Application for Pipeline Licence

Pipelines Act 2005 – Sections 28, 29 and 30
Pipelines Regulations 2017 – Regulation 8

1.	**Applicant details**		
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3.	**Details of what the proposed pipeline will be used for**
	This Application for Pipeline Licence (Application) pursuant to the *Pipelines Act 2005* (Pipelines Act) relates to the proposed construction and operation of a 350-millimetre (mm) nominal diameter (DN) jet fuel pipeline. The proposed pipeline, shown in Figure 1, would transport jet fuel between the existing Altona to Somerton pipeline (PL118) and the joint user hydrant installation (JUHI) facility at Melbourne Airport. The total length of the proposed Melbourne Airport Jet Pipeline (the pipeline) is approximately 6.7 kilometres (km).

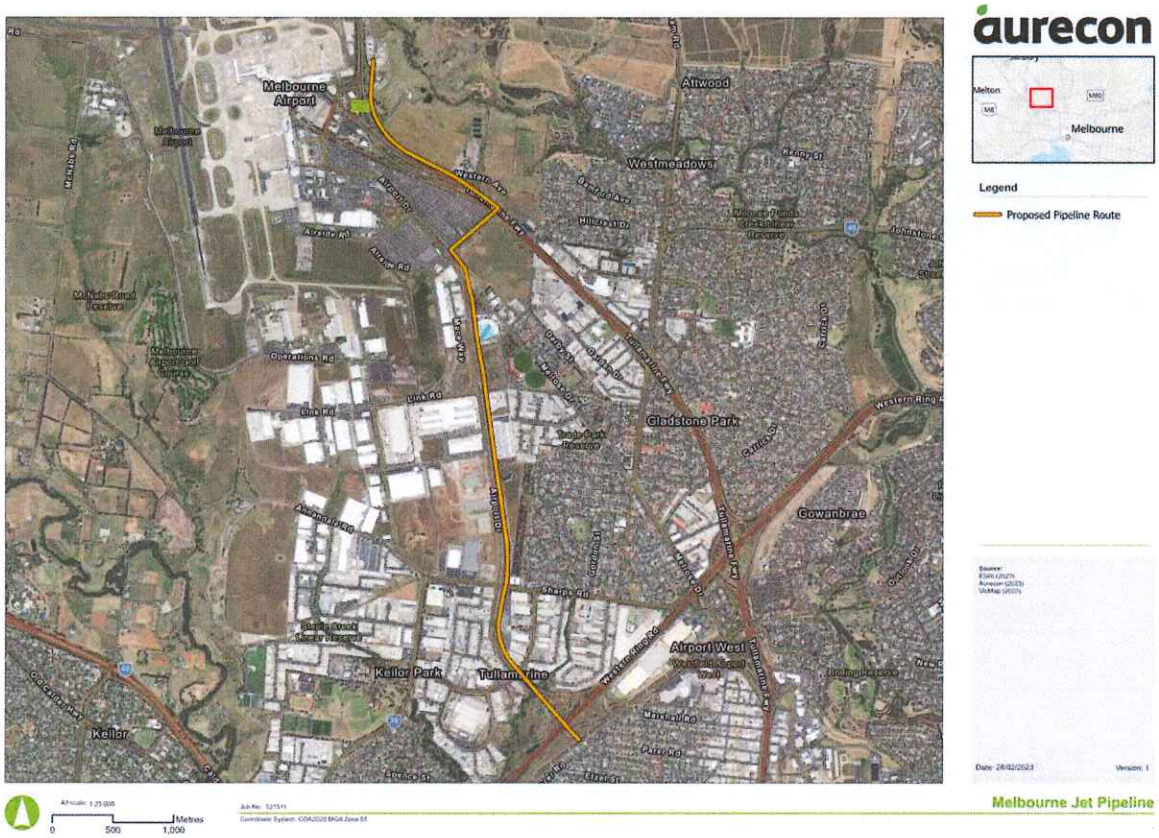


Figure 1: Proposed pipeline route

Viva Energy Australia (Viva Energy) is proposing to construct and operate the pipeline to support the growing fuel needs at Melbourne Airport. As Australia's second largest airport, annual passenger numbers for Melbourne Airport are expected to almost double by 2042 – increasing from 37 million to more than 76 million per year[1]. In line with this projected increase in passenger numbers, the requirement for jet fuel is expected to increase significantly and is expected to exceed the capacity of the existing fuel supply infrastructure. Notwithstanding future growth, jet fuel supplied via the existing pipeline system is already being supplemented by trucking operations from Geelong and Melbourne's inner-city suburbs. The development of the pipeline would provide faster replenishment of fuel stocks, provide an alternative to current and escalating dangerous goods vehicle movements and provide a more robust fuel supply chain.

The proposed pipeline aims to:

- help meet the increasing demand for jet fuel and support future growth at Melbourne Airport.
- increase the supply security of jet fuel which would contribute to the Victorian state economy.
- reduce the reliance on road transport for jet fuel supply with fewer trucks required to deliver fuel to the airport.

[1] Melbourne Airport Preliminary Draft Master Plan 2022

Key components of the proposed pipeline include:

- A new pipeline to transport jet fuel. The pipeline would be approximately 6.7 km in length and fully buried for its entire length to a minimum depth of 1200 mm below ground level (bgl).
- Pig launcher and receiver sites located at each end of the pipeline. These are used to launch instruments during initial commissioning of the pipeline to clear any debris or water and during operation to record any defects in the pipe.
- An impressed current cathodic protection system (ICCP) to protect the pipe. The ICCP is a system which comprises anode beds and power supply.
- Inlet and outlet metering stations which provide flow analysis for the leak detection system.

Table 1 summarises the key data for the proposed pipeline.

Table 1: Summary of key data for proposed pipeline

Key pipeline data	
Length	6.658 km
Product transported	Jet A1 fuel
Material	High strength steel pipe - Manufacturing code API 5L, product specification level PSL 2 with an X56 grade.
Coating system	3-layer PE
Nominal diameter	DN 350 mm
Maximum target flow rate	800 m^3/h. The initial operating flow rate would be 400 m^3/h.
Pipe wall thickness	11.8 mm
Pipe segment length	18 m
Easement	7 m
Design principles	Australian Standard AS2885 Pipelines – Gas and liquid petroleum
Design life	40 years
Design pressure/Maximum allowed operating pressure	6000 kPag
Location class	T1

The pipeline has been designed with an operational life of 40 years and in accordance with the Pipelines Act and Regulations which requires it to comply with the Australian Standard AS2885 Pipelines – Gas and liquid petroleum.

4. Commencement and termination points of the pipeline corridor and the proposed route of the pipeline

A detailed assessment process was undertaken to determine the proposed pipeline route. The assessment process included the consideration of alternative route options which are discussed in Section 11 of this Application.

The proposed pipeline corridor, commencement and termination points and the proposed route are described below. Detailed maps showing these features are presented in *Attachment A - Map Book*.

Commencement point

The proposed pipeline would tie-in to PL118, south of the Western Ring Road (M80) and southwest of Westfield Drive. The tie-in would occur at the barred tee (Easting 312686.358m, Northing 5823303.516m - GDA2020/MGA Zone 55) (Figure 2 and Figure 3). The proposed pipeline would commence at the downstream flange of the isolating valve XV-002. (Easting 312684.362m, Northing 5823302.979m - GDA2020/MGA Zone 55).

Indicative layouts of the proposed tie-in and commencement point are shown in Figure 2 and Figure 3. For further information refer to *Attachment B – Basis of Design*.

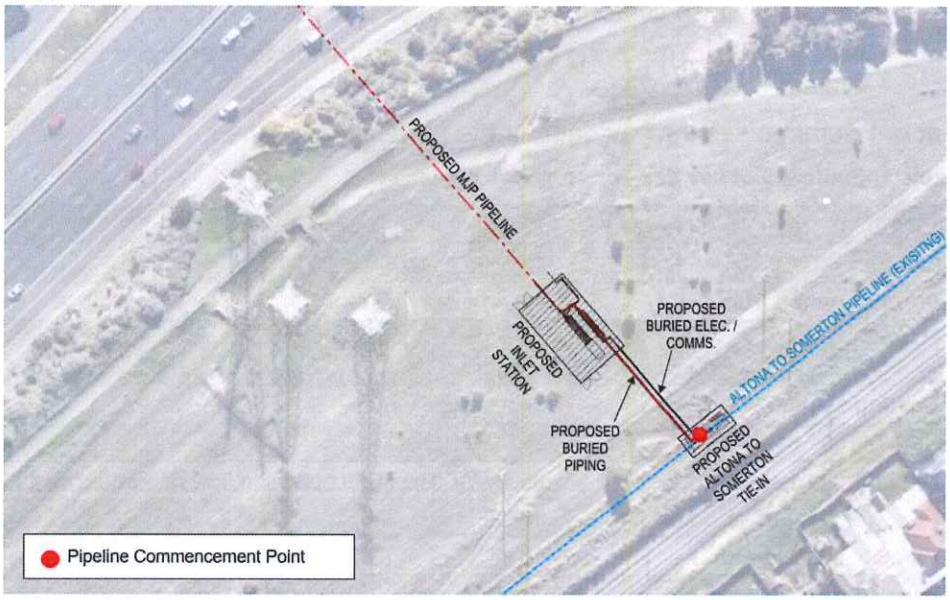


Figure 2: Plan view - pipeline commencement point and the proposed buried piping section of piping between the tie-in pit and the inlet station

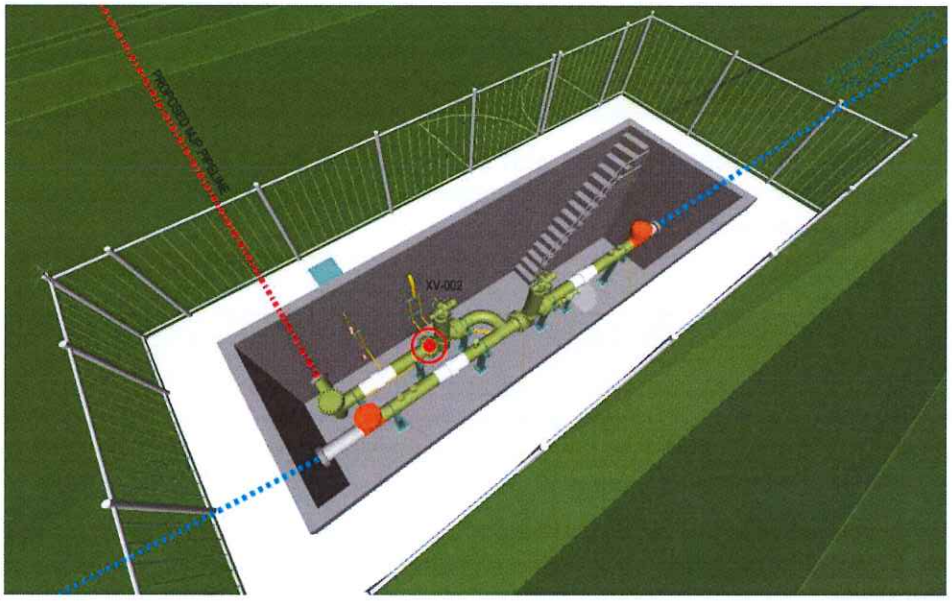


Figure 3: 3D model view – pipeline commencement point indicated with red circle

Proposed pipeline corridor

The 'pipeline corridor' is a corridor of land within which a pipeline is proposed to be constructed. The proposed pipeline corridor for the pipeline extends approximately 6.7 km between the commencement point at PL118 and the termination point at the JUHI facility. The proposed pipeline corridor includes:

- a temporary construction right of way (ROW) typically 20 metres (m) wide. A ROW is not required in areas along the pipeline route where HDD is used.
- additional areas contiguous with the construction ROW to support construction including:
  - access tracks
  - a laydown and pipe stockpiling area
  - work areas to accommodate horizontal directional drilling (HDD) and thrust boring exit and entry locations.
- a permanent easement of 7 m to protect the pipeline for operational and maintenance requirements.

The pipeline corridor includes both freehold land (including land owned or managed by Rail Projects Victoria (Department of Transport and Planning), VicTrack, VicRoads, Melbourne Water Corporation, Australia Pacific Airports (Melbourne) Pty Ltd (APAM) and private individual landowners) and Crown Land (administered or managed by Brimbank City Council, Hume City Council and VicRoads).

For further information refer to the land details provided in Section 13 of this Application.

Proposed pipeline route

The proposed pipeline would commence at the tie-in to PL118 and ends at the tie-in to the proposed pig receiver site at the JUHI facility. Kilometric points (KP) are used to locate features along the route, with the tie-in to PL118 at KP0 and the tie-in to the pig receiver site at the JUHI facility at KP6658.

The proposed pipeline route is described as follows:

- KP0 – KP903 – The pipeline runs northwest and crosses under the Western Ring Road (M80) (KP138 to KP218), Steele Creek North (KP493), Airport Drive (KP583 to KP673) and Tullamarine Park Road (KP738 to KP767).
- KP903 – KP4355 – The pipeline runs generally north within the eastern road easement of Airport Drive. The pipeline crosses under Sharps Road (KP1483 to KP1523), Link Road (KP3113 to KP3162) and Mercer Drive (KP4333 to KP4341). At KP1522, just north of Sharps Road, the pipeline enters Commonwealth land.
- KP4355 – KP4879 - The pipeline runs northeast along Mercer Drive, between Mercer Drive and the Melbourne Airport long-term car park and crosses under the Tullamarine Freeway (M2) (KP4817 to KP4867). At KP4807, prior to crossing under the Tullamarine Freeway (M2), the pipeline exits Commonwealth land.
- KP4879 - KP6658 - The pipeline runs northwest, first within a vacant property zoned for farming use (KP4879 to KP5078), under the Victoria Street road easement (KP5078 to KP5101) and re-enters Commonwealth land at KP5101. The pipeline remains in Commonwealth land for the remainder of the route, crossing under Quarry Road (KP6350), Marker Road (KP6450) and terminating at the proposed pig receiver site at the JUHI facility (KP6658).

Termination point

The pipeline would terminate at the tie-in to the pig receiver site at the JUHI facility (Easting 310966.883, Northing 5828912.209m - GDA2020/MGA Zone 55).

Indicative layouts of the pipeline termination point are shown in Figure 4 and Figure 5. For further information refer to *Attachment B – Basis of Design*.

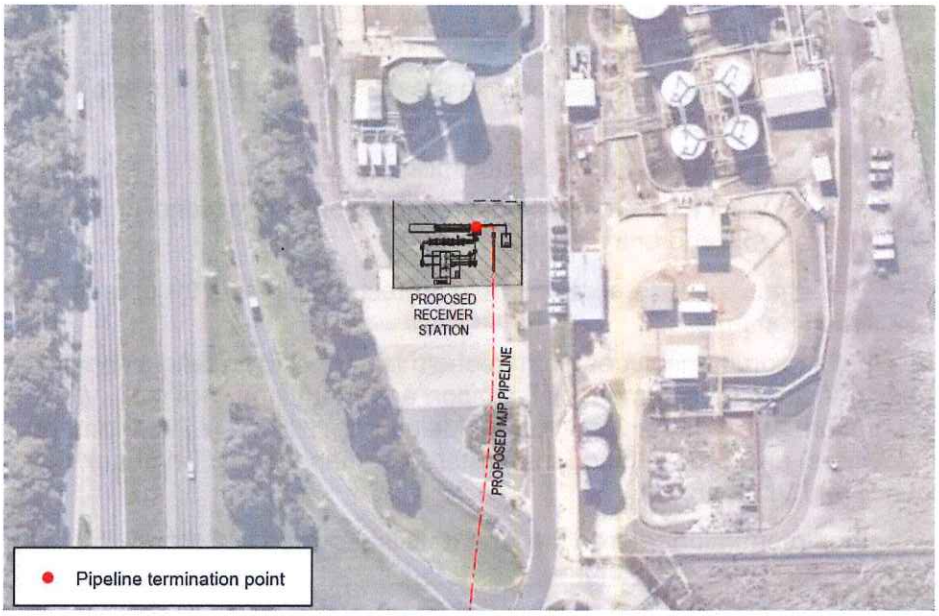


Figure 4: Plan View – pipeline termination point at the JUHI facility

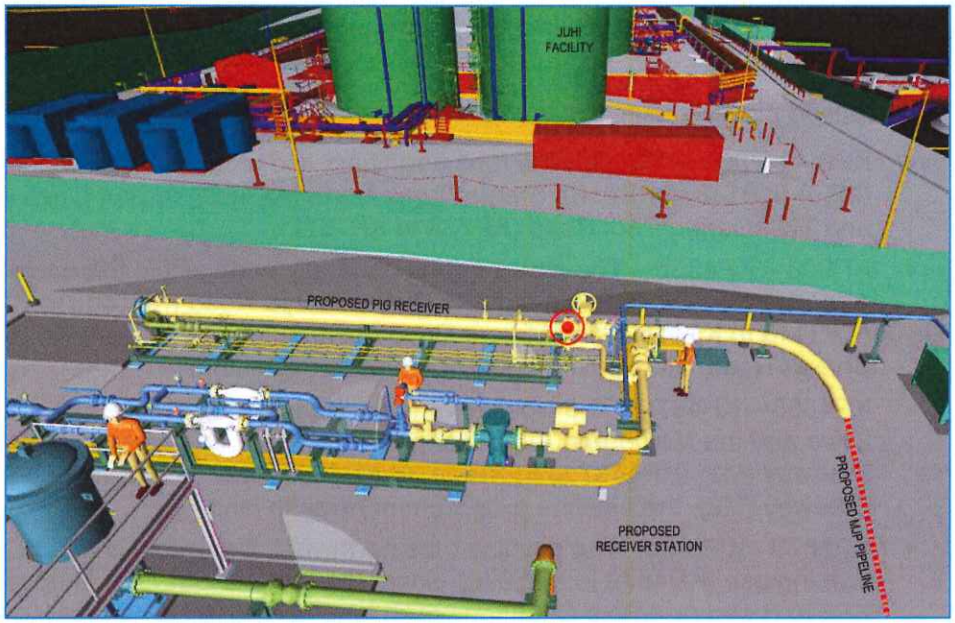


Figure 5: 3D Model View - Pipeline termination point at JUHI facility with tie-in indicated with red circle

5.	**Length of the pipeline**
	The length of the proposed pipeline, the subject of this Application, is 6.658 km.

6.	**Proposed maximum allowable operating pressure of the pipeline**
	The maximum allowable operating pressure of the proposed pipeline is 6000 kPag.

7. Proposed dates for commencement and completion of construction of the pipeline

Pipeline construction is proposed to commence in Q3 of 2024 and the pipeline is proposed to be operational by Q3 of 2025. An indicative construction schedule for the pipeline is shown in Table 2. This is a preliminary schedule and may change subject to Viva Energy Board approvals, land access, finalisation of design, award of Contracts and procurement timeframes and is subject to the grant of project approvals within certain timeframes.

While the disturbance to vegetation would be minimal, allowance has been made for approximately 13 months of rehabilitation for areas where re-seeding or re-planting may be required.

Table 2: Pipeline indicative construction schedule

Construction activity	Work period
Mobilisation	Q3 2024
Pipeline construction	Between Q3 2024 and Q2 2025
Commissioning	Between Q2 and Q3 2025
Demobilisation	Q3 2025
Rehabilitation	Between Q2 2025 and Q3 2026
Overall timeframe	Between Q3 2024 and Q3 2026

Pipeline construction would comply with all relevant codes and standards including AS2885.1-2018: Pipelines – Gas and liquid petroleum (design and construction) (AS2885.1-2018). The construction must also be guided by the environmental and safety requirements to be specified in the Construction Environmental Management Plan (CEMP) and Construction Safety Management Plan (CSMP) which would be prepared in compliance with the Pipelines Act and Pipelines Regulations 2017 and be accepted by the relevant regulator prior to construction.

8. Identification of the environmental, social and safety impacts arising from the proposed pipeline and pipeline operation, based on the surrounding current land uses and reasonably foreseeable future land uses

Viva Energy has undertaken technical studies to identify and understand the local and regional environment and the potential impacts from the construction and operation of the proposed pipeline. The technical studies were undertaken using a systematic, risk-based approach. This approach has allowed for the current and proposed future conditions of the area to be well understood and the potential impacts of the pipeline to be defined and assessed. This approach took into consideration the key constraints and opportunities afforded by existing and foreseeable future land use and infrastructure in consultation with key stakeholders.

This section summarises the potential environmental, social and safety impacts from the construction and operation of the pipeline. The proposed pipeline would be located in a highly developed and predominantly industrial area that is relatively insensitive to impact and does not exceed criteria under the Victorian *Environment Effects Act 1978* or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). Nevertheless, many potential impacts have been avoided or minimised through the refinement of the pipeline design, route alignment and construction methodology.

Current setting

The pipeline corridor is located across Commonwealth land and two local government areas (City of Brimbank and City of Hume). The pipeline corridor is adjacent to and within Melbourne Airport and contains predominately industrial land use areas with relatively few instances of community infrastructure (educational/childcare facilities, open space and natural areas, training/sports venues, or parks/linear reserves). The nearest residential properties are in Tullamarine between Sharps Road and Melrose Drive (the closest is approximately 110 m from the pipeline corridor), and in Airport West on Parer Road (the closest is approximately 35 m from the pipeline corridor). The residential properties in Airport West are currently located near the operating jet fuel pipeline, PL118 (i.e. the connection point of the proposed pipeline).

The selected pipeline route has been positioned within or adjacent to existing road reserves where possible. The pipeline route runs through one private property which is zoned for farming use (although it is not used for agricultural purposes and is proposed to be redeveloped for industrial/commercial use). This property is not residential and does not contain housing.

Most of the land along the pipeline corridor has been disturbed by previous land uses and cleared of native vegetation. The Albion-Jacana freight line rail corridor is located immediately south of the pipeline corridor. Main roads located within or adjacent the pipeline corridor include Western Ring Road (M80), Tullamarine Freeway (M2), Airport Drive and Mercer Drive. Roadsides are dominated by introduced flora with indigenous native amenity plantings common along the main roadways.

The pipeline corridor is within the catchments of Steele Creek and Moonee Ponds Creek and traverses both Steele Creek North and the artificially constructed Steele Creek North Branch. These waterways are classified as highly modified urban stormwater drains and typically have poor water quality. The major sources of pollution that have contributed to this classification are nearby freeways, airports, local industries and businesses, and local roads.

Foreseeable future land uses within and surrounding the pipeline corridor include Melbourne Airport Rail (the proposed pipeline route runs parallel to the Melbourne Airport Rail corridor along Airport Drive) and several industrial and commercial developments along Airport Drive and Western Avenue.

Environmental impacts

Biodiversity

The pipeline corridor is highly disturbed and developed along the entire alignment, with relatively few ecologically sensitive receivers present.

Flora

The pipeline corridor is dominated by introduced flora with indigenous native amenity plantings common along main roadways. Almost all remnant native vegetation has been previously cleared, and any remaining native vegetation in the area would be completely avoided by the proposed pipeline.

	Areas of the pipeline corridor where surface construction activities are proposed would require some vegetation clearance. As any vegetation removed would be either introduced flora or indigenous native plantings for amenity purposes and not remnant native vegetation, the vegetation removal would be exempt from requiring a permit, is not subject to *Guidelines for the Removal, Destruction or Lopping of Native Vegetation* (DELWP, 2017) and there is no requirement to offset. No ecological communities or threatened flora listed under the EPBC Act were identified within the pipeline corridor. One flora species listed as protected under the Victorian *Flora and Fauna Guarantee Act 1988* (FFG Act), Black Wattle, was recorded near Steele Creek North. The area around Steele Creek North would be under bored by HDD, so this species would be avoided during construction and no impacts would occur. *Fauna* The pipeline corridor is highly disturbed and developed, with a general absence of habitat that would support a diversity of fauna species. Tussock Skink was identified as the sole threatened species, as listed under either the FFG Act or the EPBC Act, potentially impacted by the proposed pipeline. Tussock Skink have been confirmed to occur in the pipeline corridor south of the Western Ring Road (M80)[2]. Their presence is expected to be localised to this area, noting extensive development and ground disturbance along the overall pipeline corridor and in the surrounding areas. Given the relatively small proportion of the habitat disturbed by the proposed pipeline (0.38 ha of the mapped 7.56 ha[3]), and the temporary nature of the construction activities, impacts to the species is considered minimal. There are three other threatened species (Growling Grass Frog, Grey-headed Flying-fox and Golden Sun Moth) with potential habitats within the pipeline corridor, however, none would be impacted by the proposed pipeline. Potential habitat exists along Steele Creek North for Growling Grass Frog and Grey-headed Flying-fox. As this area would be avoided during construction through HDD, impacts to potential habitat and this species would not occur. Potential habitat exists for the Golden Sun Moth in areas of Chilean Needle grass south of the Western Ring Road (M80), however targeted surveys undertaken in this area did not record this species. Based on the findings of the targeted surveys[4], Golden Sun Moth are not expected to regularly utilise habitat within the pipeline corridor and no impacts to this species are expected. Post-construction, the pipeline corridor would be rehabilitated as close as reasonably possible to its current state (in consultation with landholders) and ongoing operational activities along the alignment will be minimal. In the unlikely event of a pipeline failure there may be impacts to biodiversity through fauna injury and mortality.

[2] AJMJV. (2021). Melbourne Airport Rail State Land Terrestrial Ecology Impact Assessment. MAR-AJM-PWD-PWD-REP-XEV-NAP-0001710. Revision C.

[3] AJMJV. (2021). Melbourne Airport Rail State Land Terrestrial Ecology Impact Assessment. MAR-AJM-PWD-PWD-REP-XEV-NAP-0001710. Revision C.

[4] AJMJV. (2021). Melbourne Airport Rail State Land Terrestrial Ecology Impact Assessment. MAR-AJM-PWD-PWD-REP-XEV-NAP-0001710. Revision C.

Further information regarding the flora and fauna surveys conducted and assessment of potential impacts to biodiversity can be found in *Attachment C –Flora and Fauna Assessment Report.*

Surface water

The pipeline corridor is highly disturbed and developed, and the highly modified surface water systems are relatively insensitive to potential impacts from the proposed pipeline.

The pipeline corridor is within the catchments of Steele Creek and Moonee Ponds Creek and traverses both Steele Creek North and the artificially constructed Steele Creek North Branch. Steele Creek North and Steele Creek North Branch are classified as highly modified urban stormwater drains and typically have poor water quality[5]. The major sources of pollution that have contributed to this classification are nearby freeways, airports, local industries and businesses, and local roads[6].

The pipeline construction techniques near waterways have been selected to minimise ground disturbance. HDD would be used to cross all waterways, and any ground disturbance would be limited to construction work areas and trenched areas along the route. Consequently, the potential for waterways to be impacted by contaminated and/or sediment laden surface water runoff has been significantly reduced and any potential impacts can be effectively managed through standard management and mitigation measures as detailed in Section 10.

Accidental spills and leaks during construction are not expected to have significant impacts on waterways, as minimal quantities of fuels, chemical and other hazardous materials would be used or stored on-site, and any storage would occur at discrete work areas along the alignment away from waterways in accordance with relevant legislation.

Post-construction, the pipeline corridor would be returned to as close as possible to its current state. There would not be any permanent or substantial change to the existing topography which could redirect surface flows. The pipeline would be located underground, there would be minimal impervious surfaces where runoff can occur and potential operational impacts along the pipeline would be negligible.

During operational maintenance activities, stormwater with potential hydrocarbon contamination would need to be removed from the inlet and receiver stations. This may potentially impact upon water quality through wastewater discharges. However, maintenance activities at the stations are infrequent (e.g. pipeline inspection/pigging operations once every 5 years) and are closely supervised activities under permit to work conditions. Any waste is removed from site at completion and any potential impact for stormwater contamination would be limited to very minor/residual surface volumes.

In the unlikely event of a pipeline failure there may be impacts to surface water values through loss of containment and decreases in water quality.

Further information regarding the assessment of potential impacts to surface water can be found in *Attachment D – Hydrology and Groundwater Assessment*.

[5] Melbourne Water. (2022). Values of our rivers, creeks and streams. Retrieved from Port Phillip and Western Port Regional Catchment Strategy: https://portphillipwesternport.rcs.vic.gov.au/themes/waterways/

[6] Friends of Steele Creek. (2015). Submission to the Inquiry into the Environment Protection Authority., (p. 22).

Groundwater

Groundwater levels within the pipeline corridor are expected to range between 5 – 25 m bgl, with the potential for some shallow perched aquifers to be present at less than 5 m bgl.

Groundwater may be intersected during construction where HDD is used and in the deeper excavations required for HDD and thrust boring entry and exit pits. Groundwater is not expected to be encountered during any other construction activities. Where groundwater is encountered, localised impacts on groundwater users, groundwater levels, flow and quality may arise. Appropriate procedures and contingency plans, as outlined in Section 10 of this Application, would be implemented to manage potential impacts

Dewatering is not expected to be required during pipeline installation due to the shallow depth of trenching and the fact that dewatering of the drill path is not required for HDD. However, dewatering may be required if groundwater is encountered in the deeper excavations for HDD and thrust boring entry and exit pits. Dewatering can create drawdown and limit the availability of groundwater to users and can also lead to the mobilisation of existing contaminated groundwater plumes. Investigations to date have not identified significant areas of groundwater contamination, however given previous land uses, there is a possibility that groundwater contamination may exist in some discrete locations within the pipeline corridor. If dewatering is required, it will be undertaken in a manner that minimises these impacts.

Steele Creek North is the only groundwater dependant ecosystem (GDE) within the pipeline corridor. As this area will be under bored by HDD and HDD does not require dewatering, no impacts to this GDE would occur.

The pipeline is not expected to have any impacts upon groundwater levels or flow during typical operation. In the unlikely event of a pipeline failure there may be impacts to groundwater values through loss of containment and decreases in groundwater quality.

Further information regarding the assessment of potential impacts to groundwater can be found in *Attachment D – Hydrology and Groundwater Assessment*.

Contaminated land

Potential sources of contamination along the pipeline corridor include current and historical commercial/industrial land uses, roads and traffic, historical agricultural use, landfills and imported fill material. Despite the potential sources, contamination within the pipeline corridor appears to be minimal and limited to shallow fill soils impacted with detectable concentrations of PFAS. No contaminants of potential concern exceeded the adopted human health and ecological criteria and it is considered unlikely that they would be present at concentrations that would substantially impact upon human health or the environment. Regardless, appropriate procedures, as detailed in Section 10 of this Application, would still be implemented for identifying and managing unexpected contamination during construction of the pipeline.

The pipeline is not expected to introduce contaminants to the surrounding land during typical operation. Operational maintenance such as pigging/inspection activities at inlet/receiver stations are infrequent (e.g. once every five years) and are closely supervised under permit to work conditions. Any waste would be removed from site at completion and any potential for contamination would be limited to very minor/residual surface volumes.

In the unlikely event of a pipeline failure, loss of containment would lead to hydrocarbon contamination of the surrounding environment.

Further information regarding the assessment of potential contaminated land impacts can be found in *Attachment E –Environmental Site Assessment Report.*

Noise and vibration

The pipeline corridor and surrounding area is dominated by commercial and industrial land uses, including Melbourne Airport, and major road networks. As a result, the area has reasonably high background noise levels, contains relatively few noise and vibration sensitive receivers and has higher tolerance for noise and vibration typical of construction activities.

No noise exceedances have been predicted at the nearest sensitive receivers due to the reasonably high background noise levels and the relatively large separation distances from the proposed construction areas. The reasonably high background noise levels also mean that it is unlikely that the proposed construction works would affect the amenity of non-sensitive receivers.

No vibration exceedances have been predicted when assessing potential damage to building structures and impacts to human comfort. As vibration dissipates quickly with distance, the predicted levels at the nearest sensitive receivers are very low and likely not noticeable.

There are no expected noise or vibration emissions from the pipeline once operational. Ongoing impacts are therefore considered negligible.

Further information on the assessment of potential noise and vibration impacts can be found in *Attachment F – Construction Noise and Vibration Impact Assessment.*

Air quality

The generation of dust during pipeline construction may cause changes to air quality within and surrounding the pipeline corridor. Dust can be generated during construction activities such as trenching, earthworks, vehicle movements and the handling and transfer of spoil. Dust can impact upon the amenity of the surrounding communities, buildings and vehicles through dust soiling and can also impact upon human health although this is unlikely due to the industrial setting.

Dust impacts are generally well understood and are unlikely to be significant if managed through accepted and effective management and mitigation measures. As a result, it is unlikely that construction works would result in unacceptable air quality impacts.

There are no expected emissions to air from the pipeline once operational. Air quality impacts associated with pipeline operations are therefore considered negligible.

Further information regarding the assessment of potential air quality impacts can be found in *Attachment G – Construction Dust Assessment.*

Greenhouse gases

The current jet fuel delivery supply chain leverages an existing jet fuel pipeline system which is supplemented with substantial road deliveries from both Melbourne and Geelong. The proposed pipeline would have the capacity to completely satisfy the airport's anticipated fuel needs without trucking and create the opportunity to shift to a less greenhouse gas intensive supply chain (pipeline operations are significantly more energy efficient than road transport operations).

Although there are a number of factors that could influence the broader industry shift away from road transport, the pipeline provides an opportunity to realise an overall greenhouse gas emissions reduction of up to 216.1 kt CO_2-e over the 40-year design life, with savings realised after approximately 6 years of operation. Note:

- The estimated greenhouse gas emissions for the proposed pipeline are 45.3 kt CO_2-e (5.7 kt CO_2-e associated with construction activities and 39.6 kt CO_2-e associated with its operation over the 40-year design life).
- The net benefit is derived from a shift from already intensive road transport operations and the opportunity for supplementary fuel demands to be supplied via pipeline rather than increased trucking.
- The estimate does not include the Scope 3 emissions associated with the end use of the product (the impact assessed is on the basis of fuel for the future airport operations being supplied by the proposed pipeline as compared to the same future airport operations having fuel supplied by the alternative road transport).
- Total emissions are relative to the extent of future aviation operations (i.e. reduced jet fuel requirements would reduce the operational emissions generated by the proposed pipeline, and increased jet fuel requirements could increase the net benefit between the pipeline and road transport alternatives).

Forecasted aviation operations, jet fuel consumption and associated emissions at Melbourne Airport are independent of the proposed pipeline and upstream supply chain methodology. The characteristics of the pipeline itself could, in combination with multiple future upstream and downstream infrastructure projects (not associated with this proposal), allow conveyance of up to 7BL of jet fuel to the airport each year. Emissions associated with end-use of jet fuel at this quantity would be estimated at 18,107 kt CO_2-e, however, this is overstated and neither reflective of reasonably expected fuel consumption (Melbourne Airport 2022 total Scope 3 emissions were 1,782 kt CO_2-e[7]), nor reflective of the nature of the proposed pipeline capacity (i.e. displacement of jet fuel alternately trucked to the airport to satisfy requirements).

Further information on the greenhouse gas assessment can be found in *Attachment H – Greenhouse Gas Emissions Impact Assessment.*

Social impacts

Current and future land uses

The pipeline corridor is located across Commonwealth land and two local government areas (City of Brimbank and City of Hume). Land use within the pipeline corridor comprises a range of commercial, industrial and transport land uses. Local businesses are primarily airport services.

The selected pipeline route has been positioned within or adjacent to existing road reserves where possible. The pipeline route runs through one private property which is zoned for farming uses (although it is not used for agricultural purposes and is proposed to be redeveloped for industrial/commercial use). This property is not residential, nor does it contain housing. Engagement has occurred and is ongoing with relevant landowners/occupiers to minimise potential impacts during construction and operational phases of the pipeline.

Foreseeable future land uses within and surrounding the pipeline corridor include Melbourne Airport Rail (the proposed pipeline route runs parallel to the Melbourne Airport Rail corridor along Airport Drive) and several industrial and commercial developments along Airport Drive and Western Avenue. Potential conflicts between the pipeline and proposed developments have been minimised through design, and consultation continues with associated landowners/occupiers. Furthermore, substantial engagement with Rail Projects Victoria to date

[7] Australia Pacific Airports Corporation. Annual Report FY22, 2022

has refined pipeline alignment and development to ensure compatibility with Melbourne Airport Rail during construction and operational phases.

The pipeline has the potential to impact upon current and future land uses where it is inconsistent with relevant planning policy and strategic plans. By locating the proposed pipeline route in road reserves, potential impacts have been minimised as it would be consistent with the existing use of the land. These areas are also unlikely to support development and land use changes meaning potential impacts to future land uses would not be significant.

Further information regarding the current surrounding land uses and assessment of potential impacts to land use can be found in *Attachment I – Land Use and Planning Assessment*.

Social and business

The pipeline corridor is located adjacent to and within Melbourne Airport and its surrounding industrial areas, inclusive of Melbourne Airport Business Park and the Tullamarine Industrial Area. The area is predominately industrial with relatively few instances of community infrastructure.

Construction of the pipeline is likely to lead to some temporary impacts. Temporary impacts during construction may include disturbance to industrial uses, closures of shared user paths and changes in access, reduced enjoyment of outdoor areas and increases in travel time for road users.

Any impacts during construction would be of a much shorter duration than that of the total construction period given the planned progression of works along the corridor (i.e. the trench would be progressively opened, pipe laid and trench refilled). Due to the temporary and short-term nature of the proposed construction activities, significant or long-term social and business impacts are not expected to occur.

Post construction the land would generally be returned to its previous use and there would be limited operational activities that occur along the alignment. Therefore, the ongoing operational impacts to businesses and community are negligible.

Further information regarding the assessment of potential social and business impacts can be found in *Attachment J – Social and Business Impact Assessment*.

Traffic and transport

The road network within and surrounding the pipeline corridor services the Melbourne Airport and associated surrounding businesses and comprises well-maintained, high-capacity sealed roads. This network has the capacity to accommodate large increases in traffic volumes or changes in traffic behaviour.

Increases in traffic volumes during construction are expected to have negligible impacts on the surrounding traffic network. The amount of traffic generated during construction is not expected to be significant when compared to current traffic volumes and the roads and intersections along the pipeline corridor would be able to accommodate anticipated increases.

The impacts arising from road, lane or shared user path closures during construction are also not expected to be significant. Road, lane or shared user path closures would be temporary and short-term. It is expected that the surrounding road network would be able to accommodate any traffic diverted to alternative routes and any delays or detour travel times would be minor.

During operation, there would be limited operational activities that would occur along the alignment and therefore potential operational impacts are considered negligible.

Further information on the assessment of potential traffic and transport impacts can be found in *Attachment K – Transport Impact Assessment.*

Safety impacts

The proposed pipeline route has been selected to avoid or minimise impacts to current and future residential areas and sensitive land uses. The consequences of a failure event in residential areas or near sensitive land uses would be more severe given the higher population densities and the existence of sectors of the community who are less able to protect themselves (e.g. schools).

To ensure the design characteristics of a pipeline meet or exceed the safety parameters relative to its environs (for example, potential consequences in a remote/non-populated area as compared to an urban/populated area), safety analysis identifies a worst-case impact zone if pipeline rupture and subsequent fluid ignition was to occur (referred to as the measurement length, or ML). The proposed pipeline design exceeds minimum safety standards and is designated as a 'no-rupture' pipeline (i.e. full bore rupture is not credible). Regardless, the safety impacts of the proposed pipeline have been assessed based on a adopted ML of 150 m as if a pipeline rupture were credible.

There are 76 residential properties located within the ML: 16 properties in Tullamarine on Sharps Road and Fisher Grove, and 60 properties in Airport West on Parer Road, North Street and Halsey Road. The properties in Airport West are located near the existing jet fuel pipeline, PL118.

Three sensitive land uses were identified within the ML; Joey Club Melbourne - Childcare Centre/ KU Children's Services, Creative Garden Early Education (child care) and ibis budget Melbourne Airport (hotel). However, following completion of project assessments, the Joey Club Melbourne Childcare Centre/KU Children's Services has since ceased operation and it is understood that there are no plans to reopen. It has been included for completeness and has been considered in development of safety mitigation measures.

The primary safety risk associated with the pipeline is injury or fatality to people in proximity to a fire or explosion event associated with the ignition of jet fuel. Fire or explosion events can occur due to leaks, or a loss of containment caused by failures or breaches of pipe work, flanges, valves and failures of pressure vessels, in combination with immediate or delayed ignition from nearby work activity, naked flames, static electricity, hot surfaces or faulty electrical equipment. Risks associated with leaks, or a loss of containment have been managed through a no-rupture design and the pipeline has been designed in compliance with the requirements of AS2885.1-2018.

A Safety Management Study (SMS) has been conducted as per the requirements of AS2885.6-2018: Pipelines – Gas and liquid petroleum (pipeline safety management) (AS2885.6-2018) to understand specific threats to the integrity of the pipeline and so that the pipeline design is appropriate for the conditions and setting. The SMS identified potential threats to the integrity of the pipeline along the proposed corridor and multiple independent controls have been assessed and applied to each credible identified threat. Any threat that was not considered to be controlled has been evaluated, and the residual risk will be shown to be minimised As Far As Is Reasonably Practicable (AFAIRP) consistent with the requirements of the Pipelines Act.

Threat identification was undertaken across the entire length of the pipeline including all facilities. The threat categories covered by the SMS included threats from:

- External interference

- Corrosion
- Natural events
- Operations and maintenance
- Design defects
- Material defects
- Construction defects
- Intentional damage

The threat identification process carried out as part of the SMS yielded the following outputs:

- A total of 33 potential threats to the pipeline and facilities were identified.
- Five of the 33 potential threats were considered non-credible.
- 28 of the 33 potential threats were considered credible and underwent further risk evaluation to arrive at a risk ranking.
    - None of the potential threats were assessed as presenting a high or extreme risk.
    - 24 of the 28 potential threats were assessed as being controlled and required no further risk evaluation.
    - Three of the 28 potential threats were assessed as presenting a low or negligible risk. (These low and negligible risks are considered to be minimised AFAIRP.)
    - One potential threat was evaluated as presenting an intermediate risk if not resolved. This threat involves a vehicle accidently impacting associated aboveground infrastructure at the JUHI facility resulting in loss of containment, with possible ignition. This threat has been managed by increasing physical controls i.e. bollards around the aboveground infrastructure and is considered controlled.

The SMS has demonstrated that the pipeline has been designed in compliance with the requirements of AS/NZS 2885.1. The threat register demonstrated that all identified threats along the pipeline are either non-credible, controlled, or have a residual risk of low, or lower. Threat mitigation is summarised in Section 10 of this Application.

The construction of the pipeline is not expected to introduce any new or unique construction hazards that are not typical to major infrastructure projects. Hazards would include:

- Working in the vicinity of moving equipment
- Working at heights
- Falling objects from elevated workers or crane assisted lifts
- Exposure to electrical hazards
- Excavation hazards
- Welding fumes
- Noise
- Confined spaces
- Working over water.

These hazards can be managed through the application of standard mitigation measures which would be outlined in the CSMP. CSMP would be prepared and accepted before the pipeline construction commences.

9	**Outline of the details of the potential impact of the proposed pipeline on cultural heritage (including Indigenous cultural heritage)**

Aboriginal cultural heritage

The pipeline corridor is located within the Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation (WWCHAC) Registered Aboriginal Party (RAP) jurisdiction. Consideration of Aboriginal cultural heritage consists of both tangible and intangible heritage. Reviews of available information and studies in the area show that most of the pipeline corridor has been highly disturbed and modified due to historical land uses and development which decreases the likelihood of Aboriginal Cultural Heritage Places (ACHPs) being present. There are, however, areas of cultural heritage sensitivity and registered ACHPs along or surrounding the pipeline corridor. There is also the potential for sub-surface archaeological deposits to be present in areas that have experienced minimal disturbance. Where ACHPs are present, they are expected to comprise low density disturbed surface and shallow sub-surface artefact scatters of low significance. This would be consistent with the surrounding landform. The presence of dense in-situ (undisturbed) ACHPs of high significance is considered unlikely.

Ground disturbance works during construction has the potential to damage or disturb unknown Aboriginal cultural heritage sites, impact upon Aboriginal cultural heritage places and impact upon intangible cultural values. No impacts are anticipated during operation.

Viva Energy is committed to best practice management of potential impacts to Aboriginal cultural heritage and is currently developing the Cultural Heritage Management Plan (CHMP) #16705 for the pipeline. The complex assessment was completed in March 2023 and the CHMP is currently being prepared for approval. The CHMP is being prepared in consultation with WWCHAC and works can only proceed once the approved CHMP is in place.

At a minimum, the CHMP is to include management conditions to mitigate harm through planned salvage and contingency measures in relation to Section 61 of the *Aboriginal Heritage Act 2006* (AHA Act); this is a legal requirement. The CHMP would also include an unexpected finds procedure in relation to the discovery of any items of archaeological potential during works.

The mitigation measures presented in the approved CHMP are expected to minimise the impacts to Aboriginal heritage places and residual impacts are not expected to be significant. This is to be confirmed with ongoing liaison with WWCHAC through the CHMP assessment and development process. Viva Energy will continue to work with WWCHAC to assess the significance of these impacts and apply avoidance/mitigation measures as far as practicable.

Further information regarding Aboriginal cultural heritage can be found in *Attachment L – Aboriginal Cultural Heritage Memo.*

Historic heritage

There are no Victorian Heritage Register (VHR) or Victorian Heritage Inventory (VHI) listed sites or sites with heritage overlays located within or adjacent to the pipeline corridor. The closest registered historic heritage place is the VHI-listed 'Victoria Road Homestead Ruins' which is situated approximately 165 m north of the pipeline corridor. As there are no previously recorded historic heritage places within or adjacent to the pipeline corridor, the proposed pipeline is not expected to impact upon any known/registered heritage places

There is a low likelihood for unknown historic heritage sites to be present due to the moderate to high levels of disturbance caused by historical land use activities, land clearance, industrial

development and the establishment of major roadways and underground assets. As a result, the likelihood of the pipeline impacting upon any unknown historic heritage sites is not expected to be significant. Despite the low probability of impacts to unknown historic heritage sites, an unexpected finds protocol would be developed and implemented during construction.

Further information regarding that assessment of potential impacts to historic heritage can be found in *Attachment M – Historic Heritage Desktop Assessment.*

10. Outline of the measures to be undertaken to control, mitigate and manage identified impacts arising from the proposed pipeline and pipeline operation

This section provides an overview of the proposed management and mitigation measures to avoid, minimise and manage potential impacts arising from construction and operation of the proposed pipeline. These measures have been informed by the relevant technical studies and developed with consideration of the setting, which is predominantly industrial and relatively insensitive to impact, the proposed construction methodologies, and the proposed operational activities. The proposed measures may be refined should a licence be issued prior to seeking acceptance of the Environmental and Safety Management Plans.

Management and mitigation measures would be implemented through a CEMP and a CSMP during construction and an Operational Environmental Management Plan (OEMP) and an Operational Safety Management Plan (OSMP) during operation. These plans would be developed in accordance with all applicable regulations (and other enforceable policies and guidelines) and capture the project specific mitigation measures that have been developed to address environmental, heritage, social, health and safety impacts of the pipeline.

The EMPs and SMPs would be developed and presented for regulatory acceptance prior to progression of pipeline construction or pipeline operation.

Before commencing any site work, all project personnel would be required to attend an induction that outlines the management requirements of the relevant accepted EMP and SMP.

Environmental

Biodiversity

The pipeline corridor is highly developed, highly disturbed and almost all remnant native vegetation has been cleared. As a result, the area contains relatively few ecological sensitive receivers. Impacts on the sensitive receivers identified have been avoided through design and through the application of non-destructive construction methodologies (i.e. HDD).

General good practices would be adopted during construction with consideration of *EPA Publication 1834 – Civil construction, building and demolition guide* (EPA 2020) and detailed in the CEMP. Construction activities would also be undertaken in accordance with applicable legislation and guidance including:

- *Flora and Fauna Guarantee Act 1988*
- *Wildlife Act 1975*
- *Guidelines for the removal, destruction or lopping of native vegetation* (DELWP, 2017).

Additional project specific mitigation measures that would be implemented during construction include:

- Planned vegetation clearing would be confined to only necessary and defined areas.

- Each construction site footprint (including all access tracks, laydown areas, etc.) would be clearly defined. Access to areas outside the construction footprint by construction personnel, vehicles or machinery would be restricted.
- Targeted surveys for Tussock Skink would be undertaken prior to construction in areas where Tussock Skink is known to be present (i.e. south of the Western Ring Road (M80)).
- The construction footprint within areas where Tussock Skink is known to be present would be minimised. All areas outside the construction footprint where Tussock Skink is known to be present are proposed as no-go zones with no admittance to the areas by construction personnel, vehicles or machinery.
- The area within 200 m either side of the southern Steele Creek North crossing would be a restricted zone during construction. Only construction personnel on foot would be allowed off-road access within 200 m of this crossing.
- All restricted zones and construction site footprints would be clearly defined within the CEMP and related documents and incorporated into all site maps.

During operation, the measures outlined below under Safety would be adopted to reduce the potential for the pipeline to be damaged and for loss of containment to occur.

Surface water and groundwater

The proposed pipeline has been designed or would be constructed in a way that either avoids or minimises the potential impacts to surface water and groundwater. General good practices would be adopted during construction and outlined in the CEMP. These would be developed in accordance with relevant legislation and with consideration of *EPA Publication 1834 – Civil construction, building and demolition guide* (EPA 2020) and include:

- Implementation of appropriate sediment and other stormwater controls.
- Where excavations require dewatering, a construction method that minimises the dewatering period is to be adopted.
- Visual inspections of exposed areas, stockpiles and erosion and sediment control measures to identify whether any runoff is occurring and whether any rectification works are required.
- Water collected during construction or operation is to be contained, tested, and disposed of appropriately based on the water quality data and the EPA disposal guidelines.

A HDD Management Plan would also be developed to manage potential impacts associated with HDD activities. This plan would incorporate the necessary precautions or procedures to be in place to minimise the chance for hydraulic fracture and inadvertent returns of drilling fluid to the surface. These would include:

- Monitoring of fluid volumes (pumped in vs pumped out) and downhole pressures.
- Visual monitoring of the surface water asset being crossed (hourly during crossing).
- A response plan/procedure for all HDD activities.
- HDD fluids shall consist of non-toxic products only.

During operation, the measures outlined below under Safety would be adopted to reduce the potential for the pipeline to be damaged and for loss of containment to occur.

Contaminated land

Construction activities would be carried out following good practices and in accordance with applicable regulations and guidance including:

- Contaminated Land Duties under the *Environment Protection Act 2017*.
- EPA Publication 1827.2 Waste classification assessment protocol (EPA, 2021)
- EPA Publication 1828.2 Waste disposal categories – characteristics and thresholds (EPA, 2021).
- Classification of PFAS-impacted Soil under the Environment Protection Regulations 2021.

The CEMP would also incorporate management and mitigation measures with consideration of *EPA Publication 1834 – Civil construction, building and demolition guide* (EPA 2020) including:

- Procedures should contaminated soil or groundwater be encountered during construction including an unexpected finds protocol and waste management and disposal protocols.
- Stockpile management
- Spill management procedures
- Safe refuelling procedures
- Preventative measures to stop discharge of hazardous material from HDD sites.

During operation, the measures outlined below under Safety would be adopted to reduce the potential for the pipeline to be damaged and for loss of containment to occur.

Noise and vibration

Noise and vibration generated by the proposed pipeline can be appropriately managed through application of standard industry practices.

A Construction Noise and Vibration Management Plan (CNVMP) is to be prepared with consideration of *EPA Publication 1834 – Civil construction, building and demolition guide* (EPA 2020) as part of the CEMP. The CNVMP would contain suitable construction methodologies and management and mitigation measures to manage noise and vibration emissions including:

- Scheduling of activities to avoid noisy works on weekends and for shorter periods. Planned unavoidable night work may require approval by the relevant authority.
- Utilisation of the lowest noise and vibration emission equipment where practicable for the job and maintaining equipment in accordance with manufacturers specifications
- Noise attenuation measures such as mufflers or silencers are to be installed where practicable to minimise noise emissions.
- Erection of onsite barriers to provide a noise barrier for any particularly noisy construction works/equipment such as HDD.

Air quality

Management and mitigation measures are to be adopted to manage potential impacts associated with dust generation during construction. A Dust Management Plan (DMP) is to be developed with consideration of *EPA Victoria Publication 1834: Civil construction, building and demolition guide* (EPA, 2020) and to the satisfaction of relevant authorities. The DMP would be incorporated into the CEMP and include:

- The use of suitable dust suppression techniques, such as water sprays, on unpaved work areas and spoil stockpiles, and during loading and unloading of dust generating materials.
- Monitoring weather conditions and modifying works if weather conditions are likely to result in increased dust generation.
- Maintenance of plant and equipment to minimise emissions.

Greenhouse gases

Construction activities would be carried out following good practices and in accordance with applicable regulations and guidance.

During operation of the pipeline, greenhouse gas emissions from the pipeline would be included in Viva Energy's annual emissions reporting in accordance with National Greenhouse and Energy Reporting (NGER) requirements.

Social

Current and future land use

The potential impacts the proposed pipeline may have on current and future land uses have been minimised through design. Consultation with key stakeholders is to continue prior to and during construction.

Social and business

The broader management and mitigation measures detailed in this section, i.e. Section 10 of this Application, are expected to manage most potential impacts that could affect social and business receptors. Further management and mitigation measures proposed to minimise potential social and business impacts include:

- Development and implementation of a communication and engagement approach that aligns with the approach as set out in the Pipeline Consultation Plan (PCP). This would allow for meaningful and consistent consultation with community and stakeholders.
- A Business Disruption Engagement Plan is to be developed in line with the *Victorian Small Business Engagement Guidelines* (Victorian Small Business Commission, 2018) and implemented prior to construction.
- Continued consultation with key stakeholders is to occur prior to and during construction.

Viva Energy is committed to corporate social responsibility by working with communities, people and customers to make a positive impact and deliver genuine social benefits.

Traffic and transport

A Traffic Management Plan would be developed and incorporated into the CEMP to manage potential traffic and transport impacts to road users, cyclists and pedestrians. The Traffic Management Plan would be prepared to the satisfaction of relevant authorities and would outline the relevant management and mitigation measures to be implemented.

In addition to the Traffic Management Plan, to following is proposed:

- Road safety audits are to be undertaken for each construction access point upon finalisation of the proposed access driveways and access tracks to the satisfaction of the responsible road management authority.
- Stakeholder engagement with relevant stakeholders is to be undertaken to discuss the construction phase preliminary access point locations, expected impacts to the transport

network and any mitigation that needs to be incorporated into the Traffic Management Plan.

- Regular meetings with road authorities and ongoing engagement and communication over the construction period with key stakeholders and the public is to be undertaken.

Heritage

Aboriginal cultural heritage

CHMP #16705 is currently being prepared in consultation with WWCHAC and must be approved prior to the commencement of works. Mitigation measures detailed within the CHMP would also be included in the CEMP which would be implemented from planning through to operation.

At a minimum, the CHMP would include management conditions to mitigate harm through planned salvage and contingency measures in relation to Section 61 of the AHA Act; this is a legal requirement. The CHMP would include an unexpected finds procedure in relation to the discovery of any items of archaeological potential during works.

Historic heritage

No previously recorded historic heritage places are located within the pipeline corridor and the likelihood of encountering unknown historic heritage places is low.

Despite the low probability of impacts, an Unexpected Finds Procedure will be developed and implemented. At a minimum, if a potential unknown historic heritage site is discovered during construction, the person in charge is to, as soon as practicable, report the discovery to Heritage Victoria who would advise on how to manage the discovery. Management of the unexpected find may involve protection, recovery, recording or removal of the artefacts or features and is likely to require a Consent to Damage permit from Heritage Victoria.

Safety

A CSMP and OSMP would be prepared in accordance with AS2885.3-2022 and AS2885.6 2018 and detail the safety measures that would be applied during pipeline design, construction and operation. The following threat controls are proposed and would be detailed in the relevant safety management plan(s):

- The pipeline would be designed in accordance with AS2885.1-2018.
- Corrosion protection through cathodic protection and high-grade modern system pipe coating called 3LPE (three-layer polyethylene) applied for the full pipeline length.
- A conservative pipeline design has been adopted. The physical protections provided by wall thickness and depth of cover exceed requirements for the location class of T1. The entire pipeline route is nominated as a high consequence area (HCA) based on location class of T1. The pipeline shall be designed such that rupture is not a credible failure mode.
- The regular operational patrol regime (including and daily ROW), as implemented across Viva Energy's existing pipeline network, would be adopted to monitor whether there are activities occurring which could represent a threat to the pipeline.
- An inline gauging tool (pig) data acquisition run would be completed prior to pipeline hydrotest to provide the "as installed" pipeline physical condition (identification of previously unidentified mechanical irregularities).

	• Managing latent dents or defects would be via inline inspection. In-line inspection (internal) of the pipeline would be carried out initially every 10 years and then as the pipeline ages it may be necessary to run the tool ever 5 years. • Access to the right-of-way easement would be maintained along the length of the pipeline alignment. • Pipeline markers would be installed along the route and additional marker posts installed in higher risk areas or near sensitive uses to alert parties conducting works to the pipeline location. Marker tape would be laid in trenched areas. • Several sections of the pipeline would be installed via the HDD technique. Coating damage during HDD is a threat to pipeline integrity. This threat would be controlled through an Abrasive Resistance Overlay (ARO) and the requirement to replace the section if flaws are detected during installation. A trenchless crossing construction management plan is a mandatory document to be accepted in accordance with AS2885.1-2018.

11.	**Details of alternative pipeline routes considered by the applicant and reasons for selecting the proposed pipeline route in accordance with AS 2885.1—2018**
	The proposed pipeline route has been defined iteratively over a three-year period (since 2019) through desktop studies, field assessments and engagement with potentially impacted stakeholders. The selection of the proposed pipeline route is presented in *Attachment N – Pipeline Route Options Report* and is summarised below. **Initial pipeline concepts – commencement and termination locations** Melbourne Airport is supplied with jet fuel by either marine imports through terminals in Melbourne's west or by local production at Geelong Refinery. Regardless of origin, there is a single pipeline system that services the airport – a combination of the sequential PL118 and the Somerton to Tullamarine pipeline (PL119) which transfers jet fuel from Melbourne's terminals to the airport (total pipeline length of 46 km, including an intermediate storage/pumping terminal at Somerton). Jet fuel from Geelong Refinery is initially transferred to the Melbourne terminals via two multi-product pipelines (PL7 and PL8) before being subsequently stored and transferred through the previously described pipeline system. The overall pipeline system has limited capacity as it is constrained by the final leg between Somerton and Tullamarine (i.e. PL119). There has been consideration of several options and alternate new pipeline routes to resolve this limitation. Broad analysis and selection from the following key concepts allowed further refinement of route options: • Concept A: Construction and operation of a new pipeline commencing at Geelong Refinery and terminating at Melbourne Airport. At a length of greater than 60 kms through a variety of land uses and sensitivities, this option is disadvantaged by relative inefficiencies and greater social, environmental and safety impacts. • Concept B: Construction and operation of a new pipeline commencing at the intermediate Somerton terminal and terminating at Melbourne Airport (i.e. supplementary/similar to PL119). This option is disadvantaged relative to Option C given the increased pipeline length, close proximity to residential and sensitive community infrastructure, substantive traversal through reserves/parks including the Woodlands Historic Park, greater potential for heritage impacts, poorer hydraulic/energy efficiencies and lower supply chain robustness associated with increased load and reliance on the Somerton terminal.

- Concept C: Construction and operation of a new pipeline branching off from the higher-capacity PL118 and terminating at Melbourne Airport. This option is advantaged relative to the other options due to a shorter pipeline length (approximately 7 km), lower supply chain complexity, greater hydraulic/operational efficiencies and expected lower environment, safety and social impacts due to avoidance of parklands, residential areas and sensitive community infrastructure.

Concept C: Construction and operation of a new pipeline branching off from the higher-capacity PL118 and terminating at Melbourne Airport was selected as the basis for the proposed pipeline project.

Pipeline route – further identification

At its closest alignment south-east of the airport, a 10km section of PL118 passes within 6 to 7 kms of the JUHI facility. As such, potential tie-in points were identified between the Calder Freeway (Airport West) and Barry Road (Dallas) to minimise the length of the route options. Tie-in points outside of these limits would unnecessarily increase the proposed pipeline length, increase the potential to impact the surrounding area and have little to no incremental benefits.

Further to this, route options were identified with consideration to the feasibility and constructability of the proposed pipeline, in conjunction with high-level analysis of potential impacts to landholders, community, and the environment. Route options sought to follow cadastral boundaries wherever possible and minimise crossing roads, railway lines, watercourses and high-density residential areas. Five potential routes options were identified for focused evaluation. These are shown in Figure 6 and detailed in Table 3 below.

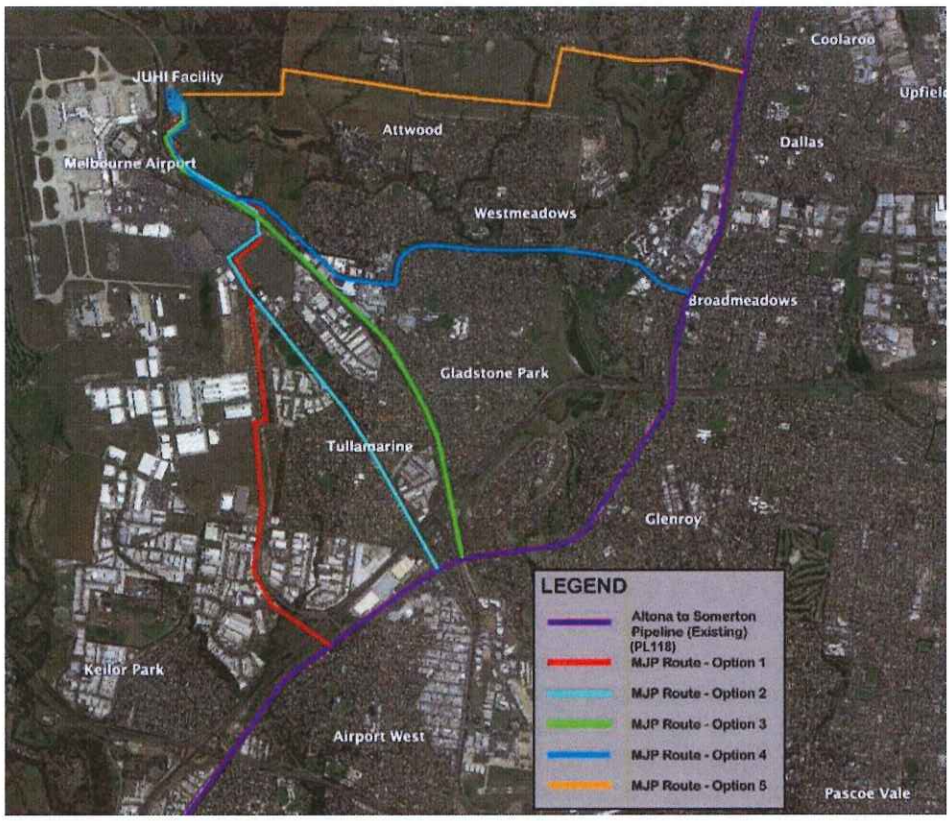


Figure 6: Pipeline route options

Table 3: Description of pipeline route options

Option	Commencement location	Route alignment (commencement location to termination at the JUHI facility)
Option 1	Near intersection of Western Ring Road (M80) and Airport Drive	North running alignment adjacent to Airport Drive before traversing northeast adjacent to Mercer Drive and then following a northwest alignment along the Tullamarine Freeway (M2) to the JUHI facility.
Option 2	Near intersection of Western Ring Road (M80) and Melrose Drive	North running alignment along Melrose Drive until intersecting with Airport Drive. The alignment then continues along the same route as Option 1, along Mercer Drive and Tullamarine Freeway (M2) to the JUHI facility.
Option 3	Eastern side of Tullamarine Freeway (M2) (Strathmore Heights)	North and north-east running alignment along Tullamarine Freeway (M2) to the JUHI facility.
Option 4	Near intersection of Pascoe Vale Road and Johnstone Street	West running alignment along Johnstone Street/Broadmeadows Road, south along Mickleham Road, and then following Western Avenue with a west and north-west alignment to the JUHI facility.
Option 5	Near intersection of Pascoe Vale Road and Barry Road	West running alignment from Pascoe Vale Road, initially along the southern side of Barry Road and then through largely open land to the JUHI facility (crossing Crescent Drain, Yuroke Creek, Attwood Creek, and Moonee Ponds Creek).

Pipeline route – analysis and selection

Each of the identified pipeline route options were assessed against a consistent set of criteria, shown in Table 4, which were developed with consideration of AS2885.1-2018. This included constructability, operability, threats to pipeline integrity, and potential implications to environment, safety, and social values. Assessments extended beyond current land use and applied reasonable assumptions regarding potential changes and future land use.

The criteria allowed comparative analysis through a weighted multi-criteria analysis (MCA). These assessment criteria considered the individual route selection items of AS2885.1-2018 (Section 4.7.3). For example, the criteria of 'Safety' included public safety, and proximity to populated areas (likelihood of external interference and the consequences of escape of fluid).

AS2885.1-2018 (Section 4.7 – 'Route') is silent regarding the required weighting to be given to each of the considerations in route determination. Therefore, weightings were developed on the basis of industry and operational experience, as well as reflecting assumed stakeholder expectations.

The assessment criteria are shown in Table 4 along with their associated weighting applied in the overall assessment (basis of the MCA below).

Table 4: Options assessment criteria

Criteria	Considerations	MCA weighting
Safety	- Risk to the public - Proximity to populated areas, third party assets, sensitive users, and residential land - Available access and space for construction to manage public and worker safety - Low or high consequence areas.	25%

Environment	- Environmentally sensitive areas - Threatened flora and fauna species and their habitat - Native vegetation - Waterway crossings - Areas of contamination.	15%
Traffic and transport	- Impacts to traffic - Availability of construction access/space at road crossings - Number of roads crossed.	15%
Hydraulics	- Location of tie-in suitable for hydraulic considerations with respect to upstream supply storage locations - Length of pipeline route - Changes in direction along pipeline route.	15%
Operational access	- Ease of locating associated operations facilities - Ability to carrying out routine operability and maintainability of plant and equipment - Space for right of way/easement tracks for integrity management (potholing, pipeline repairs) of the pipeline - Accessibility for cathodic protection test units	10%
Heritage	- Culturally significant areas - Registered heritage sites - Areas of cultural heritage sensitivity	5%
Landowners	- Number of landowners/land parcels - Public or private landowners - Existing land uses	5%
Future land use	- Future land use - Conflicts with potential future land uses	5%
Terrain complexity	- Difficulty in construction along proposed route (i.e. curved natural surfaces, creeks, hills grade condition) - Geology	5%
	Total	**100%**

Each pipeline route option was assessed against the criteria and were then classified as either:

- Low (L) – risks are considered standard or typical for a project of this nature and are expected to be mitigated through design or relevant guidance/legislation.
- Medium (M) – most risks are considered standard or typical for a project of this nature, however some could be more significant, and project specific measures may need to be developed to manage potential risks.
- High (H) – poses significant risks that are not typical for a project of this nature. Further assessment and project specific measures are likely required. Measures may not fully control risks and residual risks may be unacceptable.

Classifications were made with consideration of the conditions along each route, the proposed pipeline design and anticipated construction methodology.

Scores of 1, 2 or 3 were applied to L, M, H classifications respectively. Scores were then multiplied by the MCA weighting presented in Table 4 to obtain a weighted score for each criterion. The sum of the weighted scores across all criteria for each route option was then

calculated, resulting in rankings from most favourable (lowest score) to least favourable (highest score).

These rankings are shown in Table 5. The basis of individual rankings is discussed further in *Attachment N – Pipeline Route Options Report.*

Table 5: Multi-criteria analysis results

Criteria	Option 1			Option 2			Option 3			Option 4			Option 5		
	C	S	WS	C	S	WS	C	S	WS	C	S	WS	C	S	WS
Safety	L	1	0.25	H	3	0.75	H	3	0.75	H	3	0.75	L	1	0.25
Environment	M	2	0.30	L	1	0.15	L	1	0.15	M	2	0.30	H	3	0.45
Traffic and transport	L	1	0.15	H	3	0.45	H	3	0.45	H	3	0.45	L	1	0.15
Hydraulics	L	1	0.15	M	2	0.30	M	2	0.30	M	2	0.30	H	3	0.45
Operational access	L	1	0.10	H	3	0.30	H	3	0.30	H	3	0.30	L	1	0.10
Heritage	M	2	0.10	M	2	0.10	L	1	0.05	M	2	0.10	M	2	0.10
Landowners	L	1	0.05	H	3	0.15	H	3	0.15	H	3	0.15	L	1	0.05
Future land use	L	1	0.05	L	1	0.05	L	1	0.05	L	1	0.05	M	3	0.10
Terrain complexity	L	1	0.05	H	3	0.15	H	3	0.15	M	2	0.10	M	2	0.10
Total weighted score (Ranking)	1.20 (1st)			2.40 (4th)			2.35 (3rd)			2.50 (5th)			1.75 (2nd)		

Notes: C = classification, S = score, WS = weighted score, L = low, M = medium, H = high.

Pipeline route – selection and refinement

As evident from the MCA results in Table 5, Option 1 was determined to be most advantaged with respect to the pipeline design characteristics of Section 4 (Pipeline System Design) of AS2885.1–2018.

This was selected as the proposed pipeline route and was subsequently refined into the alignment provided in Section 4 of this Application. (For clarity, the base pipeline route assessed during the route selection stage is presented in Figure 6).

The selected pipeline route runs parallel to the Melbourne Airport Rail corridor along Airport Drive. Substantial engagement with Rail Projects Victoria to date has refined pipeline alignment and development to ensure compatibility during construction and operational phases.

Key refinements made to the proposed pipeline route are detailed in Table 6.

Table 6: Key refinements during detailed design

Design refinement	Reason
The proposed pipeline route was moved from the western side of Airport Drive to the eastern side.	The route was adjusted to avoid intersecting with the proposed future Melbourne Airport Rail alignment and associated works occurring in the area.
The alignment was proposed to run through public road reserve on the eastern side of Airport Drive between Tullamarine Park Road and Sharps Road. The alignment has been adjusted to sit within the boundary of the private land parcel (1\PS414492) adjacent to the alignment.	The alignment was required to be adjusted into the adjacent private land parcel to avoid intercepting existing infrastructure including a truck and car parking bay and streetlights and the future Melbourne Airport Rail and its associated infrastructure.

The alignment no longer runs underneath the long-term car park at Melbourne Airport and instead goes along the southern boundary of the car park and crosses under the Tullamarine Freeway.	The route was adjusted to avoid impacting upon future/planned infrastructure/services of public significance at this location.

A comparison of the various pipeline route options is provided in Section 12 of this Application, however, the following should be noted with respect to the selected pipeline route. The proposed pipeline route:

- Largely traverses industrial areas and maintains distance from residential/sensitive land use, thereby minimising potential safety impact.
- Largely traverses previously disturbed land and minimises potential impacts to areas of environmental and heritage sensitivities.
- Is largely situated within road reserves and land controlled by Melbourne Airport and Department of Transport and Planning. As such, the likelihood of future land developments within the pipeline route is predominately low, with works expected to be limited to service/utility infrastructure under the control of large/mature authorities.
- Largely traverses open/vacant areas along road reserves that provide space for construction activities and supports ongoing access for integrity and operational management activities (e.g. ease of pipeline patrols, access to pipeline alignment/stations/test points, space for excavation works, etc).
- Minimises the overall pipeline pumping distance which provides greater energy efficiency and lower public safety exposure to hydrocarbon operations.

12. A comparison of the environmental, social and safety impacts arising from each of the alternative pipeline routes set out in Section 11 above and the proposed pipeline

This Section provides a comparison of the pipeline route options considered in Section 11 of this Application. As described in Section 11 of this Application, each pipeline route option was assessed against consistent criteria and were then classified as either low, medium or high.

The assessment compared the potential environmental, social and safety impacts that may arise from each pipeline option with consideration of the following:

- Environment
  - environmentally sensitive areas
  - threatened flora and fauna species and their habitat
  - native vegetation
  - waterway crossings
  - areas of contamination.
- Social
  - heritage including culturally significant areas, registered heritage sites and areas of cultural heritage sensitivity
  - traffic and transport including impacts to traffic, availability of construction access/space at road crossings and the number of roads crossed
  - landowners including number of landowners/land parcels, public or private landowners and existing land uses

- future land use including future land use and conflicts with potential future land uses.

- Safety
  - risk to the public
  - proximity to populated areas, third party assets, sensitive users, and residential land
  - available access and space for construction to manage public and worker safety
  - low or high consequence areas.

A summary of the assessment is presented Table 7.

Table 7: Comparison of environmental, social and safety impacts

Criterion	Options	Rank	Rationale
Environmental impacts			
Environment	Option 1	M	Option 1 crosses Steele Creek North and project specific measures may need to be developed to manage potential impacts. Due to the industrial setting, potential impacts to threatened species and native vegetation are expected to be minimal. Impacts arising from potential contaminated land are expected to be typical for projects undertaken in this area and will be managed through relevant guidance/legislation.
	Option 2	L	Option 2 does not cross any waterways and due to the highly developed setting, potential impacts to threatened species and native vegetation are expected to be minimal. Impacts arising from potential contaminated land are expected to be typical for projects undertaken in this area and will be managed through relevant guidance/legislation.
	Option 3	L	Option 3 does not cross any waterways and due to the highly developed setting, potential impacts to threatened species and native vegetation are expected to be minimal. Impacts arising from potential contaminated land are expected to be typical for projects undertaken in this area and will be managed through relevant guidance/legislation.
	Option 4	M	Option 4 crosses Yuroke Creek and Moonee Ponds Creek and project specific measures may need to be developed to manage potential impacts. Due to the highly developed setting, potential impacts to threatened species and native vegetation are expected to be minimal. Impacts arising from potential contaminated land are expected to be typical for projects undertaken in this area and will be managed through relevant guidance/legislation.
	Option 5	H	Option 5 has the potential to significantly impact upon threatened species. Further assessment and project specific measures are likely required. Option 5 is less developed than the other routes, contains sites that could support threatened species, including Crescent Drain, Yuroke Creek, Attwood Creek, Moonee Ponds Creek, Broadmeadows Valley Park, and Woodlands Historic Park, and has significant historical recordings of threatened species along the route, particularly in its eastern extent. Option 5 also contains areas of mapped native vegetation along the route that will likely require removal including around Attwood Creek, Woodlands Historic Park and Moonee Ponds Creek.

			Option 5 crosses Crescent Drain, Yuroke Creek, Attwood Creek, and Moonee Ponds Creek and project specific measures may need to be developed to manage potential impacts. There is the potential to encounter contaminated land, however, impacts are expected to be mitigated by following relevant guidance or legislation.
Social impacts			
Heritage	Option 1	M	There are areas of cultural heritage sensitivity along or surrounding the pipeline route. Project specific measures may need to be developed to manage potential impacts. The route does not pass within close proximity to any heritage sites listed on national, state or local heritage registers.
	Option 2	M	There are areas of cultural heritage sensitivity along or surrounding the pipeline route. Project specific measures may need to be developed to manage potential impacts. The route does not pass within close proximity to any heritage sites listed on national, state or local heritage registers.
	Option 3	L	Option 3 does not encounter any known areas of Aboriginal cultural heritage sensitive and does not pass within close proximity to any heritage sites listed on national, state or local heritage registers.
	Option 4	M	There are areas of cultural heritage sensitivity along or surrounding the pipeline route. Project specific measures may need to be developed to manage potential impacts. The route does not pass within close proximity to any heritage sites listed on national, state or local heritage registers.
	Option 5	M	There are areas of cultural heritage sensitivity along or surrounding the pipeline route. Project specific measures may need to be developed to manage potential impacts. The route does not pass within close proximity to any heritage sites listed on national, state or local heritage registers.
Traffic and transport	Option 1	L	Option 1 is located mostly in industrial areas where major disruptions are unlikely, and it should be possible to redirect traffic along multiple alternative routes. This option also has sufficient available space along the route for construction access and workspaces.
	Option 2	H	Option 2 passes through a large portion of residential area where interruption to transport and businesses is likely to occur. Sections of Melrose Drive would be closed to traffic for the construction period likely causing significant local traffic delays. Option 2 also has limited availability for construction access and space.
	Option 3	H	Option 3 runs parallel to the Tullamarine Freeway and passes through a large portion of urban areas. Any interruption to traffic during construction activities along this route will also affect regular transport to and from the airport. This option also has limited availability for construction access and space.
	Option 4	H	Option 4 would likely result in temporary road closures during construction along Johnstone Street all the way along Broadmeadows Road. Traffic would likely have to be redirected via Western Ring Road for the majority of the construction duration. This option also has reduced availability for construction access and space.
	Option 5	L	Option 5 runs predominantly though empty or reserve land. There may be minor disruption to traffic along Barry Road, but this is expected to be minimal. This option also has sufficient availability of construction access/space at road crossings.

	Landowners	Option 1	L	Most of the Option 1 route can be located within land owned or managed by Melbourne Airport or VicRoads and has no residential properties within 50m of the proposed route.
		Option 2	H	Option 2 has approximately 160 residential properties within approximately 50 metres of route The comparatively high number of landowners / operators presents elevated difficulties in obtaining approvals within this design option.
		Option 3	H	Option 3 has approximately 50 residential properties within approximately 50 metres of route The comparatively high number of landowners / operators presents elevated difficulties in obtaining approvals within this design option.
		Option 4	H	Option 4 has approximately 110 residential properties within approximately 50 metres of route The comparatively high number of landowners / operators presents elevated difficulties in obtaining approvals within this design option.
		Option 5	L	Most of the Option 5 route can be located within land owned or managed by Melbourne Airport, VicRoads, VicTrack, and Hume City and has no residential properties within 50m of the proposed route.
	Future land use	Option 1	L	The Option 1 route is already heavily developed which limits the potential for future developments to impact upon the pipeline.
		Option 2	L	The Option 2 route is already heavily developed which limits the potential for future developments to impact upon the pipeline.
		Option 3	L	The Option 3 route is already heavily developed which limits the potential for future developments to impact upon the pipeline.
		Option 4	L	The Option 4 route is already heavily developed which limits the potential for future developments to impact upon the pipeline.
		Option 5	M	There are development opportunities along the Option 5 route as there is an abundance of space to facilitate growth either side of Mickleham Road. Some of the land is within the 'noise zone' and may be developed for industrial purposes in the future.
	Safety impacts			
	Safety	Option 1	L	Option 1 is located mainly in industrial or open areas and is away from most residential areas. This option has low consequence areas along route and is unlikely to cause significant disturbance to the public and surrounding assets. This option has a low potential to damage properties during construction. Option 1 also provides accessibility for construction access and adequate areas for construction and operational activities to manage potential safety risks to workers and the public.
		Option 2	H	Option 2 passes through high density residential areas where there is an increased risk to public safety during both construction and operation. The option has high consequence areas along route. Installing the proposed pipeline in this area is likely to present challenges with existing buried services. Careful planning through this section would be required, including assessment to identify any potential obstructions, existing assets and all other pertinent data along the proposed route. This option has limited available space for construction between the major roads in the surrounding area which could increase the safety risk to workers and the public.
		Option 3	H	Option 3 is located along a major road, passes through high density residential areas and has high consequence areas along route. This means there is an increased risk to public safety during both construction and operation.

				There is also limited space for construction activities which could increase the safety risk to workers and the public.
		Option 4	H	Option 4 passes through residential areas and public service land where the route runs adjacent to parks and reserves and has high consequence areas along route. As a result, there is an increased risk to public safety during both construction and operation. This option also has limited available space for construction which could increase the safety risk to workers and the public.
		Option 5	L	Option 5 is located on the south side of Barry Road while all residential areas are on the north side of Barry Road. Separation between the pipeline and the residential areas can be achieved by placing the proposed pipeline south of Barry Road. This option has low consequence areas along route. Option 5 provides accessibility for construction access and adequate areas for construction and operational activities to manage potential safety risks to workers and the public.

13. Details of land ownership and title details (if applicable) for the land through which the proposed pipeline route or corridor is to be constructed

Table 8 below summarises the details of land ownership and title details for the land through which the proposed pipeline route or corridor is to be constructed. *Attachment A – Map Book* shows the land affected by the pipeline route and construction. Further details relating to the landowner consultation process can be found in *Attachment O – Pipeline Consultation Plan*.

Table 8: Details of land associated with the proposed pipeline corridor

Project ID	SPI or Road Name (for Road Reserves)	Land Type	Landowner Type	Type of Impact
MJP10000	1\TP946994	Freehold	Public	Affected by Pipeline
MJP10010	Western Ring Road (M80)	Crown	Road Reserve	Affected by Pipeline
MJP10450	RES2\PS341033	Freehold	Public	Affected by Pipeline
MJP10510	RES5\LP216715	Freehold	Public	Affected by Pipeline
MJP10520	RES2\LP112505	Freehold	Public	Affected by Pipeline
MJP20540	RES6\LP216715	Freehold	Public	Affected by Pipeline
MJP10530	Airport Drive	Crown	Road Reserve	Affected by Pipeline
MJP10730	Tullamarine Park Road	Crown	Road Reserve	Affected by Pipeline
MJP20910	1\PS414492	Freehold	Public	Affected by Pipeline
MJP11560	Sharps Road	Crown	Road Reserve	Affected by Pipeline
MJP11590	15\TP801448	Freehold	Commonwealth - Airport	Affected by Pipeline
MJP12060	1\TP801352	Freehold	Commonwealth - Airport	Additional workspace area
MJP13310	16\TP801448	Freehold	Commonwealth - Airport	Affected by Pipeline
MJP15080	12\TP801448	Freehold	Commonwealth - Airport	Affected by Pipeline
MJP14520	2\TP7410	Freehold	Commonwealth - Airport	Affected by Pipeline
MJP14620	1\TP553682	Freehold	Commonwealth - Airport	Affected by Pipeline
MJP14780	1\TP385802	Freehold	Commonwealth - Airport	Affected by Pipeline

	MJP14850	Tullamarine Freeway (M2)	Crown	Road Reserve	Affected by Pipeline
	MJP14940	1\TP512682 2\TP512682	Freehold	Private	Affected by Pipeline
	MJP14930	Victoria Street	Crown	Road Reserve	Affected by Pipeline
	MJP15070	21\TP801448	Freehold	Commonwealth - Airport	Affected by Pipeline
	MJP15200	Western Avenue	Crown	Road Reserve	Additional workspace area
	MJP15690	1\TP898144	Freehold	Commonwealth - Airport	Affected by Pipeline
	MJP15250	2\LP91468	Freehold	Private	Additional workspace area
	MJP25250	1\TP512635	Freehold	Private	Additional workspace area
	MJP25255	1\TP881666	Freehold	Commonwealth - Airport	Affected by Pipeline
	MJP15800	1\TP320400	Freehold	Commonwealth - Airport	Affected by Pipeline
	MJP16090	1\TP747518	Freehold	Private	Additional workspace area

14.	**Plans and design specifications of the proposed pipeline including metering stations, aboveground and underground facilities**
	The design basis for the pipeline and associated pigging facilities, ICCP and inlet and outlet metering stations is provided in *Attachment B – Basis of Design*. While the location of the pipeline and the locations, types and numbers of associated facilities is known, the basis of design and general technical requirements for the pipeline and associated facilities are subject to further detailed engineering design. This includes both technical and safety review in line with the requirements of AS2885.1-2018.

15.	**The benefit of the proposed pipeline to Victoria relative to its potential impacts**
	The purpose of the proposed pipeline is to provide faster replenishment of fuel stocks, provide an alternative to current and escalating dangerous goods vehicle movements and provide a more robust fuel supply chain for the Melbourne Airport. Key benefits of the proposed pipeline to Victoria include: • Meeting the increasing demand for jet fuel and supporting future growth at Melbourne Airport • Increasing supply security of jet fuel which contributes to the Victorian state economy • Reducing the reliance on road transport for jet fuel supply with fewer trucks required to deliver fuel to the airport. **Meeting the increasing demand for jet fuel and supporting future growth at Melbourne Airport** **Melbourne Airport's restricted jet fuel supply chain** Melbourne Airport is predominately supplied with jet fuel through a 46 km pipeline system that connects fuel terminals in Melbourne with the airport storage and refuelling facilities (as shown in Figure 7). The final 11 km section of the pipeline system (PL119) is smaller than the rest of the system and creates a 'bottleneck' in the supply chain. This restriction means that the sole pipeline servicing Melbourne Airport is incapable of supplying its full jet fuel requirements.

Thus, Victoria's major airport has no alternative other than heavy reliance on trucking from relatively distant fuel facilities in Geelong or Melbourne's inner-city suburbs (Yarraville or Newport). A lack of reliable fuel supply has historically culminated in fuel-rationing and aviation operation restrictions ('red/black traffic light events'), including at transport intensive periods such as December/January.

Recent investment in larger fuel storage tanks at the airport has improved the 'buffer' against fuel delivery interruptions. However, without development of complementary 'surge capacity' in upstream supply infrastructure, it remains challenging to recover and sustain fuel stock levels following unplanned supply events or high demand periods.

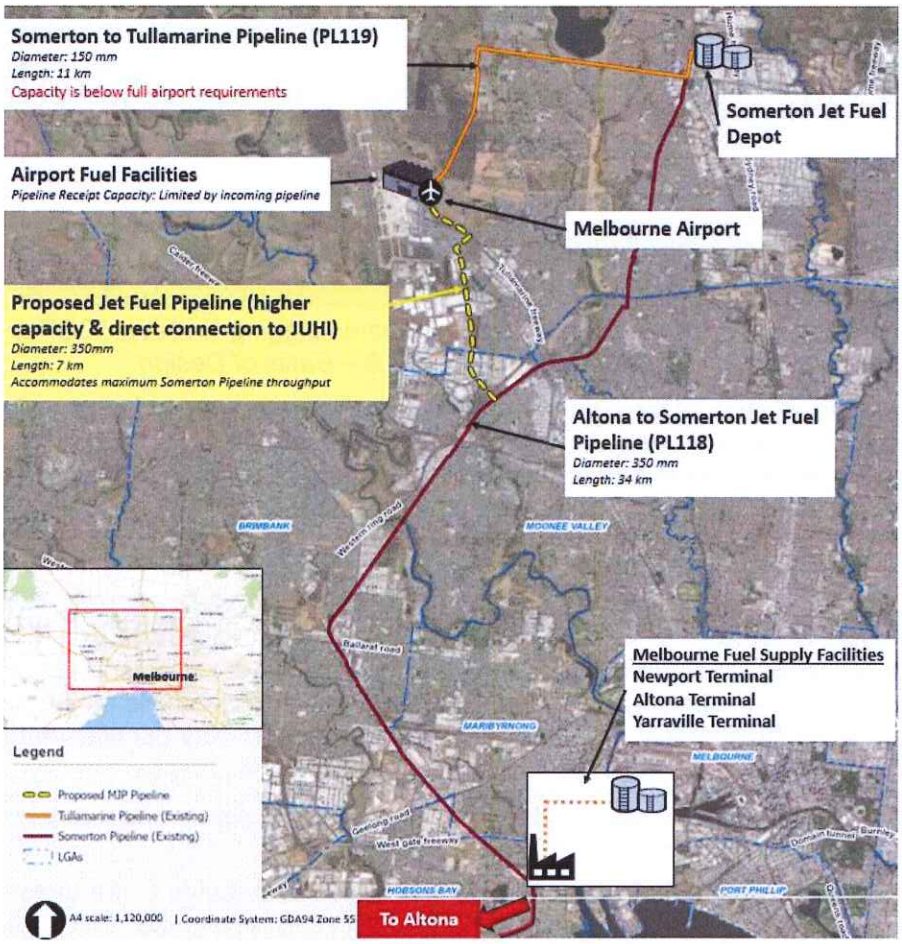


Figure 7: Melbourne Airport's jet fuel supply chain

Jet fuel demand in context of Melbourne Airport growth

Adding to this situation, annual passenger numbers for Melbourne Airport are expected to almost double by 2042 – increasing from 37 million to more than 76 million per year. Freight movements are also forecasted to double over this time period – increasing from 448,000 tonnes to 980,000 tonnes per year[8].

[8] Melbourne Airport Preliminary Draft Master Plan 2022

Accordingly, the requirement for jet fuel is expected to increase significantly, with future demand vastly exceeding the capacity of existing fuel supply infrastructure. The immense scale of trucking and associated fixed gantry facilities required to accommodate this growth would be both impractical and inferior relative to high-capacity pipeline systems.

Proposed pipeline supporting Melbourne Airport

The proposed pipeline would resolve the restrictions of the existing pipeline system by bypassing the Somerton terminal and PL119, directly connecting the upstream pipeline, PL118, with jet fuel infrastructure at the airport. The pipeline would be more than double the diameter of PL119 and allow significantly greater throughput, thereby fully able to support growing requirements at Melbourne Airport for the foreseeable future.

Increasing supply security of jet fuel and contributing to the Victorian state economy

Melbourne Airport operations are dependent on an uninterrupted supply of jet fuel through a reliable and efficient supply chain that provides the capability to adapt and grow with increasing air traffic movements.

Melbourne Airport and the Victorian economy

Melbourne Airport is a significant contributor to the Victorian state economy.

In 2019, Melbourne Airport directly generated $7 billion in economic activity, and the local suburbs surrounding the airport generated $75 billion in economic activity[9]. It has also enabled further billions of dollars in economic activity by:

- Providing the main point of entry for 3.1 million international visitors, spending $8.6 billion in Victoria on their holidays and business travel
- Providing the main point of entry for two-thirds of interstate visitors, with 5.8 million domestic passengers arriving in Victoria representing over $3 billion in expenditure
- Enabling $5.7 billion in exports and $12.5 billion in imports (2018-19).

The total impact of the economic activity enabled by Melbourne Airport is estimated at $20 billion per year for Victoria, with the average flight supporting $141,000 in economic activity.

Following planned upgrades to the airport, including the third runway for Melbourne Airport, air freight exports are expected to grow to $8.5 billion by 2027 and $13.5 billion in 2042. International tourism exports are expected to grow to $12.5 billion a year by 2027 and to $22.7 billion by 2042.

Furthermore, Melbourne Airport is a significant contributor to state employment. In 2019, around 19,000 people were directly employed for airport services, whilst more than 6,000 people were indirectly employed at the airport across hospitality, public administration, safety, and retail sectors. The surrounding local regions of Hume, Moreland and Brimbank also benefit from Melbourne Airport with an estimated 277,000 jobs directly or indirectly associated with the airport and its activities.

Proposed pipeline provides supply security

Victoria's current jet fuel supply infrastructure does not have the capability to service the state's economic growth potential. Without greater fuel supply security, the aviation industry would be unable to support the forecasted development in tourism, business and freight sectors.

[9] Melbourne Airport Preliminary Draft Master Plan 2022

The proposed pipeline would provide the necessary fuel supply infrastructure to facilitate continued growth at Melbourne Airport and the broader Victorian economy.

Reducing reliance on road transport for jet fuel supply, with fewer trucks required to deliver fuel to the airport

Road transport

The current pipeline system does not fully service Melbourne Airport's jet fuel requirements and the airport is reliant upon substantial road transport from fuel facilities in Geelong or Melbourne's inner-city suburbs (Yarraville or Newport).

Without investment in Victoria's pipeline infrastructure, the number of dangerous goods trucks travelling to and from the airport on congested arterial and local roads (including on airport roads proximate to airport passenger precincts and travelling public) must increase to support growing aviation travel. Forecasted airport growth necessitates a scale of road transport beyond practical limitations of supporting private and public infrastructure.

Transporting fuel through a pipeline is more reliable, efficient and safer than comparative road transport. Road accidents, injuries, fatalities and losses of fuel containment are not uncommon occurrences across the transport industry. The reliability of road deliveries is inherently impacted by heavy traffic and weather conditions. Additionally, reliance on trucking does not provide the advantage that a pipeline presents for rapid response to fluctuations in airport fuel requirements and stock level repositioning.

Pipeline systems utilise comparably lower amounts of energy to transport significantly larger volumes of fuel. The proposed pipeline would positively contribute to state and national GHG emissions targets by facilitating a transition towards cleaner supply chain models.

Sustainability aspects and the impact reduction

The key sustainability aspects and the impact reduction measures as detailed in this Application are summarised in Table 9 below.

Table 9: Principles of sustainable development, Pipelines Act 2005 (s4(2a-j))

Principle	Consideration
(a) individual and community wellbeing and welfare should be enhanced by following a path of economic development that safeguards the welfare of future generations;	The pipeline's role in ensuring inter-generational individual and community wellbeing and welfare is largely associated with its purpose of providing faster replenishment of fuel stocks and a more efficient and robust fuel supply chain for Melbourne Airport. By providing fuel security, the pipeline would support future growth at Melbourne Airport and the broader Victorian economy and reduce the reliance on road transport for jet fuel supply. In doing so, the pipeline would lead to an overall greenhouse gas emissions reduction when compared to transporting jet fuel by road, all while supporting economic development opportunities in the tourism, business and freight sectors and the associated job creation. More broadly, Viva Energy has an ambition to reach Net Zero Scope 1 and 2 emissions across all operations by 2050.
(b) there should be equity within and between generations;	The pipeline would provide faster replenishment of fuel stocks and a more efficient and robust fuel supply chain for the Melbourne Airport and would in turn support future growth at Melbourne Airport and the broader Victorian economy. Without a more efficient and robust fuel supply chain, the aviation industry in Melbourne would be unable to support the forecasted development in tourism, business and freight sectors and the associated jobs.

	The pipeline would also reduce the reliance on road transport for jet fuel supply. In doing so, the pipeline would lead to an overall greenhouse gas emissions reduction when compared to transporting jet fuel by road as pipeline systems utilise comparably lower amounts of energy to transport significantly larger volumes of fuel. As mentioned above, Viva Energy also has an ambition to reach Net Zero Scope 1 and 2 emissions across all operations by 2050.
(c) biological diversity should be protected and ecological integrity maintained;	As set out in Sections 8, 10, 11 and 12 of this Application, impacts on biodiversity associated with the construction and operation of the pipeline are limited and have largely been avoided by selecting a pipeline route that is located on previously disturbed and highly developed land. Development of the pipeline would not compromise the protection of biological diversity or ecological integrity. In areas where it is feasible (south of the Western Ring Road and north of the Tullamarine Freeway), reinstatement using indigenous native grass species would enhance the potential for the areas to function as a grassland habitat.
(d) there should be recognition of the need to develop a strong, growing, diversified and internationally competitive economy that can enhance the capacity for environment protection;	The pipeline would provide faster replenishment of fuel stocks and a more efficient and robust fuel supply chain for the Melbourne Airport. This will support growth in airport operations and economic development, while also delivering reduce greenhouse gas emissions during the operation when compared to transporting jet fuel by road.
(e) measures to be adopted should be cost effective and flexible, not disproportionate to the issues being addressed, including improved valuation, pricing and incentive mechanisms;	As described in Sections 8, 9 and 10, mitigation measures have been developed to address the environmental, cultural heritage, social and safety impacts of the pipeline. The measures proposed are appropriate and consistent with established industry standards that have been proven effective on numerous past projects. The proposed measures are considered to be proportionate to the issues being addressed particularly considering the relative short length of the pipeline, previously disturbed nature of the pipeline corridor and limited number of sensitive receptors.
(f) both long and short term economic, environmental, social and equity considerations should be effectively integrated into decision-making;	Economic, environmental, social and equity considerations have driven decision making in the development of the pipeline, including during the route selection process and the development of relevant impact avoidance, mitigation and management measures. The impacts of the pipeline during construction and operation are considered to be minor and acceptable, particularly when compared with the pipeline's purpose in providing fuel security for the Melbourne Airport and the associated benefits arising from supporting the forecasted future growth at the Melbourne Airport.
(g) if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;	As described in Section 8, 9 and 10, the environmental impacts of the pipeline are well understood, with measures taken to avoid or mitigate environmental degradation. As a result, there are no residual serious or irreversible environmental risks identified.
(h) decision-making should be guided by i. a careful evaluation to avoid serious or irreversible damage to the environment wherever practicable; and	As described in Section 11 and 12, the route selection comprised an appropriately detailed assessment process to avoid and minimise potential impacts. This included consideration of the potential impacts of the various options and resulted in the selection of a route where environmental and social impacts were avoided based on a balanced consideration of the significance of the potential impacts to identified values.

ii. an assessment of the risk weighted consequences of various options;	
(i) development should make a positive contribution to regional development and respect the aspirations of the community and of Indigenous peoples	As described in Sections 8 and 9, engagement with community and Traditional Owner groups has and continues to be undertaken to identify and understand social and cultural values held and therefore better understand the potential impacts arising from the construction and operation of the pipeline. Respect for individuals and the communities in which it operates is a foundation value for Viva Energy. Viva Energy is committed to corporate social responsibility by working with communities, people and customers to make a positive impact and deliver genuine social benefits. Viva Energy launched its second Innovate Reconciliation Action Plan in April 2022. The plan celebrates Indigenous culture, promotes reconciliation, builds respect and aims to raise cultural awareness. Viva Energy also supports a number of programs and projects, ranging from sponsorships to Indigenous procurement and hosting Indigenous interns, designed to address specific needs identified by its partners in Indigenous communities within its operational areas. During peak construction periods, it is expected that the project could provide up to 85 jobs. While it is important to recognise that many of these jobs would be specialised occupations via contractors, Viva Energy will engage with local businesses to identify potential opportunities to be involved with the project.
j) decisions and actions should provide for community involvement in issues that affect them.	Viva Energy is committed to corporate social responsibility by working with communities, people and customers to make a positive impact and deliver genuine social benefits. Viva Energy recognises the importance of consultation and the value it brings to the development and construction phases of infrastructure projects. Consultation with key stakeholders is to continue prior to and during construction. During the construction phase, one of Viva Energy's priorities will be to inform the affected landowners and occupiers, neighbours and community of construction timing and associated impacts prior to works commencing. Viva Energy will actively seek feedback during the construction phase to ensure continuous improvement on its performance.

Conclusion

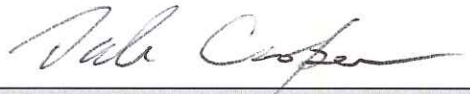
The pipeline would faster replenishment of fuel stocks and a more efficient and robust fuel supply chain for Melbourne Airport. This would contribute to the Victorian state economy by supporting the growing air traffic volumes and associated increases in passengers and air freight. By providing an alternative to current and escalating road transport operations, the pipeline would also improve road safety by reducing dangerous goods vehicle movements and lead to an overall greenhouse gas emissions reduction.

The proposed pipeline would be located in a highly developed and predominantly industrial area that is relatively insensitive to impact. Nevertheless, many potential impacts have been avoided or minimised through the refinement of the pipeline design, route alignment and construction methodology.

Engagement with relevant landowners/occupiers has occurred to minimise potential conflicts between the proposed developments along Airport Drive and Western Avenue and the pipeline. Substantial engagement with Rail Projects Victoria has also been undertaken and will be ongoing to refine the pipeline alignment and development to ensure compatibility with the Melbourne Airport Rail during construction and operational phases.

	Impacts relating to the construction and operation of the pipeline would be minimised by implementing industry best practices supplemented by project specific mitigation measures (more information provided in Section 10 of this Application). The residual impacts are not expected to be significant, nor ongoing, and are considered minor relative to the significant benefits of the proposed pipeline.

16.	**The assessment of the Environment Effects Minister in relation to the proposed pipeline, if an assessment has been made**
	A self-assessment of the proposed pipeline has been undertaken against the *Ministerial Guidelines for Assessment of Environmental Effects*. These guidelines provide criteria to enable a project proponent to determine whether a project should be referred. The self-assessment, presented in *Attachment P – Self-assessment against the Ministerial Guidelines for Assessment of Environmental Effects*, determined that a referral under the *Environment Effects Act 1978* is not required as none of the criteria would be met or exceeded.

17.	**Signature(s)**	
	Signature of authorised person(s)	**Date**
		21 April 2023
	Full name	**Position**
	Lachlan Alistair Pfeiffer	Director
	Company	
	Viva Energy Australia Pty Ltd	
	Signature(s)	
	Signature of authorised person(s)	**Date**
		19 April 2023
	Full name	**Position**
	Dale Edward Cooper	Director
	Company	
	Viva Energy Australia Pty Ltd	

Doc No. 1780/23

Affix Company seal(s) here if applicable (refer to s127 of the *Corporations Act 2001* for requirement to execute a document either with a Company seal affixed or without)

Attachments	
Attachment A	Map Book
Attachment B	Basis of Design
Attachment C	Flora and Fauna Assessment Report
Attachment D	Hydrology and Groundwater Assessment
Attachment E	Environmental Site Assessment Report
Attachment F	Construction Noise and Vibration Impact Assessment
Attachment G	Construction Dust Assessment
Attachment H	Greenhouse Gas Emissions Impact Assessment
Attachment I	Land Use and Planning Assessment
Attachment J	Social and Business Impact Assessment
Attachment K	Transport Impact Assessment
Attachment L	Aboriginal Cultural Heritage Memo
Attachment M	Historic Heritage Desktop Assessment
Attachment N	Pipeline Route Options Report
Attachment O	Pipeline Consultation Plan
Attachment P	Self-assessment against the Ministerial Guidelines for Assessment of Environmental Effects