REFERRAL OF A PROJECT FOR A DECISION ON THE NEED FOR ASSESSMENT UNDER THE *ENVIRONMENT EFFECTS ACT 1978*

REFERRAL FORM

The *Environment Effects Act 1978* provides that where proposed works may have a significant effect on the environment, either a proponent or a decision-maker may refer these works (or project) to the Minister for Planning for advice as to whether an Environment Effects Statement (EES) is required.

This Referral Form is designed to assist in the provision of relevant information in accordance with the *Ministerial Guidelines for assessment of environmental effects under the Environment Effects Act 1978* (Seventh Edition, 2006). Where a decision-maker is referring a project, they should complete a Referral Form to the best of their ability, recognising that further information may need to be obtained from the proponent.

It will generally be useful for a proponent to discuss the preparation of a Referral with the Department of Transport, Planning and Local Infrastructure (DTPLI) before submitting the Referral.

If a proponent believes that effective measures to address environmental risks are available, sufficient information could be provided in the Referral to substantiate this view. In contrast, if a proponent considers that further detailed environmental studies will be needed as part of project investigations, a more general description of potential effects and possible mitigation measures in the Referral may suffice.

In completing a Referral Form, the following should occur:

- Mark relevant boxes by changing the font colour of the 'cross' to black and provide additional information and explanation where requested.
- As a minimum, a brief response should be provided for each item in the Referral Form, with a more detailed response provided where the item is of particular relevance. Cross-references to sections or pages in supporting documents should also be provided. Information need only be provided once in the Referral Form, although relevant cross-referencing should be included.
- Responses should honestly reflect the potential for adverse environmental effects. A Referral will only be accepted for processing once DTPLI is satisfied that it has been completed appropriately.
- Potentially significant effects should be described in sufficient detail for a reasonable conclusion to be drawn on whether the project could pose a significant risk to environmental assets. Responses should include:
    - a brief description of potential changes or risks to environmental assets resulting from the project;
    - available information on the likelihood and significance of such changes;
    - the sources and accuracy of this information, and associated uncertainties.
- Any attachments, maps and supporting reports should be provided in a secure folder with the Referral Form.
- A CD or DVD copy of all documents will be needed, especially if the size of electronic documents may cause email difficulties. **Individual documents should not exceed 2MB.**

- A completed form would normally be between 15 and 30 pages in length. Responses should not be constrained by the size of the text boxes provided. Text boxes should be extended to allow for an appropriate level of detail.
- The form should be completed in MS Word and not handwritten.

The party referring a project should submit a covering letter to the Minister for Planning together with a completed Referral Form, attaching supporting reports and other information that may be relevant. This should be sent to:

Postal address

Minister for Planning
GPO Box 2392
MELBOURNE VIC 3001

Couriers

Minister for Planning
Level 7, 1 Spring Street
MELBOURNE VIC 3001

In addition to the submission of the hardcopy to the Minister, separate submission of an electronic copy of the Referral via email to ees.referrals@dtpli.vic.gov.au is encouraged. This will assist the timely processing of a referral.

PART 1 PROPONENT DETAILS, PROJECT DESCRIPTION & LOCATION

1. Information on proponent and person making Referral

Name of Proponent:	**APA GasNet Australia (Operations) Pty Ltd (APA)**
Authorised person for proponent:	Tom Carroll
Position:	**Senior Program Manager**
Postal address:	**180 Greens Road, Dandenong 3175 Victoria**
Email address:	Tom.Carroll@apa.com.au
Phone number:	**03 9797 5147**
Facsimile number:	**03 9797 5146**
Person who prepared Referral:	David Coleman
Position:	**Senior Environmental Consultant**
Organisation:	**Monarc Environmental Pty Ltd**
Postal address:	**Suite 3 / 259 Whitehorse Rd, Balwyn**
Email address:	davidc@monarcenviro.com.au
Phone number:	**03 8809 1800**
Facsimile number:	**03 9836 0801**
Available industry & environmental expertise: (areas of 'in-house' expertise & consultancy firms engaged for project)	Monarc Environmental has extensive experience in flora and fauna assessments including major infrastructure projects. Their resources include personnel accredited under the DEPI Vegetation Quality Assessment scheme. Monarc will be managing the environmental assessments for the project. Qualified sub-contractors include • Archaeology at Tardis who have extensive experience in cultural heritage assessments. • Tree-logic for arboricultural advice

2. Project – brief outline

Project title: Victorian Northern Interconnect Expansion – Construction of a Transmission gas pipeline from Wandong to Broadford and Mangalore to Glenrowan.
Project location: (describe location with MGA coordinates and attach A4/A3 map(s) showing project site or investigation area, as well as its regional and local context) The project consists of the duplication of four sections of the existing 300mm Wollert to Wodonga gas transmission pipeline (pipeline licence 101) between Wandong and Glenrowan. The pipeline is to be installed within the existing easement occupied by the existing gas transmission pipeline. An overview map is provided at the end of this Referral document and detailed maps of each looping section are provided in the Flora and Fauna Assessment Reports appended. The project area commences north of Scanlons Rd, near Wandong, at the existing APA Wandong Offtake facility (MGA Co-ord: E 337973.14 N 5903545.06) and then runs in a northerly direction to Strath Creek Rd, Broadford (MGA Co-ord: E 337973.14 N 5903545.06). As the pipeline heads north from Wandong, it comes within 200m of the Hume Freeway in a couple of locations, but generally lies at least a kilometre to the east of the Freeway It recommences south of Mangalore where the existing APA pipeline easement intersects Back Mountain Road (MGA Co-ord: E 337973.14 N 5903545.06), heading northwards until it crosses the Hume Freeway, then passes to the west of Mangalore before heading in a generally north-easterly direction passing to the west of Euroa and Benalla to finish at the Glenrowan-Boweya

Road near Glenrowan (MGA Co-ord: E 427880.99 N 5964621.04). The pipeline roughly parallels, but remains to the east of the Hume Freeway until near Mangalore. Once it crosses the Freeway near Mangalore, the Freeway lies approximately 2-5km to the south-east of the pipeline.

Refer to attached map in Figure 1.

Short project description (few sentences)**:**

APA GasNet Australia (Operations) Pty Ltd ('APA') is proposing to duplicate (loop) four sections of the existing Wollert to Wodonga gas transmission pipeline (pipeline licence 101), licenced under the *Pipelines Act 2005*.

The Wollert to Wodonga gas transmission pipeline was constructed in 1975 and runs in an approximately north-easterly direction from the Wollert Compressor Station (WCS) on the northern outskirts of Melbourne through to Wodonga on the Victorian NSW border, a total distance of approximately 269km. The sections of the route to be looped (together with the distance in kilometres from the starting point of the existing pipeline at Wollert where the WCS = Kilometre Point 0 or KP0) consists of the following:

- Wandong to Broadford (Looping 5) from KP27.8 to KP45.2 and covering about 17.4km (refer Figure 1)
- Mangalore to Longwood (Looping 3) from KP73.8 to KP107.6 and covering about 33km (refer Figure 2)
- Longwood to Violet Town (Looping 2) from KP107.6 to KP141.2 and covering about 33.6km (refer Figure 3)
- Violet Town to Glenrowan (Looping 4) from KP141.2 to KP192 and covering about 50.8km (refer Figure 4)

Each looping is required to meet the specific demands of separate large commercial customers that in turn, supply gas to end-users throughout the eastern seaboard of Australia. The total distance of all four loops, which are numbered in the likely order of construction, is approximately 135km.

[Note: - Naming conventions for the Loopings take into consideration that APA is constructing Looping 1 Wollert to Wandong, covering about 27.8km, in the first half of 2014. This has been considered separately to this application].

3. Project description

Aim/objectives of the project (what is its purpose / intended to achieve?):

APA is proposing to loop (duplicate) four sections of the existing Wollert to Wodonga gas transmission pipeline (PL 101) between Wandong to Broadford and Mangalore to Glenrowan to meet contractual requirements from clients for the supply of gas..

Background/rationale of project (describe the context / basis for the proposal, eg. for siting):

Looping of the pipeline will increase the capacity for delivery of gas to the north of the state and interstate.

The project will utilise APA's existing easement for the existing gas transmission pipeline to Wodonga as space is available for a new pipeline. The use of this easement will restrict the potential disturbance to the environment to the previously disturbed existing easement. This disturbance will be both during the construction phase and future operations and maintenance works.

An alternative route would require the acquisition of new easements and the clearing of new areas to allow construction to proceed.

Main components of the project (nature, siting & approx. dimensions; attach A4/A3 plan(s) of site layout if available):

The proposed pipeline is to be installed below the natural ground surface and the project will consist of the laying of approximately 135 kilometres of 400NB diameter steel gas pipeline.

The proposed construction Right of Way ('ROW') is a temporary construction zone that will accommodate equipment, allow vehicle travel along the construction route and temporary storage of trench spoil and topsoil. The width of the construction ROW also ensures that construction

activities can be safely performed with minimum risk of accident or injury to construction personnel.

The ROW will lie almost entirely within the existing 35 metre wide easement held by APA for the existing pipeline except at specific locations where additional space may be required adjacent to the easement to accommodate equipment required for crossing special features, such as Horizontal Directional Drilling (HDD), or where space may be required as a temporary site depot or laydown area.

The existing Wollert to Wodonga pipeline is located within, and approximately 7.5m from the western edge of the existing easement with the proposed pipeline to be located approximately 7m east of the existing pipeline. To avoid impacts on the existing pipeline, construction activities will largely occur east of the existing pipeline but within the existing easement. The width of the majority of the construction ROW is therefore up to 28m. This has been adjusted at certain points either:

- where additional space is required to accommodate equipment (generally an additional 80m × 30m but adjusted as required by location specific factors) or
- In sensitive areas where the construction ROW has been reduced to avoid or minimise impact to significant features.

Restoration of the construction area will aim to restore the construction ROW to its previous condition once construction of the pipeline is complete. This includes minimising the visual impact of the pipeline installation and minimising adverse impacts of the pipeline on existing land uses. In accordance with licence conditions, however, treed vegetation will not be allowed to regrow within 3m of either side of the pipeline.

Ancillary components of the project (e.g. upgraded access roads, new high-pressure gas pipeline; off-site resource processing):

In terms of temporary facilities, access to the proposed construction ROW will utilise existing roads as much as possible and, subject to landowner approval, existing access tracks. Temporary construction site depots will be required for each stage of the project as well as laydown areas for pipes and other working areas. These will be restored once construction is complete.

In terms of permanent above ground structures, there will be a requirement for 2 line valves to be installed as part of Loopings 3 and 4 and 1 line valve for Looping 5 in accordance with the requirements of Australian Standard AS2885 *Pipelines – Gas and Liquid Petroleum - Design and Construction*. The enclosures will be placed next to the line valve enclosures of the existing pipeline. The enclosures will encompass an area of no more than approximately 10m x10m.

In addition, there will be the pipeline marker posts and cathodic protection test boxes. These are required by AS2885 and the pipeline licence to be issued for each stage of the project under the *Pipelines Act 2005.*

Key construction activities:

Pipeline construction is to comply with all relevant codes and standards including Australian Standard AS2885.1 *Pipelines – Gas and Liquid Petroleum - Design and Construction* and the Australian Pipeline Industry Association Code of Environmental Practice (APIA, 2013). The construction will also be guided by the environmental requirements to be specified in a Construction Environment Management Plan to be prepared in compliance with the *Pipeline Regulations 2007* and approved by Earth Resources Regulation branch of the Department of State Development, Business and Innovation.

Pipeline construction activities will include:

- Access to the construction ROW: this will generally be via existing roads, tracks and access agreements. Landholders will be consulted for permission regarding use and maintenance requirements for any access tracks on their properties, associated with project works.
- Centreline survey: this requires a survey of the centreline of the pipeline and the limits of the construction ROW. The new alignment, existing pipeline and boundaries will be marked using stakes and will be retained until ROW restoration. Any fences to be cut to allow construction will also be marked by surveyors.
- Installation of temporary gateways: temporary strainer assemblies and gateways will be installed at every fence line that is intersected by the construction ROW to provide security for farm stock during construction.
- Clear and grade: There are three different land surface types that the construction ROW will

intersect: gravel, asphalt on roadways and soil with vegetative cover (grass, shrubs etc). Where construction is to include a trench for pipe installation, proposed construction methods for the pipeline include a clear and grade process that will remove the existing surface cover (such as the vegetation and topsoil) from the construction ROW to allow trenching to proceed.

In vegetated areas, clear and grade will involve the grading of up to 100mm depth of topsoil in depending on the soil profile, using bulldozers and graders. The topsoil will be stockpiled in a separate windrow along the edge of the construction ROW to permit safe and practical construction access whilst preserving the topsoil for later reinstatement.

Where potential sedimentation of water courses may occur, erosion and sediment control measures will be installed on stockpiles and spoil at these locations. Erosion and sediment control measures will be inspected and maintained on a regular basis and following rain events for the entire construction period.

Wherever practicable, vegetation clearing will be minimised. Trimming overhanging branches may be necessary. Vegetation cleared from the construction ROW will be stockpiled separately from the clear and grade, and excavated trench material to ensure successful reinstatement of the construction ROW following construction.

- Trenching: the trench for pipelaying will be approximately 700mm wide and provide a minimum depth of cover of 1200mm deep. It will be excavated using a range of specialised equipment depending on conditions. Trench depth will be increased at road and watercourse crossings as appropriate and all trench spoil will be stockpiled on the construction ROW and returned to the trench during the backfilling stage.
- Pipe stringing: pipe will be delivered to the construction ROW by semi-trailer and laid out end-to-end alongside the trench centreline. The pipes are up to 18m long and are placed on raised timber skids or sandbags to protect the pipe from damage and allow it to be welded into continuous lengths (pipestrings). Gaps will be provided for public or private access such as the movement of farm equipment or livestock.
- Bending: this may be required to enable the pipe to conform to topographic contours. Pipe may either may be 'cold bent' in the field or by heat induction in a factory to produce the desired bend angle.
- Welding, radiography and joint coating: pipe segments are welded into continuous lengths before being laid in the trench. Welded joints will be x-ray tested, sand blasted to remove surface scale and rust and then coated with a high build epoxy (HBE) to provide a continuous external coating to prevent corrosion.
- Lowering in: refers to the placement of the pipe strings into the trench by side-boom tractors. Prior to lowering-in, it may be necessary to dewater the trench: any such water will be discharged to land in accordance with regulatory requirements and not into watercourses. Artificial or natural sediment filters and energy dissipaters will be installed to prevent sediment and erosion.

  Note that bedding or padding materials may be required to protect the coating where subsurface conditions may damage the pipe coating (e.g. rock). This may utilise quarried sand or alternatively fine material may be sourced from the trench material if appropriate.
- As-built survey: prior to backfilling, a survey will be conducted to record the location of the actual pipeline and other details such as pipe numbers, welds and crossings.
- Backfilling: involves the replacement of stockpiled trench spoil and its compaction. Topsoil removed during grading will then be respread over the construction ROW and contours reinstated. If required, excess spoil may be removed from the site and transported to an appropriate landfill.
- Hydrostatic testing: the whole of the pipeline will be pressure tested with water in accordance with AS2885 to verify the integrity of the pipeline. Water for hydrostatic testing will be sourced from recycled sources where possible and disposed of following completion of testing in accordance with relevant regulatory requirements and approvals. Approval on the discharge plan will be sought from authorities (eg GBCMA) prior to disposal.
- Clean-up and rehabilitation: all temporary infrastructure, equipment and construction waste will be removed from the site following backfilling. Rehabilitation of the ROW will aim to reinstate contours, minimise the potential for erosion, minimise any impact on drainage patterns, minimise weed establishment, minimise the visual impact of the pipeline installation and minimise adverse impacts of the pipeline on existing land uses. As a result, erosion and sediment control structures (diversion berms, sediment traps) may be put in place to protect

water quality at water or drain crossings and to divert run-off away from potentially unstable areas. Revegetation of the ROW will be based on specialist advice and consultation with landholders and will continue to be monitored during pipeline operations. Timing of the removal of temporary gates and reinstatement of fences will be negotiated with each landholder.

Key operational activities:

The topography of the area will be restored as much as possible to its original form and the land returned to its prior use once the pipeline has been installed and restoration work has been completed. Few indications of the presence of the pipeline will be visible: these will include line valve enclosures, marker posts and cathodic protection test points.

When commissioned, the pipeline will be owned and maintained by APA. Routine ground patrols will be undertaken to monitor the pipeline easement for any operational or maintenance issues. Monitoring will include the same activities as those undertaken for the existing pipeline and will cover issues such as:

- Easement stability
- Revegetation
- Weed invasion
- Watercourse crossings
- Third-party activities

The pipelines will also be constructed so that in-line inspection equipment (known as intelligent pigs) can be used to inspect the integrity of the pipeline as required.

Key decommissioning activities (if applicable):

There are no decommissioning activities required for this construction project.

At the end of its useful life, decommissioning of the pipeline will be undertaken in accordance with the regulatory requirements of the day. These currently require the preparation of a Rehabilitation Plan for approval by regulatory authorities. At the present time, the preferred strategy for decommissioning is likely to involve capping of the pipeline and filling it with an inert gas ('mothballing'). The cathodic protection system, however, would be continued to maintain the integrity of the pipeline. Improvements in technology are increasing the lifetime of pipelines all the time but the pipeline is expected to have a physical life of at least 60 years.

Is the project an element or stage in a larger project?

☒ No ☒ Yes If yes, please describe: the overall project strategy for delivery of all sections and components; the concept design for the overall project; and the intended scheduling of the design and development of project sections).

As described above, the project consists of four sections (loopings).

Construction of the pipeline is scheduled to commence in September 2014 and be completed by May 2015.

The timing of construction of each looping stage will be negotiated with the successful construction tenderer(s) when they are appointed to the project.

Is the project related to any other past, current or mooted proposals in the region?

☒ No ☒ Yes If yes, please identify related proposals.

A separate looping project is currently in progress for a section of the existing pipeline between Wollert (KP0) and Wandong (KP27.8). This looping lies some 50kms south of this proposal in a different bioregion. A self-assessment against the referral criteria contained in the *Ministerial Guidelines for assessment of environmental effects under the Environment Effects Act 1978* concluded that a referral was not warranted for this project.

Construction has already commenced on this pipeline.

4. Project alternatives

Brief description of key alternatives considered to date (eg. locational, scale or design alternatives. If relevant, attach A4/A3 plans):

The proposed route is largely controlled by the location of the existing pipeline and easement between Wollert and Wodonga. An alternative route would require the acquisition of new easements and the clearing of new areas to allow construction to proceed. However, space is available for a new pipeline within the existing, previously disturbed easement and the use of the existing easement will minimise the potential disturbance to the environment of the region as well as minimise the societal impact of the project.

Brief description of key alternatives to be further investigated (if known)**:**
N/A

5. Proposed exclusions

Statement of reasons for the proposed exclusion of any ancillary activities or further project stages from the scope of the project for assessment:

Future additional loopings of the existing pipeline are a natural possibility if the demand for capacity on the pipeline increases. The likelihood of customers underwriting additional looping in the near future is low and therefore they have not been considered for inclusion in this application.

6. Project implementation

Implementing organisation (ultimately responsible for project, ie. not contractor)**:**

APA GasNet Australia (Operations) Pty Ltd

Implementation timeframe:

Construction of the pipeline is scheduled to commence in September 2014 and be completed by May 2015.

The timing of construction of each looping stage will be negotiated with the successful construction tenderer(s) when they are appointed to the project. The entire project for Loopings 2, 3, 4 and 5 is required to be commissioned by May 2015.

Proposed staging (if applicable):

As above

7. Description of proposed site or area of investigation

Has a preferred site for the project been selected?

☐ No ☒ Yes If no, please describe area for investigation.
If yes, please describe the preferred site in the next items (if practicable).

The proposed site for the pipeline is within the existing easement for the existing pipeline between Wollert and Wodonga.

General description of preferred site, (including aspects such as topography/landform, soil types/degradation, drainage/ waterways, native/exotic vegetation cover, physical features, built structures, road frontages; attach ground-level photographs of site, as well as A4/A3 aerial/satellite image(s) and/or map(s) of site & surrounds, showing project footprint):

Detailed maps of each looping section are provided in the Flora and Fauna Assessment Reports appended. These show aerial/satellite image(s) with an overlay of the project footprint and key environmental features such as waterways, remnant patches, scattered trees, threatened species locations and targeted survey locations.

Two broad landform units have been identified along the easement. These are:

- Foothills and forests on the northern slopes of the Victorian section of the Great Dividing Range (GDR) intersected by Looping 5
- Northern Victorian plains between the GDR and the Murray River intersected by Loopings 2-4

For Looping 5, the project area commences on the north-western edge of the Great Dividing

Range within an area known as the Victorian Highlands that encompasses the mountain ranges and associated foothills of the GDR between Melbourne and the NSW border.

The majority of the project corridor (Loopings 2-4) falls within a broad landform unit known as the Northern Riverine Plains that extends north and westwards from the Great Dividing Range (GDR) along the Murray River basin. Lying within the plains but near the northern edge of the GDR, the project corridor is also influenced by alluvial fans and aprons derived from the ranges, for example along Seven Creeks. The project corridor thus largely consists of a flat to gently sloping plain formed from Quaternary alluvial deposits.

In the northern half of the project corridor, the area defined by this landform unit is also roughly contiguous with the region known as the Victorian Riverina which is characterised by flat to gently undulating land and floodplain areas associated with the eight river basin tributaries of the Murray River. Prior to European settlement, the vegetation of the Victorian Riverina was a mixture of grasslands and low open woodland, dominated by box species (Grey Box *Eucalyptus microcarpa* and Yellow Box *E. melliodora)*, Red Gum *E. camaldulensis* and Murray Pine (*Callitris sp.*) with a sparse grassy understorey. A number of small freshwater wetlands of various types were also scattered across the region with concentrations of large and shallow wetlands adjacent to the major rivers in a few locations, such as around the Broken River at Benalla.

Today, over 90% of the project corridor is cleared, mainly for dryland farming involving grazing and mixed cropping. As a result, the once-extensive woodlands are largely cleared, the remnants containing predominantly Grey Box *(E. microcarpa)* with grassy understorey and scattered shrubs. Networks of vegetated roadsides and creeklines now play an important role in sustaining biodiversity across this highly modified landscape (GBCMA, 2003). Creekline vegetation remnants can retain good connectivity, especially on Seven Creeks, Castle and Woolpress Creeks while the networks of road reserves and associated vegetation not only provide critical habitat for native bird species but also for colonies of Squirrel Glider. Strathbogie Shire, for instance, is home to an estimated one third of the State's population of the endangered Grey-Crowned Babbler. Other threatened fauna along the project corridor includes Brush-tailed Phascogale which are often found along connected creeklines and roadsides with large, old, hollow-bearing trees, Bush Stone-curlew, Swift Parrot and Tree Goanna.

The following general features have been noted about the project corridor between Wandong to Broadford and Mangalore to Glenrowan:

- Wandong to Broadford (Looping 5) commences in the foothills of the north-western slopes of the GDR. The topography of the southern portion of the area therefore consists of low rolling hills commencing at about 330m AHD before dropping gradually to about 230m at Strath Creek Road east of Broadford (KP45.2).
- The topography remains relatively flat for the Mangalore to Glenrowan (Looping 2-4) route lying at about 170m AHD as it skirts the north-western edge of the Strathbogie Ranges which lie to the south of the Hume Freeway. The northern inland plains stretch to the north-east through to the Murray River about 80-90km to the north;
- The greater part of the region retains an open aspect typical of grazing land and much of this land is subject to either sheep or cattle grazing. While much of the private land has been cleared for agricultural purposes, many areas, particularly within central Victoria, have retained a number of the original trees scattered throughout the landscape
- Much of the land intersected by the existing easement is freehold. In general, areas of crown land are restricted to those associated with roads or watercourses. However, between KP178-186 (Looping 4), the project corridor also intersects land associated with Winton Wetlands (formerly Lake Mokoan) north of Benalla, a former artificial lake currently being returned to a wetland. The land intersected by the existing easement is currently held by the crown but is expected to be sold to private interests once rehabilitation of the wetland is complete.

Potential assets that have been identified along the project corridor include several natural waterways as well as some ephemeral waterways and irrigation channels. In general, natural waterways and drainage lines (designated waterways under the Victorian *Water Act 1989*) are the responsibility of the Goulburn Broken Catchment Management Authority (GBCMA) while Goulburn Murray Water is responsible for water storage and associated delivery and drainage systems along the project corridor eg irrigation channels. In summary:

- Wandong to Broadford (Looping 5) intersects 16 designated waterways of which 6 are named. This includes Sunday Creek near Clonbinane.

- Mangalore to Longwood (Looping 3) intersects 29 designated waterways of which 8 are named. This includes Hughes Creek near Avenel.
- Longwood to Violet Town (Looping 2) intersects 24 designated waterways of which 8 are named. This includes Seven Creeks near Euroa.
- Violet Town to Glenrowan (Looping 4) intersects 23 designated waterways of which 16 are named. This includes the Broken River near Benalla.

Named waterways are summarized in Table 1.

Table 1: Named waterways intersected by the project

Looping	Name	Location	Flow status	Crossing Method
Wandong to Broadford (Looping 5)	Slaty Creek	27.95	Ephemeral	Open cut
	Slaty Creek	30.4	Ephemeral	Open cut
	Sunday Creek	33.55	Intermittent	HDD
	Sheepwash Creek	36.45		Open cut
	Stony Creek	38.4		Open cut
	Mia Mia Creek	42.95		Open cut
Mangalore to Longwood (Looping 3)	Four Mile Creek	77.5		Open cut
	Eight Mile Creek	82		Open cut
	Hughes Creek	88.3		HDD
	Wormangel Creek	92		Open cut
	Charles Creek	97.5		Open cut
	Reedy Creek	97.9		Open cut
	Burnt Creek	100.5		Open cut
	Muddy Waterhole Creek	105.1		Open cut
Longwood to Violet Town (Looping 2)	Creightons Creek	114	Perennial	HDD
	Castle Creek	122.5		Open cut
	Seven Creeks	125.5	Perennial	HDD
	Branch Creek	126.4		Open cut
	Faithful Creek	130.1		HDD
	Riggs Creek	131.2		Open cut
Violet Town to Glenrowan (Looping 4)	Lambing Gunyah Creek	141.6		Open cut
	Honeysuckle Creek	143.0		Open Cut
	One Mile Creek	145.55		Open cut
	Two Mile Creek	147.6		Open cut
	Stony Creek	150.4		Open cut
	Turnip Creek	152.5		Open cut
	Folly Creek	156.5		Open cut
	Woolpress Creek	157.4		Open Cut
	Baddaginnie Creek	166.35		Open cut
	Broken River	169	Perennial	HDD
	Kennedys Creek	174.3		Open cut
	Mokoan Inlet Channel	176.3		HDD
	Winton Creek	179.45		Open cut
	Seven Mile Creek	180.3	Ephemeral	Open cut
	Eleven Mile Creek	189.2		Open cut

Many of these waterways are ephemeral and generally flow only when rainfall conditions are sufficient. Perennial waterways include Creightons Creek, Seven Creeks and the Broken River. All designated waterways intersected by the project corridor drain to the Goulburn River (about 3km from the project corridor at its closest point, near Mangalore at the commencement of Looping 3).

All waterways will be crossed in accordance with relevant guidelines for creek and river crossings. Approval to traverse these assets will be sought through the submission of a Site Environment Management Plan to the GBCMA and will include construction plans and drawings along with appropriate methods of construction and rehabilitation.

APA and GBCMA have undertaken inspections of critical waterways and have commenced the process for the protection and management of these assets during construction.

The project corridor also crosses a large number of roads. This includes one crossing of the Hume Freeway (within Looping 3 at KP76.9) as well as numerous local major and minor roads and a number of reservations set aside for future roads but yet to be developed. In addition, the project corridor crosses the main railway line between Melbourne and Wodonga (within Looping 3 at KP79) and two smaller rail lines Melbourne to Shepparton (within Looping 3 at KP82.77) and Benalla to Oaklands (NSW) (within Looping 4 at KP172.12).

Site area (if known): approx 368 hectares (consisting of the construction footprint varying between 20 and 28m of the easement to the east of the existing pipeline and allowing for equipment laydown, pipestringing and temporary support facilities)

Route length (for linear infrastructure) 134.8 km **and width** 20 - 28 m

Table 2 provides a breakdown of the area of the construction ROW by loopings.

Table 2: Maximum area of ROW

Looping	Length (km)	Width of ROW (m)	Total Area (ha)
Wandong to Broadford (Looping 5)	17.4	20-28	43.39
Mangalore to Longwood (Looping 3)	33.0	20-28	89.68
Longwood to Violet Town (Looping 2)	33.6	20-28	95.53
Violet Town to Glenrowan (Looping 4)	50.8	20-28	139.83
TOTAL	134.8		368.43

Current land use and development:

The current land use for almost the entire project corridor length is of an agricultural nature such as grazing or cropping. Other land uses intersected by the route include roads, rail lines, waterways, hobby farms, horse studs, chicken farms and two small airstrips (outside Euroa). The specific land uses for each loop are:

- Wandong to Broadford (Looping 5)
  - Forestry plantations (KP27.8-30.2, 44.5)
  - Grazing/cropping
  - Rural living/hobby farms (KP35-38)
  - Roads
- Mangalore to Longwood (Looping 3)
  - Grazing/cropping
  - Roads, railway (KP79.1 and KP82.8)
  - Airstrip (KP104)
- Longwood to Violet Town (Looping 2)
  - Grazing/cropping
  - Chicken farms (free range), piggeries (KP117-19)
  - Airstrip (KP120.5)
  - Horse stud (KP126.4)
  - Roads

• Violet Town to Glenrowan (Looping 4)	Grazing/cropping Rural living/hobby farms (KP142-3, 165-8, 172) Horse stud (KP169.5) Railway (KP172.2) and roads

Description of local setting (eg. adjoining land uses, road access, infrastructure, proximity to residences & urban centres):

Land immediately surrounding the project corridor is also predominantly of an agricultural nature.

The project corridor does not pass directly through any urban areas but tends to pass at least one to three kilometres away from rural townships. The following is noted:

• Wandong to Broadford (Looping 5)	Passes within 100m of houses on small holdings near Clonbinane between KP35.1-38 Passes over 500m to the east of the outer limits of Broadford at KP44.5 (the Hume Freeway being located between ROW and the township)
• Mangalore to Longwood (Looping 3)	Passes over 500m to the west of Mangalore at KP81 Passes over 1500m to the west of Avenel at KP89
• Longwood to Violet Town (Looping 2)	Passes about 2.8km north-west of Longwood at KP110 Passes about 4km north west of Euroa at KP 124
• Violet Town to Glenrowan (Looping 4)	Passes about 1500m north west of Violet Town at KP 142 Passes within 200m of houses on small holdings near KP165 Passes about 3.5km north of Benalla at KP170.5

Access to the construction ROW will be via existing local roads or designated access tracks.

Planning context (eg. strategic planning, zoning & overlays, management plans):

The project is approved pursuant to a licence granted under the Victorian *Pipelines Act 2005*. The Act is administered by the Earth Resources Regulation Division of the Victorian Department of State Development Business and Innovation (DSDBI) for new facilities together with Energy Safe Victoria (ESV) for existing facilities. Key steps in the granting of approvals under the *Pipelines Act* include:

- Approval to construct, following acceptance of a Construction Safety Management Plan (CSMP) by ESV and a Construction Environment Management Plan (CEMP) by DSDBI. Consent to construct will not be issued until ESV and DSDBI are satisfied that all relevant issues are appropriately resolved;
- Consent to operate, following successful construction and testing of the facility, and acceptance of an amended operating safety case and an amended operations environmental management plan from ESV. Operations Environment Management Plans are assessed by ESV following consultation with appropriate government and local government agencies and other interested stakeholders.

The CEMP and OEMP are assessed by DSDBI and ESV following consultation with appropriate state and local government agencies and other interested stakeholders.

Section 85 of the *Pipelines Act* provides an exemption from the need to obtain planning approvals under the *Planning and Environment Act 1987* (P&E Act). The project is however, subject to any other relevant Victorian environmental legislation. The regulator is also required to pay regard to state biodiversity policies before granting approvals including policies relating to native vegetation management.

Land usage in the area is predominantly rural with the majority of the land classed as a Farming Zone. There are some low density residential or rural living zones where the easement passes near regional towns (Euroa, Benalla). The planning zones that apply to parcels of land traversed by the existing easement are summarised below in Table 3.

Table 3: Planning Zones applicable to the construction ROW

Local Government Area	Zone	Location
Shire of Mitchell (KP 27.8 – 45.2, Looping 5 & 74.7 – 80.26, Looping 3)	Farming Zone 1 (FZ)	
	Road Zone 1 (RDZ1)	Hume Freeway
Shire of Strathbogie (KP80.26 to 158.55, Loopings 2, 3 & 4)	Farming Zone 1 (FZ)	
	Low Density Residential Zone (LDRZ)	about KP89.6 (corner only)
	Road Zone 2 (RDZ2)	Nagambie-Locksley Road
	Public Use Zone 7 (PUZ7)	Castle Creek Seven Creeks Faithful Creek
	Road Zone 1 (RDZ1)	Euroa-Shepparton Road Dookie-Violet Town Road
Benalla Rural City (KP158.55 to 192, Looping 4)	Farming Zone 1 (FZ)	
	Road Zone 2 (RZ2)	Basin Road Goomalibee Road Glenrowan-Boweya Rd
	Public Conservation and Resource Zone (PCRZ)	Baddaginnie Creek Broken River
	Rural Living Zone (RLZ)	KP166.6 to KP169 P171.4 to 172.1
	Road Zone 1 (RDZ1)	Midland Highway
	Special Use Zone 1 (SUZ1)	KP172.15

The existing easement (project corridor) does not intersect any areas with an Environmental Significance or Landscape Significance Overlay but does intersect a few areas with Vegetation Protection Overlays. These have been primarily applied to protect areas of potentially important native vegetation along roadsides. In the area near Benalla (Looping 4), some overlays have been applied to areas that are believed to support Grey-crowned Babbler or Regent Honeyeater populations.

A number of Conservation Management Plans have been prepared by GBCMA to identify priorities for native biodiversity conservation in the region. These have been prepared in accordance with DSE Biodiversity Action Planning objectives as part of the Victorian State biodiversity strategy and have identified a number of priority sites likely to have conservation values. Six landscape zones identified by GBCMA apply to the project area – South-west Goulburn, Hughes Creek, Longwood, Violet Town, Chesney and Samaria Landscape Zones. Key biodiversity assets identified in the plans included examples of Plains Grassy Woodland, waterways and their riparian margins, wetlands and roadside vegetation.

Local government area(s):

The project passes through the following local government areas:

Looping	**Location**	**LGA**
Wandong to Broadford (Looping 5)	KP27.8 to KP45.2	Shire of Mitchell
Mangalore to Longwood (Looping 3)	KP73.8 to 80.26	Shire of Mitchell
	KP80.26 to 107.6	Shire of Strathbogie
Longwood to Violet Town (Looping 2)	KP107.6 to 141.2	Shire of Strathbogie

Violet Town to Glenrowan (Looping 4)	KP141.2 to 158.55	Shire of Strathbogie
	KP158.55 to 192	Benalla Rural City

Meetings have been held with each of these Councils to assist in project planning, determine Council requirements for management of local issues such as roads and provide information on project status.

8. Existing environment

Overview of key environmental assets/sensitivities in project area and vicinity
(cf. general description of project site/study area under section 7)**:**

The existing easement (project corridor) intersects a number of areas of native vegetation that may be classed as an EVC under the Victorian Government Biodiversity Strategy and have been considered in accordance with Victoria's state Native Vegetation Management Framework (NVMF) It is noted that DEPI released the *Biodiversity assessment guidelines* in December 2013 which replaced the NVMF. Offsets required for this project have been assessed in accordance with the new guidelines.

An assessment of obligations applicable to vegetation occurring within the proposed construction ROW has been undertaken in accordance with the Vegetation Quality Assessment Manual prepared by DSE (2004). This is further discussed in later sections of this referral.

Some of this vegetation does provide habitat for species listed under the *Flora and Fauna Guarantee Act 1988,* such as Grey-crowned Babbler, Squirrel Glider, Brown Treecreeper, Buloke Mistletoe and Late-flowering Flax-lily. Surveys were undertaken to determine the presence or absence of all species within the construction ROW. This is discussed in later sections of this referral.

All surveys, including flora fauna surveys and obligations applicable to any vegetation clearing requirements are being discussed with DEPI.

The number of waterways intersected by the project is also significant. All crossings of designated waterways are being discussed with GBCMA who will be provided with a Site Environment Management Plan detailing construction and mitigation measures to be employed at the various waterways.

9. Land availability and control

Is the proposal on, or partly on, Crown land?

☐ No ☒ Yes If yes, please provide details.

The existing easement (project corridor) will intersect;

- waterways managed by the Goulburn Broken Catchment Management Authority (GBCMA),
- roads managed by Vicroads and Local Governments,
- rail lines managed by Victrack,
- Crown land managed by Winton Wetlands Committee of Management (KP177.7 – 184.25),
- Land managed by the Shire of Mitchell (KP43.65 – 44).

Current land tenure (provide plan, if practicable):

Freehold and Crown Land (as described above). Approximate number of properties applicable to each loop are provided below:

Looping	**Freehold Land**	**Crown Land**
Wandong to Broadford (Looping 5)	34	2
Mangalore to Longwood (Looping 3)	58	1
Longwood to Violet Town (Looping 2)	65	6
Violet Town to Glenrowan (Looping 4)	95	11

Intended land tenure (tenure over or access to project land):

APA intends to maintain the existing easement for the pipeline

Other interests in affected land (eg. easements, native title claims):

There are no native title claims applicable to any areas of land intersected by the easement.

10. Required approvals

State and Commonwealth approvals required for project components (if known):

There are a number of approvals that are required for each looping. These are summarised below in Table 4.

Table 4: Summary of Potential Environmental Approvals

Legislation	Permit, Licence, Consent or Approval Sought	Authority	Status
Commonwealth			
Environment Protection and Biodiversity Conservation Act 1999	Determination as to whether the project is a Controlled Action under the EPBC Act	Department of Environment	In preparation
State			
Aboriginal Heritage Act 2006	Approved Cultural Heritage Management Plan	Registered Aboriginal Parties	In preparation
Country Fire Authority Act 1958	Permit to use fire in the open air, in support of operation of construction equipment in the open air during a total fire ban	Country Fire Authority	Prior to construction
Crown Land (Reserves) Act 1978	Approval to carry out works within Winton Wetlands	Committee of Management	Prior to construction
Flora and Fauna Guarantee Act 1988	Permit to disturb protected flora, listed flora or fauna species or habitat on Crown land	Department of Environment and Primary Industries	Prior to construction
Heritage Act 1995	Approval to disturb or destroy known heritage sites	Heritage Victoria	Under assessment
Local Government Act 1989	Works permit for construction across or beneath roads	LGA	Prior to construction
Pipelines Act 2005	Acceptance of CEMP prior to construction of pipeline	Department of State Development, Business and Innovation	In preparation
	Approval of Offset Management Plan for removal of native vegetation	Department of Environment and Primary Industries via *MoU* with DSDBI	Prior to clearance of vegetation
	Approval to construct the pipeline	Department of State Development, Business and Innovation	Prior to construction
	Approval to operate the pipeline	Energy Safe Victoria	
Local Government Act 1989	Works permit for construction across or beneath roads	LGA	Prior to construction
Rail Safety Act 2006	Works permit for construction across or beneath a railway	VicTrack	Prior to construction

Road Management Act 2004	Permit to conduct works on or in a roadway	Vicroads	Prior to construction
Water Act 1989	Approval of proposal for crossing of designated waterways	GBCMA	In preparation
	Permit to construct 'Works on Water Ways (licence to construct works)'	GBCMA	In preparation

The primary act governing the construction of the pipeline is the *Pipelines Act 2005*.

While Section 85 of the *Pipelines Act* provides an exemption from the need for a pipeline licensee to secure permits pursuant to the *Planning and Environment Act 1987*, under a Memorandum of Understanding between DSDBI and DEPI, approval will still need to be sought from DEPI for the removal of native vegetation.

The project is also subject to any other relevant Victorian environmental legislation including:

- *Catchment and Land Protection Act 1994*
- *Flora and Fauna Guarantee Act 1988*
- *Environment Effects Act 1987*

A referral is also being prepared for submission to the Commonwealth Department of Environment (DoE) to determine whether the project as a whole, or any of the four proposed sections, will constitute a Controlled Action under the *Environment Protection and Biodiversity Conservation Act 1999*.

Have any applications for approval been lodged?

☒ No ☐ Yes If yes, please provide details.

Applications for approval have not yet been lodged but as stated above the EPBC referral and Cultural Heritage Management Plans are currently in preparation.

Approval agency consultation (agencies with whom the proposal has been discussed):

Agencies consulted to date are:

- Department of Environment and Primary Industries
- Department of State Development, Business and Innovation
- Department of Transport, Planning and Local Infrastructure
- Goulburn Broken Catchment Management Authority
- Office of Aboriginal Affairs Victoria
- Vicroads
- Victrack
- Department of Environment (Commonwealth)

Other agencies consulted:

To date, these include:

- Local Government Authorities (being Shire of Mitchell, Shire of Strathbogie and Benalla Rural City)
- Winton Wetlands Committee of Management
- Registered Aboriginal Parties (being Taungurung Clans Aboriginal Corporation and Yorta Yorta Nation Aboriginal Corporation)

PART 2 POTENTIAL ENVIRONMENTAL EFFECTS

11. Potentially significant environmental effects

Overview of potentially significant environmental effects (identify key potential effects and comment on their significance and likelihood, as well as key uncertainties):

A complete appraisal of potentially significant environmental effects is subject to the findings of a number of studies that have been undertaken for the project.

It is expected that the most significant effect will be the removal of native vegetation from the proposed construction ROW which has regrown following the construction of the existing Wollert to Wodonga pipeline. A number of surveys have therefore been undertaken to determine the presence and quality of native vegetation within the 28m of the proposed construction ROW that lies east of the existing pipeline as well as to determine where impacts to vegetation within this area can be successfully avoided or minimised.

These minimisation measures are subject to the findings of the surveys to determine the presence of threatened species, communities or cultural heritage within the construction ROW. Generally disturbance to sensitive areas will, at a minimum, be mitigated by the narrowing of the construction ROW to 20m or, where extreme sensitivity can be demonstrated, the complete avoidance of the area by other measures such as Horizontal Directional Drilling.

These measures are expected to significantly reduce impacts.

12. Native vegetation, flora and fauna

Native vegetation

Is any native vegetation likely to be cleared or otherwise affected by the project?

☒ NYD ☒ No ☒ Yes If yes, answer the following questions and attach details.

What investigation of native vegetation in the project area has been done? (briefly describe)

Investigations have included a preliminary walkthrough of the whole project corridor covering Loopings 2 to 5 to identify areas of native vegetation within the proposed construction ROW. A VQA assessment (by accredited VQA assessors), followed, of each remnant patch and scattered tree identified.

Targeted flora surveys have also been undertaken in order to determine the presence of any listed species within the proposed construction ROW.

An Arborist assessment of the loopings has also been completed to assess impacts of construction, such as the determination of Tree Protections Zones (TPZ) of trees to be retained, within and adjacent to, the proposed construction ROW.

What is the maximum area of native vegetation that may need to be cleared?

☒ NYD Estimated area 36.74.(hectares)

After the initial VQA assessments were undertaken, the maximum area of native vegetation to be cleared was determined to be 54.18ha for the whole of the construction ROW between Wandong to Broadford and Mangalore to Glenrowan. After avoidance and minimisation measures have been factored in, the total area to be cleared in the four loopings is 36.74 ha. The distribution of this vegetation across each of the looping projects is provided in Table 5 below:

It should be noted that vegetation clearance is only of a temporary nature because the construction ROW will be reinstated and rehabilitated to its previous uses.

Table 5: Summary of Potential Native Vegetation Clearance.

Looping Section	Initial area of native vegetation following VQA assessment (ha)	Native vegetation (ha) occupying 20m of the construction ROW (after avoidance and minimisation)			
		Total Area Endangered Vegetation	Total Area Other Vegetation	Combined Total Area	Very High Conservation Significance
Wandong to Broadford (Looping 5)	**11.01**	2.16	5.34	**7.50**	**4.3**
Mangalore to Longwood (Looping 3)	**16.46**	7.74	3.33	**11.07**	**2.5**
Longwood to Violet Town (Looping 2)	**11.63**	7.23	0.65	**7.88**	**2.7**
Violet Town to Glenrowan (Looping 4)	**15.08**	10.13	0.16	**10.29**	**1.5**
Total (ha)	**54.18**	**27.26**	**9.48**	**36.74**	**11.0**

How much of this clearing would be authorised under a Forest Management Plan or Fire Protection Plan?

☒ N/A ..... approx. percent (if applicable)

Which Ecological Vegetation Classes may be affected? (if not authorised as above)

☒ NYD ☒ Preliminary/detailed assessment completed. If assessed, please list.

While the project lies primarily within the Central Victorian Uplands and Victorian Riverina bioregions, there is approximately three kilometres within the Northern Inland Slopes, west of Benalla (Looping 4).

Most of this vegetation, particularly within Loopings 2-4, occurs on roadsides with some patches of reasonable quality vegetation occurring along some of the more significant waterways. The area traversed by Looping 5 has probably been subject to less clearing than the area north of the Great Dividing Range and as a result includes some areas of remnant woodland that have survived on freehold land. This is reflected in the listing provided in Table 6 which indicates a greater prevalence of endangered EVCs located north of the Range in Loopings 2-4 than in Looping 5.

Most areas, however, have been subject to invasion by exotic species to varying extent. As a result, the quality of native vegetation within the ROW varies greatly and includes areas of native grasses with very little or no native canopy that have established over previously cleared land, patches of remnant woodland with very little native understorey and patches of remnant woodland with a good cover of native understorey species. In a number of cases, native vegetation has re-established over the existing pipeline.

Consequently, while about 27 ha of the vegetation intersected by the ROW consist of vegetation types classified as Endangered within the relevant bioregion (across all loopings), only about 11 ha of this vegetation is of sufficient quality to qualify as Very High Conservation Significance under the guidelines provided in the Native Vegetation Management Framework (DNRE 2002). This is distributed over about 71 individual patches with most patches, such as those along roadsides, covering less than 0.1 ha.

Table 6: Summary of EVCs to be impacted.

Looping	Bioregion	Ecological Vegetation Class	Area (ha)	Conservation Status[1]
Wandong – Broadford (Looping 5)	Central Victorian Uplands	Riparian Forest 18	0.12	Vulnerable
		Grassy Dry Forest 22	0.14	Depleted
		Herb Rich Foothill Forest 23	0.57	Depleted
		Valley Grassy Forest 47	2.95	Vulnerable
		Plains Grassy Woodland 55	0.36	Endangered
		Valley Heathy Forest 127	1.57	Vulnerable
		Grassy Woodland 175	1.8	Endangered
Mangalore – Longwood (Looping 3)	Central Victorian Uplands	Plains Grassy Woodland 55	0.13	Endangered
		Box Ironbark Forest 61	3.33	Vulnerable
		Creekline Grassy Woodland 68	0.12	Endangered
	Victorian Riverina	Plains Grassy Woodland 55	6.1	Endangered
		Creekline Grassy Woodland 68	1.23	Endangered
		Low Rises Grassy Woodland 175_61	0.18	Endangered
Longwood – Violet Town (Looping 2)	Victorian Riverina	Plains Grassy Woodland 55	5.79	Endangered
		Box Ironbark Forest 61	0.65	Vulnerable
		Creekline Grassy Woodland 68	0.74	Endangered
		Plains Woodland/Herb-rich Gilgai Wetland Mosaic 235	0.7	Endangered
Violet Town – Glenrowan (Looping 4)	Central Victorian Uplands	Plains Woodland/Herb-rich Gilgai Wetland Mosaic 235	0.68	Endangered
	Northern Inland Slopes	Box Ironbark Forest 61	0.14	Endangered
		Creekline Grassy Woodland 68	0.39	Endangered
	Victorian Riverina	Plains Grassy Woodland 55	2.35	Endangered
		Creekline Grassy Woodland 68	1.04	Endangered
		Low Rises Grassy Woodland 175_61	0.71	Endangered
		Plains Woodland/Herb-rich Gilgai Wetland Mosaic 235	4.96	Endangered
		Floodway Pond Herbland 810	0.02	Vulnerable

Notes: Bioregional conservation status assigned to each EVC under the NVMF (DNRE 2002)

Have potential vegetation offsets been identified as yet?

☒ NYD ☐ Yes If yes, please briefly describe.

Although potential offsets have not been identified as yet, discussions with Local Governments, Winton Wetlands, Registered Offset Brokers and other third parties have been initiated to determine appropriate offset sites as these become available.

Other information/comments? (eg. accuracy of information)

Avoidance and minimisation measures (including Horizontal Directional Drilling, reduction of the construction ROW width) have been undertaken to reduce the area of native vegetation to be cleared. Using the Longwood to Violet Town (Looping 2) project as an example, these measures reduced the amount of clearance by 3.75 ha to an adjusted total of 7.88 ha.

These figures are based on the NVMF as EES triggers still make reference to the Framework.

Flora and Fauna

What investigations of flora and fauna in the project area have been done?
(provide overview here and attach details of method and results of any surveys for the project & describe their accuracy)

Surveys were targeted towards identifying any native vegetation that occurs within the proposed construction footprint and identifying any threatened species that may potentially occupy habitat occurring within the proposed construction footprint (ie species listed under state and federal legislation).

Table 7: Summary of Flora and Fauna Surveys undertaken per Looping.

Survey Type	Number of Survey Sites per Looping			
	Looping 5	Looping 3	Looping 2	Looping 4
Golden Sun Moth*	4	1		
Growling Grass Frog*#	4 (7)	4	2 (2)	8 (12)
Nocturnal	6	19	17	22
Bird	10	19	15	21
Reptiles	10	19	15	21
Other Amphibians	6 (TBC)	1	1	4
Spiny Rice Flower*	6	5		
Other Flora	30	17	11	15

* EPBC Listed Species

Numbers in brackets represent sites that were selected to be surveyed but due to ephemeral nature of these waterways, they were unsuitable (dry) at the time of survey.

The following surveys for flora and vegetation have been undertaken for the project:

- A review of state managed databases for records of flora species recorded within 5km of the proposed ROW
- A walk-through survey of all sections of the project (Loopings 2-5) to identify potential habitat for threatened flora species or communities, all patches of remnant native vegetation within the ROW and any scattered indigenous trees not part of a patch

Surveys of all patches of remnant native vegetation identified within the ROW to determine habitat quality in accordance with the Vegetation Quality Manual prepared by Department of Sustainability and Environment (Habitat hectares method)

The timings for these targeted surveys were:

- Targeted surveys of six locations within Loopings 5 and five in Looping 3 for Spiny Rice-flower *Pimelea spinescens spinescens* undertaken during winter 2013

- Targeted surveys of 73 locations within Loopings 2-5 for spring flowering species during October 2013 eg *Diuris spp*, *Hibbertia humifusa erigens*
- Targeted surveys of 73 locations within Loopings 2-5 for early summer flowering species during November December 2013 eg *Dianella amoena, D. tarda*,

The following surveys for threatened fauna species have been undertaken for the project:

- A review of state managed databases for records of fauna species recorded within 5km of the proposed ROW
- A walk-through survey of all sections of the project (Loopings 2-5) to identify potential habitat for threatened fauna species
- A total of 78 sites were surveyed for the various fauna across the project. The number of sites, for each type of survey per looping, are, shown in the table above.

The timings for these targeted surveys were:

- Targeted surveys of four locations within Looping 5 and one in Looping 3 for Golden Sun Moth *Synemon plana* during December 2013 – January 2014
- Targeted surveys at six locations within Loopings 2-4 for Brown Toadlet *Pseudophryne bibronii* during autumn 2013. Surveys in Looping 5 are planned for Autumn 2014,
- It was initially planned to undertake targeted surveys at 26 locations within Loopings 2-5 for Growling Grass Frog *Litoria raniformis* during early summer 2013. Upon inspection of the sites, only 18 were found to be suitable (water present as flowing water or ponds). These sites comprised of dams, drainage lines or water courses. Due to varying weather conditions all 18 sites were surveyed once, with 11 sites surveyed twice, before the end of December. Of the 7 remaining sites, 4 were surveyed an additional 2 times in January in accordance with Heard et al 2010 and the remaining were not surveyed a second time due to lack of permanent water.
- Targeted surveys for threatened birds and reptiles were undertaken in 65 locations for Loopings 2-5 during spring-early summer 2013 eg Grey-crowned Babbler, Barking Owl, Lace Monitor
- Targeted surveys of 64 locations within Loopings 2-5 for threatened mammal species during spring-early summer of 2013 eg Squirrel Glider, Brush-tailed Phascogale.

All surveys were undertaken in accordance with state or federal guidelines, where available, and included consideration of survey timing and survey effort (eg number and length of surveys required for each targeted species). Survey effort was also discussed with regulatory authorities, and other professionals, where available records were limited.

The methodology employed for this assessment (ie. field survey combined with information available from desktop information sources) is considered sufficient to determine if a development would have a significant impact on any threatened species, population or ecological community. No significant study limitations were identified, however the following considerations apply:

- The surveys covered vascular flora only (ferns, conifers and flowering plants). Non-vascular flora (eg. mosses, liverworts) were not considered
- Surveys provide a sampling of flora at a given time only. Different seasonal conditions may provide more flora. While every effort has been taken to examine parts of the construction ROW at times appropriate to the flowering of significant species that may be expected in the area, some flora may not have been visible due to dormancy (eg orchids or certain herbaceous species which leaf and flower during certain periods of the year but remain underground at other times) or their presence during the survey period as seeds only (eg annuals whose life cycle is completed within one season). Other plant species are perennial but are inconspicuous unless flowering. More plant species may have been recorded with additional surveys, however, the field surveys, which were undertaken at times when detection of most threatened species is high, combined with information available from other sources documented in this report is deemed appropriate to assess the ecological values of the study area.
- Much of the study area is subject either to intensive grazing by domestic stock animals or ploughing. This could lead to the removal of live plant material and/or fruiting materials and restrict the ability to identify all the plants species that could be present within the study area.
- The ROW forms a slim linear study area that may intersect only small portions of much larger areas of habitat. Much of the study area passes through private land. The focus of the study was therefore on the ecological value of the easement or construction ROW being the area accessible to APA. In some cases (where potential habitat exists or access was available), the

study area examined was widened to assist in assessing the potential for the presence of certain species within habitat intersected by the construction ROW.

- While the surveys are considered adequate for detecting active fauna typical of the area, such surveys provide a sampling of the fauna only at a given time. Factors such as time of year and day, weather conditions, species behaviour and habitat impact on the likelihood of locating many species. The surveys were therefore undertaken during times and conditions when the targeted threatened species were considered most likely to be active and the chance of locating uncommon or transient species was highest. More species may have been recorded with additional surveys, however, the survey effort is deemed appropriate to provide a reasonable assessment of the ecological values of the study area.
- After discussions with Hume DEPI, aquatic surveys were considered not necessary as any populations of threatened aquatic species were upstream away from the easement. However, these will be undertaken where rivers/creeks are planned to be HDD as a contingency measure.

Have any threatened or migratory species or listed communities been recorded from the local area?

☒ NYD ☒ No ☒ Yes If yes, please:

- List species/communities recorded in recent surveys and/or past observations.
- Indicate which of these have been recorded from the project site or nearby.

All of the following threatened (listed under the FFG Act) or migratory species have been recorded within a 5km buffer of the proposed construction ROW according to the VBA database managed by DEPI. The species DSE Advisory List (2005, 2013) status and latest record date are also included.

This relatively extensive list is largely a result of the length of the search transect being the project corridor between Wandong to Broadford and Mangalore to Glenrowan. Some records consist of only one sighting.

Table 8: Records of Flora, Fauna & Communities

Scientific name	Common Name	DSEADV	Last Recorded Date
Flora			
Brachyscome muelleroides	Mueller Daisy	EN	2002
Cullen parvum	Small Scurf-pea	EN	
Cullen tenax	Emu-foot	EN	
Diuris punctata var. punctata	Purple Diuris	VU	2009
Goodenia macbarronii	Narrow Goodenia	VU	2008
Glycine latrobeana	Clover Glycine	VU	
Hibbertia humifusa subsp. erigens	Euroa Guinea-flower	VU	2008
Isolepis congrua	Slender Club-sedge	VU	1996
Myriophyllum porcatum	Ridged Water-milfoil	VU	2008
Pimelea spinescens subsp. spinescens	Spiny Rice-flower	VU	
Swainsona plagiotropis	Red Swainson-pea	EN	1906
Swainsona recta	Mountain Swainson-pea	EN	1999
Swainsona swainsonioides	Downy Swainson-pea	EN	1906
Fauna			
Synemon plana	Golden Sun Moth	CR	<1770
Maccullochella macquariensis	Bluenose Cod (Trout Cod)	CR	1981
Maccullochella peelii peelii	Murray Cod	VU	1993
Macquaria australasica	Macquarie Perch	EN	1995
Melanotaenia fluviatilis	Murray-Darling Rainbowfish	VU	1990
Litoria raniformis	Growling Grass Frog	EN	1970
Pseudophryne bibronii	Brown Toadlet	EN	1993
Morelia spilota metcalfei	Carpet Python	EN	1992
Vermicella annulata	Bandy Bandy	VU	1942
Accipiter novaehollandiae novaehollandiae	Grey Goshawk	VU	1978

Anthochaera phrygia	Regent Honeyeater	CR	2005
Ardea intermedia	Intermediate Egret	EN	1987
Ardea modesta	Eastern Great Egret	VU	2001
Botaurus poiciloptilus	Australasian Bittern	EN	1994
Burhinus grallarius	Bush Stone-curlew	EN	2001
Chthonicola sagittata	Speckled Warbler	VU	2001
Coracina maxima	Ground Cuckoo-shrike	VU	1978
Egretta garzetta nigripes	Little Egret	EN	1987
Gallinago hardwickii	Latham's Snipe	NT	2007
Geopelia cuneata	Diamond Dove	NT	1992
Grantiella picta	Painted Honeyeater	VU	1995
Grus rubicunda	Brolga	VU	2008
Haliaeetus leucogaster	White-bellied Sea-Eagle	VU	2001
Ixobrychus minutus dubius	Australian Little Bittern	EN	2008
Lathamus discolor	Swift Parrot	EN	2006
Lewinia pectoralis pectoralis	Lewin's Rail	VU	1998
Melanodryas cucullata cucullata	Hooded Robin	NT	2005
Neophema pulchella	Turquoise Parrot	NT	1994
Ninox connivens connivens	Barking Owl	EN	2008
Ninox strenua	Powerful Owl	VU	2008
Oreoica gutturalis gutturalis	Crested Bellbird	NT	1984
Oxyura australis	Blue-billed Duck	EN	1991
Pomatostomus temporalis temporalis	Grey-crowned Babbler	EN	2008
Porzana pusilla palustris	Baillon's Crake	VU	1989
Rostratula australis	Australian Painted Snipe	CR	1931
Stagonopleura guttata	Diamond Firetail	NT	2006
Stictonetta naevosa	Freckled Duck	EN	2006
Thalassarche cauta	Shy Albatross	VU	2006
Turnix pyrrhothorax	Red-chested Button-quail	VU	1977
Petaurus norfolcensis	Squirrel Glider	EN	2004
Phascogale tapoatafa tapoatafa	Brush-tailed Phascogale	VU	2008
Pteropus poliocephalus	Grey-headed Flying-fox	VU	1995
Communities of flora and fauna			
Creekline Grassy Woodland (Goldfields) Community			
Grey Box – Buloke Grassy Woodland Community			
Victorian Temperate Woodland Bird Community			

If known, what threatening processes affecting these species or communities may be exacerbated by the project? (eg. loss or fragmentation of habitats) Please describe briefly.

Six threatening processes listed under the Victorian *FFG Act* could be applicable to the project if appropriate steps were not taken to manage impacts:

- Degradation of native riparian vegetation along Victorian rivers and streams
- Habitat fragmentation as a threatening process for fauna in Victoria
- Increase in sediment input into Victorian rivers and streams due to human activities
- Infection of amphibians with Chytrid fungus resulting in chytridiomycosis
- Invasion of native vegetation by 'environmental weeds'

- Loss of hollow-bearing trees from Victorian native forests

Part of the existing easement was cleared for the construction of the original pipeline in 1975. While removal of some vegetation will be required to allow the project to proceed, the placement of the new pipeline within the existing easement will minimise the potential for removal or fragmentation of existing habitat that may occur with the creation of a new alignment.

Measures will also be implemented where possible to minimise impacts to existing vegetation and habitat. For instance:

- The ROW has been narrowed to 20m in all instances where listed species and/or communities have been recorded in order to minimise impacts
- Emphasis has been placed on the retention of large trees wherever possible in recognition of their value as habitat and landscape features. The whole ROW has been carefully inspected, and steps taken to avoid or minimise impacts to patches of native vegetation and large old trees (LOTs) or very large old trees (VLOTs) that currently exist within the easement. As a result the ROW has been reduced where it intersects most patches of remnant vegetation or LOTs/VLOTs: only 11 LOTs will require removal across all four loopings.
- The construction ROW will be rehabilitated following construction to restore the construction area to its previous use and ensure the restoration of land and waterways crossed by the project to avoid degradation of habitat
- A Management Plan will be prepared specifically for the crossing of waterways to be approved by GBCMA. This will provide details on construction methods to be employed at all designated waterways from minor drainage lines to major creeks and rivers. Methods of waterway restoration will be described as well as methods to be utilised to rehabilitate the bed of the waterways and margins
- A Construction Environment Management Plan (CEMP) to be prepared for the project and approved by the regulator (DSDBI) will stipulate management measures to mitigate impacts from construction. This will include:
    - Measures to mitigate impacts to any of the listed species recorded within the ROW;
    - Measures to control of the introduction or spread of 'environmental weeds';
    - Measures to ensure the potential for spread of chytrid fungus between waterways is minimised.

It is therefore considered that impact to any of the FFG listed species and communities intersected by the ROW is not significant. Overall impact to listed communities is also not considered significant.

Are any threatened or migratory species, other species of conservation significance or listed communities potentially affected by the project?

☐ NYD ☐ No ☒ Yes If yes, please:

- List these species/communities:
- Indicate which species or communities could be subject to a major or extensive impact (including the loss of a genetically important population of a species listed or nominated for listing) Comment on likelihood of effects and associated uncertainties, if practicable.

A number of the threatened flora and fauna species mentioned in Table 8 were recorded within the ROW, or nearby, from various locations across the project area during the various surveys that have been undertaken along the project alignment. These are listed below.

Table 9: Results of Surveys

Scientific Name	Common Name	Looping No (# locations)			
		2	3	4	5
Flora					
Allocasuarina luehmannii	Buloke		1		
Amyema linopyhlla orientale	Buloke Mistletoe		1		
Dianella amoena	Matted Flax-lily			1	
Dianella tarda	Late-flowering Flax Lily	2	2	3	
Juncus psammophila	Sand Rush			3	
Fauna					
Varanus varius	Lace Monitor				1*
Litoria raniformis	Growling Grass Frog		1		
Ardea modesta	Eastern Great Egret			1	
Aythya australis	Hardhead				1
Burhinus grallarius	Bush Stone-curlew			2	
Climacteris picumnus victoriae	Brown Treecreeper (south-eastern ssp.)	2		3	
Gallinago hardwickii	Latham's Snipe				1
Melithripterus gularis gularis	Black-chinned Honeyeater			1	
Merops ornatus	Rainbow Bee-eater		1		
Pomatostomus temporalis temporalis	Grey-crowned Babbler	2		5	
Petaurus norfolcensis	Squirrel Glider	6	4		
Phascogale tapoatafa tapoatafa	Brush-tailed Phascogale		2		
Communities					
Creekline Grassy Woodland (Goldfields) Community				1	
Grey Box – Buloke Grassy Woodland Community		4	3		

Note: No aquatic surveys have been undertaken yet. These are planned for Autumn 2014, after seeking advice from DEPI.
* See descriptions below for more details

Some of the vegetation intersected by the project alignment has been found to provide habitat for species or communities of conservation significance. Hollow-nesting/roosting species like Squirrel Glider, Brush-tailed Phascogale, and Brown Treecreeper may potentially be impacted if the trees they inhabit are to be cleared as part of this project. Mid-layer species such as Grey-crowned Babbler could be impacted by the clearance of shrubs and immature trees, while ground-nesting species, particularly Bush Stone Curlew could be impacted by earthworks along the project corridor.

Most of this vegetation occurs as relatively thin corridors along roadsides or waterways and measures will be implemented to minimise impacts to vegetation in these locations. The nature of the project, with a construction footprint of between 20-28m, will therefore not require clearing of large swathes of native vegetation or habitat.

The following threatened fauna and flora species were recorded, and their locations per looping, are shown below:

Wandong – Broadford (Looping 5)

Hardhead Duck – One record of Hardhead was observed on a dam adjacent to the easement near Coulsons Rd, Clonbinane (KP 38.5).

Latham's Snipe – While no Latham's Snipe were observed during the bird surveys, two were flushed from a dam in the middle of the plantation at KP 29.85, during a GGF survey. This dam is within 50m of the easement.

Lace Monitor – While no Lace Monitors were recorded during surveys, we were told of a recent sighting on property S2-15, south of Taits Rd, Clonbinane (KP35.5) by the landowner of a property the easement traverses.

Mangalore – Longwood (Looping 3)

Brush-tailed Phascogale - Brush-tailed Phascogales were recorded from only two sites, these sites were 4 Mile Creek (S2-119), Mangalore (KP 77.5) and Muddy Waterhole Creek, Longwood (KP 105.15).

Squirrel Glider – Of 18 sites surveyed, Squirrel Gliders were observed in seven sites. These were: Charles and Reedy Creek (97.25 – 97.95) Monea, Ryans Lane and Nagambie-Locksley Rd, Locksley (KP99.9 and KP100.3 respectively), Kirwans Bridge- Longwood Rd/Pranjip Creek and "Government" Rd reserve, Longwood (KP109.64-109.7 and KP112.1 respectively) and Drysdale and Angle Rds, Euroa (KP117.32 and KP119.2 respectively).

Growling Grass Frog - There was only one record of GGF, that being at a farm dam, near Wormangal Creek, Avenel (KP91.8).

Allocasuarina luehmannii (Buloke) – Quite a number of plants were found in the easement at Ryan's Rd, Locksley (KP99.93).

Amyema linophylla ssp orientale (Buloke Mistletoe) - A number of plants found on Buloke, within the easement, at Ryan's Rd, Locksley (KP99.93).

Dianella tarda (Late-flowering Flax-lily)- Populations of Dianella tarda were recorded from Martins Lane and Ryans Lane (KP93.0 and KP99.9 respectively), Locksley.

Longwood – Violet Town (Looping 2)

Brown Treecreeper – Were recorded at two locations. These were Castle Creek (KP122.5) and Sullivans Lane (KP123.0) Euroa

Grey-crowned Babbler – Of the 18 sites surveyed in Looping 2, Grey-crowned Babblers were observed at 2 locations; near the easement in Geodetic Rd, Longwood (KP 112.38) and Minahan Lane (KP 140.15) near Euroa. Grey-crowned Babblers were also recorded earlier in 2013 at Angle Rd, Euroa (KP119.2). Their distinctive nests of were found at "Government" Rd reserve and Geodetic Rd, Longwood, (KP112.1 and KP112.38 respectively).

Royal Spoonbill - One sighting of Royal Spoonbill was observed flying over Castle Creek (KP122.5) Euroa.

Squirrel Glider - Of the 18 nocturnal surveys in Looping 2, Squirrel Gliders were only observed at Minahan Lane and Alan McDiarmid Rd, Violet Town (KP140.15 and KP141.0 respectively).

Allocasuarina luehmannii (Buloke) – A single plant was found on the easement at the Euroa airstrip, but this is not covered by the *FFG Act 1988*.

Violet Town – Glenrowan (Looping 4)

Black-chinned Honeyeater - Only recorded in one patch of vegetation between Winton Creek and Nelson Rd, Mokoan (KP179.6)

Brown Treecreeper – Were recorded at three locations, these were Swamp Creek Violet Town (KP149.2), near Basin and Four Mile Rds (KP165.19) and Baddaginnie Creek (KP166.35) Benalla.

*Bush Stone-Curlew*** - There was no sight records of Bush Stone-curlew within close proximity of the easement, two aural records were heard near Pagets and Sloan Rds (KP155.2 and KP160.59) respectively. It was estimated that the calls were between 200 and 500m away from the easement.

Eastern Great Egret – There was one record of an Eastern Great Egret from a farm dam, adjacent to the easement at KP154.5 (between Robinson's and Paget's Rd, Baddaginnie).

Grey-crowned Babbler - Of the 25 sites surveyed in Looping 4, Grey-crowned Babblers were observed at 3 locations; near the easement in Boyle Rd, Waters Rd and Lorimers Lane, Violet Town (KP 144.25, 147.2 and 151.5 respectively) and Robinsons Rd Baddaginnie(KP 154.1). Their distinctive nests of were found at Peck Rd and Harrison's Rd Violet Town (KP 149.5 and 149.71 respectively) and Sloan Rd (161.4) Baddaginnie.

Dianella amoena - Plants thought to be *Dianella amoena* were recorded from the vicinity of Waters Rd, Violet Town (KP 147.2).

Dianella tarda - Populations of *Dianella tarda* were recorded from Two Mile Creek, Lorimers Lane and Pagets Rd (KP 147.5, 151.5 and 155.2 respectively).

Juncus psammophila - Populations of Sand Rush were found at Hoskins Lane/One Mile Creek (KP 145.5) and Turnip Creek (KP 152.5), both near Violet Town.

Remnants of the listed community 'Grey Box – Buloke Grassy Woodland Community' also occur in a few patches intersected by the ROW. These are summarised below.

Table 10: Summary of Ecological Communities found within the ROW

	Community	Location	Impact	
			Area (Ha)	VQA score
Mangalore to Longwood (L3)	Grey Box - Buloke Grassy Woodland Community	Ryans Lane (KP99.0) Property S3-28 (KP100.3 – 100.5) Government Road (KP105.65)	0.01 0.31 0.14 0.46	0.51 0.5 0.58
Longwood to Violet Town (L2)	Grey Box - Buloke Grassy Woodland Community	Government Road (KP112.1) S3-57 Creightons Siding Rd to Drysdale Rd (KP116.89 – 117.34) Government Road (KP118.45) Property S3-64 Euroa airstrip (KP120.5 – 121)	0.08 0.85 0.22 1.21 2.36	0.34 0.45 0.45 0.51
Violet Town to Glenrowan (L4)	Creekline Grassy Woodland (Goldfields) Community	One Mile Creek/Hoskin La (KP145.55)	0.22	0.65

Most of the communities found within the ROW occupy road reserves and cover only about 0.1ha or less. The larger or most significant areas occur on private land adjacent to road sides:

- Nagambie Locksley Rd (Looping 3): the patch intersected by the ROW occurs between the road and Burnt Creek, an ephemeral waterway. The patch occupies the south-east corner of a grazing property and covers an estimated area of approx 20ha but is contiguous with other vegetation that extends beyond the property boundary. The area intersected by the easement is largely clear of mature trees but has been provisionally classed as the community due to its close connection to woodland areas outside the easement. Better quality areas of the patch occur outside the easement and will not be impacted by construction.
- S3-57 (Looping 2): the patch intersected by the ROW is a triangular area located in the north-west corner of a grazing property between Creightons Siding Road and Drysdale Road west of Euroa. The easement lies near the edge of the patch with the greater part of the patch extending to the north-west of the easement and along Drysdale Road to the east. Further areas of woodland that may also be consistent with the community lie to the north west of the Creightons Siding Road/Drysdale Road corner. The easement is therefore mostly located on the south-western edge of the patch.

  Most of the easement is occupied by understorey species (grasses and forbs) with very few trees on the ROW and has been provisionally mapped as a community largely due to the adjacent woodland and the understorey species which have established over the easement, including over parts of the previously installed pipeline. The ROW has been narrowed to 20m throughout this area and no trees are to be removed during the proposed works.
- S3-64 (Looping 2): the patch intersected by ROW is a large area that occurs on land utilised as the Euroa airstrip. It consists of three patches of regenerating Grey Box Buloke Grassy Woodland between and outside areas cleared for the airstrips. No mature woodland occupies the ROW which has been narrowed throughout the whole area to 20m to avoid a number of trees. Some trees will require removal but no trees larger than a size considered as Medium under the Victorian Native Vegetation Management Framework for this vegetation class (MOT dbh=51cm) will require removal.

Is mitigation of potential effects on indigenous flora and fauna proposed?

☒ NYD ☒ No ☒ Yes If yes, please briefly describe.

The following measures are proposed to be undertaken to minimise the impacts of this project on indigenous flora and fauna at selected locations along the construction ROW:

- Horizontal Directional Drilling of some watercourses and other sensitive areas where there could be significant impact to vegetation, flora or fauna. The watercourses to be bored using this technique are described under **13. Water Environments**
- The minimisation of the construction ROW to 20m at all locations where the ROW intersects native vegetation including any areas where the ROW intersects areas considered representative of listed communities. This will reduce the amount of flora and therefore fauna habitat required to be cleared by at least 30%.
- Extensive planning to reduce the number of large and very large old trees (hollow-bearing trees and therefore potential habitat) that are required to be felled.
- Transferring the working side of construction to above the existing pipeline (trench side) in areas (eg Four Mile Creek) where there is remnant vegetation on the eastern portion of the construction ROW.
- Reinstatement of the ROW following construction to allow the land to be used for its previous purpose.

Note that assessment of the easement located a total of 898 trees (medium sized trees and above) within the easement east of the existing pipeline. These were comprised of 558 scattered indigenous trees and 340 trees in patches.

Large trees were recognised as providing significant habitat and landscape value and mitigation measures have been put in place to retain as many of the LOTs and VLOTs as possible to ensure impacts to habitat are minimised. MOTs were also taken into consideration. As a result, only 15 scattered indigenous trees have been identified for removal and only 13 trees in patches have been identified for removal. Refer to tables below.

Table 10: Summary of Impacts to Scattered Indigenous Trees

	VLOTs, LOTs, MOTs and STs	VLOTs, LOTs, MOTs and STs to be retained	VLOTs, LOTs, MOTs and STs to be removed
Longwood to Violet Town (L2)	101	97	4
Mangalore to Longwood (L3)	150	148	2
Violet Town to Glenrowan (L4)	215	211	4
Wandong to Broadford (L5)	92	87	5
TOTAL	**558**	**543**	**15**

Figures provided above are subject to the final assessment of impacts to retained trees being conducted by an arborist.

Table 11: Summary of Impacts to Indigenous Trees in Patches

	VLOTs, LOTs and MOTs	VLOTs, LOTs and MOTs to be retained	VLOTs, LOTs and MOTs to be removed
Longwood to Violet Town (L2)	88	85	3
Mangalore to Longwood (L3)	111	105	6
Violet Town to Glenrowan (L4)	97	94	3
Wandong to Broadford (L5)	44	43	1
TOTAL	**340**	**325**	**13**

Figures provided above are subject to the final assessment of impacts to retained trees being conducted by an arborist.

A Construction Environment Management Plan (CEMP) to be prepared for the project and approved by the pipeline regulator (DSDBI) will stipulate management measures to mitigate impacts from construction (refer Section 18 of this referral form). This will include:

- Measures to mitigate impacts to any of the listed species or communities recorded within the

ROW;

- Measures to control of the introduction or spread of 'environmental weeds'.

A Management Plan to reduce the impact on local hollow-dependant fauna and Grey-crowned Babblers is also to be prepared as part of the CEMP for review by DEPI. This will include the following measures:

- Where hollow bearing trees are to be removed, nest boxes should be installed in adjacent non-impacted vegetation at least several days prior to tree removal;
- Tree collars to be installed on the hollow-bearing trees to be removed three days before scheduled removal to prevent fauna from re-entering hollows;
- An appropriately qualified zoologist/wildlife handler to carefully inspect all hollows for fauna using an endoscope prior to felling of hollow-bearing trees;
- Hollow-bearing trees to be removed carefully by qualified arborists under the direction of an appropriately licenced and qualified zoologist/wildlife handler;
- An appropriately qualified zoologist/wildlife handler to carefully inspect all hollows for fauna using an endoscope after felling of hollow-bearing trees;
- Where applicable and appropriate, restoration works should include the planting of shrubs, particularly *Acacia* species, within the ROW following construction;
- Where appropriate, lopping saplings and shrubs prior to the breeding season (June to October) in areas where babblers have been observed or nests recorded. In doing this it would eliminate the chance of nesting occurring in the construction ROW while breaking ground and construction activities are happening.

A construction footprint that defines the extent of the ROW will be included as part of the tender documentation to be provided to the pipeline contractor. This together with a CEMP and audit schedule approved by the regulator will ensure that proposed mitigation measures are achieved.

Other information/comments? (eg. accuracy of information)

The native vegetation assessments using the Vegetation Quality Assessment procedures were undertaken by DEPI-accredited VQA assessors.

The Victorian Biodiversity Atlas (VBA) maintained by DEPI was used to source data for both flora and fauna species that had been recorded in the project area. Flora and fauna survey locations were discussed with DEPI prior to implementation of the surveys to ensure all potential environmental issues were identified. Survey results are being discussed with DEPI.

13. Water environments

Will the project require significant volumes of fresh water (eg. > 1 Gl/yr)?

☐ NYD ☒ No ☐ Yes If yes, indicate approximate volume and likely source.

Will the project discharge waste water or runoff to water environments?

☐ NYD ☐ No ☒ Yes If yes, specify types of discharges and which environments.

As each major component of each looping stage is completed, the entire pipeline will be hydrostatically tested (ie. tested by filling and pressurising with water), in accordance with the Australian Pipeline Standard AS2885, to verify the integrity of the pipeline. Once full of water, the pipeline will be pressurised for a 3-hour period (strength test). The pressure is then lowered and held for a period of 24 hours and monitored for pressure drops (leak detection test).

Water held in the pipeline will then require disposal and will be disposed of in accordance with relevant regulatory requirements and approvals including applicable water quality standards as required by regulations such as the *SEPP (Waters of Victoria)*. Disposal methods will be referenced within the Construction Environment Management Plan to be prepared for the project and will ensure that no water is directly discharged to a waterway or cause erosion or flooding. The EPA will be advised prior to discharge and invited to comment on the discharge plan.

It should be noted that the pipe is internally lined and there is no requirement for any additives of potentially environmentally harmful chemical additives in water, such as corrosion inhibitors and biocides.

It is anticipated that hydrotesting would use up to a maximum of approx. 16ML of water across the entire project. However, if all sections of the project are constructed, this would be split across at

least four construction phases

Are any waterways, wetlands, estuaries or marine environments likely to be affected?

☐ NYD ☐ No ☒ Yes If yes, specify which water environments, answer the following questions and attach any relevant details.

There are a number of waterways that will be temporarily affected by the proposed works as construction occurs across the waterways. These are split between the four loopings as follows:

- Looping 2 (Longwood to Violet Town) intersects 24 designated waterways of which 8 are named). This includes Seven Creeks near Euroa
- Looping 3 (Mangalore to Longwood) intersects 29 designated waterways of which 8 are named
- Looping 4 (Violet Town to Glenrowan) intersects 23 designated waterways of which 16 are named. This includes the Broken River near Benalla
- Looping 5 (Wandong to Broadford) intersects 16 designated waterways of which six are named.

The full list of named waterways can be found in Table 1.

While there are a number of major perennial waterways to be crossed by the project, the majority of the waterways intersected by the project are ephemeral or intermittent waterways. Major waterways will be crossed with the use of HDD construction methods to pass under the river or creek and should not be affected by the project. These are:

- Looping 2 - Creightons Creek (KP114.5)
  Seven Creeks (KP126)
  Faithful Creek (KP130.6)
- Looping 3 - Hughes Creek (KP88.3)
- Looping 4 - Broken River (KP169.5)
  Mokoan Inlet Channel (KP176.3)
- Looping 5 - Sunday Creek (KP33.55)

Riparian vegetation occurring between the entry and exit holes will not be disturbed.

All other waterway crossings will be open cut. This involves the excavation of a trench across the watercourse. Construction is generally scheduled for periods of low/zero flow and sediment control measures (such as silt curtains) are used where appropriate to minimise impacts to stream quality. In some cases, temporary dams may be constructed and flumes or pumps used to carry water from one side of the construction area to the other in order to maintain stream flow. Restoration of these crossings following construction will use a range of methods to reinstate the area and ensure it is stabilised after construction is complete as approved by GBCMA. Monitoring of the conditions of each waterway will be done as part of the routine checking of the pipeline.

In general, natural waterways and drainage lines (designated waterways under the *Water Act 1989*) are the responsibility of the GBCMA while Goulburn Murray Water is responsible for water storage and associated delivery and drainage systems along the project corridor e.g. irrigation channels.

All designated waterways intersected by the project corridor drain to the Goulburn River (about 20km from the project corridor at its closest point, near Longwood). All waterways will be crossed in accordance with relevant guidelines for creek and river crossings. Approval to traverse these assets will be sought through the submission of a Site Environmental Management Plan to the GBCMA which will include construction plans and drawings along with appropriate methods of construction and rehabilitation. The format, construction and restoration requirements of all designated waterways are being discussed with GBCMA.

Looping 4 of the project will also pass through land managed by the Winton Wetlands Committee of Management. However, as the pipeline route is not within close proximity to the actual wetlands, it is not expected to be impacted by the works.

Are any of these water environments likely to support threatened or migratory species?

☐ NYD ☐ No ☒ Yes If yes, specify which water environments.

Some threatened/migratory species may utilise some of these waterways on an infrequent basis depending on conditions such as season, habitat and stream flows. In general, discussion with

DEPI have confirmed that known populations of threatened aquatic species are located upstream of the project area and will therefore not be impacted. Aquatic surveys are yet to be undertaken and then only on those waterways that are currently planned to be bored. After discussion with Hume DEPI staff regarding aquatic vertebrates and invertebrates, it was noted that known populations of threatened species occurred upstream, in many cases several kilometres, of the easement (Smith, 2013 *pers comm.*). It was decided that surveys would be done in Autumn 2014, as a contingency measure for the boring.

In addition, major waterways with known populations, such as the Broken River or Seven Creeks, have been identified for HDD and therefore are not expected to be impacted.

Are any potentially affected wetlands listed under the Ramsar Convention or in 'A Directory of Important Wetlands in Australia'?

☐ NYD ☒ No ☐ Yes If yes, please specify.

There are no Ramsar listed wetlands in the vicinity of the project.

The Lower Goulburn River Floodplain is listed on the Directory of Important Wetlands in Australia. This lies about 3km west of the project corridor at its closest point (near Mangalore at the commencement of Looping 3) and is not expected to be impacted by the proposed works.

Could the project affect streamflows?

☐ NYD ☐ No ☒ Yes If yes, briefly describe implications for streamflows.

Stream flows could be affected in the short term as excavation works for open cut crossings are undertaken, if control measures are not in place. However, most of the waterways identified for open cut construction methods are ephemeral waterways and, in normal circumstances, are likely to contain very little water at the time of construction. Mitigation measures to be included in the Site Environment Management Plan to be prepared for the project and approved by GBCMA will minimise the potential for any such impacts. These measures include installation of flumes pipes to maintain stream flow if water is present.

There will be no long term impacts on water flows from any waterway that is crossed.

Could regional groundwater resources be affected by the project?

☐ NYD ☒ No ☐ Yes If yes, describe in what way.

Could environmental values (beneficial uses) of water environments be affected?

☐ NYD ☒ No ☐ Yes If yes, identify waterways/water bodies and beneficial uses (as recognised by State Environment Protection Policies)

Could aquatic, estuarine or marine ecosystems be affected by the project?

☐ NYD ☐ No ☒ Yes If yes, describe in what way.

This is considered unlikely but there may be temporary or short-term impacts during the construction of an open-cut waterway crossing. The preparation of the Site Environment Management Plan to be approved by GBCMA is intended to anticipate any such impacts and provide mitigation measures to minimise impacts.

In addition, while the use of HDD techniques avoids river bank and in-stream construction activities, it can pose technical and environmental risks as part of the crossing is beneath the watercourse and cannot be readily observed. Drilling fluids are used to assist the process and fluid use needs to be monitored through the logging of fluid inputs and returns. The potential for 'frac-outs', or loss of fluids through fractures in the overlying strata, is minimized by a review of geology and selection of a drill profile and depth that controls this potential risk. A separate HDD Management Plan will therefore be prepared by the construction contractor for approval by the regulatory authority prior to commencement of the crossing. This will provide design details of the crossing, methods to monitor fluid use and procedures to be followed in the event of a 'frac-out'.

Is there a potential for extensive or major effects on the health or biodiversity of aquatic, estuarine or marine ecosystems over the long-term?

☒ No ☐ Yes If yes, please describe. Comment on likelihood of effects and associated uncertainties, if practicable.

Is mitigation of potential effects on water environments proposed?

☐ NYD ☐ No ☒ Yes If yes, please briefly describe.

Proposed mitigations include various measures such as construction during the summer months, construction by HDD where appropriate to the geology, the use of flumes for maintenance of water flow during open-cut construction, undertaking works at low/zero flow periods and implementation of suitable sedimentation control measures. The use of these measures is considered on a case-by-case basis appropriate to the size of the waterway.

It is proposed that seven waterways will be crossed with the use of HDD to pass under the river or creek. These are:

- Looping 2 - Creightons Creek (KP114.5)
  Seven Creeks (KP126)
  Faithful Creek (KP130.6)
- Looping 3 - Hughes Creek (KP88.3)
- Looping 4 - Broken River (KP169.5)
  Mokoan Inlet Channel (KP176.3)
- Looping 5 - Sunday Creek (KP33.55)

All other waterway crossings will be open cut. This involves the excavation of a trench across the watercourse. Construction is generally scheduled for periods of low/zero flow and sediment control measures (such as silt curtains) are used where appropriate to minimise impacts to stream quality. In some cases, temporary dams may be constructed and flumes or pumps used to carry water from one side of the construction area to the other in order to maintain stream flow.

All waterway crossings will be restored after pipe installation. Restoration of these crossings may use a range of methods to ensure the area is stabilised after construction is complete.

All crossings of designated waterways will be approved by the GBCMA and will be constructed and restored in accordance with a Site Environment Management Plan specific to the crossings. Approval conditions will include pre and post construction inspections to ensure waterways have been appropriately restored.

Other information/comments? (eg. accuracy of information)

14. Landscape and soils

Landscape

Has a preliminary landscape assessment been prepared?

☒ No ☐ Yes If yes, please attach.

Is the project to be located either within or near an area that is:

- **Subject to a Landscape Significance Overlay or Environmental Significance Overlay?**
  ☐ NYD ☒ No ☐ Yes If yes, provide plan showing footprint relative to overlay.

- **Identified as of regional or State significance in a reputable study of landscape values?**
  ☐ NYD ☒ No ☐ Yes If yes, please specify.

There are no existing studies of landscape values for the project corridor to our knowledge. It is therefore believed that the proposed construction ROW does not pass through any areas that are considered of regional or State landscape significance.

- **Within or adjoining land reserved under the *National Parks Act 1975?***
  ☐ NYD ☒ No ☐ Yes If yes, please specify.

- **Within or adjoining other public land used for conservation or recreational purposes*?***
  ☐ NYD ☐ No ☒ Yes If yes, please specify.

A number of waterways are designated public land under the management of DEPI.

The pipeline corridor also intersects land currently under the management of Winton Wetlands Committee of Management. This is expected to be sold to private interests once rehabilitation of the nearby wetland is complete.

Is any clearing vegetation or alteration of landforms likely to affect landscape values?

☐ NYD ☒ No ☐ Yes If yes, please briefly describe.

Is there a potential for effects on landscape values of regional or State importance?
☐ NYD ☒ No ☐ Yes Please briefly explain response.

Is mitigation of potential landscape effects proposed?
☐ NYD ☐ No ☒ Yes If yes, please briefly describe.

Reinstatement of the construction ROW will aim to restore the area as much as possible to the pre-existing land use (with the proviso that, in accordance with the pipeline licence, no trees will be allowed to be planted within 3m to either side of the pipeline).

Following construction, there will therefore be little above ground indication of the presence of the pipeline other than the three line valve enclosures, the required marker posts and cathodic protection points.

Other information/comments? (eg. accuracy of information)

Soils

Is there a potential for effects on land stability, acid sulphate soils or highly erodible soils?
☐ NYD ☒ No ☐ Yes If yes, please briefly describe.

Are there geotechnical hazards that may either affect the project or be affected by it?
☐ NYD ☒ No ☐ Yes If yes, please briefly describe.
In general, the easement traverses country of sedimentary origin. While it is believed that there are no geotechnical hazards, geotechnical assessments will be done at all HDD sites proposed. These assessments will influence the design and nature of the operations to be undertaken.

Other information/comments? (eg. accuracy of information)

15. Social environments

Is the project likely to generate significant volumes of road traffic, during construction or operation?
☐ NYD ☒ No ☐ Yes If yes, provide estimate of traffic volume(s) if practicable.

There is likely to be some temporary increase in local traffic volumes during the construction phase of the project when materials will need to be transported around the construction ROW. However, the traffic volume in any area will be temporary and highly localised. It will vary according to the construction phase as works move up/down the project area. The majority of construction traffic will use the existing pipeline easement (construction ROW) to move equipment along the route so as to reduce as far as possible increases in traffic flow on the local road network.

A Traffic Management Plan will be prepared in consultation with Local Government Authorities and Vicroads for all roads in order to maintain road safety during construction.

Changes in traffic volume is particularly applicable to the smaller local rural roads, where the current low traffic volumes will result in some short term increases in traffic as a result of construction. Traffic impacts will be mitigated by the use of designated access tracks and a one-way traffic system within the construction ROW. The potential for residential severance, increased noise and vibration and reduced amenity on local road and pedestrian users is not expected to have any long term major impacts. At any one location impacts will be short term as construction activities move along the pipeline route.

Is there a potential for significant effects on the amenity of residents, due to emissions of dust or odours or changes in visual, noise or traffic conditions?
☐ NYD ☒ No ☐ Yes If yes, briefly describe the nature of the changes in amenity conditions and the possible areas affected.

All construction is planned to be carried out during daylight hours.

The major sources of dust will be trucks transporting material to the construction corridor along the construction ROW and unsealed access tracks and construction activities such as earth moving, trenching, and backfill operations. This has the potential to impact on aspects of the environment including topsoil, vegetation, fauna and visual amenity.

Construction activities for Loopings 3 – 5 will be confined to the dry season, which may result in some dust from areas of construction activities. Impacts on local residences as well as users of major transport routes near to the construction ROW will be monitored and mitigation measures put in place to ensure impacts are minimised. Such measures include restriction on speed for construction vehicles and the use of dust suppression. A full list of measures will be included in the CEMP to be approved by DSDBI.

The main potential noise impact to local communities during construction is also likely to be associated with vehicle movements and activities including excavation, welding and backfilling plant and equipment. Other sources of noise are expected to be more transient and will be primarily limited to particular activities such as the hydrostatic testing process or gas vented from pressurised equipment. The EPA guidelines on Noise from Industry in Regional Victoria will be adhered to, with mitigation measures put in place to meet the guidelines.

In general, the progress of the construction crew along the pipeline corridor will result in noise and air impacts being limited in duration to only small sections of each looping at any one time. In addition, the rural nature of the majority of the construction ROW should limit impacts to social amenity.

Is there a potential for exposure of a human community to health or safety hazards, due to emissions to air or water or noise or chemical hazards or associated transport?

☐ NYD ☒ No ☐ Yes If yes, briefly describe the hazards and possible implications.

Is there a potential for displacement of residences or severance of residential access to community resources due to the proposed development?

☐ NYD ☒ No ☐ Yes If yes, briefly describe potential effects.

Access along the project corridor could temporarily be affected during the construction phase. However, long-term community severance should be minimal as a result of pipeline construction. All major sealed roads are to be bored and are not expected to be impacted by the proposed works. Minor unsealed roads are to be open cut and impacts are expected to be minimal with construction expected to be completed within one to two days at each crossing.

It is likely that the social impacts relating to land access, community severance, impacts to properties and transport networks will be relevant in the short term only. The majority of these issues are able to be mitigated through planning and good management and are unlikely to be of significant impact.

Are non-residential land use activities likely to be displaced as a result of the project?

☐ NYD ☒ No ☐ Yes If yes, briefly describe the likely effects.

As mentioned previously, the construction ROW will be reinstated to its original use after the pipeline has been installed, so no non-residential land use activities will be displaced by the project.

Do any expected changes in non-residential land use activities have a potential to cause adverse effects on local residents/communities, social groups or industries?

☐ NYD ☒ No ☐ Yes If yes, briefly describe the potential effects.

Is mitigation of potential social effects proposed?

☐ NYD ☐ No ☒ Yes If yes, please briefly describe.

Any impacts such as impacts to road traffic, noise or dust are expected to be temporary only.

Mitigation measures will be implemented to ensure noise and dust generated by the project will conform to regulatory requirements such as those outlined in SEPPs and local by-laws. As part of the Consultation Plan, land owners and local residents will be kept up to date on the project to assist in reducing any potential social impacts.

Other information/comments? (eg. accuracy of information)

Cultural heritage

Have relevant Indigenous organisations been consulted on the occurrence of Aboriginal cultural heritage within the project area?

☐ No If no, list any organisations that it is proposed to consult.
☒ Yes If yes, list the organisations so far consulted.

The project area is within the boundary of two Registered Aboriginal Parties (RAP) being:

- Taungurung Clans Aboriginal Corporation (TCAC)
- Yorta Yorta Nation Aboriginal Corporation (YYNAC)

The boundary between the two RAP areas lies at approximately KP116-117 (about 8km due west of Euroa). One CHMP will therefore be required for each of Looping sections 3, 4 and 5 and two CHMPs for Looping section 2 (Longwood to Violet Town).

- Looping 2 CHMP 12787 Longwood to Euroa (TCAC)
  CHMP 12777 Euroa to Violet Town (YYNAC)
- Looping 3 CHMP 12788 Mangalore to Longwood (TCAC)
- Looping 4 CHMP 12778 Violet Town to Glenrowan (YYNAC)
- Looping 5 Wandong to Broadford (under preparation) (TCAC)

Both RAPS have been consulted and have actively provided representatives to participate during the field assessments being undertaken as part of the preparation of the CHMPs.

What investigations of cultural heritage in the project area have been done?
(attach details of method and results of any surveys for the project & describe their accuracy)

Mandatory Cultural Heritage Management Plans (CHMPs) are being prepared for each part of the project. Notices of Intent have been lodged with OAAV and each of the RAPs have notified APA of their intention to evaluate the CHMPs. Various meetings including inception and standard assessment meetings have been held with both RAPs for all looping sections.

Work to date has included a Standard Assessment consisting of a walkthrough of the whole project area (Loopings 2-5) to identify any above ground cultural items and any areas of sensitivity requiring further sub-surface investigation during the Complex Assessment stage of the assessment (as defined under the *Aboriginal Heritage Act*). The field component of the Complex Assessment for Loopings 2 and 4 has also been completed. The field investigations for Looping 3 are in progress and for Looping 5 are scheduled for mid April 2014 and being undertaken by qualified archaeological consultancies with representatives from the relevant RAP. Once all Complex Assessments are complete, a post results meeting will be scheduled with the RAP and discussions will be undertaken regarding management measures before submission of the CHMP to be evaluated.

Assessment for sites of historic heritage value within or near to the ROW is also being undertaken during the cultural heritage survey.

Is any Aboriginal cultural heritage known from the project area?

☒ NYD ☐ No ☐ Yes If yes, briefly describe:

- Any sites listed on the AAV Site Register
- Sites or areas of sensitivity recorded in recent surveys from the project site or nearby
- Sites or areas of sensitivity identified by representatives of Indigenous organisations

All prior registered sites have been reviewed and are documented within the Desktop Assessment for Loopings 2-5. The extent and management of current sites discovered with the Complex Assessments are currently in progress and the RAPs are actively participating in the Standard and Complex investigations and being actively consulted during this process.

Looping 2 CHMP 12787 Longwood to Euroa (TCAC)

The standard assessment survey was carried out over the entire activity area. No Aboriginal cultural heritage was identified within the activity area.

Key issues identified during the standard assessment included:

- A major waterway at Pranjip Creek (KP109.65)
- The survey identified current and prior stream courses including moderate waterways at

Creightons Creek (KP 114.0) and the access track east of Creightons Creek
- Minor waterways include an anabranch of Pranjip Creek (KP110.7)
- Low ridgeline at KP 113

It was agreed with the TCAC that the Complex Assessment would focus on investigation of Pranjip Creek (4 days), the moderate waterways at Creighton Creek (2 days per waterway), and assessment of the low ridgeline at KP 113. One site of Aboriginal Cultural Heritage has been identified and awaiting response from Office of Aboriginal Affairs Victoria regarding the registered number for this site at Pranjip Creek

The complex assessment has been completed and a meeting with TCAC to discuss the results of this assessment will be scheduled for April 2014.

Looping 2 CHMP 12777 Euroa to Violet Town (YYNAC)

The standard assessment survey was carried out over the entire activity area, except for several small paddocks which had been planted out with Canola crops. No Aboriginal cultural heritage was identified within the activity area. However a couple of trees with possible cultural scarring or modification (hoops) were located adjacent to the activity area.

One bone of unknown species was located protruding from the northern bank of minor waterway (Lambing Gunyah Creek) at KP139.4.

Key issues identified during the standard assessment included:
- The activity area traverses the edge of a hill at KP 132.5 (between Balmattum Siding Road and Wilbrahams Road)
- There are no major waterways within the activity area. However, the survey identified current and prior stream courses including moderate waterways at Castle Creek (KP122.5), Seven Creeks (KP125.45), Branch Creek (126.45), Faithful Creek (KP 130.1) and Riggs Creek (KP131.2)
- Minor waterways include modified channels, ephemeral waterways and tributaries to larger waterways, and prior stream beds

It was agreed with Yorta Yorta that the Complex Assessment would focus on investigation of the moderate waterways (2 days per waterway), a sample of prior watercourses (2 days per waterway), complex assessment of the elevated landform at KP 132.5 and excavation of the bone and species identification.

During the complex assessment, an additional two places of Aboriginal cultural heritage value were located but these were assessed as low density artefact distributions which will not impact the project in any significant way. All the fieldwork for Looping 2 (Yorta Yorta section) was completed on 28 February 2014.

In terms of cultural heritage, there were no additional sites found aside from the two earlier in the fieldwork. The results of this assessment will be discussed with Yorta Yorta in late April 2014.

Looping 3 CHMP 12788 Mangalore to Longwood (TCAC)

The standard assessment survey was carried out over the entire activity area. A single artefact of Aboriginal cultural heritage was found eroding from a terrace at Four Mile Creek (KP 77.5).

Key issues identified during the standard assessment included:
- Major waterways within the activity area include Four Mile Creek (KP77.5) and Hughes Creek (KP88.35)
- The survey identified current and prior stream courses including moderate waterways at Eight Mile Creek (KP81.9), Wormangal Creek (KP92.0), Charles Creek (KP97.5), Reedy Creek (KP97.95), Burnt Creek (KP100.5) and Muddy Waterhole Creek (KP105.2)
- Minor waterways included two modified channels.

It was agreed with the TCAC that the Complex Assessment would focus on investigation of Four Mile and Hughes Creeks (4 days each), moderate waterways (2 days per waterway) and a sample of prior watercourses (2 days per waterway).

The complex assessment will be complete by mid April 2014 and the results will be discussed with TCAC in late April 2014..

Looping 4 CHMP 12778 Violet Town to Glenrowan (YYNAC)

The standard assessment survey was carried out over the entire activity areas, except for several small paddocks which had been planted out with Canola crops. One previously registered Scarred Tree was relocated within the activity area (VAHR8124-0010) however, no other Aboriginal cultural heritage was identified during the standard assessment.

Key issues identified during the standard assessment included:

- The activity area traverses hilltops at KP 160.0 and 161.25, and the edge of a hill at KP 186.4
- The activity area traverses a low rise at KP 190.98.
- The activity area traverses the edge of floodplains associated with Winton Wetlands (Lake Mokoan) at KP 183.1
- One major waterway was included in the activity area. This is the Broken River
- The survey identified current and prior stream courses with moderate waterways at Honeysuckle Creek (KP143.0), One Mile Creek (KP145.55), Two Mile Creek (KP147.6), Swamp Creek (KP149.2),Stony Creek (KP150.4),Turnip Creek (KP152.5), Folly Creek(156.5), Woolpress Creek (KP157.4), Baddaginnie Creek (KP 166.35), Kennedys Creek (174.3), Winton Creek (179.45), Seven Mile Creek (KP180.3) and Eleven Mile Creek (KP 189.2)
- Minor waterways include modified channels, ephemeral waterways, tributaries to larger waterways and prior stream beds
- One previously registered Scarred Tree exists within the activity area (VAHR8124-0010).

It was agreed with Yorta Yorta that the Complex Assessment would focus on investigation of the Broken River (4 days), moderate waterways (2 days per waterway), a sample of prior watercourses (2 days per waterway), complex assessment of elevated landform and land adjacent to the swamp.

The complex assessment has been complete and the results will be discussed with Yorta Yorta in late April 2014.

Looping 5 Wandong to Broadford

As part of the preparation of the CHMP, the Standard Assessment was undertaken on 24 and 25 February 2014.

Two areas containing Aboriginal cultural heritage in the form of surface stone artefact scatters and one area containing a potential scarred tree were identified during the Standard Assessment.

Fifteen (15) areas were determined to have archaeological potential due to the presence of surface Aboriginal cultural material and/or landforms known within the geographic region to be areas of higher cultural heritage sensitivity.

The Complex Assessment will commence in mid April 2014 with the results of this assessment to be consulted with Taungurung in May 2014.

Are there any cultural heritage places listed on the Heritage Register or the Archaeological Inventory under the *Heritage Act 1995* within the project area?

☒ NYD ☐ No ☐ Yes If yes, please list.

Is mitigation of potential cultural heritage effects proposed?

☐ NYD ☐ No ☒ Yes If yes, please briefly describe.

Once the complex investigations have been completed to identify any sites of cultural significance, mitigation measures will be developed based on these findings and included within the CHMPs. Once the CHMPs are approved they will be implemented and complied with during the project.

Measures to mitigate any impacts on items of historic heritage, should they be found to be at risk, will also be developed and included in the CEMP for the project(s).

Other information/comments? (eg. accuracy of information)

16. Energy, wastes & greenhouse gas emissions

What are the main sources of energy that the project facility would consume/generate?

- ☒ Electricity network. If possible, estimate power requirement/output …….
- ☒ Natural gas network. If possible, estimate gas requirement/output ……...
- ☒ Generated on-site. If possible, estimate power capacity/output …….
- ☒ Other

Please add any relevant additional information.

Diesel - This will be the main source of energy used during the construction of this project, for vehicles, plant and machinery etc.

What are the main forms of waste that would be generated by the project facility?

☒ Wastewater. Primarily water used to hydrotest the gas pipeline. However, it should be noted that the pipe is internally lined and there is no requirement for any additives of potentially environmentally harmful chemical additives in water, such as corrosion inhibitors and biocides.

All hydrotest water will be disposed in accordance with regulatory requirements and the pipeline construction permit. Disposal methods will ensure no water enters a river, creek or drain or causes erosion or flooding. A discharge plan will be prepared and the relevant authorities invited to comment prior to any discharge occurring.

☒ Solid chemical wastes. Describe briefly.

☒ Excavated material. There is a potential for minor quantities of subsoil that will require disposal following restoration of the construction area. This will be managed in accordance with State Waste Management policies and EPA IWRG soil disposal guidelines.

☒ Other. Litter and other construction waste such as vegetative material generated during clearing. This will be managed in accordance with State Waste Management policies

Please provide relevant further information, including proposed management of wastes.

What level of greenhouse gas emissions is expected to result directly from operation of the project facility?

- ☒ Less than 50,000 tonnes of CO_2 equivalent per annum
- ☒ Between 50,000 and 100,000 tonnes of CO_2 equivalent per annum
- ☒ Between 100,000 and 200,000 tonnes of CO_2 equivalent per annum
- ☒ More than 200,000 tonnes of CO_2 equivalent per annum

Please add any relevant additional information, including any identified mitigation options.

There will be no direct emissions as the project is a gas transportation facility. All emissions will be the result of end-users

17. Other environmental issues

Are there any other environmental issues arising from the proposed project?

☒ No ☒ Yes If yes, briefly describe.

18. Environmental management

What measures are currently proposed to avoid, minimise or manage the main potential adverse environmental effects? (if not already described above)

☒ Siting: Please describe briefly

☒ Design: Please describe briefly

☒ Environmental management: Please describe briefly.

In accordance with the *Pipelines Act 2005*, a Construction Environment Management Plan will be prepared for the project for approval by the Earth Resources Regulation branch of the Department of State Development, Business and Innovation. The CEMP will draw on recommendations from the Flora and Fauna Report, Permitted Clearing Assessment (Net Gain) prepared for DEPI and the Water Management SEMP prepared for GBCMA.

It will summarise the potential environmental impacts of construction of the proposed pipeline and identifies the means by which APA intends to avoid or mitigate these impacts.

The key objectives of the CEMP include:

- Ensuring that construction activities are carried out in accordance with environmental statutory requirements, the conditions of approval for the project, relevant guidelines and existing environmental management systems and procedures of APA;
- Ensuring that the construction operations are carried out in such a way as to manage the environmental impact on surrounding land uses;
- Identifying management responsibilities and reporting requirements to demonstrate compliance with the CEMP;
- Ensuring that the construction ROW is reinstated and rehabilitated back to its existing land uses.

The CEMP will detail all mitigation measures for the project and will form part of the contract documentation with the pipeline constructor. Some of the measures that are likely to be included in the CEMP are:

- Induction of employees and contractors prior to commencement of works to highlight environmental, cultural and other construction issues (such as threatened flora and fauna, vegetation communities etc.);
- All construction activities to stay within the construction ROW or other designated work areas.
- Vegetation to be retained shall be identified and located on the construction alignment sheets and clearly flagged in the field as not to be disturbed;
- Any native vegetation that is to be removed as a result of construction works is to be offset in accordance with legislative requirements;
- Fencing of remnant vegetation prior to and during construction activities to prevent damage to the vegetation and to prevent any construction access to retained vegetation. Tree protection, if required, will be in accordance with the *Australian Standard - AS 4970-2009 Protection of trees on development sites*;
- An arborist to be present during any vegetation clearance and trenching works within the vicinity of treed vegetation identified in the Arborist report;
- Ensuring appropriate management practices are undertaken in the vicinity of rivers, creeks and drainage lines to manage impacts from sediment and minimise impacts to aquatic habitats
- Ensuring works, including storage of materials, loading and unloading, vehicle access and parking or other construction activity will not occur within areas of retained native vegetation identified in the flora and assessment reports
- All excavated soil should be stockpiled in areas free of remnant native vegetation;
- Stockpiles should be stored away from areas of surface water flow and not impede surface drainage or water flow;
- Regular environmental inspections to be undertaken by appropriately qualified environmental specialists throughout the project to monitor impacts to flora and fauna

The following mitigation measures are to be employed to reduce impacts to fauna habitat and to minimise faunal injury or mortality:

- Checking of trees for fauna prior to removal by licensed wildlife handler. This includes checking of stags for fauna such as bats, reptiles, bird, mammals;
- Adopting a safe speed limit along the construction ROW through sensitive areas (identified on the route maps) of no greater then 40kph to minimise the potential for collision with fauna moving through roadside or other remnant vegetation;

- Minimising the period and length of time that the trench remains open, particularly in areas where sensitive habitat has been identified nearby.
- Use of end caps on pipe strings to prevent entry of fauna prior to laying;
- Daily monitoring of open sections of trench at regular intervals for trapped animals such as reptiles and small ground-dwelling mammals, particularly in areas where sensitive habitat has been identified;
- Constructing trench plugs and ramps with slopes no greater than 45% at regular intervals along the pipeline trench to provide exits for fauna;
- Checking of the open trench for fauna prior to backfill and removal of any trapped animals;
- If fauna is located during the inspection, they will be relocated by a suitably qualified and experienced animal handler that holds a current wildlife permit issued by DEPI;
- Reporting of injured or dead native wildlife within construction sites to regional DEPI personnel;
- Any accumulated trench water will be disposed in a manner that will ensure no adverse impacts from sediment load or low dissolved oxygen levels to waterways. Water from trench de-watering should therefore be disposed to land via an energy-dissipating and sediment-trapping system (eg via grassed areas, straw bales or geotextile filter/fabrics) and should not be disposed directly into a waterbody or result in flooding of the area.

All personnel on the project will be required to abide by the requirements of the approved CEMP.

☒ Other: Please describe briefly

As previously discussed, other mitigation measures include:

- The preparation of CHMPs in consultation with the RAPs
- The preparation of a Site Environmental Management Plan specific to the crossing of waterways

19. Other activities

Are there any other activities in the vicinity of the proposed project that have a potential for cumulative effects?

☐ NYD ☒ No ☐ Yes If yes, briefly describe.

20. Investigation program

Study program

Have any environmental studies not referred to above been conducted for the project?

☒ No ☐ Yes If yes, please list here and attach if relevant.

Has a program for future environmental studies been developed?

☐ No ☒ Yes If yes, briefly describe.

Studies to determine potential environmental impacts are currently in progress:

- Geotechnical investigations at the seven waterways to be traversed by HDD to assist in the planning of these crossings by investigating:
  - Geological setting and subsurface profile
  - The depth to rock
  - The presence of groundwater
  - The suitability of HDD for all sites and potential construction issues
  - Discussion on the excavation properties of the rock and any impact on the pipeline coating during the process of installation
- Targeted aquatic fauna surveys to determine if any threatened species utilise habitat in the waterways to be traversed by HDD as part of HDD contingency plans.

Consultation program

Has a consultation program conducted to date for the project?

☐ No ☒ Yes If yes, outline the consultation activities and the stakeholder groups or organisations consulted.

Ongoing consultation with affected land owners is required as part of the existing license for the existing pipeline and the Operations Environment Management Plan applicable to the pipeline. This includes regular contact with affected landowners via an annual letter drop that includes company and local contact details.

The proposed project will require an alteration to the existing license for the pipeline.

A Consultation Plan for the project was prepared and reviewed by DSDBI in 2012. It will be the responsibility of APA to ensure that any significant environmental issues that are identified in environmental assessments undertaken for the project are adequately communicated to all relevant stakeholders, personnel and contractors. Steps shall be taken to ensure the intent, scope and relevance of these assessments are understood by all the stakeholders particularly how APA plans to minimise, as far as practicably possible, the impact of the proposed pipeline on the enjoyment and use of their land by the affected landholders.

The Consultation Plan describes how communications with affected Landowners/Occupiers will be initiated as well as means by which community members will be advised of the project. A comprehensive line list will be generated for affected landowners/occupiers that identify individual concerns over access to properties as well as requirements regarding impacts and reinstatement. Property inspection reports will be prepared to record agreed requirements of landowners/occupiers and to ensure such requirements are complied with.

Feedback from all interested parties will be continuously monitored during the entire project. An Issues and Action Register will be maintained by the Project Manager in which actions taken to address issues will be recorded.

Means by which project developments will be communicated to stakeholders and feedback encouraged include:

- Letters to affected landholders/occupiers;
- Meetings with affected landowners/occupiers as well as community and special interest groups likely to be affected;
- Meetings with local council and infrastructure owners;
- Media releases during the construction of each looping to all identified media outlets;
- Establishment of a phone number for stakeholders to contact the project team.

Landowners and affected stakeholders are to be kept aware of scheduled activities and impacts as the project progresses.

A number of stakeholders have been identified as potentially having an interest in the project. A summary of the stakeholders consulted to date is provided below:

- Government and Regulatory bodies including:
  - Department of Environment (Canberra), formerly DSEWPC
  - Department of State Development, Business and Innovation
  - Department of Environment and Primary Industries (Victoria)
  - Office of Aboriginal Affairs Victoria
  - Heritage Victoria
  - Goulburn Broken Catchment Management Authority
  - VicRoads
- Local government authorities including
  - Mitchell Shire Council
  - Strathbogie Shire Council

- Benalla Rural City
- Registered Aboriginal Parties being
  - Taungurung Clans Aboriginal Corporation
  - Yorta Yorta Nation Aboriginal Corporation
- Local interest groups including
  - Winton Wetlands Committee of Management
- Landowners and occupiers whose property will be traversed by the pipeline

Has a program for future consultation been developed?

☐ NYD ☐ No ☒ Yes If yes, briefly describe.

Consultation will be ongoing with all affected parties during the planning, construction and post construction phases.

- Means by which project developments will be communicated to stakeholders and feedback encouraged include:
- An onsite meeting and introductory letter to affected landholders/occupiers providing information on the proponent, the land agent and the project. This is provided prior to the initial survey and includes details of firms and contact points of those who will be conducting the identified activities. Where a firm has not been identified a separate letter is posted to the landowner providing details;
- Preparation of a Property Information form containing landowner details including contact details, property use and any special entry conditions
- Following the survey, written advice to affected landowners containing details of the proposed pipeline corridor with an invitation to raise any concerns with APA
- Meetings with affected landowners/occupiers as well as special interest groups likely to be affected;
- Advertisement placed in major papers to alert the public to the proposed changes to the pipeline
- Meetings with local council and infrastructure owners;
- Establishment of a contact phone number for stakeholders to contact the project team.

Authorised person for proponent:

I, Tom Carroll (full name),

Senior Program Manager (position), confirm that the information contained in this form is, to my knowledge, true and not misleading.

Signature _____

Date 11/4/14

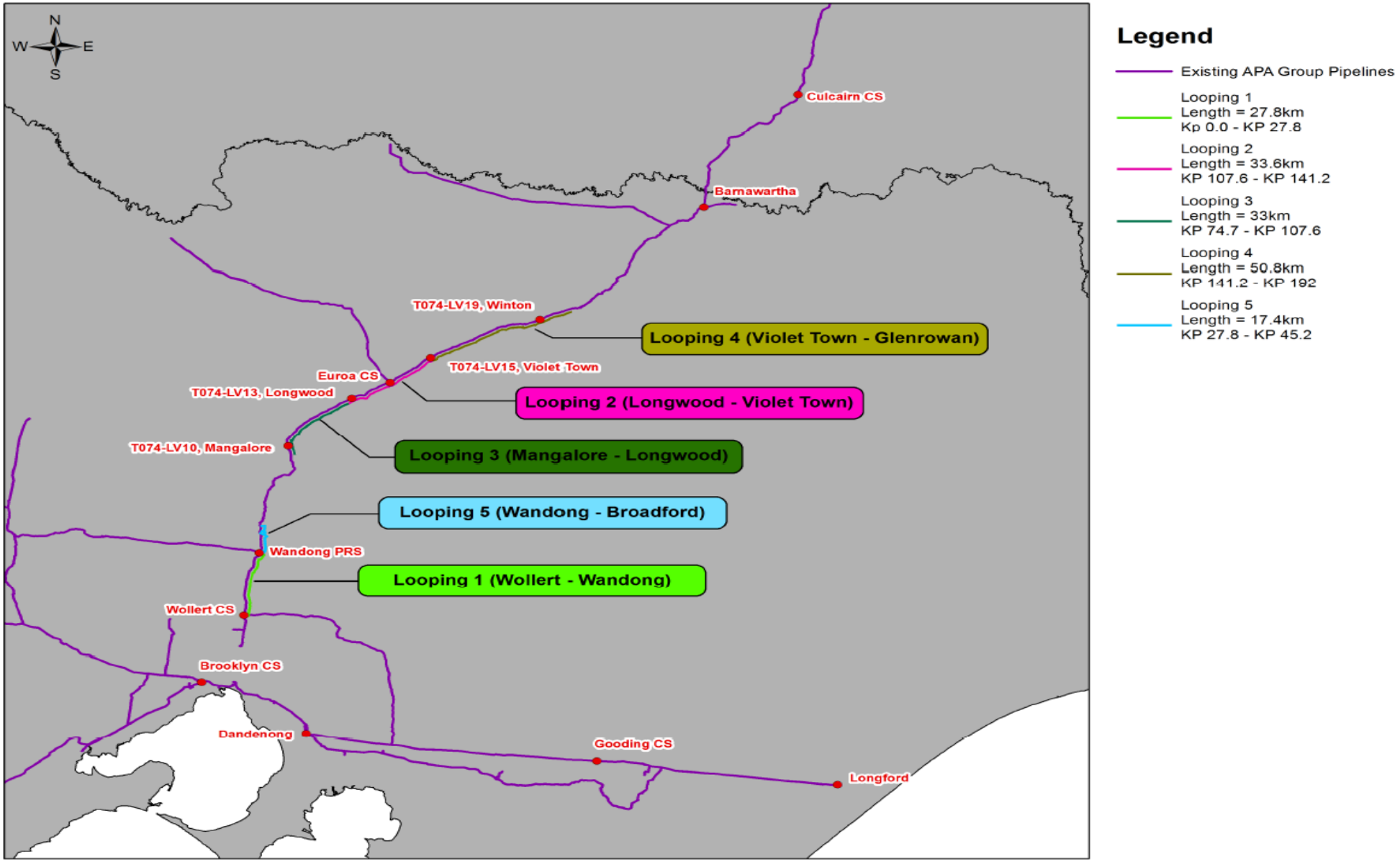
Person who prepared this referral:

I, David John Coleman…(full name),

Senior Environmental Consultant…(position), confirm that the information contained in this form is, to my knowledge, true and not misleading.

Signature _____

Date 11/4/14


N
W
E
S
Culcairn CS
Barnawartha
T074-LV19, Winton
Looping 4 (Violet Town - Glenrowan)
T074-LV15, Violet Town
Euroa CS
T074-LV13, Longwood
Looping 2 (Longwood - Violet Town)
T074-LV10, Mangalore
Looping 3 (Mangalore - Longwood)
Looping 5 (Wandong - Broadford)
Wandong PRS
Looping 1 (Wollert - Wandong)
Wollert CS
Brooklyn CS
Dandenong
Gooding CS
Longford
Legend
Existing APA Group Pipelines
Looping 1
Length = 27.8km
Kp 0.0 - KP 27.8
Looping 2
Length = 33.6km
KP 107.6 - KP 141.2
Looping 3
Length = 33km
KP 74.7 - KP 107.6
Looping 4
Length = 50.8km
KP 141.2 - KP 192
Looping 5
Length = 17.4km
KP 27.8 - KP 45.2