

**MAJOR PROJECT ASSESSMENT:
Young to Wagga Wagga Looping Pipeline
Stage 2 (Bethungra to Young)
MP 10_0163**



Director-General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

April 2013

ABBREVIATIONS

AHIMS	Aboriginal Heritage Information Management System
AHMP	Aboriginal Heritage Management Plan
CEMP	Construction Environmental Management Plan
Department	Department of Planning & Infrastructure
DGRs	Director-General's Requirements
Director-General	Director-General of the Department of Planning & Infrastructure
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities
DTI	Department of Trade and Investment
EA	Environmental Assessment
EEC	Endangered Ecological Community
EP&A Act	<i>Environmental Planning and Assessment Act 1979</i>
EP&A Regulation	<i>Environmental Planning and Assessment Regulation 2000</i>
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Commonwealth)
EPI	Environmental Planning Instrument
ESD	Ecologically Sustainable Development
FHA	Final Hazard Assessment
Ha	Hectare
LALC	Local Aboriginal Land Council
LGA	Local Government Area
MD SEPP	<i>State Environmental Planning Policy (Major Development) 2005</i>
Minister	Minister for Planning and Infrastructure
MSP	Moomba Sydney Pipeline
NOW	NSW Office of Water
OEH	Office of Environment and Heritage
Part 3A	Part 3A of the <i>Environmental Planning and Assessment Act 1979</i>
PFM	Planning Focus Meeting
PHA	Preliminary Hazard Assessment
Proponent	East Australia Pipeline Pty Ltd (as part of APA Group)
RMS	Roads & Maritime Services
ROW	Right of Way
RtS	Response to Submissions Report
TSC Act	<i>Threatened Species Conservation Act 1995</i>

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EXECUTIVE SUMMARY

East Australian Pipeline Pty Ltd (as part of APA Group) has submitted a Major Project Application for the Young to Wagga Wagga Looping Stage 2 Pipeline (Bethungra to Young) Project. This Project is a continuation of the Stage 1 (Wagga Wagga to Bethungra) gas pipeline project which was approved in 2010 under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and is now constructed. The Project is a transitional Part 3A Project. The Project is located in the Junee, Harden, Cootamundra and Young Shire Council areas.

The Project consists of a 70 km length of looping pipeline from Bethungra to Young (as shown in Figure 1-1) as part of a 131 km pipeline from Young to Wagga Wagga, NSW. The proposed gas pipeline would be 18-inch (450mm) in diameter. The Project connects to the end of the Stage 1 looping gas pipeline in Bethungra and continues to Young. It follows the easement of an existing 12-inch (305mm) pipeline (separated by approximately 7m) and aims to duplicate the existing 12-inch pipeline in order to increase and improve the capacity and security of gas supply between NSW and Victoria to meet forecast demand.

The Project passes near the regional towns of Young, Wombat, Wallendbeen and Cootamundra, in southern central NSW. The Project would connect to the Moomba to Sydney Pipeline System (MPS) mainline at its north east end in Young. The Environmental Assessment (EA) study area is a 30 metre wide Right of Way (ROW) consisting of the existing 20 metre wide easement plus an additional 10 metres for construction purposes. The Project is estimated to cost \$80-\$90 million. The construction period would be approximately four months and employ approximately 50 people at the peak of the construction work.

A Planning Focus Meeting for both Stage 1 and Stage 2 (the Project) was held on 7 April 2009 to formally seek views of relevant statutory authorities. Further consultation was conducted during development of the EA for the Stage 1 and Stage 2 Projects. The EA was exhibited from 6 August 2012 until 7 September 2012. 11 submissions were received; 10 from government agencies and one private submission. No objections to the Project were received. The key issues raised were regarding Biodiversity (removal of vegetation and fauna habitat and offsets), Aboriginal cultural heritage (protection of heritage items) and construction noise and vibration impacts.

The Department has considered all relevant documents in accordance with the objects of the EP&A Act and ecologically sustainable development. On balance, the Department considers the project to be justified and in the public interest. The Department has drafted a recommended instrument of approval incorporating stringent and comprehensive environmental mitigation and management requirements to enhance commitments made by the Proponent in its Statement of Commitments. These include preparation of a Biodiversity Offset Package and a Construction Environmental Management Plan (CEMP) with a range of sub-plans. The Department considers the Project would provide a vital link in the gas infrastructure network and increase reliability of gas supply. Further, the Department considers the impacts can be managed and therefore recommends project approval, subject to the recommended conditions of approval and the Proponent's Statement of Commitments.

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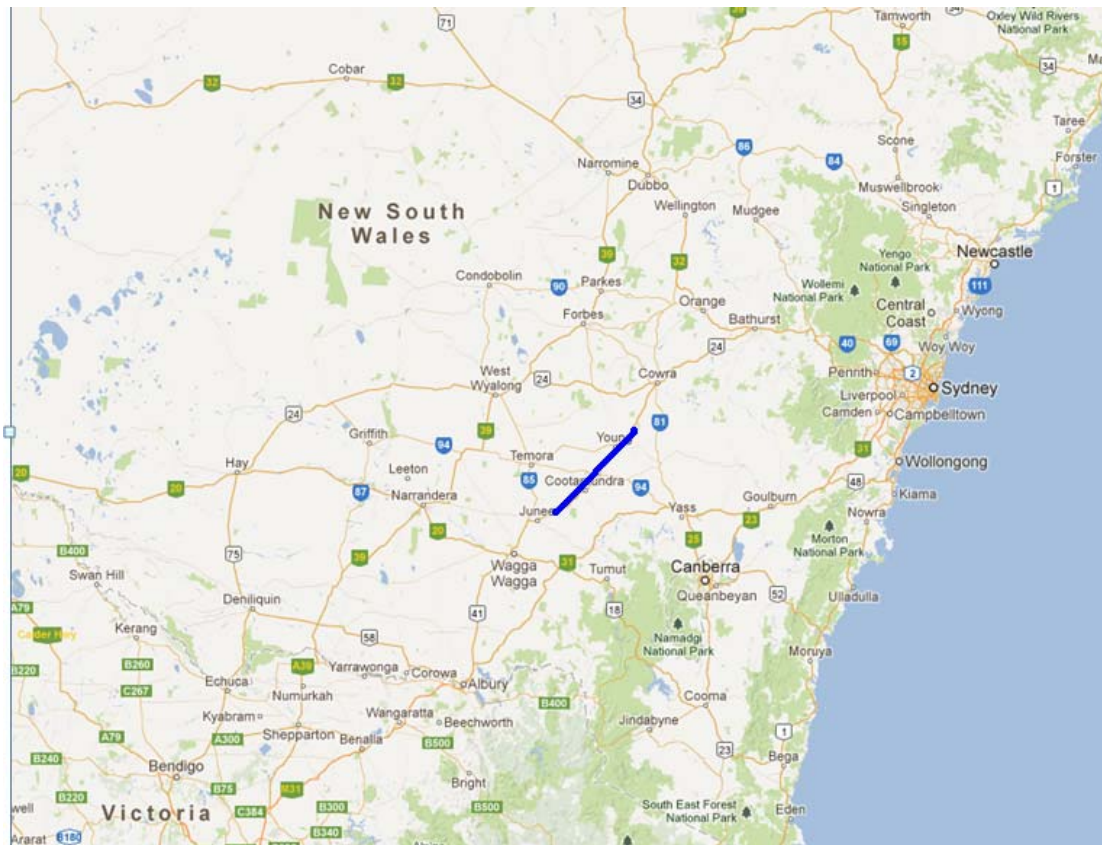
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1. BACKGROUND

1.1 Project Background

The Proponent, East Australia Pipeline Pty Ltd (as part of the APA Group) is proposing to construct and operate Stage 2 of the Young to Wagga Wagga Looping Pipeline between Bethungra and Young, NSW. The project location is shown in Figure 1-1.

Figure 1-1: Project Location



The Young to Wagga Wagga Looping Pipeline project consists of the following two stages:

- Stage 1 involved construction and operation of an 18-inch (450mm) diameter natural gas pipeline from Wagga Wagga to Bethungra, over a distance of 61 km. Stage 1 was previously approved under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and constructed in 2010/2011; and
- Stage 2 involves construction and operation of an 18-inch (450mm) diameter natural gas pipeline from Bethungra to Young, over a distance of 70 km (the Project). This application seeks approval for Stage 2 under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and is the subject of this report.

The Stage 1 and Stage 2 looping* pipelines would parallel an existing pipeline which is licensed by the Department of Trade and Investment (DTI) (formerly the Department of

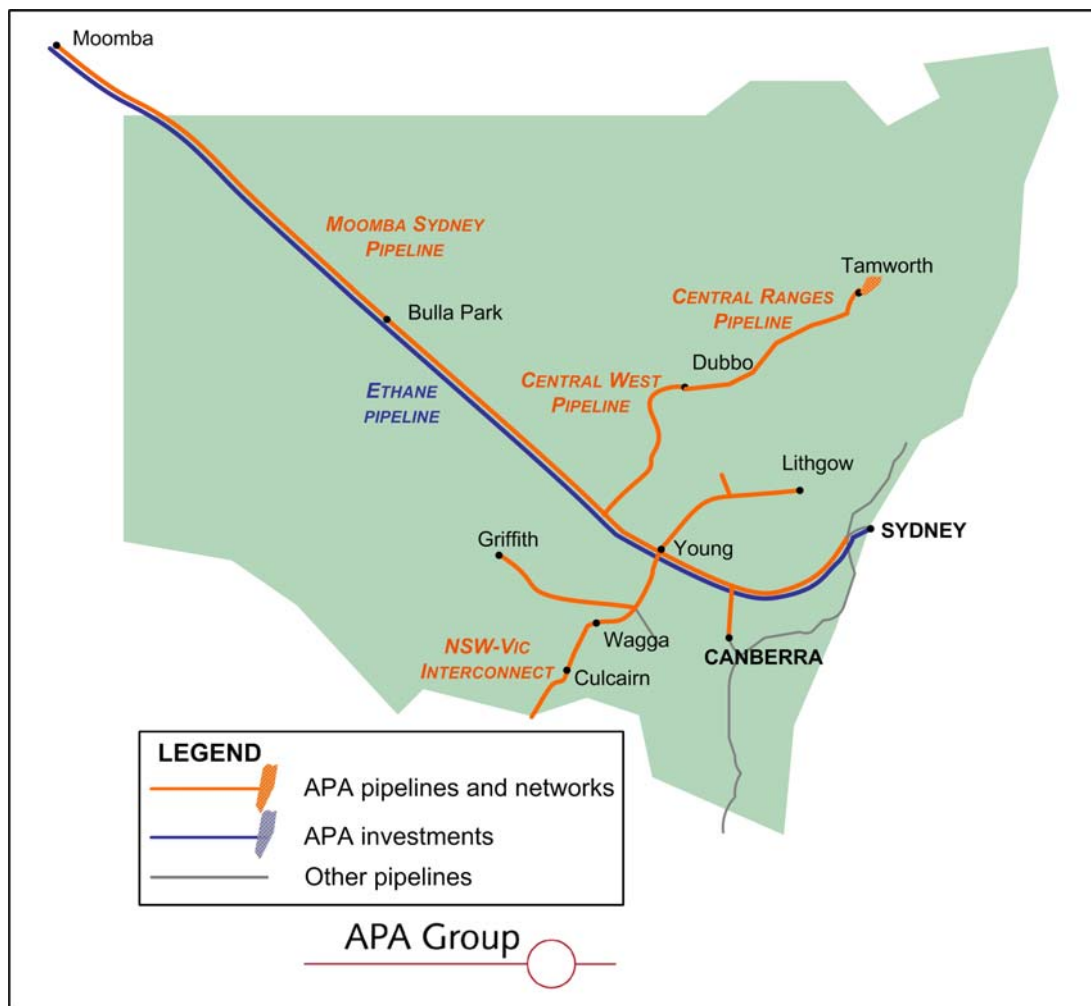
* Looping is when one pipeline is laid parallel to another and is often used as a way to increase capacity along a right-of-way beyond what is possible on one line, or an expansion of an existing pipeline(s). These lines are connected to move a larger flow along a single segment of the pipeline system. http://www.eia.gov/pub/oil_gas/natural_gas/

Water and Energy) as Licence 19 and resides within an easement of 20 metre width. The total distance of the Stage 1 and Stage 2 natural gas pipelines is 131 km.

The Project (Stage 2) is estimated to cost approximately \$80 - \$90 million. It is intended to be laid entirely within the easement of the existing pipeline, using a 30 metre Right-of-Way (ROW) for construction purposes.

The Project would duplicate the existing 12-inch (305 mm) Young to Wagga Wagga Pipeline to increase the capacity and security of gas supply between NSW and Victoria. The Young to Wagga Wagga Pipeline provides gas supply to the towns in the central south of NSW including Griffith, Cootamundra, Young and Wagga Wagga. The Pipeline connects to the Moomba to Sydney Pipeline System (MSP) mainline at its north east end at Young NSW. The MSP mainline currently carries gas from the Moomba plant in South Australia, and in the future will carry natural gas from Queensland. Similarly the Gasnet system in Victoria carries Bass Strait gas from Longford to Culcairn where the Culcairn to Wagga Wagga Pipeline connects at the southern end of the Pipeline near Wagga Wagga. The Project forms a part of APA Group's overall gas pipeline network (see Figure 1-2).

Figure 1-2: Existing NSW gas pipeline network



In addition to increasing the capacity and security of natural gas supply, the Pipeline would have capability to operate bi-directionally at a capacity of approximately 72

Tera Joules (TJ) / day. It provides the added benefit of operating as a high pressure natural gas storage facility, providing natural gas at high peak flow rates as a base fuel to the Uranquinty Power Station, which is located near Wagga Wagga in south-western NSW. To achieve this level of service, the Pipeline is pressurised to 8500 kilopascal (kPa) to hold the necessary linepack and is drawn down to around 4500 kPa during the operating day. Currently the Uranquinty Power Station can operate at full power for 5 hours allowing 43 TJ linepack consumption. The Project would increase the available capacity by approximately 30 TJ, which would enable the power station to operate continuously for approximately 8 hours. Operation of the Uranquinty Power Station is subject to a development consent. Any additional hours of operation will need to comply with the requirements of the consent (as modified). The power station is also subject to an Environment Protection Licence (EPL) administered by the EPA, and operation will need to comply with the EPL's requirements.

1.2 Project Setting

According to the EA, over 80% of the native vegetation in the region has been cleared for agricultural activity including the proposed pipeline easement route. The area is characterised by native and introduced grasses and weeds that dominate the remaining vegetation. In addition, the proposed pipeline easement has been previously disturbed due to construction of the existing pipeline in 1980 and an optical fibre cable in 2006.

Surrounding land uses are characterised primarily by agricultural land with open pastures and crops with patches of native trees and isolated residences, rural roads and small rural town centres (see Figure 1-3 for a typical site setting).

Figure 1-3: Typical Existing Site Setting



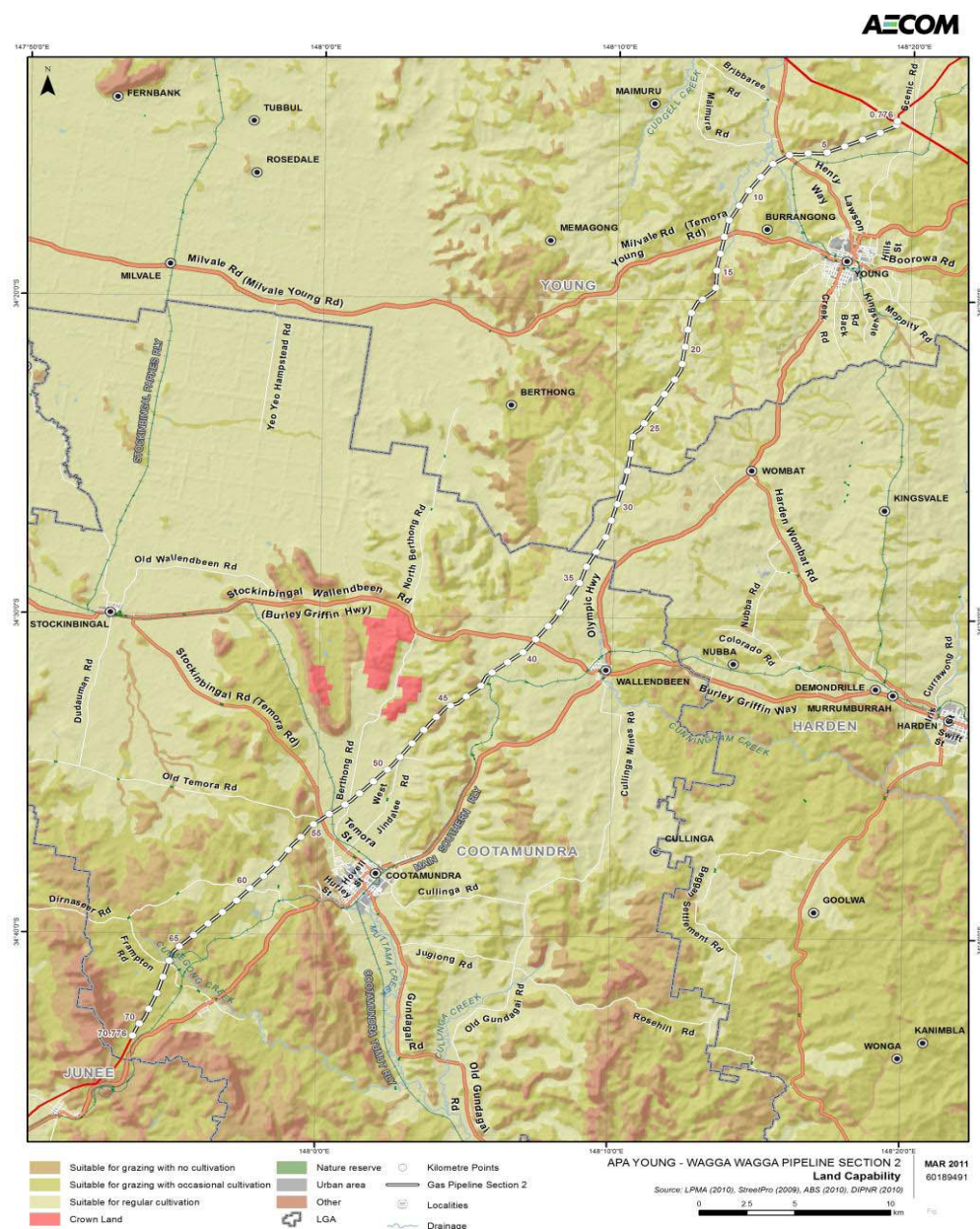
2. PROPOSED PROJECT

2.1. Project Description

The Project would involve the installation of a new 18-inch (450 mm) natural gas transmission 'looping pipeline' between the townships of Young and Bethungra (see Figure 1-1). Young is a major gas hub in NSW as the pipeline network diagram illustrates (see Figure 1-2). The locality of the Project is shown below (see Figure 2-1).

The proposed pipeline would be a buried gas transmission pipeline with a maximum allowable operating pressure of 10.2MPa and would initially be operated at 8.5 MPa. The pipeline would be designed, constructed and operated in accordance with the relevant Australian Standard, AS 2885.

Figure 2-1: Project Locality



The new pipeline is proposed to be installed adjacent to an existing 12-inch (305 mm) pipeline over a distance of approximately 70 km, and would be constructed within the existing 20 metre wide gas pipeline easement. For construction purposes only, an additional strip of land approximately 10 metres wide is proposed to be used with an Easement Construction Deed approval from property owners where relevant along the 70km route. The study area is defined as the proposed pipeline route contained within the existing easement, and the construction foot print resulting in a ROW approximately 30 metres wide. The study area also includes surrounding areas which may be indirectly affected by the Project.

A typical project layout is shown in Figure 2-2. The key components of the project are listed in Table 1-1.

Figure 2-2: Project Layout

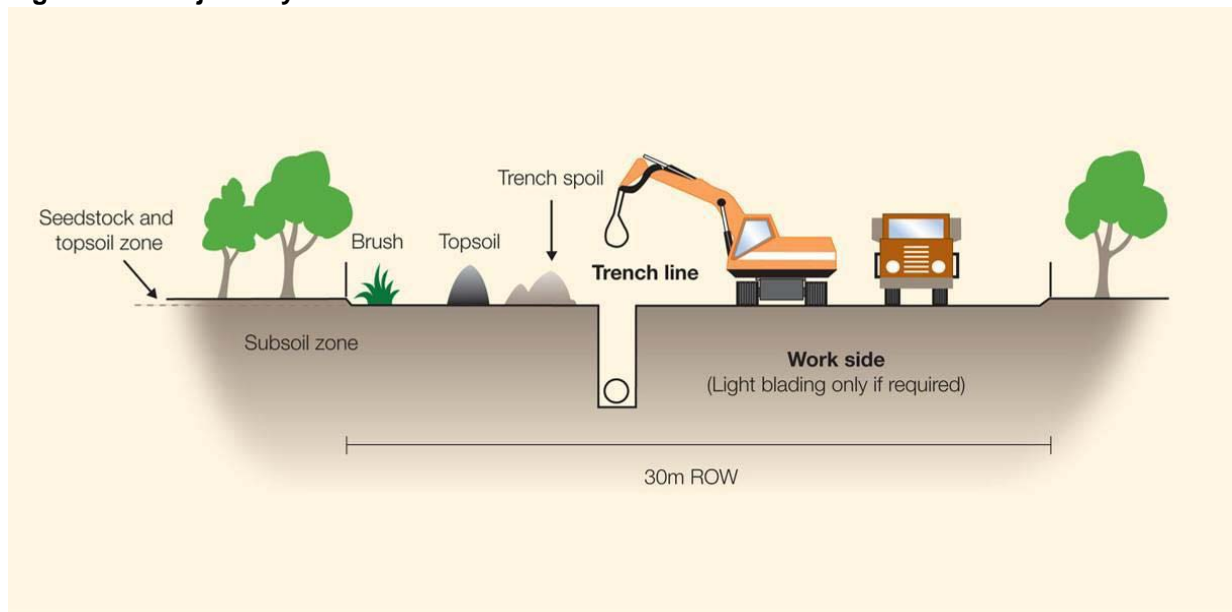


Table 1-1: Key Project Components

Aspect	Description
Project Summary	<ul style="list-style-type: none"> Construction and operation of a new 70 km 18-inch (450 mm) natural gas transmission 'looping pipeline' between Young and Bethungra adjacent to the easement of an existing 12-inch (305mm) pipeline, separated by approximately 7m. 30m ROW for construction purposes and 20m ROW during operation. Typical construction equipment includes bulldozers, loaders, graders, side-boom tractors, trucks, padding machines, excavators, wheel ditching machines, welding units and light vehicles. Construction workforce of 50 individuals for the peak construction period. Operational workforce of 1 person/year absorbed by existing staff or 1 additional employee at the Young Base. Construction period of 4 months. Operational life expectancy of 70 years. General construction hours proposed in accordance with standard pipeline industry cycle of 28 days on / 9 days off during daylight hours of 7am to 6pm daily. Extended hours may be required for specific activities that must continue to completion eg. HDD, boring and hydro-testing. Rock-blasting construction hours limited to 9am to 5pm (Revised Statement of Commitments CM4) on weekdays and may be required where hard rock is outcropping for approximately 2km of the route.

Aspect	Description
Construction	
Site access	Via existing roads, access tracks and disturbed areas based on APIA Code of Environmental Practise and negotiations with potentially affected landowners.
Clearing and grading	Total surface clearing along the pipeline route, except where directional drilling would be used.
Trenching	Trench construction by mechanical trenching plant (a wheel trencher, rock saw or excavator) which excavates a trench (1.5 metres deep x 0.65 metres wide), moving the spoil to one side. Used along the route except for major infrastructure crossings (see below).
Stringing	Pipe transportation in 18m lengths on trucks and laying out of the pipe adjacent to the trench on skids in preparation for welding. Bending to match the required vertical and/or horizontal profile.
Welding	Pipe positioning using side-boom tractors and internal line-up clamps. Welding by specialised construction crews in several segments, typically into 1km lengths called pipe strings.
Inspection	100% Non-Destructive Testing (NDT) inspection for the integrity of each weld, carried out immediately after welding & repair of any defects.
Coating	Cleaning of pipe by grit blasting and application of an external coating.
Lowering In	Trench preparation as necessary to protect the pipe followed by lowering in into the trench using side-boom tractors. Trench breakers installed if required in the trench prior to backfilling to control water movement along the trench.
Backfilling	Backfilling of the trench with screened trench spoil, providing a stone free covering. Layering of the remaining subsoil in the trench with compaction between each layer.
Infrastructure Crossings	Construction of Classified Road crossings and the Southern Railway crossing using horizontal boring or horizontal directional drilling (HDD). Trench excavation for crossings of minor roadways would involve partial or full road closures with local diversions.
Watercourse Crossings	Construction by standard open-cut trenching with flow diversions using either Dam and Pump method or Flume method to divert flow. The method depends on the size and nature of the watercourse flow regime and the quality of the riparian vegetation at each crossing. Note: There are no major watercourse crossings. All are 4 th class streams according to the DPI Fish Habitat Classes.
Commissioning	
Hydrostatic Testing	Water and pressure testing of pipe section.
Clean-up and Restoration	Removal of all construction material and waste, surface contouring, resspreading topsoil, resspreading vegetation and reseeding/revegetating (typically with native grass or other approved species). Erosion control measures where required.
Installation of marker signs	In accordance with AS 2885 to indicate the pipeline location and reduce the risk of inadvertent damage by third parties.
Instrumentation calibration	In accordance with appropriate Australian standards, industry guidelines and manufactures' instructions.
Pipeline drying & purging	Pipeline dried and then purged of any air prior to gas entry.

Operation

Operation & maintenance of pipeline & easement

Maintenance and repair as required for the life of the pipeline in accordance with APA Group's established maintenance regime and AS 2885 including regular pipeline monitoring, ongoing vegetation management and telemetry monitoring.

Expected operational life of 70 years.

Future decommissioning would be in accordance with AS 2885 requirements and the APIA Code of Environmental Practice.

2.2. Project Need and Justification

The Department understands that the *2012 Gas Statement of Opportunities (GSOO)* published by the Australian Energy Market Operator (AEMO) identified inadequacies in the existing natural gas reticulation systems, where projected gas demand currently exceeds the capacity of the pipelines to supply gas in several town centres, particularly in Queensland. Furthermore, according to the *ABARE Research Report 10.02 Australian Energy Projections for 2029-30 (2010)* there is substantial opportunity to increase the level of base load gas-fired generation in NSW. This would involve expansion of existing gas transmission networks and investment in new pipelines to secure reserves, including securing gas reticulation from Victoria and Queensland. The Department notes that the Project would add additional capacity and security to the NSW gas network, thereby ensuring supply meets natural gas demand in NSW.

The Department notes current expansions of the State's energy generating capacity as recommended by the *2007 Owen Report* into electricity supply has seen the development of additional gas-fired power stations in various locations around NSW, including the Uranquinty Power Station in January 2009. The choice of gas as a fuel source is based on its ability to provide timely energy supply during times of peak generation demand. The Department further notes gas also produces less greenhouse emissions than coal and is therefore in line with the *NSW 2021* target to reduce the State's greenhouse gas emissions.

The Department notes that gas-generated power has the potential to back up intermittent renewables during times of peak demand. This is important given the current uncertainty in energy demand forecasting.

The Project aims to duplicate an existing 12-inch pipeline along the same easement to increase and improve the capacity and security of gas supply between the NSW pipeline system and the Victorian system. At this stage, the Project would provide minimal flow benefit. However, once system augmentation works in Victoria are completed, both supply systems would be significantly strengthened, providing greater security of supply to both Sydney and Melbourne. The new looping pipeline would utilise the same gas reserves as the existing pipeline. The Project would not draw on any new gas resources.

In addition, due to the ability of the pipeline to operate as a high pressure storage facility, it would supply natural gas at high peak flow rates as a base fuel to the Uranquinty power station. This power station is a 640 MW gas-fired peaking power station; one of the largest open cycle gas turbine (OCGT) power stations in Australia. It is designed to generate power at times of high demand, for example in summer when air conditioners are extensively used and throughout winter when there is high demand for heating. It is the only power station of its type in NSW and is capable of supplying power to 800,000

homes in the National Electricity Market. As a gas-fired power station, Uranquinty produces less greenhouse gas emissions than a typical coal-fired power station when generating electricity.

The Project would effectively increase linepack consumption and enable the Uranquinty Power Station to operate continuously for approximately 8 hours, an increase from its current capacity of 5 hours of continuous operation. This longer continuous operation would result in efficiencies of scale and environmental savings due to the need for less frequent start up and shut down periods. The Department notes that operation of the Uranquinty Power Station is subject to a development consent. Any additional hours of operation will need to comply with the requirements of the consent (as modified). The power station is also subject to an Environment Protection Licence (EPL) administered by the EPA, and operation will need to comply with the EPL's requirements.

In summary, the Department considers that the Proposed Young to Wagga Wagga Looping Pipeline Stage 2 (Bethungra to Young) is justified as an important and necessary component of the NSW gas reticulation network to secure the State's energy supplies into the future. This position is derived from considerations as follows:

1. The need to enhance the security of gas supply by strengthening the gas supply link between Victoria and NSW and enhanced security of existing gas pipelines in regional NSW.
2. The Project would add additional capacity to the NSW gas network, thereby supplementing supply for increasing demand.
3. The benefit of increasing the maximum available storage of gas in NSW that would facilitate the increased use of a cleaner burning fuel source for power generation, eg longer continuous operation of the Uranquinty Power Station, subject to its EPL and development consent requirements, as discussed above.
4. The benefit of using natural gas to meet peak energy demands and potential to back up intermittent renewable energy supply during times of peak demand.
5. The Project is Stage 2 of the Young to Wagga Wagga Pipeline and is proposed to connect to the already constructed Stage 1 pipeline.

The Department considers the Project therefore improves the link between the Victorian pipeline network and the network that supplies NSW (Figure 1-2), effectively providing an enhanced and secure natural gas supply for NSW.

3. STATUTORY CONTEXT

3.1. Major Project

The project is declared to be a Major Project under *State Environmental Planning Policy (Major Development) 2005* (Schedule 1, clause 26(a)) because it is development for the purpose of a pipeline in respect of which a licence will be required under the *Pipelines Act 1967*. The project is therefore subject to Part 3A of the *Environmental Planning and Assessment Act 1979* (the EP&A Act) and the Minister for Planning and Infrastructure is the approval authority.

The Project is a “transitional Part 3A project” under the *Environmental Planning and Assessment Amendment (Part 3A Repeal) Act 2011* as it is a Project for which EA requirements were notified before the repeal of Part 3A. Under Schedule 6A, the provisions of Part 3A of the EP&A Act will continue to apply to transitional Part 3A projects.

On 27 February 2013, the Minister for Planning and Infrastructure delegated his powers and functions for the approving or disapproving the carrying out of a project under section 75J of the EP&A Act to the Executive Director, Development Assessment Systems and Approvals, of the Department in cases where:

- the relevant local council has not made an objection, and
- a political disclosure statement has not been made, and
- there are less than 25 public submissions in the nature of objections.

The subject application complies with the above criteria. Consequently, the Executive Director, Development Assessment Systems and Approvals, may determine the application under delegated authority.

3.2. Permissibility

The Project is located within four LGAs, being Harden Shire, Junee Shire, Cootamundra Shire and Young Shire. Review of the local environmental planning instruments pertaining to the study area indicate that the Project is not prohibited in any of the land use zones within which it is located, as follows:

- Harden Shire: The *Harden Local Environmental Plan 2011* was gazetted in February 2011 and is currently guiding development in Harden Shire. (The EA considered the previous planning instrument: *1976 Harden Interim Development Order No 1* which has been superseded). The Project passes through a small section of Harden Shire just north of the township of Wallendbeen (which is in Cootamundra Shire) which is in Zone area RU1. In this zone the Project, as a utility installation may be carried out with consent.
- Junee Shire: The *Junee Local Environmental Plan 1992* and its subsequent amendments apply to the land within this section of the project area. The Project passes through a small section in the northern corner of the Junee Shire identified as Zone No 1 (a) (General Rural Zone) and Zone No 2 (v) (Village or Urban Zone). In both these zones the Project is permissible with consent.
- Cootamundra Shire: The *Cootamundra Interim Development Order No 1 (1976)* as amended is the planning instrument that currently guides development in the Shire.

(the Draft Cootamundra LEP 2012 is yet to be finalised). The proposed pipeline runs through a 1(a) non-Urban A zone which allows a utility installation to be carried out with consent.

- Young Shire: The *Young Local Environmental Plan 2010* currently applies to the land within this section of the study area and according to this plan the proposed pipeline runs through a RU1 primary production zone. This allows utility installations with consent.

Notwithstanding these zonings the project is also considered permissible under Section 53 of the *State Environmental Planning Policy (Infrastructure) 2007* because it is development for the purpose of a pipeline on any land where the pipeline is subject to a licence under the *Pipelines Act 1967*.

The existing pipeline is licensed under the *Pipelines Act 1967* as Licence 19. DTI has indicated to the Proponent that an application for variation under Section 30(d) of the *Pipelines Act 1967* would be appropriate to cover the proposed works because the works will be contained wholly within the existing licence area.

3.3. Environmental Planning Instruments

The *State Environmental Planning Policy (Infrastructure) 2007* and the *State Environmental Planning Policy (Major Development) 2005* are relevant as they enable the project to be considered a Major Project. There are no other SEPPs substantially governing the carrying out of the Project.

3.4. Objects of the EP&A Act

The Minister should consider the objects of the EP&A Act when making decisions under the Act. The objects most relevant to the Minister's decision on whether or not to approve the project are found in Section 5(a) (ii), (iii), (iv) and (vii). They are to encourage:

- (ii) *the promotion and co-ordination of the orderly and economic use and development of land,*
- (iii) *the protection, provision and co-ordination of communication and utility services,*
- (iv) *the provision of land for public purposes,*
- (vii) *ecologically sustainable development.*

These objects are key items for assessment with respect to the Project and are addressed further in this report. The agency and community consultation undertaken as part of the assessment process address objects 5(b) and 5(c) of the Act, as provided in Section 4 Consultation and Submissions below.

The Department is satisfied that the project encourages the orderly and economic use of land, and protection of utility services, particularly as the project is permissible with development consent and would contribute to a reliable natural gas supply for the efficient and effective functioning of the NSW gas reticulation network. The landuse would be partially for a public purpose, and with respect to ecologically sustainable development (ESD), the Act adopts the definition in the *Protection of the Environment Administration Act 1991*. This is discussed further in section 3.5.

3.5. Ecologically Sustainable Development

The EP&A Act adopts the definition of ESD found in the *Protection of the Environment Administration Act 1991*. Section 6(2) of that Act states that ESD requires the effective integration of economic and environmental considerations in decision-making processes and that ESD can be achieved through the implementation of:

- (a) *the precautionary principle;*
- (b) *inter-generational equity;*
- (c) *conservation of biological diversity and ecological integrity; and*
- (d) *improved valuation, pricing and incentive mechanisms.*

The Department's assessment has given due consideration to ESD in its assessment as demonstrated by the following:

- the Department's assessment of the need for the project (section 2.2) has considered the benefits in helping to secure less greenhouse gas-intensive fuel resources, which are consistent with the principle of inter-generational equity;
- the Department's assessment of the Aboriginal cultural heritage impacts of the project (section 5.3) is based on a conservative and rigorous assessment of the likely extent of impacts and measures to avoid, register and preserve cultural heritage items, which are consistent with the precautionary principle and the principle of inter-generational equity;
- the Department's assessment of the biodiversity impacts of the project (section 5.1) is based on a conservative and rigorous assessment of the likely extent of ecological impacts and likely offset requirements to ensure that appropriate and adequate measures are put in place to prevent threats of serious or irreversible environmental damage, consistent with the precautionary principle and the principle of the conservation of biological diversity and ecological integrity;
- the proposed development along an existing and previously disturbed gas pipeline easement as opposed to development of undisturbed land is generally consistent with the principle of the conservation of biological diversity and ecological integrity; and
- the Department's assessment of key issues (section 5) has considered the requirement for appropriate contingency strategies to offset impacts in relation to flora and fauna, Aboriginal heritage and gas pipeline hazards which are consistent with the precautionary principle.

On the basis of the assessed impacts on the environment and their ability to be managed, it is considered that the development would be ecologically sustainable within the context of the above principles. If approved, the Project would help to ensure a reliable gas supply for future generations.

4. CONSULTATION AND SUBMISSIONS

4.1. Exhibition

The Director-General issued DGRs for the Project on 21 September 2010. An EA was subsequently prepared dated 27 June 2012. After accepting the EA, the Department publicly exhibited it from 6 August 2012 until 7 September 2012 on the Department's website, and at the following exhibition locations:

- Department of Planning and Infrastructure Information Centre, Bridge Street, Sydney;
- Nature Conservation Council, Sydney;
- Young Shire Council offices;
- Junee Shire Council offices;
- Cootamundra Shire Council offices; and
- Harden Shire Council offices.

The Department advertised in the Daily Advertiser Wagga Wagga, The Young Witness and the Cootamundra Herald on 1 August 2012 and in the Harden Murrumburrah Express on 2 August 2012 and notified relevant State and local government authorities in writing.

The Department received 11 submissions during the exhibition of the EA – ten submissions from public authorities and one submission from the general public. No submissions were received from special interest groups.

A summary of the issues raised in submissions is provided below.

4.2. Public Authority Submissions

Ten submissions were received from public authorities. The submissions were received from Junee Shire Council, Harden Shire Council, Department of Primary Industries, Murrumbidgee Catchment Management Authority (CMA), EPA, Lachlan CMA, Roads & Maritime Services (RMS), Office of Environment and Heritage (OEH), Department of Trade and Investment (DTI) – Resources & Energy and from NSW Rural Fire Services. The submissions raised specific issues to be addressed. No submissions raised objection to the Project.

Junee Shire Council raised issues regarding bushfire prevention, erosion control, water sourcing and possible re-use of water, assessment and management of fauna impacts, work site traffic control measures and rehabilitation work at the completion of construction works.

Harden Shire Council raised issues regarding economic drivers and the possibility of supplying gas to local communities from the new pipeline and the consultation process.

The **Department of Primary Industries** raised issues from its various divisions: Fisheries NSW raised issues regarding the stranding of fish and erosion and sedimentation control at watercourse crossings during construction works; NSW Office of Water supported the project on the basis of coffer dams and flow diversion

structures being installed at watercourse crossings, ongoing consultation regarding groundwater interception for the pipeline trench and general surface and groundwater management issues being provided within the CEMP; and Crown Lands raised issues regarding the appropriate tenure of Crown Lands and also Aboriginal Land Claims for the project.

Murrumbidgee CMA raised issues regarding the impacts on native vegetation, water and soils along the pipeline easement and offsite. The need for a biodiversity offset package was also raised to achieve maintain or improve biodiversity principles.

The **EPA** provided erosion control and noise and vibration management measures to be added to the Statement of Commitments. The maximum overpressure level and ground vibration peak particle velocity from blasting operations when measured at the nearest residential receiver were specified. The EPA also raised issues regarding air quality (dust), timing of rehabilitating water courses and noise management measures via restricted operating hours.

Lachlan CMA raised land, water, community and biodiversity objectives to be met in accordance with the Lachlan Catchment Action Plan.

Roads & Maritime Services raised traffic, access and safety management issues and management measures to be implemented within affected Classified Roads and the existing road network. In addition, the proposed pipeline alignment needs to provide for potential future road widening.

4.3. Public Submissions

One submission was received from the public that did not object to the project. This submission raised one issue regarding economic drivers and the potential for supply of gas from the new pipeline to local communities along the pipeline easement.

The Department has considered the issues raised in submissions in its assessment of the project.

4.4. Proponent's Response to Submissions

The Proponent provided a Response to Submissions report (RtS) (see Appendix C) dated 12 November 2012. This also included an updated Statement of Commitments in response to some of the issues raised. Further consultation was conducted with OEH regarding biodiversity impacts and the biodiversity offset package and with RMS regarding crossing of Classified Roads. No concerns were raised by other agencies or Councils regarding the RtS.

5. ASSESSMENT

After consideration of the EA, submissions, the RtS report and Statement of Commitments, the Department has identified the following key environmental issues associated with the Project:

- biodiversity impacts;
- heritage, including Aboriginal Land Claims; and
- construction noise and vibration impacts.

All other issues (including traffic, air quality impacts due to dust generation, risks and hazards and surface and groundwater impacts) are considered to be adequately addressed by the Proponent's RtS report and Statement of Commitments, as detailed in Section 5.4 and Table 5-4 below.

5.1. Biodiversity

Issue

Clearing activities for the Project would result in total surface disturbance over the 30m wide ROW where it is employed, which will likely consist of the majority of the 70km route. The study area has already been subject to such an impact in 1980 when the original pipeline was constructed, and subsequently in 2006 when an optical fibre cable was constructed in part of the study area. Since 1980, the area has also been subject to ongoing maintenance activities, including vegetation clearing and maintenance in accordance with safety requirements for gas pipelines of this specification.

Impacts to native terrestrial flora and fauna resulting from the construction and operation of the pipeline were examined by the Proponent in the EA. Field surveys which included traversing the entire Project ROW, were conducted in July 2011. A total of 36 hollow-bearing trees were identified and generally comprised of isolated paddock trees. Mapping conducted for the EA indicated that clearing of up to 6.9 ha of remnant vegetation may be required for the Project as a worst case scenario, but is likely to be lower than this estimate as the ROW would largely use a previously cleared infrastructure corridor.

Of the maximum 6.9 ha clearing area, 2.46 ha of Box-Gum Woodland which is listed under Schedule 1 of the *Threatened Species Conservation Act 1995* (TSC Act) was identified along the pipeline easement, and this includes 1.66 ha of Box-Gum Woodland defined as a critically Endangered Ecological Community (EEC) under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). However, the Project does not require approval under the EPBC Act, as discussed below.

The remaining vegetation comprises of unlisted vegetation communities. No other EECs were identified within the Project site.

The EA survey identified suitable habitat for woodland bird species, using a Seven Part Test provided in the TSC Act. Glider species were observed during field work but not positively identified, however suitable habitat was identified.

Submissions

Submissions regarding biodiversity focused on the potential impacts of clearing vegetation, in particular to grasslands derived from the Box-Gum Woodland identified along the easement and the need for mitigation of lost hollow-bearing trees using suitable nest boxes. Revegetation should ensure use of local native species. Submissions also raised issues of fauna habitat loss in particular not removing trees containing raptor nests.

Submissions regarding potential fauna impacts focused on:

- an unidentified glider and raised questions regarding the overall survey effort for woodland birds;
- impacts upon fauna due to trenches; and
- potential impacts on fish that may become stranded at watercourse crossings.

Submissions regarding development of a biodiversity offset package focused on the need to maintain or improve biodiversity resulting from the Project, and that it should be prepared in consultation with OEH and Lachlan and/or Murrumbidgee CMA before approval is granted for the Project.

Following the RtS, the Proponent consulted directly with OEH regarding the biodiversity offset package. OEH and the Proponent agreed to use an Offset Broker (such as the Lachlan and/or Murrumbidgee CMA, or NSW Nature Conservation Trust) for identification of a suitable offset prior to construction, and reassess this package after completion of construction should the actual impact level be less than the predicted worst case scenario. This was evidenced by a letter to the Department dated 5th February 2013.

Consideration

The Department is satisfied with the methodology of the Fauna and Flora Assessment reported in the EA. The Department notes the Proponent's Statement of Commitments provides for management of biodiversity impacts during the construction and operation of the pipeline. The Proponent's mitigation measures include the following:

- location of the ROW for the Project mainly in existing cleared infrastructure corridors through remnant vegetation;
- adjustment of the pipeline corridor in specific locations, a reduced 20m ROW width where possible and/or use of sensitive construction techniques to minimise impact;
- mitigating the loss of hollow-bearing trees through the use of nest boxes in suitable retained vegetation and where possible recycling of felled hollows by strapping to trees adjacent to the project footprint (Commitment B12). This would be conducted in consultation with OEH to ensure the location and suitability of these measures;
- no raptor nests were identified within the Project site, however any trees found to contain previously unidentified raptor nests would not be removed without prior consultation with OEH (Commitment B18);
- likewise, potential impact to suitable fauna habitat for woodland birds and gliders (though not positively identified) would be mitigated by construction outside the known breeding periods, inspection of hollows by a suitably qualified ecologist prior to clearing, and relocation of nesting fauna to suitable adjacent habitat (Commitments B9-B12) to minimise native fauna disturbance;

- survey of the open trench by designated personnel, trapping and relocation of native fauna species on a daily basis as trench construction progresses;
- trenching by progressive construction to ensure the full length of the proposed pipeline is not open at any one time to reduce the likelihood of fauna falling and becoming trapped. In addition, use of fencing during construction works to minimise the length of the open trench and risk of fauna impacts;
- construction of watercourse crossings at low or no flow to minimise the potential for fish stranding (Commitment SG2). Further measures will be developed, such as capture and relocation, during watercourse crossings construction, in consultation with Fisheries NSW (Commitment B20); and
- revegetation commencing as soon as practical after clearing and construction activities. Access to reinstated habitat will be minimised during operation.

The Proponent has committed to minimise its development footprint in order to avoid biodiversity impacts where feasible.

In addition to the biodiversity offset package detailed below, the Department is supportive of the proposed mitigation measures included in the EA as they will significantly assist in minimising adverse flora and fauna impacts. However, the manner in which they will occur should be clearly identified prior to the commencement of construction works. The Department therefore recommends the details of these mitigation measures be included in a Construction Environmental Management Plan (CEMP). Such a Plan should outline environmental management practices and procedures to be followed during construction of the project that will aim to minimise flora and fauna impact.

The Department considers that impacts to native vegetation and biodiversity overall should be avoided wherever practicable by implementation of the above mitigation measures. Where unavoidable, the impacted biodiversity values should be mitigated or otherwise offset to ensure an overall “maintain or improve” outcome. The pipeline is to be constructed along an existing easement that is already highly disturbed, however it would require up to 6.9 ha of vegetation clearing within the easement due to the need to expand the existing pipeline corridor to accommodate the duplicate (looping) pipeline adjacent to the existing pipeline. The Department accepts that any alternate location of the duplicate pipeline outside of the existing easement (to avoid vegetation clearing within the easement) would not be technically or economically desirable and may not necessarily achieve an outcome of avoiding vegetation clearing. Any alternative route has the potential to impact on new areas of native vegetation rather than limiting impacts to already disturbed and fragmented vegetation within the existing easement. The Department is therefore satisfied the Proponent has avoided impacts to native flora and fauna to the maximum feasible extent through the proposed location of the looping pipeline within the existing easement.

Notwithstanding, some native vegetation clearance is expected to occur as a result of the project (i.e. 6.9 ha and removal of 36 hollow bearing trees as a worst case scenario). Although the total amount of native vegetation expected to be removed is relatively small, the Department considers the Proponent's Commitment B17 providing a biodiversity offset package with other mitigation measures is essential to achieve an overall “maintain or improve” outcome.

Therefore, in order to achieve such an outcome the Department recommends the Proponent develop a final offset package for the proposed biodiversity impacts resulting from this project in consultation with the Lachlan and/or Murrumbidgee CMA and

consultation with OEH. The final biodiversity offset package would likely comprise revegetation and enhancement of retained vegetation within the easement width; revegetation and rehabilitation of surplus land made available through property acquisition; financial contributions to existing biodiversity enhancement programs (such as Landcare or CMA programs) or research measures; and/ or BioBanking measures. The Department is satisfied that these represent achievable measures to offset the biodiversity impacts of the project. The package should be developed in consultation with OEH and to the satisfaction of the Director-General and importantly should be maintained in perpetuity. Once secured, the sites will effectively no longer be available for any future development. Instead they will be secured for conservation so that local biodiversity values are maintained and improved. By applying such a compensatory package the Department considers the "maintain or improve" principle can be upheld.

This approach is consistent with the Proponent's response to OEH (dated 5th February 2013) which raised concern about a lack of progress with development of the biodiversity offset package in the RtS. Consultation was conducted between the Proponent and OEH regarding the offset package, particularly in relation to potential impacts on ecological communities and hollow-bearing trees identified in the EA. To ensure that appropriate offsets are obtained for the potential impacts identified, the Proponent proposes to hold discussions with an Offset Broker (such as the Lachlan and/or Murrumbidgee CMA, or the NSW Nature Conservation Trust) prior to construction. These discussions would aim to progress the biodiversity offset package and identify suitable offset area(s) which are both available for use as an offset, and contain the required ecological values. OEH would be informed of the outcomes of these discussions prior to commencement of construction.

However, it is noted that during construction of the project it is expected that the actual impacts upon communities and hollow bearing trees would be lower than the worst case scenario, through sensitive construction methods and design adjustments (previously demonstrated during construction of Stage 1 of this project). As such, while the initial discussion with the Offset Broker would be carried out to ensure the availability of suitable offsets for the worst case scenario, the final quantity of offset required for the project would be reassessed following construction in consultation with OEH. This reassessment would consider the actual impacts of the Project in comparison to the forecasted worst case scenario amounts presented in the EA, and may allow a reduction of the offset area required. This reduction would be expected to be proportional to the difference between the actual and forecasted impacts. The Department is satisfied with this approach.

The Department supports the Proponent's commitment to minimise the extent of native vegetation clearing during construction to the maximum extent feasible. In particular, where habitat containing hollow-bearing trees are required to be removed, the Proponent has committed to checking for the presence of any native species and the hollows re-located or nesting boxes installed. Tree removal should also occur outside of the known breeding periods so as to reduce likely fauna impacts. Methods for the implementation of such mitigation measures should be included in the CEMP. By undertaking such measures the Department believes that adverse impacts to threatened species can be minimised.

By including such details of mitigation measures in a CEMP as well as implementation of the biodiversity offset package described, the Department is satisfied that the biodiversity impacts of the project can be appropriately minimised, mitigated or offset consistent with the "maintain and improve" principles.

5.2. Heritage

Issue

The Proponent's Aboriginal Cultural Heritage Assessment was based on information derived from archaeological and environmental literature, register searches including the Aboriginal Heritage Information Management System (AHIMS) database, historical research, archaeological site surveying that involved predictive modelling and Aboriginal community consultation. Community consultation was undertaken in accordance with the *Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (DEC, 2005).

According to the EA, a total of 18 Aboriginal sites were identified during this assessment within a 1km zone of the proposed easement: 7 sites were identified during desktop studies and an additional 11 sites were identified during the field survey. The sites comprised 9 artefact scatters, 3 isolated artefacts and 6 scarred trees. A total of 13 sites located along the proposed easement were identified to be potentially impacted by the Project due to clearing and grading work, two of which were known to be high significance sites (one artefact scatter listed as an AHIMS site (BY/11) and one scarred tree (APA-ST5-11)) while the remaining sites are low-moderately significant sites. Mitigation measures for the high significance sites were provided in the EA, as detailed below.

In addition to the above identified Aboriginal sites, one site of historical heritage known as the Old Nubba Homestead is located 200 metres to the east of the pipeline easement and reported in the EA. This historical site presents potential for unanticipated discoveries during initial Project earthworks and trenching because historical records suggest that the site complex is much larger than the homestead. According to the EA, the Proponent considers that the homestead itself would not be directly impacted by construction of the proposed pipeline.

The Proponent has committed to a range of management strategies and measures to avoid or minimise harm to Aboriginal heritage items and to the old Nubba Homestead site, including:

- avoidance of identified sites, where possible;
- fencing of known sites during construction;
- salvage excavation of artefact scatters potentially directly impacted;
- reassessment of scarred trees by a qualified arborist and implementation of any recommended protective measures;
- contingency plans for unexpected events; and
- monitoring of archaeological sites (e.g. from a representative of the LALC during excavation works and monitoring for the discovery of any archaeological artefacts during clearing near the Old Nubba Homestead).

Submissions

One submission, from OEH, raised concern that recent studies within the Project area should be considered when developing the Aboriginal Heritage Management Plan (AHMP) for the Project. Further shortcomings were identified such as the need for an arborist inspection of a scarred tree (referred to as APA-ST5-11). In addition, the AHMP should be developed in consultation with OEH and registered Aboriginal stakeholders to the satisfaction of the Director-General. Further, the submission noted that there are areas where ground visibility is limited.

Consideration

The Department notes that the Proponent has committed to the preparation of an AHMP prior to commencement of construction which will include consideration of recent surveys and will provide specific actions for monitoring, excavation, collection and salvage of Aboriginal cultural heritage. In response to OEH's submission, the Proponent has committed to include the results and recommended actions resulting from an arborist inspection of the scarred tree (APA-ST5-11). Furthermore, the Statement of Commitments has been updated by the Proponent covering all issues raised in the submissions. The Department is satisfied with these measures and updated commitments.

The Department is aware of the highly modified nature of the Project site area due to construction of the existing pipeline in 1980, construction of an optical fibre cable in 2006 and subsequent maintenance work during operation of both. Furthermore, other activities have occurred within the site area over the years such as grazing. The Department considers that based on the previously disturbed nature of the site, the archaeological value of any heritage items identified is likely to be reduced. Site surveying during the EA that identified artefact scatters, isolated artefacts and scarred trees confirmed this view. The Department considers the method of assessment used for the EA was satisfactory to identify the indigenous heritage value along the easement.

Notwithstanding, the Department notes that all heritage items would have socio-cultural significance to the local indigenous community. Consultation was conducted with four individual members of the Young Local Aboriginal Land Council (LALC) during the indigenous heritage assessment. The EA reported that no concerns were raised by these individuals. No other comments or submissions were made by aboriginal stakeholders or LALCs regarding the indigenous heritage value of any of the identified artefacts along the easement. The Department considers management measures to be adequate, based on the archaeological value of the identified artefacts.

Overall, the Department agrees with the Proponent's conclusion that management measures within the AHMP are capable of adequately mitigating impacts to the heritage value of the project area. Whilst all artefacts have value to the aboriginal community, the Department noted that two high significance sites (one artefact scatter listed as an AHIMS site and one scarred tree) were identified. The Department considers that the potential impact of the Project on these two items can be adequately managed through the implementation of the measures detailed above.

The Department is satisfied that management measures put in place by the Proponent will ensure no impacts to items outside of the existing disturbed easement. The Department has reflected these measures in its recommended conditions of approval. Further, implementation of recommendations made by the Department regarding the Old Nubba Homestead site will ensure impacts to the site are avoided. The Department is therefore satisfied the Project would not significantly impact on heritage values.

5.3. Construction Noise

Issue

The EA included a quantitative approach based on a tiered noise impact assessment to determine potential sensitive noise receptors and noise impacts during construction and to identify possible mitigation measures including offset distances to achieve acceptable noise goals.

The *Interim Construction Noise Guidelines (OEH 2009)* recommends standard hours of construction as 7 am to 6 pm Monday to Friday, and 8 am to 1 pm Saturday, with no work on Sundays or public holidays. The Proponent has reasoned that in order to shorten the life of the project's construction period and to achieve maximum efficiency for specialist construction crew, the standard pipeline industry work cycle of 28 days on/9 days off would be adopted. The proposed hours of construction are reported in the EA to be 'during daylight hours'. Further information from the Proponent during preparation of this report confirmed this to mean 7.00 am to 6.00 pm, seven days a week. Any earlier time between 6.00 am and 7.00 am is outside standard hours and considered to be night time. The Department notes work on Sundays and outside 8.00 am to 1.00 pm on Saturdays is also outside the standard construction hours.

Furthermore, according to the EA, extended hours may be required in the following circumstances:

- to complete horizontal directional drilling (HDD) once the drill rig is in operation including 24 hours operation potentially for construction of Classified Road crossings and the Southern Railway Line crossing;
- likewise, boring must continue until completion to ensure the integrity of the bore and avoid potential subsidence issues;
- hydro-testing of the pipeline must continue to completion;
- transportation of plant & equipment by oversized trucks may be required by authorities to occur outside standard construction hours for safety reasons; and
- in an emergency situation and/or to prevent environmental harm.

The total construction period for the project is expected to be four months. Construction is progressive such that any impact to sensitive noise receptors along the pipeline corridor would be short-term, lasting no more than a few days.

The Proponent's Construction Noise Assessment has identified construction noise goals based on Rating Background Level (RBL) of 30 dB(A) under the *NSW Industrial Noise Policy* for all receivers in the vicinity of the Project due to the pipeline's rural location.

Noise level thresholds for different human receptors in the *Interim Construction Noise Guideline, 2009* (OEH 2009) are presented in Table 5-3.

Table 5-3: Noise level thresholds for different human receptors (OEH 2009)

No. of Receptors	Management level LAeq (15 min)
Residence during standard hours	Noise affected / RBL + 10 dB Highly noise affected / 75 dB(A)
Classrooms at schools and other educational institutions internal noise level	Internal noise level 45 dB(A)
Hospital wards and operating theatres	Internal noise level 45 dB(A)
Places of worship	Internal noise level 45 dB(A)
Active recreation areas	65 dB(A)

Noise modelling in the EA was conducted for noisy equipment (side boom, excavators and trenchers) used on site. Modelling did not consider meteorological conditions or traffic noise, which is expected to be below the equipment noise levels.

The noise assessment found that there are 56 receptors that would be within a “noise affected” area of 40dB(A) up to a maximum of 75dB(A). These receptors are located up to 1.6km from the pipeline easement. There are no receptors located within a “highly noise affected” area of 75dB(A). Information on noise affected receptors was provided by the proponent in Table 5-3a.

Table 5-3a: Receptors at each noise level (AECOM 2013)

Receptors	Noise level dB(A)
0	Highly noise affected / 75 dB(A)
0	66-75 dB(A)
32	45-65 dB(A)
24	40 – 45 dB(A)

Based on the location of receptors and absence of highly noise affected receptors, the EA concluded that the proposed pipeline construction methodology and continuous construction cycle as detailed above is appropriate.

Nevertheless to minimise construction noise impact, the Proponent has committed to the following noise management measures in a construction noise management sub-plan:

- adopt management practices consistent with the *Australian Pipeline Industry Association Code*, eg. use of mufflers on noisy equipment and maintain in good working order, use of noise attenuation screens etc as appropriate;
- regularly inspect, test and maintain all plant and equipment to ensure noise emission levels do not increase over the construction period;
- actively consult with affected receivers ahead of construction activities;
- provide a freecall 1800 telephone number to landholders that might be affected by construction noise for complaints to liaise directly with the Proponent for an appropriate resolution;
- establish a procedure for responding to all calls within 24 hours; and
- site inductions would include appropriate behaviour on site to minimise disruptive noise (for example no shouting, slamming doors etc), particularly during night works.

The Proponent notes that these measures were successfully implemented during the first stage of the looping pipeline (from Wagga Wagga to Bethungra).

Vibration impacts may arise as a result of construction activities and/or resulting from blasting activities. Both construction and blasting activities would be conducted in accordance with the following guidelines that were used to assess potential vibration impact resulting from the project:

- *NSW DECC Environmental Noise Management Manual Chapter 154;*
- *APIA Code of Environmental Practice, Section 4.5.1 Blasting;*
- *Australian Standard 2187.2 – 2006: Explosives – Storage and use of explosives;*
- *Australia and New Zealand and Environment Conservation Council (ANZECC) (1990) Technical Basis for Guidelines to Minimise Annoyance Due to Blasting Overpressure and Ground Vibration;* and
- *German Standard DIN 4150-3, 1999–02 Vibration in buildings – Part 3: Effects on structures.*

Based on previous monitoring experience, typical ground vibration levels associated with construction activities are shown in the following tables, as provided in the EA.

Table 5-3b Typical ground vibration level associated with construction activities

Construction Activity	Typical Ground Vibration Level
Vibratory roller	Up to 1.5 mm/s @ 25m– higher levels can occur but no damages are expected for building at distance greater than 12m.
Hydraulic rock breakers (typical level for a large rock breaker operating in hard sandstone)	4.5 mm/s @ 5m 1.3 mm/s @ 10m 0.4 mm/s @ 20m 0.1 mm/s @ 50m
Compactor	20 mm/s @ 5m 2 mm/s @ 15m <0.3mm/s @ 30m
Bulldozer	1-2 mm/s @ 5m 0.1 mm/s @ 50m
Truck traffic (smooth surface)	<0.2 mm/s @ 20m
Truck traffic (rough surface)	<2 mm/s @ 20m

Table 5-3c Human perception of vibrations

Vibration level (mm/s)	Degree of perception
0.10	Not felt
0.15	Threshold of perception
0.35	Barely noticeable
1.0	Noticeable
2.2	Easily noticeable
6.0	Strongly noticeable

Typical ground vibration levels from construction activities are reported in the EA as follows:

- up to 20 mm/s at a distance of approximately 5 m; and
- 0.4 mm/s at distances greater than 20 m.

Due to pipeline safety criteria, there are no receptors within 5 metres of the pipeline. Based on the German Standard *DIN 4150-Part 3 Structural Vibration in buildings* –

Effects on Structures, the expected vibration levels from normal construction activities are not predicted to cause structural damage to buildings. The proponent noted that there are no receptors within the 65dB offset distance (equating to 60m) (see Table 5-3a) and therefore no receptors reach the “barely noticeable” degree of perception for vibrations (see Table 5-3c).

Vibration from blasting is considered in the assessment as it may be required at locations along the pipeline route where hard rock is outcropping. Hard rock is present for approximately 2 km of the pipeline route. Vibration impacts from blasting activities would include audible and sub-audible noise and vibration and regenerated noise. The level of vibration would depend on the method (blast techniques), type of rock and its depth. The extent of these impacts can be controlled by the experience of the contractor to some extent. However, vibration impacts would only occur for short periods and vibration levels are predicted to be below building damage criteria. Within the hard rock zone, there are no residences or receivers likely to be affected based on the assessment of human receptors within 250 metres of the Project.

Detailed blasting parameters and design had not been finalised at the EA stage. However, the complying distance from the blasting site would typically be 250m (using the general recommended criterion of 115dB airblast and 5 mm peak particle ground velocity). According to the EA, this has been taken into consideration in route selection for the pipeline through hard rock areas. The EA has assumed blast techniques would incorporate confined blasting. Furthermore, the Department notes blasting activities would be temporary and short-term in nature as construction moves along the easement and would only be required over approximately 2 km of the 70km long ROW.

To minimise vibration impacts, the Proponent has committed, in the Revised Statement of Commitments (Commitment CM4) to only conduct this activity during the hours of 8am–5pm. The duration of this activity has been further limited in the conditions of approval.

Submissions

The EPA's submission provides recommended noise and vibration management measures including specific maximum overpressure level and ground vibration peak particle velocity due to blasting operations measured at the nearest residential receiver.

Consideration

The Department is satisfied that the Proponent's noise assessment has been undertaken in accordance with the *NSW Interim Construction Noise Guidelines (July 2009)*. The works would be progressive along the route and therefore exposure to construction noise by any receiver would be temporary and generally only between one and three days, that is, between 12 and 36 hours. This is a best case scenario assuming that no delays occur, however, the Department considers that even under a worst case scenario it is unlikely that a receiver at a single location would be exposed to construction noise for more than one week.

The Department considers the exposure of dwellings to noise is acceptable provided that the noise mitigation measures identified in the EA are implemented to minimise impacts where possible. Furthermore, given the short duration and finite nature of

impacts (total construction of four months) the Department is satisfied that the construction noise generated by the project would not result in an unacceptable noise impact to surrounding receivers and land uses (including livestock and rural activities).

Therefore, the Department recommends construction hours of 7.00 am until 6.00 pm daily for a maximum period of 28 days at a time, separated by a minimum respite period of nine days. This construction schedule would have the benefit of shortening the overall construction period. Given the progressive nature of construction in a linear fashion along the pipeline easement, the Department considers it to be appropriate.

The Department has recommended a condition that requires the Proponent to seek approval from the Director-General for any construction works outside the Department's recommended construction hours, (e.g. HDD that must be completed once the drill is in operation). This would also enable the Proponent to seek approval for unforeseen out-of-hours work. Each request would be considered on a case by case basis, accompanied by details of the need for the works and site-specific mitigation measures proposed to ensure there are no unreasonable noise impacts at nearby receivers, including appropriate consultation.

The Department has recommended that restricted construction hours apply to high noise works that have impulsive, intermittent, low frequency or tonal characteristics, such as jack hammering, line drilling, pile driving, rock hammering, saw cutting, sheet piling and vibratory rolling. The Department considers such works should take place only between 8.00 am and 5.00 pm and in continuous blocks of no more than three hours, with at least one hour respite between each block of work generating high noise impact, where the location of the work is likely to impact the same receiver.

The Department's recommended construction hours also restrict works associated with blasting, which is limited to between 8.00 am to 5.00 pm Monday to Friday; 8.00am to 1.00pm Saturdays, and in continuous blocks of no more than three hours, with at least one hour respite between each block of work where the location of the work is likely to impact the same receiver.

In the event that construction noise exceeds the "highly noise affected level" of 75 dB(A) specified in the *Interim Construction Noise Guidelines* at any receiver (eg. during blasting), then the Proponent would be required to put additional mitigation measures in place. These would be negotiated with the affected receiver.

In order to coordinate the effective implementation of the Proponent's proposed mitigation measures, the Department recommends the Proponent submit a management plan for noise, vibration and blasting impacts incorporating measures to monitor and manage impacts. This shall be incorporated into the CEMP to be submitted to the Director-General for approval prior to the construction. This management plan would detail the procedure for notifying receivers of any construction activities that are likely to affect their amenity within a reasonable time frame. A complaints procedure would also need to be implemented by the Proponent in order to deal with any potential noise complaints arising from

construction of the project. Any non-compliance would be dealt with in a contingency plan and should be contained in the noise management sub-plan of the CEMP.

Through implementation of the Proponent's proposed noise mitigation measures, the Department is satisfied that any noise impacts associated with the Project can be managed to avoid any unacceptable noise impacts at nearby sensitive receivers. By incorporating the Department's recommendations into a construction noise and vibration management plan, the Department considers that construction noise and vibration resulting from the project can be appropriately managed.

5.4. Other Issues

The Department has recommended conditions of approval addressing the following issues:

- Traffic;
- Dust generation during construction;
- Risk and hazard management in accordance with relevant Australian Standards and State policies that ensure pipeline safety and the safety of adjacent land users;
- Surface and groundwater management; and
- Erosion control measures considering the design of watercourse crossings and the location and management of temporary construction facilities.

The conditions of approval also provide for regular auditing, compliance tracking, complaints response and the maintenance of publicly available information about the project. The Department is satisfied that all other matters have been adequately addressed in the Proponent's RtS and final Statement of Commitments.

Table 5-4: Consideration of Other Issues

Issue	Department's consideration
Traffic	<p>The proposed pipeline route avoids built up areas but passes near the regional towns of Young, Wombat, Wallendbeen and Cootamundra. Road crossings required for construction of the Project include:</p> <ul style="list-style-type: none"> • Major road crossings by horizontal boring or HDD; and • Minor road crossings to be constructed by trenching. <p>Crossings of four Classified Roads are within 100 km/h speed zones. Therefore, mitigation measures are required to minimise traffic flow disruption (traffic delays and reduced speed limits) during construction and maintenance of the pipeline, particularly at the Classified Road crossings. The affected roads are:</p> <ul style="list-style-type: none"> • Burley Griffin Way (MR84); • Cootamundra – Stockinbingal Road (MR235); • Gunning – Temora Road (MR241) referred to as Boorowa Street in the EA; and • Young – Grenfell Road (MR 239) referred to as Henry Lawson Way in the EA. <p>In addition to road crossings, potential impacts on the road network during general construction of the Project would be due to:</p>

	<ul style="list-style-type: none"> • mobilisation of plant and equipment to the work site, as construction progresses along the easement; • haulage of fuel for use at site in plant and equipment by conventional road tankers through a licensed provider, to vehicles along the ROW; • transportation of pipe sections from the supplier to the ROW or temporary stockpile location; and • movement of the workforce between the ROW and the accommodation facilities. <p>It is noted in the EA that trench material would be stockpiled and used for backfill during reinstatement work, if it meets engineering specifications. Therefore truck movements would not be required for spoil transportation. Any unsuitable excess material would be stockpiled in suitable locations for ongoing maintenance during pipeline operation.</p> <p>According to the EA, road transportation would be used for all construction related activities, being practicable, efficient and cost effective. Use of rail networks is not the preferred option.</p> <p>Transport of the workforce would be by personal vehicles or typically by coach to the nearest airport for specialist crew who require flights home. A daily increase in vehicles on local roads due to workforce movement (a maximum of 50 people at the peak of the construction period) would be low due to construction hours outside peak traffic times.</p> <p>Submissions regarding traffic and transport focused on minimising potential impacts on the existing road network and safety, efficiency and standard of maintenance along the existing road network during design and construction of the Project. Furthermore, use of a central material depot would allow for better traffic distribution.</p> <p><u>Consideration</u></p> <p>Given the linear nature of construction along the ROW, the Department accepts that use of a central material depot would not be practical. Instead, as detailed in the RtS report, materials, plant and equipment would be moved along the ROW as construction progresses along the easement. The Department is satisfied with this arrangement.</p> <p>RMS concurred with construction of Classified Roads crossing by horizontal boring or HDD not open trenching, as this would effectively minimise impacts on the existing road network. RMS requirements provided in its submission to the Department for the construction of Classified Road crossings include:</p> <ul style="list-style-type: none"> • Specific construction techniques (horizontal boring or HDD), location and boring depth specifications etc; • Location of access points and valves to be outside the road reserve; • Installation of permanent markers; • Reinstatement of disturbed areas and restrictions on disturbing specific roads; • Preparation of a Traffic Management Plan, in consultation with Council and RMS; • Preparation of a Traffic Control Plan (providing the installation of warning signs, lighting, barriers etc) and final detailed Works-As-Executed Plans for works within a road reserve requiring approval from RMS under Section 138 of the Roads Act 1993; • Adjustment and reinstatement of public utilities that may be affected by the construction works; and
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	<ul style="list-style-type: none"> Confirmation that the Project would be completed at no cost to RMS and RMS is not liable for any damage that may occur due to the proposed works. For this reason, the proponent is required to hold current Public Liability Insurance cover to \$20 million for works within the reserve of Classified Roads and indemnify the RMS against any legal action that may arise from the Project. <p>The Department is satisfied that the traffic impacts can be appropriately managed via the Conditions of Approval to maintain traffic flow, safety, efficiency and standard of maintenance along the existing road network during construction and operation of the Project.</p> <p>Furthermore, the Department considers that traffic impacts due to general construction activities would be reduced as haulage of spoil material from trenching would not be required and also because workforce traffic is expected to occur outside peak traffic times.</p>
Air Quality/Dust Management	<p>Dust would be generated during excavation, trenching, rock blasting, vehicle movements on unsealed roads and material handling, in particular stockpiling of soils. Dust generation would impact on the amenity of the surrounding areas if appropriate controls are not implemented.</p> <p>Potential receptors sensitive to air quality impacts are low density rural properties. Some existing dust impacts occur in this area from cropping and tillage activities and unsealed roads. Higher density areas within the towns (eg Cootamundra and Wallendbeen) are located more than 1km from the Project site and are unlikely to be affected by dust generated from construction activities. No more than 10 residences were identified within 250 metres of the construction site (the most potentially affected receivers). Therefore a small number of residences may experience short-term adverse impacts from dust during construction.</p> <p>The Proponent has committed to implement a range of dust management measures including minimal vegetation and topsoil clearing and progressive reinstatement as the pipeline construction proceeds. Water trucks would be used to reduce dust in dry windy conditions. Silt and other materials would be removed from erosion control structures following rain to ensure deposits do not become a dust source. During rock blasting activities, blasting mats would be used to minimise dust and stray debris.</p> <p>Operation of the project would have negligible impact on air quality in the locality due to the underground location of the pipeline and passive maintenance requirements. Ventilation systems would comply with the relevant Australian Standards.</p> <p>The EPA raised dust impacts as requiring management measures, in particular the timing of rehabilitation works.</p> <p><u>Consideration</u></p> <p>The Department is satisfied that dust can be managed appropriately through the CEMP and conditions of approval. The Department has recommended in the conditions that the Proponent provide mitigation measures to reduce dust from excavation, construction and rock blasting activities and a reactive management program detailing how and when construction operations are to be modified to minimise the potential for dust emissions, should there be significant emissions.</p>

Risk/Hazards	<p>A Preliminary Hazard Analysis (PHA) was conducted in the EA in accordance with the Department's <i>Hazardous Industry Planning Advisory Paper No. 6</i> and <i>Australian Standard AS 2885 Pipelines – Gas and Liquid Petroleum</i> as required by the DGRs.</p> <p>The main potential hazard identified is loss of containment (natural gas/methane) and subsequent ignition, resulting in a jet fire, flash fire or vapour cloud explosion during commissioning or operation. The PHA has quantified the risks from potential hazardous incidents to the adjacent land uses and presented the results as risk transects. The Quantitative Risk Assessment (QRA) undertaken in the EA indicates that the risks associated with the pipeline are very low and meet the Department's criteria.</p> <p>No submissions were received regarding the issue of risk/hazard.</p> <p><u>Consideration</u></p> <p>The Department is satisfied that the QRA results show very low risks associated with the Project. The Department has recommended in the conditions that the Proponent conduct a Final Hazard Analysis (FHA) prior to the commencement of construction of the Project to identify any further risks. A Construction Safety and Operating Plan consistent with <i>Australian Standard AS 2885.1</i> would also be prepared including all prevention/protection measures that were identified in the EA (Table 8 – Hazard Identification Word Diagram) to further reduce risks associated with loss of containment from the pipeline.</p> <p>Furthermore, the Proponent would need to abide by the conditions of Pipeline Licence No. 19 granted under the <i>Pipelines Act 1967</i>, which includes a pipeline monitoring regime and dedicated real time telemetry monitoring in accordance with AS 2885.3 – 2001.</p>
Water	<p>The EA identified that a total of 25 watercourses would be traversed by the pipeline. Sensitivity criteria for water quality and hydrology were assessed in the EA for each watercourse, based on the DPI's Fish Habitat Classes. Overall 12 watercourses of low sensitivity and 13 watercourses of moderate sensitivity were identified. No watercourses of high sensitivity were identified in the EA. The northern watercourses flow into the Lachlan River catchment and the remainder into the Murrumbidgee River. There are no known drinking water sources within these catchments immediately downstream of the Project and no sensitive wetlands (such as RAMSAR wetlands) within the study area.</p> <p>Construction methods would include open cut trenching, with flow diversions where possible.</p> <p>The majority of watercourse crossings would be through ephemeral watercourses which have intermittent flow during and after rain and are dry most of the time, with either poor or moderate riparian vegetation. The EA considers surface water impacts to be negligible when the watercourses are dry. However, potential impacts associated with construction of the project include:</p> <ul style="list-style-type: none"> • Changes in the watercourse channel or bank form; • Surface water pollution if there is flow at the time of construction or overland flow during rain; and • Changes to existing surface flow regimes. Backfilling of pipeline

	<p>trenches with soil compaction to restore the natural contours would ensure surface flow regimes are maintained following construction work.</p> <p>According to the EA, construction of the Project is not expected to interact with existing groundwater levels due to depth of groundwater resources in the area. However, protective measures have been included in the unlikely case of groundwater impact.</p> <p>Potential impacts to water resource regimes during operation of the pipeline are considered limited to changes to existing surface and groundwater flow regimes resulting from any subsidence along the trenchline. Long term impacts to surface water and groundwater are considered minor to negligible.</p> <p>The Proponent has committed to a range of mitigation measures to protect water quality and flow regime impact during construction of watercourse crossings including:</p> <ul style="list-style-type: none"> • use of erosion and sediment control measures; • using a wider ROW and work area for watercourses with steep banks; • undertaking crossings during no or low flow conditions where possible. According to the EA, any required dewatering of the trench would be conducted in a manner that does not cause erosion and does not result in sediment laden water flowing into any watercourse. The dewatering structures would be removed as soon as possible after the completion of dewatering activities; • stockpile locations of trench material outside the vicinity of watercourses or drainage areas; and • prompt and thorough bank restoration techniques including soil stabilisation to restore watercourses. <p><u>Consideration</u></p> <p>The Department is satisfied that surface water issues can be managed appropriately through the CEMP and conditions of approval. Likewise, the Department is satisfied that groundwater impact is unlikely as evidenced by information provided in the EA and in the event of any groundwater impact the Proponent's mitigation measures would be implemented to prevent adverse groundwater impacts. The Department has recommended in the conditions of approval that the Proponent prepares an Erosion and Sediment Control Plan and Spill Response Plan as part of the CEMP, detailing mitigation measures to reduce the likelihood of any impact to surface water during construction of watercourse crossings and construction of the Project as a whole.</p> <p>The Proponent has committed in the RtS (Revised Statement of Commitment SG3) to conduct restoration of existing surface flow regimes as soon as practicable after the pipe has been laid and backfilled, including bank and floor reinstatement of the natural contours and the prevention of scoring. In addition, mitigation measures provided in the EA provide for stabilisation of watercourses following construction work and ongoing maintenance of the easement. The Proponent has committed to compliance audits of erosion and sediment controls during and upon completion of construction work.</p>
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6. RECOMMENDATION

The Department has assessed the Proponent's EA, RtS report and Statement of Commitments on the Young to Wagga Wagga Looping Pipeline Stage 2 (Bethungra to Young) Project. The Department has also assessed submissions received from public agencies and the community pertaining to this project. The Young to Wagga Wagga Looping Pipeline Stage 2 between Young and Bethungra is proposed to complete the link between Young and Wagga Wagga by connecting to the Stage 1 pipeline which has already been constructed between Wagga Wagga and Bethungra. The Stage 2 pipeline is proposed to be located on an existing easement which has previously been disturbed. The Department considers that the additional impacts associated with construction and operation of the additional pipeline within this disturbed context would not be significant.

Based on its assessment, the Department is satisfied that the Proponent has provided a robust and conservative assessment of potential impacts. The Department considers the project to be, on balance, justified given its benefits to the broader community in securing future gas supply for NSW. The Department is confident any adverse impacts identified in this report can be mitigated to acceptable levels with the mitigation measures proposed in the Proponent's Statement of Commitments and implementation of the recommended conditions of approval. The Department therefore recommends the approval of this project subject to the Department's recommended conditions.

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2.4.13

APPENDIX A ENVIRONMENTAL ASSESSMENT

See the Department's website at

http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=4246

APPENDIX B SUBMISSIONS

See the Department's website at
http://majorprojects.planning.nsw.gov.au/index.pl?action=list_submissions&job_id=4246

APPENDIX C PROPONENT'S RESPONSE TO SUBMISSIONS

See the Department's website at
https://majorprojects.affinitylive.com/?action=view_job&id=4246

APPENDIX D RECOMMENDED CONDITIONS OF APPROVAL
