelter and art sites on the Woronora Plateau. Culturally significant landscape sites also likely to be present, particularly associated with the Illawarra escarpment.

The project overlaps two Local Aboriginal Land Council (LALC) areas the Illawarra LALC from the eastern end of the pipeline at Port Kembla and west to Lake Cordeuax and the Tharawal LALC for the remainder of the preliminary route options through to Wilton. No positive determinations of native title under the Commonwealth *Native Title Act 1993* have been made in the area intersected by the preliminary route options. A native title claim has been registered by the South Coast People (NC2017/003) for an area which covers all but the final 2 km of the preliminary route options.

European colonization and settlement of the Illawarra began with cedar cutters as early as 1805, with the first land grants for agriculture made in 1816. The first coal mine in the region opened on Mount Keira in 1849 and shale oil production commenced at Mt Kembla during 1865. Many coal mines were subsequently opened in the area.

## **2.4 Illawarra Escarpment State Conservation Area**

State conservation areas are lands reserved under the *National Parks and Wildlife Act 1974* to protect and conserve significant or representative ecosystems, landforms, natural phenomena or places of cultural significance. The main difference between national parks and state conservation areas is that mineral and petroleum exploration and mining may be permitted in state conservation areas.

The Illawarra Escarpment SCA protects the landscape of the Illawarra escarpment, which is the dominant landform of the Illawarra region, and an iconic feature of the Illawarra. The Illawarra SCA occupies nearly 30% of the Illawarra escarpment. It occupies an area of 2,772 hectares, comprised of six separate sections extending over approximately 40 kilometres, from Stanwell Park in the north to West Dapto in the south.

Preliminary route options have been selected to minimise impacts to the Illawarra SCA. One preliminary route option avoids the Illawarra SCA entirely by following a disused mining tunnel.

## **2.5 Water NSW metropolitan special area**

The preliminary route options traverse the Metropolitan Special Area, managed by Water NSW, which provides protection to the Sydney drinking water catchment surrounding the water storages of the Lake Nepean, Lake Avon, Lake Cordeaux and Lake Cataract. Public access and activities are prohibited to protect water quality in these areas, which generally comprise rugged, densely vegetated landscapes on the Woronora Plateau.

## 3. Project description

### 3.1 Overview

APA proposes to develop a buried, steel, high-pressure gas pipeline approximately 37 kilometres in length to connect the proposed AIE Port Kembla Gas Terminal south of Wollongong, NSW to the Moomba to Sydney Pipeline east of the town of Wilton, NSW.

The project will transport gas from the Port Kembla Gas Terminal to the existing gas transmission network allowing for flexibility of supply to Sydney, regional NSW and interstate.

In combination with the Port Kembla Gas Terminal, the project will:

- Provide improved access to the east coast gas transmission network.
- Place downwards pressure on gas and gas transportation process through increased volumes.
- Ensure NSW is seen as an energy-rich (natural gas) State, not an energy-poor State. This in turn will support improved investor confidence and help support future economic growth in the State.
- Increase competition by providing an alternative pipeline connection between the Illawarra region and the rest of the transmission network.
- Increase the flexibility of supply to regional areas of NSW.
- Introduce greater capacity to support new and existing gas fired power generation as NSW continues to transition to a lower carbon power generation profile.
- Provide NSW with greater independence from other states to meet natural gas demand through improved supply optionality as well as an incremental increase in storage capacity from that already provided by the Port Kembla Gas Terminal.

The pipeline and all associated facilities will be designed, constructed, commissioned and operated in accordance with Australian Standards 2885 (a suite of standards outlining requirements for gas and petroleum pipelines which are designed, constructed and operated in Australia) and a Pipeline Licence under the *Pipelines Act 1967*.

The project is planned for construction from Q1 2021 with a gas-on date of Q1 2022.

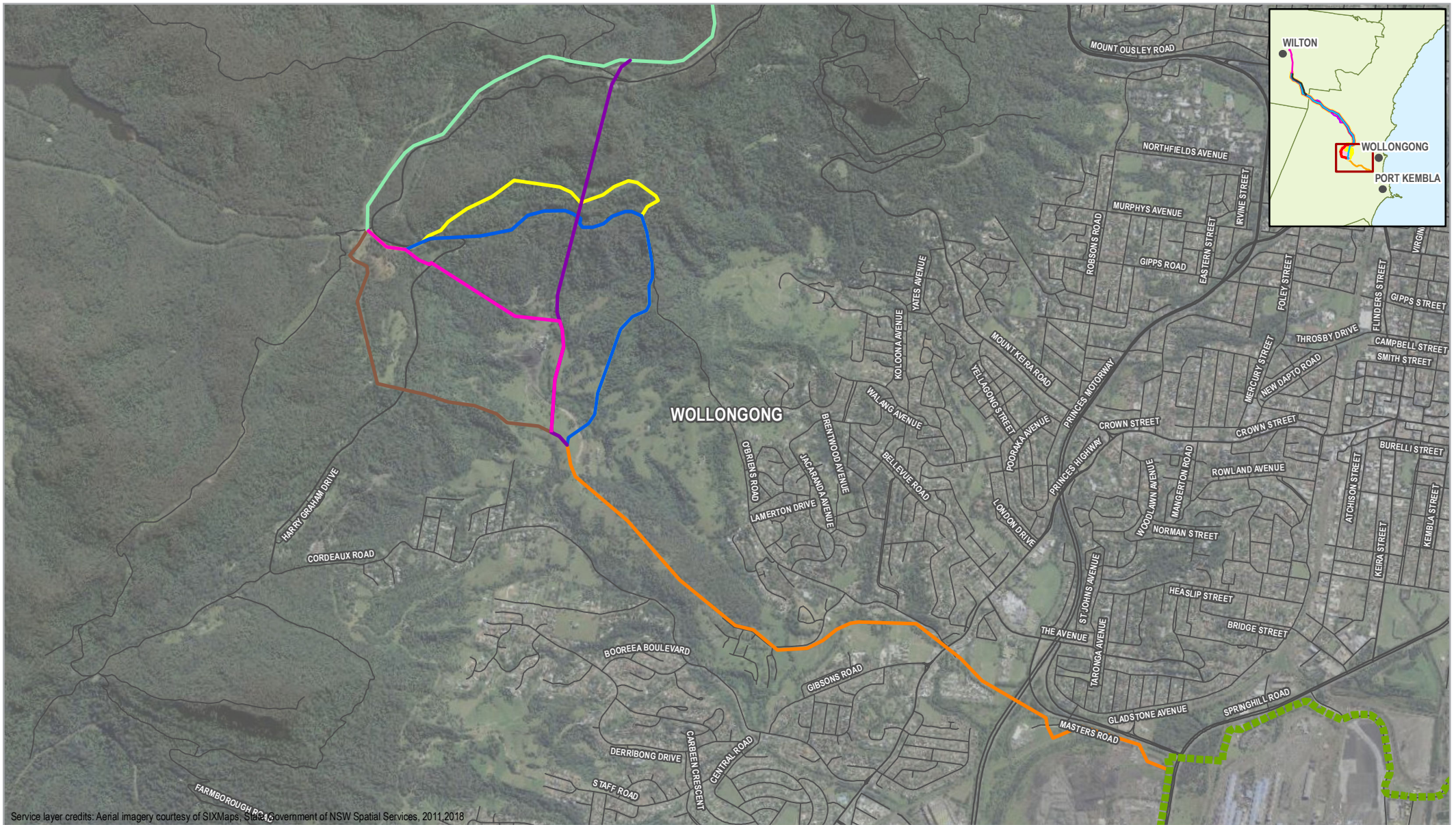
### 3.2 Route selection

APA is in the process of selecting a preferred route from a number of preliminary route options. Where possible, use will be made of existing infrastructure corridors including other pipelines and powerlines in order to reduce the extent of disturbance required for the project.

The preliminary route options currently under consideration are shown in Figure 3-1.

APA intends to select a preferred route based on feedback from key stakeholders, the outcomes of initial community engagement and the outcomes of environmental assessments.





Service layer credits: Aerial imagery courtesy of SIXMaps, State Government of NSW Spatial Services, 2011,2018

## LEGEND

### Preliminary Pipeline Route Options

- Coastal Plain Alignment
- Escarpment Option 1
- Escarpment Option 2

- Escarpment Option 3
- Escarpment Option 4
- Escarpment Option 5
- Plateau Alignment

- - - AIE Port Kembla Gas Pipeline
- Road
- LGA boundary

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Kilometers  
Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
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Project overview

FIGURE 2-1





Service layer credits: Aerial imagery courtesy of SIXMaps, State Government of NSW Spatial Services, 2011,2018

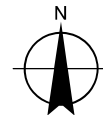
## LEGEND

### Preliminary Pipeline Route Options

- Escarpment Option 3
- Plateau Alignment
- - - Plateau Alternative 1

- Road
- LGA boundary

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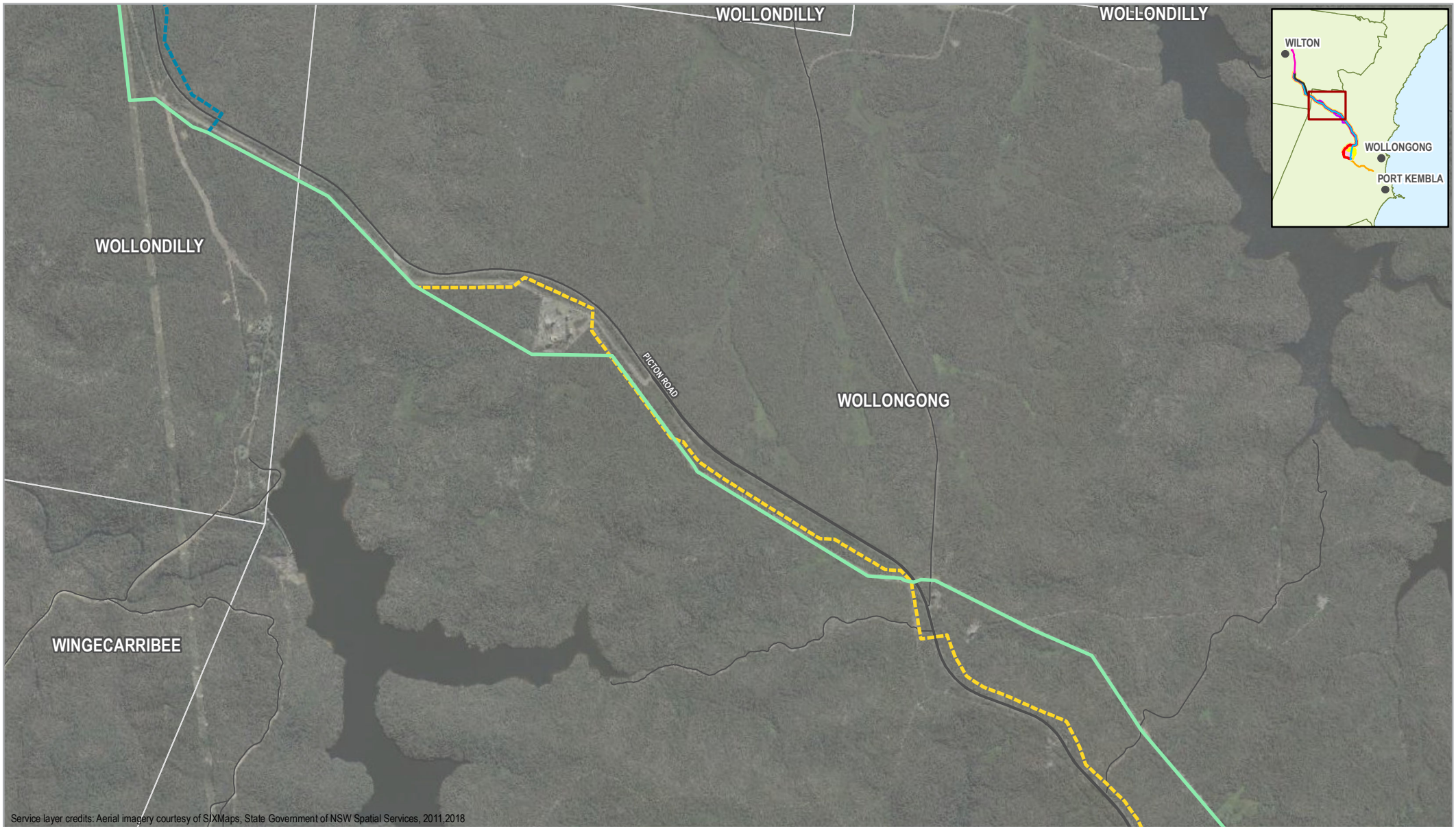
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**Project overview**

**FIGURE 2-1**





Service layer credits: Aerial imagery courtesy of SIXMaps, State Government of NSW Spatial Services, 2011,2018

**LEGEND**

**Preliminary Pipeline Route Options**

- Plateau Alignment
- Plateau Alternative 1
- Plateau Alternative 2

— Road  
 □ LGA boundary

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Kilometers

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
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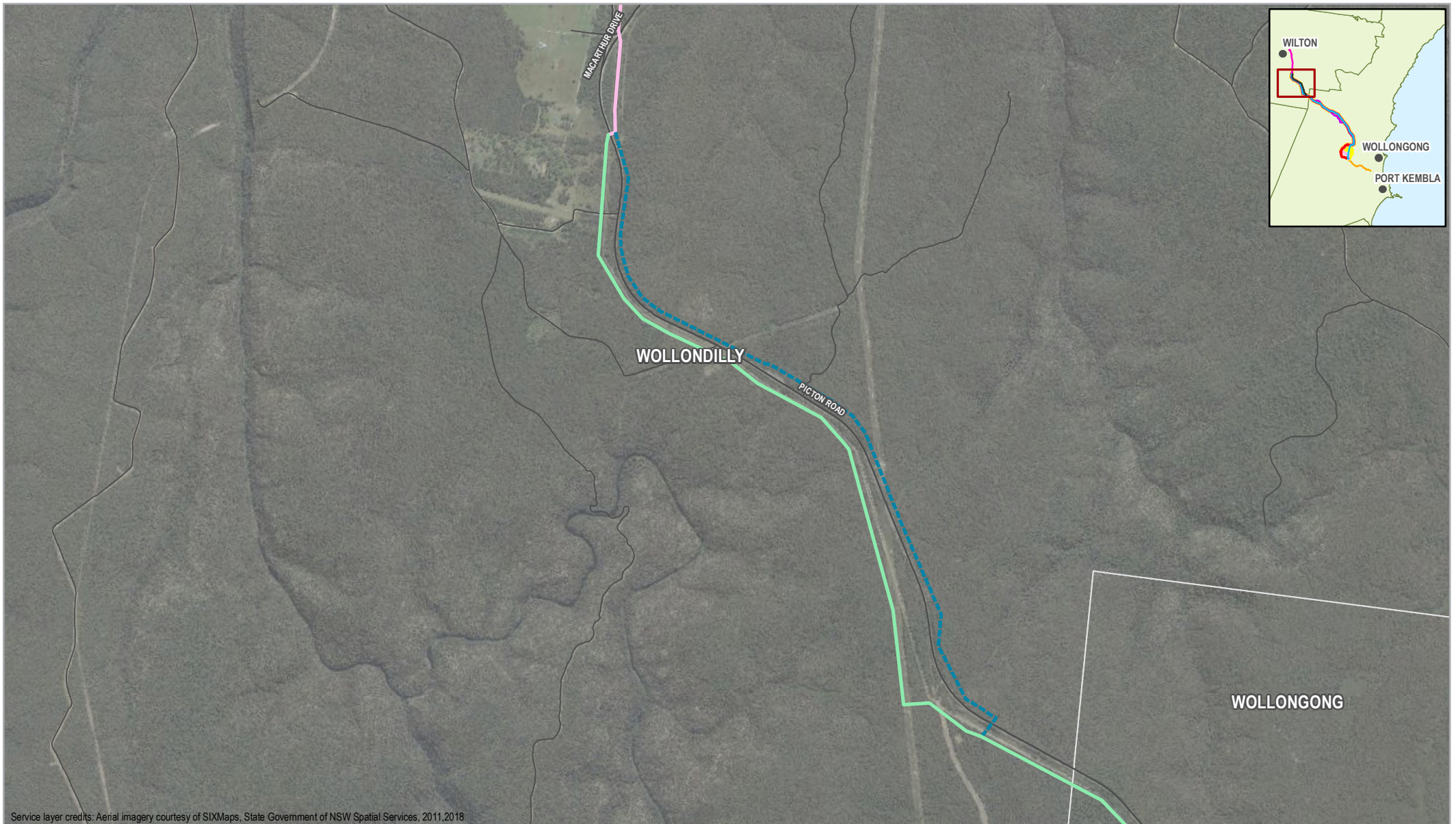
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**Project overview**

**FIGURE 2-1**





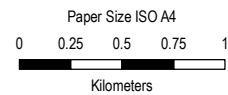
Service layer credits: Aerial imagery courtesy of SIXMaps, State Government of NSW Spatial Services, 2011,2018

## LEGEND

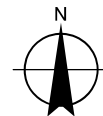
### Preliminary Pipeline Route Options

- Plateau Alignment
- - - Plateau Alternative 2
- Wilton Alignment

- Road
- LGA boundary



Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
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**Project overview**

**FIGURE 2-1**





Service layer credits: Aerial imagery courtesy of SIXMaps, State Government of NSW Spatial Services, 2011, 2018

- LEGEND**
- Preliminary Pipeline Route Options**
- Wilton Alignment
  - Road
  - LGA boundary

Paper Size ISO A4

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Kilometers

Map Projection: Transverse Mercator  
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**Project overview**

**FIGURE 2-1**



### 3.3 Project infrastructure

The main component of the project will be the construction and operation of the pipeline. The pipeline will be designed in accordance with Australian Standard AS 2885.0—2008 *Pipelines—Gas and liquid petroleum* and *Code of Environmental Practice Onshore Pipelines*<sup>2</sup>.

The key characteristics of the pipeline are summarised in Table 3-1.

**Table 3-1 Key characteristics**

| Design element          | Value                                     |
|-------------------------|-------------------------------------------|
| Pipeline length         | Approximately 37 kilometres               |
| Pipeline diameter       | Subject to detailed design                |
| Pipeline burial depth   | Minimum 900 millimetres                   |
| Pipeline easement width | Nominally 30 metres depending on location |
| Material                | Epoxy-coated high strength steel          |
| Capacity                | Nominally 500 terajoules per day          |

The project will also include construction and operation of supporting infrastructure, including:

- Scraper stations — to provide access to the pipeline for inspections and maintenance
- Meter station — to monitor the flow of gas for commercial purposes
- Mainline valves — to isolate sections of the pipeline for maintenance or safety
- Delivery facility — to lower pressure for connection to Moomba to Sydney Pipeline
- Marker signs — to delineate the location of the pipeline
- Cathodic protection upstands — to monitor pipeline cathodic protection system.

Nitrogen injection may be required in order to ensure that gas composition is suitable for connection into the broader gas transmission network. Options for nitrogen injection, including offtakes from existing sources of supply in the Port Kembla area, are currently being considered.

### 3.4 Pipeline construction

The project will be constructed using typical methods for modern gas pipelines.

The construction of the project will involve the following steps:

- Survey and fencing — survey of the pipeline route and modification of fencing to facilitate access during construction
- Clearing and grading — clearing of vegetation and grading within construction corridor, including stockpiling of topsoil, subsoil and vegetation for use in restoration works
- Stringing and bending — transportation of pipeline sections to the construction corridor to be laid end to end adjacent to the trench and bending pipeline sections to conform to topography.

<sup>2</sup> Australian Pipelines and Gas Association 2017, *Code of Environmental Practice Onshore Pipelines*, Revision 4, [https://www.apga.org.au/sites/default/files/uploaded-content/field\\_f\\_content\\_file/apga-code-of-environmental-practice.pdf](https://www.apga.org.au/sites/default/files/uploaded-content/field_f_content_file/apga-code-of-environmental-practice.pdf)

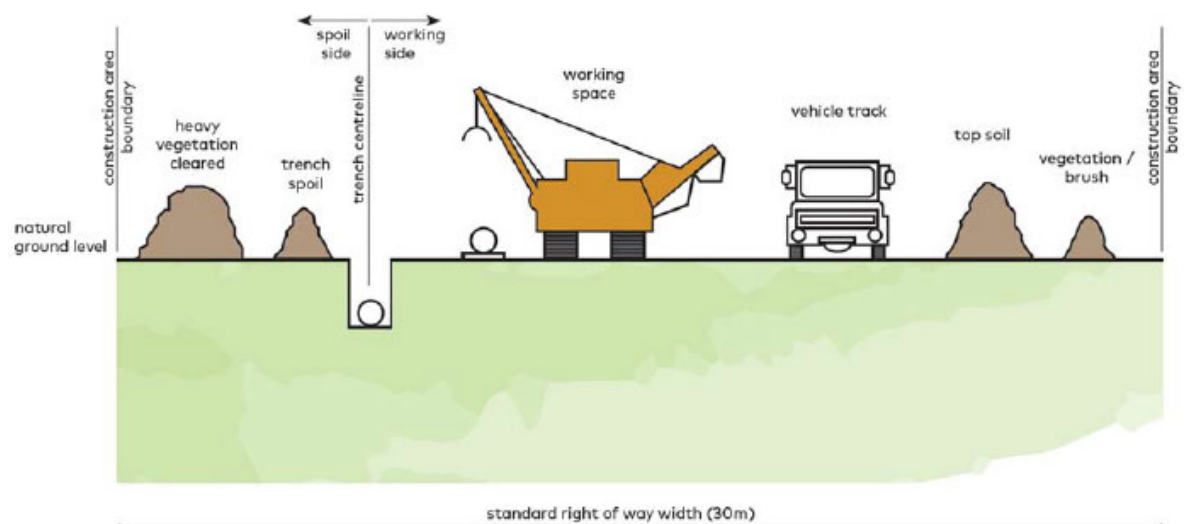
- Welding, testing and coating — welding of pipeline sections, testing of welded pipeline sections for quality and integrity, and coating or welded joints for corrosion protection.
- Trenching — trench excavation using specialised trenching machines and excavators.
- Lowering and padding — lowering pipeline sections into the trench using side booms and padding with fine grain material to protect the pipeline coating from hard objects.
- Backfilling — backfilling trench with excavated subsoil material and compacting the backfilled subsoil material to prevent settlement of the trench during operation.
- Hydrostatic testing — progressive filling of pipeline sections with water and then pressurising as a method of confirming the strength and integrity of the pipeline
- Restoration — restoration of disturbed areas to similar to pre-existing condition including recontouring, permanent erosion control structures, respreading of stripped material and establishment of suitable vegetation or groundcover.
- Signage — Installation of signs at regular intervals within line of sight to delineate pipeline.

The pipeline will be required to cross a number of waterways, roads and railways. These crossings will be constructed using open cut trenching or trenchless methods such as horizontal boring or horizontal directional drilling, depending on the sensitivity of the crossing.

Minor or ephemeral waterways and unsealed roads will typically be crossed using open cut trenching and restored to similar to pre-existing condition as discussed in section 3.4.

Sealed roads, railways, higher sensitivity waterways and other high sensitivity areas will typically be crossed using trenchless methods such as horizontal boring or horizontal directional drilling. Trenchless methods will involve the establishment of an entry pit and exit pit at either end of the relevant pipeline section, which will be restored at the completion of the boring or drilling.

An indicative layout for the construction corridor is shown in Figure 3-2.



**Figure 3-2 Indicative construction corridor**

### 3.5 Pipeline commissioning

The pipeline will be progressively commissioned at completion of hydrostatic testing. The commissioning will be carried out in accordance with a procedure to be developed during the detailed design of the project that will include calibration of instrumentation, commissioning of supporting infrastructure including the scraper stations, meter stations and delivery facility, and progressive filling of the pipeline with gas as pipeline operation commences.

### 3.6 Pipeline operation

The pipeline and supporting infrastructure will largely operate independently. As such, activities during operation will be limited to inspections and maintenance.

Routine air and ground inspection of the pipeline easement will be carried out to monitor for issues such as soil erosion, ground subsidence, weed intrusion, revegetation or unauthorised third-party activities. Field staff based at APA's existing operations office in Wilton may also access the pipeline from time to time for operations or other non-routine maintenance. Regular contact will be maintained with landholders of properties crossed by the pipeline, including consultation regarding land access, in accordance with Australian Standard AS 2885.0—2008 *Pipelines—Gas and liquid petroleum*.

Inspections and maintenance will be coordinated from the APA Integrated Operations Centre (IOC) situated in Brisbane. Gas flows and pressures will also be monitored at the IOC.

### 3.7 Pipeline decommissioning

The pipeline and supporting infrastructure will be decommissioned at the end of its useful life. A decommissioning plan will be prepared prior to decommissioning. The plan will be prepared in consultation with regulatory authorities and landholders and in accordance with the applicable regulatory requirements and best practice guidelines at the time of decommissioning.

The following decommissioning strategies will be considered:

- Suspension — depressurisation of pipeline, capping of pipeline and filling with an inert gas such as nitrogen or water with corrosion inhibitors, retention of cathodic protection system to prevent corrosion, removal of other supporting infrastructure unless future use identified.
- Abandonment — depressurisation of pipeline, purging of pipeline with non-flammable liquid, capping of pipeline and filling with water or cementitious mud, or removed entirely, removal of all surface infrastructure facilities unless future use identified.

Both decommissioning strategies will involve small scale and limited disturbance.



## 4. Statutory framework

### 4.1 NSW statutory framework

#### 4.1.1 Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* (EP&A Act) is the principal law regulating development in NSW. It establishes a regime for the making of development applications, assessment of their environmental impacts, and the determination of those applications. It also allows for the making of environmental planning instruments for controlling development.

*State Environmental Planning Policy (State and Regional Development) 2011* is an environmental planning instrument under the *Environmental Planning and Assessment Act 1979*, which identifies particular types of development as state significant infrastructure (SSI). Under schedule 3 of the policy, development for the purpose of a pipeline in respect of which a licence is required under the *Pipelines Act 1967*. As discussed in section 4.1.2, the project will require a licence under the *Pipelines Act 1967* and consequently is SSI under *State Environmental Planning Policy (State and Regional Development) 2011*.

The procedure for environmental assessment and approval of State significant infrastructure is set out in Division 5.2 *Environmental Planning and Assessment Act 1979*. Key steps include:

- Application for approval of State significant infrastructure
- Receipt of environmental assessment requirements
- Production of an environmental impact statement
- Public exhibition of the environmental impact statement
- Response to submission received during public exhibition
- Preparation of planning secretary's environmental assessment report
- Determination by Minister with regard to carrying out the project.

The EP&A Act also sets out a number of other approvals that do not apply with respect to State significant infrastructure, including:

- a permit under section 201, 205 or 219 of the *Fisheries Management Act 1994*
- an approval under Part 4, or excavation permit under section 139, of the *Heritage Act 1977*
- an Aboriginal heritage impact permit under the *National Parks and Wildlife Act 1974*
- a bush fire safety authority under the *Rural Fires Act 1997*
- a water use approval, a water management work approval or activity approval (other than an aquifer interference approval) under the *Water Management Act 2000*.

The EP&A Act also sets out a number of other approvals that must be applied consistently with an approval for State significant infrastructure. The approvals that must be applied consistently include but are not limited to:

- a licence under Chapter 3 of the *Protection of the Environment Operations Act 1997*
- a consent under section 138 of the *Roads Act 1993*
- a licence under the *Pipelines Act 1967*.

#### **4.1.2 Pipelines Act 1967**

The *Pipelines Act 1967* establishes a regime for licensing of prescribed pipelines in NSW. Section 11 of the *Pipelines Act 1967* states that a person shall not construct, alter or operate a pipeline unless the person is, or is acting on behalf of, the registered holder of a licence. As the project will involve the construction and operation of a pipeline a licence will be required.

An application for a licence may be made under section 12 of the *Pipelines Act 1967*. The manner of making applications for licences is set out in section 13 of the *Pipelines Act 1967* and includes providing details of the alignment, design, easements and access arrangements.

Section 14 of the *Pipelines Act 1967* provides for the granting of licences if the Minister is satisfied that an application has been made in the manner set out in section 13 and the lands or easements specified in the application are vested in the applicant or available for acquisition.

Sections 22 and 22A of the *Pipelines Act 1967* concern the compulsory acquisition of lands and compensation entitlements for any person with an estate or interest in those lands.

Where voluntary access cannot be obtained, a person who proposes to construct a pipeline may apply to the Minister for an authority to survey authorising entry onto the relevant land.

#### **4.1.3 Roads Act 1993**

The *Roads Act 1993* regulates the carrying out of various activities on public roads in NSW. It establishes NSW Roads and Maritime Services as the roads authority for certain classified and state and regional roads and the relevant local councils as roads authorities for local roads.

Section 138 of the *Roads Act 1993* states that a person must not carry out work in, on or over a public road or dig up or disturb the surface of a public road otherwise than with the consent of the appropriate roads authority. An approval will be required for any such works for the project.

#### **4.1.4 Protection of the Environment Operations Act 1997**

The *Protection of the Environment Operations Act 1997* (POEO Act) aims to protect, restore and enhance the quality of the environment. It prescribes offences mainly regarding pollution of the environment and establishes a regime for the licensing of certain scheduled activities.

The project will be constructed and operated in accordance with the general environmental duties under the POEO Act regarding disposal of waste (section 115), leaks or spill (section 116), emissions to air (section 117), pollution of water (section 120) and land (section 142A).

The construction and operation of a pipeline is not a scheduled activity listed in Schedule 1 of the POEO Act and consequently an environment protection licence will not be required.

#### **4.1.5 Biodiversity Conservation Act 2016**

The *Biodiversity Conservation Act 2016* (BC Act) aims to maintain a healthy, productive and resilient environment consistent with the principals of ecologically sustainable development and in particular conserve biodiversity at bioregional and state scales, among other specific aims.

Part 4 of the BC Act provides for the listing of threatened species and threatened ecological communities. Part 7 of the BC Act provides for biodiversity assessment and approvals under the *Environmental Planning and Assessment Act 1979*, and includes a test to determine whether a proposed development will significantly affect threatened species or ecological communities. Part 6 of the BC Act provides for a biodiversity offsets scheme for biodiversity values.

Section 7.9 of the BC Act states an application for State significant infrastructure under the *Environmental Planning and Assessment Act 1979* is to be accompanied by a biodiversity development assessment report (BDAR). Section 7.14 of the BC Act states the Minister, in

determining an application for State significant infrastructure, must take into account the likely impact of the development on biodiversity values assessed in the BDAR, and may require the application to offset impacts on biodiversity values through the biodiversity offsets scheme.

#### **4.1.6 National Parks and Wildlife Act 1974**

The *National Parks and Wildlife Act 1974* provides for the conservation of nature through an estate of national parks, state conservation areas and nature reserves as well as providing for the conservation of objects, places or features of cultural value within the landscape.

Part 6 of the *National Parks and Wildlife Act 1974* concerns the protection of Aboriginal objects and Aboriginal places. Section 86 states that a person must not harm an Aboriginal object or Aboriginal place while section 87 provides that such harm may be authorised by an Aboriginal heritage impact permit, which provides a defence against prosecution under section 86.

As discussed in section 4.1.1, the requirement for an Aboriginal heritage impact permit does not apply with respect to State significant infrastructure. Nonetheless, the potential impacts of the project on Aboriginal objects and Aboriginal places will be assessed and managed through the assessment and approval process under the EP&A Act and informed through consultation with the relevant registered Aboriginal parties in accordance with *Aboriginal cultural heritage consultation requirements for proponents 2010*.

#### **4.1.7 Aboriginal Land Rights Act 1983**

The *Aboriginal Land Rights Act 1983* sets out land rights for Aboriginal persons, the establishment of Local Aboriginal Land Councils and the vesting of land in the councils.

The project is within the boundaries of the Illawarra Local Aboriginal Land Council and the Tharawal Local Aboriginal Land Council<sup>3</sup>. Should it be identified that the project intersects any areas of Aboriginal land under the *Aboriginal Land Rights Act 1983*, agreement will be sought with the relevant Local Aboriginal Land Council for the creation of an appropriate easement.

#### **4.1.8 Local environmental plans**

The project is within the local government areas of Wollongong City Council and Wollondilly Shire Council. The relevant local environmental plans are the *Wollongong Local Environmental Plan 2009* and the *Wollondilly Local Environmental Plan 2011* respectively.

As shown in Appendix C, the project crosses a range of land use zones including a mix of industrial, recreational, residential land use zones at Port Kembla, environmental conservation land zones in the Metropolitan Special Area, and rural landscape land zones at Wilton.

### **4.2 Commonwealth statutory framework**

#### **4.2.1 Environment Protection and Biodiversity Conservation Act 1999**

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) is the Commonwealth's principal environmental protection legislation. The EPBC Act functions to protect nine matters of national environmental significance (MNES), which are as follows:

- world heritage properties
- national heritage places
- wetlands of international importance (listed under the Ramsar Convention)

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<sup>3</sup> National Native Title Tribunal 2019, Native Title Vision, <https://nntt.maps.arcgis.com/apps/webappviewer/index.html?id=b221c006ae5d4cabaa1e18099bc11bb9>



- listed threatened species and ecological communities
- migratory species protected under international agreements
- Commonwealth marine areas
- the Great Barrier Reef Marine Park
- nuclear actions (including uranium mines)
- a water resource, in relation to coal seam gas development and coal mining development.

The EPBC Act also protects the environment in general where an action is proposed on, or will affect, Commonwealth land, or where a Commonwealth agency is proposing the action.

Under the EPBC Act, actions that have, or are likely to have, a significant impact on MNES require approval from the Minister for the Environment. Chapter 4 of the EPBC Act establishes requirements for environmental approvals relating to MNES, including the requirement to refer an action that will have, or is likely to have, a significant impact on MNES to the Minister for the environment. The Minister for the Environment may then choose a method of assessment of the action including assessment on referral information or an environmental impact statement.

The bilateral agreement between the Commonwealth Government and NSW Government allows the Commonwealth Minister for the Environment to rely on NSW environmental impact assessment process in assessing actions under the EPBC Act. Minor amendments to the bilateral agreement are being made to accommodate NSW legislative changes including amendments to the EP&A Act and the introduction of the BC Act.

#### **4.2.2 Native Title Act 1993**

The *Native Title Act 1993* provides for recognition of native title, establishes a mechanism for determining claims to native title and sets standards for future dealings affecting native title. It also provides that native title may be extinguished by past possession acts. These acts include granting of freehold land, whereas native title may persist on other lands such as reserve areas.

A review of existing native title claims and determinations on the National Native Title Tribunal website indicates the project intersects a claim by the South Coast People (NC2017/003). The extent of the claim is shown in Appendix C. No determination has been made on the claim.

APA will engage with the relevant native title group to negotiate appropriate agreements.

## 5. Stakeholder engagement

### 5.1 Stakeholder Identification

APA is committed to developing and maintaining successful partnerships and working relationships with the people, communities and other stakeholders impacted both directly and indirectly by the Project.

APA undertook initial screening and identified the following stakeholder groups with a potential interest in the Project.

- Government stakeholders
  - Commonwealth government agencies
  - NSW State government agencies
  - Local government
  - Elected representatives
- Private stakeholders
  - Landowners (landowners and occupiers directly impacted by the Project)
  - Native Title claimants
  - Utility owners / operators
  - Resource tenement holders
- Community / non-government stakeholders
  - Local communities and general public
  - Local Aboriginal Land Councils
  - Industry bodies, special interest and lobby groups
  - Media.

### 5.2 Stakeholder engagement during scoping

#### 5.2.1 Project Scoping

Initial stakeholder engagement formally commenced in mid-August 2019 with an introduction of the Project presented to the NSW Department of Planning, Industry and the Environment (DPI&E). A high level overview of proposed activities during the project scoping phase was presented.

A formal Scoping Meeting was held on the 12th November 2019 to present the draft scoping report and seek feedback prior to lodging the scoping report formally.

#### 5.2.2 Preliminary route options

In order to gain an understanding of the key issues and opportunities that would inform route option development, targeted engagement was undertaken with the following stakeholders:

- Bluescope Steel – regarding the feasibility of the proposed offtake point at Springhill Road
- South32 – regarding route option interfaces with past, current and future mining operations associated with the Dendrobium Mine.
- Sydney Water – particularly regarding interfaces with existing water assets

- WaterNSW – regarding the preliminary route options within the Metropolitan Special Area
- National Parks and Wildlife Services – regarding interfaces with the Illawarra Escarpment SCA and associated environmental values.
- Wollongong City and Wollondilly Shire Council - feedback on land use & development, environmental, heritage, infrastructure and other community values.
- Roads and Maritime and Transport for NSW regarding interfaces with state controlled roads and planned upgrade projects.
- Local business groups including Illawarra Business Chamber, Regional Development Australia — Illawarra and the Illawarra Innovative Industry Network (i3net).

### **5.2.3 Completed activities**

In addition to the stakeholder engagement detailed above, the following activities have also been undertaken during the scoping phase:

- Factsheets produced – printed and sent to local councils and local APA office (Wilton) and available through Project website
- Port Kembla to Wilton Pipeline website launched - <https://www.apa.com.au/pk2w>
- Interactive map of Project area launched (access through link on Project website) – ability to comment / provide feedback on Project directly
- Project email address active ([pk2w@apa.com.au](mailto:pk2w@apa.com.au))
- 1800 Project hotline number established (1800 220 401)
- Elected government representatives have been informed of the Project in writing
- Direct telephone conversations and initial meetings (where available) with landowners.

## **5.3 Ongoing stakeholder engagement**

APA is committed to a comprehensive community engagement process at all stages of the Project. This will include ongoing contact by our project team with landowners affected by the preliminary pipeline route options as well as opportunities for the general community to be fully informed and provide feedback.

APA has developed a Stakeholder Engagement Strategy for the project which will be implemented throughout the EIS process. Activities planned during the EIS process include:

- Community information sessions, which have been scheduled in Wollongong on 5 December 2019 and Wollondilly on 10 December 2019.
- Introductory meetings with the Tharawal and Illawarra Local Aboriginal Land Councils are scheduled for 4 and 5 December respectively.
- Consultation with landowners seeking access to private lands to facilitate field investigations, surveys and technical studies
- Ongoing engagement with government agencies
- Distribution of Project Newsletters (to detail Project status, upcoming survey activity, upcoming consultation activities, schedule update and any update FAQs)
- Potential to attend relevant local events / conferences
- Maintenance of project website, interactive webmap, project email, 1800 number etc. for duration of project.



Additionally, there will be multiple opportunities for community and stakeholder engagement and feedback throughout the assessment process. This would include but not be limited to the implementation of community engagement requirements identified in the SEARs, public exhibition of the EIS, public submissions on the EIS, and the submissions report.

## 6. Environmental assessment

A preliminary environmental assessment has been carried out to identify the relevant environmental matters for consideration and the appropriate level of assessment.

The relevant environmental matters for consideration were initially identified using the scoping worksheet in *Scoping an Environmental Impact Statement*<sup>4</sup> and provided as Appendix A.

The potential impacts of the project on the relevant environmental matters were then considered in order to determine the appropriate level of assessment, generally being either:

- Key issue — assessment in EIS
- Other issue — assessment in EIS
- Nil or negligible — no further assessment.

The relevant environmental matters, the potential impacts of the project on the relevant environmental matters and appropriate level of assessment are described further in Table 6-1.

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<sup>4</sup> Department of Planning, Industry and Environment 2019, *Scoping an Environmental Impact Statement*, Draft Environmental Impact Assessment Guidance Series June 2017, <https://www.planning.nsw.gov.au/-/media/Files/DPE/Guidelines/guideline-3-draft-scoping-an-environmental-impact-statement-2017-06.pdf>

**Table 6-1 Environmental scoping assessment**

| Issue   | Sub issue | Discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Scope                                                                                           |
|---------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Amenity | Acoustic  | <p>Construction activities including using machinery, clearing and excavation will generate noise that will have the potential to affect sensitive receptors, and specifically residences at the Port Kembla and Wilton ends of the project. These impacts will be limited in their extent and duration given the relatively small construction footprint and progressive nature of construction along the pipeline alignment.</p> <p>Operation will generally have less potential to generate noise that will affect sensitive receptors however some supporting infrastructure such as the delivery facility will have the potential to generate noise. These impacts will be limited given the likely separation of the supporting infrastructure and sensitive receptors as well as potential incorporation of mitigation in infrastructure design.</p> | Other issue —<br><br>detailed noise and vibration assessment to be completed as part of the EIS |
|         | Visual    | <p>Construction activities will have the potential to have temporary visual impacts at sensitive visual receptors such as residences, roads, parks and natural areas. Construction activities will also have potential visual impacts on the Illawarra Escarpment. These impacts will be limited in their extent and duration given the relatively small construction footprint and progressive nature of construction along the pipeline alignment.</p> <p>Operation will generally have less potential to generate visual impacts as the project will be predominantly below ground however some supporting infrastructure such as the delivery facility will have potential to be visible from sensitive visual receptors, depending on its location.</p>                                                                                                | Other issue —<br><br>detailed landscape and visual Assessment to be completed as part of EIS    |
|         | Odour     | The project is not expected to generate odour. While natural gas is predominantly methane, which is naturally odourless, odorant may be applied to the gas to enable human detection in the event of a leak or                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Nil or negligible —<br><br>no further assessment                                                |



| Issue  | Sub issue             | Discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Scope                                                              |
|--------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|
|        |                       | other accidental loss of gas as a safety measure. Day to day operation of the project will not involve such releases of gas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                    |
|        | Microclimate          | The project will not have any microclimate effects.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Nil or negligible —<br>no further assessment                       |
| Access | Access to property    | <p>Construction activities around roads and property will have the potential to temporarily affect access to property, mainly at the Port Kembla and Wilton ends of the project. Impacts will be limited in their extent and duration given the relatively small construction footprint and progressive nature of construction along the pipeline alignment.</p> <p>Following restoration works at the end of construction, and throughout operation, the project will have no persisting effect on access to property except for the potential occasional requirement for maintenance works.</p> | Other issue —<br>Land holder consultation and consideration in EIS |
|        | Utilities             | <p>Construction activities around roads and utility easements will have the potential to require temporary disruption or relocation of utilities. These impacts will be avoided as far as reasonably practicable through the detailed design of the project and appropriate identification of existing utilities prior to construction.</p> <p>The project will have no persisting effects on utilities.</p>                                                                                                                                                                                      | Other issue —<br>Stakeholder consultation and consideration in EIS |
|        | Road and rail network | Construction activities around roads and railways will have the potential to affect their operation, efficiency and safety. As stated in section 2, sealed roads and railways will be crossed using trenchless methods such as horizontal boring or horizontal directional drilling. As such, direct impacts to the road and rail network will be limited to relatively minor unsealed roads. All disturbed roads will be restored to similar to pre-existing condition.                                                                                                                          | Other issue —<br>Stakeholder consultation and consideration in EIS |

| Issue             | Sub issue             | Discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Scope                                                                 |
|-------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
|                   |                       | <p>Construction activities will also involve additional vehicle movements on the road network including mobilisation of the workforce and delivery of construction materials.</p> <p>During operation the project will have no persisting effects on the road and rail network.</p>                                                                                                                                                                                                                                                                                                           |                                                                       |
|                   | Offsite parking       | The project is not expected to affect offsite parking as it does not intersect any dedicated parking areas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Nil or negligible —<br>no further assessment                          |
| Built environment | Public domain         | <p>Construction activity around roads and public areas will have the potential to temporarily disrupt these areas. As stated in section 2, sealed roads, railways and other high sensitivity areas will be crossed by trenchless methods. As such, the potential impacts will mainly be limited to open trenching at minor unsealed roads and open space.</p> <p>Following restoration works at the end of construction, and throughout operation, the project will have no persisting effect on the public domain except for the potential occasional requirement for maintenance works.</p> | Other issue —<br>Stakeholder consultation and consideration in EIS    |
|                   | Public infrastructure | See issues — utilities and road and rail network.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Other issue —<br>Stakeholder consultation and consideration in EIS    |
|                   | Other built assets    | The project is not expected to affect other built assets.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Nil or negligible —<br>no further assessment                          |
| Heritage          | Natural               | As shown in Appendix C, the project intersects a number of heritage items including Illawarra Escarpment Landscape Area under the <i>Wollongong Local Environmental Plan 2009</i> .                                                                                                                                                                                                                                                                                                                                                                                                           | Key issue —<br>Detailed heritage assessment undertaken as part of EIS |

| Issue | Sub issue           | Discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Scope                                                                            |
|-------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|
|       |                     | The construction and operation of the project will have the potential to affect the heritage values, including natural heritage values, of these heritage items — particularly the Illawarra Escarpment Landscape Area. The project will be designed to avoid impacts to heritage items as far as practicable.                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                  |
|       | Cultural            | <p>As shown in Appendix C, the project intersects a number of heritage items including Illawarra Escarpment Landscape Area under the <i>Wollongong Local Environmental Plan 2009</i>, Mount Kembla Colliery under the <i>Wollongong Local Environmental Plan 2009</i> and the <i>Heritage Act 1977</i>, and Upper Canal System (Pheasants Nest Weir to Prospect Reservoir) under the <i>Heritage Act 1977</i>.</p> <p>The construction and operation of the project will have the potential to affect the cultural heritage values of these heritage items. The project will be designed to avoid impacts to heritage items as far as practicable.</p>                                                                                                        | <p>Key issue —</p> <p>Detailed heritage assessment undertaken as part of EIS</p> |
|       | Aboriginal cultural | <p>There are a relatively large number of Aboriginal heritage sites recorded under the <i>National Parks and Wildlife Act 1974</i> in the region of the project. The region of the project, particularly the relatively undisturbed areas such as the Metropolitan Special Area, also has the potential to contain further previously unidentified Aboriginal heritage items.</p> <p>The construction of the project will have the potential to harm Aboriginal heritage items. Detailed heritage assessment will be undertaken as part of the EIS and in consultation with Aboriginal parties. The identified Aboriginal heritage sites will be avoided where practicable or managed in accordance with an Aboriginal cultural heritage management plan.</p> | <p>Key issue —</p> <p>Detailed heritage assessment undertaken as part of EIS</p> |
|       | Built               | As shown in Appendix C, the project intersects a number of heritage items including Mount Kembla Colliery under the <i>Wollongong Local Environmental Plan 2009</i> and <i>Heritage Act 1977</i> and Upper Canal                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Other issue —                                                                    |

| Issue     | Sub issue               | Discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Scope                                                                                                                                                                                          |
|-----------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |                         | System (Pheasants Nest Weir to Prospect Reservoir) under the <i>Heritage Act 1977</i> . The construction and operation of the project will have the potential to affect heritage values, including built heritage values, of these heritage items. The project will be designed to avoid impacts to heritage items as far as practicable.                                                                                                                                                                                                            | Detailed heritage assessment undertaken as part of EIS                                                                                                                                         |
| Community | Health                  | Construction activities, and particularly earthworks, will have the potential to generate emissions to air with associated potential health effects.<br><br>See issue — particulate matter.                                                                                                                                                                                                                                                                                                                                                          | Other issue —<br><br>potential health impacts associated with particulate emissions during construction will be considered as part of the Air Quality assessment completed as part of the EIS. |
|           | Safety                  | Construction activities, including hot works, have the potential to cause a bushfire. The operation of the project will also have the potential for gas fire or explosion. Both of these present risks to safety of people and property.<br><br>See issues — bushfire and hazardous development.                                                                                                                                                                                                                                                     | Other issue —<br><br>assessment in EIS                                                                                                                                                         |
|           | Services and facilities | Construction activities in the vicinity of community services and facilities have the potential to temporarily disrupt these services and facilities, primarily at the Port Kembla and Wilton ends of the project. Based on a preliminary review, community services and facilities in the vicinity of the project at Port Kembla include Figtree Public School, Figtree High School and Figtree Private Hospital whereas services and facilities in the vicinity of the project at Wilton include an environmental retreat and equestrian facility. | Other issue —<br><br>assessment in EIS                                                                                                                                                         |



| Issue    | Sub issue                        | Discussion                                                                                                                                                                                                                                                                                 | Scope                                                                                                                  |
|----------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
|          | Cohesion, capital and resilience | The project is not expected to cause impacts that will materially affect social cohesion, capital and resilience.                                                                                                                                                                          | Nil or negligible —<br>no further assessment                                                                           |
|          | Housing                          | Construction of the project will require a workforce that may require temporary accommodation in and around Port Kembla and/or Wilton. The workforce will therefore have the potential to temporarily affect availability of housing or other forms of accommodation during construction.  | Other issue —<br><br>Potential impacts considered as part of the social impact assessment prepared as part of the EIS. |
| Economic | Natural resource use             | Construction of the project will involve the consumption of natural resources embodied in construction materials such as pipeline lengths (steel) and fill material.                                                                                                                       | Other issue —<br>assessment in EIS                                                                                     |
|          | Livelihood                       | Construction and operation of the project will generate employment with potential benefits to livelihoods.                                                                                                                                                                                 | Other issue —<br>assessment in EIS                                                                                     |
|          | Opportunity cost                 | The project is not expected to cause impacts or preclude development that will represent an opportunity cost.                                                                                                                                                                              | Nil or negligible —<br>no further assessment                                                                           |
|          | Economic benefits                | Construction of the project will generate employment with potential economic benefits of income. As discussed in section 2, the project combined with the Port Kembla Gas Terminal will improve gas supply and market competition with benefits to gas users and the economy.              | Other issue —<br>assessment in EIS                                                                                     |
| Air      | Particulate matter               | Construction activities, particularly earthworks, have the potential to generate dust that will affect sensitive receptors, and specifically residences at the Port Kembla and Wilton ends of the project. These impacts will be limited in their extent and duration given the relatively | Other issue —<br><br>Detailed air quality assessment completed as part of the EIS                                      |

| Issue        | Sub issue             | Discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Scope                                                                         |
|--------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|
|              |                       | <p>small construction footprint and progressive nature of construction along the pipeline alignment and will be readily mitigated.</p> <p>The operation of machinery during construction will also have the potential to generate emissions from exhaust. These emissions will likely be negligible.</p> <p>Operation will generally have less potential to generate emissions that will affect sensitive receptors however some supporting infrastructure such as the delivery facility will have the potential to generate emissions. These impacts will be limited given the likely separation of the supporting infrastructure and sensitive receptors.</p> |                                                                               |
|              | Gases                 | The project will involve the reticulation of natural gas and as such there is potential for losses of gas to occur. Day to day operation of the project will not involve such releases of gas. Releases of gases would only occur due to deliberate depressurisation in response to an emergency situation, or a leak or other accidental loss of gas. Loss of gas will occur rarely, if ever, and will not be expected to have off site impacts.                                                                                                                                                                                                               | Other issue —<br>Considered as part of the air quality assessment for the EIS |
|              | Atmospheric emissions | Construction of the project is expected to have negligible atmospheric emissions. Operation of the project will have potential atmospheric emissions including potential fugitive emissions of gas as well as emissions from supporting infrastructure such as the delivery facility.                                                                                                                                                                                                                                                                                                                                                                           | Other issue —<br>Considered as part of the air quality assessment for the EIS |
| Biodiversity | Native vegetation     | <p>Construction activities, including clearing, in vegetated areas will have the potential to affect native vegetation. As shown in Appendix C, the project intersects a diversity of vegetation zones including areas potentially comprising:</p> <ul style="list-style-type: none"> <li>Coastal Upland Swamp in the Sydney Basin Bioregion, which is an endangered ecological community under the BC Act and EPBC Act</li> </ul>                                                                                                                                                                                                                              | Key issue —<br>Biodiversity Assessment Report completed as part of the EIS    |

| Issue | Sub issue                  | Discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Scope                                                                      |
|-------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
|       |                            | <ul style="list-style-type: none"> <li>Shale Sandstone Transition Forest in the Sydney Basin Bioregion, which is a critically endangered ecological community under the BC Act and EPBC Act</li> <li>Illawarra Subtropical Rainforest of the Sydney Basin Bioregion, which is an endangered ecological community under the BC Act and a critically endangered ecological community under the EPBC Act</li> <li>Illawarra Lowlands Grassy Woodland in the Sydney Basin Bioregion, which is an endangered ecological community under the BC Act and a critically endangered ecological community under the EPBC Act</li> </ul> <p>A number of threatened flora species have the potential to occur in the region of the project as shown in Appendix C and listed in Appendix D.</p> |                                                                            |
|       | Native fauna               | <p>Construction activities, including clearing, in potential fauna habitat have the potential to affect native fauna.</p> <p>A number of threatened fauna species have the potential to occur in the region of the project as shown in Appendix C and listed in Appendix D.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Key issue —<br>Biodiversity Assessment Report completed as part of the EIS |
| Land  | Stability and/or structure | <p>Construction activities, including excavation, may be carried out in some relatively steep/relief/unstable areas, including in particular the Illawarra Escarpment and potentially some other areas within the Metropolitan Special Area.</p> <p>The design of the project, including construction methodology, will be developed to ensure the stability and/or structure of these areas is maintained.</p>                                                                                                                                                                                                                                                                                                                                                                    | Other issue —<br>assessment in EIS                                         |

| Issue | Sub issue      | Discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Scope                                                                     |
|-------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|
|       | Soil chemistry | Construction activities, including excavation and stockpiling of topsoil and subsoil, in natural/agricultural landscapes will have the potential to affect soil chemistry.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Other issue — assessment in EIS                                           |
|       | Capability     | Construction activities, including excavation and stockpiling of topsoil and subsoil, in natural/agricultural landscapes will have the potential to affect land capability. This would more likely be a potential issue in rural and rural residential areas towards the Wilton end of the project.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Other issue — assessment in EIS                                           |
|       | Topography     | Construction activities, including excavation, in steep/relief/unstable areas will have the potential to affect topography. In general, such areas will be avoided and the project will be constructed on relatively flat or sloping land followed by restoration of disturbed areas to similar to pre-existing condition including recontouring as required.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Other issue — assessment in EIS                                           |
| Water | Water quality  | Construction activities, including excavation, near waterways, swamps, groundwater would have the potential to affect water quality. Potential impacts include erosion and sedimentation as well as accidental spills or leaks. Water quality is a particularly sensitive matter in the Metropolitan Special Area as it is a drinking water catchment. <i>State Environmental Planning Policy (Sydney Drinking Water Catchment) 2011</i> states that any development or activity proposed to be carried out on land to which the policy applies, including the Metropolitan Special Area, should incorporate Water NSW's recommended practices and standards or achieve outcomes not less than those achieved by those recommended practices and standards. It is expected that the project will be able to conform with these practices and standards and will have a neutral effect on water quality in the Metropolitan Special Area. The potential impacts of the project in the Metropolitan Special Area will be assessed further in the proposed water resources assessment in the EIS. | Key issue — water resources assessment to be completed as part of the EIS |



| Issue | Sub issue          | Discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Scope                                                                             |
|-------|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
|       | Water availability | Construction activities, including dust suppression and hydrostatic testing, would involve the use of water. The use of water for such activities would be relatively limited and would not be to an extent where it would materially affect water availability.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Key issue —<br>water resources assessment to be completed as part of the EIS      |
|       | Hydrological flows | Construction activities, including excavation, near waterways, swamps or groundwater would have the potential to affect hydrological flows. As discussed in section 2, any major waterways will be crossed using trenchless methods while only minor or ephemeral waterways will be crossed using open cut trenching, meaning impacts on hydrological flows in waterways are likely to be minimal. Construction activities including trenching or drilling near swamps will have the potential to create conduits for hydrological flows. The design of the project, including associated construction methodology, will be developed to ensure appropriate separation, barriers or other measures to prevent impacts to hydrological flows in swamps. As discussed in section 2, the pipeline depth will be in the order of one metre and accordingly there would generally be limited potential to encounter groundwater in greater than minor volumes along most of the project. | Key issue —<br>water resources assessment to be completed as part of the EIS      |
| Risks | Coastal hazards    | The eastern end of the project partly intersects a small section of the coastal environment area under <i>State Environmental Planning Policy (Coastal Management) 2018</i> . The project will have negligible effect on the coastal areas, coastal hazards or similar values and accordingly further assessment is not considered to be necessary.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Nil or negligible —<br>no further assessment                                      |
|       | Flood waters       | Construction activities and surface infrastructure near waterways would have the potential to affect, and be affected by, flood waters. Potential impacts would be limited given the relatively small construction footprint, progressive nature of construction along the pipeline alignment, and that construction would not be carried out in flood conditions. The pipeline                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Other issue —<br>considered as part of the Water Resources assessment for the EIS |

| Issue | Sub issue    | Discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Scope                                                                                   |
|-------|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
|       |              | will be buried and have negligible potential to influence flood behaviour following completion of construction.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                         |
|       | Bushfire     | <p>Construction activities, including hot work, would have the potential to cause a bushfire. This is particularly a risk while working in remote and densely vegetated areas such as the Metropolitan Special Area. Measures to avoid, mitigate and manage potential impacts relating to bushfire will therefore need to be developed to ensure the risk remains very low.</p> <p>The operation of the project would involve the reticulation of flammable gas in the pipeline and supporting infrastructure in areas that may be prone to bushfire. The potential for interaction between project infrastructure and bushfire would be considered further as part of the project design.</p> | <p>Other issue —</p> <p>Bushfire risk assessment to be completed as part of the EIS</p> |
|       | Undermining  | Construction activities including trenchless methods such as drilling or boring would have the potential to undermine other surface infrastructure. The volume of material that would be excavated by these trenchless methods would be small and, combined with a depth of excavation in the order of multiple metres, unlikely to result in any material impacts. The potential impacts of underground mining operations on the project are discussed below. See issue — subsidence.                                                                                                                                                                                                         | Nil or negligible —<br>no further assessment                                            |
|       | Steep slopes | Construction activities in steep areas, including Illawarra Escarpment, could represent a hazard. The design of the project, including the construction methodology, will be developed to ensure the project is safely constructible.                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Other issue —<br>assessment in EIS                                                      |

| Issue | Sub issue             | Discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Scope                                                                                        |
|-------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
|       | Hazardous development | <p>The project will involve the operation of gas infrastructure with potential for gas fire or explosion, which could have consequences for surrounding people and property.</p> <p>These and other hazards will be assessed in accordance with the Department of Planning, Industry and Environment planning guidelines for hazardous development<sup>5</sup>.</p> <p>The pipeline will be designed in accordance with Australian Standard AS 2885.0—2008 <i>Pipelines—Gas and liquid petroleum</i> and <i>Code of Environmental Practice Onshore Pipelines</i>.</p> | <p>Key issue —</p> <p>A preliminary hazard analysis will be completed as part of the EIS</p> |
|       | Subsidence            | <p>The project would be in the vicinity of underground mining operations and specifically the Dendrobium Mine. As discussed in section 5, stakeholder engagement has included South32 as the operator of the Dendrobium Mine with regard to potential interfaces of the project with past, current and future mining operations. It is expected that with further stakeholder engagement and assessment in the EIS the potential interaction of the project and the Dendrobium Mine will be negligible.</p>                                                           | <p>Other issue —</p> <p>assessment in EIS</p>                                                |

<sup>5</sup> Department of Planning, Industry and Environment 2019, Planning guidelines for hazardous development, <https://www.planning.nsw.gov.au/Policy-and-Legislation/Hazards>

## 7. Conclusion

This scoping report has provided preliminary information on the project and its potential environment impacts in support of a request for SEARs under the *Environmental Planning and Assessment Act 1979*. It has identified the relevant environmental matters, the potential impacts of the project on the relevant environmental matters and appropriate level of assessment.

In particular, it has identified the following key issues for assessment in the EIS:

- Heritage — including non-Aboriginal and Aboriginal heritage
- Biodiversity — including threatened species and ecological communities
- Water — including waterways, swamps and groundwater
- Risk — to the extent the project is a hazardous development.

Other issues for assessment in the EIS include potential amenity impacts such as acoustic, visual or air quality impacts; potential impacts to property, access, public space, utilities, road and rail; community and economic impacts; impacts to land including topography and soil; and potential issues associated with construction on steep terrain such as the Illawarra Escarpment.



## **Appendix A** — Scoping worksheet

| Environmental Impact Statement (EIS) scoping worksheet for:                                                                                                                                                                                                |                   |                                  |                                                                                                   | Port Kembla to Wilton Gas Pipeline                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                               |           |           |              | Date:                                                           |                                                                                                                                                                |                                                                                                                      |                                                                                                                                                                                  | 1/11/2019                                                                   |                                                          |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------|---------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------|--------------|-----------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------|--|
| What matters might be impacted?                                                                                                                                                                                                                            |                   |                                  | What activities might cause an impact?                                                            |                                                                                                                                                                                                                                                                                                                                                                           | What are the characteristics of the impact?                                                                                                                                                                   |           |           |              |                                                                 | How will the impact be managed?                                                                                                                                | What are the community and other stakeholder views?                                                                  | What level of assessment and engagement is required in the EIS preparation phase?                                                                                                |                                                                             |                                                          |  |
| Social and environmental matters<br>I.e. natural or human assets or values aggregated at the level most appropriate for informing management and assessment requirements<br><br>Click on the matter for a description, or the link above for full glossary |                   |                                  | Without any mitigation, is the proposal likely to impact on the matter?<br><br>(Select from list) | If there is a 'likely' impact:<br>1. list the activities expected to cause the impact; and<br>2. if applicable, list the receptor being impacted and its status.<br>E.g. construction noise will be heard at nearby school<br><br>If 'unlikely', briefly explain why. Has the impact been actively avoided through project design or site location?<br><br>(Manual entry) | Is the impact, without mitigation, expected to cause a material effect with regard to its...<br><br>(Answer 'Y', 'N' or '?')<br>Click on characteristic for description, or the link above for further detail |           |           |              | Does the impact need assessment in the EIS?<br><br>(Auto fills) | Is the impact, without mitigation, expected to have a material cumulative effect with other impacts (including from other projects)?<br><br>(Select from list) | What safeguards and management measures are expected to be required to address the impact?<br><br>(Select from list) | Are there community or other stakeholder concerns regarding the impact or activity?<br><br>(Based on engagement with community and other stakeholders)<br><br>(Select from list) | Expected level of assessment and/or engagement required<br><br>(Auto fills) | Relevant section in Scoping Report<br><br>(Manual entry) |  |
|                                                                                                                                                                                                                                                            |                   |                                  |                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                           | extent?                                                                                                                                                                                                       | duration? | severity? | sensitivity? |                                                                 |                                                                                                                                                                |                                                                                                                      |                                                                                                                                                                                  |                                                                             |                                                          |  |
| What does the proposal mean for people?                                                                                                                                                                                                                    | AMENITY           | acoustic                         | Likely                                                                                            | Construction activities including using machinery, clearing and excavation.                                                                                                                                                                                                                                                                                               | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | Unknown                                                                                                                                                        | Standard                                                                                                             | Yes                                                                                                                                                                              | Other Issue + CIA + Focussed Engagement                                     | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | visual                           | Likely                                                                                            | Construction activities and surface infrastructure.                                                                                                                                                                                                                                                                                                                       | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | Yes                                                                                                                                                                              | Other Issue + Focussed Engagement                                           | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | odour                            | Unlikely                                                                                          | —                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                               |           |           |              |                                                                 |                                                                                                                                                                |                                                                                                                      | No                                                                                                                                                                               | Scoping Report                                                              | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | microclimate                     | Unlikely                                                                                          | —                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                               |           |           |              |                                                                 |                                                                                                                                                                |                                                                                                                      | No                                                                                                                                                                               | Scoping Report                                                              | 6                                                        |  |
|                                                                                                                                                                                                                                                            | ACCESS            | access to property               | Likely                                                                                            | Construction activities around roads and property.                                                                                                                                                                                                                                                                                                                        | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | Yes                                                                                                                                                                              | Other Issue + Focussed Engagement                                           | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | utilities                        | Likely                                                                                            | Construction activities around roads and utility easements.                                                                                                                                                                                                                                                                                                               | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | No                                                                                                                                                                               | Other Issue                                                                 | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | road and rail network            | Likely                                                                                            | Construction activities around roads and railways.                                                                                                                                                                                                                                                                                                                        | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | No                                                                                                                                                                               | Other Issue                                                                 | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | offsite parking                  | Unlikely                                                                                          | —                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                               |           |           |              |                                                                 |                                                                                                                                                                |                                                                                                                      | No                                                                                                                                                                               | Scoping Report                                                              | 6                                                        |  |
|                                                                                                                                                                                                                                                            | BUILT ENVIRONMENT | public domain                    | Likely                                                                                            | Construction activity around roads and public areas.                                                                                                                                                                                                                                                                                                                      | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | Yes                                                                                                                                                                              | Other Issue + Focussed Engagement                                           | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | public infrastructure            | Likely                                                                                            | Construction around roads, railways and utility easements.                                                                                                                                                                                                                                                                                                                | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | Yes                                                                                                                                                                              | Other Issue + Focussed Engagement                                           | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | other built assets               | Unlikely                                                                                          | —                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                               |           |           |              |                                                                 |                                                                                                                                                                |                                                                                                                      | No                                                                                                                                                                               | Scoping Report                                                              | 6                                                        |  |
|                                                                                                                                                                                                                                                            | HERITAGE          | natural                          | Likely                                                                                            | Construction activities, including clearing, in natural areas.                                                                                                                                                                                                                                                                                                            | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Project Specific                                                                                                     | Yes                                                                                                                                                                              | Key Issue + Focussed Engagement                                             | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | cultural                         | Likely                                                                                            | Construction activities and vibration in vicinity of heritage items.                                                                                                                                                                                                                                                                                                      | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Project Specific                                                                                                     | Yes                                                                                                                                                                              | Key Issue + Focussed Engagement                                             | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | Aboriginal cultural              | Likely                                                                                            | Construction activities in vicinity of Aboriginal heritage items.                                                                                                                                                                                                                                                                                                         | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Project Specific                                                                                                     | Yes                                                                                                                                                                              | Key Issue + Focussed Engagement                                             | 6                                                        |  |
|                                                                                                                                                                                                                                                            | COMMUNITY         | built                            | Likely                                                                                            | Construction activities and vibration in vicinity of heritage items.                                                                                                                                                                                                                                                                                                      | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | Yes                                                                                                                                                                              | Other Issue + Focussed Engagement                                           | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | health                           | Likely                                                                                            | Construction activities and associated air quality impacts.                                                                                                                                                                                                                                                                                                               | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | Yes                                                                                                                                                                              | Other Issue + Focussed Engagement                                           | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | safety                           | Likely                                                                                            | Bushfire during construction. Gas fire or explosion during operation.                                                                                                                                                                                                                                                                                                     | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | Unknown                                                                                                                                                        | Standard                                                                                                             | Yes                                                                                                                                                                              | Other Issue + CIA + Focussed Engagement                                     | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | services and facilities          | Likely                                                                                            | Construction activities in the vicinity of services and facilities.                                                                                                                                                                                                                                                                                                       | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | No                                                                                                                                                                               | Other Issue                                                                 | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | cohesion, capital and resilience | Unlikely                                                                                          | —                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                               |           |           |              |                                                                 |                                                                                                                                                                |                                                                                                                      | Yes                                                                                                                                                                              | Scoping Report + Explain avoidance                                          | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | housing                          | Likely                                                                                            | Construction workforce requiring temporary accommodation.                                                                                                                                                                                                                                                                                                                 | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | Unknown                                                                                                                                                        | Standard                                                                                                             | No                                                                                                                                                                               | Other Issue + CIA                                                           | 6                                                        |  |
|                                                                                                                                                                                                                                                            | ECONOMIC          | natural resource use             | Likely                                                                                            | Consumption of construction materials. Transport of natural gas.                                                                                                                                                                                                                                                                                                          | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | No                                                                                                                                                                               | Other Issue                                                                 | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | livelihood                       | Likely                                                                                            | Creation of jobs during construction and operation.                                                                                                                                                                                                                                                                                                                       | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | No                                                                                                                                                                               | Other Issue                                                                 | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | opportunity cost                 | Unlikely                                                                                          | —                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                               |           |           |              |                                                                 |                                                                                                                                                                |                                                                                                                      | No                                                                                                                                                                               | Scoping Report                                                              | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | economic benefits                | Likely                                                                                            | Creation of jobs and benefits of gas supply for industry.                                                                                                                                                                                                                                                                                                                 | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | No                                                                                                                                                                               | Other Issue                                                                 | 6                                                        |  |
| What does the proposal mean for the natural environment?                                                                                                                                                                                                   | AIR               | particulate matter               | Likely                                                                                            | Construction activities, particularly earthworks, generating dust.                                                                                                                                                                                                                                                                                                        | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | Unknown                                                                                                                                                        | Standard                                                                                                             | Yes                                                                                                                                                                              | Other Issue + CIA + Focussed Engagement                                     | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | gases                            | Likely                                                                                            | Construction, including operation of machinery, and surface infrastructure.                                                                                                                                                                                                                                                                                               | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | Unknown                                                                                                                                                        | Standard                                                                                                             | Yes                                                                                                                                                                              | Other Issue + CIA + Focussed Engagement                                     | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | atmospheric emissions            | Likely                                                                                            | Atmospheric emissions during operation, including potential fugitives.                                                                                                                                                                                                                                                                                                    | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | Unknown                                                                                                                                                        | Standard                                                                                                             | Yes                                                                                                                                                                              | Other Issue + CIA + Focussed Engagement                                     | 6                                                        |  |
|                                                                                                                                                                                                                                                            | BIODIVERSITY      | native vegetation                | Likely                                                                                            | Construction activities, including clearing, in vegetated areas.                                                                                                                                                                                                                                                                                                          | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | Unknown                                                                                                                                                        | Project Specific                                                                                                     | Yes                                                                                                                                                                              | Key Issue + CIA + Focussed Engagement                                       | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | native fauna                     | Likely                                                                                            | Construction activities, including clearing, in potential fauna habitat.                                                                                                                                                                                                                                                                                                  | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | Unknown                                                                                                                                                        | Project Specific                                                                                                     | Yes                                                                                                                                                                              | Key Issue + CIA + Focussed Engagement                                       | 6                                                        |  |
|                                                                                                                                                                                                                                                            | LAND              | stability and/or structure       | Likely                                                                                            | Construction activities, including excavation, in steep/relief/unstable areas.                                                                                                                                                                                                                                                                                            | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | No                                                                                                                                                                               | Other Issue                                                                 | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | soil chemistry                   | Likely                                                                                            | Construction activities, including excavation, in natural/agricultural landscapes.                                                                                                                                                                                                                                                                                        | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | No                                                                                                                                                                               | Other Issue                                                                 | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | capability                       | Likely                                                                                            | Construction activities, including excavation, in natural/agricultural landscapes.                                                                                                                                                                                                                                                                                        | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | Yes                                                                                                                                                                              | Other Issue + Focussed Engagement                                           | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | topography                       | Likely                                                                                            | Construction activities, including excavation, in steep/relief/unstable areas.                                                                                                                                                                                                                                                                                            | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | No                                                                                                                                                                               | Other Issue                                                                 | 6                                                        |  |
|                                                                                                                                                                                                                                                            | WATER             | water quality                    | Likely                                                                                            | Construction activities, including excavation, near waterways, swamps, groundwater.                                                                                                                                                                                                                                                                                       | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | Yes                                                                                                                                                                              | Other Issue + Focussed Engagement                                           | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | water availability               | Likely                                                                                            | Construction activities involving the use of water, including dust suppression.                                                                                                                                                                                                                                                                                           | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | No                                                                                                                                                                               | Other Issue                                                                 | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | hydrological flows               | Likely                                                                                            | Construction activities, including excavation, near waterways, swamps, groundwater.                                                                                                                                                                                                                                                                                       | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Project Specific                                                                                                     | Yes                                                                                                                                                                              | Key Issue + Focussed Engagement                                             | 6                                                        |  |
| What risks does the proposal face?                                                                                                                                                                                                                         | RISKS             | coastal hazards                  | Unlikely                                                                                          | The eastern end of the project partly intersect the coastal environment area.                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                               |           |           |              |                                                                 |                                                                                                                                                                |                                                                                                                      | No                                                                                                                                                                               | Scoping Report                                                              | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | flood waters                     | Likely                                                                                            | Construction activities and surface infrastructure near waterways.                                                                                                                                                                                                                                                                                                        | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | No                                                                                                                                                                               | Other Issue                                                                 | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | bushfire                         | Likely                                                                                            | Construction activities, including hot work, and reticulation of flammable gas.                                                                                                                                                                                                                                                                                           | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | No                                                                                                                                                                               | Other Issue                                                                 | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | undermining                      | Unlikely                                                                                          | Construction activities including trenchless methods such as drilling or boring.                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                               |           |           |              |                                                                 |                                                                                                                                                                |                                                                                                                      | No                                                                                                                                                                               | Scoping Report                                                              | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | steep slopes                     | Likely                                                                                            | Construction activities in steep areas, including Illawarra Escarpment.                                                                                                                                                                                                                                                                                                   | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | No                                                                                                                                                                               | Other Issue                                                                 | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | hazardous development            | Likely                                                                                            | Operation of gas infrastructure with potential for gas fire or explosion.                                                                                                                                                                                                                                                                                                 | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | Unknown                                                                                                                                                        | Project Specific                                                                                                     | Yes                                                                                                                                                                              | Key Issue + CIA + Focussed Engagement                                       | 6                                                        |  |
|                                                                                                                                                                                                                                                            |                   | subsidence                       | Likely                                                                                            | Construction and operation in vicinity of underground mining operations.                                                                                                                                                                                                                                                                                                  | Y                                                                                                                                                                                                             | Y         | Y         | Y            | Yes                                                             | No                                                                                                                                                             | Standard                                                                                                             | Yes                                                                                                                                                                              | Other Issue + Focussed Engagement                                           | 6                                                        |  |

## **Appendix B** — Protected matters report



# EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 31/10/19 12:40:36

[Summary](#)

[Details](#)

[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

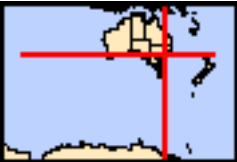
[Acknowledgements](#)



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[Coordinates](#)

Buffer: 1.0Km



# Summary

## Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

|                                                           |      |
|-----------------------------------------------------------|------|
| <a href="#">World Heritage Properties:</a>                | None |
| <a href="#">National Heritage Places:</a>                 | None |
| <a href="#">Wetlands of International Importance:</a>     | None |
| <a href="#">Great Barrier Reef Marine Park:</a>           | None |
| <a href="#">Commonwealth Marine Area:</a>                 | None |
| <a href="#">Listed Threatened Ecological Communities:</a> | 12   |
| <a href="#">Listed Threatened Species:</a>                | 84   |
| <a href="#">Listed Migratory Species:</a>                 | 47   |

## Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

|                                                    |      |
|----------------------------------------------------|------|
| <a href="#">Commonwealth Land:</a>                 | 3    |
| <a href="#">Commonwealth Heritage Places:</a>      | None |
| <a href="#">Listed Marine Species:</a>             | 52   |
| <a href="#">Whales and Other Cetaceans:</a>        | 4    |
| <a href="#">Critical Habitats:</a>                 | None |
| <a href="#">Commonwealth Reserves Terrestrial:</a> | None |
| <a href="#">Australian Marine Parks:</a>           | None |

## Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

|                                                  |      |
|--------------------------------------------------|------|
| <a href="#">State and Territory Reserves:</a>    | 1    |
| <a href="#">Regional Forest Agreements:</a>      | None |
| <a href="#">Invasive Species:</a>                | 48   |
| <a href="#">Nationally Important Wetlands:</a>   | None |
| <a href="#">Key Ecological Features (Marine)</a> | None |



# Details

## Matters of National Environmental Significance

Listed Threatened Ecological Communities

[ Resource Information ]

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

| Name                                                                                                                          | Status                | Type of Presence                      |
|-------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------|
| <a href="#">Castlereagh Scribbly Gum and Agnes Banks Woodlands of the Sydney Basin Bioregion</a>                              | Endangered            | Community may occur within area       |
| <a href="#">Coastal Swamp Oak (Casuarina glauca) Forest of New South Wales and South East Queensland ecological community</a> | Endangered            | Community may occur within area       |
| <a href="#">Coastal Upland Swamps in the Sydney Basin Bioregion</a>                                                           | Endangered            | Community likely to occur within area |
| <a href="#">Cooks River/Castlereagh Ironbark Forest of the Sydney Basin Bioregion</a>                                         | Critically Endangered | Community may occur within area       |
| <a href="#">Cumberland Plain Shale Woodlands and Shale-Gravel Transition Forest</a>                                           | Critically Endangered | Community likely to occur within area |
| <a href="#">Illawarra and south coast lowland forest and woodland ecological community</a>                                    | Critically Endangered | Community likely to occur within area |
| <a href="#">Illawarra-Shoalhaven Subtropical Rainforest of the Sydney Basin Bioregion</a>                                     | Critically Endangered | Community likely to occur within area |
| <a href="#">Shale Sandstone Transition Forest of the Sydney Basin Bioregion</a>                                               | Critically Endangered | Community likely to occur within area |
| <a href="#">Subtropical and Temperate Coastal Saltmarsh</a>                                                                   | Vulnerable            | Community likely to occur within area |
| <a href="#">Turpentine-Ironbark Forest of the Sydney Basin Bioregion</a>                                                      | Critically Endangered | Community likely to occur within area |
| <a href="#">Upland Basalt Eucalypt Forests of the Sydney Basin Bioregion</a>                                                  | Endangered            | Community may occur within area       |
| <a href="#">Western Sydney Dry Rainforest and Moist Woodland on Shale</a>                                                     | Critically Endangered | Community may occur within area       |

Listed Threatened Species

[ Resource Information ]

| Name                                                                  | Status                | Type of Presence                                                   |
|-----------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------|
| Birds                                                                 |                       |                                                                    |
| <a href="#">Anthochaera phrygia</a><br>Regent Honeyeater [82338]      | Critically Endangered | Foraging, feeding or related behaviour likely to occur within area |
| <a href="#">Botaurus poiciloptilus</a><br>Australasian Bittern [1001] | Endangered            | Species or species habitat likely to occur within area             |
| <a href="#">Calidris canutus</a><br>Red Knot, Knot [855]              | Endangered            | Species or species habitat may occur within area                   |
| <a href="#">Calidris ferruginea</a><br>Curlew Sandpiper [856]         | Critically Endangered | Species or species habitat known to occur within area              |
| <a href="#">Dasyornis brachypterus</a><br>Eastern Bristlebird [533]   | Endangered            | Species or species habitat likely to occur within area             |

| Name                                                                                                                     | Status                | Type of Presence                                       |
|--------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------|
| <a href="#">Diomedea antipodensis</a><br>Antipodean Albatross [64458]                                                    | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Diomedea antipodensis gibsoni</a><br>Gibson's Albatross [82270]                                              | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Diomedea epomophora</a><br>Southern Royal Albatross [89221]                                                  | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Diomedea exulans</a><br>Wandering Albatross [89223]                                                          | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Diomedea sanfordi</a><br>Northern Royal Albatross [64456]                                                    | Endangered            | Species or species habitat likely to occur within area |
| <a href="#">Grantiella picta</a><br>Painted Honeyeater [470]                                                             | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Hirundapus caudacutus</a><br>White-throated Needletail [682]                                                 | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Lathamus discolor</a><br>Swift Parrot [744]                                                                  | Critically Endangered | Species or species habitat likely to occur within area |
| <a href="#">Limosa lapponica baueri</a><br>Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]         | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Limosa lapponica menzbieri</a><br>Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432] | Critically Endangered | Species or species habitat may occur within area       |
| <a href="#">Macronectes giganteus</a><br>Southern Giant-Petrel, Southern Giant Petrel [1060]                             | Endangered            | Species or species habitat may occur within area       |
| <a href="#">Macronectes halli</a><br>Northern Giant Petrel [1061]                                                        | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#">Neophema chrysogaster</a><br>Orange-bellied Parrot [747]                                                     | Critically Endangered | Species or species habitat may occur within area       |
| <a href="#">Numenius madagascariensis</a><br>Eastern Curlew, Far Eastern Curlew [847]                                    | Critically Endangered | Species or species habitat likely to occur within area |
| <a href="#">Pachyptila turtur subantarctica</a><br>Fairy Prion (southern) [64445]                                        | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Rostratula australis</a><br>Australian Painted-snipe, Australian Painted Snipe [77037]                       | Endangered            | Species or species habitat likely to occur within area |
| <a href="#">Sternula nereis nereis</a><br>Australian Fairy Tern [82950]                                                  | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#">Thalassarche bulleri</a><br>Buller's Albatross, Pacific Albatross [64460]                                    | Vulnerable            | Species or species habitat may occur within area       |

| Name                                                                                                  | Status                | Type of Presence                                       |
|-------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------|
| <a href="#">Thalassarche bulleri_platei</a><br>Northern Buller's Albatross, Pacific Albatross [82273] | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#">Thalassarche cauta_cauta</a><br>Shy Albatross, Tasmanian Shy Albatross [82345]            | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Thalassarche cauta_steadi</a><br>White-capped Albatross [82344]                           | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Thalassarche eremita</a><br>Chatham Albatross [64457]                                     | Endangered            | Species or species habitat likely to occur within area |
| <a href="#">Thalassarche impavida</a><br>Campbell Albatross, Campbell Black-browed Albatross [64459]  | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#">Thalassarche melanophris</a><br>Black-browed Albatross [66472]                            | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#">Thalassarche salvini</a><br>Salvin's Albatross [64463]                                    | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Thinornis rubricollis_rubricollis</a><br>Hooded Plover (eastern) [66726]                  | Vulnerable            | Species or species habitat may occur within area       |
| Fish                                                                                                  |                       |                                                        |
| <a href="#">Epinephelus daemeli</a><br>Black Rockcod, Black Cod, Saddled Rockcod [68449]              | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Macquaria australasica</a><br>Macquarie Perch [66632]                                     | Endangered            | Species or species habitat known to occur within area  |
| <a href="#">Prototroctes maraena</a><br>Australian Grayling [26179]                                   | Vulnerable            | Species or species habitat may occur within area       |
| Frogs                                                                                                 |                       |                                                        |
| <a href="#">Heleioporus australiacus</a><br>Giant Burrowing Frog [1973]                               | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Litoria aurea</a><br>Green and Golden Bell Frog [1870]                                    | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Litoria littlejohni</a><br>Littlejohn's Tree Frog, Heath Frog [64733]                     | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Mixophyes balbus</a><br>Stuttering Frog, Southern Barred Frog (in Victoria) [1942]        | Vulnerable            | Species or species habitat likely to occur within area |
| Insects                                                                                               |                       |                                                        |
| <a href="#">Synemon plana</a><br>Golden Sun Moth [25234]                                              | Critically Endangered | Species or species habitat likely to occur within area |
| Mammals                                                                                               |                       |                                                        |
| <a href="#">Chalinolobus dwyeri</a><br>Large-eared Pied Bat, Large Pied Bat [183]                     | Vulnerable            | Species or species habitat known to occur within area  |

| Name                                                                                                                                                                                              | Status     | Type of Presence                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|--------------------------------------------------------|
| <a href="#">Dasyurus maculatus maculatus (SE mainland population)</a><br>Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll<br>(southeastern mainland population) [75184]                         | Endangered | Species or species habitat likely to occur within area |
| <a href="#">Isoodon obesulus obesulus</a><br>Southern Brown Bandicoot (eastern), Southern Brown Bandicoot (south-eastern) [68050]                                                                 | Endangered | Species or species habitat likely to occur within area |
| <a href="#">Megaptera novaeangliae</a><br>Humpback Whale [38]                                                                                                                                     | Vulnerable | Species or species habitat known to occur within area  |
| <a href="#">Petauroides volans</a><br>Greater Glider [254]                                                                                                                                        | Vulnerable | Species or species habitat known to occur within area  |
| <a href="#">Petrogale penicillata</a><br>Brush-tailed Rock-wallaby [225]                                                                                                                          | Vulnerable | Species or species habitat likely to occur within area |
| <a href="#">Phascolarctos cinereus (combined populations of Qld, NSW and the ACT)</a><br>Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104] | Vulnerable | Species or species habitat known to occur within area  |
| <a href="#">Potorous tridactylus tridactylus</a><br>Long-nosed Potoroo (SE Mainland) [66645]                                                                                                      | Vulnerable | Species or species habitat likely to occur within area |
| <a href="#">Pseudomys novaehollandiae</a><br>New Holland Mouse, Pookila [96]                                                                                                                      | Vulnerable | Species or species habitat likely to occur within area |
| <a href="#">Pteropus poliocephalus</a><br>Grey-headed Flying-fox [186]                                                                                                                            | Vulnerable | Roosting known to occur within area                    |
| Plants                                                                                                                                                                                            |            |                                                        |
| <a href="#">Acacia bynoeana</a><br>Bynoe's Wattle, Tiny Wattle [8575]                                                                                                                             | Vulnerable | Species or species habitat known to occur within area  |
| <a href="#">Allocasuarina glareicola</a><br>[21932]                                                                                                                                               | Endangered | Species or species habitat may occur within area       |
| <a href="#">Caladenia tessellata</a><br>Thick-lipped Spider-orchid, Daddy Long-legs [2119]                                                                                                        | Vulnerable | Species or species habitat likely to occur within area |
| <a href="#">Commersonia prostrata</a><br>Dwarf Kerrawang [87152]                                                                                                                                  | Endangered | Species or species habitat may occur within area       |
| <a href="#">Cryptostylis hunteriana</a><br>Leafless Tongue-orchid [19533]                                                                                                                         | Vulnerable | Species or species habitat likely to occur within area |
| <a href="#">Cynanchum elegans</a><br>White-flowered Wax Plant [12533]                                                                                                                             | Endangered | Species or species habitat known to occur within area  |
| <a href="#">Genoplesium baueri</a><br>Yellow Gnat-orchid [7528]                                                                                                                                   | Endangered | Species or species habitat likely to occur within area |
| <a href="#">Grevillea parviflora subsp. parviflora</a><br>Small-flower Grevillea [64910]                                                                                                          | Vulnerable | Species or species habitat known to occur within area  |
| <a href="#">Haloragis exalata subsp. exalata</a><br>Wingless Raspwort, Square Raspwort [24636]                                                                                                    | Vulnerable | Species or species habitat may occur within area       |



| Name                                                                                                                                       | Status                | Type of Presence                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------|
| <a href="#">Melaleuca biconvexa</a><br>Biconvex Paperbark [5583]                                                                           | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#">Melaleuca deanei</a><br>Deane's Melaleuca [5818]                                                                               | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Persicaria elatior</a><br>Knotweed, Tall Knotweed [5831]                                                                       | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Persoonia acerosa</a><br>Needle Geebung [7232]                                                                                 | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#">Persoonia bargoensis</a><br>Bargo Geebung [56267]                                                                              | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Persoonia hirsuta</a><br>Hairy Geebung, Hairy Persoonia [19006]                                                                | Endangered            | Species or species habitat known to occur within area  |
| <a href="#">Persoonia nutans</a><br>Nodding Geebung [18119]                                                                                | Endangered            | Species or species habitat may occur within area       |
| <a href="#">Pimelea spicata</a><br>Spiked Rice-flower [20834]                                                                              | Endangered            | Species or species habitat likely to occur within area |
| <a href="#">Pomaderris brunnea</a><br>Rufous Pomaderris [16845]                                                                            | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Pomaderris cotoneaster</a><br>Cotoneaster Pomaderris [2043]                                                                    | Endangered            | Species or species habitat may occur within area       |
| <a href="#">Pterostylis gibbosa</a><br>Illawarra Greenhood, Rufa Greenhood, Pouched Greenhood [4562]                                       | Endangered            | Species or species habitat likely to occur within area |
| <a href="#">Pterostylis saxicola</a><br>Sydney Plains Greenhood [64537]                                                                    | Endangered            | Species or species habitat likely to occur within area |
| <a href="#">Pultenaea aristata</a><br>[18062]                                                                                              | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Pultenaea glabra</a><br>Smooth Bush-pea, Swamp Bush-pea [11887]                                                                | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#">Syzygium paniculatum</a><br>Magenta Lilly Pilly, Magenta Cherry, Daguba, Scrub Cherry, Creek Lilly Pilly, Brush Cherry [20307] | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Thelymitra kangaloonica</a><br>Kangaloon Sun Orchid [81861]                                                                    | Critically Endangered | Species or species habitat likely to occur within area |
| <a href="#">Thesium australe</a><br>Austral Toadflax, Toadflax [15202]                                                                     | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Xerochrysum palustre</a><br>Swamp Everlasting, Swamp Paper Daisy [76215]                                                       | Vulnerable            | Species or species habitat likely to occur within area |

Reptiles



| Name                                                                                     | Status     | Type of Presence                                       |
|------------------------------------------------------------------------------------------|------------|--------------------------------------------------------|
| <a href="#">Caretta caretta</a><br>Loggerhead Turtle [1763]                              | Endangered | Species or species habitat likely to occur within area |
| <a href="#">Chelonia mydas</a><br>Green Turtle [1765]                                    | Vulnerable | Species or species habitat known to occur within area  |
| <a href="#">Dermochelys coriacea</a><br>Leatherback Turtle, Leathery Turtle, Luth [1768] | Endangered | Species or species habitat known to occur within area  |
| <a href="#">Eretmochelys imbricata</a><br>Hawksbill Turtle [1766]                        | Vulnerable | Species or species habitat known to occur within area  |
| <a href="#">Hoplocephalus bungaroides</a><br>Broad-headed Snake [1182]                   | Vulnerable | Species or species habitat known to occur within area  |
| <a href="#">Natator depressus</a><br>Flatback Turtle [59257]                             | Vulnerable | Species or species habitat known to occur within area  |

| Sharks                                                                                                        |                       |                                                        |
|---------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------|
| <a href="#">Carcharias taurus (east coast population)</a><br>Grey Nurse Shark (east coast population) [68751] | Critically Endangered | Species or species habitat likely to occur within area |
| <a href="#">Carcharodon carcharias</a><br>White Shark, Great White Shark [64470]                              | Vulnerable            | Species or species habitat likely to occur within area |

| Listed Migratory Species                                                                         |            | [ <a href="#">Resource Information</a> ]               |
|--------------------------------------------------------------------------------------------------|------------|--------------------------------------------------------|
| * Species is listed under a different scientific name on the EPBC Act - Threatened Species list. |            |                                                        |
| Name                                                                                             | Threatened | Type of Presence                                       |
| Migratory Marine Birds                                                                           |            |                                                        |
| <a href="#">Anous stolidus</a><br>Common Noddy [825]                                             |            | Species or species habitat may occur within area       |
| <a href="#">Apus pacificus</a><br>Fork-tailed Swift [678]                                        |            | Species or species habitat likely to occur within area |
| <a href="#">Ardenna grisea</a><br>Sooty Shearwater [82651]                                       |            | Species or species habitat likely to occur within area |
| <a href="#">Calonectris leucomelas</a><br>Streaked Shearwater [1077]                             |            | Species or species habitat known to occur within area  |
| <a href="#">Diomedea antipodensis</a><br>Antipodean Albatross [64458]                            | Vulnerable | Species or species habitat likely to occur within area |
| <a href="#">Diomedea epomophora</a><br>Southern Royal Albatross [89221]                          | Vulnerable | Species or species habitat likely to occur within area |
| <a href="#">Diomedea exulans</a><br>Wandering Albatross [89223]                                  | Vulnerable | Species or species habitat likely to occur within area |
| <a href="#">Diomedea sanfordi</a><br>Northern Royal Albatross [64456]                            | Endangered | Species or species habitat likely to occur within area |
| <a href="#">Fregata ariel</a><br>Lesser Frigatebird, Least Frigatebird [1012]                    |            | Species or species habitat likely to occur             |

| Name                                                                                                 | Threatened  | Type of Presence                                             |
|------------------------------------------------------------------------------------------------------|-------------|--------------------------------------------------------------|
|                                                                                                      |             | within area                                                  |
| <a href="#">Macronectes giganteus</a><br>Southern Giant-Petrel, Southern Giant Petrel [1060]         | Endangered  | Species or species habitat may occur within area             |
| <a href="#">Macronectes halli</a><br>Northern Giant Petrel [1061]                                    | Vulnerable  | Species or species habitat may occur within area             |
| <a href="#">Thalassarche bulleri</a><br>Buller's Albatross, Pacific Albatross [64460]                | Vulnerable  | Species or species habitat may occur within area             |
| <a href="#">Thalassarche cauta</a><br>Tasmanian Shy Albatross [89224]                                | Vulnerable* | Species or species habitat likely to occur within area       |
| <a href="#">Thalassarche eremita</a><br>Chatham Albatross [64457]                                    | Endangered  | Species or species habitat likely to occur within area       |
| <a href="#">Thalassarche impavida</a><br>Campbell Albatross, Campbell Black-browed Albatross [64459] | Vulnerable  | Species or species habitat may occur within area             |
| <a href="#">Thalassarche melanophris</a><br>Black-browed Albatross [66472]                           | Vulnerable  | Species or species habitat may occur within area             |
| <a href="#">Thalassarche salvini</a><br>Salvin's Albatross [64463]                                   | Vulnerable  | Species or species habitat likely to occur within area       |
| <a href="#">Thalassarche steadi</a><br>White-capped Albatross [64462]                                | Vulnerable* | Species or species habitat likely to occur within area       |
| Migratory Marine Species                                                                             |             |                                                              |
| <a href="#">Balaenoptera edeni</a><br>Bryde's Whale [35]                                             |             | Species or species habitat may occur within area             |
| <a href="#">Caperea marginata</a><br>Pygmy Right Whale [39]                                          |             | Foraging, feeding or related behaviour may occur within area |
| <a href="#">Carcharodon carcharias</a><br>White Shark, Great White Shark [64470]                     | Vulnerable  | Species or species habitat likely to occur within area       |
| <a href="#">Caretta caretta</a><br>Loggerhead Turtle [1763]                                          | Endangered  | Species or species habitat likely to occur within area       |
| <a href="#">Chelonia mydas</a><br>Green Turtle [1765]                                                | Vulnerable  | Species or species habitat known to occur within area        |
| <a href="#">Dermochelys coriacea</a><br>Leatherback Turtle, Leathery Turtle, Luth [1768]             | Endangered  | Species or species habitat known to occur within area        |
| <a href="#">Eretmochelys imbricata</a><br>Hawksbill Turtle [1766]                                    | Vulnerable  | Species or species habitat known to occur within area        |
| <a href="#">Lagenorhynchus obscurus</a><br>Dusky Dolphin [43]                                        |             | Species or species habitat may occur within area             |
| <a href="#">Lamna nasus</a><br>Porbeagle, Mackerel Shark [83288]                                     |             | Species or species habitat likely to occur                   |

| Name                                                                                                                                   | Threatened            | Type of Presence                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------|
| <a href="#">Manta birostris</a><br>Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995] |                       | within area<br><br>Species or species habitat may occur within area |
| <a href="#">Megaptera novaeangliae</a><br>Humpback Whale [38]                                                                          | Vulnerable            | Species or species habitat known to occur within area               |
| <a href="#">Natator depressus</a><br>Flatback Turtle [59257]                                                                           | Vulnerable            | Species or species habitat known to occur within area               |
| Migratory Terrestrial Species                                                                                                          |                       |                                                                     |
| <a href="#">Cuculus optatus</a><br>Oriental Cuckoo, Horsfield's Cuckoo [86651]                                                         |                       | Species or species habitat may occur within area                    |
| <a href="#">Hirundapus caudacutus</a><br>White-throated Needletail [682]                                                               | Vulnerable            | Species or species habitat known to occur within area               |
| <a href="#">Monarcha melanopsis</a><br>Black-faced Monarch [609]                                                                       |                       | Species or species habitat known to occur within area               |
| <a href="#">Monarcha trivirgatus</a><br>Spectacled Monarch [610]                                                                       |                       | Species or species habitat may occur within area                    |
| <a href="#">Motacilla flava</a><br>Yellow Wagtail [644]                                                                                |                       | Species or species habitat may occur within area                    |
| <a href="#">Myiagra cyanoleuca</a><br>Satin Flycatcher [612]                                                                           |                       | Species or species habitat known to occur within area               |
| <a href="#">Rhipidura rufifrons</a><br>Rufous Fantail [592]                                                                            |                       | Species or species habitat known to occur within area               |
| Migratory Wetlands Species                                                                                                             |                       |                                                                     |
| <a href="#">Actitis hypoleucos</a><br>Common Sandpiper [59309]                                                                         |                       | Species or species habitat likely to occur within area              |
| <a href="#">Calidris acuminata</a><br>Sharp-tailed Sandpiper [874]                                                                     |                       | Species or species habitat known to occur within area               |
| <a href="#">Calidris canutus</a><br>Red Knot, Knot [855]                                                                               | Endangered            | Species or species habitat may occur within area                    |
| <a href="#">Calidris ferruginea</a><br>Curlew Sandpiper [856]                                                                          | Critically Endangered | Species or species habitat known to occur within area               |
| <a href="#">Calidris melanotos</a><br>Pectoral Sandpiper [858]                                                                         |                       | Species or species habitat likely to occur within area              |
| <a href="#">Gallinago hardwickii</a><br>Latham's Snipe, Japanese Snipe [863]                                                           |                       | Species or species habitat may occur within area                    |
| <a href="#">Limosa lapponica</a><br>Bar-tailed Godwit [844]                                                                            |                       | Species or species habitat known to occur within area               |
| <a href="#">Numenius madagascariensis</a><br>Eastern Curlew, Far Eastern Curlew [847]                                                  | Critically Endangered | Species or species                                                  |

| Name                                                                    | Threatened | Type of Presence                                                                                  |
|-------------------------------------------------------------------------|------------|---------------------------------------------------------------------------------------------------|
| <a href="#">Pandion haliaetus</a><br>Osprey [952]                       |            | habitat likely to occur within area<br><br>Species or species habitat likely to occur within area |
| <a href="#">Tringa nebularia</a><br>Common Greenshank, Greenshank [832] |            | Species or species habitat likely to occur within area                                            |

Other Matters Protected by the EPBC Act

|                   |                                          |
|-------------------|------------------------------------------|
| Commonwealth Land | <a href="#">[ Resource Information ]</a> |
|-------------------|------------------------------------------|

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

| Name                                                         |
|--------------------------------------------------------------|
| Commonwealth Land - Australian Telecommunications Commission |
| Commonwealth Land - Commonwealth Trading Bank of Australia   |
| Defence - AIRTC WOLLONGONG                                   |

|                       |                                          |
|-----------------------|------------------------------------------|
| Listed Marine Species | <a href="#">[ Resource Information ]</a> |
|-----------------------|------------------------------------------|

\* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

| Name                                                               | Threatened            | Type of Presence                                       |
|--------------------------------------------------------------------|-----------------------|--------------------------------------------------------|
| <b>Birds</b>                                                       |                       |                                                        |
| <a href="#">Actitis hypoleucos</a><br>Common Sandpiper [59309]     |                       | Species or species habitat likely to occur within area |
| <a href="#">Anous stolidus</a><br>Common Noddy [825]               |                       | Species or species habitat may occur within area       |
| <a href="#">Apus pacificus</a><br>Fork-tailed Swift [678]          |                       | Species or species habitat likely to occur within area |
| <a href="#">Ardea alba</a><br>Great Egret, White Egret [59541]     |                       | Species or species habitat known to occur within area  |
| <a href="#">Ardea ibis</a><br>Cattle Egret [59542]                 |                       | Species or species habitat may occur within area       |
| <a href="#">Calidris acuminata</a><br>Sharp-tailed Sandpiper [874] |                       | Species or species habitat known to occur within area  |
| <a href="#">Calidris canutus</a><br>Red Knot, Knot [855]           | Endangered            | Species or species habitat may occur within area       |
| <a href="#">Calidris ferruginea</a><br>Curlew Sandpiper [856]      | Critically Endangered | Species or species habitat known to occur within area  |

| Name                                                                                         | Threatened            | Type of Presence                                       |
|----------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------|
| <a href="#">Calidris melanotos</a><br>Pectoral Sandpiper [858]                               |                       | Species or species habitat likely to occur within area |
| <a href="#">Calonectris leucomelas</a><br>Streaked Shearwater [1077]                         |                       | Species or species habitat known to occur within area  |
| <a href="#">Chrysococcyx osculans</a><br>Black-eared Cuckoo [705]                            |                       | Species or species habitat likely to occur within area |
| <a href="#">Diomedea antipodensis</a><br>Antipodean Albatross [64458]                        | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Diomedea epomophora</a><br>Southern Royal Albatross [89221]                      | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Diomedea exulans</a><br>Wandering Albatross [89223]                              | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Diomedea gibsoni</a><br>Gibson's Albatross [64466]                               | Vulnerable*           | Species or species habitat likely to occur within area |
| <a href="#">Diomedea sanfordi</a><br>Northern Royal Albatross [64456]                        | Endangered            | Species or species habitat likely to occur within area |
| <a href="#">Fregata ariel</a><br>Lesser Frigatebird, Least Frigatebird [1012]                |                       | Species or species habitat likely to occur within area |
| <a href="#">Gallinago hardwickii</a><br>Latham's Snipe, Japanese Snipe [863]                 |                       | Species or species habitat may occur within area       |
| <a href="#">Haliaeetus leucogaster</a><br>White-bellied Sea-Eagle [943]                      |                       | Species or species habitat known to occur within area  |
| <a href="#">Hirundapus caudacutus</a><br>White-throated Needletail [682]                     | Vulnerable            | Species or species habitat known to occur within area  |
| <a href="#">Lathamus discolor</a><br>Swift Parrot [744]                                      | Critically Endangered | Species or species habitat likely to occur within area |
| <a href="#">Limosa lapponica</a><br>Bar-tailed Godwit [844]                                  |                       | Species or species habitat known to occur within area  |
| <a href="#">Macronectes giganteus</a><br>Southern Giant-Petrel, Southern Giant Petrel [1060] | Endangered            | Species or species habitat may occur within area       |
| <a href="#">Macronectes halli</a><br>Northern Giant Petrel [1061]                            | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#">Merops ornatus</a><br>Rainbow Bee-eater [670]                                    |                       | Species or species habitat may occur within area       |
| <a href="#">Monarcha melanopsis</a><br>Black-faced Monarch [609]                             |                       | Species or species habitat known to occur within area  |



| Name                                                                                                 | Threatened            | Type of Presence                                       |
|------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------|
| <a href="#">Monarcha trivirgatus</a><br>Spectacled Monarch [610]                                     |                       | Species or species habitat may occur within area       |
| <a href="#">Motacilla flava</a><br>Yellow Wagtail [644]                                              |                       | Species or species habitat may occur within area       |
| <a href="#">Myiagra cyanoleuca</a><br>Satin Flycatcher [612]                                         |                       | Species or species habitat known to occur within area  |
| <a href="#">Neophema chrysogaster</a><br>Orange-bellied Parrot [747]                                 | Critically Endangered | Species or species habitat may occur within area       |
| <a href="#">Numenius madagascariensis</a><br>Eastern Curlew, Far Eastern Curlew [847]                | Critically Endangered | Species or species habitat likely to occur within area |
| <a href="#">Pachyptila turtur</a><br>Fairy Prion [1066]                                              |                       | Species or species habitat known to occur within area  |
| <a href="#">Pandion haliaetus</a><br>Osprey [952]                                                    |                       | Species or species habitat likely to occur within area |
| <a href="#">Puffinus griseus</a><br>Sooty Shearwater [1024]                                          |                       | Species or species habitat likely to occur within area |
| <a href="#">Rhipidura rufifrons</a><br>Rufous Fantail [592]                                          |                       | Species or species habitat known to occur within area  |
| <a href="#">Rostratula benghalensis (sensu lato)</a><br>Painted Snipe [889]                          | Endangered*           | Species or species habitat likely to occur within area |
| <a href="#">Thalassarche bulleri</a><br>Buller's Albatross, Pacific Albatross [64460]                | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#">Thalassarche cauta</a><br>Tasmanian Shy Albatross [89224]                                | Vulnerable*           | Species or species habitat likely to occur within area |
| <a href="#">Thalassarche eremita</a><br>Chatham Albatross [64457]                                    | Endangered            | Species or species habitat likely to occur within area |
| <a href="#">Thalassarche impavida</a><br>Campbell Albatross, Campbell Black-browed Albatross [64459] | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#">Thalassarche melanophris</a><br>Black-browed Albatross [66472]                           | Vulnerable            | Species or species habitat may occur within area       |
| <a href="#">Thalassarche salvini</a><br>Salvin's Albatross [64463]                                   | Vulnerable            | Species or species habitat likely to occur within area |
| <a href="#">Thalassarche sp. nov.</a><br>Pacific Albatross [66511]                                   | Vulnerable*           | Species or species habitat may occur within area       |
| <a href="#">Thalassarche steadi</a><br>White-capped Albatross [64462]                                | Vulnerable*           | Species or species habitat likely to occur within area |

| Name                                                                                 | Threatened | Type of Presence                                       |
|--------------------------------------------------------------------------------------|------------|--------------------------------------------------------|
| <a href="#">Thinornis rubricollis</a><br>Hooded Plover [59510]                       |            | Species or species habitat may occur within area       |
| <a href="#">Thinornis rubricollis rubricollis</a><br>Hooded Plover (eastern) [66726] | Vulnerable | Species or species habitat may occur within area       |
| <a href="#">Tringa nebularia</a><br>Common Greenshank, Greenshank [832]              |            | Species or species habitat likely to occur within area |

| Reptiles                                                                                 |            |                                                        |
|------------------------------------------------------------------------------------------|------------|--------------------------------------------------------|
| <a href="#">Caretta caretta</a><br>Loggerhead Turtle [1763]                              | Endangered | Species or species habitat likely to occur within area |
| <a href="#">Chelonia mydas</a><br>Green Turtle [1765]                                    | Vulnerable | Species or species habitat known to occur within area  |
| <a href="#">Dermochelys coriacea</a><br>Leatherback Turtle, Leathery Turtle, Luth [1768] | Endangered | Species or species habitat known to occur within area  |
| <a href="#">Eretmochelys imbricata</a><br>Hawksbill Turtle [1766]                        | Vulnerable | Species or species habitat known to occur within area  |
| <a href="#">Natator depressus</a><br>Flatback Turtle [59257]                             | Vulnerable | Species or species habitat known to occur within area  |

| Whales and other Cetaceans                                    |            | [ Resource Information ]                                     |
|---------------------------------------------------------------|------------|--------------------------------------------------------------|
| Name                                                          | Status     | Type of Presence                                             |
| Mammals                                                       |            |                                                              |
| <a href="#">Balaenoptera edeni</a><br>Bryde's Whale [35]      |            | Species or species habitat may occur within area             |
| <a href="#">Caperea marginata</a><br>Pygmy Right Whale [39]   |            | Foraging, feeding or related behaviour may occur within area |
| <a href="#">Lagenorhynchus obscurus</a><br>Dusky Dolphin [43] |            | Species or species habitat may occur within area             |
| <a href="#">Megaptera novaeangliae</a><br>Humpback Whale [38] | Vulnerable | Species or species habitat known to occur within area        |

### Extra Information

| State and Territory Reserves |       | [ Resource Information ] |
|------------------------------|-------|--------------------------|
| Name                         | State |                          |
| Illawarra Escarpment         | NSW   |                          |

| Invasive Species                                                                                                                                                                                                                                                                                                                                                                                                  | [ Resource Information ] |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001. |                          |

| Name  | Status | Type of Presence |
|-------|--------|------------------|
| Birds |        |                  |

| Name                                                           | Status | Type of Presence                                       |
|----------------------------------------------------------------|--------|--------------------------------------------------------|
| Acridotheres tristis<br>Common Myna, Indian Myna [387]         |        | Species or species habitat likely to occur within area |
| Alauda arvensis<br>Skylark [656]                               |        | Species or species habitat likely to occur within area |
| Anas platyrhynchos<br>Mallard [974]                            |        | Species or species habitat likely to occur within area |
| Carduelis carduelis<br>European Goldfinch [403]                |        | Species or species habitat likely to occur within area |
| Columba livia<br>Rock Pigeon, Rock Dove, Domestic Pigeon [803] |        | Species or species habitat likely to occur within area |
| Lonchura punctulata<br>Nutmeg Mannikin [399]                   |        | Species or species habitat likely to occur within area |
| Passer domesticus<br>House Sparrow [405]                       |        | Species or species habitat likely to occur within area |
| Pycnonotus jocosus<br>Red-whiskered Bulbul [631]               |        | Species or species habitat likely to occur within area |
| Streptopelia chinensis<br>Spotted Turtle-Dove [780]            |        | Species or species habitat likely to occur within area |
| Sturnus vulgaris<br>Common Starling [389]                      |        | Species or species habitat likely to occur within area |
| Turdus merula<br>Common Blackbird, Eurasian Blackbird [596]    |        | Species or species habitat likely to occur within area |
| Frogs                                                          |        |                                                        |
| Rhinella marina<br>Cane Toad [83218]                           |        | Species or species habitat likely to occur within area |
| Mammals                                                        |        |                                                        |
| Bos taurus<br>Domestic Cattle [16]                             |        | Species or species habitat likely to occur within area |
| Canis lupus familiaris<br>Domestic Dog [82654]                 |        | Species or species habitat likely to occur within area |
| Felis catus<br>Cat, House Cat, Domestic Cat [19]               |        | Species or species habitat likely to occur within area |
| Feral deer<br>Feral deer species in Australia [85733]          |        | Species or species habitat likely to occur within area |
| Lepus capensis<br>Brown Hare [127]                             |        | Species or species habitat likely to occur within area |
| Mus musculus<br>House Mouse [120]                              |        | Species or species habitat likely to occur             |

| Name                                                                                                                                                                                                                                                                                                                                                                                                       | Status | Type of Presence                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----------------------------------------------------------------------------------------------------------------------|
| Oryctolagus cuniculus<br>Rabbit, European Rabbit [128]                                                                                                                                                                                                                                                                                                                                                     |        | within area<br><br>Species or species habitat likely to occur within area                                            |
| Rattus norvegicus<br>Brown Rat, Norway Rat [83]                                                                                                                                                                                                                                                                                                                                                            |        | Species or species habitat likely to occur within area                                                               |
| Rattus rattus<br>Black Rat, Ship Rat [84]                                                                                                                                                                                                                                                                                                                                                                  |        | Species or species habitat likely to occur within area                                                               |
| Vulpes vulpes<br>Red Fox, Fox [18]                                                                                                                                                                                                                                                                                                                                                                         |        | Species or species habitat likely to occur within area                                                               |
| Plants                                                                                                                                                                                                                                                                                                                                                                                                     |        |                                                                                                                      |
| Alternanthera philoxeroides<br>Alligator Weed [11620]                                                                                                                                                                                                                                                                                                                                                      |        | Species or species habitat likely to occur within area                                                               |
| Anredera cordifolia<br>Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]<br>Asparagus aethiopicus<br>Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]<br>Asparagus asparagoides<br>Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473] |        | Species or species habitat likely to occur within area<br><br>Species or species habitat likely to occur within area |
| Asparagus plumosus<br>Climbing Asparagus-fern [48993]                                                                                                                                                                                                                                                                                                                                                      |        | Species or species habitat likely to occur within area                                                               |
| Asparagus scandens<br>Asparagus Fern, Climbing Asparagus Fern [23255]                                                                                                                                                                                                                                                                                                                                      |        | Species or species habitat likely to occur within area                                                               |
| Cabomba caroliniana<br>Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]<br>Chrysanthemoides monilifera<br>Bitou Bush, Boneseed [18983]                                                                                                                                                                                           |        | Species or species habitat likely to occur within area<br><br>Species or species habitat may occur within area       |
| Chrysanthemoides monilifera subsp. monilifera<br>Boneseed [16905]                                                                                                                                                                                                                                                                                                                                          |        | Species or species habitat likely to occur within area                                                               |
| Chrysanthemoides monilifera subsp. rotundata<br>Bitou Bush [16332]                                                                                                                                                                                                                                                                                                                                         |        | Species or species habitat likely to occur within area                                                               |
| Cytisus scoparius<br>Broom, English Broom, Scotch Broom, Common Broom, Scottish Broom, Spanish Broom [5934]                                                                                                                                                                                                                                                                                                |        | Species or species habitat likely to occur within area                                                               |
| Eichhornia crassipes<br>Water Hyacinth, Water Orchid, Nile Lily [13466]                                                                                                                                                                                                                                                                                                                                    |        | Species or species habitat likely to occur within area                                                               |
| Genista monspessulana<br>Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]                                                                                                                                                                                                                                                                                       |        | Species or species habitat likely to occur within area                                                               |
| Genista sp. X Genista monspessulana<br>Broom [67538]                                                                                                                                                                                                                                                                                                                                                       |        | Species or species habitat may occur within                                                                          |

| Name                                                                                                                                                       | Status | Type of Presence                                       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------------------------------------------|
| Lantana camara                                                                                                                                             |        | area                                                   |
| Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892] |        | Species or species habitat likely to occur within area |
| Lycium ferocissimum                                                                                                                                        |        |                                                        |
| African Boxthorn, Boxthorn [19235]                                                                                                                         |        | Species or species habitat likely to occur within area |
| Nassella neesiana                                                                                                                                          |        |                                                        |
| Chilean Needle grass [67699]                                                                                                                               |        | Species or species habitat likely to occur within area |
| Nassella trichotoma                                                                                                                                        |        |                                                        |
| Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ) [18884]                                                                          |        | Species or species habitat likely to occur within area |
| Opuntia spp.                                                                                                                                               |        |                                                        |
| Prickly Pears [82753]                                                                                                                                      |        | Species or species habitat likely to occur within area |
| Pinus radiata                                                                                                                                              |        |                                                        |
| Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]                                                                                            |        | Species or species habitat may occur within area       |
| Rubus fruticosus aggregate                                                                                                                                 |        |                                                        |
| Blackberry, European Blackberry [68406]                                                                                                                    |        | Species or species habitat likely to occur within area |
| Sagittaria platyphylla                                                                                                                                     |        |                                                        |
| Delta Arrowhead, Arrowhead, Slender Arrowhead [68483]                                                                                                      |        | Species or species habitat likely to occur within area |
| Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii                                                                                          |        |                                                        |
| Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]                                                                               |        | Species or species habitat likely to occur within area |
| Salvinia molesta                                                                                                                                           |        |                                                        |
| Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]                                                                                          |        | Species or species habitat likely to occur within area |
| Senecio madagascariensis                                                                                                                                   |        |                                                        |
| Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]                                                                                                  |        | Species or species habitat likely to occur within area |
| Ulex europaeus                                                                                                                                             |        |                                                        |
| Gorse, Furze [7693]                                                                                                                                        |        | Species or species habitat likely to occur within area |



# Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

# Coordinates

-34.23056 150.71278,-34.23472 150.71222,-34.23944 150.71806,-34.25583 150.71944,-34.26361 150.72083,-34.28528 150.72333,-34.29167 150.72972,-34.29139 150.72972,-34.30889 150.73917,-34.33167 150.76583,-34.34861 150.79611,-34.35139 150.80556,-34.36111 150.81361,-34.36222 150.82083,-34.38361 150.835,-34.38722 150.83944,-34.39889 150.84083,-34.40167 150.83472,-34.40056 150.82861,-34.405 150.81778,-34.41056 150.81194,-34.41389 150.81194,-34.42111 150.81472,-34.42611 150.82972,-34.44 150.84611,-34.43833 150.85083,-34.44167 150.86194,-34.44444 150.86556,-34.44444 150.86806,-34.44611 150.87444,-34.44528 150.88306,-34.44361 150.86694,-34.44111 150.8625,-34.43778 150.85139,-34.43944 150.84611,-34.42611 150.83056,-34.42528 150.83361,-34.41611 150.83722,-34.40972 150.83556,-34.40861 150.83139,-34.40306 150.83472,-34.40028 150.84167,-34.39389 150.84194,-34.39528 150.84444,-34.39417 150.84583,-34.3925 150.8425,-34.38722 150.84083,-34.36944 150.82944,-34.35972 150.82167,-34.34667 150.80917,-34.33222 150.77917,-34.32278 150.77028,-34.32111 150.75806,-34.315 150.75194,-34.30944 150.74,-34.29167 150.7325,-34.2825 150.71556,-34.2675 150.71528,-34.26361 150.72,-34.25444 150.725,-34.24694 150.72667,-34.24139 150.73056,-34.23861 150.73389,-34.21806 150.74417

# Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

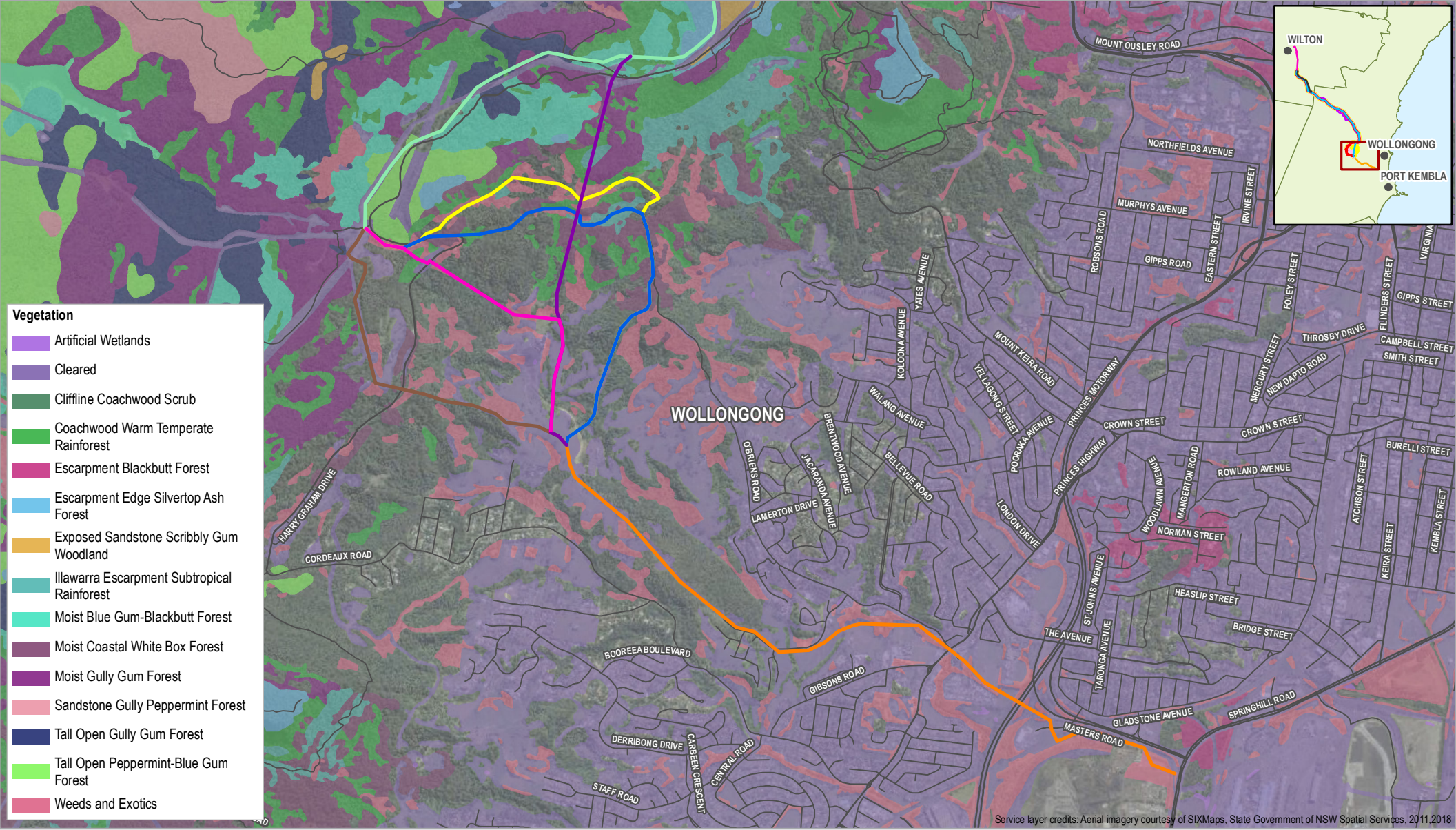
- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
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- [-Australian National Herbarium, Canberra](#)
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- [Forestry Corporation, NSW](#)
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- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

## **Appendix C** — Constraint maps

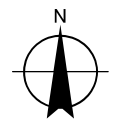




**LEGEND**  
**Preliminary Pipeline Route Options**  
— Coastal Plain Alignment  
— Escarpment Option 1  
— Escarpment Option 2  
— Escarpment Option 3  
— Escarpment Option 4  
— Escarpment Option 5  
— Plateau Alignment  
— Road

— LGA boundary

Paper Size ISO A4  
0 0.25 0.5 0.75 1  
Kilometers  
Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 56



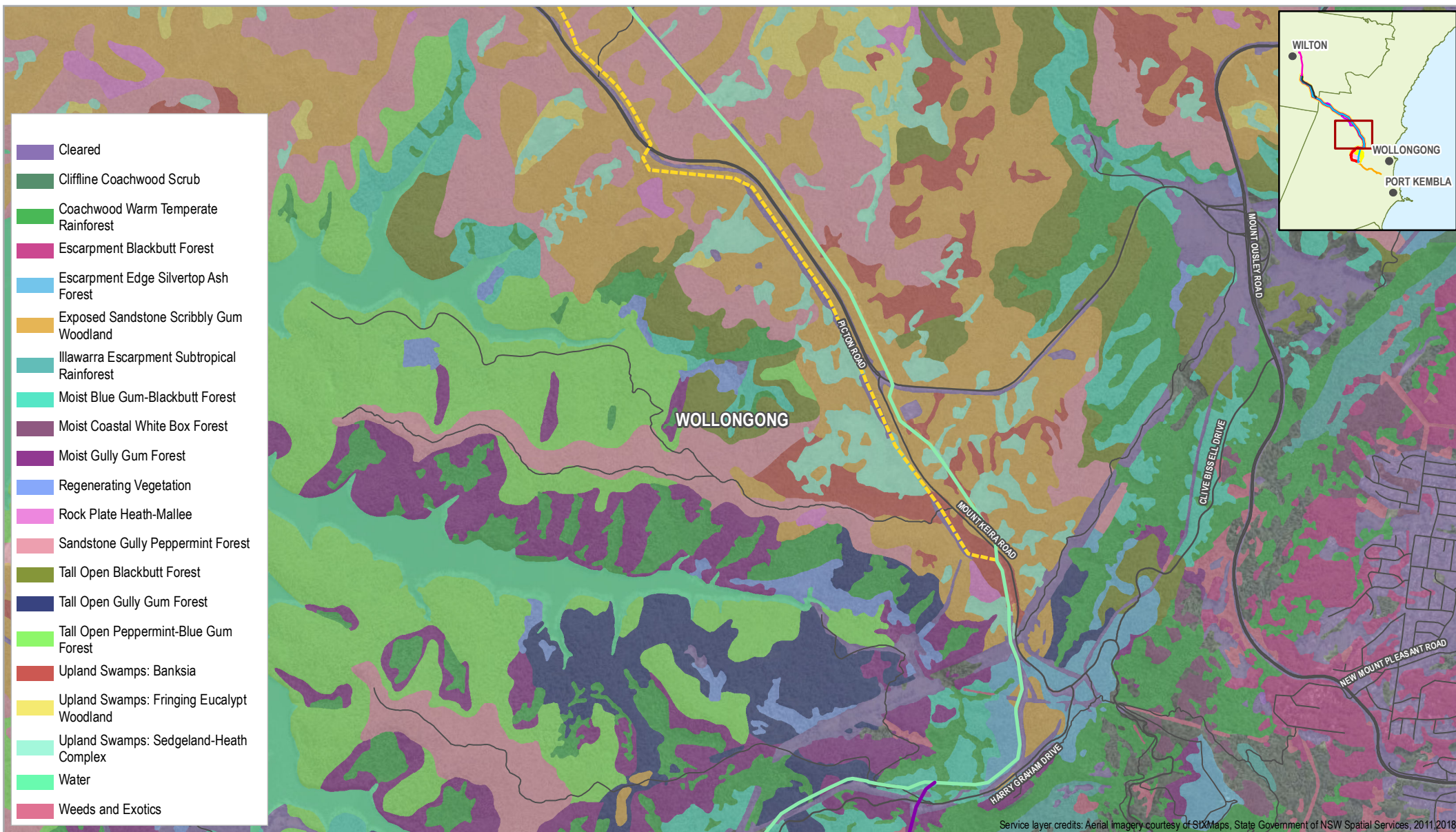
**APA Group**  
**Port Kembla to Wilton Gas Pipeline**

**Vegetation**

Project No. 21-12514771  
Revision No. -  
Date 3/12/2019

**FIGURE C-1**

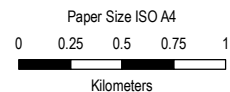




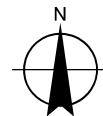
## LEGEND

### Preliminary Pipeline Route Options

- Escarpment Option 3
  - Plateau Alignment
  - Plateau Alternative 1
- Road
- LGA boundary



Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 56



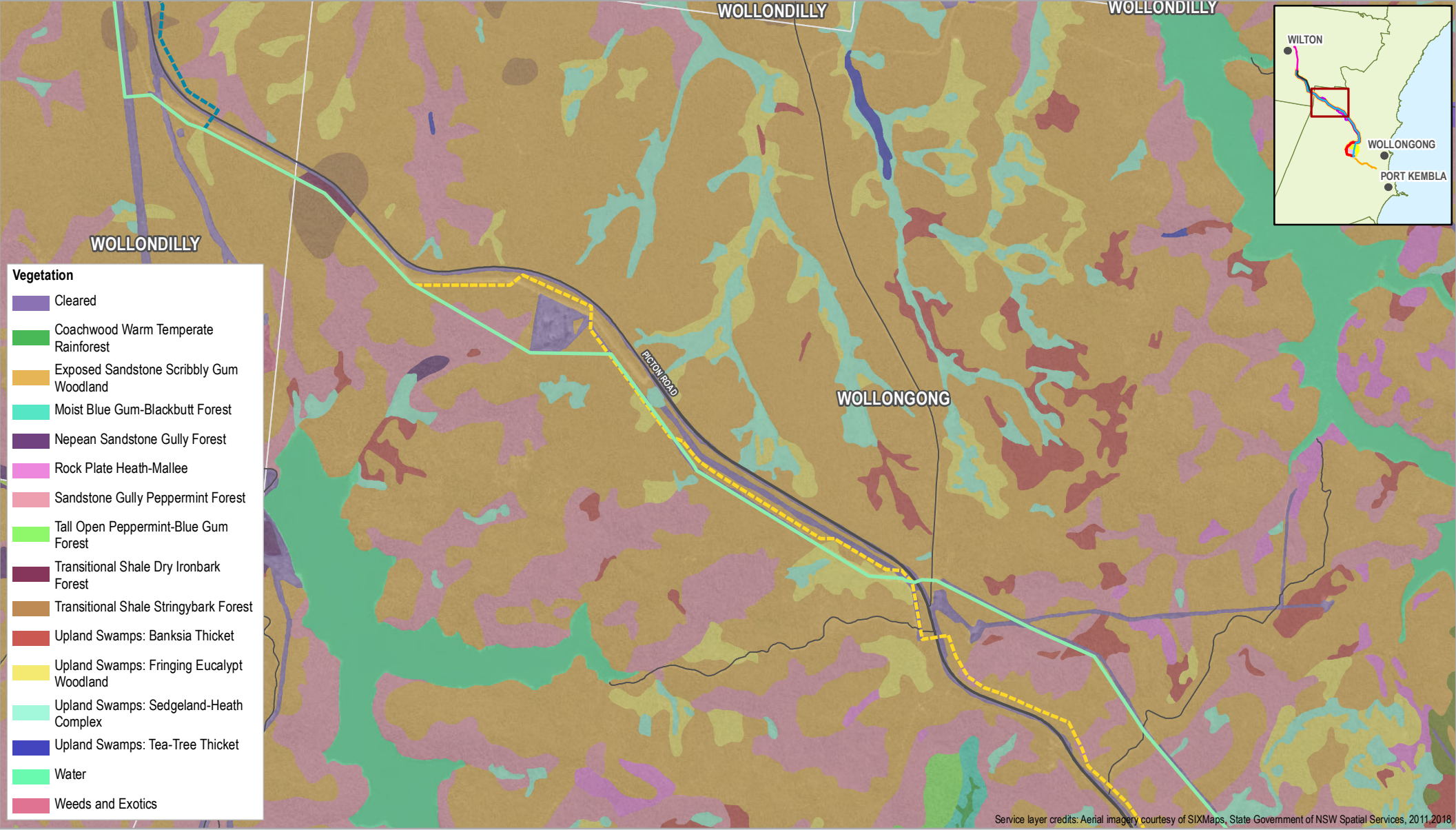
**APA Group**  
**Port Kembla to Wilton Gas Pipeline**

**Vegetation**

Project No. 21-12514771  
Revision No. -  
Date 3/12/2019

**FIGURE C-1**





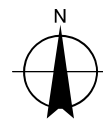
**LEGEND**  
**Preliminary Pipeline Route Options**  
— Road  
□ LGA boundary  
— Plateau Alignment  
- - - Plateau Alternative 1  
- - - Plateau Alternative 2

Paper Size ISO A4

0 0.25 0.5 0.75 1

Kilometers

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 56



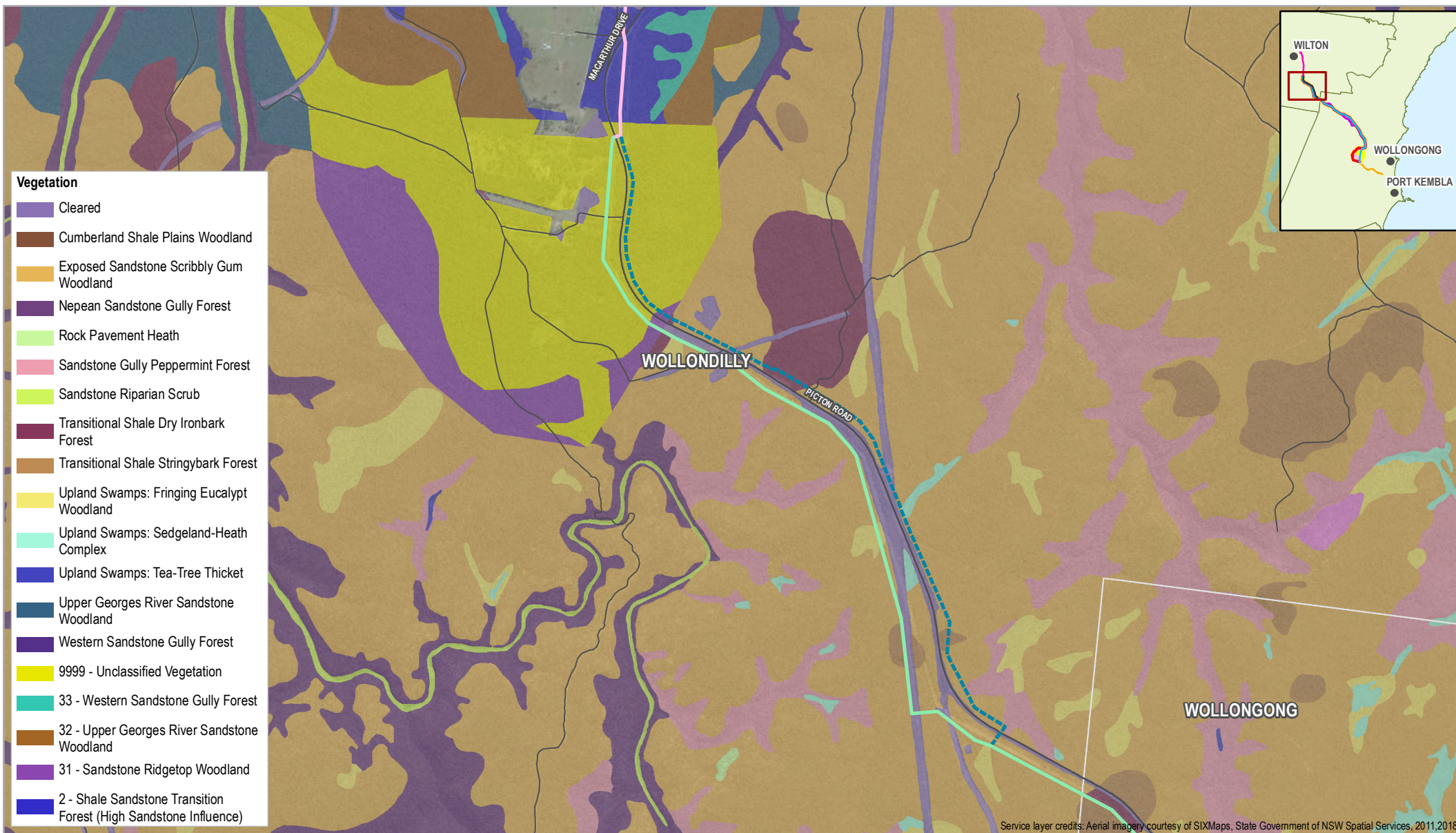
**APA Group**  
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Project No. **21-12514771**  
Revision No. **-**  
Date **3/12/2019**

**Vegetation**

**FIGURE C-1**



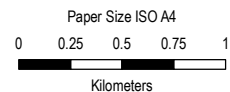


## LEGEND

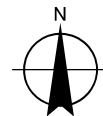
### Preliminary Pipeline Route Options

- Plateau Alignment
- Plateau Alternative 2
- Wilton Alignment

- Road
- LGA boundary



Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 56



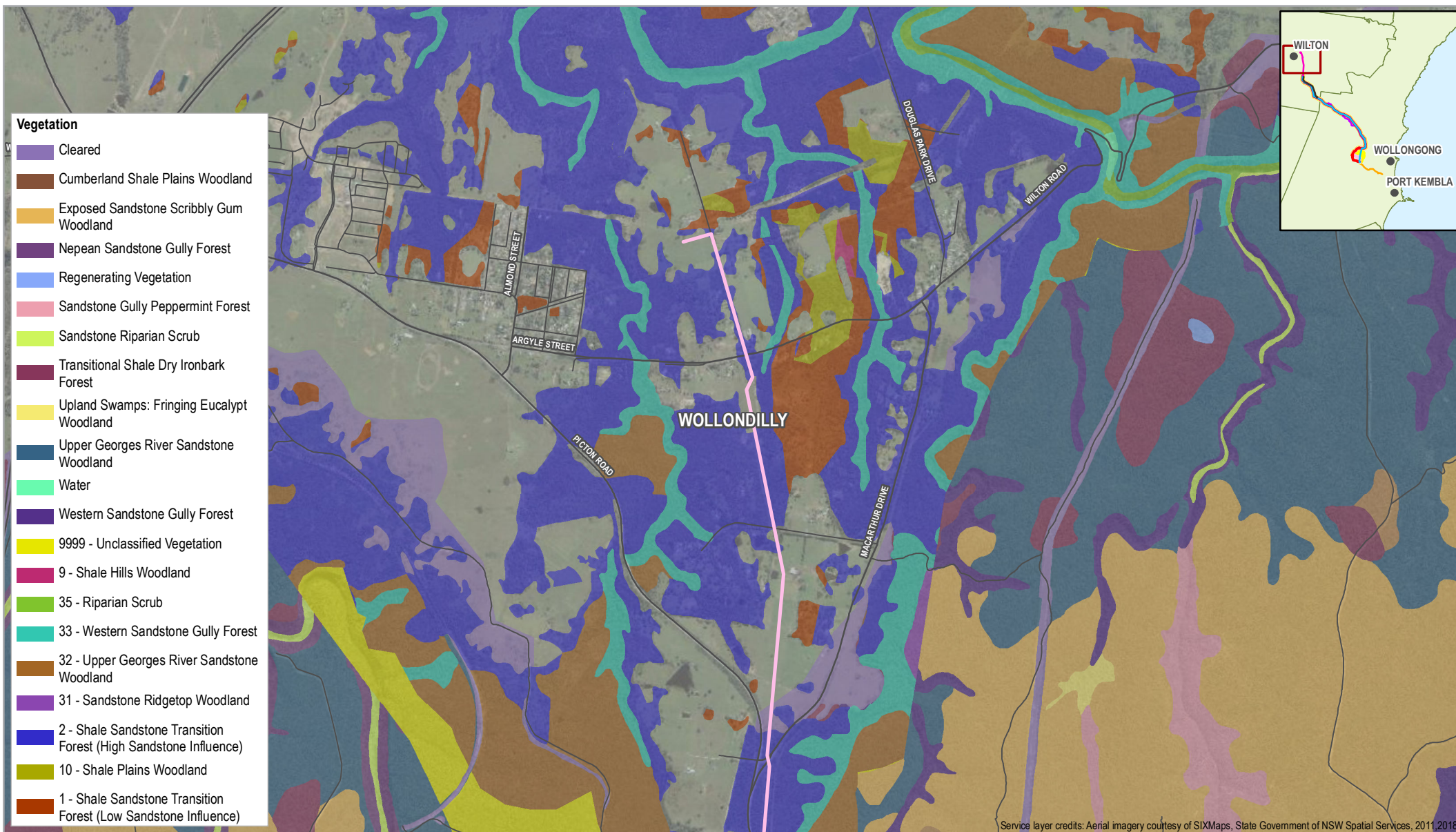
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Date 3/12/2019

Vegetation

FIGURE C-1

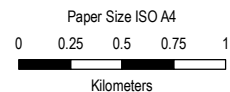




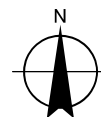
## LEGEND

### Preliminary Pipeline Route Options

- Wilton Alignment
- Road
- LGA boundary



Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 56



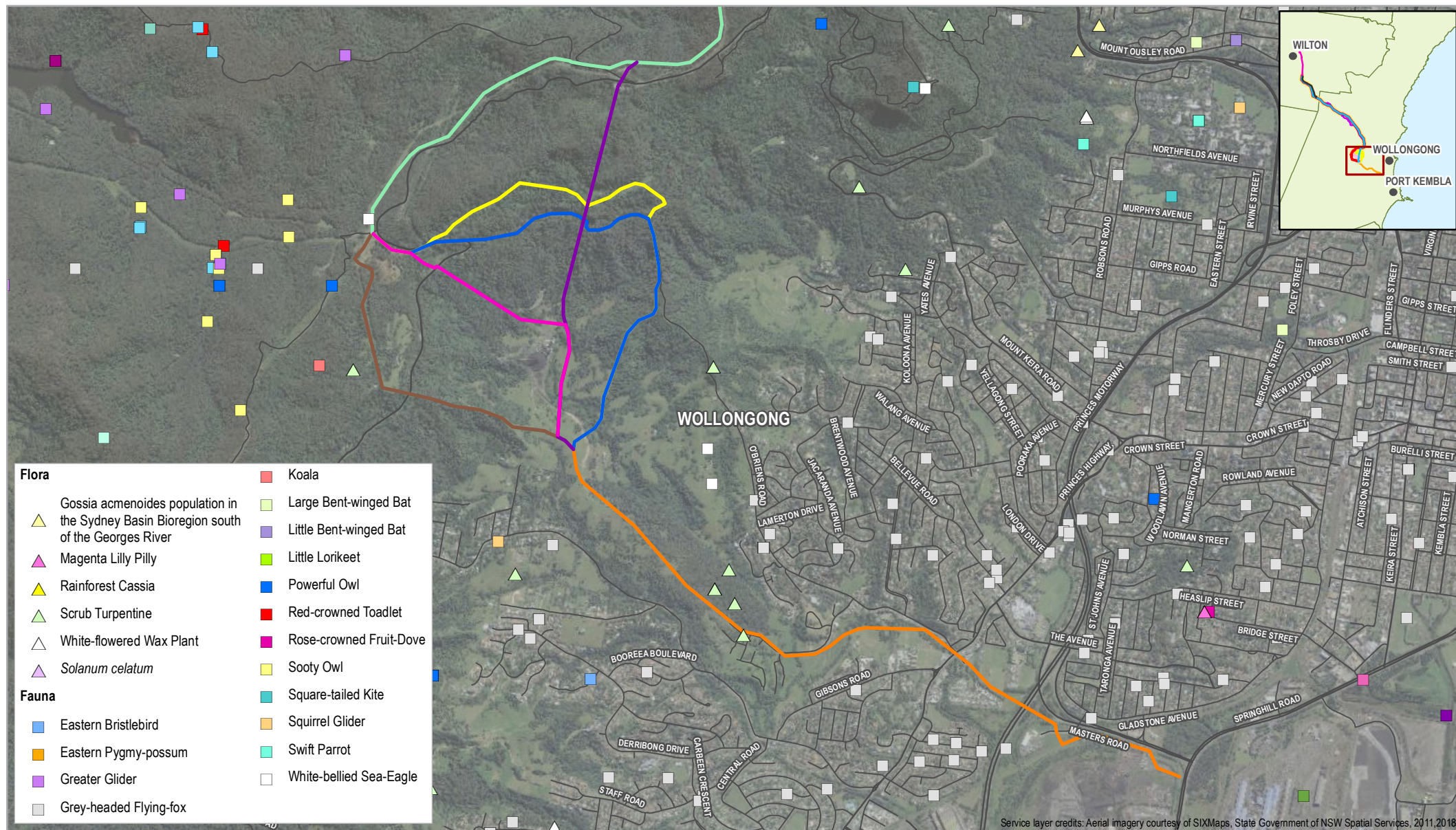
**APA Group**  
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**Vegetation**

**FIGURE C-1**





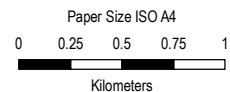
## LEGEND

### Preliminary Pipeline Route Options

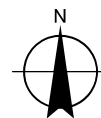
- Coastal Plain Alignment
- Escarpment Option 1
- Escarpment Option 2

- Escarpment Option 3
- Escarpment Option 4
- Escarpment Option 5
- Plateau Alignment
- Road

LGA boundary



Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 56



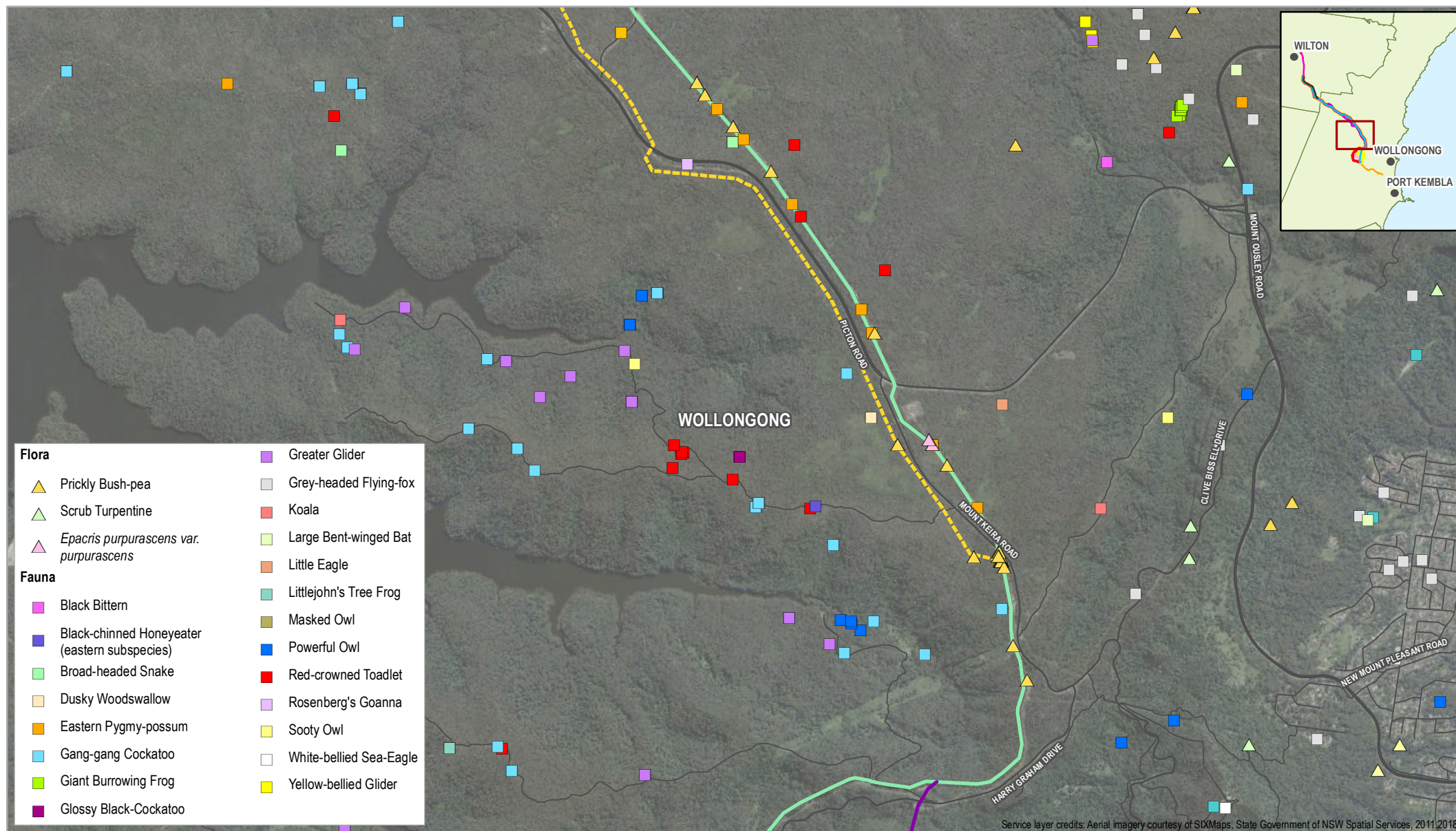
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Date 3/12/2019

Flora and fauna

FIGURE C-2



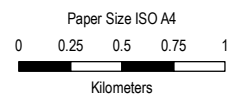


## LEGEND

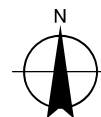
### Preliminary Pipeline Route Options

- Escarpment Option 3
- Plateau Alignment
- Plateau Alternative 1

- Road
- LGA boundary



Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 56



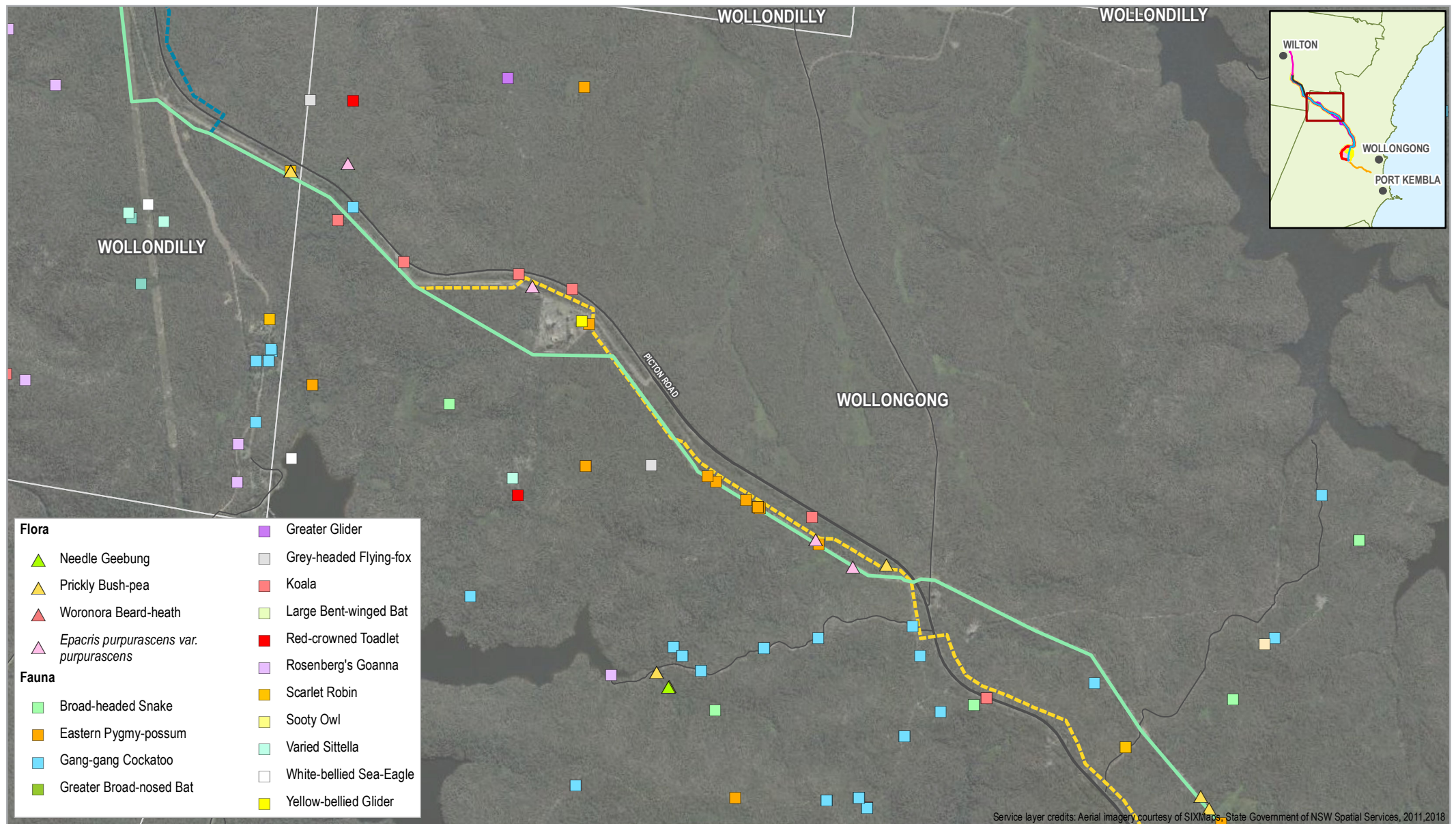
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Revision No. -  
Date 3/12/2019

**Flora and fauna**

**FIGURE C-2**



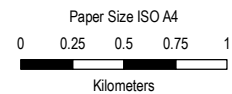


## LEGEND

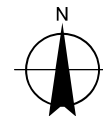
### Preliminary Pipeline Route Options

- Plateau Alignment
- Plateau Alternative 1
- Plateau Alternative 2

- Road
- LGA boundary



Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 56



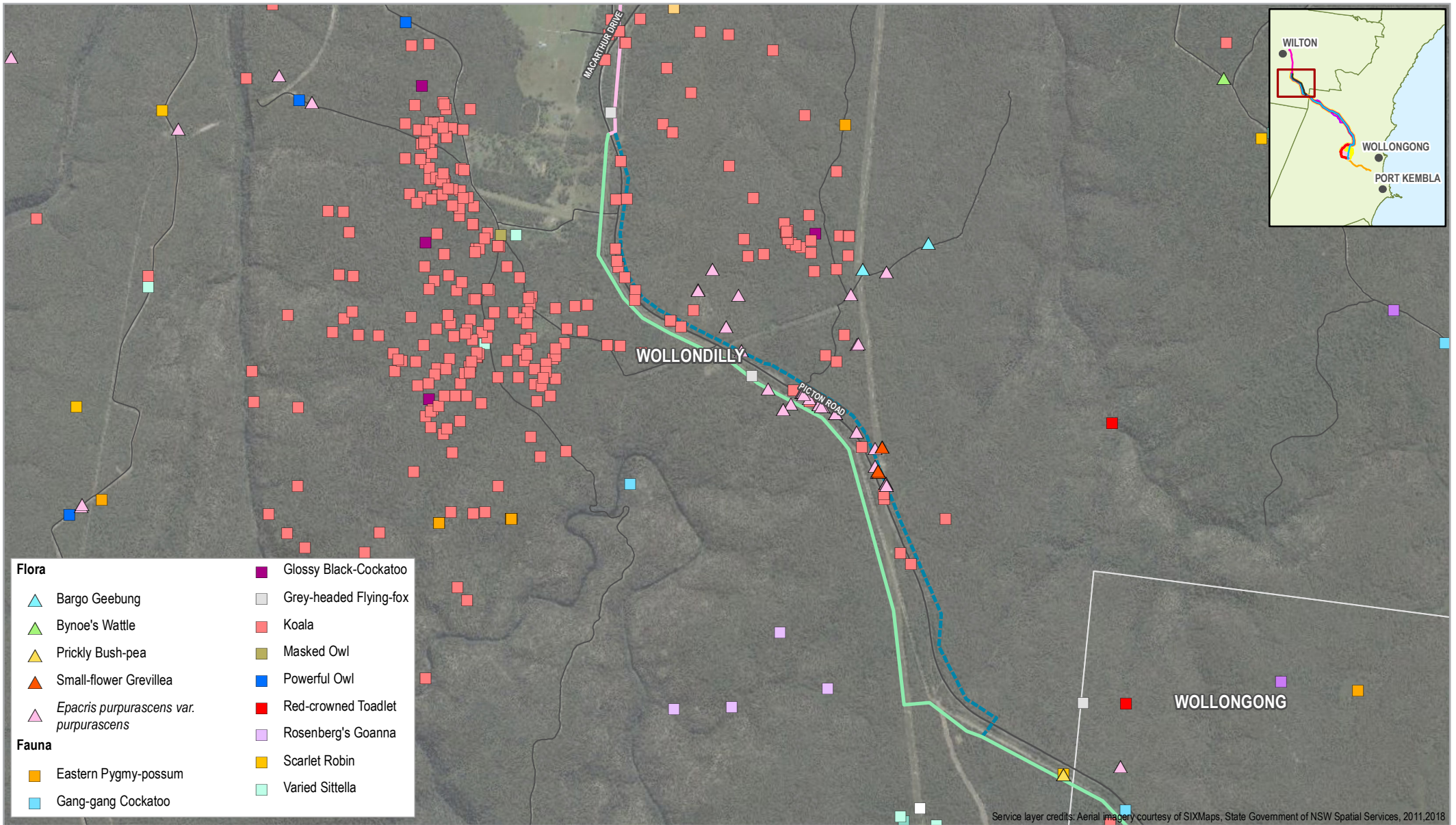
APA Group  
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Project No. 21-12514771  
Revision No. -  
Date 3/12/2019

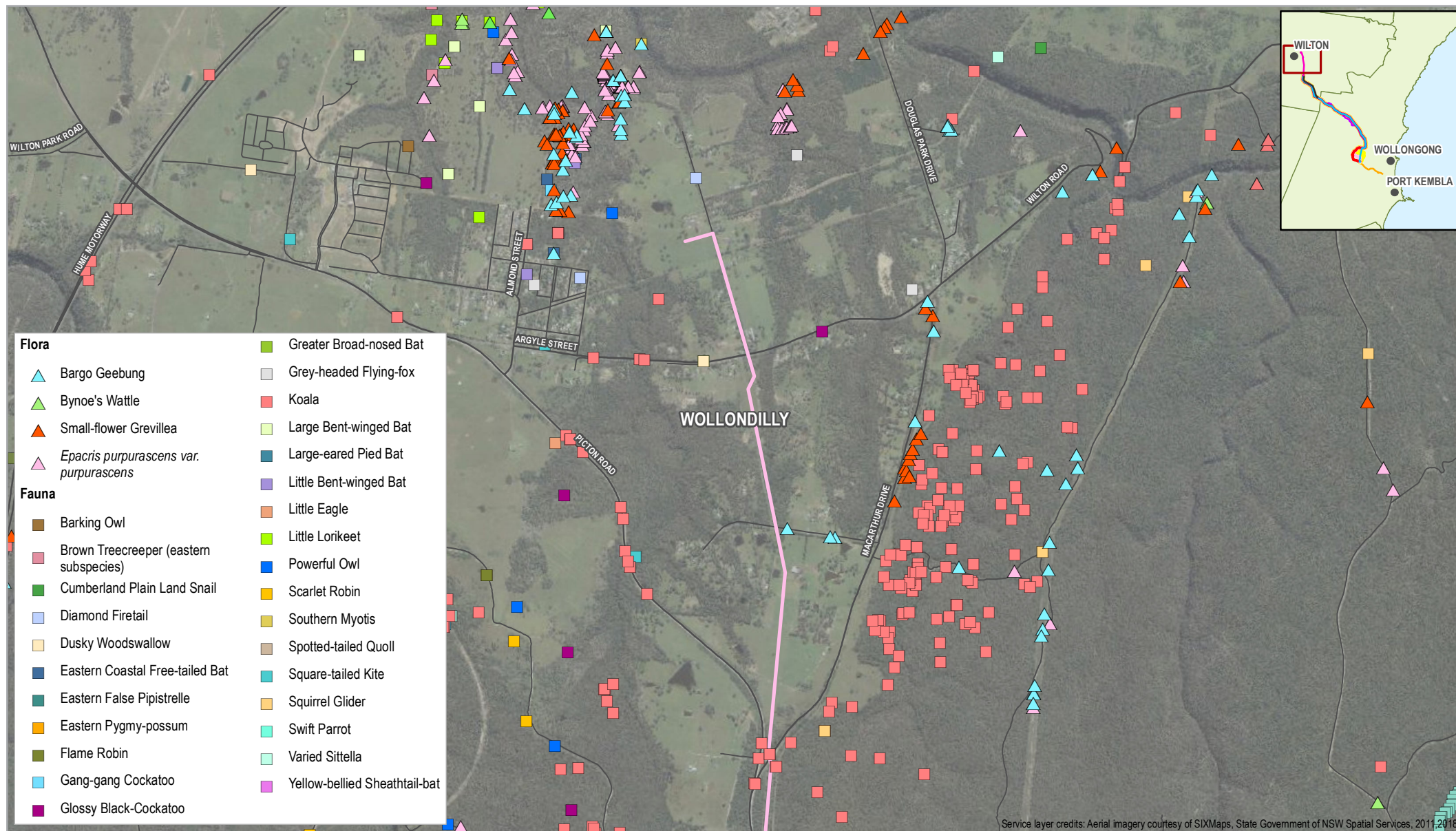
Flora and fauna

FIGURE C-2





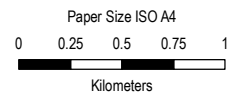




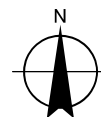
## LEGEND

### Preliminary Pipeline Route Options

- Wilton Alignment
- Road
- LGA boundary



Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 56



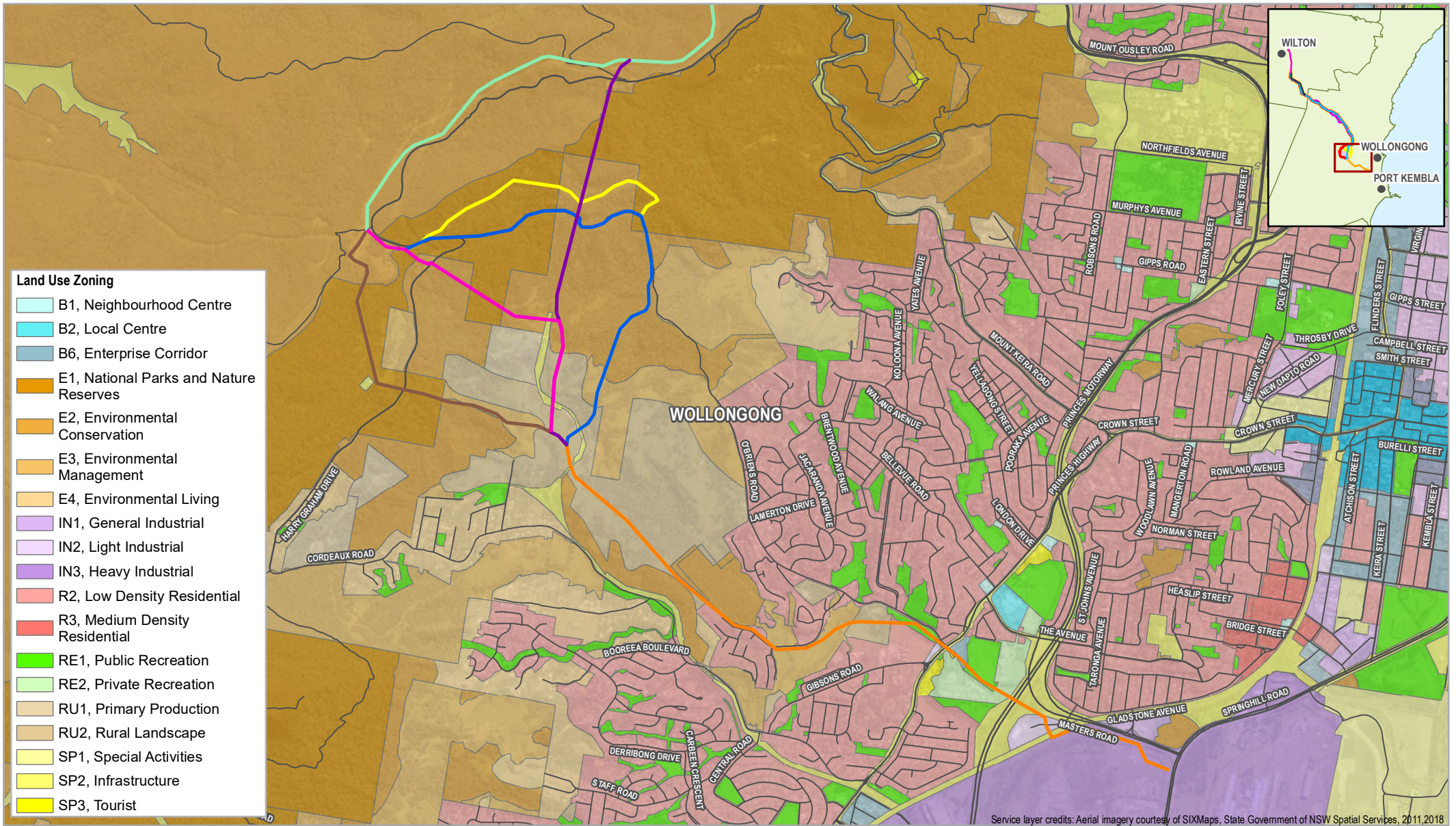
APA Group  
Port Kembla to Wilton Gas Pipeline

Project No. 21-12514771  
Revision No. -  
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Flora and fauna

FIGURE C-2

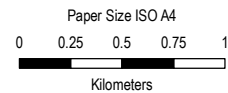




## LEGEND

### Preliminary Pipeline Route Options

- Escarpment Option 3
- Escarpment Option 4
- Coastal Plain Alignment
- Escarpment Option 1
- Escarpment Option 2
- Escarpment Option 5
- Plateau Alignment
- Road
- LGA boundary



Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 56



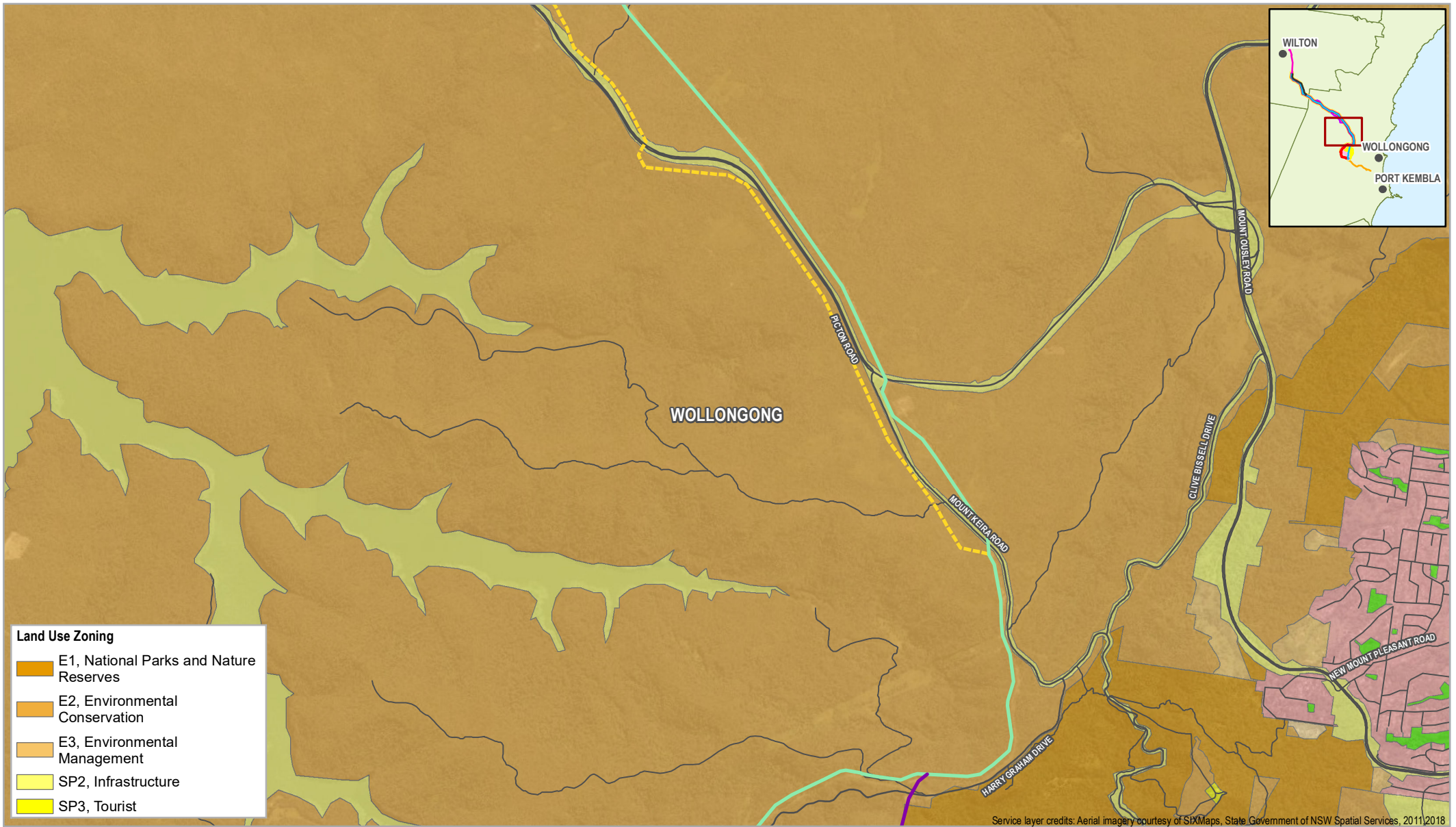
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Date 3/12/2019

**Land zoning**

**FIGURE C-3**



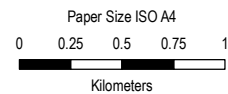


## LEGEND

### Preliminary Pipeline Route Options

- Escarpment Option 3
- Plateau Alignment
- Plateau Alternative 1

- Road
- LGA boundary



Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 56

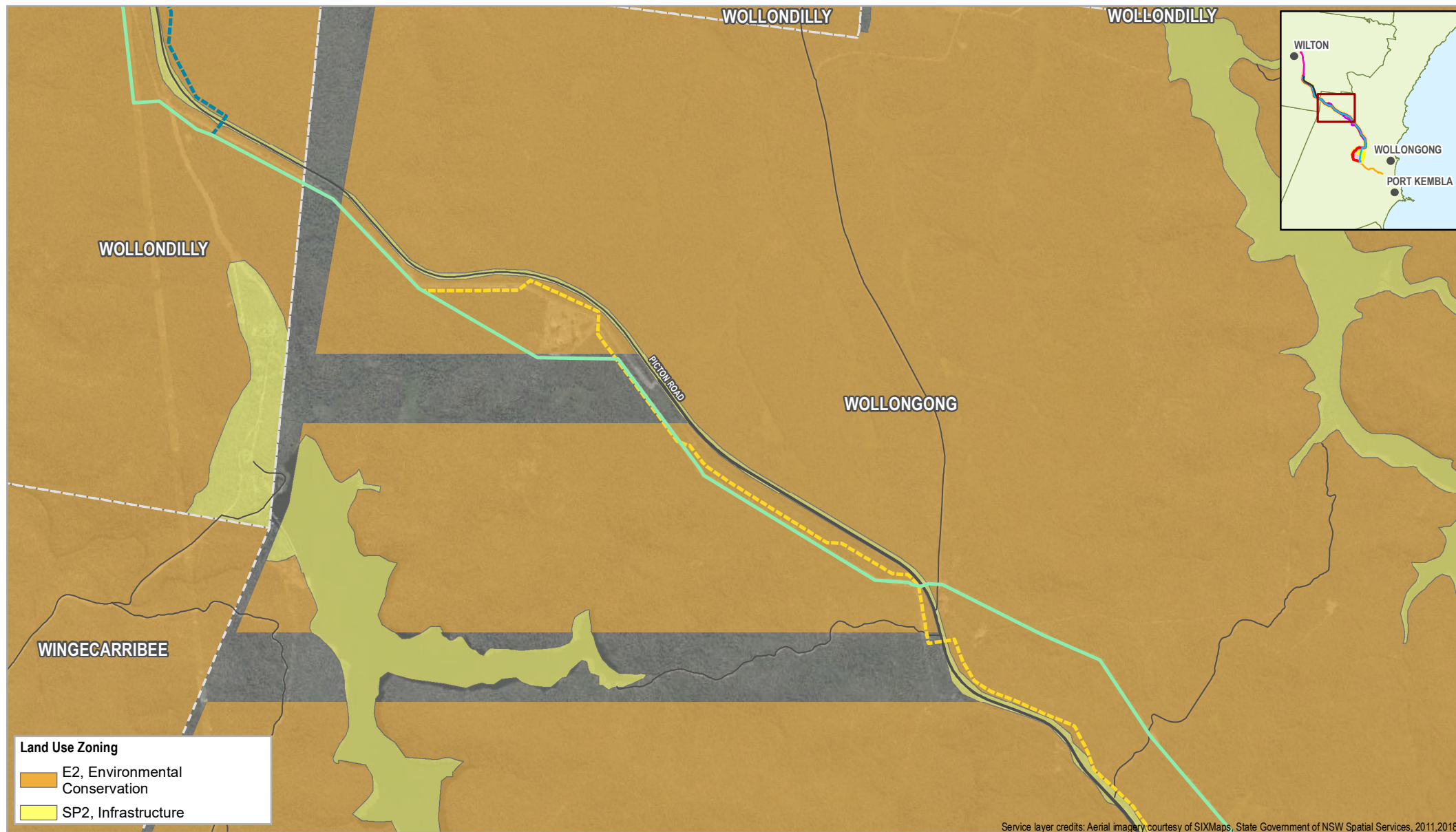


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Date 3/12/2019

Land zoning

**FIGURE C-3**

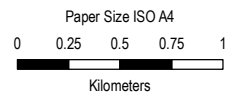


## LEGEND

### Preliminary Pipeline Route Options

- Plateau Alignment
- Plateau Alternative 1
- Plateau Alternative 2

- Road
- LGA boundary



Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 56



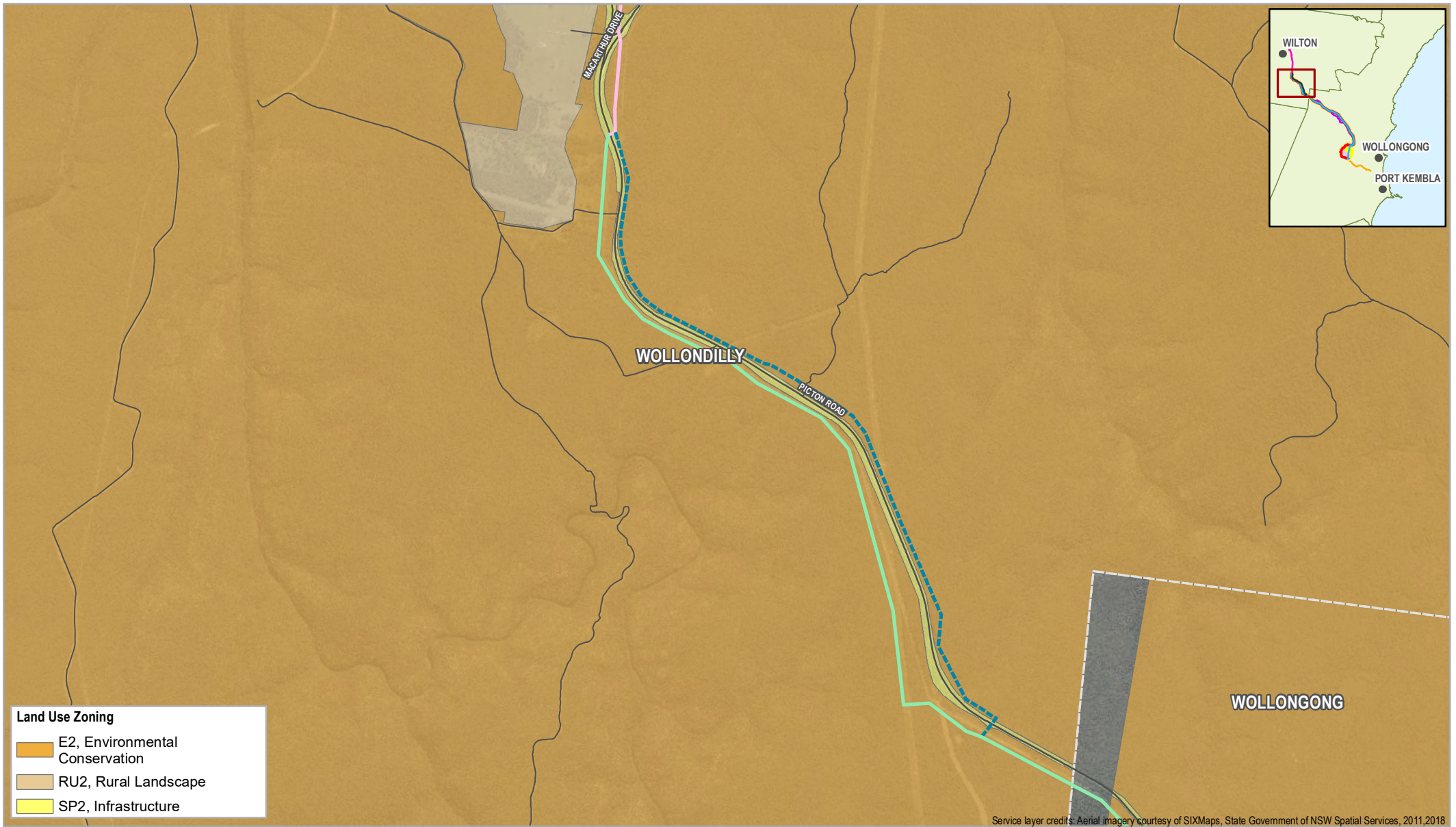
**APA Group**  
**Port Kembla to Wilton Gas Pipeline**

**Land zoning**

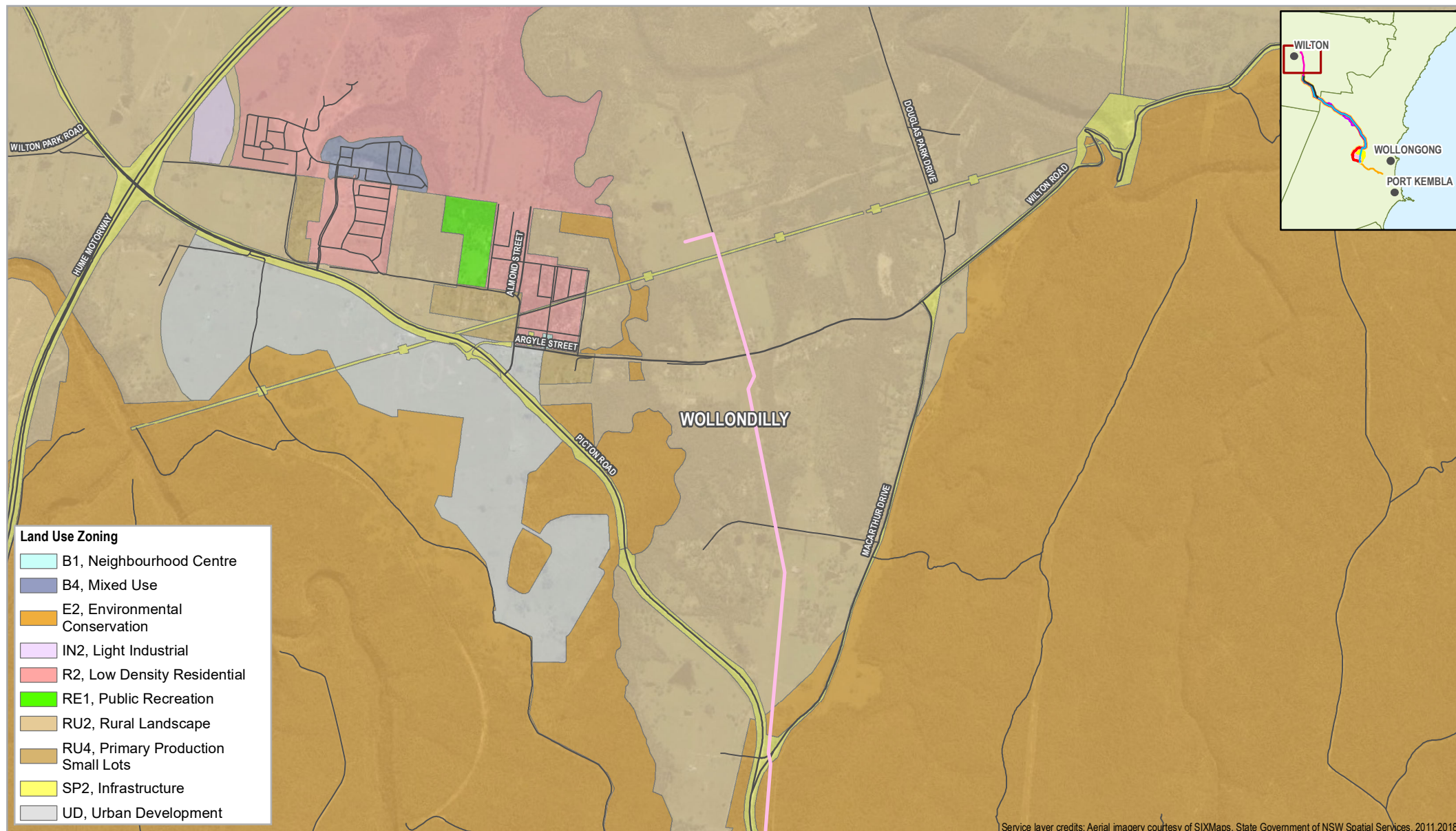
Project No. 21-12514771  
Revision No. -  
Date 3/12/2019

**FIGURE C-3**





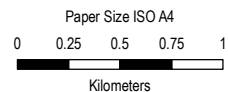




## LEGEND

### Preliminary Pipeline Route Options

- Wilton Alignment
- Road
- LGA boundary



Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 56



APA Group  
Port Kembla to Wilton Gas Pipeline

Project No. 21-12514771  
Revision No. -  
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Land zoning

FIGURE C-3







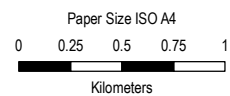


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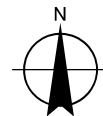
### Preliminary Pipeline Route Options

- Escarpment Option 3
- Plateau Alignment
- Plateau Alternative 1

- Road
- LGA boundary



Map Projection: Transverse Mercator  
 Horizontal Datum: GDA 1994  
 Grid: GDA 1994 MGA Zone 56



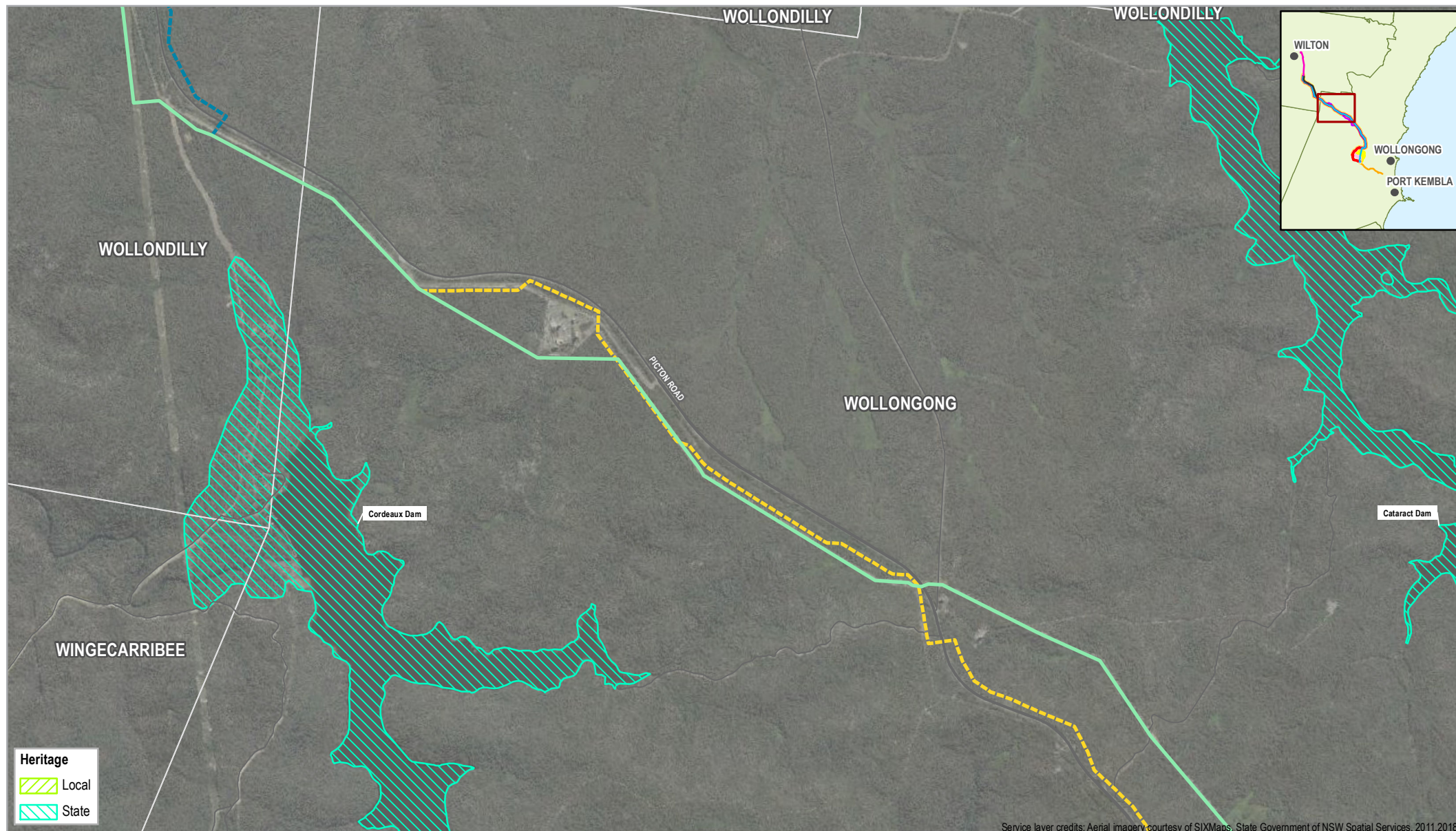
**APA Group**  
**Port Kembla to Wilton Gas Pipeline**

**Non-Aboriginal**  
**heritage values**

Project No. 21-12514771  
 Revision No. -  
 Date 3/12/2019

**FIGURE C-4**



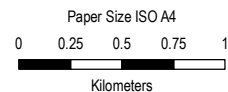


## LEGEND

### Preliminary Pipeline Route Options

- Plateau Alignment
- Plateau Alternative 1
- Plateau Alternative 2

- Road
- LGA boundary



Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 56



APA Group  
Port Kembla to Wilton Gas Pipeline

Non-Aboriginal  
heritage values

Project No. 21-12514771  
Revision No. -  
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**FIGURE C-4**





**LEGEND**

**Preliminary Pipeline Route Options**

- Plateau Alignment
- Plateau Alternative 2
- Wilton Alignment

— Road

□ LGA boundary

Paper Size ISO A4

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Kilometers

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
Grid: GDA 1994 MGA Zone 56



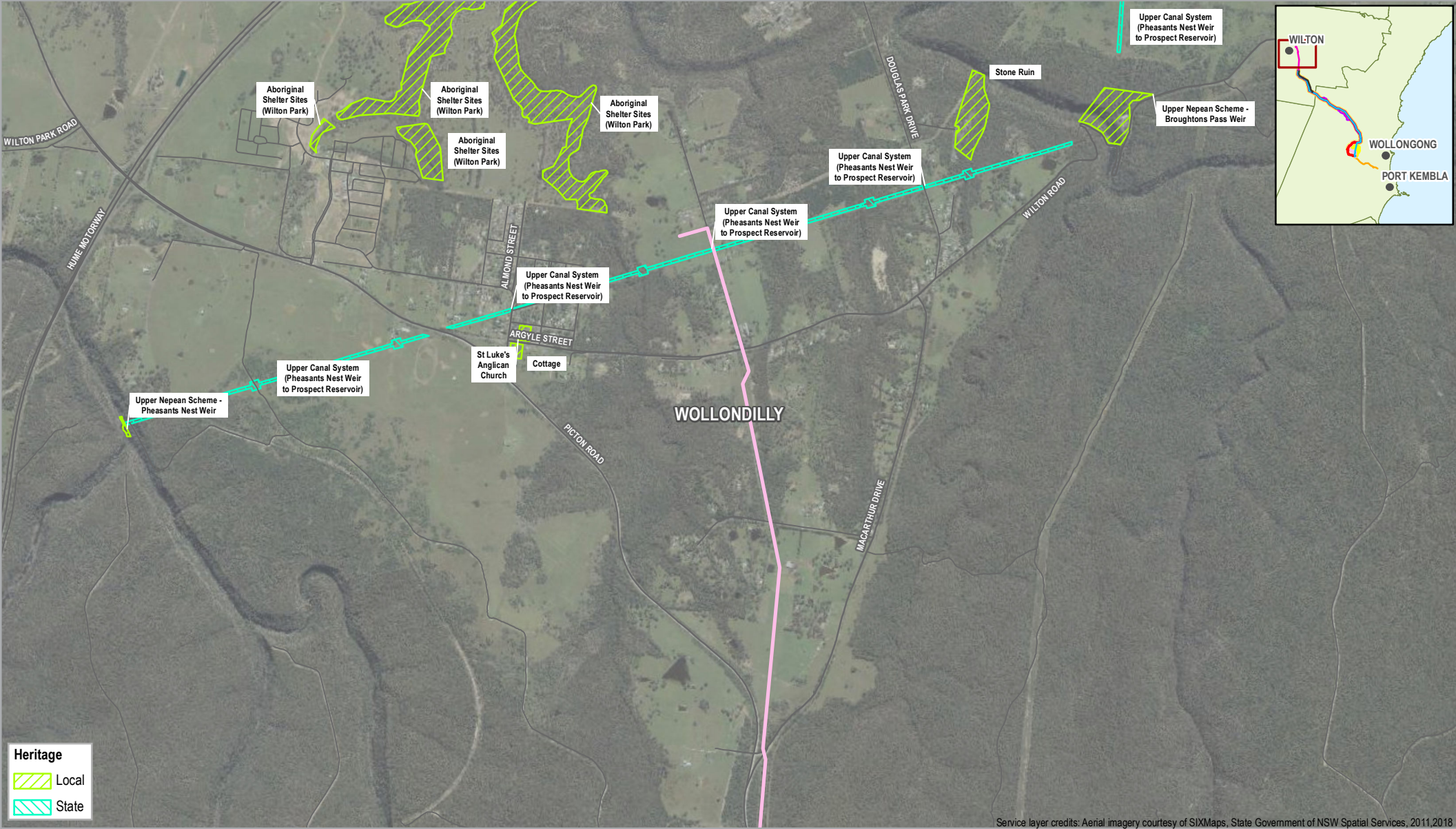
**APA Group**  
**Port Kembla to Wilton Gas Pipeline**

**Non-Aboriginal  
heritage values**

Project No. 21-12514771  
Revision No. -  
Date 3/12/2019

**FIGURE C-4**





**LEGEND**

**Preliminary Pipeline Route Options**

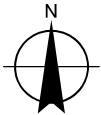
- Wilton Alignment
- Road
- LGA boundary

Paper Size ISO A4

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Kilometers

Map Projection: Transverse Mercator  
Horizontal Datum: GDA 1994  
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**Non-Aboriginal  
heritage values**

Project No. **21-12514771**  
Revision No. **-**  
Date **3/12/2019**

**FIGURE C-4**



## **Appendix D** — Threatened flora and fauna

## Threatened flora records

| Scientific name                                      | Common name                                                                           | BC Act                | EPBC Act   |
|------------------------------------------------------|---------------------------------------------------------------------------------------|-----------------------|------------|
| <i>Acacia bynoeana</i>                               | Bynoe's Wattle                                                                        | Endangered            | Vulnerable |
| <i>Allocasuarina glareicola</i>                      | —                                                                                     | Endangered            | Endangered |
| <i>Caladenia tessellata</i>                          | Thick—lipped Spider—orchid                                                            | Endangered            | Vulnerable |
| <i>Callistemon linearifolius</i>                     | Netted Bottle Brush                                                                   | Vulnerable            | —          |
| <i>Commersonia prostrata</i>                         | Dwarf Kerrawang                                                                       | Endangered            | Endangered |
| <i>Cryptostylis hunteriana</i>                       | Leafless Tongue—orchid                                                                | Vulnerable            | Vulnerable |
| <i>Cynanchum elegans</i>                             | White—flowered Wax Plant                                                              | Endangered            | Endangered |
| <i>Epacris purpurascens</i> var. <i>purpurascens</i> | —                                                                                     | Vulnerable            | —          |
| <i>Eucalyptus nicholii</i>                           | Narrow—leaved Black Peppermint                                                        | Vulnerable            | Vulnerable |
| <i>Galium australe</i>                               | Tangled Bedstraw                                                                      | Endangered            | —          |
| <i>Genoplesium baueri</i>                            | Bauer's Midge Orchid                                                                  | Endangered            | Endangered |
| <i>Gossia acmenoides</i>                             | Gossia acmenoides population in the Sydney Basin Bioregion south of the Georges River | Endangered population | —          |
| <i>Grammitis stenophylla</i>                         | Narrow—leaf Finger Fern                                                               | Endangered            | —          |
| <i>Grevillea parviflora</i> subsp. <i>parviflora</i> | Small—flower Grevillea                                                                | Vulnerable            | Vulnerable |
| <i>Grevillea raybrownii</i>                          | —                                                                                     | Vulnerable            | —          |
| <i>Haloragis exalata</i> subsp. <i>exalata</i>       | Wingless Raspwort                                                                     | Vulnerable            | Vulnerable |
| <i>Leucopogon exolasius</i>                          | Woronora Beard—heath                                                                  | Vulnerable            | Vulnerable |
| <i>Melaleuca deanei</i>                              | Deane's Paperbark                                                                     | Vulnerable            | Vulnerable |
| <i>Persicaria elatior</i>                            | Knotweed                                                                              | Vulnerable            | Vulnerable |
| <i>Persoonia acerosa</i>                             | Needle Geebung                                                                        | Vulnerable            | Vulnerable |
| <i>Persoonia bargoensis</i>                          | Bargo Geebung                                                                         | Endangered            | Vulnerable |
| <i>Persoonia hirsuta</i>                             | Hairy Geebung                                                                         | Endangered            | Endangered |
| <i>Persoonia nutans</i>                              | Nodding Geebung                                                                       | Endangered            | Endangered |
| <i>Pimelea curviflora</i> var. <i>curviflora</i>     | —                                                                                     | Vulnerable            | Vulnerable |
| <i>Pimelea spicata</i>                               | Spiked Rice—flower                                                                    | Endangered            | Endangered |
| <i>Pomaderris adnata</i>                             | Sublime Point Pomaderris                                                              | Endangered            | —          |
| <i>Pomaderris brunnea</i>                            | Brown Pomaderris                                                                      | Endangered            | Vulnerable |

| Scientific name                | Common name             | BC Act                | EPBC Act              |
|--------------------------------|-------------------------|-----------------------|-----------------------|
| <i>Pomaderris cotoneaster</i>  | Cotoneaster Pomaderris  | Endangered            | Endangered            |
| <i>Pterostylis gibbosa</i>     | Illawarra Greenhood     | Endangered            | Endangered            |
| <i>Pterostylis saxicola</i>    | Sydney Plains Greenhood | Endangered            | Endangered            |
| <i>Pultenaea aristata</i>      | Prickly Bush—pea        | Vulnerable            | Vulnerable            |
| <i>Pultenaea glabra</i>        | Smooth Bush—pea         | Vulnerable            | Vulnerable            |
| <i>Pultenaea pedunculata</i>   | Matted Bush—pea         | Endangered            | —                     |
| <i>Rhodamnia rubescens</i>     | Scrub Turpentine        | Critically endangered | —                     |
| <i>Senna acclinis</i>          | Rainforest Cassia       | Endangered            | —                     |
| <i>Solanum celatum</i>         | —                       | Endangered            | —                     |
| <i>Syzygium paniculatum</i>    | Magenta Lilly Pilly     | Endangered            | Vulnerable            |
| <i>Thelymitra kangaloonica</i> | Kangaloon Sun Orchid    | Critically endangered | Critically endangered |
| <i>Thesium australe</i>        | Austral Toadflax        | Vulnerable            | Vulnerable            |
| <i>Xerochrysum palustre</i>    | Swamp Everlasting       | —                     | Vulnerable            |
| <i>Zieria granulata</i>        | Illawarra Zieria        | Endangered            | Endangered            |

#### Threatened fauna records

| Scientific name                        | Common name                | BC Act     | EPBC Act   |
|----------------------------------------|----------------------------|------------|------------|
| <i>Litoria aurea</i>                   | Green and Golden Bell Frog | Endangered | Vulnerable |
| <i>Litoria littlejohni</i>             | Littlejohn's Tree Frog     | Vulnerable | Vulnerable |
| <i>Heleioporus australiacus</i>        | Giant Burrowing Frog       | Vulnerable | Vulnerable |
| <i>Pseudophryne australis</i>          | Red-crowned Toadlet        | Vulnerable | —          |
| <i>Chthonicola sagittata</i>           | Speckled Warbler           | Vulnerable | —          |
| <i>Circus assimilis</i>                | Spotted Harrier            | Vulnerable | —          |
| <i>Haliaeetus leucogaster</i>          | White-bellied Sea-Eagle    | Vulnerable | —          |
| <i>Hieraaetus morphnoides</i>          | Little Eagle               | Vulnerable | —          |
| <i>Lophoictinia isura</i>              | Square-tailed Kite         | Vulnerable | —          |
| <i>Pandion cristatus</i>               | Eastern Osprey             | Vulnerable | —          |
| <i>Stictonetta naevosa</i>             | Freckled Duck              | Vulnerable | —          |
| <i>Botaurus poiciloptilus</i>          | Australasian Bittern       | Endangered | Endangered |
| <i>Ixobrychus flavicollis</i>          | Black Bittern              | Vulnerable | —          |
| <i>Artamus cyanopterus cyanopterus</i> | Dusky Woodswallow          | Vulnerable | —          |
| <i>Callocephalon fimbriatum</i>        | Gang-gang Cockatoo         | Vulnerable | —          |



| Scientific name                        | Common name                                   | BC Act                | EPBC Act              |
|----------------------------------------|-----------------------------------------------|-----------------------|-----------------------|
| <i>Calyptorhynchus lathamii</i>        | Glossy Black-Cockatoo                         | Vulnerable            | —                     |
| <i>Coracina lineata</i>                | Barred Cuckoo-shrike                          | Vulnerable            | —                     |
| <i>Thinornis rubricollis</i>           | Hooded Plover                                 | Critically endangered | Vulnerable            |
| <i>Ephippiorhynchus asiaticus</i>      | Black-necked Stork                            | Endangered            | —                     |
| <i>Climacteris picumnus victoriae</i>  | Brown Treecreeper (eastern subspecies)        | Vulnerable            | —                     |
| <i>Ptilinopus regina</i>               | Rose-crowned Fruit-Dove                       | Vulnerable            | —                     |
| <i>Dasyornis brachypterus</i>          | Eastern Bristlebird                           | Endangered            | Endangered            |
| <i>Stagonopleura guttata</i>           | Diamond Firetail                              | Vulnerable            | —                     |
| <i>Falco subniger</i>                  | Black Falcon                                  | Vulnerable            | —                     |
| <i>Haematopus fuliginosus</i>          | Sooty Oystercatcher                           | Vulnerable            | —                     |
| <i>Haematopus longirostris</i>         | Pied Oystercatcher                            | Endangered            | —                     |
| <i>Onychoprion fuscata</i>             | Sooty Tern                                    | Vulnerable            | —                     |
| <i>Sternula albifrons</i>              | Little Tern                                   | Endangered            | —                     |
| <i>Melithreptus gularis gularis</i>    | Black-chinned Honeyeater (eastern subspecies) | Vulnerable            | —                     |
| <i>Daphoenositta chrysoptera</i>       | Varied Sittella                               | Vulnerable            | —                     |
| <i>Melanodryas cucullata cucullata</i> | Hooded Robin (south-eastern form)             | Vulnerable            | —                     |
| <i>Petroica boodang</i>                | Scarlet Robin                                 | Vulnerable            | —                     |
| <i>Petroica phoenicea</i>              | Flame Robin                                   | Vulnerable            | —                     |
| <i>Petroica rodinogaster</i>           | Pink Robin                                    | Vulnerable            | —                     |
| <i>Glossopsitta pusilla</i>            | Little Lorikeet                               | Vulnerable            | —                     |
| <i>Lathamus discolor</i>               | Swift Parrot                                  | Endangered            | Critically endangered |
| <i>Neophema pulchella</i>              | Turquoise Parrot                              | Vulnerable            | —                     |
| <i>Calidris alba</i>                   | Sanderling                                    | Vulnerable            | —                     |
| <i>Calidris ferruginea</i>             | Curlew Sandpiper                              | Endangered            | Critically endangered |
| <i>Numenius madagascariensis</i>       | Eastern Curlew                                | —                     | Critically endangered |
| <i>Ninox connivens</i>                 | Barking Owl                                   | Vulnerable            | —                     |
| <i>Ninox strenua</i>                   | Powerful Owl                                  | Vulnerable            | —                     |
| <i>Tyto novaehollandiae</i>            | Masked Owl                                    | Vulnerable            | —                     |
| <i>Tyto tenebricosa</i>                | Sooty Owl                                     | Vulnerable            | —                     |

| Scientific name                         | Common name                        | BC Act                | EPBC Act              |
|-----------------------------------------|------------------------------------|-----------------------|-----------------------|
| <i>Meridolum corneovirens</i>           | Cumberland Plain Land Snail        | Endangered            | —                     |
| <i>Petalura gigantea</i>                | Giant Dragonfly                    | Endangered            | —                     |
| <i>Cercartetus nanus</i>                | Eastern Pygmy-possum               | Vulnerable            | —                     |
| <i>Dasyurus maculatus</i>               | Spotted-tailed Quoll               | Vulnerable            | Endangered            |
| <i>Saccolaimus flaviventris</i>         | Yellow-bellied Sheath-tail-bat     | Vulnerable            | —                     |
| <i>Miniopterus australis</i>            | Little Bent-winged Bat             | Vulnerable            | —                     |
| <i>Miniopterus orianae oceanensis</i>   | Large Bent-winged Bat              | Vulnerable            | —                     |
| <i>Micronomus norfolkensis</i>          | Eastern Coastal Free-tailed Bat    | Vulnerable            | —                     |
| <i>Pseudomys novaehollandiae</i>        | New Holland Mouse                  | —                     | Vulnerable            |
| <i>Arctocephalus forsteri</i>           | New Zealand Fur-seal               | Vulnerable            | —                     |
| <i>Arctocephalus pusillus doriferus</i> | Australian Fur-seal                | Vulnerable            | —                     |
| <i>Isodon obesulus obesulus</i>         | Southern Brown Bandicoot (eastern) | Endangered            | Endangered            |
| <i>Petaurus australis</i>               | Yellow-bellied Glider              | Vulnerable            | —                     |
| <i>Petaurus norfolcensis</i>            | Squirrel Glider                    | Vulnerable            | —                     |
| <i>Phascolarctos cinereus</i>           | Koala                              | Vulnerable            | Vulnerable            |
| <i>Petauroides volans</i>               | Greater Glider                     | —                     | Vulnerable            |
| <i>Pteropus poliocephalus</i>           | Grey-headed Flying-fox             | Vulnerable            | Vulnerable            |
| <i>Chalinolobus dwyeri</i>              | Large-eared Pied Bat               | Vulnerable            | Vulnerable            |
| <i>Falsistrellus tasmaniensis</i>       | Eastern False Pipistrelle          | Vulnerable            | —                     |
| <i>Myotis macropus</i>                  | Southern Myotis                    | Vulnerable            | —                     |
| <i>Phoniscus papuensis</i>              | Golden-tipped Bat                  | Vulnerable            | —                     |
| <i>Scoteanax rueppellii</i>             | Greater Broad-nosed Bat            | Vulnerable            | —                     |
| <i>Caretta caretta</i>                  | Loggerhead Turtle                  | Endangered            | Endangered            |
| <i>Chelonia mydas</i>                   | Green Turtle                       | Vulnerable            | Vulnerable            |
| <i>Eretmochelys imbricata</i>           | Hawksbill Turtle                   | —                     | Vulnerable            |
| <i>Hoplocephalus bungaroides</i>        | Broad-headed Snake                 | Endangered            | Vulnerable            |
| <i>Varanus rosenbergi</i>               | Rosenberg's Goanna                 | Vulnerable            | —                     |
| <i>Anthochaera phrygia</i>              | Regent Honeyeater                  | Critically endangered | Critically endangered |
| <i>Calidris canutus</i>                 | Red Knot                           | —                     | Endangered            |
| <i>Grantiella picta</i>                 | Painted Honeyeater                 | Vulnerable            | Vulnerable            |

| Scientific name                         | Common name                         | BC Act                | EPBC Act              |
|-----------------------------------------|-------------------------------------|-----------------------|-----------------------|
| <i>Hirundapus caudacutus</i>            | White-throated Needletail           | —                     | Vulnerable            |
| <i>Limosa lapponica_baueri</i>          | Bar-tailed Godwit (baueri)          | —                     | Vulnerable            |
| <i>Limosa lapponica_menzbieri</i>       | Northern Siberian Bar-tailed Godwit | —                     | Critically endangered |
| <i>Neophema chrysogaster</i>            | Orange-bellied Parrot               | Critically endangered | Critically endangered |
| <i>Macquaria australasica</i>           | Macquarie Perch                     | Endangered            | Endangered            |
| <i>Mixophyes balbus</i>                 | Stuttering Frog                     | Endangered            | Vulnerable            |
| <i>Synemon plana</i>                    | Golden Sun Moth                     | Endangered            | Critically endangered |
| <i>Petrogale penicillata</i>            | Brush-tailed Rock-wallaby           | Endangered            | Vulnerable            |
| <i>Potorous tridactylus tridactylus</i> | Long-nosed Potoroo (SE mainland)    | Vulnerable            | Vulnerable            |



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Document Status

| Revision | Author    | Reviewer |                                                                                     | Approved for Issue |                                                                                      |          |
|----------|-----------|----------|-------------------------------------------------------------------------------------|--------------------|--------------------------------------------------------------------------------------|----------|
|          |           | Name     | Signature                                                                           | Name               | Signature                                                                            | Date     |
| A        | M Goodall | K Rosen  | On file                                                                             | K Rosen            | On file                                                                              | 11/11/19 |
| B        | M Goodall | K Rosen  | On File                                                                             | K Rosen            | On file                                                                              | 27/11/19 |
| 0        | M Goodall | K Rosen  |  | K Rosen            |  | 3/12/19  |

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