

Part A Introduction



Chapter 1. Introduction

1.1 Overview

1.1.1 Need for the project

Orange has experienced water shortages for some time. In May 2010, the city was on the brink of level six water restrictions, which would have severely restricted business and industry activity within the city. In response to ongoing concerns about the security of the city's water supply, Orange City Council (Council) adopted a strategy *'to establish a broad-based water supply strategy for the next 50 years and beyond which focuses on ongoing water conservation, quality and demand management and the provision of key water supply infrastructure at least 10 years in advance of projected demand'*.

Council has also undertaken an integrated water cycle management study, which has estimated Orange's future water demands. The various studies and modelling have shown that:

- ▶ there is an existing and immediate shortfall in water supply
- ▶ the gap between supply and demand will continue to widen in the future
- ▶ without significant augmentation of the city's water supply, population growth and development will stagnate and residents will experience unreasonable water restrictions.

To address the existing shortfall in supply and to provide certainty about future supply, Council is proposing to construct and operate the Macquarie River to Orange pipeline project (referred to as 'the project' for the purposes of this document). The design and development of the project has taken into account the existing and future water needs of the Orange community; projected population growth; secure water yields with demand management measures in place; and potential environmental, economic, community and climate change impacts. Once it is fully operational, the project would provide for the water supply needs of the Orange community until at least 2040 under a high population growth scenario, and until 2060 under a medium growth scenario.

Development of the project has been guided by a taskforce consisting of representatives of various NSW government agencies (refer section 4.2.2).

1.1.2 The environmental assessment

GHD Pty Ltd (GHD) has been engaged by Council to prepare documentation to support an application for approval of the project under the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). This environmental assessment has been prepared in accordance with the provisions of (the now repealed) Part 3A of the EP&A Act. It addresses the requirements of the Director-General of the NSW Department of Planning and Infrastructure (the Director-General's requirements) dated 24 March 2011 and 27 February 2012 (copies provided in Appendix A).

1.2 Key features of the project

The project involves construction and operation of the infrastructure required to transfer, on average, 1,616 mega litres (ML) of water per year a distance of approximately 37 km from the Macquarie River to

the Suma Park Reservoir at Orange. On average, pumping would occur 135 days per year (when the operating rules are met), transferring 12 ML per day (ML/day) over a 19 hour period.

The infrastructure required to transfer the water includes an offtake (inlet) structure and pump stations, an underground pipeline, a discharge (outlet) structure, and ancillary infrastructure. The project involves construction and operation of the following main infrastructure:

- ▶ an offtake structure and pump station located at the water intake point at the upper Macquarie River
- ▶ a pipeline approximately 37 km in length and 375 mm in diameter, between the Macquarie River and Suma Park Dam
- ▶ two booster pump stations and break tanks along the pipeline corridor
- ▶ a water discharge structure at the Suma Park Dam
- ▶ a power supply to the pumps and other infrastructure
- ▶ telemetry controls to enable remote operation of the infrastructure, including the pumps and valves.

It is noted that the route and project components described in the environmental assessment are indicative and conceptual, and does not preclude Council from refining the design during the detailed design phase. This may occur due to the need to:

- ▶ avoid ground conditions or services that present significant construction difficulties in terms of logistics, time and/or cost
- ▶ reduce the construction timeframe
- ▶ avoid areas of environmental sensitivity identified following approval
- ▶ reduce impacts on local residents
- ▶ improve the operation of the project without increasing the potential environmental impacts.

1.3 Location of the project

The location of the project is shown in Figure 1.1 and Figure 1.2. The majority of the pipeline would be located along or adjacent to road reserves, including Ophir Road and Long Point Road. In some areas the pipeline would need to cross private land. It is proposed that the majority of the pipeline would be underground and it would therefore not impact on ongoing farming or other land uses.

The proposed offtake structure would be located on the south side of the Macquarie River immediately upstream of the confluence with Boshes Creek. The water carried along the pipeline would discharge into the Suma Park Reservoir at Orange via the discharge structure, located approximately 10 m east of the existing saddle dam (at the north-west corner of the dam wall).

The project would be located in both the Orange and Cabonne local government areas. The offtake structure and approximately 31 km of pipeline would be located in the Cabonne local government area. The remaining 6 km of pipeline and the discharge structure would be located in the Orange local government area (see Figure 1.2).

1.4 The proponent

Orange City Council (Council) is the proponent for the project, and a local government body located in the Central West of NSW. Council's role is to provide the functions and services that are listed in the *Local Government Act 1993* to the communities within its jurisdiction. As outlined in the Act, the provision of water supply services to country towns in NSW is the responsibility of local government. Orange City Council owns and operates its own water supply system. Council is one of the leading regional water authorities in NSW, consistently being recognised as complying with the NSW State Government's Best Practice Guidelines for Water and Sewer.

1.5 Objectives of the project

Council's Comprehensive Water Supply Management Strategy for Orange has as its strategic objective:

To establish a broad based water supply strategy for the next 50 years and beyond which focuses on ongoing water conservation, quality and demand management and the provision of key water supply infrastructure at least 10 years in advance of projected demand.

In delivering the key water supply infrastructure component of this strategic objective, Council has set the following objectives for water supply augmentation projects:

- ▶ Meet best practice secure yield guidelines consistent with the 'NSW Security of Supply basis' (commonly referred to as the '5/10/10 rule') for the next 50 years.
- ▶ Deliver a minimum of 1,000 ML of water per year as additional secure yield, to satisfy immediate supply needs in the short term.
- ▶ Deliver a minimum of 2,700 ML of water per year, to meet the expected demand to 2060.
- ▶ Diversify Orange's water supply sources in an environmentally sustainable way, to ensure resilience in times of drought.
- ▶ Consist of components which can be delivered in the required timeframe.
- ▶ Adapt to changes in demand and/or supply if they are impacted by climate change.

The overarching aim of the project is to be consistent with the above objectives.

1.6 Overview of the approval requirements and the environmental assessment

1.6.1 Approval requirements

On 13 January 2011 the (then) Minister for Planning declared the project to be a project to which Part 3A of the EP&A Act applies (refer correspondence in Appendix A). The Minister for Planning and Infrastructure is the approval authority for the project and an environmental assessment (this document) is required to support the application for approval in accordance with the requirements of the EP&A Act.

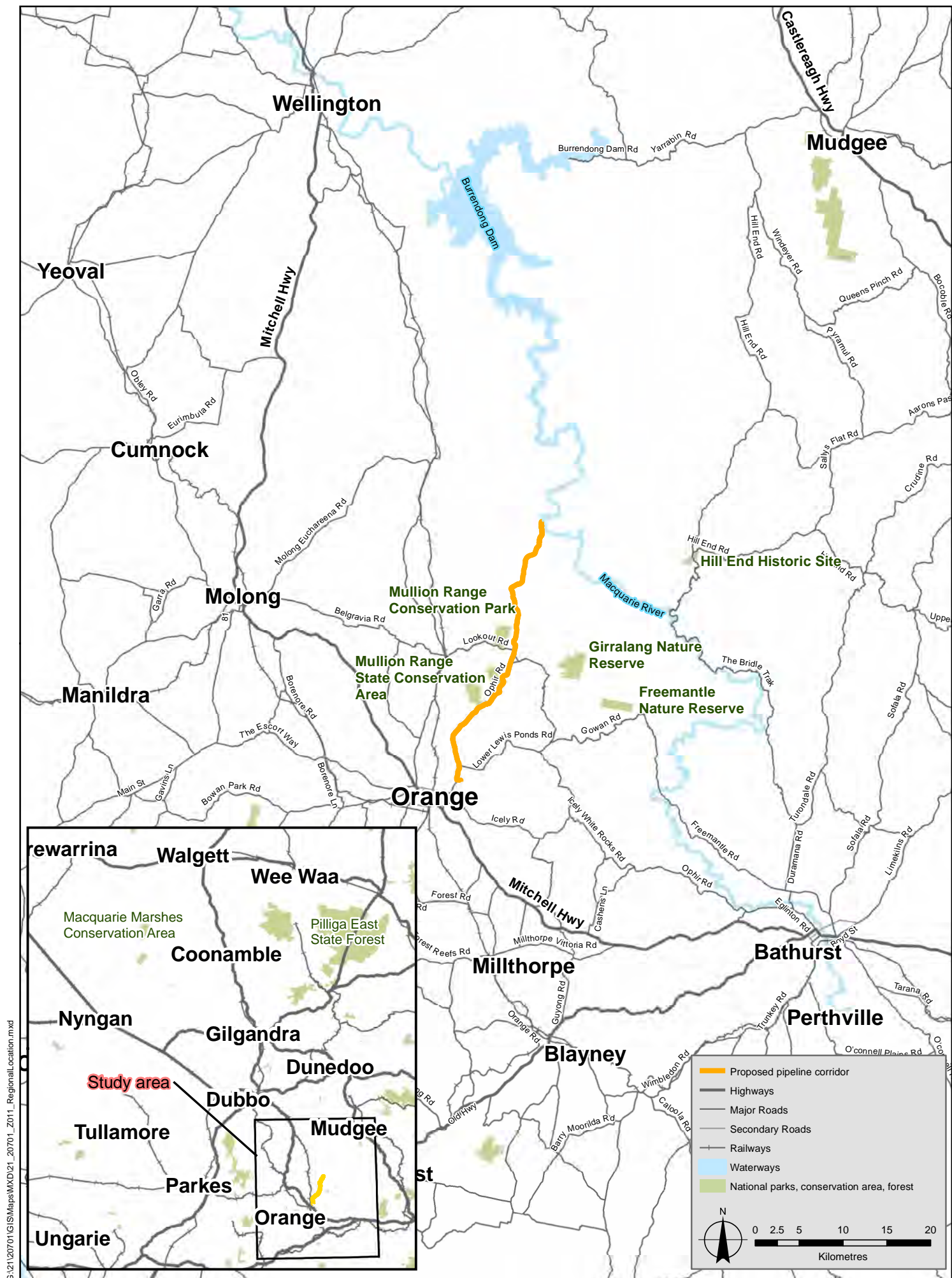


Figure 1.1
Regional Location

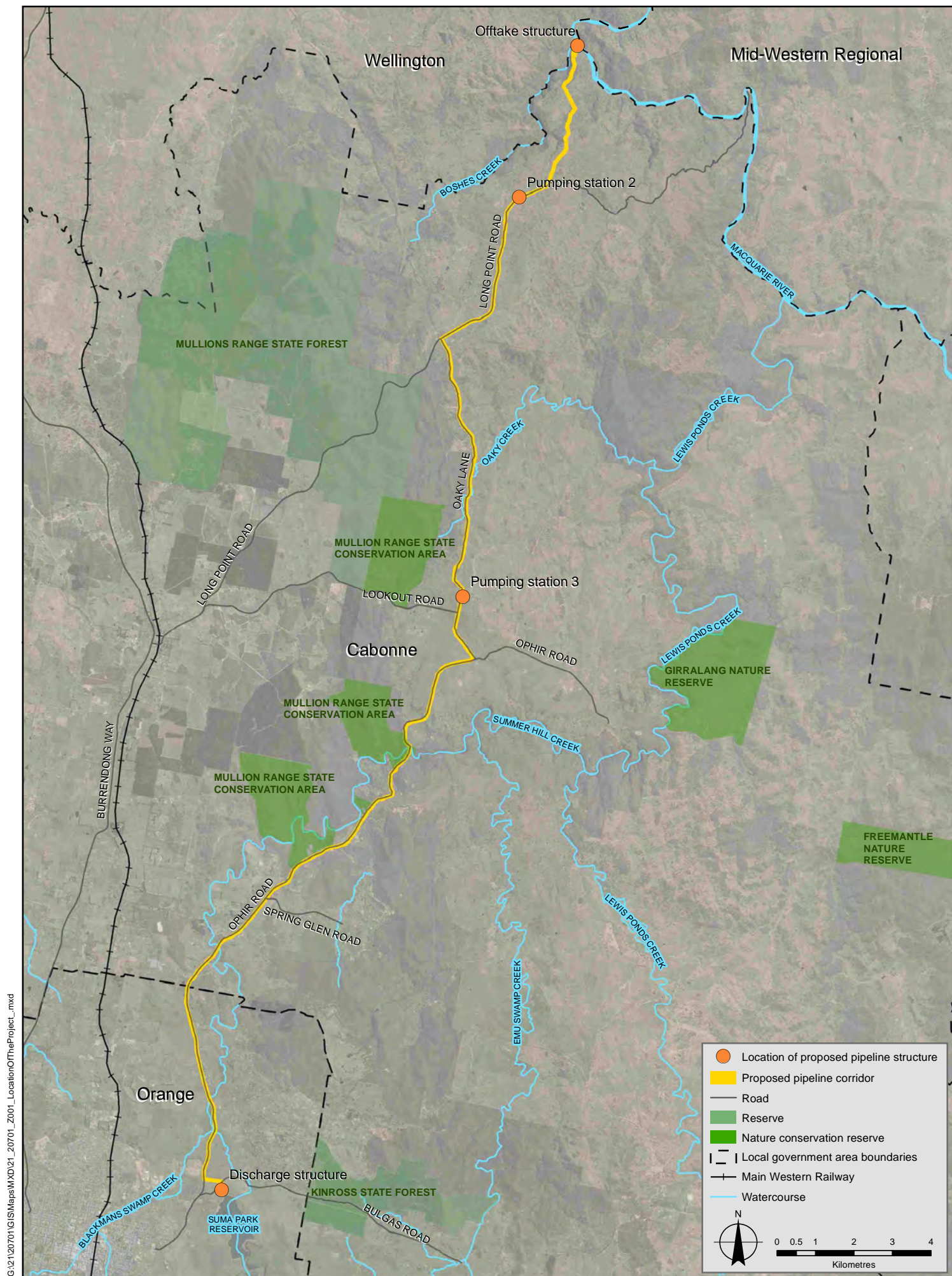


Figure 1.2
Location of the project

The assessment process under Part 3A of the EP&A Act applied to development with State significance and/or the potential for a significant environmental impact. Development could be declared as a project to which Part 3A applied in certain circumstances, one of which was where the development was 'major infrastructure' that, in the opinion of the Minister, was of 'State or regional environmental planning significance'. Although Part 3A of the EP&A Act was repealed on 1 October 2011, under the transitional arrangements it continues to apply to certain projects where the project application process commenced prior to the repeal.

Further information on the approval and assessment requirements for the project is provided in chapter 2.

1.6.2 Purpose and structure of this environmental assessment

This environmental assessment has been prepared in accordance with the EP&A Act, the *Environmental Planning and Assessment Regulation 2000*, and the Director-General's requirements for the project to support Council's application for approval of the project. The environmental assessment provides:

- ▶ Information on the project, including the project need and alternatives considered.
- ▶ A description of the existing environment and an assessment of the potential key environmental impacts of the project identified by the Director-General's requirements.
- ▶ The proponent's commitments in terms of measures to minimise and manage potential environmental impacts.

The environmental assessment is structured as follows:

Environmental assessment (main report)

This volume (volume 1) includes:

- ▶ Part A Introduction and context - including:
 - an introduction to the environmental assessment (chapter 1)
 - an overview of the statutory framework for the project (chapter 2)
 - a description of the regional setting, location of the project including pipeline route and land ownership (chapter 3)
 - a summary of the consultation that occurred during the project development and environmental assessment process (chapter 4).
- ▶ Part B The project - including:
 - an overview of strategic planning drivers, the project need, objectives and benefits (chapter 5)
 - a description of the project (chapter 6) including proposed project components, technology and design features, operation, maintenance and other related information
 - an indicative description of the likely construction process (chapter 7)
 - an overview of the alternatives considered during development of the project (chapter 8).
- ▶ Part C Environmental assessment - including:
 - an environmental risk analysis identifying key potential environmental issues (chapter 9)

- the results of the assessment of key environmental issues identified by the Director-General's requirements and the environmental risk analysis (chapters 10 to 25).
- ▶ Part D Project justification and conclusion - including:
 - proposed environmental management and monitoring (chapter 26)
 - a statement of commitments in relation to mitigation, management and monitoring of potential environmental impacts (chapter 27)
 - conclusion and justification for the project (chapter 28).

Volumes 2 to 4 – Appendices

Volumes 2 to 4 contains the specialist technical/background reports prepared as part of the environmental assessment process and supporting correspondence.

Chapter 2. Statutory framework

2.1 Overview

This chapter provides a description of the approval process for the project, including the application of Part 3A. It includes consideration of:

- ▶ the permissibility of the project under relevant environmental planning instruments
- ▶ the requirements of relevant environmental legislation and other planning instruments
- ▶ the application and assessment process for the project, including a summary of the Director-General's requirements.

2.2 Approval under the Environmental Planning and Assessment Act 1979

2.2.1 The Environmental Planning and Assessment Act

The EP&A Act provides the statutory basis for planning and environmental assessment in NSW. The Minister for Planning and Infrastructure, statutory authorities and local councils are responsible for implementing the EP&A Act. The EP&A Act provides the framework for environmental planning and development approvals and includes provisions to ensure that the potential environmental impacts of a development are assessed and considered in the decision making process.

As outlined in the following sections, the project is subject to Part 3A of the EP&A Act (refer section 2.1.2) as in place before it was repealed, and is permissible without development consent under the Orange and Cabonne local environmental plans and *State Environmental Planning Policy (Infrastructure) 2007* (refer section 2.3.2).

2.2.2 Assessment under Part 3A

Until it was repealed, Part 3A of the EP&A Act provided the assessment and approval regime for major infrastructure projects. Section 75B (Projects to which part applies) specified that:

(1) *General*

This Part applies to the carrying out of development that is declared under this section to be a project to which this Part applies:

(a) *by a State environmental planning policy, or*

(b) *by order of the Minister published in the Gazette (including by an order that amends such a policy).*

On 16 December 2010 the (then) Minister for Planning declared the project to be a project to which Part 3A of the EP&A Act applies (refer Appendix A).

Part 3A was repealed on 1 October 2011. Despite this, Part 3A continues to apply to certain projects subject to the transitional provisions identified in Schedule 6A of the EP&A Act. Part 3A continues to apply to most undetermined applications where the Director-General's requirements were issued before

1 October 2011 and a major project declaration remains in force. These undetermined applications will continue to be assessed and determined under Part 3A as in force immediately before its repeal.

As the declaration that the project is a major project remains in force, and the Director-General's requirements were issued on 24 March 2011, the project is subject to assessment under Part 3A.

2.2.3 Land owner's consent

Clause 8F of the *Environmental Planning and Assessment Regulation 2000* (the Regulation) provides owner's consent or notification requirements for transitional Part 3A projects. Clause 8F(1) specifies that:

(1) The consent of the owner of land on which a project is to be carried out is required for a project application or modification application unless:

(a) the application is made by a public authority, or

...

(d) the application relates to a linear infrastructure project ...

A linear infrastructure project is defined by this clause as 'development for the purposes of linear transport or public utility infrastructure.'

As the application for the project is being made by a public authority and is for linear infrastructure, the consent of individual land owners will not be required to make the application. However, a proponent needs to give notice of the application in accordance with the requirements of this clause. In particular:

(3) If the consent of the owner of the land is not required for a project application under this clause, then the proponent is required to give notice of the application:

(a) in the case of a linear infrastructure project or a project designated under subclause (1) (e)—to the public by advertisement published in a newspaper circulating in the area of the project before the start of the public consultation period for the project, or

...

(d) in any other case—to the owner of the land at any time before the application is made.

Council will provide notice of the application in accordance with the requirements of clause 8F prior to submitting the application to the Minister for approval.

2.3 Permissibility of the project under relevant environmental planning instruments

2.3.1 Local environmental plans

The project is located in the Orange and Cabonne LGAs. The following environmental planning instruments apply to these LGAs:

- ▶ *Orange Local Environmental Plan 2011*
- ▶ *Cabonne Local Environmental Plan 1991*

The zoning and permissibility of the project under these instruments is summarised below.

Orange Local Environmental Plan 2011

The project would be located on land zoned RUI Primary Production, R5 Large Lot Residential and SP2 Infrastructure under the *Orange Local Environmental Plan 2011* (the Orange LEP). In accordance with the provisions for these zones, water supply systems are permitted with consent.

The Infrastructure SEPP overrides the consent requirements of the LEP (refer section 2.3.2).

Cabonne Local Environmental Plan 1991

The project would be located on land zoned 1(a) General Rural and 1(c) Rural small holdings under the LEP.

Under clause 6, the LEP adopts the model provisions (except for a few clauses) as specified by the *Environmental Planning and Assessment Model Provisions 1980*. Clause 35 of the model provisions specifies that:

Nothing in the local environmental plan shall be construed as restricting or prohibiting or enabling the consent authority to restrict or prohibit:

(a) the carrying out of development of any description specified in Schedule 1,

Schedule 1 includes:

2 The carrying out by persons carrying on public utility undertakings, being water, sewerage, drainage, electricity or gas undertakings, of any of the following development, being development required for the purpose of their undertakings, that is to say:

(a) development of any description at or below the surface of the ground,

...

(d) the provision of overhead service lines in pursuance of any statutory power to provide a supply of electricity,

As the project is a public utility undertaking which meets the above definition, it is permissible without consent under the LEP.

Draft Cabonne Local Environmental Plan 2012

The draft Cabonne LEP was placed on public exhibition on Monday 21 May to Friday 22 June 2012.

According to the draft LEP, the project would be located on land zoned RUI Primary Production and R5 Large Lot Residential. In accordance with the provisions for these zones, water supply systems are permitted with consent.

The Infrastructure SEPP would override the consent requirements of the LEP (refer section 2.3.2).

2.3.2 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 (the Infrastructure SEPP) clarifies the consent arrangements for infrastructure projects. According to clause 8(1) 'if there is an inconsistency between this Policy and any other environmental planning instrument, whether made before or after the commencement of this Policy, this Policy prevails to the extent of the inconsistency'.

The project meets the definition of a water reticulation system, which is defined by clause 124 as 'a facility for the transport of water, including pipes, tunnels, canals, bores, pumping stations, related electricity infrastructure, dosing facilities and water supply reservoirs.'

Clause 125(1) specifies that ‘Development for the purpose of water reticulation systems may be carried out by or on behalf of a public authority without consent on any land.’

The Infrastructure SEPP confirms that the project does not require development consent.

2.4 Consideration of other relevant legislation and environmental planning instruments

2.4.1 NSW legislation – other approvals for Part 3A projects

Approvals that do not apply

Section 75U(1) of the EP&A Act specified certain authorisations which are not required for an ‘approved project’ under Part 3A. These included the following authorisations, which may otherwise have been relevant to this project:

- ▶ *Fisheries Management Act 1994* – permit for work or structures within a waterway
- ▶ *Heritage Act 1977* – approval to disturb an item or an excavation permit
- ▶ *National Parks and Wildlife Act 1974* – a section 87 research permit or a section 90 consent to destroy
- ▶ *Native Vegetation Act 2003* – consent to clearing native vegetation
- ▶ *Rural Fires Act 1997* – a bush fire safety authority under section 100B
- ▶ *Water Management Act 2000* – water use approval, water management work approval or activity approval.

These approvals would not be required if the Minister grants approval to carry out the project.

Approvals legislation to be applied consistently

Under section 75V(1) of the EP&A Act, the following authorisations cannot be refused if necessary for the carrying out of an ‘approved project’ and are to be substantially consistent with an approval to carry out the project given under Part 3A:

- ▶ *Protection of the Environment Operations Act 1997* – an environment protection licence under Chapter 3 of the Act
- ▶ *Roads Act 1993* - a permit under s138 to impact on public roads.

2.4.2 Consideration of requirements under other NSW Acts

Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) establishes, amongst other things, the procedures for issuing of licences for environmental protection on aspects such as waste, air, water and noise pollution control. Environment protection licences are generally issued for scheduled activities or scheduled development work.

The project is not specifically defined as either a scheduled activity or as scheduled work by the Act, and would not require an environmental protection licence. However, the local drainage systems near the site could be defined as 'waters' pursuant to the Act. Section 120 of the Act prohibits the pollution of waters by any person. Under section 122, the holding of a licence is a defence against accidental pollution of waterways. The Act permits (but does not require) an environmental protection licence to be obtained for a non-scheduled activity for the purpose of regulating water pollution resulting from that activity.

Roads Act 1993

Under Section 138, Part 9, Division 3 of the *Roads Act 1993*, a person must not impact or carry out work on or over a public road otherwise than with the consent of the appropriate roads authority. Sections of the project would be constructed within a number of public road reserves under the control of Orange and Cabonne Councils.

Council would seek the necessary approvals under the Act. It is noted that under section 75V(1) of the EP&A Act, a permit under section 138 of the Roads Act cannot be refused if necessary for the carrying out of an approved project and is to be substantially consistent with an approval to carry out the project given under Part 3A.

Water Management Act 2000 and Water Act 1912

The NSW Water Management Act 2000 and NSW Water Act 1912 control the extraction of water, the use of water, the construction of works such as dams and weirs and the carrying out of activities in or near water sources in NSW. The provisions of the Water Management Act 2000 are being progressively implemented to replace the Water Act 1912. Since 1 July 2004 the new licensing and approvals system has been in effect in those areas of NSW covered by operational water sharing plans.

Water sharing plans have not commenced within the study area. As a result, water licensing for the project is covered by the *Water Act 1912*.

Under the Water Act a water user must have a water licence or authority to:

- ▶ take water from a stream or river via a pump or other work for all purposes other than for basic landholder rights
- ▶ capture surface water from river flow in a dam (any size) located on a river or stream.

In relation to licensing, the Office of Water has advised that Council's options for securing a water entitlement for the project include:

- ▶ applying to permanently transfer a portion of its existing 7,800 ML/year entitlement to the Macquarie River
- ▶ purchasing and transferring the entitlement from other existing licensed users.

Council's preferred option for securing a water entitlement is discussed in section 6.3.3.

A controlled activity approval under the Water Management Act is required for certain types of developments and activities that are carried out in or near a river, lake or estuary. However, under clause 38 of the *Water Management (General) Regulation 2011*, a public authority is exempt from section 91E(1) of the Act in relation to all controlled activities that it carries out in, on or under waterfront land. Council is therefore exempt from these requirements. However, the design and construction of the project would take into account the NSW Office of Water's Guidelines for Controlled Activities.

Crown Lands Act 1989

The Crown Lands Act sets out how Crown land is to be managed. In particular, in relation to actions affecting Crown land:

- ▶ All actions are to be consistent with the 'principles of Crown land management'.
- ▶ An assessment must be carried out prior to any dealings in Crown land (such as a lease).
- ▶ Specific use of Crown land generally needs to be authorised by a lease, licence or other permit.

In summary, the principles of Crown land management are that, as appropriate:

- ▶ environmental protection principles be observed
- ▶ natural resources be conserved wherever possible
- ▶ public use and enjoyment, and multiple use be encouraged
- ▶ the land and its resources be sustained in perpetuity
- ▶ it be occupied, sold, or otherwise dealt with consistent with these principles.

Where an applicant is a public authority (which includes a council), landowner consent is not required for a development application if the public authority serves a copy of the application on the Crown before the application is lodged with the consent or approval authority. It is noted that there are different provisions for landowner consent for Part 3A development (refer section 2.1.3 above).

An authorisation under the Act to allow occupation of Crown land must be obtained once project approval is received. The potential impacts of the project on land use are considered in chapter 16.

Local Government Act 1993 and Land Acquisition (Just Terms Compensation) Act 1991

Under Section 24 of the *Local Government Act 1993*, Councils have the power to '*provide goods, services and facilities, and carry out activities, appropriate to the current and future needs within its local community and of the wider public*'. Chapter 6 of the *Local Government Act 1993* states that such service functions include 'environmental conservation, protection and improvement services and facilities'.

A permanent easement may need to be acquired from landowners for the ongoing operation and maintenance of the pipeline and the new sections of power supply. This would be done under the terms of the *Local Government Act 1993* and the *Land Acquisition (Just Terms Compensation) Act 1991*. It is intended that an agreement regarding compensation for the temporary use of land (during construction) and the permanent easement would be negotiated between Council and landowners. The likely conditions for the permanent easement would include:

- ▶ The landowner not being permitted to erect any building or permanent structure on the easement.
- ▶ The landowner not being permitted to plant substantial or deep rooted trees on the easement.
- ▶ Subject to the above, it is likely that the landowner would be able to continue to carry out the following activities on the easement:
 - normal passage over the easement
 - grazing of livestock
 - normal cultivation for crops and market gardens etc (excluding orchards)
 - normal cultivation and propagation of pasture.

National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* establishes the responsibility for the care, control and management of all national parks, historic sites, nature reserves, reserves, Aboriginal areas and state game reserves. State conservation areas, karst conservation reserves and regional parks are also administered under the Act. As described in chapter 16, the project route would travel (for a short section) inside the south-eastern boundary of the Mullion Range State Conservation Area. Section 153 ('easements') of the Act specifies that:

(1) The Minister may upon such terms and conditions as the Minister thinks fit grant for joint or several use easements or rights of way through, upon or in a national park, historic site, state conservation area, regional park, nature reserve or karst conservation reserve for the purpose of providing access to any area included in any lease or licence within the park, site, area or reserve, or for the construction of pipelines, or for the erection of standards, posts, wires and appliances for the conveyance or transmission of electricity, or for any other purpose deemed necessary.

Council would negotiate an easement over the reserve in accordance with the requirements of the Act.

2.4.3 Environment Protection and Biodiversity Conservation Act 1999

The Australian Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) prescribes the role of the Australian Government in environmental assessment, biodiversity conservation and the management of protected areas and species, populations and communities and heritage items.

Council submitted a referral and received advice from the Commonwealth Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) on 22 December 2011 (refer Appendix N) that the project is a controlled action under sections 75 and 87 of the EPBC Act. The relevant controlling provisions were identified as:

- ▶ listed threatened species and communities
- ▶ wetlands (Ramsar)
- ▶ listed migratory species.

Further information on the EPBC Act requirements in relation to the project, and a summary of the results of the assessment of EPBC matters, are provided in chapter 25. The results of the assessment of the potential impacts on terrestrial and aquatic ecology are provided in chapters 12 and 13.

2.5 The application and assessment process

2.5.1 Director-General's requirements

Under clause 75F of the EP&A Act, the Director-General is required to prepare and issue a proponent with requirements for undertaking the environmental assessment. These identify key issues to be addressed and the level of assessment required. The Director-General's requirements for the project were issued on 24 March 2011. A supplement to the Director-General's requirements (to cover the EPBC Act assessment requirements) was issued on 27 February 2012. A copy of the requirements is included in Appendix A. The matters raised by the Director-General for consideration, and the section of the environmental assessment that addresses them, are outlined in Table 2.1.

2.5.2 Exhibition and submissions

If the environmental assessment is considered to meet the requirements, the Department of Planning and Infrastructure would place it on public exhibition for at least 30 days. During the exhibition period, submissions would be invited from relevant agencies and members of the public.

The Department of Planning and Infrastructure would provide Council with a copy of the submissions or a summary of the issues raised. Council would be asked to respond to the issues and may modify the project and the draft statement of commitments to minimise impacts on the environment if required. If the project or statement of commitments are modified in response to issues raised, a preferred project report would be prepared to describe the scope of the revised project. The Director-General would make this report public.

Table 2.1 Director-General's requirements

Issue category	Requirement	Document reference
General requirements	Executive summary	Executive summary
	Detailed description of the project including:	Part B
	<ul style="list-style-type: none"> proposed construction methods of all components of the project clearly defining the proposal corridor 	Section 7.2 Section 7.3
	<ul style="list-style-type: none"> types of watercourse and infrastructure crossings and ancillary infrastructure 	
	<ul style="list-style-type: none"> location and alignment of project components 	Section 3.3
	<ul style="list-style-type: none"> operation details, including pumping technology and water quality standards to be applied 	Chapter 6 Section 7.3
	<ul style="list-style-type: none"> interfaces with watercourses 	Section 7.7
	<ul style="list-style-type: none"> energy requirements and associated greenhouse gas emissions 	Section 7.5
	<ul style="list-style-type: none"> any staging 	
	<ul style="list-style-type: none"> any implications for the existing operational capacity (including water volumes and treatment procedures) for Orange water treatment facilities 	Section 6.3
	<ul style="list-style-type: none"> details of the operation of the offtake (in terms of river flow and offtake volumes) under different climatic conditions 	Section 6.3
	<ul style="list-style-type: none"> the preferred option for securing a water entitlement under the <i>Water Act 1912</i> 	Section 6.3
	<ul style="list-style-type: none"> details of maintenance activities (for the pipeline and corridor) including contingency management in the case of pipeline failure 	Section 6.4
	Justification for the project	Section 28.1
	Consideration of relevant statutory provisions	Chapter 2
	Assessment of the key issues	Part C
	Draft statement of commitments	Chapter 27
	Conclusion justifying the project	Chapter 28
	Certification by the author	At front of document

Issue category	Requirement	Document reference
Key issues	General environmental risk analysis	Chapter 9
	<i>Strategic planning and justification</i>	
	Regional strategic context	Section 5.2
	Need, scale, scope, location and objectives of the project including justification for preferred project	Chapters 3, 5, 6 and 28
	<i>Alternatives</i>	
	Alternatives considered – water supply and corridor selection	Chapter 8
	<i>Land use planning impacts</i>	
	Suitability of the project considering potential conflicts with existing and future land use and infrastructure	Chapter 16
	<i>Ecological impacts</i>	
	Flora and fauna impact assessment	Sections 12.3, 13.3
	Management framework	Sections 12.6, 13.5
	Offsets and management requirements	Sections 12.4, 13.5
	Fish passage and avoidance of entrainment or entrapment of fish eggs and larvae	Section 13.3
	<i>Heritage</i>	
	Non-indigenous heritage	Chapter 18
	Indigenous heritage	Chapter 17
	Aboriginal communities consultation	Section 17.1
	<i>Surface and groundwater impacts</i>	
	Potential risks to surface and groundwater	Section 11.3
	Site water balance	Section 10.3
	Potential impacts on other groundwater and surface water users	Section 11.3
	Framework for mitigation, management and monitoring	Section 11.5
	Potential for impacts to watercourses including risk assessment	Section 11.3
	<i>Geomorphology and hydrology</i>	
	Hydrological, hydraulic or ecological characteristics and sensitivity of significant water courses	Section 11.2
	Assessment of impacts to stability of watercourses	Section 11.3
	<i>Infrastructure impacts</i>	
	Assessment on infrastructure, including roads, communications, electricity, gas and water supply.	Chapter 22
	<i>Traffic and transport</i>	
	Assessment of impacts to local and regional road network and intersections	Chapter 21

Issue category	Requirement	Document reference
	Nature/mode of traffic generation from the project	Section 21.3
	Transport routes and traffic volumes	Section 21.3
	Impact on any existing and proposed railway infrastructure	Section 21.3
	Noise and vibration	
	Assessment of noise and vibration impacts	Chapter 15
	Visual amenity	
	Description of all project components and locations	Section 19.3
	Photographic assessment from key viewing locations	Section 19.3, Appendix K
	Contamination and spoil management	
	Identification of any contaminated land affected and potential to contaminate land	Section 20.2
	Likely spoil generation, known or potential contamination issues, options for spoil management, reuse and/or disposal	Chapters 20 and 23
Consultation	Consultation with agencies, stakeholders and community	Chapter 4
EPBC Act requirements (supplement to original requirements)	Address the supplementary requirements provided by the Department of Sustainability, Environment, Water, Population and Communities	Chapter 25

2.5.3 Assessment and determination

Following the exhibition period the Department of Planning and Infrastructure would, on behalf of the Minister, review the environmental assessment, any preferred project report, and any submissions received. Once the Department has completed its assessment, a draft assessment report would be prepared for the Director-General. This report may include recommended conditions of approval. The recommended conditions would refer to the statement of commitments, and may modify them and/or add additional provisions.

The assessment report would then be submitted to the Minister for determination. The Minister may refuse the project, or approve it with any conditions considered appropriate. The Minister's determination and the Director-General's report would be published on the Department of Planning and Infrastructure's website immediately following determination.

Chapter 3. Location and setting

3.1 Overview

This chapter provides a description of the project's setting and location. Section 3.2 provides an overview of some of the key features of the region and sub-region in which the project is located. The project location is described in section 3.3, with a summary of key features of the local environment provided in section 3.4. Further information on the existing environment is provided in part C. Land ownership along the project route is described in section 3.5.

3.2 Regional setting

The project is located in the Orange and Cabonne local government areas, as shown in Figure 1.2. These local government areas are located in the central west of NSW, approximately 250 km west of Sydney. The study area for the project is located to the north and north-east of the city of Orange. The key features of the study area and surrounding region are described in the following sections.

The regional setting for the project is shown in Figure 1.1 and Figure 1.2.

3.2.1 Sub-regional population and development

The sub-region consists of the local government areas of Orange, Cabonne and Blayney. The Orange local government covers an area of approximately 286 km² and had a population of approximately 34,969 at the time of the 2006 Australian Bureau of Statistics (ABS) census. The area includes the main city of Orange and the smaller villages of Lucknow, Shadforth, Spring Hill and March. Orange is the main service centre for the sub-region, and the biggest town.

The Cabonne local government area surrounds the Orange local government area to the north, east and west. It has an area of approximately 6,022 km² and a population of approximately 12,215 people (ABS, 2006). Villages in the Cabonne area include Manildra, Molong, Borenore, Canowindra, Cargo, Cudal, Cumnock, Eugowra, Mullion Creek, Nashdale and Yeoval.

The Blayney local government area is located to the south of Orange. It has an area of approximately 1,524 km² and a population of 6,364 (ABS, 2006). The main towns in the local government area are Millthorpe and Blayney.

Orange is a major service, commercial and administrative centre for central NSW, complemented by a number of smaller towns and villages. Blayney and Cabonne local government areas have a primary industry focus, with agriculture, viticulture, horticulture and mining forming the basis of the local economy. Tourism is a significant and growing component of the regional economy, focused around food and wine from an emerging viticulture industry, historic sites, and the natural beauty of the area.

Key drivers of employment growth in the region are mining, agriculture, the local wine industry, construction, industry, commerce/retail services, health and education. The sub-region has experienced considerable population growth in the past ten years particularly within the rural areas close to the city of Orange. This growth has been partly attributable to the growth of tourism and viticulture within the region together with the expansion of Cadia/Ridgeway Gold Mine and the range of support services associated

with this industry. There are also indications of people moving to the region from larger population centres to experience town, village and rural lifestyle opportunities. The dominant land uses in the sub-region outside the villages and towns are (GHD, 2008):

- ▶ pasture/grazing (approximately 69.3% of land)
- ▶ timber/tree cover and State Forest/National Park (13.6% of land)
- ▶ cropping (12% of land).

3.2.2 Key features of the study area

Macquarie River

The Macquarie River is one of the main inland rivers in NSW. Its headwaters rise in the central highlands of NSW near the town of Oberon (see Figure 3.1). The river travels generally northwest past or near the towns of Bathurst, Orange, Wellington, Dubbo, Narromine, and Warren to the Macquarie Marshes. The Macquarie Marshes then drain into the Darling River via the lower Barwon River.

The Macquarie River is formed by the joining of the Fish and Campbells Rivers, and extends north-west to the Barwon River upstream of Bourke. The river flows generally northward from the high plateau area near Oberon, through steep gorge areas around Hill End and the Cabonne local government area (near the project), and is impounded by Burrendong Dam, upstream of Wellington.

The river continues to flow in a north-west direction downstream of the dam. It passes through Wellington and Dubbo and is joined by several major tributaries from the east and western parts of the catchment (including the Cudgegong, Bell, Little and Talbragar Rivers). North of Dubbo, the river passes through flat plains flowing north-west through Narromine and Warren. The Macquarie Marshes lies at the end of the river channel proper.

The volume and pattern of flows in the river have been significantly altered by the construction and operation of Windamere Dam on the Cudgegong River and Burrendong Dam on the Macquarie River. Traditionally, natural river flows were highest between June and October and lowest in late-summer and autumn. However, flows in much of the system are now at their highest during the irrigation season, which extends from October to March.

Other water courses

The Orange local government area does not contain a major river. Surface water is the main source of town water supply and is also used for agricultural and industrial purposes (MWH, 2007). Orange has six major creek catchments:

- ▶ Blackmans Swamp Creek
- ▶ Ploughmans Creek
- ▶ Spring Creek/Brandy Creek
- ▶ Gosling Creek
- ▶ Upper Summer Hill Creek
- ▶ Lower Summer Hill Creek.

All of the catchments, except for Ploughmans Creek, run into the lower Summer Hill Creek catchment and onto Ophir Creek.



Source: Wikipedia commons

Figure 3.1 Macquarie River Catchment

Reserves

The project does not pass through any reserves; however the following reserves are located in the vicinity of the project (as shown in Figure 1.2).

Mullion Range State Conservation Area and the Central Mullion Reserve

The Mullion Range State Conservation Area, which was created in March 1999, is located to the west of the project. It is managed by NSW National Parks and Wildlife Service and covers an area of 1,025 hectares. The main access is located 17 km north to north-east of Orange via Ophir Road. Facilities include picnic areas and walking tracks.

It consists of three separate parcels of land. Between and adjoining the two southern blocks of the state conservation area is the 355 hectare Central Mullion Reserve. This Crown Reserve was also previously managed by the Canobolas Regional Parkland Trust. It is currently managed by a trust established under the *Crown Lands Act 1989*. It is likely that this land will be added to the state conservation area in future,

following which it will be managed in accordance with this plan. In addition to the Crown Reserve, Mullion Range State Conservation Area is bounded by small rural holdings, private and Forests NSW pine plantations. The northern part of the reserve adjoins larger rural holdings and Forests NSW estate consisting of both pine plantations and native forests (DECCW, 2010).

The project is located close to the south-eastern boundary of this reserve, approximately between chainages 21000 and 26000 (refer chapter 16). The potential impacts on the reserve are considered in chapters 12 and 16.

Kinross State Forest

Kinross State Forest is located to the south-east of the project, to the east of the locality of Clifton Grove, north of Suma Park Dam. It is managed by Forests NSW and covers an area of approximately 600 hectares. The main access is located via Lower Lewis Ponds Road, approximately 8 km north-east of Orange. The reserve has no facilities for visitors.

The project would not impact on this reserve.

Girralang Nature Reserve and Ophir Reserve

The Girralang Nature Reserve, which was created in November 1998, is located further to the east of the project, to the south of the Macquarie River. The reserve was part of the Ophir goldfields and was first mined in 1851. It is managed by NSW National Parks and Wildlife Service. The main access is located approximately 24 km north-east of Orange via the Ophir Road. The reserve has no facilities for visitors.

The reserve covers an area of 640 hectares. It is surrounded by larger rural holdings and bounded by Ophir Creek on the reserve's western boundary. Ophir Creek flows north into the Macquarie River.

Nearby conservation reserves include Freemantle Nature Reserve which is located 5 km to the south-east of the reserve's south-eastern boundary. Current land uses in the region include cattle and sheep production, cropping and pine plantations (DECCW, 2010).

The historic Ophir Reserve adjoins the Girralang Nature Reserve. Ophir Reserve is a Crown Reserve and is the site of the first payable gold in Australia. The main access is via Ophir Road. Facilities include picnic and camping areas, and walking tracks.

The project would not impact on this reserve.

Macquarie Marshes

The Macquarie Marshes are located approximately 330 km downstream of the project (see Figure 1.1). The Macquarie Marshes comprise the wetlands associated with the floodplains of the Macquarie River and tributaries in this location. Macquarie River and the marshes eventually drain into the Darling River.

The marshes consist of a system of freshwater channels and streams, some of which are permanent following construction of water regulation devices, with semi-permanent and ephemeral swamps and floodplains. The extent of the marshes varies according to the extent of flooding. Most of the area covered by the marshes is used as rangeland or pasture. Approximately 10% is protected in the Macquarie Marshes Nature Reserve, which is located approximately 100 km north of the town of Warren and 30 km west of Quambone. The rest of the Macquarie Marshes floodplain consists of private properties, on which the main land uses are grazing and cropping.

The marshes are one of the largest semi-permanent wetlands in south-eastern Australia, covering more than 150,000 hectares. Parts of the marshes are listed on or under the:

- ▶ Ramsar convention (18,143 hectares)
- ▶ National Trust as a Landscape Conservation Area (148,000 hectares)
- ▶ Australian Heritage Commission's register of the National Estate (148,000 hectares)
- ▶ Directory of Important Wetlands in Australia.

The potential impacts of the project on the Macquarie Marshes are considered in chapters 10 and 13.

3.2.3 Water supply context

Regional context

Orange is in the Macquarie River catchment and draws all of its water from surface and ground waters in small catchments surrounding the town, which are mostly part of the larger Summer Hill Creek catchment. Summer Hill Creek flows into Ophir Creek which joins the Macquarie River 47 km from Orange and 12 km downstream of the junction of the Macquarie River the Turon River. Ploughmans Creek is the one exception and it is part of the Bell River catchment which enters the Macquarie River further downstream than Ophir Creek.

Oberon Dam on the Fish River and Chifley Dam on the Macquarie River are two major water supply dams in the Macquarie Catchment well upstream of Orange. Burrendong Dam is a major water supply dam on the Macquarie River downstream of Orange and about 70 km directly north of the city. None of these dams supply water to Orange.

Orange's water supply system

Council owns and operates its own water supply system. The primary water supply for Orange is from Suma Park Dam and Reservoir, located on Summer Hill Creek approximately 4 km east of Orange. The catchment for the dam is relatively small at 179 km² and the reservoir has a storage capacity at full supply level of approximately 18,000 ML.

The city's secondary water supply is from Spring Creek Dam, which is located at the junction of Spring Creek and Gosling Creek, approximately 4 km south-east of Orange. The catchment for this dam is 63 km² and it has a storage capacity of 4,500 ML at full supply level.

Water from these two dams is treated at the Icely Road Water Treatment Plant and, when required, the Spring Creek Water Treatment Plant, and is reticulated to users via reservoirs and 464 km of water mains. Information on current and predicted levels of demand and supply is provided in chapter 5.

3.3 Location of the project including the pipeline route

The overall location of the pipeline route and main structures is shown in Figure 1.2 and the figures referenced in the sections below. A location figure showing chainages is provided in Figure 3.2. Indicative photos of the location of the project are provided in chapter 19.

3.3.1 Offtake structure and pump station

The location of the offtake structure is shown in Figure 3.3. The offtake structure (which includes a pump station) would be located on the southern bank of the Macquarie River immediately upstream of Boshes Creek, near the locality of Long Point. The waterhole known as 'Gardiners Hole' is located in the vicinity of the site.

Access to the site is via an unsealed road. The site is surrounded by the river and steeply wooded banks. Areas in the vicinity of the site are used informally for recreation purposes. There are no structures or residences in the vicinity of the site. Other than landowners there is no real public access to the site except by river craft.

3.3.2 Pipeline

The pipeline is approximately 37 km long, and extends from the Macquarie River in the north, to the Suma Park Dam in the south. The pipeline route is shown in Figure 1.2 and Figure 3.2 (with chainages). More detailed figures of the route are provided in chapter 6.

The route of the pipeline was determined based on a number of physical factors such as topography, landscape, land use and environmental considerations. The route selection process is described in chapter 8.

The pipeline would commence at the offtake point on the bank of the Macquarie River. It then continues in a south-easterly direction for approximately 4 km through private property. Following this, the pipeline would continue along (or adjacent to) the road reserves for the following roadways:

- ▶ Long Point Road
- ▶ Oaky Lane
- ▶ Lookout Road
- ▶ Ophir Road
- ▶ Bulgas Road.

The pipeline would cross watercourses and the above roadways on several occasions, as described in chapters 7, 11 and 22.

3.3.3 Booster pump stations

Two booster pump stations (with associated break tanks) would be located along the route, as shown in Figure 3.4 and Figure 3.5. One (PS2) would be located approximately 4.7 km south-west of the offtake. This site is located on private land and directly adjoins Long Point Road. The site is surrounded by open rural land. The nearest residence to the site (with the address of 1829 Long Point Road) is located approximately 1,600 m to the east.

The other pump station (PS3) would be located approximately 16.7 km south-west of the offtake. This site is located on private land and directly adjoins Oaky Lane. The site is surrounded by open rural land with scattered trees. The nearest residence to the site (206 Lookout Road) is located approximately 600 m to the west.

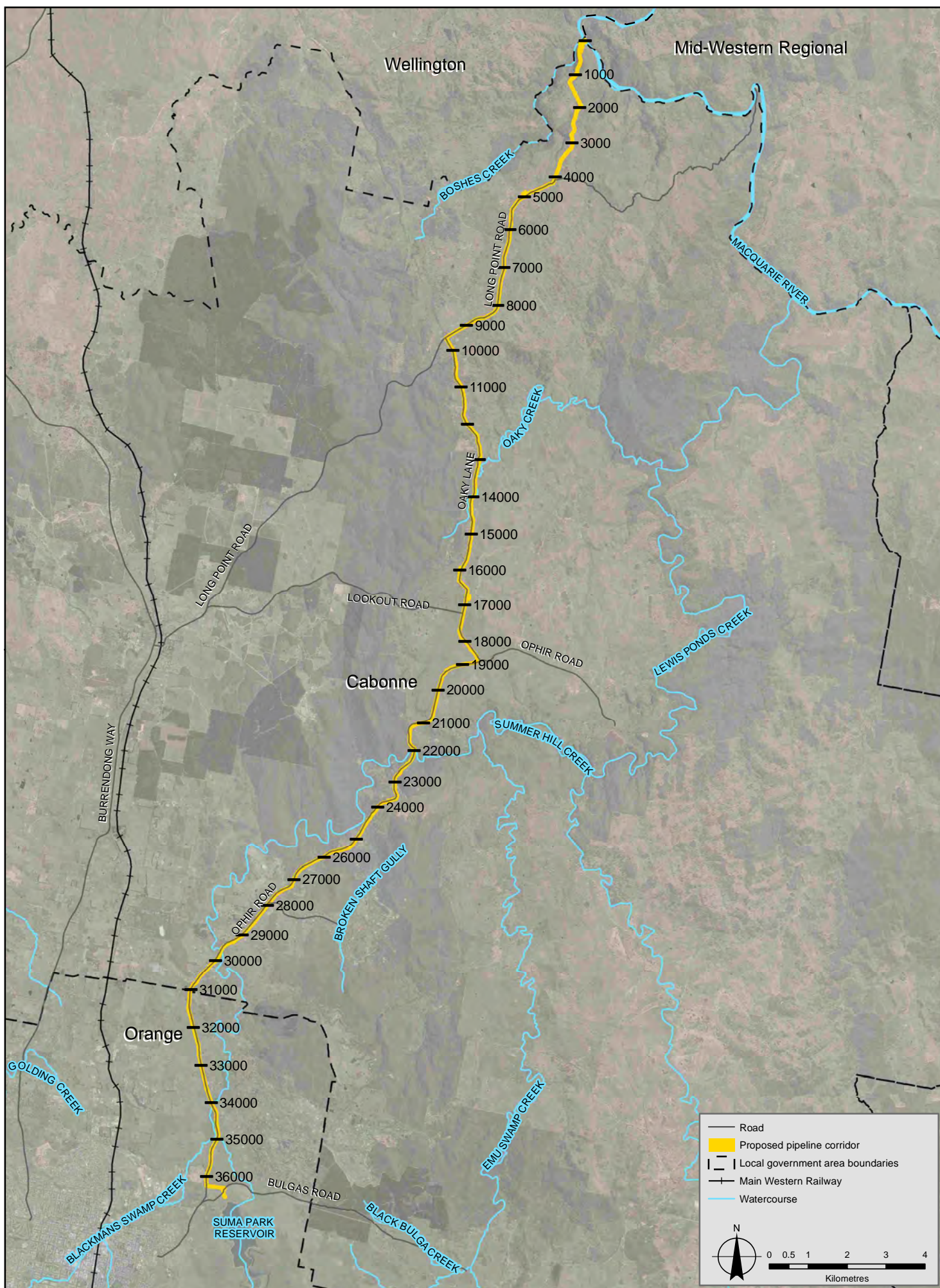


Figure 3.2
Location of the pipeline showing chainages

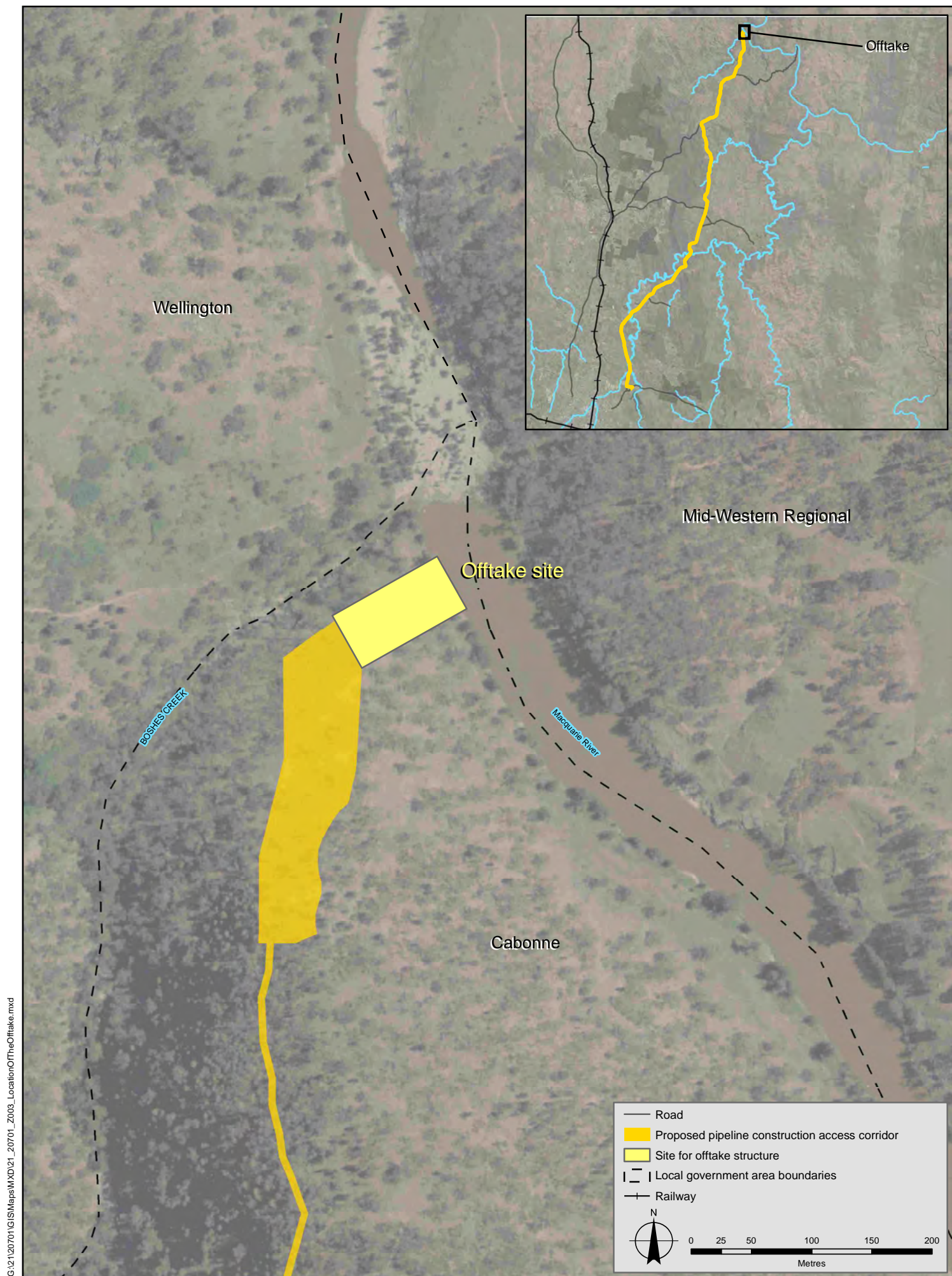


Figure 3.3
Location of the offtake structure

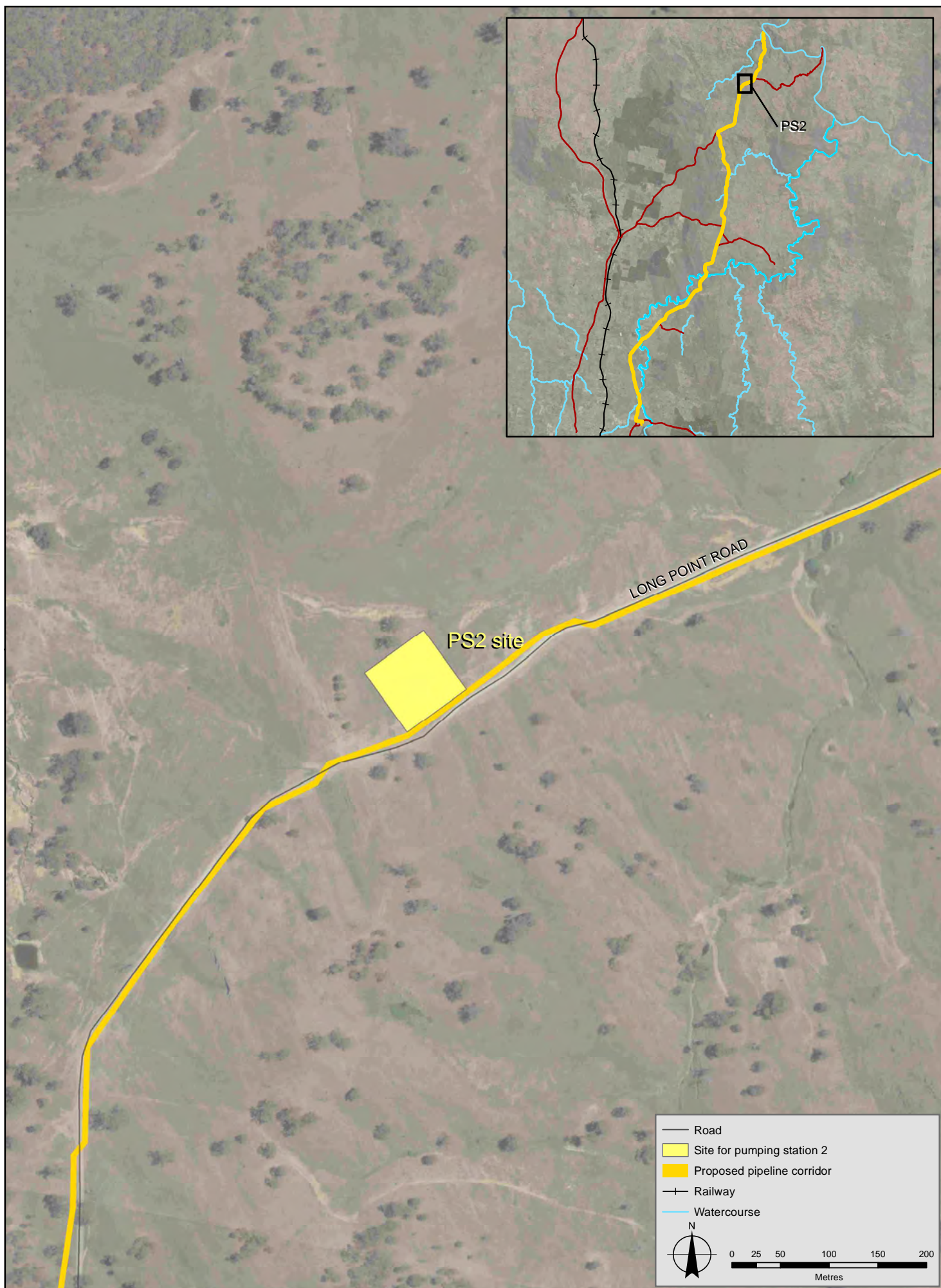


Figure 3.4
Location of booster pumping station 2 (PS2)

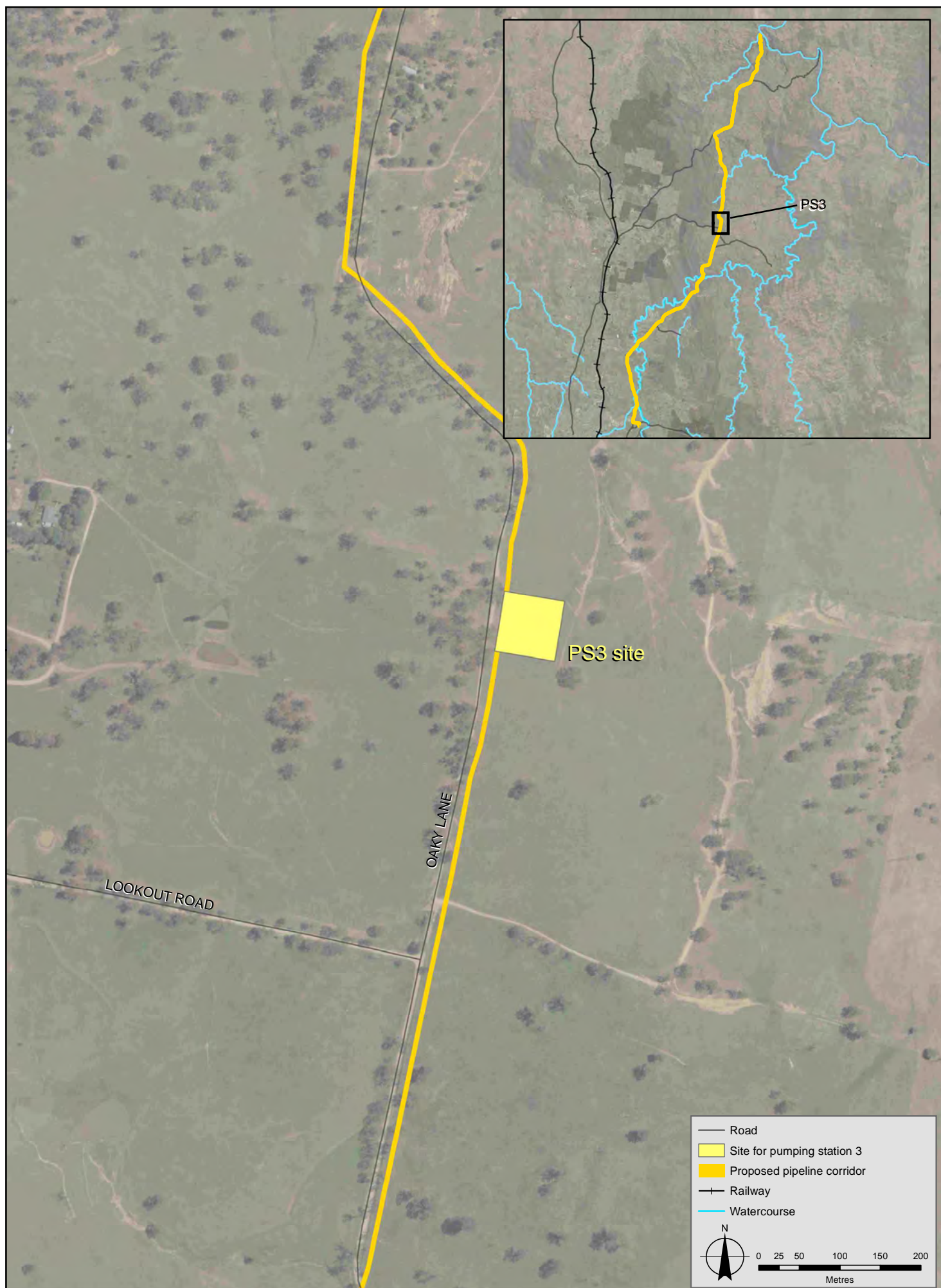


Figure 3.5
Location of booster pumping station 3 (PS3)

3.3.4 Discharge structure

The pipeline would discharge to the discharge structure, located at the Suma Park Dam approximately 10 m east of the existing saddle dam, as shown in Figure 3.6. Access to the site is via an existing unsealed road via Bulgas Road. The site is surrounded by open paddocks. The nearest residence to the site is located approximately 190 m to the south west.

The outlet of the pipeline would be at the location of the saddle dam at the Suma Park Reservoir. It would be placed above the dam's top water level and a sufficient distance away from the dam's spillway such that it would not be washed away in the event of spillway operation.

3.3.5 Other

Power supply

Construction of new overhead power supply would be required from approximately chainage 00 to chainage 4100. The power line would be installed within the same corridor as the project where practicable to minimise the amount of clearing that would be required. The existing power supply would be upgraded from chainage 4100 to approximately chainage 26660. This would not require the creation of additional easements, however the upgrade would involve the provision of additional conductors and poles. The power supply location is shown in Figure 3.7.

Valves

A number of valves would be located at regular intervals along the pipeline. These include section/isolation valves, scour valves and air valves. The final location and design of the valves would be determined during detailed design in consultation with affected landholders where possible.

3.4 Local setting – key features of the existing environment of the study area

The following sections provide a summary of the key features of the local environment. Further information is provided in Part C of the environmental assessment, within the existing environment sections of chapters 10 to 24. The potential impacts of the project are assessed in Part C

3.4.1 Land use

The land use in the vicinity of the pipeline corridor is a mix of rural (grazing), rural residential and reserves. In the vicinity of the site for the offtake structure, the Macquarie River is subject to informal recreation use (fishing, canoeing etc). Other land uses along the route include infrastructure (roads, power lines).

Land within the study area has been cleared for grazing and pasture improvement. Parts of the study area have been subject to forestry practices including logging and construction of infrastructure such as vehicle tracks. The areas of greatest disturbance are those impacted by mining activities dating from the 1850s through to the 1930s. The majority of the study area has been cleared, particularly at the southern end towards Suma Park Dam.

Residences in the vicinity of the project (within 200 metres) are shown in Figure 3.8.

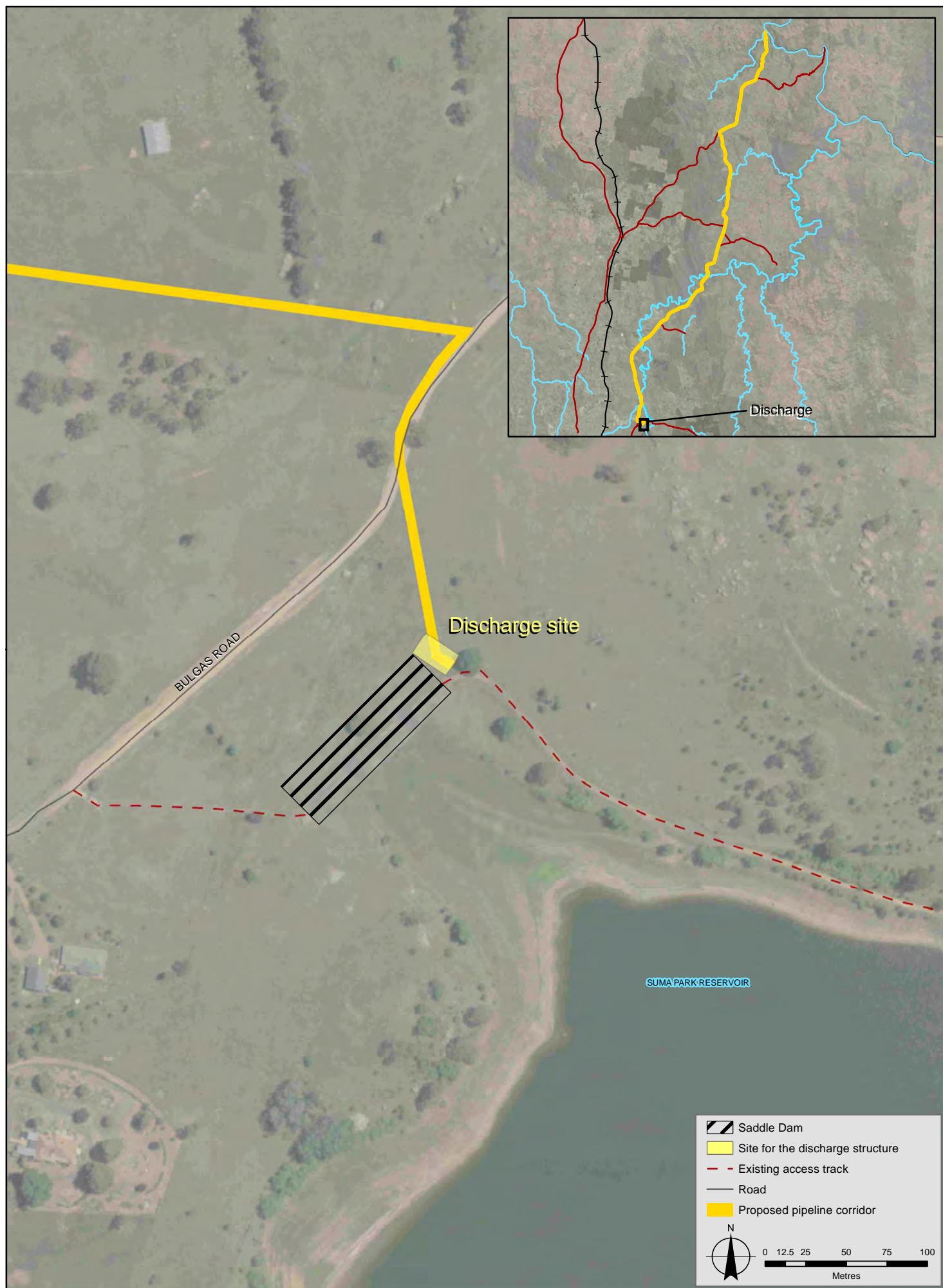


Figure 3.6
Location of the discharge structure

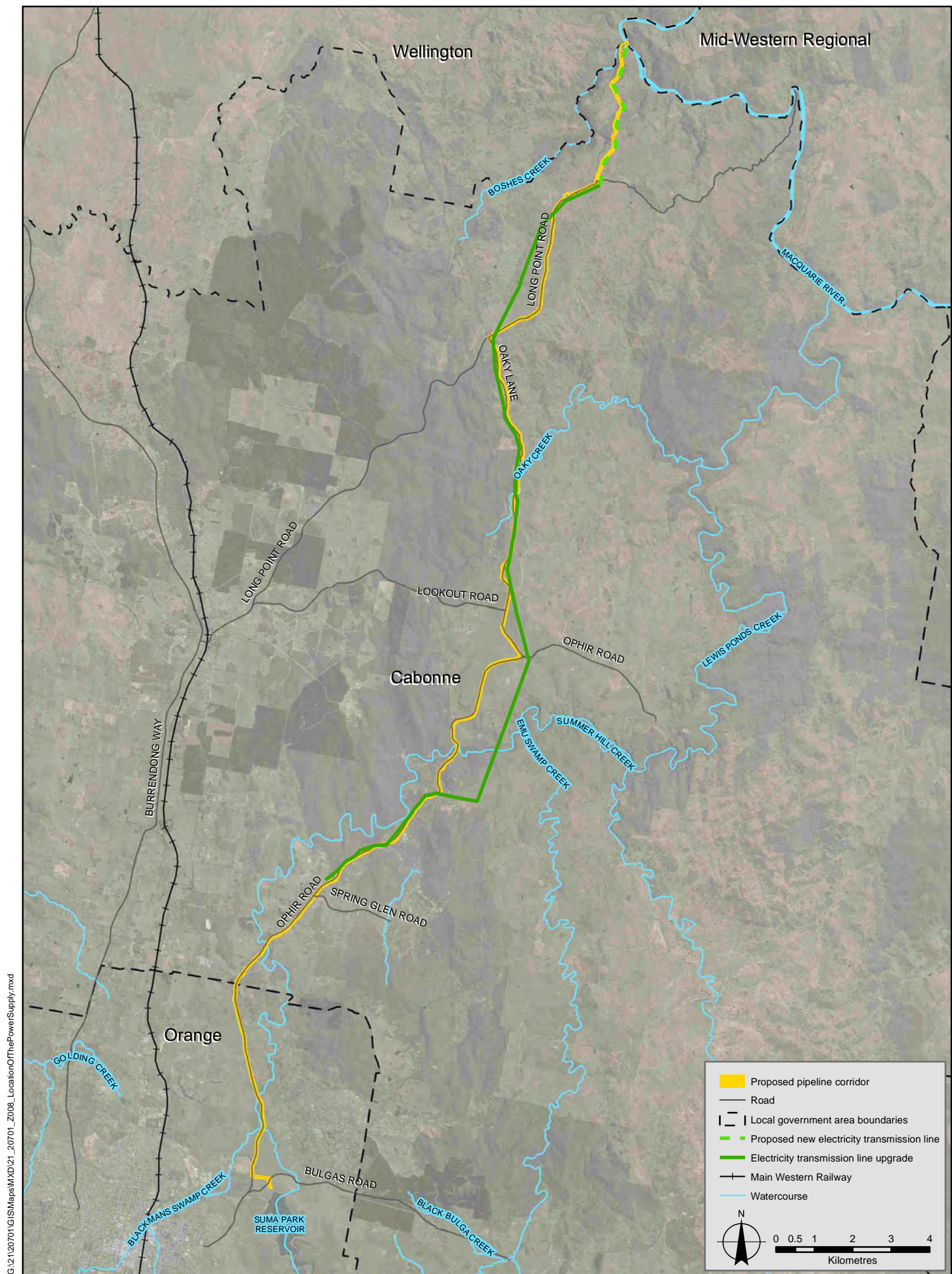


Figure 3.7

Location of the power supply

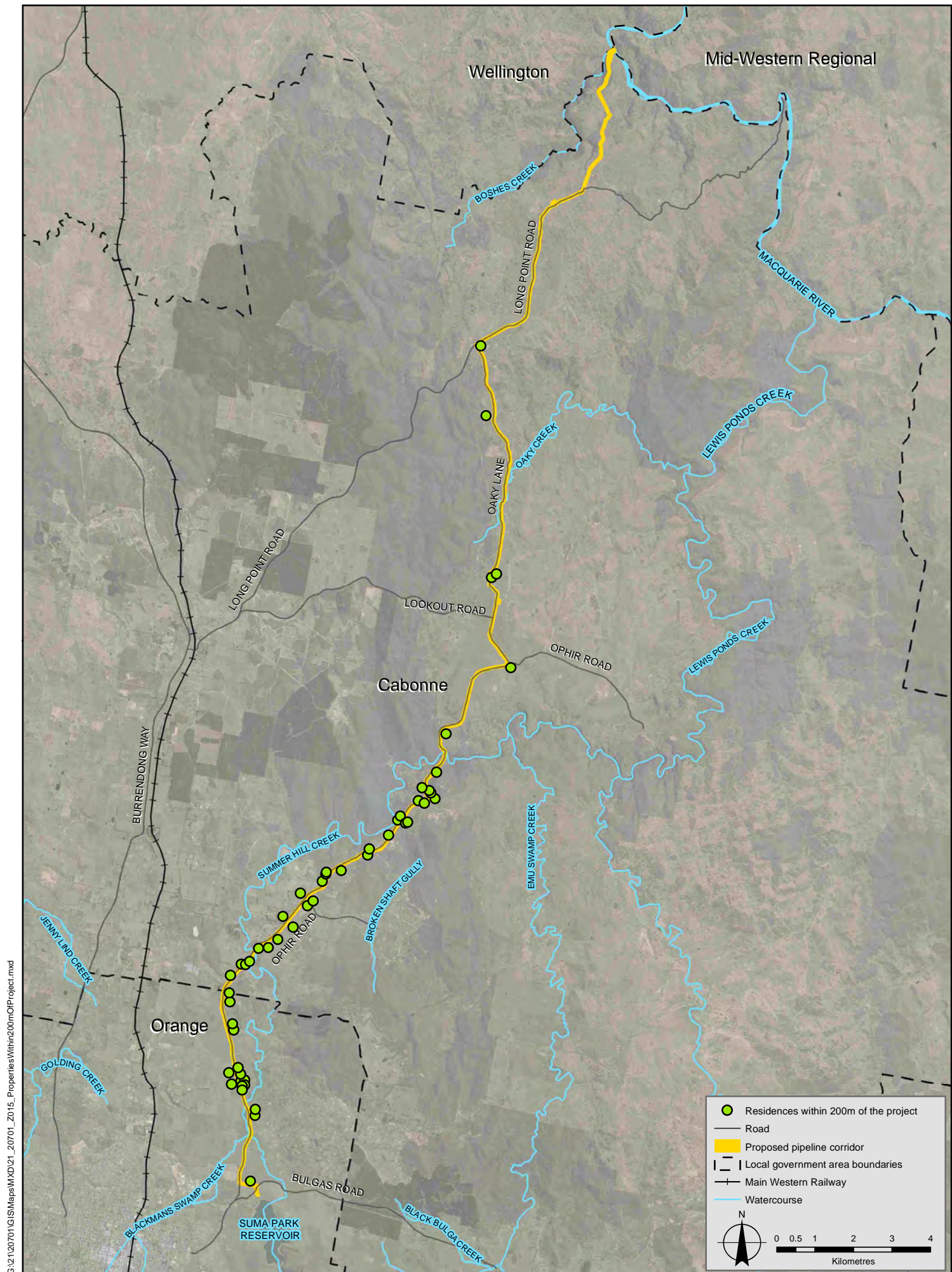


Figure 3.8

Residences within 200m of the project

3.4.2 Landscape and topography

The pipeline corridor passes through a varied landscape. The northern most portion of the corridor is more remote and characterised by undulating hills with steep slopes. Part of the land has been cleared for grazing and rocky outcrops exist. Further to the south the pipeline corridor passes through a landscape with small hills and sheltered slopes. Several creeks run through the landscape.

Towards the southern area of the corridor, the landscape becomes a cleared plateau, with gently undulating topography. Rural residential properties are scattered throughout the area. The corridor passes through the outskirts of Orange at its southern most end. The landscape at this location is dominated by large lot residential development and infrastructure (roads, power, Suma Park Dam).

Numerous tributaries of the Macquarie River traverse the study area. These range from first order ephemeral creek lines through to more substantial semi-permanent to permanent watercourses such as Oaky Creek, Summer Hill Creek, Emu Swamp Creek and Boshes Creek.

3.4.3 Geology and soils

The pipeline is set within the geological region known as the Lachlan Fold Belt. This is a geological region with a complex history and associated complex formations. The geological formations along the project corridor route are summarised in Table 2.1. Chainages are approximate, and are measured along the corridor starting from the Macquarie River, as shown in Figure 3.2.

Table 3.1 Geological formations along the project corridor

Approx. chainage	Formation
0-900	Cunningham Formation
900-2500	Mafic Volcanic Rocks
2500-7800	Cunningham Formation
7800-8300	Bay Formation
8300-15200	Barnaby Hills Shale
15200-19900	Mafic Volcanic Rocks
19900-22900	Mullions Range Volcanics
22900-23300	Barnaby Hills Shale / Mullions Range Volcanics / Mafic Volcanic Rocks
23300-30200	Mullions Range Volcanics
30200-32200	Oakdale Formation
32200-34300	Oakdale Formation / Ultramafic cumulates and lava
34300-36991	Oakdale Formation

Source: Pells, 2012

In the study area, the geology typically comprises:

- ▶ Devonian metasedimentary slates, siltstones and sandstones
- ▶ Silurian volcanic tuffaceous mudstones, conglomerates and breccias
- ▶ Ordovician volcanoclastic sandstones, siltstone, breccia and basalt.

Some younger Tertiary intrusions of basalt are found to outcrop at locations along the corridor. These are similar to the basalt formations found underneath Orange, and forming Mt Canobolas to the South-West of the town.

The site walkover identified that the project corridor contains soil units comprising siltstone, basalt, rhyolite, monzonite, sandstone and ashstone. The pipeline corridor traverses a number of soil landscapes including North Orange, Macquarie, Mookerawa, Panuara and Burrendong. The dominant soil landscape is the Mookerawa landscape.

3.4.4 Ecology

Terrestrial

The most common vegetation types along the project corridor are

- ▶ Stringybark - Box - Gum Woodland
- ▶ Grassland (exotic).

No threatened flora was recorded within the study area. Potential habitat for two species (Austral Toadflax *Thesium australe* and Silky Swainson-pea *Swainsona sericea*) is present within the project corridor. A third species, *Euphrasia arguta*, was considered to have marginal potential habitat within the study area.

Eight threatened fauna species were recorded within the study area during field surveys:

- ▶ Four fauna species positively identified during the field surveys - the Brown Treecreeper, Diamond Firetail, Powerful Owl and Large-eared Pied Bat.
- ▶ Four microchiropteran bat species assumed to be present.

One ecological community listed as threatened under the TSC Act - White Box Yellow Box Blakely's Red Gum Woodland (Box Gum Woodland) - was recorded within the study area. This community is also listed as threatened under the EPBC Act (as White Box Yellow Box Blakely's Red Gum Grassy Woodland and Derived Grassland ('Box Gum Woodland')).

Aquatic

Five fish species (Macquarie Perch, Trout Cod, Flathead Galaxias, Silver Perch, and Purple-spotted Gudgeon) and one endangered population (Eel Tailed Catfish) listed under the Fisheries Management Act potentially occur in the study area. Three threatened fish species listed under the EPBC Act (Murray Cod, Macquarie Perch and Trout Cod), were identified as potentially occurring within the study area. None of the species listed above were recorded during the field survey undertaken for the project. However, Macquarie Perch and Flat-head Galaxias have been previously recorded as occurring in the upper Macquarie River. Freshwater fish stocking records indicate that Silver Perch have been released into Burrendong Dam, and Trout Cod have been released into the Macquarie River.

3.4.5 Heritage

Aboriginal heritage

The study area traverses an area which was previously inhabited by members of the Wiradjuri linguistic group, and falls into the tribal area delineated as 'Wiradjuri'. Nine previously recorded sites are located within 1 km of the project. Two of these sites are within the pipeline corridor. Sites include open artefact sites, found in close proximity to creeks or rivers, and stone quarry sites.

Seventeen new Aboriginal sites were recorded during the field survey for the project. The sites included artefact scatters, isolated finds and a possible scarred tree. Five areas of potential archaeological sensitivity were also identified.

Non-indigenous heritage

Historically, the study area to the north-east of Orange was dominated by pastoralism and mining. A portion of the study area is located within the former goldfields of Ophir and the Macquarie River. Ophir, located approximately 30 km north-east of Orange, was the location of the first gold discovery in Australia in 1851.

The pipeline corridor intersects the curtilage of two State listed heritage items - the 'Rosedale' homestead and the Templar's Mill and Banjo Paterson memorial at the 'Narrambla' property. Five historic heritage sites were identified during the field survey, including sites related to mining and a 20th Century structure.

3.4.6 Traffic and transport

The local road network in the vicinity of the project includes:

- ▶ Ophir Road
- ▶ Lookout Road
- ▶ Oaky Lane
- ▶ Bulgas Road
- ▶ Burrendong Way
- ▶ Long Point Road.

Observations during site visits indicated that the road network is operating adequately and has significant spare capacity.

3.4.7 Air quality and noise

As the majority of the study area is subject to rural (grazing) and rural residential uses, the background noise levels are relatively low and the air quality is relatively good.

3.5 Land leases/ownership

The pipeline corridor passes through a mix of private properties and Crown land (mainly road reserves). Land ownership is shown in Table 3.2 according to the chainage (that is, distance along the corridor as shown in Figure 3.2).

Table 3.2 Land ownership

Chainage (m)	Lot	DP	Ownership	Property description
0 - 1940	1	794007	Private	Heavily vegetated along pipeline route, access track and power line extension and used for grazing
1940 - 2878	16	756881	Private	Vegetated along pipeline route, access track and power line extension and used for grazing
2878 - 3970	1	344307	Private	Vegetated along pipeline route, access track and power line extension and used for grazing
Access road	3	1092033	Private	Unsealed road
3970- 3990			Public	Unsealed road (Crown land)
3990 - 4145	41	756881	Private	Lightly vegetated along pipeline route and used for grazing
4145 - 4151			Public	Long Point Road (Crown land)
4151- 5629	A	414856	Private	Lightly vegetated along pipeline route and used for grazing
5629 - 9676			Public	Long Point Road
9676 - 10898	4	586403	Private	Lightly vegetated along pipeline route and used for grazing
10898 - 12088	28	756881	Private	Lightly vegetated along pipeline route and used for grazing
12088-12117	6	114868	Crown land	Lightly vegetated along pipeline route and used for grazing
12117 - 12414	28	756881	Private	Heavily vegetated along pipeline route, and used for grazing
12414 - 12430	1	441717	Private	Lightly vegetated along pipeline route and used for grazing
12420 - 12907	1	119722	Private	Lightly vegetated along pipeline route and used for grazing
12907 - 13433	1	161887	Private	Lightly vegetated along pipeline route and used for grazing
13434 - 14000	100	579209	Private	Lightly vegetated along pipeline route and used for grazing
14000 - 14093	2	119722	Private	Lightly vegetated along pipeline route and used for grazing
14093 - 14506	3	119722	Private	Lightly vegetated along pipeline route and used for grazing
14506 - 15066	2	119722	Private	Unsealed Road
15066 - 15239			Private	Transgrid
15239 - 15898	4	119722	Private	Lightly vegetated along pipeline route and used for grazing
15898 - 15908	5	119722	Private	Lightly vegetated along pipeline route and used for grazing
15908 -15932			Public	Oaky Lane
15932 - 16284	1	399078	Private	Lightly vegetated along pipeline route and used for grazing
16284 - 16305			Public	Oaky Lane
16305 - 16370	5	119722	Private	Lightly vegetated along pipeline route and used for grazing
16370 - 16377	1	399077	Private	Lookout Road
16377 - 16742	44	756889	Private	Lightly vegetated along pipeline route and used for grazing
16742 - 17222	17	756889	Private	Lightly vegetated along pipeline route and used for grazing
17222 - 17630	2	1113542	Private	Lightly vegetated along pipeline route and used for grazing
17630 - 17660			Public	Lookout Road
17660 - 18544	2	1113542	Private	Lightly vegetated along pipeline route and used for grazing
18544 - 18585	1	1099195	Private	Lightly vegetated along pipeline route and used for grazing
18585 - 19462	2	1113542	Private	Lightly vegetated along pipeline route and used for grazing
19462 - 19488			Public	Ophir Road
19488 - 19547	1	711515	Private	Lightly vegetated along pipeline route and used for grazing
19547 - 20068	1	1108354	Private	Lightly vegetated along pipeline route and used for grazing
20068 - 20548	70	756889	Private	Lightly vegetated along pipeline route and used for grazing
20548 - 20732	3	618120	Private	Lightly vegetated along pipeline route and used for grazing
20732 - 20757	83	720612	Private	Lightly vegetated along pipeline route and used for grazing

Chainage (m)	Lot	DP	Ownership	Property description
20757 - 20877	3	618120	Private	Lightly vegetated along pipeline route and used for grazing
20877 - 20902	2	618120	Private	Lightly vegetated along pipeline route and used for grazing
20902 - 21015	34	756889	Private	Heavily vegetated in parts along pipeline route, and used for grazing
21015 - 21429	2	618120	Private	Lightly vegetated along pipeline route and used for grazing
21429 - 21726	2	732738	Private	Lightly vegetated along pipeline route and used for grazing
21726 - 22457			Public	Crown land
22457 - 23021	105	1003870	Private	Heavily vegetated in parts along pipeline route, and used for grazing
23021 - 23260	104	1003870	Private	Lightly vegetated along pipeline route and used for grazing
23260 - 23421	103	1003870	Private	Heavily vegetated in parts along pipeline route, and used for grazing
23421 - 23714			Public	Ophir Road
23714 - 24717	4	591883	Private	Heavily vegetated in parts along pipeline route, and used for grazing
24717 - 25181	3	591883	Private	Heavily vegetated in parts along pipeline route, and used for grazing
25181 - 25635	2	591883	Private	Heavily vegetated in parts along pipeline route, and used for grazing
25635 - 26678	11	870930	Private	Lightly vegetated along pipeline route and used for grazing
26678 - 26817	5	836381	Private	Lightly vegetated along pipeline route and used for grazing
26817 - 27470			Public	Ophir Road
27470 - 27900	2	836381	Private	Lightly vegetated along pipeline route and used for grazing
27900 - 27929			Public	Spring Glen Road
27929 - 28397	2	786104	Private	Lightly vegetated along pipeline route and used for grazing
28397 - 28816	1	786104	Private	Lightly vegetated along pipeline route and used for grazing
28816 - 29015	6	703806	Private	Lightly vegetated along pipeline route and used for grazing
29015 - 29042			Public	Winter Lane
29042 - 29369	44	836267	Private	Lightly vegetated along pipeline route and used for grazing
29369 - 29675			Public	Crown land
29675 - 30065	12	756890	Private	Lightly vegetated along pipeline route and used for grazing
30065 - 31402			Public	Ophir Road
31402 - 32140	26	668540	Private	Heavily vegetated in parts along pipeline route, and used for grazing
32140 - 32385	4	524856	Charles Stuart University	Lightly vegetated along pipeline route and used for grazing
32385 - 36264			Public	Ophir Road
36264 - 36728	25	1075011	Private	Lightly vegetated along pipeline route and used for grazing
36728 - 36855			Public	Ophir Road
36855 - 36931	92	841660	Private	Lightly vegetated along pipeline route and used for grazing
36931 - 36933	11	771560	Orange City Council	Lightly vegetated along pipeline route and used for grazing
36933 - 36991	A	421655	Orange City Council	Lightly vegetated along pipeline route and used for grazing

Chapter 4. Stakeholder consultation

4.1 Overview

This chapter provides a description of the consultation that has been undertaken with stakeholders during development of the project, and then during the concept design and environmental assessment process. The chapter includes consideration of:

- consultation undertaken during each stage
- stakeholders consulted
- consultation mechanisms employed
- key issues identified as a result of the consultation undertaken.

4.2 Consultation during project development

4.2.1 Community consultation

Consultation with the community on local and regional water management has been ongoing for many years. In recent years there has been a significant focus on regional water management. Orange City Council has played a major role in the development of Centroc's water security study (refer section 5.2.2). This study included significant regional consultation and involved major stakeholders such as mining and agriculture representatives.

The Centroc study included reference to a proposal to construct a pipeline between the Macquarie River and Orange. Consultation regarding this proposal commenced in 2010. The objectives of this consultation were to:

- identify key stakeholders along the proposed pipeline corridor
- brief stakeholders about the project
- ensure that Council provided a clear line of communication for any stakeholder feedback
- identify stakeholder issues, question and concerns.

Stakeholders identified that they would like to ensure that:

- there was an adequate response to the issues raised during consultation
- a comprehensive consultation process with all stakeholder groups is maintained for the duration of the project.

Consultants (Manidis Roberts Pty Ltd) were engaged by Council to undertake a series of landholder discussions. The purpose of these discussions was to provide landholders with information on the project, and listen to their concerns, comments and requirements. Consultation activities undertaken during this stage included:

- individual meetings with landowners
- phone calls

- public meeting with the wider community
- advertisements and information updates in local newspaper
- information on Council's website.

The issues raised by stakeholders were used to inform the concept design process.

4.2.2 Consultation groups

Reference group for the Integrated Water Cycle Management plan

Council has been developing an integrated water cycle management study since 2007. The study involves a structured process set by the NSW Office of Water. As part of the process a project reference group has been established. Three meetings of the reference group have been held between May 2007 and November 2011. The most recent meeting involved a multi-criteria analysis of shortlisted water augmentation options (refer chapter 8 for further information on the options considered).

Project taskforce

The NSW Government (the Office of Water) established a taskforce to review and oversee the development and implementation of the project (if approved). The taskforce is comprised of representatives of relevant government agencies including:

- Department of Premier and Cabinet (Chair)
- Office of Environment and Heritage
- Department of Primary Industries (including NSW Office of Water, NSW Fisheries and Forests NSW)
- Division of Crown Lands
- Department of Planning and Infrastructure
- Cabonne Council
- Orange City Council.
- Commonwealth Department of Sustainability, Environment, Water, Population and Communities

The taskforce has met monthly in Orange since December 2010. Orange City Council officers provide progress reports to the taskforce each month.

4.3 Consultation during concept design and environmental assessment

4.3.1 Planning and stakeholder identification

Community engagement plan

Orange City Council commenced consultation activities as part of the concept design and environmental assessment in March 2011. Council developed a community engagement plan and communications strategy to guide consultation activities. The main objective of the community engagement plan is to

develop and implement planned, positive and targeted communication and engagement with all stakeholders, to support the continued investigation and assessment of:

- alternative water supply strategies for the Orange community
- the project and its implementation (if it is approved).

The community engagement plan outlines the process for community and stakeholder engagement throughout the project and details the following:

- communication and management tools to share and record information
- activities to share information and bring people together.

Consultation tools and activities are listed in section 4.3.2. The plan has been updated throughout the consultation process.

Stakeholder identification

Council conducted a community scan to identify relevant stakeholders and develop a project database. Stakeholders are added to the database as they express interest in the project. Stakeholders include:

- Commonwealth Department of Sustainability, Environment, Water, Population and Communities
- NSW Office of Water Taskforce - Orange Drought Emergency Water Project
- Government members:
 - Minister for Sustainability, Environment, Water, Population and Communities (Tony Burke)
 - Former Minister for Water (Phillip Costa)
 - Senator Matt Thistlethwaite
 - Senator Barnaby Joyce
 - Senator Steve Hutchens
 - Minister for Primary Industries and Small Business (Katrina Hodgkinson MP)
 - Federal Member for Calare (John Cobb MP)
 - Member for Orange (Andrew Gee MP)
- Department of Local Government
- Central West Catchment Management Authority
- NSW Roads and Maritime Services
- Land and Property Management Authority
- Telstra
- Essential Energy
- Councils (incl Councillors):
 - Orange City Council
 - Cabonne Council
 - Wellington Council
 - other Centroc member councils
- Lower Macquarie Water Utilities Alliance
- Property owners/residents:
 - along the project route
 - where electricity upgrades are proposed
 - on construction transport routes
- Local and regional road users
- Orange Water Security Alliance:
 - Orange Ratepayers Association
 - Friends of the Macquarie River
 - Inland Rivers Network
 - Inland Water Rejuvenation Association
 - Environmentally Concerned Citizens of Orange
- Macquarie Pipeline Concerned Citizens Committee
- Orange Day Break Rotary
- Charles Sturt University

- ▶ Orange Business Chamber
- ▶ Orange Rotary groups
- ▶ Orange Christian School
- ▶ Aboriginal groups
- ▶ General Orange community
- ▶ General Cabonne community

Committees

NSW Office of Water Rural Landholder Sub-Committee

As an outcome of the meetings of the project taskforce (described in section 4.2.2), the NSW Office of Water Rural Landholder Sub-committee was established. This committee provides advice to the taskforce on matters associated with the planning, design, construction and monitoring of the project. It also acts as a point of liaison between the taskforce and rural landholders. Committee members include

- ▶ Taskforce Executive Officer
- ▶ NSW Office of Water
- ▶ a rural representative of the Cabonne Community Pipeline Liaison Committee
- ▶ a representative with an interest in rural environmental issues.

Macquarie Pipeline Consultative Committee

Orange and Cabonne Councils established the Macquarie Pipeline Consultative Committee to provide a structured forum to consider stakeholder issues and assist in distributing information to stakeholder groups. The committee would meet until the contractual construction defects liability period for the project is complete. The committee consists of:

- ▶ an independent chairperson endorsed by the Mayors of Orange City and Cabonne Councils
- ▶ the General Manager (or nominee) and Mayors of Orange City and Cabonne Councils
- ▶ two representatives of the Macquarie Pipeline Concerned Citizens Committee
- ▶ up to six interested community members
- ▶ Council staff as required in an advisory capacity.

The committee meets every two months and has done so from November 2011. Each meeting is advertised in the local newspaper.

Aboriginal consultation

Aboriginal consultation was undertaken by Navin Officer Heritage Consultants as part of the cultural heritage assessment for the project. Consultation was undertaken in accordance with the requirements of the guidelines 'Aboriginal cultural heritage consultation requirements for proponents' (DECCW, 2010). Further information is provided in section 17.1.

Consultation with utility providers

Telecommunications

Council identified that Telstra is the only provider with infrastructure that may be directly impacted by the project. Consultation with Telstra included a risk assessment workshop to identify high risk activities and appropriate control measures. These control measures would be incorporated as part of detailed design and documentation. Infrastructure locations would be included in all project plans.

Power

Council consulted the local electricity provider (Essential Energy). Consultation has included:

- ▶ design and estimate for the proposed power upgrade
- ▶ optimisation of pumping station design and operating hours to minimise power costs
- ▶ alternative power options
- ▶ benefits to customers
- ▶ minimising outages during construction
- ▶ conditions that would apply when work is undertaken within easements or in close proximity to power transmission lines

Council also consulted Transgrid. Consultation has included:

- ▶ identifying encroachment distances from transmission towers
- ▶ application to cross Transgrid easements

The results of consultation would be incorporated as part of detailed design and documentation.

Interest group consultation

Council staff have addressed local environmental and community groups at various times throughout the project development and environmental assessment process.

Fishing groups

Council arranged for a community meeting for fishing groups who use the Macquarie River. The purpose of this meeting was for stakeholders to raise issues and ask questions regarding the aquatic ecology of the river system. The meeting was attended by representatives of:

- ▶ fishing group users of the Macquarie River
- ▶ Inland Water Rejuvenation Association
- ▶ property owners along the river
- ▶ Council and their consultants (Cardno and GHD)
- ▶ NSW Fisheries.

Council has attended additional meetings at Hill End and with the NSW Council of Freshwater Anglers.

Macquarie Pipeline Concerned Citizens Committee

The Macquarie Pipeline Concerned Citizens Group consists mainly of local landowners who are potentially affected by the project. The group has actively lobbied Council.

Orange Water Security Alliance

The Orange Water Security Alliance has actively lobbied Council in relation to the project.

4.3.2 Consultation tools and activities

The main consultation tools and activities used are listed in Table 4.1.

Table 4.1 Consultation tools and activities

Tool	Purpose	Activity to date
Contact mechanisms	<p>A community information phone line and reply paid mailing address were established to allow the community and stakeholders to provide feedback.</p> <p>The contact information is included on all project related communication materials.</p> <p>All contacts with stakeholders have been recorded using the Consultation Manager database. This program allows the project team to maintain an accurate record of contact with stakeholders, as well as to identify and track any issues or trends that may arise. A summary of issues and discussions with stakeholders has been given to the design team after consultation events to allow feedback to be considered in the design process where possible.</p>	<p>Since the environmental assessment commenced, contact has been made with at least 340 stakeholders.</p> <p>Council has received 21 phone calls and 139 items of correspondence via the contact mechanisms.</p>
Email address	A project email address was added in response to stakeholder feedback on project communications.	The email address (macquariepipeline@orange.nsw.gov.au) was launched in August 2011.
Project websites	<p>The project webpage was developed in 2010 and is updated regularly with information that Council releases to the public. The website contains information such as media releases, information sheets on the project, the Director-General's requirements, Council reports, links to other government organisations information and information on the project.</p> <p>In October 2011, Council's project team identified that Council required a new website to communicate the overall water security strategy for Orange. This page (www.watersecurity.orange.nsw.gov.au) was developed and became live in December 2011. The website provides another form of communication, in relation to both the project and Orange's overall water security strategy.</p>	Council has received 3,211 hits on the project webpage.
Information mail outs	<p>Council has sent letters to stakeholders between March 2011 and June 2012.</p> <p>Letters provided an outline of Council's progress and information on the project. The letters have been sent out periodically as updates became available. As the project design has developed, Council has corresponded with landowners to advise how their property could potentially be affected, and to request individual meetings.</p>	Council has sent 10 letters to each stakeholder group.
Media updates	Council has issued regular media updates to report on project progress. These updates are available on Council's website and are circulated to local media in Bathurst, Dubbo, Molong, Orange and Wellington.	Council has released 13 media releases.

Tool	Purpose	Activity to date
Project information sheets	<p>Project information sheets were prepared at the beginning of the environmental assessment stage. The information sheets are available at Council offices, community information sessions and via Council's website. Stakeholders along the pipeline route were also made aware of the information sheets through an information letter and those on the project email list received copies.</p> <p>The documents are version controlled to keep stakeholders informed and up to date.</p> <p>Council developed a Q & A sheet for all stakeholders in March 2011. This information was available at all community meetings, Council's website and was displayed at the reception desk of the Council civic centre. The Q & A sheet has been updated three times as more information became available.</p>	<p>The following information sheets have been prepared:</p> <ul style="list-style-type: none"> ▮ Macquarie Orange Pipeline Project ▮ Investigation and Environmental Assessment ▮ Pipeline Construction ▮ How the Pipeline will be maintained ▮ Pump Stations and Break Tanks ▮ Restoration of Land After Construction ▮ Acquiring Easements ▮ Taskforce ▮ Hydrology ▮ Aquatic Ecology
Landowner meetings	<p>Face to face meetings have been held with owners of the properties potentially affected by the project. Meetings provide landowners with the opportunity to provide feedback, raise concerns and ask any questions about the project. Landowner meetings would continue for the duration of the project.</p>	<p>Meetings have been held with owners of 30 properties.</p>
Community and environmental interest group meetings	<p>Council staff have addressed local environmental and community groups at various times throughout the project development and environmental assessment process.</p>	<p>Meetings have been held with</p> <ul style="list-style-type: none"> ▮ Fishing groups ▮ Macquarie Pipeline Concerned Citizens Group ▮ Orange Water Security Alliance ▮ Environmentally Concerned Citizens of Orange (ECCO) ▮ North Orange Rotary
Community information sessions	<p>Community information sessions have been held to present information on the project and listen to feedback. These have included</p> <ul style="list-style-type: none"> ▮ sessions for individual stakeholders whose properties may potentially be impacted by the project ▮ general community information sessions for all other interested community members and stakeholders. <p>Information sessions have been widely advertised to increase awareness. Directly impacted stakeholders were contacted on the phone prior to confirm that they had received their letter. Follow up phone calls were made to arrange meetings.</p>	<p>Six community information sessions have been held, including four for individual stakeholders and two general community information sessions.</p> <p>A total of 65 people attended sessions.</p>
Consultation with State and Commonwealth government	<p>In addition to meetings of the taskforce, project updates have been sent to government representatives between March 2011 and April 2012.</p>	<p>A total of 15 letters providing an update on the progress of the project have been sent.</p>

Tool	Purpose	Activity to date
Consultation with local government	<p>Project updates are regularly sent to Cabonne Council.</p> <p>Wellington Council has been sent copies of the information sheets and the Orange City Council report on justification for the pipeline.</p> <p>The project team has briefed Orange City Council staff during six individual meetings to keep staff informed of the project.</p> <p>Orange City Councillors have been updated regularly via Council meetings, briefings, memorandums, phone calls and emails when new information was available or Council were required to be informed of progress.</p> <p>The Central West Catchment Management Authority contacted Council to obtain information on the project. Information on the project has been sent and an offer has been made for the project team to brief the authority.</p>	<p>In May 2011 Orange Council staff attended a Cabonne Council meeting and briefed the Council on the project.</p> <p>An offer has been made for the project team to brief Wellington Council on the progress of the project.</p> <p>Regular updates of Orange City Council staff and Councillors have been undertaken.</p>

4.4 Results of consultation undertaken

4.4.1 Summary of issues raised

A summary of the issues raised during consultation is provided in Table 4.2, together with a reference to where they are addressed in this document.

Table 4.2 Summary of issues raised by the community

Issue category	Issues raised	Where addressed
Project development and project details	<ul style="list-style-type: none"> ▮ justification (have all other water security options been assessed/considered) ▮ alignment of pipeline (route) on private property ▮ standard of environmental assessment investigations ▮ location of the extraction point ▮ size of pump stations and break tanks ▮ project costs ▮ Council will require ongoing access to private properties ▮ pump stations - locations ▮ pump stations - noise ▮ ongoing costs to local residents ▮ boundary alignment of private property ▮ residences privacy not being maintained ▮ easement purchases and acquisition of land ▮ quality control ▮ upgrades of power along the route would not be available to residences. 	<p>Chapters 5,8 and 28</p> <p>Section 3.4 and 3.5</p> <p>Part C</p> <p>Section 3.3</p> <p>Section 6.2</p> <p>Section 6.6</p> <p>Sections 16.3 and 24.3</p> <p>Section 3.3</p> <p>Chapter 15</p> <p>Section 24.3</p> <p>Sections 16.3 and 24.3</p> <p>Sections 16.3 and 24.3</p> <p>Sections 16.3 and 24.3</p> <p>Chapter 6</p> <p>Section 6.3</p>
Water supply	<ul style="list-style-type: none"> ▮ availability of water in river 	Section 6.3

Issue category	Issues raised	Where addressed
	▸ effects on downstream water users	Section 6.3 and chapter 10
	▸ access to water by others (eg fire brigades, mines)	Section 6.3
	▸ consultation with cultural heritage groups	Section 17.1
Consultation and community interests	▸ community information and consultation	Chapter 4
	▸ who the taskforce reports to	Section 4.2
	▸ weeds, including weed transfer across properties	Section 4.4.2
Environmental issues	▸ water contamination	Chapter 11
	▸ impacts on fauna being sucked into the pump	Section 13.4
	▸ what impacts the sound and vibration will have on the local environment	Section 15.4
	▸ impacts to endangered and non-endangered fish within the river	Section 13.4
	▸ how land will be impacted by erosion during construction	Sections 11.4 and 20.3
	▸ property damage	Section 24.3
	▸ damage to roads	Section 22.3
	▸ sediment control	Sections 7.8 and 11.6
	▸ visual amenity impacts - that the pipeline could be placed above ground	Chapter 19
	▸ extra traffic that would be on the roads during construction	Chapter 21
	▸ removal of water impacting on fish spawning and passage	Chapters 10 and 13
	▸ biosecurity, spread of diseases	Chapter 24 and section 26.4

4.4.2 Other issues

Other issues that were raised during consultation are discussed below.

Easement purchase and acquisition

During consultation with landowners, issues were raised regarding the acquisition of land and the purchase of land for the easement. Council developed an information sheet on acquiring easements, and when each group meeting was held with landowners Council contracted a valuer to attend these meetings and explain the process.

Property, construction and rehabilitation management

Council prepared a work method statement for weed management during survey and investigation work associated with the project. The work method statement included control measures to limit weed contamination from properties that were accessed for the purposes of:

- environmental assessment
- geotechnical investigation

- telecommunications locations
- investigation and design.

The work method statement included basic vehicle clean down actions:

- inspect and clean interior
- inspect and clean exterior.

Council has conducted three weed management workshops with the attendees from Soil Conservation Services, Department of Primary Industries, Orange City Council's Weeds Management Officer and advising Agronomist. The objective of the workshops was to determine the terms of engagement for the development of a weed, soil erosion and biosecurity management plans for the project. The consultation on weed management continues as Council also consults with the NSW Office of Water Taskforce, Rural Land Holders Sub-Committee and Cabonne Council.

Individual property management plans would be developed in consultation with individual landowners with respect to property access arrangements, rehabilitation of the construction corridor, management of the easement and maintenance of the project (refer chapter 26). The plans would also cover:

- weeds control
- soil erosion
- disease control
- stock management.

4.5 Results of Government and statutory agency consultation

4.5.1 Consultation undertaken by Council

A summary of the issues raised by government agencies is provided in Table 4.3, together with a reference to where they are addressed in this document.

Table 4.3 Issues raised by government agencies

Agency	Issues raised	Where addressed
NSW Office of Water	▸ effects on downstream users	Chapter 10
	▸ water quality (surface and ground)	Chapter 11
	▸ native title claims (aboriginal heritage issues)	Chapter 17
	▸ community consultation and information	Chapter 4
	▸ availability of water licences for the project	Section 6.3
DSEWPC	▸ community education	Chapter 4
	▸ sediment control	Sections 7.8 and 11.6
	▸ flora and fauna	Chapters 12 and 13
CMA	▸ no comments received	
Department of Primary Industries	▸ community consultation and information	Chapter 4
	▸ route alignment (impacts on crown land)	Sections 3.3 and 16.3

Agency	Issues raised	Where addressed
	▮ Aboriginal land rights and native title	Chapter 17
	▮ weeds	Section 4.4.2
	▮ animal health	Chapter 12, Section 24.3
	▮ land restoration	Section 26.4
Environmental Protection Authority	▮ weeds	Chapter 12, Section 24.3, below table
	▮ erosion	Sections 10.3, 11.3 and 20.3
	▮ environmental impacts on flora, fauna and waterways	Chapters 10-13
	▮ animal health	Chapter 12, Section 24.3
Telstra	▮ damage to optic fibre lines during consultation	Chapter 22
TransGrid	▮ damage to existing infrastructure	Chapter 22
Essential Energy	▮ damage to existing infrastructure	Chapter 22
Cabonne Shire Council	▮ community consultation and information	Chapter 4
	▮ pipeline route in Oaky Lane	Chapter 3
	▮ number of pump stations required	Chapter 6
	▮ opportunity of power upgrades	Chapter 6
	▮ cost of power upgrade	Section 24.2
	▮ weed management and prevention	Section 4.4.2
	▮ restoration of land	Section 26.4
	▮ noise from pump stations	Chapter 15
	▮ extraction rate of flow in river	Section 6.3, chapter 10
	▮ availability of water in river	Section 6.3, chapter 10
	▮ size of balance tanks (pump stations)	Section 6.2
	▮ visual amenity	Chapter 19
	▮ damage to infrastructure (roads, drainage)	Chapter 22
	▮ public safety at time of construction	Chapter 24
	▮ damage to vegetation during construction	Chapter 12
	▮ sediment controls	Sections 7.8 and 11.6
	▮ coverage of pipe under road	Section 7.3
	▮ materials used in backfilling of trenches	Chapter 23
	▮ disruption of traffic	Chapter 21

4.5.2 Consultation undertaken as an input to the Director-General's requirements

A summary of issues raised by government agencies consulted by the (then) Department of Planning during preparation of the Director-General's requirements is provided in Table 4.4 together with a

reference to where they are addressed in this document. The full responses from agencies are provided in Appendix A.

Table 4.4 Issues raised by government agencies as an input to the Director-General's requirements

Agency	Issues raised	Where addressed
Department of Environment and Climate Change	▶ noise and vibration	Chapter 15
	▶ contaminated land	Chapter 20
	▶ contaminated water	Chapter 11
	▶ impacts to aquatic ecosystems/water dependent ecosystems	Chapter 13
	▶ incident management procedures	Section 26.4
	▶ impacts to heritage (Aboriginal)	Chapter 17
	▶ impacts to biodiversity	Chapters 12 and 13
Central West Catchment Management Authority	▶ project's alignment to the Central West Catchment Management Plan	Section 5.2
	▶ vegetation offsets and biodiversity issues	Chapters 12 and 13
Industry and Investment, Fisheries Conservation and Aquaculture Branch	▶ blockages to fish passage	Section 13.4
	▶ river offtake pump station – fish screens/filters	Sections 6.2 and 13.3
	▶ waterway crossings	Section 7.3, chapter 11
	▶ threatened species, populations and ecological communities	Chapters 12 and 13
	▶ riparian buffer zones	Chapters 11 and 13
	▶ hydrological impacts	Chapter 10
	▶ agricultural issues	Chapters 16 and 24
Office of Water	▶ confirmation that water supplies for the project are sourced from an authorised and reliable supply	Section 6.3 and chapter 10
	▶ identification of water demands, sources, disposal and storage in the form of a water balance	Chapters 5 and 10
	▶ location and operation details of the proposed infrastructure	Chapters 3 and 6
	▶ existing and proposed water licensing requirements	Section 6.3
	▶ impact assessment of the pump infrastructure on the Macquarie River	Part C
	▶ assessment of watercourses to be crossed and appropriate crossing methods	Section 7.3 and chapter 11
	▶ requirement to intercept groundwater and impacts to groundwater dependent ecosystems	Chapter 11, section 13.4
Crown Lands	▶ identification of any Crown land to be impacted and approvals	Sections 2.4 and 16.3
	▶ a 20 m construction corridor is excessive on Crown land	Section 7.2

Agency	Issues raised	Where addressed
	<ul style="list-style-type: none"> bed of streams and Macquarie River are Crown land, crossings along roads and waters require approvals from and consultation with the Crown 	Section 2.4
	<ul style="list-style-type: none"> review of existing vegetation communities is required 	Chapter 12
	<ul style="list-style-type: none"> increased ease of access for illegal and unauthorised activities 	Section 24.3
	<ul style="list-style-type: none"> impacts of noise and vibration 	Chapter 15
	<ul style="list-style-type: none"> impact on the recreational usage of Long Point 	Section 16.3
	<ul style="list-style-type: none"> visibility of the pipeline 	Chapter 19