### 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 Impact Assessment Unit (IAU) at the Department of Environment, Land, Water and Planning (DELWP) 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 IAU 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 USB copy of all documents will be needed, especially if the size of electronic documents may cause email difficulties. **Individual documents should not exceed 2MB as they will be published on the Department’s website.**
* 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 Couriers

**Minister for Planning Minister for Planning**

**PO Box 500 Level 16, 8 Nicholson Street**

**EAST MELBOURNE VIC 8002 EAST MELBOURNE VIC 3002**

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@delwp.vic.gov.au](mailto:ees.referrals@delwp.vic.gov.au) is required. This will assist the timely processing of a referral.

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**PART 1 PROPONENT DETAILS, PROJECT DESCRIPTION & LOCATION**

### 1. Information on proponent and person making Referral

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| **Name of Proponent:** | APA VTS (Operations) Pty Limited |
| **Authorised person for proponent:** | Paul Maloney |
| **Position:** | GM Infrastructure Planning and Protection |
| **Postal address:** | Level 14, IBM Building, 60 City Road, Southbank VIC 3000 |
| **Email address:** | WORM@apa.com.au |
| **Phone number:** | (03) 8626 8400 |
| **Facsimile number:** | N/A |
| **Person who prepared Referral:** | Mitchell Deaves |
| **Position:** | Senior Environmental Planner |
| **Organisation:** | Biosis Pty Ltd |
| **Postal address:** | 38 Bertie Street, Port Melbourne, VIC, 3207 |
| **Email address:** | mdeaves@biosis.com.au |
| **Phone number:** | (03) 8686 4867 |
| **Facsimile number:** | N/A |
| **Available industry & environmental expertise:** (areas of ‘in-house’ expertise & consultancy firms engaged for project) | APA is Australia’s largest natural gas infrastructure business, owning and/or operating approximately $20 billion of energy assets, with gas transmission pipelines spanning every state and territory in mainland Australia, delivering approximately half of the nation’s gas usage. APA currently owns and operates 15,000 kilometres of natural gas transmission pipelines, as well as owning or having interests in gas storage facilities, gas fired power stations and wind/solar farms.  Our skilled workforce, in excess of 1,700 people, has extensive ‘in-house’ expertise in planning, design, construction, operation and environmental management of pipelines. These processes are governed by the *Pipelines Act 2005* (Vic) (Pipelines Act).  APA engaged Biosis to coordinate environmental services to support the assessment process for the Western Outer Ring Main Project (the Project). Biosis has extensive experience in assessing ecological and cultural heritage values as well as managing environmental assessments for linear infrastructure projects. Biosis has been responsible for the following reports and studies:   * Project maps, October 2019 (Attachment 1a-1g) * Project description, October 2019 (Attachment 2) * Desktop Biodiversity Assessment, October 2019 (Attachment 4) * Desktop Land Use and Planning Assessment, August 2019 (Attachment 6) * Preliminary Desktop Cultural Heritage Assessment, August 2019 (Attachment 10) * Environmental Management Framework, October 2019 (Attachment 11)   Alluvium (sub-consultant to Biosis) has provided specialist advice on surface water and groundwater and has been responsible for preparing the following assessment:   * Surface Water and Groundwater Desktop assessment, August 2019 (Attachment 5)   Golder Associates (sub-consultant to Biosis) has provided specialist advice on air quality, noise, greenhouse gas emission, geology and soils and has been responsible for preparing the following assessments:   * Geological and Soils Desktop Study, August 2019 (Attachment 7) * Noise and Air Quality Assessment Desktop Study, October 2019 (Attachment 8)   Wood has provided specialist advice on noise for the Wollert Compressor Station and has been responsible for preparing the following assessment:   * Wollert Compression Station Noise Assessment, June 2019 (Attachment 9)   APA has been responsible for preparing the following assessments:   * Western Outer Ring Main - Route Options Report March 2019 (Attachment 3) * Western Outer Ring Main – Consultation Plan March 2019 (Attachment 12) |

### 2. Project – brief outline

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| **Project title:** |
| Western Outer Ring Main (WORM) – Construction of a high pressure gas transmission pipeline from Plumpton to Wollert. |
| **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 is approximately 50 kilometres in length and is proposed to be constructed between APA’s existing regulating station in Plumpton (approximately 38 kilometres west of Melbourne’s CBD) and APA’s existing compressor station in Wollert (approximately 26 kilometres north east of Melbourne’s CBD). Refer to Attachment 1a and 1g.  A Study Area has been identified (refer Attachment 1a), within which the Project will occur. The Study Area is larger than the final disturbance footprint that will be required to construct and operate the pipeline as flexibility in the determination of the final alignment and disturbance footprint is required.  The Study Area is generally described as follows:   * **Commences at the current termination of the Truganina to Plumpton pipeline located just to the north of Taylors Rd, Plumpton, near the Plumpton Pressure Regulating Station (55H 298360 5823036).** * **Follows APA’s existing Sunbury pipeline easement north to the Calder Freeway (55H 300121 5831359).** * **Generally follows the proposed Outer Metropolitan Ring (OMR) public acquisition overlay (PAO) corridor through Diggers Rest, before deviating to the north and crossing Jacksons Creek (55H 303828 5833642), Sunbury Road (55H 304212 5834439) and Deep Creek (55H 305917 5834782).** * **Re-joins the OMR PAO in Oaklands Junction (55H 307599 5835477) and follows the PAO north east through Mickleham, Merrifield and Kalkallo.** * **Crosses the Hume Highway at the existing intersection with Gunns Gully Road (55H 318823 5846417) before again following the OMR PAO east to the existing Victorian Northern Interconnect (VNI) pipeline easement (55H 322994 5847476).** * **Follows APA’s VNI pipeline easement south to terminate at the Wollert compressor station (55H 322812 5838986).** |
| **Short project description** (few sentences)**:** |
| The Project comprises a 50 kilometre high pressure gas transmission pipeline, which will provide a high pressure connection between the eastern and western sections of the Victorian Transmission System (VTS) (Figure 1 below).  The Project scope includes the upgrade of APA’s existing gas compressor station located at 365 Summerhill road, Wollert. Works will include installation of a new gas compressor, process control equipment and pipework.  The pipeline and all associated facilities will be designed, constructed, commissioned and operated in accordance with Australian Standard AS/NZS 2885 series - Pipelines – Gas and Liquid Petroleum and a Pipeline Licence, which is required pursuant to the *Pipelines Act 2005* (Vic) (Pipelines Act).    Figure 1 Western Outer Ring Main |

### 3. Project description

In addition to the below information, Biosis, with assistance from APA, prepared a project description report to guide the preparation of all desktop environmental assessments and this referral (refer Attachment 2).

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| **Aim/objectives of the project** (what is its purpose / intended to achieve?): |
| The objective of the Project is to provide a new high pressure link between existing sources of gas supply in the north and east with those in the west of the State, in order to enable increased refilling rates at the Iona Underground Gas Storage (UGS).  The Australian Energy Market Regulator (AEMO) has identified that Victoria relies on the Iona UGS near Port Campbell to meet winter maximum gas demand.  Providing this linkage will play a key role in addressing security of supply concerns (from winter 2021) as identified by AEMO in its Victorian Gas Planning Report (March 2019)[[1]](#footnote-2), by increasing the amount of gas that can be stored for times of peak demand and ensuring that sufficient volumes of gas can be moved to where it is needed most. |
| **Background/rationale of project** (describe the context / basis for the proposal, e.g. for siting): |
| In Victoria, the VTS is owned and maintained by APA and consists of some 2,267 kilometres of gas pipelines. The VTS serves a total consumption base of approximately 2 million residential consumers and approximately 60,000 industrial and commercial users throughout Victoria. The VTS has three main branches, including:   * The Longford Dandenong Pipeline (LDP) which lies between Dandenong in Melbourne’s south east and South Eastern Victoria. * The VNI pipeline which lies between Wollert just north of Melbourne and the NSW border. * The South West Pipeline (SWP) which lies between Brooklyn in Melbourne’s west and South Western Victoria.   The LDP and the VNI pipeline are linked by the high pressure Outer Ring Main (Pakenham to Wollert Gas Pipeline). This provides the ability to send gas under high pressure between these pipelines.  There is no equivalent link between either the VNI and the SWP or the LDP and the SWP. Sending gas between these pipelines involves using the lower pressure Melbourne network, and this limits the amount of gas that can be moved across Victoria in these directions (Figure 2 below).    **Figure 2 Victorian Transmission System schematic including the WORM**  The Project will deliver significant benefits to the Victorian community by addressing this capacity constraint. Refilling and withdrawal rates for the Iona UGS are currently limited by capacity on the SWP.  The Project will increase the SWP transportation capacity towards Port Campbell (to support Iona UGS refilling) and towards Melbourne to support peak day demand. The Project will therefore play a key role in helping to avoid gas supply shortages that had otherwise been forecast by AEMO from winter 2021.  The Project will also result in a number of other benefits, including:   * Improved system resilience and security of gas supply in the event of planned or unplanned outages at one of the main gas processing facilities. * Increased capacity to supply existing and potential new gas fired peaking power generation for which demand is increasing as Victoria’s reliance on renewable generation sources increases. * Increased storage capacity within the pipeline system. * Provides an oppportuity for third party energy retailers to install new offtakes from the proposed pipeline, at a later date, for future provision of gas supply for residential and employment growth areas along the route, including Sunbury South, Mickleham and Kalkallo. The establishment of new offtakes would not be undertaken by APA and is not within the scope of the proposed works for the Project.   The Project will help ensure that all Victorians can continue to benefit from a reliable gas transmission system that meets the needs of the community both now and into the future. |
| **Main components of the project** (nature, siting & approx. dimensions; attach A4/A3 plan(s) of site layout if available):  The Project consists of the following components:   * The pipeline. * Aboveground facilities, including an end of line scraper station, mainline valves (MLVs), cathodic protection and pipeline marker signs. * Wollert compressor station upgrade.   Each component is discussed in detail below. |
| **Pipeline**  Approximately 50 kilometres of high pressure gas transmission pipeline with a nominal diameter of 500 millimetres and a minimum depth of cover of 1200 millimeters for its entire length. Operational and construction areas required for the pipeline include:   * Construction right of way (ROW), generally 30 metres in width, including additional space in certain sections to accommodate:   + Setup of Horizontal Directional Drilling (HDD) plant and equipment;   + Additional truck turnaround areas; and   + Material storage   These areas described above are generally 50 metres wide and varies in length at approximately (50-150 metres) depending on the type of activity to occur). (refer Attachment 1, which shows the ROW corridor)   * Operational easement will be 20 metres in width.   **Aboveground facilities**  End of line scraper station  The routine operation of gas pipelines requires the periodic running of intelligent pipeline inspection gauge tools (pig) to inspect the integrity of the pipeline. Scraper stations are required to launch and receive pigs under pipeline pressure. The pig is loaded into an unpressurised launcher vessel at the scraper station. The launcher vessel is closed and pressurised to equal the pipeline pressure.  The pig is then sent down the pipeline using the flowing gas as the driving force. The pig is collected by a receiver vessel at a downstream scraper station. The receiver vessel is isolated, depressurised and opened to retrieve the pig.  A new scraper station is required at the Wollert end of the pipeline and will be located within the existing APA facility at Wollert (approx. KP 50). Figure 3 below shows the typical layout of an end of line scraper station.  RC Scraper Stn 2  **Figure 3 Typical end of line scraper station**  Mainline valves  MLVs are in-line buried block valves fitted with actuators. Up to 4 MLVs are proposed for the length of the pipeline, spaced at intervals of approximately 15 kilometres. MLVs are located on areas of hardstand and fenced to exclude members of the public. All MLVs will be fully accommodated within the proposed operational easement.  Potential sites for MLVs will be identified following further design and ongoing consultation with landowners. A typical MLV is shown in Figure 4 below.  IMG_2747  **Figure 4 Typical mainline valve**  Cathodic protection  The pipeline’s primary corrosion protection system will be its external coating. Each pipe length will be coated with dual layers of fusion bonded epoxy for corrosion protection purposes except at each end to allow welding. Post welding, the uncoated weld margins will be cleaned and coated with spray applied epoxy. 100% testing will be undertaken on the coating in both the factory and just prior to being installed in the trench to ensure the integrity of the coating.  Following the completion of construction the integrity of the pipeline coating will be tested by a Direct Current Voltage Gradient (DCVG) survey which involves traversing over the top of the pipeline on foot measuring the voltage gradient in the soil using a pair of probes.  As a secondary protection, an impressed current cathodic protection system (CP system) will be employed to protect the pipeline from corrosion. Upstands for monitoring of the CP system will be required at approximately 2 kilometres to 4 kilometres spacing along the pipeline.  An upstand consists of a small metal box on a post which contains a terminal for monitoring the CP system (Figure 5 below). Upstands are typically installed at marker posts and at other key features such as paved roads and fence crossings.  Depending on the final detailed design of the CP system, anode beds may also be required at points along the alignment.  Pipeline marker signs  Pipeline marker signs (Figure 5 below) will be installed along the length of the pipeline, to indicate the pipeline location in accordance with AS/NZS 2885.1 Pipelines – Gas and liquid petroleum, Part 1: Design and construction (AS/NZS 2885.1).  The markers will be placed at a frequency to ensure continual line of sight along the alignment and will also be located at any bends, at property boundary fences and either side of crossings, such as roads, railways or watercourses. Text on the signs will describe the presence of a high pressure gas pipeline and provide the name and contact details of the operator.  20170707 - YWL_033  **Figure 5 Typical pipeline marker sign with co-located cathodic protection test point**  **Wollert compressor station upgrade**  The Project terminates at APA’s existing gas compression station located at 365 Summerhill Rd, Wollert. The existing site comprises:   * Wollert City Gate: Four regulator runs that reduce the gas pressure from the 7000 kilopascal (kPa) country pipeline system to the 2800 kPa metropolitan system, with a 3 megawatt (MW) gas fired water bath heater. * Compressor Station: Two Solar Centaur 50 and three Solar Saturn 10 gas turbine driven compressor units with one fin fan gas cooler and one lube oil cooler per unit, a gas engine generator, an instrument air compressor, a station vent and two pressure regulation valves.   The Project includes the addition of one Solar Centaur 50 compressor unit to the site, along with associated valves and pipework. Figure 6 below shows the existing layout of the compressor station with an indicative location of the additional compressor unit. All works will be undertaken within the existing APA landholding at Wollert.    **Figure 6 Existing Wollert compressor site with proposed location of additional compressor** |
| **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 within private land.  A temporary construction site depot will be required to facilitate the construction of the pipeline as well as providing a laydown area for the storage of pipe sections, prior to their being delivered to the construction ROW. The exact location for the site depot has not been finalised however, will be at an established industrial site.  Areas will be approved for use under relevant regulatory requirements (where not already part of the final disturbance footprint) and not increase the environmental impacts of the Project.  Any ancillary areas utilised as part of the Project will be approved sites for the proposed use or will be restored to previous land uses and condition once construction is complete.  Due to the proximity to populated areas, construction personnel are planned to be accommodated in existing local accommodation. |
| **Key construction activities:** |
| **Pipeline and aboveground facilities**  Pipeline construction will comply with all relevant codes and standards, including AS/NZS 2885.1. Construction activities will also be guided by the environmental requirements to be specified in a Construction Environment Management Plan (CEMP), to be prepared in compliance with the Pipelines Act and *Pipelines Regulations 2017* (Vic) (Pipelines Regulations).  Pipeline construction will utilise a construction ROW; a temporary construction zone that will accommodate construction plant and equipment, allow vehicle travel along the route as well as 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 standard width of the construction ROW is 30 metres (the centreline of the pipeline is generally offset 10 metres from one side of the ROW), plus additional space in certain sections to accommodate HDD, truck turnarounds and material storage (generally 50 metres wide x 50-150 metres in length). Refer to Attachment 1.  The typical layout of a construction ROW is shown in Figure 7 below.  Standard ROW  **Figure 7 Typical construction ROW**  Approximately 18 kilometres of the Project will be located within two existing APA easements which have been subject to previous disturbance. The need for additional construction ROW beyond the existing easement in these areas will be limited to between 5m and 15m depending on the specific location.  The width of the construction ROW may be reduced in areas such as sensitive environments and/or watercourses to minimise disturbance to these features.  In some cases, due to the presence of areas of high ecological significance or other constraints, APA may utilise alternate construction techniques, such as Horizontal Directional Drilling (HDD) or boring, which will minimise construction disturbance within the area of the alternate method. The potential to utilise these methods of construction will be subject to suitable geotechnical conditions being present. The use of alternate construction techniques will be determined during detailed design, however will generally be used in the following situations:   * HDD – major freeways and major watercourses. * Horizontal Laser bore (pipe jacking) – all rail crossings. * Horizontal Laser bore (special crossing) – (most likely) arterial roads. * Open cut – future roads, minor roads and creek/drain crossings.   The construction ROW, all temporary facilities, temporary access tracks and extra work areas will be progressively decommissioned and the land will be reinstated and rehabilitated on completion of the construction phase. Following construction of the pipeline, landowners will be able to resume use of these areas of land.  Pipeline construction activities will occur in the following sequence:   * Surveying: Preliminary survey works will be undertaken to mark the extent of the construction footprint. Markers will be placed along the alignment to identify the pipeline centerline, the boundaries of the ROW, any additional work spaces and access roads, if required. * Site establishment: Preliminary activities will be undertaken to facilitate the construction of the pipeline, including but not limited to, establishment of a site depot, proving of existing third party assets, installation of temporary gateways at fence crossings and relocation of any infrastructure within the ROW. * Clear and grade: Clearing and grading of the ROW is undertaken to provide a safe and efficient area for construction activities. Clearing will be required to remove trees, shrubs and groundcover vegetation. Graders, bulldozers and excavators are generally used to clear and level the ROW.   Cleared vegetation will be stockpiled on one or both sides of the ROW. Breaks will be left in stockpiled vegetation to allow continued access for stock, fence lines, tracks and drainage lines and continued access for stock.  Temporary access tracks over watercourses and access points to local roads will be constructed during the clear and grade phase.   * Pipe stringing and bending: Stringing involves distributing pipe segments along the ROW in preparation for welding. Where required, pipe lengths will be bent using a hydraulic bending machine to match changes in either elevation or direction of the alignment. * Welding: Pipe segments will be welded in strings. All welding is tested to ensure quality. The areas of the weld are cleaned and pipe joints are coated to reduce the possibility of corrosion. * Trenching: Specialised trenching machines and excavators will be used to excavate the trench to a depth of approximately 1800 millimeters and approximate width of 800 millimeters. Spoil generated during trench excavation will be stockpiled separate from vegetation and topsoil stockpiled earlier in the construction program.   Rock breaking processes such as the use of rock saws/hammers and/or blasting may be required to excavate the trench in areas of rock.   * Lowering and Backfilling: The pipe will be lowered into the trench with suitable bedding material. The trench is backfilled with the previously excavated subsoil material. Care is taken to maintain separation between topsoil and subsoil during this process. The subsoils are compacted to limit settlement of the trench through the operational life of the pipeline. * Horizontal Directional Drilling (HDD): Drilling is conducted by a specific HDD rig, operated by a specialist contractor. The size of the HDD rig and its associated footprint will depend upon the nature of the subsurface geology and the length of the section to be drilled. * Horizontal boring: Horizontal boring involves excavation of pits either side of the obstacle. The boring machine is located within the entry pit, which uses a hydraulic ram to jack the pipe section, behind a cutting head, in a straight line through the ground to the receiving pit. * Testing and commissioning: The pipeline will be pressure tested (in accordance with AS/NZS 2885.5 Pipelines – Gas and liquid petroleum Part 5: Field pressure testing (AS/NZS 2885.5)) prior to commissioning to ensure that the pipeline passes strength and leak tests. This is done through a process called hydrostatic testing whereby sections of the pipeline (test sections) are filled with water and then pressurised. The pipeline will be commissioned following completion of hydrostatic testing. * Rehabilitation: Rehabilitation of the construction footprint will be undertaken in accordance with best practice for pipeline construction with the view to returning land to its previous use within a reasonable timeframes. Key activities will include:   + Re-establishing topsoil cover.   + Reinstating roadways and road reserves in accordance with the requirements of local councils.   + Reinstating natural drainage patterns.   + Application of seed, where appropriate.   + Installing any erosion control measures in prone areas.   + Reinstating waterways to meeting Catchment Management Authority requirements.   Figure 8 below summaries the pipeline construction sequence described above.    **Figure 8 Pipeline construction sequence**  In areas of constraint, such as major waterways, sites of ecological significance, third party services and major transport corridors, APA will consider alternate trenchless construction methods such as HDD and boring subject to geological conditions. These construction methods avoid impacts to the surface of the land and physical features that would otherwise result in significant disturbance and disruption to these features.  The HDD construction methodology will require the excavation of entry and exit pits, typically an approximate bell hole of 3m x 3m x 3m. As part of this process, a bore hole is drilled below the invert of the constraint being crossed from one side to the other and the pipe pulled back through the bore hole. A typical HDD work area set up and layout is shown in Figure 9 below.    **Figure 9 Typical HDD site setup**  The methodology for shallow horizontal boring (referred to as thrust boring or micro-tunnelling) involves excavation of a horizontal bore hole for installation of a pipeline beneath sensitive surface features, roads and underground services. Bell holes are excavated on both sides of the sensitive feature to the depth of the adjacent trench and graded to match the proposed slope of the pipeline and a boring machine operates within this bell hole to tunnel under the relevant constraint. A typical set up for a thrust bored crossing is shown in Figure 10 below.    **Figure 10 Typical thrust bore site setup (APGA, 2017)**  **Wollert compressor station upgrade**  The following describes the construction methodology specific to the installation of the additional Solar Centaur compressor unit:   * Surveying: Preliminary survey works will be undertaken to mark the extent of the construction footprint. * Site establishment: Preliminary activities will be undertaken to facilitate the construction of the compressor, including but not limited to establishment of a site depot, proving of any existing assets, installation of any temporary roads within the APA site. * Bulk Earthworks: Will include excavation and removal of existing soil material or rock from the construction footprint. * Slab Construction: Excavations will be undertaken to cut into the existing surface material to facilitate construction of a concrete slab and footings to provide a firm base for the compressor. * Compressor: Various components of the compressor are assembled offsite. When delivered to site the various components are assembled together onsite. Cranes are used to lift the compressor into place with all connecting pipework fitted. * Hydrostatic testing and commissioning: The pipeline will be pressure tested (in accordance with AS/NZS 2885.5 or applicable station piping standard) prior to commissioning to ensure that the pipework passes strength and leak tests. This is done through a process called hydrostatic testing whereby sections of the pipeline (test sections) are filled with water and then pressurised. * Site Completion & fencing: A hardstand area will be established around the compressor site. Installation of permanent fencing will be required around the facility to maintain ongoing site security. |
| **Key operational activities:** |
| **Pipeline and aboveground facilities**  Once commissioned, the pipeline will be owned and maintained by APA.  The operational footprint will be delineated by an easement, generally 20m wide.  The pipeline will be used to transport gas, under high pressure, between the Plumpton Regulating Station and Wollert Compressor Station.  The pipeline will be buried for its entire length and limited on ground activities will be required to operate and maintain the pipeline. A routine inspection and maintenance program will be implemented during pipeline operation.  Inspection of the easement for issues such as erosion, weeds, subsidence, revegetation (see rehabilitation section above) and unauthorised third party activity will be undertaken on a regular basis by ground patrols. Ground patrols of the easement will be generally undertaken by travelling along accessible sections of the easement in light vehicles.  Ongoing activities to maintain pipeline integrity will include MLV inspection and maintenance, CP system surveys and scheduled internal pipeline inspections.  Monitoring of MLVs will typically occur monthly, or more frequently where required.  Inspection of the CP system will typically be undertaken annually in accordance with AS2832.  Regular contact will be maintained with landholders of all properties traversed by the pipeline during the pipeline operation, in accordance with the requirements of AS2885.3 Pipelines – Gas and liquid petroleum Part 3: Operation and maintenance.  **Wollert compressor station**  The existing Wollert Compressor site is owned and maintained by APA. Ongoing inspection and maintenance activities are undertaken to ensure all equipment is maintained. AEMO operate the facility for the distribution of gas in Victoria under a Service Envelope Agreement (SEA).  An Environment Protection Authority (EPA) Works Approval and licence will be required for the Wollert compressor station as a result of the new compressor unit proposed as part of the Project. Applicable licence conditions will form part of the ongoing operating requirements for the compressor station site. |
| **Key decommissioning activities** (if applicable): |
| **Pipeline and aboveground facilities**  The pipeline is expected to have a physical life of at least 60 years. When required, decommissioning of the pipeline will be undertaken in accordance with the regulatory requirements of the day.  Currently, the Pipelines Act requires the preparation of a decommissioning 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 with an inert gas (‘mothballing’).  The cathodic protection system however, would be retained in perpetuity to maintain the integrity of the pipeline. Removal of the pipeline would result in significant disturbance and environmental impacts and is therefore not preferred.  Decommissioning of the pipeline would result in small scale disturbance and environmental impacts. Upon decommissioning, APA would remain responsible for addressing any subsidence, which may occur above the pipeline. It is anticipated that relinquishment of the applicable Pipeline Licence (and associated easement) would not be possible until such time as any issues are resolved.  **Wollert compressor station**The existing Wollert compressor station contributes to the ongoing supply of gas within Victoria. When required, decommissioning of the facility will be undertaken in accordance with the regulatory requirements of the day. |
| **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 stages and components; the concept design for the overall project; and the intended scheduling of the design and development of project stages. |
| **Is the project related to any other past, current or mooted proposals in the region?** |
| **🗙** No 🗙Yes If yes, please identify related proposals. |

### 4. Project alternatives

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| **Brief description of key alternatives considered to date** (e.g. locational, scale or design alternatives. If relevant, attach A4/A3 plans): |
| **Do Nothing Option**  Without the Project being delivered, AEMO[[2]](#footnote-3) has forecast that Victoria may face natural gas shortages from winter 2021. Accordingly, the Project is considered essential to ensuring the future security of Victoria’s gas supply and a ‘do nothing’ scenario is not considered a viable option.  **Route Alternatives**  In developing route options for assessment, APA undertook detailed consideration of alternative ways to meet the purpose of the proposed pipeline. This process identified the proposed connection points at Plumpton and Wollert as the most beneficial locations from which to provide a new connection, due to the capacity of adjoining pipelines and the need for operational flexibility.  APA undertook a comprehensive route selection process, assessing possible alignments for the project through a multi-criteria assessment aligning with the objectives of the Pipelines Act.  Two of the six objectives of the Pipelines Act specifically relate to the minimisation of social and environmental impacts:   * To protect the public from environmental, health and safety risks resulting from the construction and operation of pipelines. * To ensure that pipelines are constructed and operated in a way that minimises adverse environmental impacts and has regard for the need for sustainable development.   The initial route selection process and key considerations are detailed in APA Route Options Report – Western Outer Ring Main Project, March 2019 (Attachment 3). This report has been available on APA’s project website since the public launch of the project.  The route selection process resulted in the selection of a preferred route option which was adopted as the preliminary pipeline alignment (PPA), to be investigated in greater detail and refined based on desktop assessments, feedback from landowners and on-ground assessments.  Since adopting the PPA, APA has continued a process of optimisation and review through consultation and engagement with relevant stakeholders and owners and occupiers of land. This refinement process has resulted in a number of alignment revisions, to avoid and minimise potential impacts to the environment and social values along the route.  The criteria applied to the route selection process included the following (in no particular order of preference):   * Terrain complexity and difficulty. * Extent of areas of environmental sensitivity (e.g. flora, fauna and waterways). * Extent of areas of conservation and nature reserves. * Pipeline route length. * The number of land parcels and landowners. * Extent of areas of cultural heritage significance. * Impacts to operation of the transport network. * Co-existence challenges or opportunities in respect of other utilities/assets. * Population density levels, including proximity to residential areas. * Accessibility for pipeline construction and operation. * Use of existing APA pipeline easement corridors. * Termination and connection points. |
| **Brief description of key alternatives to be further investigated** (if known)**:** |
| APA is undertaking ongoing engagement with stakeholders and landowners and occupiers of land to refine the pipeline route based on information provided about the use of their property management, environment considerations, existing improvements and future land use plans.  Any future revisions to the pipeline route are expected to be localised and minor and will be assessed for potential environmental or other impacts before being adopted. |

### 5. Proposed exclusions

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| **Statement of reasons for the proposed exclusion of any ancillary activities or further project stages from the scope of the project for assessment:** |
| No ancillary activities or further project stages have been excluded from the scope of this project, although the activities below are currently progressing:   * Cadastral and Centreline survey. * Landwoner access and easement negotations . * Service Proving. * Geotechnical. |

### 6. Project implementation

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| **Implementing organisation** (ultimately responsible for project, i.e. not contractor)**:** |
| APA VTS Australia (Operations) Pty Limited |
| **Implementation timeframe:**  The delivery timeframe of the Project has been developed to see the pipeline operational by early July, to meet peak demand from winter 2021.  The current proposed timeline for the delivery of the construction and operation of the Project is provided in Table 1. The timeframes are indicative only and subject to the successful completion of the regulatory approvals program, obtaining access to land and contractual arrangements.  **Table 1 Indicative implementation timeline**   |  |  | | --- | --- | | **Timeframe** | **Project delivery milestones** | | October 2020 – June 2021 | Pipeline Construction | | October 2020 – June 2021 | Wollert Compressor Station - Construction of additional compressor and associated valves, fittings and pipework. | | Early July 2021 | Project Operational – Gas ON | |
| Should APA complete the regulatory approvals program earlier, APA may elect to commence earlier construction of the Project in order to ensure that the Project is in place sufficiently early to meet forecast demand. |
| **Proposed staging** (if applicable): |
| Not applicable. |

### 7. Description of proposed site or area of investigation

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| **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).  **Study Area**  The proposed pipeline is to be constructed between APA’s existing regulating station in Plumpton (approximately 38 kilometres west of Melbourne’s CBD) and APA’s existing compressor station in Wollert (approximately 26 kilometres north east of Melbourne’s CBD). A Study Area has been identified between these two locations within which the pipeline is to be constructed (refer Attachment 1a).  The Study Area is generally a 100metre wide corridor covering the proposed pipeline alignment between KP 0 – KP50.7. The Study Area at the Wollert Compressor Station accommodates a broader footprint required for upgrade works as part of the project.  The Study Area is wider than the final disturbance footprint that will be required to construct and operate the pipeline as flexibility in the determination of the final alignment and disturbance footprint is required. Desktop assessments have documented the environmental features and key values within and surrounding the Study Area to ensure that the final pipeline alignment can be revised further to either avoid, where possible, or minimise impacts. The locations the Study Area traverses are generally described in section 2 above (project location).  **Preliminary Pipeline Alignment**  The Preliminary Pipeline Alignment (PPA) was used for the purpose of conducting the desktop impact assessment (refer Attachments 1b and 1c). The PPA sits wholly within the Study Area and includes the Wollert compressor site. The PPA comprises the alignment of the pipeline itself as well as the construction and operational footprints. The PPA has been refined based on landowner consultation and desktop environmental studies completed to date.  The PPA may be subject to further refinement in response to consultation with landowners or other stakeholders during the detailed design phase.  Due to existing constraints the likelihood for PPA refinements to occur in the following sections is low:   * Approximately 18 kilometres of the PPA is located within two existing APA easements;  KP 0 – 9 comprising the existing Sunbury transmission pipeline, and  KP 42 – 50.7 comprising the existing VNI pipeline.  The PPA will remain fixed within these sections. * Between KP 28 – 42 (approximately 14 kilometres) the PPA is aligned with the OMR PAO and several Precinct Structure Plan (PSP) boundaries, where limited opportunity for PPA refinement is available. |
| **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): |
| The Study Area has the following key features:  Topography / Landform  The topography is typically flat to gently undulating.  The land along the Study Area generally gently rises from Plumpton (RL 101.2m AHD at KP 0) to the northernmost point of the pipeline at Kalkallo at an approximate elevation of RL 270 m AHD at KP 41.5, then gently descends to approximately RL 210 m AHD at the pipeline connection location at Wollert (KP 50.7).  Significant low level points occur at valley crossings at Jacksons Creek (KP 13.8) and Deep Creek (KP 17.1) with approximate levels at the creek crossing points of RL 120 m AHD and RL 100 m AHD respectively.  The sides of the valleys of Jacksons Creek and Deep Creek are relatively steep compared to the surrounding plains.  Vegetation cover  Vegetation comprises native and non-native vegetation including remnant and adventive native vegetation, planted native vegetation and introduced non-native vegetation.  The Study Area is located within the Victorian Volcanic Plain Bioregion and supports native vegetation and habitat in the form of woodland, grassland, wetland and riparian vegetation with a number of known waterways and dams.  The majority of the Study Area has experienced some level of disturbance due to historical farming (predominantly cropping and grazing) and urban development activities.  Native canopy trees are likely to range in size from large old hollow-bearing specimens, which provide important local habitat, to small trees in areas of dense regrowth. Planted native and indigenous trees and shrubs are also likely to occur along roadsides and river banks.  Geology / soils  The geology underlying the Study Area is predominantly Quaternary aged Newer Volcanics (‘Neo’ or ‘Neo1’ and ‘Neo2’). The volcanic materials were typically formed as a series of lava flows, typically originating from eruption centres to the north. The lava flows covered the previous terrain and created relatively flat plains.  The volcanic plains have been dissected by watercourses since their formation, with the regional drainage pattern generally running from north to south. Some of the watercourses have incised through the Newer Volcanics and into the underlying geology. Recent deposition of alluvial and colluvial materials has also occurred in the watercourse valleys.  Waterways and wetlands  The Study Area spans three main catchments: Werribee River, Maribyrnong River and Yarra River. No watercourses are crossed by the Study Area in the Werribee catchment.  There are 7 watercourses crossed in the Maribyrnong catchment and 14 in the Yarra catchment.  The Study Area intersects 5 named watercourse crossings, including Tame Street Drain, Jacksons Creek (KP 13-14), Deep Creek (KP 17), Kalkallo Creek (KP 34-35)and Merri Creek (KP 42-43). A series of wetlands mapped in the Victorian Wetlands Inventory are intersected around KP 44 - 45. |
| **Site area** (if known): See below. |
| **Route length** (for linear infrastructure): See below. |
| The length of the Study Area and PPA is approximately 50 kilometres.  The width of the PPA includes the construction ROW, which is generally 30 metres wide, as well as the additional space required in certain sections to accommodate truck turnarounds and material storage. The operational easement is generally 20 metres in width.  The width of the Study Area is larger than the PPA as it has been based on a 50 metre buffer being applied on either side of the PPA. The PPA may be subject to further refinement in response to construction with landowners or during the detailed design phase.  The total footprint of the Study Area and PPA are shown in Table 2.  **Table 2 Study Area and PPA footprint**   |  |  | | --- | --- | | **Description** | **Area (hectares)** | | Study Area | 705.73 | | PPA construction footprint (construction ROW, including truck turnarounds and material storage areas + Wollert compressor site) | 164.94 | | PPA operational footprint (operational easement + Wollert compressor site)  (Note: operational easement wholly contained within the construction ROW) | 106.19 |   Approximately 18 kilometres of the PPA is located within two existing APA easements which have been subject to previous disturbance. The existing easements have the following footprints which make up a total of 44.95 hectares of the PPA:   * Sunbury pipeline easement (KP 0 – 9): 18.28 hectares. * VNI pipeline easement (KP 42 – 50.7): 26.67 hectares. |
| **Current land use and development:**  The Study Area traverses rural and rural residential land (approximately 22 kilometres), urban growth zone land (approximately 25 kilometres) and existing urban areas (approximately 3 kilometres).  The Study Area intersects seven PSP areas and is adjacent to two PSP areas designated within Melbourne’s Urban Growth Boundary.  The areas where the pipeline is located within the approved MSA is between:   * KP 0 – KP 3.2. * KP 28.2 – KP 50.7.   In several locations the Study Area crosses existing railway and road infrastructure as well as natural features such as creeks and secondary watercourses. The Study Area also intersects the OMR PAO.  There is a significant amount of construction activity taking place within and surrounding the Study Area, primarily in the designated urban growth areas. The conditions within and surrounding the Study Area are rapidly changing due to urban development.  Significant construction activities associated with urban development will continue to occur within at least half of the Study Area for the life of the construction phase (e.g. until mid-2021) and during the operational phase of the Project (e.g. from mid-2021).  A detailed description of the land use and development within the Study Area as well as the local setting is provided in Table 3 as part of the following section. |
| **Description of local setting** (e.g. adjoining land uses, road access, infrastructure, proximity to residences & urban centres):  Table 3 provides a detailed description of the Study Area and the local setting. This should be read in conjunction with Attachments 1a and 1b.  **Table 3 Current land use and development within the Study Area**   |  |  | | --- | --- | | **KP** | **Description** | | **KP 0 – 3.2**  **(within** approved MSA area) | The Study Area follows APA’s existing Sunbury pipeline easement and is wholly located within the Plumpton PSP. This PSP was completed and gazetted in February 2019. This is within the MSA approved area. Much of the land use within this section remains grazing or cropping, however civil works for residential subdivision have begun in parts. Two existing roads are crossed, including Beattys Road (KP 2.4) and Melton Highway (KP 3.2). | | **KP 3.2 – 9** | The Study Area continues along the Sunbury pipeline easement until Calder Freeway (KP 9). The land is not within a designated PSP and is currently used for cropping and grazing. Three roads and one railway is crossed, including Holden Road (KP 6.5), Sunbury railway line (KP 8.3), Calder Freeway (KP 8.6) and Dillon Court (KP 8.8).  The Study Area intersects with the OMR PAO at KP 7.5 and KP 9. | | **KP 9 – 15** | The Study area traverses the suburb of Diggers Rest, which is characterised by detached dwellings on rural residential lots. Jacksons Creek is crossed (KP 13.7). Four roads are crossed, including Duncans Lane (KP 9.7), Morefield Court (KP 10.8), Bulla-Diggers Rest Road (KP 11.2) and Sunbury Road (KP 14.9).  The Study Area runs alongside the western edge of the OMR PAO between KP 9.8 and KP 12. Several dwellings / outbuildings are located within the Study Area at KP 9.7, 11.2 and 14.8. | | **KP 15 - 28** | The Study Area traverses rural and rural residential areas within Oaklands Junction, Yuroke and Mickleham. No land within this section is designated within a PSP. Deep Creek is crossed at KP 17.1. Six roads are crossed, including Wildwood Road (KP 17.4), St Johns Road (KP 19.3), Oaklands Road (KP 22.2), Craigieburn Road (KP 22.6), Mt Ridley Road (KP 26.3), and Mickleham Road (KP 27.9). The centre of Parkland Crescent is traversed between (KP 26.3 and 26.9).  The Study Area runs alongside the western edge of the OMR PAO from KP 19.5 to KP 20.6 before crossing it at KP 20.6 and continuing alongside the eastern edge until KP 28. Two dwellings are located within the Study Area at KP 19.4 and KP 26.7. | | **KP 28 – 28.2** | The Study Area traverses through the Lindum Vale (Mt Ridley West) PSP. The PSP was approved in July 2019 and the land remains rural with scattered detached dwellings present.  The Study Area continues alongside the eastern edge of the OMR PAO. One dwelling is located within the Study Area at KP 28.1. | | **KP 28.2 – 32.9 (within** approved MSA area) | The Study Area traverses in between the eastern edge of the OMR PAO and the western edge of the Merrifield West PSP within the MSA approved. The PSP was approved in June 2012 and majority of residential development within the PSP is either constructed or currently under construction. Dwellings currently exist directly adjacent to the Study Area. Donnybrook Road is crossed at KP 30.1. | | **KP 32.9 – 36.8 (within** approved MSA area) | The Study Area enters the Merrifield North Employment PSP, continuing alongside the eastern edge of the OMR PAO before diverting towards Gunns Gully Road.  The Study Area follows the southern side of Gunns Gully Road between KP 34 – 36.8. The Merrifield North Employment PSP has not yet been prepared and the land remains undeveloped. Several smaller rural parcels with dwellings exist at the eastern end of Gunns Gully Road. | | **KP 36.8 – 40.8 (within** approved MSA area) | The Study Area crosses the Hume Freeway and OMR PAO at KP 36.8 before joining the western edge of the Lockerbie PSP. This PSP was completed and approved in June 2012, however no urban development has commenced within proximity to the Study Area.  The Study Area runs alongside the southern edge of the OMR PAO before crossing the Shepparton railway line at KP 40.8. One dwelling is located within the Study Area at KP 38. | | **KP 40.8 – 41.7 (within** approved MSA area) | The Study Area continues in between the southern edge of the OMR PAO and northern edge of the Donnybrook-Woodstock PSP. The PSP was completed and gazetted in November 2017. No urban development has commenced within proximity to the Study Area and the land remains farmland. | | **KP 41.7 – 50.7 (within** approved MSA area)**)** | The Study Area diverts south from the OMR PAO and enters APA’s existing VNI pipeline easement. The Study Area follows the easement until the Wollert compressor station site and traverses between the Donnybrook, Woodstock, Shenstone Park and Northern Quarries PSPs. Land adjacent to the Study Area remains largely undeveloped, however a small stage of urban development is underway at KP 46. Two roads are crossed, including Donnybrook Road (KP 46.6) and Summerhill Road (KP 49.8). The Study Area enters the Wollert compressor site at KP 50.7. | | **Wollert compressor station** | The Study Area comprises the entire Wollert compressor site, which is characterised by hardstand and operating equipment. The surrounding area is vacant land. | |
| **Planning context** (e.g. strategic planning, zoning & overlays, management plans): |
| **Planning Policy Framework**  The Planning Policy Framework (PPF) includes State and regional planning policies. Table 4 provides an overview of the PPF clauses relevant to the Project.  **Table 4 Planning Policy Framework overview**   |  |  |  | | --- | --- | --- | | **PPF** | **Clause** | **Policy Objective** | | **Settlement** | Clause 11.01-1S Settlement | To promote the sustainable growth and development of Victoria and deliver choice and opportunity for all Victorians through a network of settlements. Strategies supporting this objective include the convenient access of settlements to infrastructure. | | Clause 11.01-1R Green wedges – Metropolitan Melbourne | To protect the green wedges of Metropolitan Melbourne from inappropriate development. Strategies supporting this objective include protecting important productive agricultural areas and areas of environmental, landscape and scenic value. | | Clause 11.02-1S Supply of urban land | To ensure a sufficient supply of land for residential, commercial, retail, industrial, recreational, institutional and other community uses. Strategies supporting this objective include the ongoing provision of supporting infrastructure to support sustainable urban development. | | Clause 11.02-3S Sequencing of development | To manage the sequence of development in areas of growth so that services are available from early in the life of new communities. Strategies supporting this objective include improving the coordination and timing of infrastructure in areas of growth and supporting opportunities to co-locate facilities. | | **Environmental and Landscape Values** | Clause 12.01-1S Protection of biodiversity | To assist the protection and conservation of Victoria’s biodiversity. Strategies supporting this objective include using biodiversity information to identify important areas of biodiversity and avoiding impacts of land use and development on important areas of biodiversity. | | Clause 12.01-2S Native vegetation management | To ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation. Strategies supporting this objective include applying the three-step approach; avoid, minimise and offset. | | Clause 12.03-1S River corridors, waterways, lakes and wetlands | To protect and enhance river corridors, waterways, lakes and wetlands. Strategies supporting this objective include protecting the landscape values of water bodies, ensuring development responds to and respects the assets of water bodies and wetlands and ensuring development is sensitively designed to maintain significant views and landscapes. | | Clause 12.05-1S Environmentally sensitive areas | This policy specifically relates to Merri Creek, which is recognised as an environmentally sensitive area. The objective is to protect and conserve environmentally sensitive areas. Strategies supporting this objective include the protection of these areas from development that would diminish their environmental conservation or recreational values. | | Clause 12.05-2S Landscapes | To protect and enhance significant landscapes and open spaces that contribute to character, identity and sustainable environments. Strategies supporting this objective include ensuring development does not detract from the natural qualities of significant landscape areas. | | **Environmental Risks and Amenity** | Clause 13.04-1S Contaminated and potentially contaminated land | To ensure that potentially contaminated land is suitable for its intended future use and development, and that contaminated land is used safely. | | Clause 13.04-2S Erosion and landslip | To protect areas prone to erosion, landslip or other land degradation processes. Strategies supporting this objective include including inappropriate development in unstable areas. | | Clause 13.05-1S Noise abatement | To assist the control of noise effects on sensitive land uses. Strategies supporting this objective include ensuring that community amenity is not reduced by noise emissions through land use separation, as appropriate. | | Clause 13.06-1S Air quality management | To assist the protection and improvement of air quality. Strategies supporting this objective include ensuring, wherever possible, that there is suitable separation between land uses that reduce air amenity and sensitive land uses. | | Clause 13.07-1S Land use compatibility | To safeguard community amenity while facilitating appropriate commercial, industrial or other uses with potential off-site effects. Strategies supporting this objective include directing land uses to appropriate locations. | | Clause 13.07-2S Major hazard facilities | To minimise the potential for human and property exposure to risk from incidents that may occur at a major hazard facility. Strategies supporting this objective include ensuring major hazard facilities are sited and designed to minimise risk and applying appropriate threshold distances from sensitive land uses. | | **Natural Resource Management - Agriculture** | Clause 14.01-1S Protection of agricultural land | To protect the state’s agricultural base by preserving productive farmland. Strategies supporting this objective include balancing the potential off-site effects of a use or development proposal against the benefits of the proposal. | | Clause 14.01-1R Protection of agricultural land - Metropolitan Melbourne | The standalone strategy is to protect agricultural land in Metropolitan Melbourne’s green wedges and peri-urban areas to avoid the permanent loss of agricultural land in those locations. | | **Built Environment and Heritage** | Clause 15.03-1S Heritage conservation | To ensure the conservation of places of heritage significance. Strategies supporting this objective include encouraging development that respects places with identified heritage values. | | Clause 15.03-2S Aboriginal cultural heritage | To ensure the protection and conservation of places of Aboriginal cultural heritage significance. Strategies supporting this objective include providing for the protection and conservation of pre-contact and post-contact Aboriginal cultural places and ensuring that approval align with the recommendations of any relevant CHMP. | | **Infrastructure** | Clause 19.01-1S Energy supply | The objective is to facilitate appropriate development of energy supply infrastructure. Strategies supporting this objective include supporting the development of energy facilities in appropriate locations where they take advantage of existing infrastructure and provide benefits to industry and the community. | | Clause 19.01-3S Pipeline infrastructure | To ensure that gas, oil and other substances are safely delivered to users and to and from port terminals at minimal risk to people, other critical infrastructure and the environment. Strategies supporting this objective include planning for the development of pipeline infrastructure subject to the Pipelines Act and planning for new pipelines along routes with adequate buffers to residences, zoned residential land and other sensitive land uses and with minimal impacts on waterways, wetlands, flora and fauna, erosion prone areas and other environmentally sensitive sites. |   **Plan Melbourne 2017 – 2050: Metropolitan Planning Strategy**  Plan Melbourne (DELWP 2017) is a long-term plan that sets out visions, directions and policies to accommodate the future land use, infrastructure and transport planning of Melbourne. Table 5 provides an overview of Plan Melbourne directions and policies relevant to the Project.  **Table 5 Plan Melbourne directions and policies relevant to the Project**   |  |  |  | | --- | --- | --- | | **Direction** | **Policy** | **Policy objective** | | 2.1 - Manage the supply of new housing in the right locations to meet population growth and create a sustainable city | 2.1.3 - Plan for and define expected housing needs across Melbourne’s regions | To support long-term housing growth, choice and diversity of household types across Melbourne’s regions. To encourage new development to be directed to areas with appropriate infrastructure. | | 4.5 - Plan for Melbourne’s green wedges and peri-urban areas | 4.5.2 - Protect and enhance valued attributes of distinctive areas and landscapes | To protect the landscapes that have significant geographic and physical features within green wedges and peri-urban areas. The desired outcomes for green wedges and peri-urban areas are to protect and enhance, among others, environmental and biodiversity assets, significant views, agricultural land and sites of Aboriginal and post-European settlement. |   **Green Wedge Management Plans**  Green wedges are the non-urban areas of metropolitan Melbourne that lie outside the UGB. The Study Area traverses two green wedges, including the Western Plains North Green Wedge and the Sunbury Green Wedge.  The following overview is provided for each:  Western Plains North Green Wedge  The Study Area intersects the Western Plains North Green Wedge between approximately  KP 3 – 9. The green wedge is within the Melton LGA and a Green Wedge Management Plan (GWMP) has been developed. The GWMP (Melton 2014) identifies a number of important viewpoints which are visible from the public realm. Of relevance to the Study Area are the following:   * Views of Mount Kororoit from the surrounding roads. * Views from the south of Diggers Rest and along Holden Road to Mount Kororoit.   The GWMP recognises agricultural uses play an important role within the City of Melton. The land in this region is of reasonably high agricultural value as it is suited to a wide variety of commodities and therefore provides the greatest versatility to sustain multiple agricultural uses. However, the soil and the availability of water, as well as urban related pressures counter this, making traditional agricultural pursuits such as broad acre cropping and grazing difficult.  Sunbury Green Wedge  The Study Area intersects the Sunbury Green Wedge between approximately KP 11.5 – 28. The green wedge is within the Hume and Brimbank LGA’s, however the Study Area only intersects the portion within the Hume LGA. Hume City Council has completed Phase 1 of the GWMP covering their portion, however no details are publically available.  **Local Planning Policy Framework (LPPF)**  The LPPF outlines the local planning policies which are unique to each local government area. The following local policies are relevant to the Project given its location within the City of Melton, Hume City Council, Mitchell Shire Council and Whittlesea City Council:   * Melton:   + Clause 21.02 – Settlement   + Clause 21.03 – Environmental and Landscape Values   + Clause 21.04 – Environmental Risks   + Clause 21.05 – Natural Resource Management   + Clause 21.11 - Infrastructure * Hume:   + Clause 21.02 – Urban Structure and Settlement   + Clause 21.04 – Built Environment and Heritage   + Clause 21.07 – Transport Connectivity and Infrastructure   + Clause 21.08 – Natural Environment and Environmental Risks * Mitchell:   + Clause 21.02 – Settlement   + Clause 21.03 – Environmental and Landscape Values   + Clause 21.04 – Environmental Risks   + Clause 21.05 – Natural Resource Management   + Clause 21.06 – Built Environment and Heritage   + Clause 21.10 - Infrastructure * Whittlesea:   + Clause 21.04 – Settlement   + Clause 21.05 – Environmental and Landscape Values   + Clause 21.06 – Natural Resource Management   + Clause 21.07 – Environmental Risks   + Clause 21.08 – Built Environment and Heritage   + Clause 21.12 - Infrastructure   **Planning scheme zones and PSP land uses**  Zones provide an indication of the existing and future form of land use and development that may occur within the Study Area (refer Attachment 1d). Likewise, PSP’s which apply in many of the Urban Growth Zones provide even more detail in relation to the future form of development (refer Attachment 1e). Table 6 provides an overview of planning scheme zones intersected by the Study Area. Table 7 provides an overview of PSP land uses intersected by and adjoining the Study Area.  **Table 6 Planning scheme zones intersected by the Study Area**   |  |  |  | | --- | --- | --- | | **LGA** | **Zone** | **Location (approx. KP)** | | **Melton** | Urban Growth Zone - Schedule 11 (UGZ11) | Plumpton PSP (KP 0 – 3) | | Road Zone Category 1 (RDZ1) | Melton Highway (KP 3.3) and Calder Freeway (KP 8.8) | | Green Wedge Zone (GWZ) | Most rural areas between Melton Highway and Calder Freeway (KP 3.3 – 8.8) | | Public Use Zone – Service and Utility (PUZ1) | City West Water (KP 4.2) | | Public Use Zone 4 – Transport (PUZ4) | Sunbury railway corridor (KP 8.3) | | **Hume** | Green Wedge A Zone (GWAZ) | Diggers Rest rural residential area (KP 9 – 11.5) | | Green Wedge Zone (GWZ) | Rural and rural residential areas within Oaklands Junction, Yuroke and Mickleham (KP11.5 – 27.9) | | Road Zone – Category 1 (RDZ1) | Sunbury Road (KP 14.9), Mickleham Road (27.9) and Hume Freeway (KP36.8) | | Road Zone - Category 2 (RDZ2) | Oaklands Road (KP22.4) | | Farming Zone – Schedule 1 (FZ1) | Lindum Vale (Mt Ridley West) PSP (KP 28) | | Urban Growth Zone - Schedule 4 (UGZ4) | Merrifield West PSP (KP28 - 33.5) | | Public Use Zone - Service and Utility (PUZ1) | Western Water (KP33.5 - 35.2) | | Urban Growth Zone (UGZ) | Merrifield North Employment PSP (KP35.2 - 36.6) | | **Mitchell** | Urban Growth Zone - Schedule 5 (UGZ5) | Lockerbie PSP (KP 36.7 – 37) | | Urban Growth Zone - Schedule 1 (UGZ1) | Lockerbie PSP (KP 37 – 40.7) | | Public Use Zone – Transport (PUZ4) | Shepparton railway corridor (KP 40.7) | | Urban Growth Zone - Schedule 4 (UGZ4) | Donnybrook-Woodstock PSP (KP40.7 - 42.2) | | Rural Conservation Zone (RCZ) | Merri Creek (KP42.2 - 42.8) | | **Whittlesea** | Rural Conservation Zone (RCZ) | Merri Creek (KP42.2 - 42.8) and KP46 | | Urban Growth Zone - Schedule 6 (UGZ6) | Donnybrook-Woodstock PSP (KP 42.8 – 46.6) | | Road Zone Category 1 (RDZ1) | Donnybrook Road (KP46.6) | | Urban Growth Zone (UGZ) | Shenstone Park PSP (KP 46.6 – 47.7) | | Rural Conservation Zone - Schedule 1 (RCZ1) | Shenstone Park PSP (KP47.7 - 49.1) | | Special Use Zone - Schedule 4 (SUZ4) | Northern Quarries PSP (KP 49.3 – 49.8) | | Farming Zone (FZ) | Northern Quarries PSP (KP 49.3 – 50.7) | |
| **Table 7 PSP land uses which intersect and adjoin the Study Area**   |  |  |  | | --- | --- | --- | | **KP** | **PSP** | **Planned land use/s** | | **0 – 3.3** | **Plumpton** | **Residential and Local Open Space.**  **Education site (KP 0.5) approx. 125 metres from Study Area.**  **Education site (KP 1.7) approx. 270 metres from Study Area.**  **Community facility (KP 2) approx. 195 metres from Study Area.**  **Education site (KP 2.4) approx. 427 metres from Study Area.** | | **28** | **Lindum Vale (Mt Ridley West)** | **Residential.** | | **28 – 32.8** | **Merrifield West** | **Residential, Local Open Space and Drainage.**  **Education site (KP 29.1) approx. 360 metres from Study Area.**  **Education site (KP 31) approx. 290 metres from Study Area.** | | **32.8 – 36.8** | **Merrifield North Employment** | **Not yet planned.** | | **36.8 – 40.8** | **Lockerbie** | **Residential and Local Open Space.** | | **40.8 – 46.7** | **Donnybrook-Woodstock (note: the two areas have been considered under the same PSP)** | **Residential, Local Open Space, Drainage and Municipal.**  **Education site (KP 45.6) approx. 320 metres from Study Area.** | | **46.7 – 48.5** | **Shenstone Park** | **Not yet planned.** | | **48.5 – 50.7** | **Northern Quarries** | **Not yet planned.** |   Overlays control the form of development which can occur. Overlays can be indicative of particular characteristics or environmental values of an area (refer Attachment 1f). Overlays intersected by the Study Area are identified in Table 8.  **Table 8 Planning scheme overlays intersected by the Study Area**   |  |  |  | | --- | --- | --- | | **LGA** | **Overlay** | **Location (approx. KP)** | | **Melton** | Environmental Significance Overlay Schedule 1 (ESO1) - Remnant woodlands, open forests and grasslands | KP 8.3 (Sunbury railway corridor). | | Heritage Overlay (HO) | KP 3.3 (HO55 – House) | | **Hume** | Environmental Significance Overlay Schedule 1 (ESO1) - Rural waterways and environs | KP 13.5 - 15 (Jacksons Creek) and KP 16.3 - 18.1 (Deep Creek). | | Heritage Overlay (HO) | KP 21.4 (HO 273 – Warlaby) | | Land Subject to Inundation Overlay (LSIO) | KP 33.6 – 35.3 | | **Mitchell** | Vegetation Protection Overlay Schedule 2 (VPO2) – Freeway Environs Protection | KP 36.9 Hume Freeway | | Environmental Significance Overlay Schedule 6 (ESO6) - Urban conservation area | KP 42.2 - KP 42.4 (Merri Creek). | | **Whittlesea** | Environmental Significance Overlay Schedule 6 (ESO6)[[3]](#footnote-4) - Urban conservation area | KP 42.4 - KP 43.2 (Merri Creek) and KP 46. | | Environmental Significance Overlay Schedule 4 (ESO4)[[4]](#footnote-5) - Rural conservation area | KP 46 and KP 48 – 49. | |
| **Local government area(s):**  Table 9 provides an overview of the local government areas intersected by the Study Area:  **Table 9 Local government areas intersected by the Study Area**   |  |  | | --- | --- | | **Local Government Area** | **Location (approx. KP)** | | Melton City Council | KP 0 – 9 | | Hume City Council | KP 9 – 36.8 | | Mitchell City Council | KP 36.8 – 42.4 | | Whittlesea City Council | KP 42.4 – 50.7 | |
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### 8. Existing environment

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| **Overview of key environmental assets/sensitivities in project area and vicinity** (cf. general description of project site/study area under section 7)**:** |
| Section 7 (above) describes the Study Area and identifies key values and constraints that have been documented at a desktop level. Key environmental values traversed by the Study Area include:   * Significant native flora and fauna. * Social environments. * Aboriginal cultural heritage. * Waterways. * Historic heritage.   The key environmental values are discussed in detail below.  **Native vegetation**  Desktop investigation indicates the Study Area supports native vegetation and habitat in the form of woodland, grassland, wetland and riparian vegetation with a number of known waterways and dams.  The majority of the Study Area has experienced some level of disturbance due to historical farming (predominantly cropping and grazing) and urban development activities. Despite this history of disturbance, surveys in recent decades (particularly the assessments carried out under the Melbourne Strategic Assessment (MSA)) have shown that areas of native vegetation persist within the agricultural and pre-urbanised landscape.  Many areas currently used for grazing, areas along roadsides, and long uncultivated grassland areas still meet the definition of a patch of native vegetation and some agricultural areas not meeting the criteria to be defined as native vegetation can still have scattered native trees. Similarly, although the habitat is often degraded and fragmented, threatened plants and animals exist in these areas.  Further information about native vegetation is provided in section 12.  **Significant Flora**  A 5 kilometre buffered search of the EPBC Protected Matters Search Tool (PMST) and Victorian Biodiversity Atlas (VBA) indicates 45 nationally or state significant threatened flora species occur, or are predicted to occur, in the entire Study Area. This includes a total of 29 threatened flora species with a medium or higher likelihood of occuring in the entire Study Area.  Areas of potential habitat for significant flora include areas of Plains Grassland, Plains Grassy Woodland, and Grassy Woodland, uncultivated areas along roadsides and within paddocks, along drainage lines and wetlands and areas of Riparian Woodland, Plains Grassy Wetland and Grey Clay Drainage-line Aggregate.  Further information about significant flora is provided in section 12.  **Significant Fauna**  A 5 kilometre buffered search of the EPBC PMST and VBA indicates 58 nationally or state significant threatened fauna species occur, or are predicted to occur, in the entire Study Area. This includes a total of 24 threatened species with a medium or higher likelihood of occuring in the entire Study Area.  Areas of potential habitat for significant fauna include forest, grassland and grassy woodland habitat, pasture supporting spear grasses and wallaby grasses, grassland dominated by introduced tussock grasses, scattered indigenous and planted eucalypts, wetlands and farm dams, and aquatic habitat along Jacksons Creek, Deep Creek and Merri Creek.  A total of 20 migratory species have been recorded from or are predicted to occur within the Study Area. The majority of these species are unlikely to make significant use of or have significant habitat within the Study Area, with the exception of Latham’s Snipe which may occur in seasonal wetlands supporting tussock-grasses and rushes as well as vegetated farm dams.  Further information about significant fauna is provided in section 12.  **Social environments**  The Study Area traverses the urban fringe of metropolitan Melbourne where rural, peri-urban and urban land uses merge. Approximately half of the Study Area interacts with either existing or future planned urban land uses. The Study Area intersects seven PSP areas and is adjacent to two PSP areas (approximately 25 kilometres) as well as existing urban areas (approximately 3 kilometres).  A key sensitivity is the rapid progression of urban development that is occuring within the PSP areas (referenced within Table 3 and Table 7 above). The development of new residential land and construction of dwellings is well underway and will continue to occur for the life of the construction phase (e.g. until mid-2021) and during the operational phase of the Project (e.g. from mid-2021).  Further information about social environments is provided in section 15.  **Aboriginal cultural heritage**  Desktop investigation indicates areas within the Study Area to have the greatest potential for Aboriginal cultural heritage are stony rises, hills, escarpments, slopes and in close proximity to Jacksons Creek, Deep Creek, Kalkallo Creek and Merri Creek and associated natural tributaries and drainages, particularly at the creek crossing locations.  There appears to be a lack of archaeological places within much of the central extent of the Study Area, more specifically between KP 10 – 20 in close proximity to the creeks. The absence of Aboriginal places could be attributed to a lack of survey and investigation within these areas, and therefore, it is possible for more places to be present even though not yet recorded.  Further information about Aboriginal cultural heritage is provided in section 15.  **Waterways**  The Study Area spans three main catchments: Werribee River, Maribyrnong River and Yarra River. No watercourses are crossed by the Study Area in the Werribee catchment.   There are 7 watercourses crossed in the Maribyrnong catchment and 14 in the Yarra catchment.  The Study Area intersects 5 named watercourse crossings, including Tame Street Drain, Jacksons Creek, Deep Creek, Kalkallo Creek and Merri Creek.  Further information about waterways is provided in section 12.  **Historic heritage**  Desktop investigation indicates the Study Area intersects a total of four historical places (two local council heritage overlays and two listed on the Victorian Heritage Register / Archaeological Inventory).  Further information about historic heritage is provided in section 15. |

### 9. Land availability and control

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| **Is the proposal on, or partly on, Crown land?** |
| 🗙 No **🗙**Yes If yes, please provide details. |
| The PPA intersects Crown land, including land for conservation purposes, watercourses, road reserves and public transport. A summary of the Crown land intersected by the PPA is presented in Table 10.  **Table 10 Crown land intersected by the PPA**   |  |  | | --- | --- | | **Crown land** | **Approx. KP** | | Crown | 13.81, 13.82, 17.08 | | Road Reserve | 2.30, 3.15, 3.18, 6.40, 6.41, 8.68, 8.74, 9.73, 10.83, 11.20, 14.74, 17.33, 18.60, 18.61, 19.28, 22.23, 22.65, 22.66, 26.35, 26.37, 27.95, 30.16, 33.68, 36.77, 36.81, 36.86, 46.74, 49.95 | |
| **Current land tenure** (provide plan, if practicable): |
| The PPA primarily intersects freehold land, though some portions also traverse public land and Crown land. A summary of the land tenure intersected by the PPA is presented in Table 11.  **Table 11 Land tenure along the PPA**   |  |  |  |  | | --- | --- | --- | --- | | **Land** | **No. parcels** | **Area within (20m) Easement (ha)** | **Additional Temporary Construction Space (ha)** | | Freehold | 94 | 106.192 | 54.571 | | Crown | 28 (road reserve parcels) |  | 3.882 | | Public | 3 (DELWP creek crossing parcels) |  | 0.081 | |
| **Intended land tenure** (tenure over or access to project land): |
| APA propose to obtain an easement in gross for the construction and operation of the pipeline, which will be registered on the title of freehold land. The easement will afford APA certain rights in relation to accessing the land for the ongoing and safe operation of the pipeline. APA will seek to obtain an easement of generally 20 metres in width. This area is required to efficiently undertake operations and maintenance activities.  In relation to the upgrade works at Wollert Compressor Station for the Project, APA own this land in freehold.  The pipeline easement will include certain restrictions which can be undertaken on the activities within the easement area, including but not limited to preventing the erection of structures or excavation of land below a certain depth, planting of permanent vegetation that may impact the pipeline and line of sight between the pipeline warning markers and altering the existing contour of the land.  Other than these restrictions in relation to the safe operation of the pipeline, landowners have the right to use and enjoy the land and APA will reinstate the land to its former condition following pipeline construction.  Where the pipeline intersects Crown land, or public land and similar tenures, APA will seek the agreement of the relevant land manager. These agreements will be specific to the authority that manages land (e.g. boundary watercourses, roads) and in addition APA will seek the relevant Crown Land Minister’s consent for any Crown land affected by the pipeline, where required. |
| **Other interests in affected land** (e.g. easements, native title claims): |
| APA has received advice from DELWP regarding native title for the Project.  The alignment for the proposed works impact the following three Crown allotments (CA) where native title rights exist:   * CA 2002, Parish of Bulla Bulla (SPI: 2002\PP2258); - Jacksons Creek. * CA 2010, Parish of Bulla Bulla (SPI: 2010\PP2258). – Jacksons Creek. * CA 2029, Parish of Holden (SPI: 2029\PP2761); - Deep Creek.   CAs 2002, 2029 and 2010 are unreserved Crown land (creek beds and frontage).  The proposed pipeline has been determined to be a facility providing services to the general public.  Given this, the issue of the proposed licence (and all related works) is a valid future act under section 24KA of the *Native Title Act 1993* (NTA).  APA are currently proceeding through the process required under S24KA of the NTA.  The Study Area / PPA intersects and/or interfaces with the following infrastructure:   * Existing roads (at grade separated rail crossings). * Easements for overhead power transmission lines. * Drainage structures and overland flow paths. * Third-party utilities.   APA will liaise with the asset owners of relevant third-party crossings through the detailed design of the pipeline and will seek the technical design and works approvals to allow for the construction and operation of the pipeline.  Outer Metropolitan Ring – Public Acquisition Overlay (OMR PAO)  The proposed OMR is intended to create a 100 kilometre long high-speed transport link across Melbourne’s north and west. Following an amendment to the relevant planning schemes in August 2010 (VC68), the PAO reserves the right for construction of the future OMR. The selected route for the Western Outer Ring Main has been collocated with the OMR PAO in a number of locations.  APA has established a working group with VicRoads to work through and agree on the proposed interfaces between the two projects.  It is noted the PPA crosses the OMR PAO in multiple locations:   * KP 7.31 – 7.68; * KP 8.52 – 8.68; * KP 8.95 – 9.12; * KP 19.28 – 19.30; * KP 20.57 – 20.75; * KP 22.21 – 22.25; * KP 22.62 – 22.68; and * KP 36.61 – 37.0.   Sections of the PPA are located within the OMR PAO from KP 28.2 – 33.2 and KP 37 – 41.8.  The PPA remains outside the OMR PAO in all other areas. |

### 10. Required approvals

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| **State and Commonwealth approvals required for project components** (if known):  **Relationship with other environmental assessment and approvals**  The Study Area and PPA comprises of the following:   * KP 0 – 3.2 is within the approved MSA area. * KP 3.2 - 28.2 is outside the approved MSA area. * KP 28.2 – 50.7 is within the approved MSA area.   Land within the Study Area has been subject to a number of assessment and approval processes under the EPBC Act. Specifically, the following processes have been completed:   * An assessment was conducted under Part 10 of the EPBC Act for all land within the ‘Melbourne Strategic Assessment area’ (MSA area) in 2009. This assessment involved targeted surveys and detailed assessments of the potential impacts of urban development and associated infrastructure on matters of national environmental significance (MNES), resulting in the timestamped dataset. This dataset is currently relied on for many projects within the MSA area. * A Part 10 EPBC Act approval was granted on 5 September 2013 allowing actions resulting from urban development and infrastructure in parts of the MSA area.  These are referred to as the ‘**approved MSA areas’** and approximately 25.7 kilometres of the Project traverses these approved MSA areas within between KP 0 – 3.2 and KP 28.2 – 50.7. (Refer to Attachment 1a-1c and 1g). * The VNI pipeline has been previously constructed by APA in the eastern part of the Study area (located between approx. KP 42 – KP 50.7). The VNI project was an activity associated with urban development and previously subject to the EPBC - Part 10 approval.   While this MSA assessment was initiated under the EPBC Act, an integrated assessment process was conducted where matters of State ecological significance were also assessed.  The timestamped dataset, is used as the basis for assessing decisions under the *Planning and Environment Act 1987* (PE Act). For example, where PSPs have been approved in the MSA area there has been an amendment to clause 52.17 (Native vegetation) so that proponents can rely on approval conditions under the Part 10 EPBC approval.  In preparing this referral, APA has adopted a consistent approach. APA has relied on the timestamped dataset as the basis for quantifying the extent of the impact of the Project within the approved MSA areas – between KP 0- 3.2 & KP 28.2- 50.7.  APA in consultation with both DoEE and DELWP departments(MSA and Port Phillip Region team) have been advised that the approval decision made under Part 10 of the EPBC Act can be applied to sections of the project within the approved MSA areas.  Timestamped data (Melbourne Strategic Assessment)  The assessment (and baseline data gathered) through the ‘MSA process’ (e.g. as initiated under Part 10 of the EPBC Act) was an integrated assessment of Commonwealth and State ecological significance, including state significant species and native vegetation (as defined under State based assessment methodologies).  Surveys were undertaken in accordance with the DELWP Biodiversity Precinct Structure Planning Kit (DSE 2010) and EPBC Act guidelines and listing advice for MNES. Significant species recorded during the MSA surveys were input to State biodiversity databases.  The MSA surveys and assessments undertaken resulted in development of the Native Vegetation Time Stamping Dataset (timestamping dataset – 13 December, 2012) which provided a definitive view of native vegetation extent and condition within the Melbourne Urban Growth Boundary.  The timestamping dataset is based on an assessment of native vegetation using the Victorian habitat hectares method (Version 1.3) which is the current DELWP method for assessing native vegetation extent and condition for regulatory purposes.  The dataset was based on a combination of extensive on-ground site surveys and estimated data using the best available information (desktop assessments, modelling, expert opinion, and over the fence assessment) for those properties where access was not obtained.  Timestamp data has been used for the project within the MSA approved areas.  Section 1.7 of the Desktop Biodiversity Assessment, October 2019 (Attachment 4) contains more detail in relation to the methodology used to prepare the timestamped dataset. |
| **Commonwealth**  The Project is being referred concurrently with this referral to the Commonwealth Minister for the Environment under the EPBC Act for a decision on whether the Project is to be a ‘controlled action’ and requires further assessment and approval under the Act.  Following discussions with DoEE, APA will be submitting the EPBC referral for the areas of the project between KP 3.2 – 28.2. All other areas of the project between KP 0 -3.2 & KP 28.2 -50.7 will be covered under the Melbourne Strategic Assessment approvals under Part 10 EPBC Act. Refer to Attachment 1.  **State**  Other than the relevant overarching environmental approvals (described in Table 12), the primary approval for the Project is a pipeline licence, which is granted under Part 5 of the Pipelines Act. APA will need to meet all other requirements under the Pipelines Act.  These include obtaining the consent of the relevant Minister for works within Crown land (prior to issue of a pipeline licence), acceptance of a Construction Environment Management Plan (CEMP) prior to pipeline construction and approval to construct and operate the pipeline.  Section 85 of the Pipelines Act provides an exemption from the need to obtain planning approvals under the PE Act for the use or development of land or the doing or carrying out of any matter or thing for the purpose of the pipeline.  A summary of other key State environmental legislation that may apply to the Project is presented in Table 12.  **Table 12 Summary of State regulatory requirements**   |  |  |  | | --- | --- | --- | | **Legislation** | **Permit, Licence, Consent or Approval** | **Responsible Authority** | | *Aboriginal Heritage Act 2006* (AH Act) | Approval of (2) two x Cultural Heritage Management Plans which are currently under preparation. (KP 0 – 8 and KP 8 – 50) | Registered Aboriginal Parties (RAPs)  Aboriginal Victoria (AV) | | *Catchment and Land Protection Act 1994* | Discussion with the Port Phillip & Westernport Catchment Management Authority to understand management of noxious weeds and pest animals | Port Phillip & Westernport Catchment Management Authority | | *Country Fire Authority Act 1958* | Hot works Permit | Country Fire Authority (CFA) | | *Environment Protection Act 1970* (EP Act) | Works Approval for Wollert compressor site | Environment Protection Authority (EPA) | | *Fisheries Act 1995* | General permit | DELWP | | *Flora and Fauna Guarantee Act 1988* (FFG Act) | Permit to take protected flora from public land | DELWP | | *Heritage Act 2017* | Permit for works or alterations in relation to a registered place or object | Heritage Victoria | | *Local Government Act 1989* | Road Opening Permit Works permit for construction across or beneath roads | Relevant LGA | | *Rail Safety (Local Operations) Act 2006* | Works permit for construction across or beneath a railway | VicTrack | | *Road Management Act 2004* | Road Opening Permit  Permit to conduct works on or in a roadway, including a Traffic Management Plan | VicRoads | | *Water Act 1989* | Permit for Works on Waterways | Melbourne Water | | *Wildlife Act 1975* | Management Authorisation | DELWP | |
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| **Have any applications for approval been lodged?** |
| **🗙** No 🗙 Yes If yes, please provide details.  **EPBC Referral**  Referral of the Project to the Commonwealth Government under the EPBC Act has been undertaken in parallel with the formal submission of the EES Referral.   EPBC Ref. 2019/8569 - Western Outer Ring Main (WORM) – High pressure gas transmission pipeline from Plumpton to Wollert  As noted above, APA have also been advised that it can rely on the approval decision made under Part 10 of the EPBC Act in the approved MSA areas (KP 0- 3.2 & KP 28.2 -50.7).  **Works Approval**  An EPA works approval will be required for the Wollert Compressor Station against SEPP requirements. |
| **Approval agency consultation** (agencies with whom the proposal has been discussed): |
| Consultation has been undertaken with the following approval agencies:   * Aboriginal Victoria. * Commonwealth Department of Environment and Energy. * DELWP. * EPA. * Melbourne Water. * VicRoads. * VicTrack. * Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation (WWWCHAC). * Councils and Shires – Melton, Hume, Mitchell and Whittlesea. |
| **Other agencies consulted:** |
| * City West Water. * Yarra Valley Water.   No other approval agencies have been formally consulted except for the ones listed above. |

PART 2 POTENTIAL ENVIRONMENTAL EFFECTS

### 11. Potentially significant environmental effects

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| **Overview of potentially significant environmental effects** (identify key potential effects and comment on their significance and likelihood, as well as key uncertainties):  **Summary** |
| The most significant environmental effects of the Project are likely to be:   * Loss of native vegetation. * Impacts on flora and fauna. * Impacts on aboriginal cultural heritage values. * Amenity impacts, land use changes and general disturbance in urban growth areas (which are already undergoing significant transformation) during the construction phase.   These are summarised below in more detail, however a more detailed information on these potential effects and proposed mitigation measures are set out in parts 12 – 16 of this referral form.  In assessing the likely significant effects of the Project, a conservative approach has been adopted with using available desktop information.  **Impacts will be further avoided, minimised and mitigated**  It is expected that the impacts identified in this referral will be significantly reduced following:   * On-ground detailed surveys; * Detailed design; * Alignment refinement; * Development of detailed construction methodology and program; and * Implementation of the Environmental Management Framework (EMF).   The Project will be required to undertake the following:   * Under the Pipelines Act, APA must prepare an Environmental Management Plan (EMP), Operational Environment Management Plan (OEMP) and conduct community consultation in accordance with the consultation plan that has been approved by DELWP. * A Cultural Heritage Management Plan (CHMP) is required to address cultural heritage impacts. * A Works Approval is required under the EP Act for the Wollert compressor site as part of the Project. * An Environment Management Framework is included with this referral (Refer Attachment 11). The EMF establishes a risk based framework for the next phases of the Project. The EMF sets out environmental objectives for the Project (based on findings of the desktop assessments) and creates an integrated framework to guide the design, construction and operational phases of the Project.   **Summary of most significant impacts**  Loss of native vegetation  An estimated maximum area of 59.57 hectares of native vegetation may be impacted by the Project using desktop information, aerial photography and rapid field assessments.  A breakdown is provided in Table 13.   **Table 13 Summary of estimated native vegetation loss**   |  |  |  | | --- | --- | --- | | Within approved MSA areas  (KP 0 – 3.2 & 28.2 – 50.7) | Outside approved MSA areas  (KP 3.2 – 28.2) | Total (Project) | | 9.55 hectares | 50.02 hectares | 59.57 hectares |   This calculation is conservative and assumes that areas that appear to have been cultivated (but not recently) will be classified as “native vegetation” until further on ground surveys are carried out to verify presence.  The sections of the project between (KP 0- 3.2 & 28.2- 50.7) will be assessed as part of the ‘Melbourne Strategic Assessment’ (MSA) under Part 10 of the EPBC Act (refer to section 10 of this referral form for further detail). Where-ever possible, the PPA has been collocated with existing or proposed linear infrastructure corridors to minimise the impact on current and future land use and minimise cumulative environmental effects.  There are scattered trees within the Study Area. The PPA has considered avoidance of scattered trees (and can be further refined), however there is a potential that scattered trees will be lost as a result of the Project.  In line with the *Guidelines for the removal, destruction or lopping of native vegetation* (Guidelines), native vegetation losses will be avoided and minimised to the extent practicable.  The project will also implement a CEMP with specific project performance requirements and mitigation measures. Unavoidable impacts to native vegetation will include securing of offsets under the State Guidelines.  A desktop biodiversity assessment has been prepared by Biosis (refer Attachment 4).  Impacts on flora and fauna  There are a number of flora and fauna species which are predicted to occur within the overall Study Area which could be impacted by the Project, specifically:   * 19 EPBC Act listed flora species and 26 EPBC Act listed fauna species. * 45 FFG Act listed flora species and 32 FFG Act listed fauna species. * 42 flora and 58 fauna species on the DELWP Advisory list.   Of these flora and fauna species predicted to occur, there are 52 species have a medium or higher likelihood of occuring within the Study Area. Taking a precautionary approach, it is assumed that these species will be impacted by the Project, particularly during the construction phase, however the scale of the impact is not known.  Areas of potential habitat for significant flora include areas of Plains Grassland, Plains Grassy Woodland, and Grassy Woodland, uncultivated areas along roadsides and within paddocks, along drainage lines and wetlands and areas of Riparian Woodland, Plains Grassy Wetland and Grey Clay Drainage-line Aggregate.  Areas of potential habitat for significant fauna include forest, grassland and grassy woodland habitat, pasture supporting spear grasses and wallaby grasses, grassland dominated by introduced tussock grasses, scattered indigenous and planted eucalypts, wetlands and farm dams, and aquatic habitat along Jacksons Creek, Deep Creek and Merri Creek.  A total of 20 migratory species have been recorded from or are predicted to occur within the Study Area. The majority of these species are unlikely to make significant use of or have significant habitat within the Study Area, with the exception of Latham’s Snipe which may occur in seasonal wetlands supporting tussock-grasses and rushes as well as vegetated farm dams.  A desktop biodiversity assessment has been prepared by Biosis (refer Attachment 4).  Further targeted surveys need to be conducted to consider the presence of significant flora and fauna. The survey data will then be used to refine the route of the alignment, tailor the construction methodology and identify specific mitigation measures to avoid and minimise impacts.  Amenity impacts, land use changes and general disturbance in urban growth areas  The Study Area traverses the urban fringe of metropolitan Melbourne where rural, peri-urban and urban land uses merge. Approximately half of the Study Area intersects with either existing or future planned urban land uses. The Study Area intersects seven PSP areas and is adjacent to two PSP areas (approximately 25 kilometres) as well as existing urban areas (approximately 3 kilometres).  A key sensitivity is the rapid progression of urban development that is occuring within the PSP areas. During the construction phase, the Project could impact on the amenity of existing residential communities via noise, dust, vibration and general disturbance. The project will have localised and short term impacts on the communities in proximity to the pipeline corridor. To minimise this impact, works will occur within a defined construction corridor which connects into local roads.  The construction methodology and program will be tailored to minimise adverse amenity impacts to the extent practicable. Where-ever possible, the proposed pipeline has been collocated with existing or proposed linear infrastructure corridors to minimise the impact on current and future land use.  APA has taken into consideration the existing PSPs as part of the alignment route selection. For those PSPs yet to be prepared, APA will liase with the relevant planning authorities to ensure the presence of pipeline is taken into consideration.  In proposing to construct the pipeline APA are required to consider the Australian Standard AS2885 Pipelines—Gas and liquid petroleum. This Standard requires the location of proposed High Pressure Gas Pipelines to consider the current and foreseeable land use outcomes along the pipeline alignment.  APA considered reasonable foreseeability of urban development occuring, as follows:   * Mapped existing physical constraints of the land. * Existing Planning Policies relevant to the project. * Planning Principles for whether and where urban growth corridor might be expanded.   These principles relate to planning attributes, transport networks and the infrastructure required for new communities.  Refer to Attachment 6 for further information.  Aboriginal cultural heritage values  The Study Area contains a total of 26 previously recorded Aboriginal places, comprising 87 components, intersect with the Study Area. Of these places, 19 are located within the Study Area. There are a significant number of previously registered Low Density Artefact Distributions (LDADs) situated within the western extent of the Study Area, all located in an area of ploughed land, near Plumpton. There appears to be no consistent spatial patterns of the Aboriginal cultural heritage found in this area, and the artefacts were not located in close proximity to any watercourses.  There are also several scarred trees and an earth feature found within, or in close proximity to, the Study Area. The locations of most of the scarred trees appear to follow predictive patterns as they are located near watercourses, namely Merri Creek.  The Project could have a significant impact on these places, therefore mandatory CHMPs will be completed under the Aboriginal Heritage Act 2006.   As part of the assessment process, route refinement and specific mitigation measures will be identified and integrated into the design process. |

### 12. Native vegetation, flora and fauna

Native vegetation

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| **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) |
| A desktop biodiversity assessment has been prepared by Biosis (refer Attachment 4). The assessment investigated the potential native vegetation that may be impacted by the PPA.  Potential native vegetation has been mapped using a combination of sources, including:   * Review of databases (many of which are maintained by DELWP and DoEE). * Review of publically available reports (prepared by State government departments, Biosis and by other consultants for previous projects). * Aerial photo interpretation (undertaken by Biosis, 2019). * Rapid field assessments (undertaken by Biosis, 2019).   The Project consists of the following areas:   1. **Areas covered by MSA approvals (approx. KP 0 – 3.2 and KP 28.2 – 50.7)**   DELWP’s timestamped dataset is intended to be a definitive view (for the purposes of the MSA) of native vegetation extent, habitat and condition across Melbourne’s Growth Areas, Timestamped as at 13 December 2012.  The dataset was based on a combination of extensive on-ground site surveys and estimated (modelled) data. The timestamped dataset provides a highly accurate snap shot of native vegetation present within the MSA at the time it was collected, and in the context of current conditions, a reasonable estimate of contemporary native vegetation values present. This dataset forms part of the approvals issued under Part 10 of the EPBC Act.   1. **Areas not covered by MSA approvals (approx. KP 3.2 – 28.2)**   A number of data sources were reviewed to provide information on potential vegetation within this area, which includes:  Existing data (desktop assessment)  Existing datasets were reviewed to provide a likely indication of potential native vegetation within the Study Area.  Aerial photo interpretation (desktop assessment)  Aerial photos were reviewed along the PPA for areas outside of those approved under Part 10 of the EPBC Act (MSA approvals). The review identified additional areas of potential native vegetation beyond areas identified in existing datasets due to:   * Gaps in existing datasets (e.g. areas which had not previously been assessed on-ground). * The coarseness of existing modelled data. * Limitations in accurately modelling grassland and grassy woodland vegetation types due to difficulty in distinguishing between introduced and native grassland species using remote imagery. * The time since previous on-ground assessments were undertaken (e.g. Timestamping undertaken in 2012) due to the dynamic nature of vegetation within grassland and grassy woodland ecosystems.   Aerial photo interpretation was completed by senior botanists from Biosis with extensive experience in aerial photo interpretation of vegetation patterns in grassland and grassy woodland ecosystems.  Where aerial photo interpretation identified areas that were significantly disturbed due to infrastructure, construction activities (excavation, stockpiling, and development) or recent or regular cultivation, these areas were excluded.  Where there was evidence of previous but not recent cultivation (as evidence by furrow lines or cropping in older imagery) the areas were defined as native but annotated with ‘Previously Cultivated’. All areas where furrow lines or past cultivation were not apparent were assumed and annotated ‘Uncultivated’.  A precautionary approach was taken, and where there was uncertainty around the level of current or past disturbance, native vegetation was assumed present.  Rapid field assessment  Rapid field assessments were undertaken by senior ecologists (botanists and/or zoologists) from Biosis. The rapid field assessments were conducted on land parcels with the highest degree of uncertainty on potential for native vegetation (based on aerial photo interpretation) and where access was available.  The rapid field assessments involved mapping of areas of potential native vegetation and/or habitat for significant species. Any areas of potential native vegetation and habitat were mapped and a ‘Cultivated’, ‘Previously Cultivated’ or ‘Uncultivated’ status assigned.  The rapid assessment was not intended to provide fine scale mapping of native vegetation or habitat or of vegetation condition but to identify broad areas of potential native vegetation and habitat. Where native vegetation was identified and the cover was such that it could meet the thresholds required to classify as a patch of native vegetation, scattered tree or wetland under State guidelines (the Guidelines) or an ecological community based on FFG Act community listings or EPBC Act listing criteria, the area was mapped as potential native vegetation.  This rapid field assessment mapping includes small areas with a high cover of perennial non-native vegetation cover which are likely to be excluded from areas of potential native vegetation under more detailed assessments (e.g. a full assessment under the Guidelines and under FFG Act or EPBC Act listing criteria).  Much of the vegetation present had suffered from prolonged grazing during an extended dry period. Therefore, while the presence of native vegetation was made with a relatively high degree of confidence, the degraded nature of most sites means that some areas identified as native vegetation could support a significant cover of introduced species under more benign conditions.  Areas of mapped native vegetation identified during the rapid field assessments are therefore considered likely to represent an upper limit of the extent of native vegetation for those properties accessed. On ground assessment in late spring - summer will be required to map extent and condition of native vegetation. |
| **What is the maximum area of native vegetation that may need to be cleared?**  🗙 NYD Estimated area: Up to 59.57 hectares |
| The estimated vegetation clearance using existing modelled datasets, aerial photography and rapid field assessment techniques is 59.57 hectares, summaried in Table 14 below.  **Table 14 - Summary of extent of native vegetation EVCs within the PPA (based on the PNV mapping)**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | Project Area Description | Timestamped Data (ha) | Biosis Desktop Assessment Data (ha) # | Biosis Rapid Field Assessment Data (ha)\* | Total (ha) | | **Inside approved MSA areas**  **(KP 0 – 3.2 & 28.2 – 50.7)** | 9.55 | - | - | 9.55 | | **Outside approved MSA areas**  **(KP 3.2 – 28.2)** | - | 16.38 | 33.63 | 50.02 | | **TOTAL** |  |  |  | **59.57** |   **# Desktop Assessment Data** comprises of publically available datasets (including timestamped data) and aerial photography interpretation. Where aerial photography interpretation provided more accurate information over the above-mentioned datasets this has been adopted.  **\*** **Rapid field assessment** involved inspecting properties and mapping areas with potential to include native vegetation and/or habitat for significant species. These areas are considered likely to support an upper limiting value of potential native vegetation, which will require further seasonal surveys to refine.  Further field survey verification, pipeline route refinement, pipeline design and construction methodology will be used to minimise overall impacts and confirm final disturbance area.  Native trees  Native canopy trees have been previously recorded within the study area as both scattered trees and as trees within patches (Attachment 4 - Figure 11). Under the native vegetation regulations native canopy trees are classified as small or large depending on whether they meet the relevant EVC Benchmark diameter at breast height (DBH). EVC Benchmarks are available from <https://www.environment.vic.gov.au/biodiversity/bioregions-and-evc-benchmarks>.  Within the approved MSA area all native canopy trees have been mapped and are included in the DELWP Environment Mitigation Dataset.  An on-ground assessment will be required to confirm the presence and size of native canopy trees outside the MSA approved areas. |
| **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 assessment completed. If assessed, please list. |
| The PPA lies predominantly within the DELWP modelled Victorian Volcanic Plain (VVP) bioregion and extends slightly into the Central Victorian Uplands (CVU) bioregion at KP 17 and between KP 29 - 32. The bioregional boundaries shown in DELWP’s Victorian Bioregion (VBIOREG100) dataset were defined at a broad scale and are intended to be indicative only.  Based on previous on-ground assessments undertaken as part of the Time Stamping project and the rapid field surveys undertaken as part of this assessment, the areas shown on the bioregion maps within the CVU have been assigned to the VVP based on the vegetation, soil and geology observed. All vegetation is therefore classified according to the relevant VVP EVC.  Table 15 below identifies which EVCs may be affected by the PPA.  **Table 15 EVCs potentially affected by the PPA**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Ecological Vegetation Class** | **Timestamped Data (ha)** | **Biosis Desktop Assessment Data (ha)** | **Biosis Rapid Field Assessment Data (ha)** | **Total (ha)** | | **Inside MSA areas approved under Part 10 of the EPBC Act (KP 0 - 3.2 & 28.2 - 50.7)** | | | | | | (VVP\_0055) Plains Grassy Woodland | 5.69 | - | - | 5.69 | | (VVP\_0068) Creekline Grassy Woodland | - | - | - | - | | (VVP\_0125) Plains Grassy Wetland | 0.17 | - | - | 0.17 | | (VVP\_0132) Plains Grassland | 2.12 | - | - | 2.12 | | (VVP\_0641) Riparian Woodland | 0.06 | - | - | 0.06 | | (VVP\_0649) Stony Knoll Shrubland | 1.43 | - | - | 1.43 | | (VVP\_0654) Creekline Tussock Grassland | 0.08 | - | - | 0.08 | | **Sub-total** | **9.55** | - | - | **9.55** | | **Outside MSA areas approved under Part 10 of the EPBC Act (KP 3.2 – 28.2)** | | | | | | (VVP\_0055) Plains Grassy Woodland | - | 0.3 | 3.85 | 4.15 | | (VVP\_0068) Creekline Grassy Woodland | - | 0.14 | 0.08 | 0.22 | | (VVP\_0125) Plains Grassy Wetland | - | 0.46 | 0.04 | 0.5 | | (VVP\_0132) Plains Grassland | - | 15.21 | 29.57 | 44.79 | | (VVP\_0641) Riparian Woodland | - | 0.12 | 0.08 | 0.2 | | (VVP\_0649) Stony Knoll Shrubland | - | - | - | - | | (VVP\_0654) Creekline Tussock Grassland | - | 0.15 | 0.01 | 0.16 | | **Sub-total** | - | **16.38** | **33.63** | **50.02** | | **TOTAL** | | | | **59.57** | |
| **Have potential vegetation offsets been identified as yet?**  **🗙** NYD 🗙 Yes If yes, please briefly describe. |
| **Commonwealth offsets**  **Inside approved MSA Areas (KP 0 – 3.2 and KP 28.2 – 50.7)**  Where the project crosses the Biodiversity Conservation Strategy (BCS) area, native vegetation and habitat losses will be offset in accordance with the Habitat Compensation Obligations (HCOs) established by DELWP. This will include any unavoidable losses of vegetation and habitat within BCS Conservation Areas (CAs).  A Works in a Conservation Area (WICA) application will be submitted to the MSA team at DEWLP for assessment.  All biodiversity offset requirements under the MSA Program will be met through payment to DELWP prior to the commencement of the project.  **Outside approved MSA areas (KP 3.2 – 28.2)**  For unavoidable impacts to Matters of National Environmental Significance (MNES) outside of the area covered by the BCS (including the OMR) , offsets will be sourced and secured in accordance with the EPBC Act Environmental Offsets Policy (DSEWPaC 2012). Offsets will compensate for residual significant impacts on the MNES. These are impacts that remain after the implementation of avoidance, management and mitigation measures.  APA has committed to undertaking reasonable measures to avoid and mitigate impacts to MNES, but residual impacts are still likely to occur. Based on ecological investigations undertaken to date, residual significant impacts are likely for the unavoidable removal of:   * Natural Temperate Grassland of the Victorian Volcanic Plain (NGVVP), a critically endangered ecological community. * Habitat for Striped Legless Lizard Delma impar, a vulnerable species. * Habitat for Golden Sun Moth Synemon plana, a critically endangered species.   Other MNES for which the Project may have residual impacts are:   * Permanent removal of Grassy Eucalypt Woodland of the Victorian Volcanic Plain GEWVVP), a critically endangered ecological community. * Permanent removal of Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains (SHWTLP), a critically endangered ecological community. * Permanent removal of White Box-Yellow Box-Blakeley’s Red Gum Grassy Woodland and Derived Native Grassland (WBYBRGGW), a critically endangered ecological community. * Permanent removal of habitat for Growling Grass Frog Litoria raniformis, a vulnerable species. * Permanent removal of habitat for a number of EPBC listed plant species of grassland and grassy woodland.   Detailed survey and mapping will be required to confirm the presence / absence and define the extent and quality of these threatened ecological communities outside the approved MSA areas.  Offset suitability  Offsets sourced for unavoidable losses of MNES will:   * Be compensatory and deliver and overall conservation outcome that improve or maintain the viability of the MNES. * Be additional to what is already required by law, planning regulations or other programs that impose pre-existing management requirements. * To the greatest extent possible, tailored to the specific attribute of the environment or MNES that is impacted (e.g. foraging habitat should be offset with foraging habitat).   To be considered suitable, offsets must meet the following criteria (DSEWPaC, 2012):   * Deliver an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed action. * Be built around direct offsets but may include other compensatory measures. * Be in proportion to the level of statutory protection that applies to the protected matter. * Be of a size and scale proportionate to the residual impacts on the protected matter. * Effectively account for and manage the risks of the offset not succeeding. * Be additional to what is already required, determined by law or planning regulations or agreed to under other schemes or programs. * Be efficient, effective, timely, transparent, scientifically robust and reasonable. * Have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced.   Offset sites secured for the project will be assessed against each of these criteria to ensure they are compliant with the EPBC Environmental Offsets Policy.  Detailed ecological surveys of potential offset sites will be conducted to confirm the full extent and condition of MNES that are present, to determine specific management issues that need to be addressed and to ensure that future quality improvements are achievable at each site.  The EPBC Act Offsets Assessment Guide will be used to develop offset calculations and assumptions for potential offset sites. Offsets under the EPBC Environmental Offsets Policy can be combination of direct offsets and other compensatory measures, but at least 90 percent of the offset requirements must be met through direct offsets. The proposed offset sites are expected to meet 100 per cent of direct offset requirements for the residual significant impacts of the Project. Other compensatory offsets are therefore unlikely to be required. The direct offsets would be on private land and would be permanently secured for conservation purposes by way of an encumbrance on the property title. Performance of offset management obligations would be monitored annually over the first 10 years to demonstrate compliance.  All secured offset site(s) will have Offset Management Plans (OMPs) developed in accordance with DoEE requirements. Offset site(s) will be secured in perpetuity through one of the following mechanisms, all of which involve an encumbrance being registered on the title to the offset site:   * An agreement under section 69 of the Conservation, Forests and Lands Act 1987 (Vic), executed by the Secretary of the Victorian Government Department of Environment, Land, Water and Planning. * An agreement under section 173 of the Victorian Planning and Environment Act 1987 (Vic), executed by the relevant local government. * A covenant under section 3A of the Conservation Trust Act 1972 (Vic), executed by the Trust for Nature.   To the greatest extent possible, offset sites will provide satisfy multiple MNES (e.g. preference will be given to sites supporting NTGVVP, as well as confirmed populations of Striped Legless Lizard and Golden Sun Moth).  **State offsets**  **Inside approved MSA Areas (KP 0 – 3.2 and KP 28.2 – 50.7)**  Where the project crosses the Biodiversity Conservation Strategy (BCS) area, native vegetation and habitat losses will be offset in accordance with the Habitat Compensation Obligations (HCOs) established by DELWP. This will include any unavoidable losses of vegetation and habitat within BCS Conservation Areas (CAs).  A Works in a Conservation Area (WICA) application will be submitted to the MSA team at DEWLP for assessment.  All biodiversity offset requirements under the MSA Program will be met through payment to DELWP.  **Outside approved MSA areas (KP 3.2 – 28.2)**  Offsets will be sought in accordance with relevant policy and *Guidelines for the removal, destruction or lopping of native vegetation* (Native Vegetation Guidelines).  The Native Vegetation Guidelines (and provision of offsets required under the guidelines) can be used as a mechanism for addressing the environmental mitigation requirements of a project relating to the proposed removal of native vegetation.  An offset strategy is currently being prepared for the Project. The intent of the offset strategy is to document a process to meet biodiversity offset requirements, including:   * Explore sites where offsets can be met (partial or in full). * Explore opportunities to co-locate offsets. * Minimise the total number of sites such that financial efficiency is gained.   The offsets will be secured before clearing by either:   * Via a security agreement for the offset site that includes an onsite management plan; and * Evidence of a secured third-party offset, such as an allocated credit register extract from the native vegetation credit register.   The final extent of native vegetation offsets to be secured in accordance with relevant regulatory guidance and in consultation with DELWP. |
| **Other information/comments?** (e.g. accuracy of information) |
| N/A |

NYD = not yet determined

Flora and fauna

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| **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) |
| A desktop biodiversity assessment has been prepared by Biosis (refer Attachment 4).  In order to provide a context for the Study Area, information about flora and fauna from within 5 kilometres of the Study Area (the ‘local area’) was obtained from relevant biodiversity databases, many of which are maintained by the DELWP or DoEE.  Aquatic fauna records were searched for the Maribyrnong catchment (Jacksons Creek and Deep Creek) and Yarra Catchment (Merri Creek). |
| **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. |
| Threatened Flora  A 5 kilometre buffered search of the EPBC Protected Matters Search Tool (PMST) and VBA indicates 45 nationally or state significant threatened flora species occur, or are predicted to occur, in the Study Area, including:   * 19 EPBC Act listed flora species. This includes 9 species with a medium or higher likelihood of occuring in the Study Area. None of these species have been previously recorded within the PPA however, one of these species, Matted Flax-lily, has been previously recorded within the Study Area. * 32 FFG Act listed flora species. This includes 19 with a medium or higher likelihood of occuring in the Study Area. None of these species have been previously recorded within the PPA however, one of these species, Matted Flax-lily, has been previously recorded within the Study Area. * 42 DELWP Advisory listed flora species. This includes 27 with a medium or higher likelihood of occuring in the Study Area. None of these species have been previously recorded within the PPA however, one of these species, Matted Flax-lily, has been previously recorded within the Study Area.   Table 16 below identifies the records of flora species with a medium or higher likelihood of occuring in the Study Area.  Threatened Fauna  A 5 kilometre buffered search of the EPBC PMST and VBA indicates 58 nationally or state significant threatened fauna species occur, or are predicted to occur, in the Study Area, including:   * 26 EPBC Act listed fauna species occur or are predicted to occur within the Study Area. This includes 7 species with a medium or higher likelihood of occuring in the Study Area. A total of three of these species have been previously recorded within the Study area and within the PPA, including:   + Growling Grass Frog (2 records, both in PPA).   + Grassland Earless Dragon (1 record in PPA)  Note: There is a historical record in the PPA (last record 1990) inside the approved MSA area near KP 42.6 within the VNI easement. The species is considered likely to be extinct within northern Melbourne and potentially within Victoria (Melville et al 2019). The likelihood of occurrence or potential for significant impact to this species resulting from the Project is therefore considered low.   + Golden Sun Moth (8 records in Study Area, 4 of these within PPA). * 45 FFG Act listed fauna species. This includes 17 species with a medium or higher likelihood of occuring in the Study Area. 5 of these species have been previously recorded within the Study Area and 3 within the PPA, including:   + Growling Grass Frog (2 records in PPA).   + Grassland Earless Dragon (1 record in PPA in 1990’s).  Note: There is a historical record in the PPA (last record 1990) inside the approved MSA area near KP 42.6 within the VNI easement. The species is considered likely to be extinct within northern Melbourne and potentially within Victoria (Melville et al 2019). The likelihood of occurrence or potential for significant impact to this species resulting from the Project is therefore considered low.   + Golden Sun Moth (8 records in Study Area, 4 of these within PPA).   + Red-chested Button Quail (1 record in Study Area).   + Black Falcon (1 record in Study Area). * 54 DELWP Advisory listed fauna species. This includes 22 with a medium or higher likelihood of occuring in the Study Area. 6 of these species have been previously recorded within the Study Area and 4 within the PPA, including:   + Growling Grass Frog (2 records in PPA).   + Grassland Earless Dragon (1 record in PPA in 1990’s). Note: This species is most likely now extinct within northern Melbourne and potentially within Victoria.   + Golden Sun Moth (8 records in Study Area, 4 of these within PPA).   + Red-chested Button Quail (1 record in Study Area).   + Black Falcon (1 record in Study Area).   + White-throated Needletail (2 records in PPA).   Table 16 below identifies the records of fauna species with a medium or higher likelihood of occuring in the Study Area.  Migratory Species  A total of 20 migratory species have been recorded or are predicted to occur the Study Area. The majority of these species are unlikely to make significant use of or have significant habitat within the Study Area, with the exception of Latham’s Snipe. Table 16 below identifies the records of Latham’s Snipe.  Nationally significant ecological communities  The EPBC PMST indicates five threatened ecological communities occur or have potential to occur in the local area (refer Table 16). Of these, four are considered to have at least a medium likelihood of occurrence, including:   * Grassy Eucalypt Woodland of the Victorian Volcanic Plain (GEWVVP). * Natural Temperate Grassland of the Victorian Volcanic Plain (NTGVVP). * Seasonal Herbaceous Wetlands (Freshwater) of the Temperate Lowland Plains (SHWTLP). * White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland (WBYBRGGW).   State significant ecological communities  DELWP's Modelled FFG Act Community dataset indicates two threatened ecological communities occur or have the potential to occur in the local area (refer Table 16), including:   * Western (Basalt) Plains Grasslands Community. * Floristic Community 55-04 Western Basalt Plains (River Red Gum) Grassy Woodland.   **Table 16 Threatened / migratory species and listed communities recorded from local area (Medium/High Likelihood)**   |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | **Scientific name** | **Common name** | **Conservation status** | | | **Most recent record** | **Likelihood to occur within PPA** | | **EPBC** | **DELWP Adv.** | **FFG** | | **Flora** | | | | | | | | *Amphibromus fluitans* | River Swamp Wallaby-grass | VU |  |  | 2008 | Medium | | *Dianella amoena* | Matted Flax-lily | EN | e | L | 2015 | Recorded | | *Diuris basaltica* | Small Golden Moths | EN | e | L | 2009 | Medium | | *Glycine latrobeana* | Clover Glycine | VU | v | L | 1995 | Medium | | *Lachnagrostis adamsonii* | Adamson's Blown-grass | EN | v | L | 1990 | Medium | | *Lepidium hyssopifolium* s.s. | Basalt Peppercress | EN | e | L | 1984 | Medium | | *Pimelea spinescens* subsp. *spinescens* | Spiny Rice-flower | CR | e | L | 2014 | High | | *Rutidosis leptorhynchoides* | Button Wrinklewort | EN | e | L | 1982 | Medium | | *Senecio macrocarpus* | Large-headed Fireweed | VU | e | L | 2013 | Medium | | *Allocasuarina luehmannii* | Buloke |  | e | L | 2010 | Medium | | *Amphibromus pithogastrus* | Plump Swamp Wallaby-grass |  | e | L | 1992 | Medium | | *Calotis anthemoides* | Cut-leaf Burr-daisy |  |  | L | 2005 | Medium | | *Carex tasmanica* | Curly Sedge |  | v | L | 2009 | Medium | | *Comesperma polygaloides* | Small Milkwort |  | v | L | 1995 | Medium | | *Cullen parvum* | Small Scurf-pea |  | e | L | 2011 | High | | *Cullen tenax* | Tough Scurf-pea |  | e | L | 2015 | High | | *Diuris palustris* | Swamp Diuris |  | v | L | 1979 | Medium | | *Diuris punctata* | Purple Diuris |  | v | L | 1982 | Medium | | *Geranium* sp. *1* | Large-flower Crane's-bill |  | e | L | 2012 | Medium | | *Goodenia macbarronii* | Narrow Goodenia |  | v | L | 2009 | Medium | | *Eucalyptus leucoxylon* subsp. *connata* | Melbourne Yellow-gum |  | v |  | 2016 | Medium | | *Chloris ventricosa* | Plump Windmill Grass |  | v |  | 2011 | Medium | | *Coronidium gunnianum* | Pale Swamp Everlasting |  | v |  | 2010 | Medium | | *Dianella longifolia* var. *grandis* | Flax-lily |  | v |  | 2014 | Medium | | *Eleocharis plana* | Flat Spike-sedge |  | v |  | 2011 | Medium | | *Eucalyptus* X *studleyensis* | Studley Park Gum |  | e |  | 2006 | Medium | | *Geranium solanderi* var*. solanderi* s.s. | Austral Crane's-bill |  | v |  | 2013 | Medium | | *Microseris scapigera* s.s. | Plains Yam-daisy |  | v |  | 2010 | Medium | | *Podolepis linearifolia* | Basalt Podolepis |  | e |  | 2015 | Medium | | **Fauna** |  |  |  |  |  |  | | *Lathamus discolor* | Swift Parrot | CR | e | L | 2009 | Medium | | *Pteropus poliocephalus* | Grey-headed Flying-fox | VU | v | L |  | High | | *Delma impar* | Striped Legless Lizard | VU | e | L | 2012 | High | | *Litoria raniformis* | Growling Grass Frog | VU | e | L | 2017 | High | | *Prototroctes maraena* | Australian Grayling | VU | v | L |  | Medium | | *Synemon plana* | Golden Sun Moth | CR | e | L | 2017 | High | | *Egretta garzetta* | Little Egret |  | e | L | 1980 | Medium | | *Stictonetta naevosa* | Freckled Duck |  | e | L | 2009 | Medium | | *Oxyura australis* | Blue-billed Duck |  | e | L | 2015 | Medium | | *Pseudophryne bibronii* | Brown Toadlet |  | e | L | 2010 | Medium | | *Ardea intermedia plumifera* | Plumed Egret |  | e | L | 1980 | Medium | | *Turnix pyrrhothorax* | Red-chested Button-quail |  | v | L | 2010 | Medium | | *Lewinia pectoralis* | Lewin's Rail |  | v | L | 1991 | Medium | | *Porzana pusilla* | Baillon's Crake |  | v | L | 2006 | Medium | | *Falco subniger* | Black Falcon |  | v | L | 2007 | Medium | | *Miniopterus schreibersii oceanensis* | Common Bent-wing Bat (eastern ssp.) |  | v | L | 2013 | Medium | | *Ardea alba modesta* | Great Egret |  | v | L | 2014 | High | | *Spatula rhynchotis* | Australasian Shoveler |  | v |  | 2005 | Medium | | *Aythya australis* | Hardhead |  | v |  | 2015 | Medium | | *Biziura lobata* | Musk Duck |  | v |  | 1996 | Medium | | *Hirundapus caudacutus* | White-throated Needletail |  | v |  | 2014 | Medium | | *Pseudemoia pagenstecheri* | Tussock Skink |  | v |  | 2016 | High | | **Communities** |  |  |  |  |  |  | | Grassy Eucalypt Woodland of the Victorian Volcanic  Plain | N/A | CR |  |  | PMST | High | | Grey Box (Eucalyptus microcarpa) Grassy Woodlands  and Derived Native Grasslands of South-eastern  Australia | N/A | EN |  |  | PMST | Low | | Natural Temperate Grassland of the Victorian Volcanic  Plain | N/A | CR |  |  | PMST | High | | Seasonal Herbaceous Wetlands (Freshwater) of the  Temperate Lowland Plains | N/A | CR |  |  | PMST | High | | White Box-Yellow Box-Blakely's Red Gum Grassy  Woodland and Derived Native Grassland | N/A | CR |  |  | PMST | Medium | | Western (Basalt) Plains Grasslands Community | N/A |  |  | L | Recorded from the local area | High | | Floristic Community 55-04 Western  Basalt Plains (River Red Gum) Grassy Woodland | N/A |  |  | L | Recorded from the local area | High | | **Migratory species** | | | | | | | | *Gallinago hardwickii* | Latham's Snipe | | | | 2006 | Low | |
| **If known, what threatening processes affecting these species or communities may be exacerbated by the project?** (e.g. loss or fragmentation of habitats) Please describe briefly. |
| Of the ‘Potentially Threatening Processes’ as defined under the FFG Act (Processes List, December 2016), threatening processes relevant to the Project include:   * *Alteration to the natural flow regimes of rivers and streams.* * *Alteration to the natural temperature regimes of rivers and streams.* * *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.* * *Input of petroleum and related products into Victorian marine and estuarine environments.* * *Invasion of native vegetation by ‘environmental weeds’.* * *Loss of terrestrial climatic habitat caused by anthropogenic emissions of greenhouse gases.* * *Removal of wood debris from Victorian streams.* * *The spread of Phytophthora cinnamomi from infected sites into parks and reserves, including roadsides, under the control of a state or local government authority* * *Wetland loss and degradation as a result of change in water regime, dredging, draining, filling and grazing.* |
| **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. |
| Table 16 (above) identifies threatened flora and fauna species, migratory species and listed communities with a medium or higher likelihood of occuring in the Study Area. All of these species and communities are potentially affected by the Project however, targeted surveys will be required in areas of potential habitat to confirm presence or absence.  If the species or community is found to be present impacts can be avoided by using trenchless technology, or by minor realignment of the PPA. If the species is present and direct impacts cannot be entirely avoided, options for offsetting or translocation will be agreed with the relevant regulator prior to impacts occuring.  Threatened Flora  Areas of potential habitat for significant flora include areas of Plains Grassland, Plains Grassy Woodland, Grassy Woodland, uncultivated areas along roadsides and within paddocks, along drainage lines and wetlands and areas of Riparian Woodland, Plains Grassy Wetland and Grey Clay Drainage-line Aggregate.  Threatened Fauna  Areas of potential habitat for significant fauna include forest, grassland and grassy woodland habitat, pasture supporting spear grasses and wallaby grasses, grassland dominated by introduced tussock grasses, scattered indigenous and planted eucalypts within or adjacent to the proposed alignment, wetlands and farm dams within or adjacent to the alignment, and aquatic habitat along Merri Creek, Jacksons Creek and Deep Creek.  Migratory species  The majority of migratory species are unlikely to make significant use of or have significant habitat within the Study Area, with the exception of Latham’s Snipe which may occur in seasonal wetlands supporting tussock-grasses and rushes as well as vegetated farm dams.  Important habitat for Latham’s snipe is described as areas that have previously been identified as internationally important for the species, or areas that support at least 18 individuals of the species.  No internationally important areas of habitat occur within the Study area and the likelihood of 18 individuals being recorded from seasonal wetlands or farm dams within the Study Area is considered low due to the limited size of these habitat types within the Study Area. |
| **Is mitigation of potential effects on indigenous flora and fauna proposed?**  🗙 NYD 🗙 No **🗙** Yes If yes, please briefly describe. |
| The primary measure to reduce impacts to biodiversity values is to avoid and minimise removal of native vegetation and terrestrial and aquatic habitat.  APA has taken flora and fauna values into account in the pipeline route selection process.  The results of the targeted surveys will inform the detailed design and specific construction methodology to avoid and minimise impacts to the extent practicable. Priority will be given to highest value areas and retaining larger areas in preference to numerous smaller ones.  The following mitigation measures will be implemented as part of the Project to avoid and minimise biodiversity impacts:   * Design & Planning Phase:   + Pipeline route selection.   + Project will be designed, constructed and operated in accordance with AS/NZS 2885.1*.*   + Avoidance: Use of alternative construction methods where feasible (such as HDD, boring).   + Potential to reduce construction ROW corridor in areas of significant environmental value. * Construction Phase:   + Environment management measures will be consistent with the APGA Code of Environmental Practice, 2017.   + Development of an CEMP and procedures to protect environment values and manage environment risks including (but not limited to):     - Air and dust management;     - Noise management;     - Soil management;     - Waterway management;     - Biosecurity and weed management;     - Fauna and Flora management;     - Erosion and sediment management;     - Rehabilitation of construction footprint;     - Cultural Heritage.   + Project inductions and toolboxes will be used to include and communicate environment management requirements. * Operational Phase:   + An OEMP will be prepared to ensure that any maintenance activities consider and protect environmental values. |
| **Other information/comments?** (e.g. accuracy of information) |
| N/A |

### 13. Water environments

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| **Will the project require significant volumes of fresh water (e.g. > 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. |
| During construction, water may need to be discharged that has accumulated in open excavations (e.g. pipeline trench dewatering).  On completion of construction, the pipeline will be pressure tested (in accordance with AS/NZS 2885.5) prior to commissioning to ensure that the pipeline passes strength and leak tests. This is done through a process called hydrostatic testing whereby sections of the pipeline (test sections) are filled with water and then pressurised.  Water from trench dewatering and hydrostatic testing may be disposed of in several ways, including discharge to land, irrigation, release into sewers, landholders’ dams or paddocks, or into watercourses subject to relevant regulatory and/or landowner approvals.  Waste water management measures, including disposal of trench dewatering and hydrostatic testing water will be addressed in the CEMP, which will be submitted and prepared for regulatory approval prior to construction. |
| **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. |
| Alluvium has provided specialist advice on surface water and ground water was responsible for preparing the Surface Water and Groundwater Desktop assessment, August 2019 (Attachment 5).  **Waterways**  The Study Area spans three main catchments: The Werribee River, Maribyrnong River and Yarra River. No watercourses are crossed by the PPA in the Werribee catchment. There are 7 watercourses crossed in the Maribyrnong catchment and 14 in the Yarra catchment.  There are 5 named watercourse crossings (as mapped by DELWP) along the PPA, discussed in further detail below.  Tame Street Drain (KP 8 -9)  The Tame Street Drain is a 2nd order stream at the point where the Study Area crosses, south of Diggers Rest. The creek then flows in a predominantly southerly direction where it joins the Maribyrnong River. The Tame Street Drain catchment upstream of the crossing is made up of basalt from the Western Volcanic Plains and the soils have a very low soil erosion susceptibility index in gullies.  Jacksons Creek (KP 13- 14)  Jacksons Creek is part of the Maribyrnong River catchment and flows in a typically southerly direction. Jacksons Creek is one of two major tributaries of the Maribyrnong River. The Study Area crosses Jacksons Creek east of Diggers Rest before it drains into the Maribyrnong River. The catchment is predominately urban with pastoral and grazing zones also contributing. Jacksons Creek is located in the Western Volcanic Plains with very low soil erosion susceptibility index in gullies.  Deep Creek (KP 17 -18)  Deep Creek is part of the Maribyrnong River catchment and flows in a typically southerly direction where its confluence with Jacksons Creek forms the Maribyrnong River. The Study Area crosses Deep Creek immediately downstream of its confluence with Emu Creek. The catchment consists of mainly farming zones and urban living land use zones in Western Volcanic Plains basalt soils. The soil has a moderate soil erosion susceptibility index in gullies.  Kalkallo Creek (KP 33 – 34)  Kalkallo Creek flows in a southerly direction where it joins Merri Creek as part of the Yarra River catchment. The Study Area crosses Kalkallo Creek at KP 34.1 and then two minor tributaries at KP34.4 and 35.1. The catchment upstream is predominately Urban Growth Zones and Farming Zones. The soils are sedimentary located in the Western Uplands region with a high soil erosion susceptibility index within gullies.  Merri Creek (KP 42- 43)  Merri Creek flows in a southerly direction to the north of Melbourne and is part of the Yarra River catchment. The basaltic soils in the Volcanic Plains of the Western Plains region have a very low soil erosion susceptibility index in gullies.  **Wetlands**  The Study Area does not cross any wetlands of International or National Importance or any watercourses that are tributaries of wetlands of International or National Importance.  Some wetlands as mapped in the Victorian Wetlands Inventory do fall within the study area around KP 44 - 45.  Refer to Attachment 5 – Surface Water and Groundwater Desktop Report |
| **Are any of these water environments likely to support threatened or migratory species?**  **🗙** NYD 🗙 No 🗙 Yes If yes, specify which water environments. |
| Potential threatened / migratory aquatic species have been identified within the desktop biodiversity assessment prepared by Biosis.  Australian Grayling is present throughout the Maribyrnong and Yarra River, however Deep Creek is the only waterway within the Study Area that contains suitable habitat.  The PPA is considered unlikely to pose a significant risk to the species provided appropriate sediment management and site remediation measures are implemented. The species will be most susceptible to construction related impacts immediately upstream of estuaries during spawning in April-May. |
| **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. |
| **Could the project affect streamflows?**  🗙 NYD 🗙 No **🗙** Yes If yes, briefly describe implications for streamflows. |
| Alluvium has identified the risk of impacts to surface water is low and likely to be localised and temporarily associated with the construction activities. Potential risks to surface water (including the mapped wetland) include:   * Run off/erosion of spoil (turbidity and organics) * Influx of brackish groundwater to surface water systems (salinity) during excavation along the pipeline/gravel pit following completion (preferential flow path) * Disturbance of stream bed or wetland bed – changes in surface water quality (localised) * Disturbance of stream bed wetland bed– hyporheic flow disruption (localised) * Disturbance of stream bed wetland – brackish groundwater influx (localised) * Disturbance of farm dams where the PPA intersects   These potential impacts are most likely to occur near or at stream crossings, mapped wetlands and where shallow water tables occur, such as the area around the PPA in the north-west of the Merri Creek catchment, including the mapped wetland in the Merri Creek catchment (KP 44 to 45).  The design of the pipeline will include minimum cover requirements at waterway crossings to consider long term scour protection and pipeline integrity.  Risks are limited to the construction phase, this will be localised and limited in duration.  APA will implement controls to allow any natural flows to continue where open trenching will be undertaken around the works area. Suitable erosion controls will be implemented during construction.  The bed and banks of the waterways will be reinstated immediately following the pipeline installation, with any access tracks being removed during the reinstatement phase of construction activities.  Restoration of crossings will be undertaken in accordance with any requirements of the relevant Catchment Management Authority. |
| **Could regional groundwater resources be affected by the project?**  🗙 NYD **🗙** No 🗙 Yes If yes, describe in what way. |
| As the pipeline excavation and construction is shallow, only shallow aquifers have the potential to be impacted by the Project and not regional groundwater resources.  The potential for impact on shallow aquifers is very low for the following reasons:   * The activity of installing the pipeline will only intersect the shallowest aquifer, or potentially may not intersect any aquifer at all (depending on seasonal conditions). * The groundwater resource in the areas is generally brackish, and the activity will not result in the addition of salts to the aquifer. Consequently, the beneficial use, which is defined by the groundwater salinity, is unlikely to be at risk. * The activity does not involve depositing or releasing any potential contaminant to shallow aquifers.   The predominant risk to groundwater from the proposed pipeline is the potential to create preferential flow paths that may inadvertently change groundwater flow directions due to use of packing sand used along trenched sections.  The potential for this risk is likely to be higher where the water table is shallow, such as the area around the PPA in the north-west of the Merri Creek catchment (approximately KP 40 to KP 45).  Use of appropriate design and construction methods to manage any groundwater flow such as collar cut-offs/trench breakers for sections that are open excavated will prevent any groundwater issues and manage potential erosion risks. |
| **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) |
| The *State Environment Protection Policy (Waters of Victoria)* (SEPP (WoV)) provides the framework to set beneficial uses and environmental values of both surface water and ground water in Victoria.  **Groundwater**  Under the SEPP (Waters) groundwater segments are defined according to the background level of total dissolved solids (TDS).  The potential for impact on groundwater is very low for the following reasons:   * The activity of installing the pipeline will only intersect the shallowest aquifer, or potentially may not intersect any aquifer at all (depending on seasonal conditions). * The groundwater resource in the areas is generally brackish, and the activity will not result in the addition of salts to the aquifer. Consequently, the beneficial use, which is defined by the groundwater salinity, is unlikely to be at risk. * The activity does not involve depositing or releasing any potential contaminant to shallow aquifers.   The impacts to beneficial uses is considered to be negligible due to the temporary nature of works and the implementation of suitable environmental mitigation controls such as:   * Monitoring groundwater quality during excavation. * Installing groundwater flow prevention barriers along the pipeline.   **Surface Water**  The Project falls within beneficial uses for surface water segments defined under the Victorian SEPP (Waters) which includes:   * Central Foothills. * Coastal Plains. * Urban Wetlands. * Aquatic reserve segments.   Potential risks to surface water (including the mapped wetland) include:   * Run off/erosion of spoil (turbidity and organics). * Influx of brackish groundwater to surface water systems (salinity) during excavation. * Disturbance of stream bed or wetland bed – changes in surface water quality, flow disruption (localised).   The impacts to beneficial uses is considered to be negligible due to the temporary nature of works and the implementation of suitable environmental mitigation controls such as:   * Installing appropriate sediment and erosion control barriers to prevent run off/erosion of spoil. * If surface water is present in-stream, installing downstream bunds in the stream during installation activities. * With the implementation of all proposed mitigation measures, the PPA will not present a significant risk to regional surface water or groundwater assets or associated beneficial uses.   The construction activities associated with installing the pipeline will result in localised disturbances. These risks from the PPA to beneficial use ‘water-dependent ecosystems protection and species’ are considered to be low and localised. Risks to other beneficial uses are likely to be very minor due to the localised disturbance from the activity. |
| **Could aquatic, estuarine or marine ecosystems be affected by the project?**  🗙 NYD 🗙 No **🗙** Yes If yes, describe in what way. |
| All three waterways intersected by the Study Area / PPA (Jacksons Creek, Deep Creek and Merri Creek) provide important aquatic habitat for local flora and fauna as well as hold important cultural values for current and past residents. The construction phase of the Project will result in short term localised impacts, including:   * Disturbance of the structural integrity of the bed and banks of waterways and associated vegetation. * Creation of potential short term barriers to fish passage. * Mobilisation of sediments into waterways, which may negatively influence water quality.   The abovementioned impacts are considered unlikely to affect the ecological character of the waterways.  Mitigation measures available include minimising disturbance to the bed and banks of waterways and reducing the temporal scale of impacts as far as practicable. |
| **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. |
| The primary forms of mitigation relate to siting and design and construction management. An EMF is being developed which includes environmental performance objectives tailored to address the potential impacts.  Relevant environmental objectives in the EMF include:   * Avoid adverse impacts on surface or ground water quality and beneficial uses of water. * Prevent significant adverse impacts on ecological health of water environments. * Design the pipeline to as far as practical avoid disturbance to stream beds and wetland beds.   In refining the detailed design and construction methodology, further assessment will be undertaken to avoid impacts on water environments. The following matters will be assessed and integrated into the design process:   * Where practical, use existing stable crossings * Minimise the number of channels to be crossed (where a watercourse has more than one channel or where a tributary joins) * Cross on straight sections of channel and not on the outside of bends. * Minimise the disturbance of bed banks and riparian vegetation. * Avoid permanent pools where practical. * Avoid farm dams where practical.   Overall, risks to surface water beneficial uses from the proposal pipeline installation can be effectively mitigated by:   * Monitoring groundwater quality during excavation: * Installing groundwater flow prevention barriers along the pipeline. * Installing appropriate sediment and erosion control barriers to prevent run off/erosion of spoil. * If surface water is present in-stream, installing downstream bunds in the stream during installation activities.   The pipeline will be constructed in accordance with all conditions set out in a Construction Environment Management Plan (CEMP). The CEMP will include mitigation measures for dewatering, management of runoff, sedimentation, and works on waterways.  The CEMP is prepared and approved under the Pipelines Act 2005. |
| **Other information/comments?** (e.g. accuracy of information) |
| N/A |

### 14. Landscape and soils

**Landscape**

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| **Has a preliminary landscape assessment been prepared?**  🗙 No **🗙** Yes If yes, please attach.  Landscape and visual amenity impacts of the Project are discussed within the Desktop Land Use and Planning Assessment prepared by Biosis (refer Attachment 6). |
| 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. |
| The PPA intersects five Environmental Significance Overlays (ESOs), as identified within Table 17. No Significant Landscape Overlays (SLOs) are intersected. These are indicative of environmental and landscape values.  **Table 17 Environmental Significance Overlays intersected by the PPA**   |  |  |  | | --- | --- | --- | | **LGA** | **Overlay** | **Location (approx. KP)** | | **Melton** | Environmental Significance Overlay Schedule 1 (ESO1) - Remnant woodlands, open forests and grasslands | KP 8.3 (Sunbury railway corridor). | | **Hume** | Environmental Significance Overlay Schedule 1 (ESO1) - Rural waterways and environs | KP 13.5 - 15 (Jacksons Creek) and KP 16.3 - 18.1 (Deep Creek). | | **Mitchell** | Environmental Significance Overlay Schedule 6 (ESO6) - Urban conservation area | KP 42.2 - KP 42.4 (Merri Creek). | | **Whittlesea** | Environmental Significance Overlay Schedule 5 (ESO6)[[5]](#footnote-6) - Urban conservation area | KP 42.4 - KP 43.2 (Merri Creek) and KP 46. | | Environmental Significance Overlay Schedule 4 (ESO4)[[6]](#footnote-7) - Rural conservation area | KP 46 and KP 48 – 49. | |
| * **Identified as of regional or State significance in a reputable study of landscape values?**   🗙 NYD **🗙** No 🗙 Yes If yes, please specify. |
| * **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. |
| **Is any clearing vegetation or alteration of landforms likely to affect landscape values?**  🗙 NYD **🗙** No 🗙 Yes If yes, please briefly describe. |
| Construction activities will include clearing, grading and trenching within the construction ROW. Approximately half of the PPA traverses urban growth zone land, whilst the other half traverses rural / rural residential land within the green wedge zone. Limited impacts to landscape values are identified within these areas, largely due to extensive urban development and the cropping/grazing activities that occur. Areas of higher landscape and visual value are located at the three creeks (Jacksons Creek, Deep Creek and Merri Creek).  The addition of one compressor at the Wollert site will not create impacts to the landscape as it is located within an existing hardstand area in the facility. |
| **Is there a potential for effects on landscape values of regional or State importance?** 🗙 NYD **🗙** No 🗙 Yes Please briefly explain response. |
| Desktop investigation identifies no areas within the Study Area of regional or State importance. |
| **Is mitigation of potential landscape effects proposed?**  🗙 NYD 🗙 No **🗙** Yes If yes, please briefly describe. |
| A key design measure to reduce potential landscape and visual impacts has been the utilisation of APA’s existing easements (KP 0 – 8 and KP 42 – 50). The easements have been subject to past disturbance and as a result there will be no new impact for these sections of the PPA outside of the construction period.  Along the remaining sections of the alignment, topsoil and 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. Reinstatement of the construction ROW will aim to restore all areas as close as possible to the pre-existing condition.  However, it is noted pipeline easements are required to be predominantly clear of tall vegetation both to minimise adverse impacts on pipeline integrity from excessive root growth and to ensure the pipeline remains clearly locatable to prevent accidental damage. Removal of trees will be minimised as much as possible through PPA micro-siting, short sections of reduced construction ROW width and retention / protection within the construction ROW, where practicable.  Topsoil removed during clearing and grading will be re-spread over the construction ROW. 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.  Although limited operational impacts have been identified to landscape and visual environments, the following mitigation measures are available:   * Mainline valves will be located to reduce potential visual impact and, where necessary, landscaping may be used to reduce visibility from adjacent public thoroughfares and residences. * Rehabilitation of the ROW will be completed in a timely fashion following construction. * The new compressor unit at the Wollert compressor station will be located to be visually contiguous with the existing facility and such that clearing of existing mature vegetation at the site is not required. |
| **Other information/comments?** (e.g. accuracy of information) |
| N/A |

**Soils**

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| **Is there a potential for effects on land stability, acid sulphate soils or highly erodible soils?**  🗙 NYD 🗙 No **🗙** Yes If yes, please briefly describe. |
| The following response is informed by the Geological and Soils Desktop Study prepared by Golder Associates (refer Attachment 7).  **Slope stability**  The PPA traverses creek valleys with potentially steep slopes at Jacksons Creek (KP 13.8) and Deep Creek (KP 17.1). Geomorphological evidence of natural slope instability along the creek valleys in the area has been observed.  Instability may occur where the:   * Toe of a slope is undercut by erosion, making the slope too steep, or * When extreme rainfall events occur, which elevates groundwater levels and soil moisture and may also cause high levels of erosion. * Construction activities such as the creation of cuts and fills on slopes create instability.   Where the PPA crosses Jacksons Creek, the northern slopes of the valley show potential geomorphological evidence of previous slope instability, indicating that the current slopes may be marginally stable. Similarly, where the PPA crosses Deep Creek, the western slope of the valley shows potential evidence of previous slope instability and steep slopes. On the western slope of the valley, colluvium has been mapped, which may be marginally stable due to the nature of colluvium deposition.  **Acid sulphate soils**  Acid sulfate soils (ASS) are typically present in reducing chemical environments such as below the permanent water table. Although areas at highest risk of having acid sulfate soils present are usually considered to be below RL 5 m AHD, close to the coast, some inland soil environments may have relatively high potential for the presence of ASS, including saturated soils with a high organic content.  Based on the geological conditions and the elevation of the PPA, there is likely to be a low risk of encountering ASS. However, the low potential will be confirmed by a limited ASS field assessment for all soil units traversed by the final pipeline alignment, with soil units with higher potential such as alluvium and colluvium have a higher frequency of testing. Swampy areas on the volcanic plains will also be targeted. The extent of swampy areas along the alignment would be assessed by field mapping as part of site investigation fieldwork.  **Erosion**  Residual soils derived from the Newer Volcanics and the Deep Creek Formation and Humevale Formation siltstone and sandstone geological units are usually considered to have a low erosion potential in natural, vegetated conditions. On the volcanic plains, the low slope angles means surface water runoff energy is typically low, reducing scour potential.  During construction, high traffic volumes and heavy traffic loads on unsealed roads, particularly during wet weather, may cause rutting which can create a long term erosion concentration point. Construction roads and site traffic procedures will be designed to minimise the potential for rutting to occur.  The erosion potential of the materials in the creek valleys is uncertain. The higher slope angles will increase the scour potential of surface water runoff on the valley slopes, compared to the volcanic plains. The Brighton Group materials exposed in the eastern slopes of the Deep Creek valley have relatively high erosion potential. Evidence for erosion of the Brighton Group materials on the valley slopes to the north of the PPA crossing was observed on aerial imagery.  At creek crossings, where trenching will occur through the creek bed, the trench will be designed to include measures to reduce long term creek bed erosion in the vicinity of the trench. Erosion mitigation measures will also be included on the valley side slopes, which could include the establishment of vegetation and construction of hillside berms or check drains to reduce the velocity and scour potential of surface water running down the slopes. |
| **Are there geotechnical hazards that may either affect the project or be affected by it?**  **🗙** NYD 🗙 No 🗙 Yes If yes, please briefly describe. |
| **Pipeline trench excavation**  Soils within the Study Area should be able to be excavated by traditional excavator bucket methods or by specialist trenching machinery. Newer Volcanics basalt may be high strength or stronger. Excavation by toothed bucket methods are not likely to be effective in such materials. Excavation methods for high strength materials, such as using rock breaking attachments on excavators, or blasting may need to be adopted to achieve acceptable excavation rates.  It is likely that extremely and highly weathered siltstone and sandstone of the Deep Creek Formation and Humevale Formation could be excavated by traditional excavator methods or trenching machinery. Rock breaking attachments or tynes may be required to assist excavation of moderately weathered or better siltstone or sandstone.  Future geotechnical investigation along the final pipeline alignment would include an assessment of the depth to rock and the likely excavation characteristics.  There is a risk of ground loss induced surface settlement where HDD and horizontal boring is used to excavate beneath road / rail crossings and other constraints. To reduce the risk of unacceptable ground surface settlement, site investigation will be undertaken at crossing locations to assess the ground conditions and the HDD / horizontal boring methodology will be selected in collaboration with specialist contractors. Survey monitoring of the ground surface during the HDD / horizontal boring will be undertaken to check unacceptable settlement limits are not exceeded.  **Trench stability during construction**  Generally, trenches with vertical walls excavated in Newer Volcanics basalt rock and siltstone and sandstone bedrock will have a low, but not zero, incidence of sidewall instability. There will also be a risk that isolated unstable rock blocks or wedges could detach from the trench walls and fall into the trench.  Trenches excavated in residual soil, alluvium or colluvium will have a higher incidence of sidewall instability. It is unlikely that trenches with stable vertical sidewalls will be able to be formed. The risk of trench sidewall instability will increase where the sidewall materials have a high moisture content. Trench sidewalls in soils will be battered back to stable slope angles or engineered trench stabilisation measures such as shoring will be used. Shoring may be required in saturated soils where batters cannot be practically formed, particularly alluvial soils in the base of the creek valleys.  Trenches formed in ‘stony rise’ basalt terrain may have a higher potential for loose basalt boulders and other variable soil and rock conditions in the sidewalls and at the crest of the trench. Loose boulders will be assessed for stability prior to pipe laying works occuring.  To reduce the risk of trench wall collapse impacting workers and construction operations, stable batter angles will be adopted based on the trench material or suitable temporary support such as shoring designed to resist the imposed earth pressures is installed. Trench excavation will be undertaken to Worksafe approved practices, including exclusion buffers for plant, stockpiles and personnel back from the crest of the trench walls and personnel exclusion from trench excavations.  **Trench backfill**  The materials generated by trench excavation are expected to include high plasticity residual basaltic clay soils that are susceptible to significant volume change with changes in moisture content. Excavation in weathered rock may also generate poorly graded granular materials including cobbles and boulders.  Upon backfilling the trench following the installation of the pipe and padding materials, consideration will be given to the methods for moisture conditioning, placing and compacting the backfill materials. The use of high plasticity clays as earthworks materials can be problematic because of their sensitivity to change in moisture content.  The use of poorly graded granular material or cobbles and boulders can also result in voids being formed in the backfill. If backfill materials are not well compacted there is the risk of subsidence of the surface above the trench which could exacerbate erosion issues or increase the risk of pipe damage. Backfilled trenches can also provide a conduit for surface water infiltration which can lead to the swelling of high plasticity clays.  The uppermost layers of backfill in the trench will be of low hydraulic conductivity to provide a barrier to infiltration. |
| **Other information/comments?** (e.g. accuracy of information) |
| More detailed site specific studies will be undertaken to assess the creek crossing valleys for potential slope instability. Where potential slope instability is identified, slope stabilisation measures, pipeline rerouting, and pipeline design against slope movements could be used as mitigation measures. Construction methodology specifically addressing potential slope instability will be used to mitigate against risks during construction.  Should ASS be assessed to be an unacceptable risk an Acid Sulfate Soil Management Plan will be developed in accordance with state guidelines for the Project and earthwork procedures developed to adhere to the Plan, to manage exposure of acid sulfate soils through excavation activities.  A targeted site investigation, including laboratory testing for dispersive soils, will be undertaken for on the final pipeline alignment, including alluvium, colluvium and Brighton Group materials. |

### 15. Social environments

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| **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. |
| Construction phase  Road traffic generated during the construction phase of the Project will comprise the movement of light vehicles and machinery to and from the construction ROW at discrete locations, which is typical of construction on a linear reserve. Construction activities will occur over a period of approximately 6 months, however works are progressive which means that the duration of traffic impacts in any one part of the alignment is limited.  Heavy and larger vehicles are required to transport pipe, plant, equipment and materials to the relevant work areas.  Construction traffic will use the construction ROW and access tracks within private property to move equipment along the pipeline route so as to reduce as far as possible increases in traffic flow on the local road network.  Traffic impacts on the road network associated with the construction of the pipeline will be temporary and highly localised. Traffic impacts associated with the construction of above ground facilities will remain localised, however over the medium term (6 months).  Impacts are only associated with entry and egress points to the ROW and Wollert Compressor Station.  Operational phase  Traffic movements during operation will be minimal and are expected to include periodic easement inspections with up to two light vehicles. Physical visits to surface facilities, such as the mainline valves and cathodic protection test points, may be more frequent, also requiring the use of light vehicles. Any other maintenance or easement access will be carried out on an ad-hoc basis to respond to specific tasks. |
| 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. |
| Sensitive receptors are identified along the PPA in the form of existing residences as well as future residential land uses within the PSP areas.  The Wollert compressor station is located in an agricultural zone and within a Northern Quarries PSP, which will most likely comprise existing quarries and future employment uses.  The nearest sensitive receptor is located 850 metres from the site.  Potential impacts to the amenity of residents are primarily attributed to the construction phase of the Project and are expected to be temporary in nature, resulting from dust, emissions, odour, noise/vibrations or changes in visual conditions are discussed in detail below.  **Air quality**  Pipeline  Key construction activities with the potential to generate dust include clearing and grading, trench excavation, blasting, stockpiling of topsoil, backfilling, transport of materials, construction of surface facilities and reinstatement. Off-site impacts could occur due to the movement of trucks filled with spoil or fill moving along roads in the local area.  Construction will be progressive and therefore the duration and proximity to any one receiver or group of receivers will be limited.  Dust mitigation measures have been identified through the Project risk assessment process and will be managed through the CEMP. Mitigation measures will include reduced speed limits and dust suppression where dust is a concern to surrounding sensitive receptors.  **Wollert compressor station**  Golder conducted a GHG assessment for the additional compressor unit to be installed at the existing Wollert compressor station (refer Attachment 8). The GHG assessment is based on the energy consumption of the following scenarios:  **Standard Operations:**  Assumes that the proposed gas turbine will be operational over 12hrs per day x 365days per year (50% operational during the year). The emissions from the operation of the additional gas turbine is estimated at 12,911 C02 / year.  This includes an annual fugitive emissions of 11 t C02 / year for the additional gas turbine.  **Worst Case Operations:**  Note this scenario is extremely conservative as it is expected to occur no more than 10% of the time. It has been included to compare against threshold for EES @ 200,000 t C02 / year.  Assumes all (3) gas turbines (including the additional gas turbine) will be operating continuously 365days per year. The annual combined GHG emissions from all (3) gas turbines is estimated at 77,000 C02 / year, compared with the EES referral trigger level of 200,000 t C02 / year indicating the EES referral criteria will not be triggered by GHG emission due to the proposed works.  Works Approval  NOx was modelled to be 173 kilograms per day, which is above the Works Approval exemption threshold of 100 kilograms per day under the *Environment Protection (Scheduled Premises) Regulations 2017*.  Golder identified the expanded Wollert compressor station would therefore be a Scheduled Premise under Schedule 1 of the Regulations. A Works Approval will be required for the upgrade works. Further detailed investigations and modelling will be required to form part of the Works Approval process.  **Noise and vibration**  Pipeline  Noise and vibration impacts could result from trenching, blasting and backfilling and trenchless construction, such as HDD and thrust boring. Noise could also result from ground disturbance activities associated with the clearing and reinstatement of the construction ROW, general earthworks, loading and unloading of materials, and vehicle movements within the construction ROW.  Construction activities are unlikely to be at one location for long periods given the progressive nature of construction. The noise impacts will be temporary, except for the aboveground facilities. APA will work with directly affected residents to minimise interference from noise during construction and works planning will take into account the potential nuisance noise levels and relevant State Environmental Planning Policy standards.  APA will comply with EPA Noise Guidelines for construction including:   * EPA guidelines used to manage construction noise are usually applied by local government through permits, local laws, and powers provided under the [Environment Protection Act 1970.](https://www.epa.vic.gov.au/about-us/legislation) * EPA’s [Environmental guidelines for major construction sites](https://www.epa.vic.gov.au/our-work/publications/publication/1996/february/480) (publication 480)   Wollert Compressor Station  Wood assessed the noise impact of the proposed upgrade works at the Wollert compressor station. The noise model was assessed in accordance with State Environmental Planning Policy N1 (SEPP-N1) (refer Attachment 9).  The modelling assumed that the additional compressor will have an overall package sound power level of 111dB(A), the same as that of the existing units, operating at the maximum operational scenario under both neutral and adverse meteorological conditions.  The modelling and analysis undertaken for the assessment indicated that noise levels at most receiver(s) would increase by 1.5 to 2 dB(A).  The maximum predicted noise level expected at a receiver would be to 36.8dB(A), which is below the SEPP-N1 noise limit of (39dB(A)).  **Visual conditions**  Visual impacts will be most prevalent during the construction period, however they will be temporary and short-term. A summary of potential construction impacts includes:   * Vegetation clearing, grading and trenching within the construction ROW. * Temporary views of bare soil areas and soil mounds along the ROW. * Temporary views of work crew and machinery from residential properties and public areas (e.g. roads and railway corridors) as they move along the alignment and install the pipeline.   Following construction and reinstatement there will be little above ground presence of the pipeline other than ancillary structures required for safety and maintenance purposes.  Pipeline marker posts, mainline valves and cathodic protection points will be visible intermittently along the PPA, all of which will not create significant landscape or visual impacts.  The additional compressor at the Wollert site will not create impacts to the landscape as it is identified as existing hardstand. Visually, the Wollert compressor station will increase only marginally in size and the expanded facility will be of similar visual scale and impact to the existing development.  **Odour**  Odour from construction activities is not expected and no impacts are identified.  The pipeline will be buried below ground and will be operated in accordance with AS/NZS 2885. No odour emission are expected. |
| **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. |
| Significant health and safety hazards to the local community are not expected from the Project. Access to the construction ROW will be clearly demarcated and public access will be denied.  Any chemicals used during pipeline construction will be stored, handled and disposed of in accordance with the Material Safety Data Sheets and the specific requirements outlined in the CEMP.  Design, construction and operation of the Project will be undertaken in accordance with AS/NZS 2885. This standard facilitates the necessary requirements in consideration of the protection of the public, construction and operating personnel and the environment. APA will review safety considerations identified in the project planning against the final constructed pipeline to consider and address any additional threats discovered during construction.  During operation, the pipeline and facility safety is then regularly reviewed to ensure ongoing compliance with the requirements of AS/NZS 2885, and to ensure appropriate responses to changes in land uses and any external threats are implemented. |
| **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. |
| The PPA has been designed to minimise impacts on existing (and future) land uses.  Access along the construction ROW could temporarily be affected during the construction phase. However, long term community severance is not identified.  Social impacts relating to land access, community severance and access to transportation networks will be attributed to the construction phase of the Project and are expected to be intermittent and temporary in nature.  Under AS2885, APA is required to design the pipeline in response to the reasonably foreseeable sensitive land uses within proximity of the pipeline to ensure that the risk of impacts to such uses during operations is appropriately mitigated.  APA will adopt suitable design and procedural measures such that the proposed pipeline will not constrain land uses that have been already approved through existing PSPs or that are otherwise reasonably foreseeable within proximity of the pipeline.  The current PPA goes through a residential house at KP 10. Discussions with the landowner around a number of alignment options through their property have occurred. The property and house is currently within the OMR PAO. The owner has indicated a preference for the proposed pipeline to follow the boundary of the OMR, which requires the pipeline to go through the existing house. Should APA adopt this alignment it would be with an agreement in place with existing landowner. |
| 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. |
| Agricultural land  The main non-residential land uses within the Study Area include cropping, grazing and other agricultural activities. The Study Area is not considered strategic agricultural land as it has mainly low to moderate agricultural land capability. This is evident as majority of agricultural land within the Study Area would be identified as hobby farming already facing the pressures attributed to the interface with the UGB.  APA’s route selection and ongoing route refinement process of the PPA has considered impacts to agricultural production based on feedback from landowners and other stakeholders. Efforts have been made to utilise existing easements, where possible, and to follow property boundaries or preferred landowner alignments.  During the construction phase there will be temporary disruption to these agricultural land uses, however during the operational phase there will be minimal impact. Reinstatement of the construction ROW will ensure that existing land use activities can resume following construction of the pipeline and the reinstatement of land including grazing and cultivation where relevant.  Outer Metropolitan Ring Transport Corridor (OMR)  The corridor for the proposed OMR is also within the Study Area. APA has conducted extensive consultation with VicRoads (now Department of Transport) in relation to the location of the PPA within the OMR corridor to ensure the Project does not compromise future works associated with construction of the OMR. A Working Group has been established between APA and Vic Roads which meets regularly to discuss and resolve the relevant interface issues.  Extractive Industry  The Study Area intersects with an Extractive Industry Interest Area (EIIA) between KP 37 – 50.7 and an existing extractive industry tenement at KP 14, just south of Sunbury Road.  The co-location of the PPA within the existing VNIE pipeline easement (KP 42 – 50.7) will ensure substantial additional potential extractive resource land in this area will not be affected.  Regarding the existing extractive industry tenement at the parcel located at KP 14, APA has undertaken substantial consultation with the landowners to align the PPA outside of planned quarry and stockpile areas and away from access roads. |
| 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. |
| Changes to non-residential land use activities will be temporary only and are not expected to permanently affect local residences/communities, social groups or industries. |
| **Is mitigation of potential social effects proposed?**  🗙 NYD 🗙 No 🗙 Yes If yes, please briefly describe. |
| The primary forms of mitigation relate to siting and design and construction management. An EMF has been developed which includes environmental performance objectives tailored to address the potential impacts.  Relevant environmental objectives in the EMF include:   * Siting and design of the pipeline (and construction ROW) to minimise severance or interference with existing and planned future land uses. The alignment should particularly avoid or minimise impacts on sensitive land uses, future transport infrastructure, extractive industries and community facilities. * The use of trenchless construction to construct the pipeline underneath selected roads to maintain traffic flow and minimise disruption to road users. * Develop a construction program for progressive works along the PPA. The construction program should be designed to:   + Minimise traffic movements around sensitive land uses.   + Coordinate works to the extent practicable with other works in PSP areas   + Minimise amenity impacts at any one location (e.g. noise, vibration, air emissions) * Develop a CEMP for the Project to avoid or minimise impacts of dust or other air pollution, noise and vibrations, and traffic on local residents. |
| **Other information/comments?** (e.g. accuracy of information) |
| N/A |

### Cultural heritage

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| **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. |
| A Registered Aboriginal Party (RAP) (Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation (WWWCHAC)) has been appointed for the majority of the Study Area and the remainder of the Study Area is governed by Aboriginal Victoria (AV). Both organisations have been consulted.  Two CHMP’s will be undertaken for the project to represent the interests of the applicable registered aboriginal parties across the project.   * KP 0 – KP 8 falls within Aboriginal Victoria (AV) region. There are three recognised Traditional Owner groups for this part of the Study Area including WWWCHAC, Bunurong Land Council Aboriginal Corporation (BLCAC) and the Boon Wurrung Foundation (BWF). * KP 8 – KP 50 falls within Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation region.   A Notice of Intent to prepare a CHMP for the purposes of the AH Act was lodged for the project to cover both regions:   * WWWCHAC on 3 June 2019. The CHMP ID is 16593. A CHMP inception meeting was held with WWWCHAC on 4 June 2019. * AV on 3 June 2019. The CHMP ID is 16594. |
| **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) |
| Biosis have been commissioned to undertake a cultural heritage preliminary desktop assessment for the Project (refer Attachment 10). The preliminary desktop assessment provides formal cultural heritage advice following a review of the requirements of the AH Act and the *Aboriginal Heritage Regulations 2018*, the *Heritage Act 2017.*  It is noted that the preliminary desktop assessment provided with the EES referral is not the report required for the CHMP under AV’s guidelines.  Biosis has been commissioned to prepare the two above-mentioned CHMPs. The desktop assessment stage is currently being progressed which includes a review of relevant background information such as environmental and ethnographic data, Aboriginal archaeological reports, Aboriginal place data, historic map sources and aerial imagery. The assessment also includes the development of an Aboriginal place prediction model.  Overall Progress:   * Standard assessments have commenced for both CHMP’s 16594 & 16593 in consultation with the RAP’s. * The complex assessment has been scheduled to commence on onsite on 11th November, 19 for CHMP 1. |
| **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 |
| A search of the Victorian Aboriginal Heritage Register (VAHR) undertaken as part of the desktop assessment indicates a total of 26 previously recorded Aboriginal places, comprising 87 components, intersect with the Study Area. Of these places, 19 are located within the Study Area. The remaining seven places lie outside the Study Area, however the 50 metre cultural heritage buffer of each place crosses into the Study Area.  The archaeological record indicates there is a common occurrence of low density artefact distributions and artefact scatters within the Study Area, with silcrete and quartz as the most common raw materials being identified. Many of these places are situated in close proximity to named waterways, such as Merri and Curly Sedge Creeks, and near associated tributaries and drainages.  The Study Area crosses the location of five large place extents comprising:   * Tamboore 6 (VAHR 7822-3394), * Tamboore 20 (VAHR 7822-3408), * Donnybrook Road Aboriginal Place 1 (VAHR 7822-3649), * Donnybrook Road Aboriginal Place 2 (VAHR 7822-3650) and * Donnybrook Road Aboriginal Place 4 (VAHR 7822-3760).   The extents have been determined by landforms including stony and volcanic rises, and an alluvial terrace margin. Of these large artefact scatters, only one is located within close proximity to a major waterway. Donnybrook Road Aboriginal Place 2 (VAHR 7822-3649) is situated within 200 metres of Merri Creek, within the northern extent of the Study Area.  There are a significant number of previously registered Low Density Artefact Distributions (LDADs) situated within the western extent of the Study Area, all located in an area of ploughed land, near Plumpton. There appears to be no consistent spatial patterns of the Aboriginal cultural heritage found in this area, and the artefacts were not located in close proximity to any watercourses.  There are also several scarred trees and an earth feature found within, or in close proximity to, the Study Area. The locations of most of the scarred trees appear to follow predictive patterns as they are located near watercourses, namely Merri Creek.  There appears to be a lack of archaeological places within much of the central extent of the Study Area, more specifically between KP 10 – 20. The absence of Aboriginal places could be attributed to a lack of survey and investigation within these areas, and therefore it is possible for more places to be present even though not yet recorded.  The large number of already registered Aboriginal places within the Study Area in areas that have been subject to archaeological survey, is indicative of past Aboriginal occupation of the land, and suggests the landscape would have been used for activities associated with hunting, gathering and camping, or even as travel routes to get to other places.  It should also be noted that the majority of registered places within the Study Area have been found when an Aboriginal archaeological survey was required or recommended, mainly for residential subdivisions, construction of utility infrastructure and the rail line upgrade between Sunbury and Footscray. |
| **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. |
| A search of recorded historical cultural heritage records in the vicinity of the Study Area was undertaken on 24 July 2019. A total of two historical places listed on the Heritage Register or the Archaeological Inventory under the *Heritage Act 1995* were identified.  It is also noted two historical places listed by local council heritage overlays are intersected by the Study Area. Table 18 provides an overview of cultural heritage places intersected by the Study Area, including a description of whether the PPA will impact the place.  **Table 18 Cultural heritage places within the Study Area**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | **Heritage Listing/No.** | **Place Name** | **Address** | **Site Type** | **Location** | **PPA impact** | | **State significant** | | | | | | | VHI-H7822-2283 | Holden Cobbled Stone Road | Holden Road, Plumpton and Diggers Rest, Melton Shire | Transport – Road | KP 6.4 | The PPA will intersect the place (road crossing). If avoidance cannot be achieved (e.g. HDD or boring) an *Application for Consent* must be submitted to Heritage Victoria for any impact. | | D7822-0888 (Delisted from VHI) | Beveridge Quarry 2 | 300 Hume Highway, Beveridge | Mining and Mineral Processing | KP 36.8 | The PPA does not intersect the place. | | **Locally significant** | | | | | | | HO 55 | House | 974 – 1048 Melton Highway, Plumpton | Farming and grazing  Parks, gardens and trees  Residential buildings (private) | KP 3.3 | The PPA does not intersect the place. | | HO 273 | Warlaby | 395 Oaklands Road, Oaklands Junction | Farm complex – homestead and outbuildings | KP 21.4 | The PPA does not intersect the place. | |
| **Is mitigation of potential cultural heritage effects proposed?**  🗙 NYD 🗙 No **🗙** Yes If yes, please briefly describe. |
| The primary forms of mitigation relate to siting and design followed by management, should avoidance not be achieved. A mandatory CHMP is triggered for the Project under the AH Act, which will be completed using the following methodology:   * Standard Assessment comprising a ground survey of the entire PPA to identify surface Aboriginal cultural heritage material and confirm landforms of archaeological potential. * Complex Assessment comprising subsurface testing in the areas of Aboriginal archaeological potential. * Should Aboriginal places be identified during the CHMPs there is an obligation under the AH Act to register these places of the VAHR. * Following fieldwork and Aboriginal place registration, CHMPs will be produced in compliance with AVs relevant practice notes and guidelines and be in accordance with the *Aboriginal Heritage Regulations 2018*.   The outcomes of the assessment will be integrated into the detailed design process.  The CHMPs will be submitted for evaluation.  An EMF has been developed which includes environment performance objectives tailored to address the potential impacts. Relevant performance objectives that will be achieved include:   * Meet the requirements of the AH Act and *Heritage Act 2017*. * Site / design the PPA away from known archaeological sites and areas with higher archaeological potential and cultural sensitivity, reducing the risk to harming any cultural heritage or areas with higher densities of Aboriginal artefact scatters. * Implement all CHMP management recommendations in project design and construction, including implementing any salvage plan. * Develop a site specific construction management plan with options to minimise impact by way of HDD or horizontal boring, particularly at known places and creek crossings. |
| **Other information/comments?** (e.g. accuracy of information) |
| N/A |

### 16. Energy, wastes & greenhouse gas emissions

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| 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 describe. |
| Please add any relevant additional information. |
| Natural gas  Implementation of the Project is expected to result in a net reduction in the amount of natural gas used for compression (fuel gas) across the Victorian Transmission System by removing the need to de-pressurise and re-pressurise gas being moved from the eastern to the western sections of the system and vice versa.  Other  Other energy use will occur during the construction phase resulting from the combustion of diesel and other fossil fuels in vehicles, plant and machinery.  Operational activities that may consume/generate energy include infrequent transport movements required for pipeline surveillance and maintenance. |
| What are the main forms of waste that would be generated by the project facility? |
| **🗙** Wastewater. |
| 🗙 Solid chemical wastes. |
| **🗙** Excavated material. |
| **🗙** Other. |
| Please provide relevant further information, including proposed management of wastes. |
| Wastewater  During construction, water may need to be discharged that has accumulated in open excavations (e.g. pipeline trench dewatering) and following hydrostatic testing of the pipeline.  Water from trench dewatering and hydrostatic testing may be disposed of in several ways, including discharge to land, irrigation, release into sewers, landholders’ dams or paddocks, or into watercourses subject to relevant regulatory and/or landowner approvals.  Waste water management measures, including disposal of trench dewatering and hydrostatic test water will be addressed in the CEMP, which will be submitted and prepared for regulatory approval prior to construction.  Excavated material  There is potential for minor quantities of subsoil to be disposed of following restoration of the construction footprint. All waste soil will be managed in accordance with the Environmental Protection (Industrial Waste Resource) Regulations 2009 and relevant EPA IWRG soil disposal guidelines.  Other  Other waste streams expected to be generated during the construction phase of the Project include vegetative material from clearing operations and hard waste construction material (e.g. concrete, off-cuts, pipe coverings and materials from temporary structures such as fencing and signage). Solid and liquid waste, including excess excavated soils generated during construction, will be managed in accordance with the standard measures of the CEMP, which are based on the following waste management hierarchy:   * Avoid receiving waste at point of purchase. * Reduce wastes at point of use. * Reuse materials, where possible. * Recycle wastes, where practicable. * Dispose of wastes appropriately and responsibly. |
| What level of greenhouse gas emissions is expected to result directly from operation of the project facility?  **🗙** Less than 50,000 tonnes of CO2 equivalent per annum  🗙 Between 50,000 and 100,000 tonnes of CO2 equivalent per annum  🗙 Between 100,000 and 200,000 tonnes of CO2 equivalent per annum  🗙 More than 200,000 tonnes of CO2 equivalent per annum |
| Please add any relevant additional information, including any identified mitigation options. |
| **Pipeline**  Fugitive emissions related to the transmission of natural gas have been determined in accordance with the NGERS *(Measurement) Determination 2008*, Section 3.76 using Method 1. This accounts for fugitive emission of methane from the pipeline, valves and other infrastructure.  Fugitive emissions from the pipeline and associated infrastructure is a total of 527t C02 /year.  Other activities associated with the operation of the pipeline by infrequent transport movement required for the pipeline surveillance and operational maintenance activities have minor impacts  (<1 t C02 / year) and therefore have not been considered further in this assessment.  **Wollert compressor station**  Golder conducted a GHG assessment for the additional compressor unit to be installed at the existing Wollert compressor station (refer Attachment 8). The GHG assessment is based on the energy consumption of the following scenarios:  **Standard Operations:**  Assumes that the proposed gas turbine will be operational over 12hrs per day x 365days per year (50% operational during the year). The emissions from the operation of the additional gas turbine is estimated at 12,911 C02 / year.  This includes an annual fugitive emissions of 11 t C02 / year for the additional gas turbine.  **Worst Case Operations:**  Note this scenario is extremely conservative as it is expected to occur no more than 10% of the time. It has been included to compare against threshold for EES @ 200,000 t C02 / year.  Assumes all (3) gas turbines (including the additional gas turbine) will be operating continuously 365days per year. The annual combined GHG emissions from all (3) gas turbines is estimated at 77,000 C02 / year, compared with the EES referral trigger level of 200,000 t C02 / year indicating the EES referral criteria will not be triggered by GHG emission due to the proposed works. |

### 17. Other environmental issues

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| Are there any other environmental issues arising from the proposed project?  **🗙** No 🗙 Yes If yes, briefly describe. |

### 18. Environmental management

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| 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 |
| The PPA will be refined in consultation with affected landowners/occupiers and government stakeholders. On ground environmental investigations will inform the construction methodology for avoidance and minimisation of impacts.  PPA selection and refinement criteria considers minimisation of environmental impacts, which includes defining the following:   * The extent of areas on environmental sensitivity such as flora, fauna and waterways. * The extent of areas of cultural heritage significance. * The extent of areas of good to high quality agricultural land. * The number of land parcels and landowners. * The proximity to existing and planned sensitive receptors, community facilities and infrastructure. |
| **🗙** Design: Please describe briefly |
| An integral part of the pipeline design process is the review and planning of the potential environmental, safety and social implications of the Project.  Available measures to avoid or reduce the extent of impact to MNES will include:   * Undertaking targeted surveys to inform design and construction methodologies. * Realignment and micro-siting of the pipeline route. * Reduction of the construction footprint in specific areas. * Use of Horizontal Directional Drilling or other trenchless construction methods. * Retention and protection of features such as cultural heritage and vegetation (where possible) within the ROW.   Through the route refinement process, and implemtation of suitable mitigation measures APA will avoid potential impact to these aspects by consideration of the outlined pipeline route selection criteria and review of present and foreseeable changes to land use.  The pipeline has a design life of 60 years. The design life of other pipeline equipment and subsystems ranges from 15 to 25 years, but with ongoing integrity management, and subject to appropriate commercial drivers, the operational life is expected to be longer.  APA undertakes the design and construction of the pipeline in accordance with AS2885.1-2012, which has important design reviews and controls to ensure the pipeline is adequately designed for its intended purpose and risks are minimised to as low as reasonably practicable with consideration of the environmental, safety and social impact of the pipeline operation.  APA continuously monitors activities around its assets, including what land use changes are occuring and what development is taking place to ensure it remains in a positon to comply with applicable operational and safety standards and legislation whilst meeting its commercial obligations and imperatives.  Specifically in relation to pipeline safety and land use, the Safety Management Study will be undertaken prior to pipeline construction and will then be reviewed against the final constructed pipeline to consider and address any additional threats discovered during construction. During operation, the Safety Management Study is then regularly reviewed to ensure ongoing compliance with the requirements of AS2885.1-2012, and to ensure appropriate responses to changes in land uses and any external threats are implemented. |
| **🗙** Environmental management: Please describe briefly. |
| An EMF is included with this referral (Attachment 11) which sets out the environmental management objectives to be achieved during detailed design, construction and operation of the Project.  The EMF sets out performance based environmental objectives designed to avoid, minimise and mitigate impacts of the Project. Specifically, the EMF seeks to:   * Establish a framework to ensure compliance with statutory requirements and manage environmental risks. * Identify environmental aspects and values as part of the project delivery phases. * Identify environment management systems and project documents required to capture environmental risks and controls during project delivery phases. * Identify higher level reporting and monitoring requirements.   The EMF provides framework to guide the preparation and implementation of subsidiary documents, including   * A CEMP, required by the Pipelines Act. * Consultation plan as defined in Pipelines Act. * An OEMP.   Subsidiary EMPs, for the Project will be developed to be consistent with the EMF and be prepared in consultation with:   * Relevant stakeholders, including local governments, the Department of Environment, Land Water and Planning (DELWP), and Melbourne Water. * The Registered Aboriginal Party and Aboriginal Victoria * Contractor appointed to manage and contract the Project.   Compliance with the EMF and subsidiary control documents, such as the EMPs and OEMP, will be a condition of any pipeline licence under the Pipeline Act or other subsidiary approval. Compliance will be achieved through undertaking assurance/audit activities.  **Management plans**  In relation to safety during construction, APA will implement a specific Construction Health and Safety Management Plan in addition to the CEMP. The preparation of these plans are informed by both APA’s hazard and risk assessments as well as specialist and technical assessments completed for specific activities. APA will seek approval of these plans prior to the construction of the pipeline in accordance with the requirements of the Pipelines Act.  Following the construction and commissioning of the pipeline, the asset will be owned and operated by APA in accordance with an Operational Safety Management Plan and Environmental Management Plan approved by the Minister. This will be consistent with APA’s HSE Management System. The pipeline will form part of the well-established operations and maintenance systems APA has in place for other pipeline assets in Victoria.  The CEMP and OEMP will be centralised, scope-specific documents that describe all environmental risks related to the Project and required actions to manage those risks, including conditions of approval. The CEMP and OEMP will be supported by a number of sub-plans which provide detailed environmental controls to manage key environmental issues.  Performance standards will be identified to address key environmental risks, effects and legal requirements for the Project. Key environmental risks were defined through the process of an Environmental Risk Assessment conducted by APA with specialist consultants and contractors. The performance standards, which are defined in these plans, are a collation of the management and mitigation measures, environmental monitoring and contingency plans for the Project.  The CEMP and OEMP will outline the relevant assurance procedures for the construction activities, including regulatory reporting requirements. |
| **🗙** Other: Please describe briefly |
| APA is committed to responsible safety and environmental management. This is formalised in a Health, Safety and Environment (HSE) Policy, which outlines the requirements of all APA employees, including contractors. The HSE Policy sets out APA’s commitment, strategic intent, direction, and an overview of supporting strategies to achieve the aims of the policy.  The plans and procedures APA will implement as part of the operation of the pipeline are based on the specific risks that arise from its operation and relevant regulatory requirements. Risks associated with health and safety are managed by identifying hazards, assessing consequences and likelihood, evaluating risk and implementing preventive and mitigation measures as appropriate and required pursuant to relevant legislation and standards.  For the Project, APA will undertake a Safety Management Study, Environmental Risk Assessment and a Construction Safety Hazard Identification to allow for the assessment of site specific hazards and avoidance and mitigation measures. The risk assessments and registers developed through these processes consider risks to the following groups:   * APA personnel, and customers; * The public; * The environment; and * APA’s assets/facilities.   If the hazards identified through this process are not able to be eliminated, work is carried out in accordance with plans and documented procedures, so as to ensure a safe working environment and practices. This approach is consistent with AS2885.1-2012. |

### 19. Other activities

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| 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. |
| Other construction activities occuring within the designated urban growth areas will include the development of new residential estates and associated infrastructure to support future population growth in the region (e.g. utility services such as telecommunication, water, sewerage and transport infrastructure). |

### 20. Investigation program

Study program

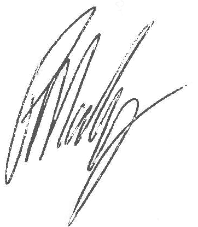
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| Have any environmental studies not referred to above been conducted for the project?  🗙 No **🗙** Yes If yes, please list here and attach if relevant. |
| Spiny Rice-flower (SRF) targeted survey  Targeted surveys for SRF commenced in July 2019 as the optimum survey timing for the species is April to August. Surveys have been conducted in areas of uncultivated grassland west of Deep Creek (KP 0 - 17), which is based on expert knowledge of the species and previous surveys in the locality.  The species has not previously been recorded east of Jacksons Creek (KP 13 - 14) however much of the area between Jacksons Creek and Deep Creek (KP 17 -18) has not been extensively surveyed, therefore a precautionary approach was proposed to set the eastern limit of survey activity.  Striped Legless Lizard (SLL) targeted survey  Targeted surveys for SLL commenced in July 2019. The survey methodology included an initial habitat assessment along the entire length of the PPA followed by the placement of 20 tile arrays in accordance with survey guidelines. Tile arrays were divided into the following sections along the PPA:   * The western section (west of Calder Fwy; KP0 to KP9) is the section of the alignment considered most likely to support SLL, as it is closest to the majority of recent SLL records. This section of the alignment is subject to the highest level of survey effort. * The north-western section (east of Calder Hwy and west of Hume Fwy; KP9 to KP37) is the section of alignment with the greatest uncertainty in regards to the potential for SLL to be present. There are no SLL records through this section, however, a limited number of surveys have been undertaken. A moderate level of survey effort is being undertaken in this section to account for uncertainty. * The northern section (east of Hume Fwy; KP37 to KP51) is the section of alignment considered least likely to support SLL, as a recent review by DELWP concluded that SLL are unlikely to occur in this area, based on previous survey results.   A reduced survey effort is being undertaken through this section, which largely focuses on better quality areas of potential habitat based on grassland structure, land use history, proximity to historical SLL records, patch size and level of fragmentation.   Inspection of the tiles is currently being undertaken once per week which will continue to occur until November 2019 and fortnightly in December 2019 in an attempt to detect any animals sheltering beneath the tiles. This will result in a total of 15 checks, which will all be undertaken by teams of two zoologists with experience surveying and identifying SLL.  Spring targeted flora surveys  Spring targeted flora surveys commenced in October 2019. Surveys are being conducted across the entire PPA in areas of high quality grassland / woodland / grassy wetland for:   * Large-headed Fireweed *Senecio macrocarpus* * Small Golden Moths *Diuris basaltica* * Swamp Diuris *Diuris palustris* * Purple Diuris *Diuris punctata*. |
| Has a program for future environmental studies been developed?  🗙 No **🗙** Yes If yes, briefly describe. |
| Vegetation assessment  On ground assessments will be conducted during spring – summer 2019-20 to map vegetation extent, including the extent and condition of threatened grassland, woodland and wetland ecological communities. Condition will be assessed according to Victoria’s Vegetation Quality Assessment (VQA) method and diagnostics for threatened ecological communities.  Targeted flora surveys  Targeted surveys for significant flora will be undertaken at a seasonally appropriate time, during the flowering period of the species, or in accordance with published survey guidelines. Surveys will be undertaken in all areas of suitable habitat with the standard survey method involving trained botanists walking transects spaced approximately 5 metres apart. The following survey program is being progressed:   * August 2019 – winter targeted surveys. * September to October 2019 – spring targeted surveys. * November to December 2019 – late spring / early summer targeted surveys.   Targeted fauna surveys  Targeted fauna surveys will focus on determining the presence of cryptic, resident species typically with relatively small and discrete home ranges. Species that are only seasonally present, wide-ranging and highly mobile are generally unlikely to be significantly impacted by the Project, and targeted surveys for such species are unlikely to add any value as the absence of records does not necessarily mean that these species won’t utilise habitat within the PPA.  Based on the above, targeted surveys have been identified for Striped Legless Lizards (SLL) (currently progressing), Golden Sun Moth (GSM), Growling Grass Frog (GGF), Red-chested Button-quail, Lewin’s Rail, Tussock Skink and Baillon’s Crake.  The following survey program has been developed:   * September to December 2019 – SLL targeted survey, including Tussock Skink and Red-chested Button quail. * November to December 2019 – GSM targeted survey, including Red-chested Button quail. * November 2019 to January 2020 – GGF targeted survey, including Lewin’s Rail, Baillon’s Crake and Red-chested Button quail.   Cultural Heritage Management Plans  In June 2019, APA engaged Biosis to prepare the two mandatory CHMPs for the Project. The CHMPs are currently following the below program:   * August to September 2019 – Standard Assessment, comprising a ground survey of the entire PPA to identify surface Aboriginal cultural heritage material and confirm landforms of archaeological potential. * September to November 2019 – Complex Assessment, comprising subsurface testing in the areas of Aboriginal archaeological potential. * November 2019 onwards – Completion of CHMPs.   Arborist Assessment  An arborist assessment will be undertaken for all trees within the boundaries of the construction ROW (outside the MSA approved area) to understand if the trees marked as a loss may be able to be retained and managed during construction. Any trees immediately adjacent to the construction ROW will also be assessed to determine any impacts from construction and identify any mitigation measures to be considered during construction.  Works Approval  All assessments required under the works approval process will be completed for the Project.  Soil Assessment  Various soil assessments will be undertaken along the pipeline alignment to provide information on the condition, profile and geology of the soil to assist with both the design and construction phases of the project.  Geotechnical and hydrogeological assessments shall occur along the pipeline (at select locations) to establish the exiting conditions and profile of the material to assist in defining appropriate design considerations and construction methodology. |

### 21. Consultation program

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| 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. |
| APA has prepared a Consultation Plan for the Project in accordance with Part 4, Division 1 of the Pipelines Act and requirements of the *Pipelines Regulations 2017* (Attachment 12)*.* The Consultation Plan was approved by the Minister on 29 January 2019, in accordance with Section 18(2) of the Pipelines Act.  The consultation plan describes how APA will communicate with stakeholders and, in particular, land-owners and occupiers that may be affected by the project. The Consultation Plan outlines the key objectives of consultation activities, tools to be used and the desired outcomes from the engagement with the relevant stakeholders. A copy of the plan has been available on the project website since the public launch of the project.  The primary objectives of consultation activities proposed under the Consultation Plan are to:   * Ensure a consistent consultation approach is applied throughout the Project lifecycle * Meet the statutory requirements and expectations of regulatory agencies in relation to the consultative processes used by the Project for engaging with stakeholders * Ensure that the consultation activities enable stakeholders to better understand the Project through the timely distribution of Project information that is presented in an understandable format * Ensure that APA is able to understand the views of the stakeholders * Ensure that landowners and occupiers are sufficiently informed about the project, the aspects they can influence and their rights * Allow landowners and occupiers to have input into those aspects of the Project that could affect them * Outline the process of consultation with landowners and occupiers and the complaints process, to ensure consistency with regulatory requirements   The Consultation Plan identifies seven phases of consultation across the Project lifecycle:   * Information gathering for route selection * Initial stakeholder engagement * Obtaining land access for surveys * Agreement on pipeline corridor * Completion of regulatory approvals * Pipeline construction * Pipeline operation   Information gathering for Route Selection took place mid-late 2018 and included engagement with key stakeholders of relevance to the route selection process. Consultation with external stakeholders regarding the Project has taken place since as early as 2007 however, more recently the Initial Stakeholder Consultation phase commenced in November 2018 with project information and briefings being provided to relevant federal, state and local government authorities and utilities, including:   * AusNet Services * Australian Rail Track Corporation (ARTC) * City West Water * Commonwealth Department of the Environment and Energy * Department of Environment, Land, Water and Planning * Department of Transport * Environment Protection Authority Victoria * Hume City Council * Melbourne Water * Melton City Council * Mitchell Shire Council * Major Road Projects Victoria * VicRoads (now Department of Transport) * Victorian Planning Authority * VicTrack * Western Water * Whittlesea City Council * Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation (WWWCHAC) * Yarra Valley Water   Communication with these organisations is ongoing and will continue over the lifecycle of the Project.  Communications with external parties are captured within APA’s consultation management system. A summary of communication activities with stakeholders (not including landowners), undertaken on the project prior to 17 October 2019, is provided within Figure 11 below.    **Figure 11 – Project communication with stakeholder’s summary (extract from APA’s consultation management system)**  A web-page for the project was published on APA’s website 20th March 2019 (<https://www.apa.com.au/about-apa/our-projects/western-outer-ring-main/>), providing a project overview and links to a Project Fact Sheet, an Introducing APA and Field Survey Fact Sheet, the Consultation Plan, an Overview Map and the Route Selection Report. APA has provided a project specific phone number on the Project web-page as well as an email enquiry function with enquiries monitored by the project team and responded to promptly.  A newsletter has been mailed out to the local community providing some general information about the project on 19th October, 19 (e.g. residents within close proximity to the proposed pipeline alignment). Approximately 1750 residents received the newsletter. A project hotline and email address was provided with the newsletter to answer any queries that local residents may have in relation to the project.  Following the identification of a preferred route and the publishing of the project web-page, in late March 2019, APA commenced consultation with potentially affected landowners and occupiers, along the Preliminary Pipeline alignment, as a component of the Initial Stakeholder Engagement phase. APA has contacted all landowners and occupiers whose properties are traversed by the preliminary pipeline alignment through a combination of visits to properties, phone-calls, emails and the issuing of letters. Through discussions with landowners regarding existing and future land-use, APA has been able to refine the Preliminary Pipeline alignment to further reduce social impact.  A summary of communications activities involving landowners, undertaken on the project prior to 17 October 2019, is shown with Figure 12 below.    **Figure 12 – Project communication with landowner’s summary (extract from APA’s consultation management system)**  APA commenced the Obtaining Land Access for Surveys phase in April 2019 and has reached a voluntary survey agreement with landowners for over 86% of the alignment. |
| Has a program for future consultation been developed?  🗙 NYD 🗙 No **🗙** Yes If yes, briefly describe. |
| Future consultation to be undertaken under the Consultation Plan includes the following phases:   * Obtaining land access for surveys (continued) * Agreement on pipeline corridor * Completion of regulatory approvals * Pipeline construction * Pipeline operation   It is worth noting that further engagement under the Initial Stakeholder Engagement phase may be necessary, should consideration to alternative alignment options involving properties outside of the current alignment be required.  The following future consultation activities are to be undertaken on the project:   * Ongoing meetings with federal, state and local government authorities * Meetings with utilities * Ongoing one-on-one landowner and occupier meetings * Project update newsletters to local residents within proximity of the project and other interested parties * Notice of Pipeline Corridor to be issued to all affected landowners * Online materials to be retained on APA’s website over the lifecycle of the project and updated as required * Phone-calls and emails to the project specific phone number and email address on the Project web-page will be monitored and responded to over the lifecycle of the Project. |

**Authorised person for proponent:**

I, PAUL MALONEY (full name),

****General Manager Infrastructure Planning and Protection (position), confirm that the information contained in this form is, to my knowledge, true and not misleading.

Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date 22 October 2019

**Person who prepared this referral:**

I, MITCHELL DEAVES (full name),

****Senior Environmental Planner, Biosis Pty Ltd (position), confirm that the information contained in this form is, to my knowledge, true and not misleading.

Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date 22 October 2019

1. Victorian Gas Planning Report (March 19) Australian Energy Market Operator (AEMO) [↑](#footnote-ref-2)
2. Victorian Gas Planning Report (March 19) Australian Energy Market Operator (AEMO) [↑](#footnote-ref-3)
3. It is noted that following Amendment GC28 to the Whittlesea Planning Scheme, ESO6 applies to the RCZ area. However, ESO6 has mistakenly been referenced as ESO7 in the current maps of the Whittlesea Planning Scheme. [↑](#footnote-ref-4)
4. Following Amendment CG28 to the Whittlesea Planning Scheme, ESO4 has been removed from the Amendment area including some portions of the Study Area. However, this amendment has not been reflected in the current maps of the Planning Scheme as yet. [↑](#footnote-ref-5)
5. It is noted that following Amendment GC28 to the Whittlesea Planning Scheme, ESO6 applies to the RCZ area. However, ESO6 has mistakenly been referenced as ESO7 in the current maps of the Whittlesea Planning Scheme. [↑](#footnote-ref-6)
6. Following Amendment CG28 to the Whittlesea Planning Scheme, ESO4 has been removed from the Amendment area including some portions of the Study Area. However, this amendment has not been reflected in the current maps of the Planning Scheme as yet. [↑](#footnote-ref-7)