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land use.

Environment Effects Statement | May 2021

western outer ring main

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APA VTS (Operations) Pty Ltd

Western Outer Ring Main Environment Effects Statement

Technical Report – Land use and planning

Prepared for APA VTS (Operations) Pty Ltd

May 2021

Executive summary

This technical report is an attachment to the Western Outer Ring Main Project (the Project) Environment Effects Statement (EES).

The report discusses the current and reasonably foreseeable future land uses within and adjacent to the Project area and provides an assessment of the potential impacts associated with the construction and ongoing operation of the Project.

Overview

The Project is a 600 millimetre nominal diameter high pressure gas transmission pipeline between APA's (project proponent) existing Plumpton Regulating Station (approx. 38 kilometres north west of Melbourne's CBD) and Wollert Compressor Station (approx. 26 kilometres north east of Melbourne's CBD), providing a high pressure connection between the eastern and western pipeline networks of the Victorian Transmission System (VTS). The Project includes a new pipeline, three mainline valves along the pipeline alignment, and an additional compressor and regulating station at the existing Wollert Compressor Station.

On 22 December 2019, the Minister for Planning determined that the Project would require an Environment Effects Statement (EES) under the *Environment Effects Act 1978* (EE Act).

GHD was commissioned to undertake a land use impact assessment as part of a wider scope of work for the purpose of the EES.

Land use context

The Project is located to the north and west of Melbourne and lies between Plumpton and Wollert. The pipeline would traverse the local government areas of Melton City, Hume City, Mitchell Shire and Whittlesea City Councils.

All four municipalities are expected to experience significant population growth under state, regional and local planning policy directives, which will be largely accommodated through the incremental and planned development of residential growth areas (and associated employment precincts) within the western (Melton) and northern (Hume, Mitchell and Whittlesea) growth corridors.

The Project also traverses two green wedges (the Western Plains North green wedge, and the Sunbury green wedge), which are predominantly home to rural and agricultural land uses, with some associated residential development, limited commercial uses, and some extractive industry operations.

Understanding the land uses found across the Project and adjacent area and how they may be impacted by Project activities ensures appropriate mitigation measures can be developed to avoid, minimise or manage these impacts during construction and operation of the Project.

Existing conditions

Land uses in the Project area generally comprise a range of residential, agricultural, open space, commercial, industrial (including extractive industry such as quarries) and community facilities-based land uses. Broadly, land across all sections is generally within a growth area subject to a current or future Precinct Structure Plan (PSP), or within a green wedge. In summary, 29.6% of land is zoned Urban Growth Zone, and 50.9% of land is zoned Green Wedge Zone.

The existing conditions assessment also found that the majority of the land subject to the pipeline was privately held, with Crown Land in the study area limited to waterways and roadways.

Impact assessment

The expected impacts to existing and planned (known or reasonably foreseeable) land uses during the construction and operation of the Project have been discussed and assessed.

The Project was found to be generally in accordance with relevant state, regional and local planning policy, including *Plan Melbourne 2017-2050*, the Planning Policy Framework (PPF), Municipal Strategic Statements (MSSs), and various local strategies.

Generally, impacts to land use during construction were found to include the following:

- Temporary impacts to use of land for agricultural purposes within the 30 m construction corridor, with project mitigation measures such as rehabilitation lessening ongoing impacts
- Potential minor traffic impacts during construction through access for construction vehicles (managed through a Traffic Management Plan), and impacts to some unsealed roads (with impacts to sealed roads avoided through trenchless construction methods)
- Temporary changes to access of private land would be managed through negotiation and agreement reached with landowners
- Potential noise and dust impacts to land uses such as residential, commercial, agricultural and industrial, to be managed through a CEMP
- Potential impacts to waterways, managed through the CEMP and avoided where possible through trenchless construction

Land use impacts during the operation phase were found to include the following:

- Ongoing minor limitations on land use within the green wedge, where an easement is not already present, with land unable to be used for structures or large trees and shrubs. However, cropping and grazing can continue in the easement, except within the fenced MLVs.
- While predominantly consistent with PSPs along the Project due to the use of existing pipeline easements, some PSPs do not specifically recognise the Project (including the Sunbury South, Lindum Vale, Merrifield West and Lockerbie North PSPs), however future PSPs would recognise the Project
- Ongoing traffic impacts are expected for maintenance and inspection of the pipeline throughout the operational life of the Project however, these are expected to be negligible and generally considered to be consistent with the general use of roads in the area

Residual impacts across Sections 1, 2 and 3 are assessed as minor, with residual impacts in Section 4 assessed as insignificant.

Environmental management measures

Environmental management measures (EMMs) were formulated to address the above impacts, where required, and include:

- **PSP areas** – Minimise impacts as far as reasonably practicable to PSPs and growth areas by providing for consistency with approved and PSPs that are yet to be approved, including designing the pipeline in accordance with AS 2885 with consideration to current land use
- **Continuation of existing land uses** – Construction and operation of the Project would be undertaken in accordance with air quality and noise and vibration EMMs AQ1, AQ3, AQ4, NV1, NV2, NV3, NV4 and NV5 to minimise air quality and noise amenity impacts, with landowners and occupiers engaged throughout construction in accordance with the Project Consultation Plan (EMM S6)
- **Land tenure and operation** – Compensation for acquisition of land or reservation for the purpose of an easement for the pipeline would be managed in accordance with the *Pipelines Act 2005* and the *Land Acquisition and Compensation Act 1986*, with operational activities undertaken with ongoing consultation with landowners under the Project Consultation Plan
- **Transport land uses** – Implemented of a Traffic Management Plan to manage disruptions to roads during construction and utilisation of trenchless construction methods to avoid transport disruption

Post-construction, ongoing monitoring and contingency measures are also recommended, including:

- Ongoing consultation with the relevant authority to allow for co-location with other infrastructure projects (e.g. Department of Transport for the OMR/E6 Transport corridor) and consultation with the VPA to allow for incorporation of the Project into future PSPs
- Intensive monitoring over a period of 12 months following completion of rehabilitation works to ensure reinstatement is completed to the satisfaction of each land owner and APA
- Contingency measures for road disruptions incorporated into a Traffic Management Plan

Conclusion

The report concludes that the Project is generally in accordance with the relevant strategic state, regional and local planning policy, and supports the efficient provision of energy, namely natural gas, including facilitating access to this energy by planned residential growth in Melbourne's northern and western growth areas as outlined in Plan Melbourne.

Impacts to land use are primarily confined to agricultural land uses, and impacts during construction are temporary and can be managed through the relevant EMMs, with impacts during operation allowing ongoing use of land for agricultural purposes in the planned pipeline easement, where an easement is not already present. Generally, where EMMs are applied, residual impacts across the Project are low or insignificant.

The relevant supporting EES technical assessment and reports provide mitigation measures which avoid or appropriately reduce the impacts to existing and reasonably foreseeable land use that may be caused by the Project.

Abbreviations

Abbreviation	Definition
APA	APA VTS (Operations) Pty Ltd
BCP	Biodiversity Conservation Plan
CHMP	Cultural Heritage Management Plan
CEMP	Construction Environment Management Plan
DELWP	Department of Environment, Land, Water and Planning
EMM	Environmental Mitigation Measure
EE Act	*Environment Effects Act 1978*
EES	Environment Effects Statement
EMF	Environmental Management Framework
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
GWMP	Green Wedge Management Plan
HDD	Horizontal Directional Drilling
ICCP	Impressed Current Cathodic Protection System
LPPF	Local Planning Policy Framework
MLV	Mainline Valve
MSS	Municipal Strategic Statement
NGCP	Northern Growth Corridor Plan
PE Act	*Planning and Environment Act 1987*
Pipelines Act	*Pipelines Act 2005*
PPF	Planning Policy Framework
PSP	Precinct Structure Plan
SEPPs	State Environment Protection Policies
UGB	Urban Growth Boundary
VHR	Victorian Heritage Register
VHI	Victorian Heritage Inventory
VPA	Victorian Planning Authority
VTS	Victorian Transmission System
WGCP	Western Growth Corridor Plan
WORM	Western Outer Ring Main

Glossary

Term	Definition
APA	APA VTS (Operations) Pty Ltd, trading as APA Group, the proponent for the Project
Project	The Western Outer Ring Main Project
Environmental Management Measures	Approaches, requirements or actions to avoid, mitigate or manage potential adverse impacts.
Green Wedge	A 'green wedge' is a non-urban area of metropolitan Melbourne that is outside of the urban growth boundary, and is protected by zoning that restricts uses to agriculture and lower-density uses such as infrastructure, quarries, and environmental conservation areas. Areas within a designated green wedge are also provided with protections within the PE Act to prevent them from urban encroachment.
Melbourne Strategic Assessment (MSA) area	The area between approximately KP 0 to KP 3.2, KP 28.16 to KP 28.57, and KP 32 to KP 51 which is within the area having MSA approvals. This approval is an agreement between the Victorian and Australian governments made under Part 10 of the EPBC Act whereby impacts on Matters of National Environmental Significance that are expected to occur within the Melbourne urban growth boundary are defined and accounted for *a priori* and can be considered early in the development of a plan, policy or program.
Planning scheme	A planning scheme is a land use planning statutory document, implemented through Section 2 of the PE Act, which sets out objectives, policies and provisions which regulate the use, development, protection and conservation of land
Precinct Structure Plan	A PSP is a master plan that provides guidance for integrated planning of a local area, typically being located within a growth area. PSP's provide strategic context for new urban development, and generally include plans for projected land use, employment, community facilities, transport, native vegetation, heritage, open space, and utilities.
Scoping Requirements	The EES Scoping requirements for the Project issued by the Minister for Planning in August 2020.
Urban Growth Boundary	The urban growth boundary is a legislated boundary which acts as the interface between growth areas and metropolitan Melbourne, and a green wedge or rural area.

Term	Definition
Measurement Length	Pipelines are designed in accordance with Australian Standard AS 2885 Pipelines – Gas and liquid petroleum. AS 2885 requires APA to take account of the current and reasonably foreseeable land uses along the proposed pipeline corridor, for the design life of the pipeline, as a central input to pipeline design. The area of land around the pipeline where APA must consider the existing and reasonably foreseeable land uses for the purpose of pipeline design considerations is referred to as the Measurement Length. The Measurement Length is determined primarily by the Maximum Allowable Operating Pressure and the pipeline diameter. The Measurement Length is the area of consequence in the extremely unlikely event of a full loss of containment of the gas (full-bore rupture of the pipeline) plus the gas being ignited. The Measurement Length defines the area where land use classifications as defined in AS 2885 must be identified and is the geographical extent of the Safety Management Study considerations. The Measurement Length can be defined as the area where risks associated with the pipeline are assessed and consequently designed out or mitigated to as low as reasonably practical to minimise any such event from occurring. The Measurement Length is not a buffer or separation distance from the pipeline, but the area of study and assessment.
Area of Consequence	In planning for WORM, APA has reviewed credible threats and has designed the pipeline to respond to the existing and reasonably foreseeable environments identified in the ML. The Project has been designed in accordance with AS/NZS 2885.1, which specifies minimum design requirements (such as wall thickness and depth of cover) based on the surrounding existing and reasonably foreseeable land use classification. The classification scheme is used to determine the pipeline design requirements according to whether the pipeline is to be installed in rural, semi-rural, suburban or urban areas. Further information regarding the design and safety requirements applicable to the Project is provided in Chapter 17 Safety. As a result of this, an event resulting in the full loss of containment (a full bore rupture) is not considered to be a credible scenario and the worst case scenario is a pipeline puncture. In a similar way to establishing the ML for a full bore rupture, the area potentially impacted in this scenario was assessed based on likely puncture size and the risk of gas escaping and igniting. This area is known as the Area of Consequence and is significantly smaller than the ML. The Area of Consequence for the WORM pipeline has been determined to be 65 metres each side of the pipeline. The Notification Area, within which APA would seek ongoing visibility of Sensitive Use related planning applications to assess if they are compatible with the pipeline design, would match the Area of Consequence. Under AS/NZS 2885, a sensitive use includes residential aged care, child care, education and hospital facilities (residential housing is not a sensitive use). APA would still also monitor land use within the ML for the design life of the pipeline, in accordance with AS 2885.

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1. Introduction

1.1 Purpose of this report

The Western Outer Ring Main (WORM) gas pipeline project (the Project) is a proposed 600 millimetre nominal diameter high pressure gas transmission pipeline that will provide a high pressure connection between the eastern and western pipeline networks of the Victorian Transmission System (VTS).

APA is the proponent for the Project. APA is Australia's largest natural gas infrastructure business. In Victoria, the VTS is owned and maintained by APA and consists of some 2,267 kilometres of gas pipelines. The VTS serves a total consumption base of approximately two million residential consumers and approximately 60,000 industrial and commercial users throughout Victoria.

The Project has been designed to provide critical infrastructure for Victoria's gas supply, distribution, and consequent security, efficiency and affordability. The key objectives of the Project are to:

- Improve system resilience and security of gas supply
- Increase the amount of natural gas that can be stored for times of peak demand
- Improve network performance and reliability
- Address potential gas shortages as forecasted by AEMO in the March 2020 Victorian Gas Planning Report update

The Minister for Planning determined on 22 December 2019 that APA and the Western Outer Ring Main (WORM) gas pipeline project (the Project) would require an Environment Effects Statement (EES) under the *Environment Effects Act 1978* (EE Act). The EES will inform assessment of approvals required for the Project including under the *Pipelines Act 2005*, *Aboriginal Heritage Act 2006* and *Environment Protection and Biodiversity Conservation Act 1999.*

Section 49 of the Pipelines Act requires that the following matters relevant to land use and planning be considered before granting a licence:

(a) the potential environmental, social, economic and safety impacts of the proposed pipeline

(f) the assessment of the Environment Effects Minister in relation to the proposed pipeline, if an assessment has been made;

(g) any written comments received from the Planning Minister or the relevant responsible authority on the effect of the proposed pipeline on the planning of the area through which it is to pass;

(h) any written comments received from the Water Minister and from the relevant Crown Land Minister on the impact of the proposed pipeline.

The purpose of this report is to identify and assess the potential land use impacts associated with the Project, and to define the environmental management measures necessary to meet the EES evaluation objectives.

1.2 Why understanding land use is important

This report considers the existing land use and planning conditions relevant to the Project and an assessment of potential land use planning impacts as a result of the Project.

The Project is within and adjacent to existing residential, agricultural, open space, commercial industrial and extractive industries, and community facility land uses. Land reserved for the Outer Metropolitan Ring (OMR)/E6 Transport corridor, through a Public Acquisition Overlay, also applies to land within and adjacent to a significant portion of the Project. Sections of the Project are situated within a green wedge, or within a growth area subject to a current or future Precinct Structure Plan (PSP).

As such, Project activities have the potential to impact existing and reasonably foreseeable land uses or land use policies during the construction and operation phases of the Project.

Land use impacts may include:

- Temporary impacts to continuation of agricultural land uses
- Potential impacts to roads (both sealed and unsealed) during construction through access for construction vehicles and intersection with the Project
- Temporary changes to access to private land during construction including potential road closures and access to agricultural land
- Minor land acquisition for the three MLV project components
- Restrictions on future activities within the pipeline easement (i.e. the installation of sheds and other structures would be restricted within close proximity to the pipeline in the easement and require APA approval)

It is important to understand how the Project would impact land use so that appropriate mitigation measures can be developed to avoid or minimise or manage impacts during construction and operation of the Project.

1.3 Limitations

This Land Use Impact Assessment Report (Report):

1. *Has been prepared by GHD Pty Ltd ("GHD") for APA VTS (Operations) Pty Ltd (APA);*
2. *May only be used for the purpose of informing the Environment Effects Statement and Pipeline Licence Application for the Western Outer Ring Main Project (and must not be used for any other purpose); and*
3. *May be provided to the Department of Environment, Land, Water and Planning for the purpose of public exhibition as part of the Environment Effects Statement and Pipeline Licence Application for the Western Outer Ring Main Project.*

The services undertaken by GHD in connection with preparing this Report were limited to those specifically detailed in section 4 Methodology of this Report. The opinions, conclusions and any recommendations in this Report are based on assumptions made by GHD when undertaking services and preparing the Report (Assumptions), as specified in section 4 Methodology and throughout this Report. GHD excludes liability for errors in, or omissions from, this Report arising from or in connection with any of the assumptions being incorrect. Subject to the paragraphs in this section of the Report, the opinions, conclusions and any recommendations in this Report are based on conditions encountered and information reviewed at the time of preparation. GHD has not, and accepts no responsibility or obligation to update this Report to account for events or changes occurring subsequent to the date that the Report was signed.

2. EES scoping requirements

The scoping requirements for the EES, released by the Minister for Planning in August 2020, set out the specific environmental matters to be investigated and documented in the Project's EES, and informs the scope of the EES technical studies.

The scoping requirements include a set of evaluation objectives. These objectives identify the desired outcomes to be achieved in managing the potential impacts of construction and operation of the Project.

2.1 EES evaluation objectives

The following evaluation objective is relevant to the land use assessment:

- *Minimise potential adverse social, economic, amenity and land use effects at local and regional scales.*

2.2 EES scoping requirements

The scoping requirements relevant to the land use evaluation objectives are shown in Table 2-1, as well as the Section where these items have been addressed in this report.

Please note the below scoping requirements specifically relevant to land use, and scoping requirements generally relevant to this EES have not been outlined below.

Table 2-1 Scoping requirements relevant to land use

Scoping requirement	Section addressed
Key issues	
Potential for project works and operations to affect business (including farming) operations or other existing or approved land uses through direct impacts of land loss or indirect impacts such as severance of land, reduced accessibility, or impacts on water supply and use.	The existing conditions of commercial, agricultural and industrial land uses is discussed at Section 6. Impacts are discussed at Section 8. Further information can be found within the Social Technical Report (Technical Report L).
Relocation or other impacts to existing or proposed infrastructure, including road/rail networks and power infrastructure.	The construction methodology is described at Section 3.2, with existing conditions discussed at Section 6. Potential impacts are discussed at Section 8. Further information can be found within the Ground Movement Technical Report (Technical Report D), Social Technical Report (Technical Report L), and Chapter 4 of the EES.
Potential for dust emissions resulting from construction works and activities, including dust from potentially contaminated soil.	Potential impacts are discussed at Section 8. Further information can be found within the Contamination Technical Report (Technical Report E) and the Air Quality Technical Report (Technical Report G).
Potential for increases in noise and vibration levels during project construction or operation to affect amenity adversely for sensitive receptors including residential areas (including from blasting activities where required).	The existing conditions of land uses, including residential areas and community facilities, is discussed at Section 6. Potential impacts are discussed at Section 8. Further information can be found within the Noise and Vibration Technical Report (Technical Report F) and the Social Technical Report (Technical Report L).

Scoping requirement	Section addressed
Potential for project construction or operation to adversely affect local air quality.	Potential impacts are discussed at Section 8. Further information can be found within the Air Quality Technical Report (Technical Report G) and the Social Technical Report (Technical Report L).
Potential for temporary or permanent changes to use of or access to existing infrastructure and land in the project area and in its vicinity.	The existing conditions of land uses across the Project is discussed at Section 6. Potential impacts are discussed at Section 8. Further information can be found in the Social Technical Report (Technical Report L).
Potential for adverse impacts on visual or landscape values, including impacts on amenity from project lighting.	The existing conditions of land uses across the Project is discussed at Section 6. Potential impacts are discussed at Section 8. Further information can be found in the Landscape and Visual Technical Report (Technical Report J).
Existing environment	
Describe existing and reasonably foreseeable land uses within and adjacent to the proposed project area, including the types of land ownership present along the Project and land uses associated precinct structure plans.	The existing conditions of land uses across the Project is discussed at Section 6. Further information can be found in the Social Technical Report (Technical Report L).
Identify existing and reasonably foreseeable land uses and businesses occupying land to be traversed by, adjacent to, or otherwise affected by impacts from the project.	The existing conditions of land uses across the Project is discussed at Section 6. Further information can be found in the Social Technical Report (Technical Report L).
Identify strategic plans specifying or encouraging land use outcomes for land to be occupied by the project.	A discussion of applicable legislation can be found at Section 5. Alignment with legislation, policies and plans is discussed at Section 8.1.
Mitigation measures	
Identify mitigation measures to be implemented to avoid or minimise impacts on existing or proposed land uses within and surrounding the project area, including the proposed approach to arrange access where required.	EMMs can be found at Section 9. Further information can be found in the Social Technical Report (Technical Report L.
Describe and evaluate the proposed traffic management and safety principles to address changed traffic conditions during construction and operation of the project.	Potential impacts to traffic are discussed at Section 8. EMMs can be found at Section 9. Further information can be found in the Social Technical Report (Technical Report L).
Identify options for mitigating impacts from project construction or operation on any potentially affected businesses, existing and proposed transport infrastructure, and community facilities including open space.	EMMs can be found at Section 9. Further information can be found in the Social Technical Report (Technical Report L).

Scoping requirement	Section addressed
Likely effects	
Identify implications for communities, current land uses and businesses and reasonably foreseeable changes in land use. This should include the likely extent and duration of any temporary or permanent disruption to existing land uses arising from project construction, including requirements for the project to access and/or acquire land. This should also include a description of the rights and restrictions on use of the pipeline easement during operations.	Potential impacts to current and reasonably foreseeable land uses are discussed at Section 8. EMMs can be found at Section 9. Further information can be found in the Social Technical Report (Technical Report L).
Assess potential impacts on precinct structure plans.	Alignment with PSPs is discussed at Section 8.1. EMMs can be found at Section 9.
Performance criteria	
Outline measures to monitor the success of commitments to mitigate or manage effects on social, economic, amenity and land use values during all phases of the project.	EMMs can be found at Section 9. Further information can be found within the Air Quality Technical Report (Technical Report G), Contamination Technical Report (Technical Report E), Noise and Vibration Technical Report (Technical Report F), and the Social Technical Report (Technical Report L).
Describe the approach to monitor effects and develop contingency measures to be implemented in the event of adverse residual effects on social, economic, amenity and land use values requiring further management.	EMMs can be found at Section 9. Further information can be found within the Air Quality Technical Report (Technical Report G), Contamination Technical Report (Technical Report E), Noise and Vibration Technical Report (Technical Report F), and the Social Technical Report (Technical Report L).

2.3 Linkages to other reports

This report relies on or informs the technical assessments as indicated in Table 2-2.

Table 2-2 Linkages to other technical reports

Specialist report	Relevance to this technical study
Air quality	Provides an assessment of the Project's potential to impact air quality during construction and operation. Findings from the air quality report have informed the assessment of potential impacts to existing and planned land uses as a result of changes in air quality conditions.
Biodiversity	Addresses impacts to biodiversity across the Project, including flora and fauna, and site rehabilitation. Information from the biodiversity report has been used to inform the policy context in this report, as well as the impact assessment of changes to agricultural and open space land uses.
Landscape and visual	Identifies sensitive receptors and provides an assessment of potential visual and landscape impacts of the Project. Linkages to land use include impacts on built form and strategic policy outcomes, which have informed the policy analysis within this report.

Specialist report	Relevance to this technical study
Noise and vibration	Provides an assessment of the potential surface noise and vibration impacts during construction and operation. Findings from the noise and vibration report have informed the assessment of noise and vibration impacts on land use during construction.
Social	Provides an assessment of the potential social impacts of the Project. Information from the social report has assisted in the preparation of the existing conditions section of this report, and informed the impact assessment on land used for community facilities and residential land uses.
Water	Addresses impacts to waterways and groundwater that may be caused by construction. Information from the water report has informed the impact assessment section of this report.

3. Project description

3.1 Project overview

The Project provides a new link between APA's existing Plumpton Regulating Station (approx. 38 kilometres north west of Melbourne's CBD) and the Wollert Compressor Station (approx. 26 kilometres to the north east of Melbourne's CBD). The Project includes the following key components:

- **A new pipeline**: The pipeline would be approximately 51 kilometres in length. The pipeline would be within a 15 metre wide permanent easement and be buried for its entire length to a minimum depth of cover of 750 millimetres.
- **Mainline valves**: Three mainline valves (MLV) would be located along the Project. The area required for mainline valves would be subdivided and acquired by APA to provide ongoing access for any maintenance or inspection activities from the existing roads. The mainline valves would be spaced at intervals of approximately 15 kilometres, and located at approximately KP 6, KP 22 and KP 35.
- The **Wollert Compressor Station upgrade**: The installation of a new Solar Centaur 50 compressor, an end of line scraper station and a pressure regulating station within the existing APA facility at Wollert.

A schematic illustration of the Project context is shown in Figure 1.

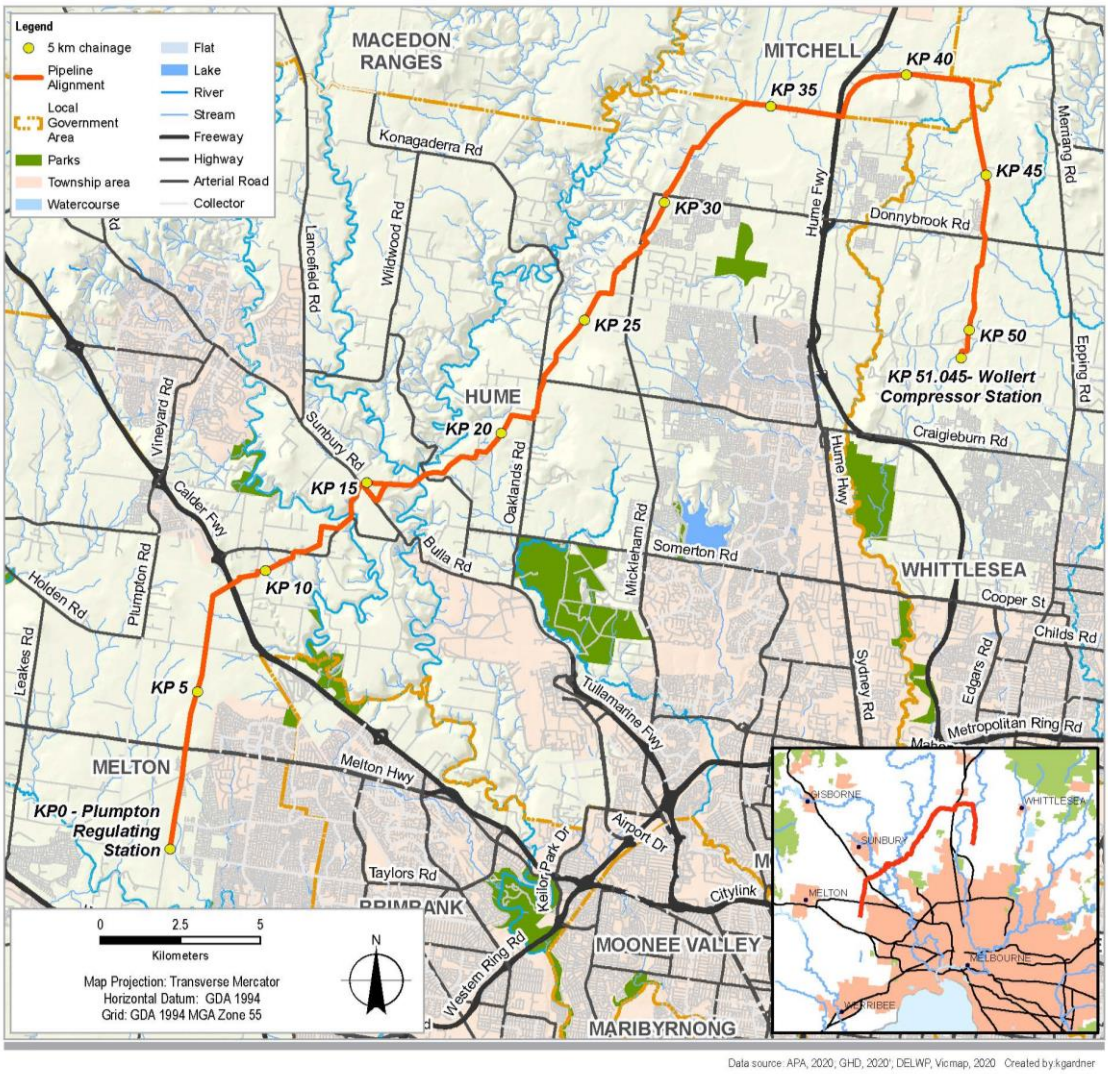


Figure 1 Western Outer Ring Main overview

3.2 Construction

Subject to the staging of the works, construction for the entire Project is expected to take approximately nine months. Key construction activities for the Project include:

- Establishing offsite construction sites and construction/laydown areas
- Constructing the pipeline
- Constructing three mainline valves
- Construction of upgrades associated with the Wollert compressor station
- Rehabilitation

3.2.1 Construction laydown and pipeline stockpiling areas

Two temporary construction sites would be established for construction.

One offsite compound for pipeline works is proposed to be nominally 200 metres x 200 metres in area, including laydown and storage areas and would be located on a site where the activity is permitted under the relevant Planning Scheme (most likely within an existing industrial zoned area).

The second temporary laydown area and construction offices facility would be established for the Wollert Compressor Station construction works. The construction offices and site laydown area for the compressor station equipment would be located within the existing compressor site area at Wollert.

3.2.2 Pipeline construction area

The Project would require a construction area for the pipeline, which would typically comprise a 30 metre wide corridor along the Project. Most construction activity would be located within this construction area. The activities and facilities within the construction corridor would include access tracks and additional work areas such as vehicle turn around points and additional work spaces for crossings, stockpiling of materials and storage of pipe. Additional work areas up to 50 m x 50 m or 50 m x 100 m (such as for vehicle turn-around points, areas to accommodate HDD) would be required in some locations.

3.2.3 Pipeline construction methodology

The techniques used to construct the underground pipeline would include various methods including open trench construction and alternative techniques at certain locations, such as horizontal directional drilling (HDD) or horizontal boring.

Where crossing watercourses, major roads, rail line reserves or other constraints, the pipeline may be constructed using trenchless construction techniques such as HDD or shallow horizontal boring, to avoid construction disturbance within the sensitive area.

An overview of preliminary trenchless construction techniques and locations is provided in Table 3-1 below (with reference to pipeline sections as reviewed for the existing conditions and impact assessment in this report, please refer to Section 4.2).

The pipeline construction sequence starts with survey works and continues with site establishment (including laydown area), clearing and grading, pipe stringing, pipe bending, welding and coating, open trench construction, lowering pipe into trench, hydrostatic testing, commissioning, and finally rehabilitation.

There would be dedicated access points into the construction corridor with vehicular movements along the Project kept within the construction corridor.

Table 3-1 Preliminary proposed trenchless construction

Pipeline section (Land use assessment methodology)	Road/creek/rail line name	Approx. location (KP)	Likely construction method at crossing
Section 1	Beatty's road	2.2	Bored
	Melton Highway	3.1	HDD
	Holden Road	6.4	Bored
	Bendigo rail line reserve	8.2	Bored (pipe jacking)
	Calder Freeway	8.6	HDD

Pipeline section (Land use assessment methodology)	Road/creek/rail line name	Approx. location (KP)	Likely construction method at crossing
Section 2	Morefield Court	10.9	Bored
	Bulla-Diggers Rest Road	11.2	Bored
	Sunbury Road	14.9	Mini HDD
	Deep Creek	16.8	HDD
	Wildwood Road	17.0	Bored
	St Johns Road	19.0	Bored
	Oaklands Road	21.6	Bored
	Craigieburn Road	22.7	Bored
	Mt Ridley Road	26.4	Bored
	Parkland Crescent	26.4	Bored/Open trench construction
Section 3	Mickleham Road	28.0	Bored
	Donnybrook Road	30.2	Bored
	Gunns Gully Road	36.8	Bored
	Hume Freeway	36.9	HDD
	North Eastern rail line reserve	40.9	Bored (Pipe jacking)
Section 4	Donnybrook Road	46.8	Bored

3.2.4 Construction of other facilities

The construction sequence for the Wollert Compressor Station works starts with survey works and continues with site establishment (including laydown area), bulk earthworks, civil works (concrete slab and footings), mechanical works, electrical and instrumentation works, hydrostatic testing, commissioning, and site completion.

Various components of the compressor are assembled offsite. When delivered to site the various components are assembled together in-situ. Cranes are used to lift the compressor into place with all connecting pipework fitted.

3.3 Operation

Following the reinstatement of land as part of the pipeline construction, the land would be generally returned to its previous use. When commissioned, the pipeline would be owned and maintained by APA. The pipeline would be contained within a 15 metre wide permanent easement corridor (within the area that formed the 30 metre construction corridor). Routine corridor inspections would be undertaken in accordance with APA procedures and AS2885 to monitor the pipeline easement for any operational or maintenance issues.

Maintenance and inspections of the MLVs and the Wollert Compressor Station would also be conducted periodically in accordance with APA procedures. The activities usually include vegetation management, valve and compressor operation and corrective maintenance.

The key operation and maintenance phase activities include:

- Easement maintenance (vegetation control, weed management, erosion and subsidence monitoring)
- Pipeline, MLVs and compressor station maintenance
- Specialist pigging operations
- Cathodic protection surveys for mechanical and electrical preventative and corrective maintenance
- Monitoring and routine inspections and surveillance

3.3.1 Use and development restrictions during operation

Once the easement for the Project has been registered, there would be restrictions on the use and development of land within the 15 m easement corridor, as outlined under Division 3 of the *Pipelines Act 2005*.

Restrictions would include the prohibition of excavating or erecting permanent structures, buildings, planting of large trees or shrubs over the underground pipeline. These activities would be prohibited by the *Pipelines Act 2005* and pursuant to easement agreements with landowners.

Any planned road crossings in the future must meet the requirements of AS2885.1-2012 Clause 5.8.8 and Figure 5.8.8(B), while linear buried infrastructure should minimise crossings of the pipeline. Accordingly, any future roads and linear infrastructure should be designed to cross the pipeline at 90 degrees.

Physical access to land within the pipeline easement would not be restricted beyond the above, and activities such as livestock grazing or cropping would be able to continue. Shared use and bicycle paths are also encouraged along pipeline easements and have generally been accommodated within PSPs where existing pipeline easements exist, in accordance with the *APA Site Planning and Landscape National Guidelines* (APA 2020). This document would also be used to guide developers on appropriate rehabilitation and landscaping along the pipeline easement, which would provide an opportunity for linear green open space.

4. Methodology

4.1 Overview of method

This section describes the method that was used to identify existing conditions and assess the potential impacts of the Project. A risk based approach was applied to prioritise the key issues for assessment and inform measures to avoid, minimise and offset potential effects.

Figure 2 below shows an overview of the assessment method.

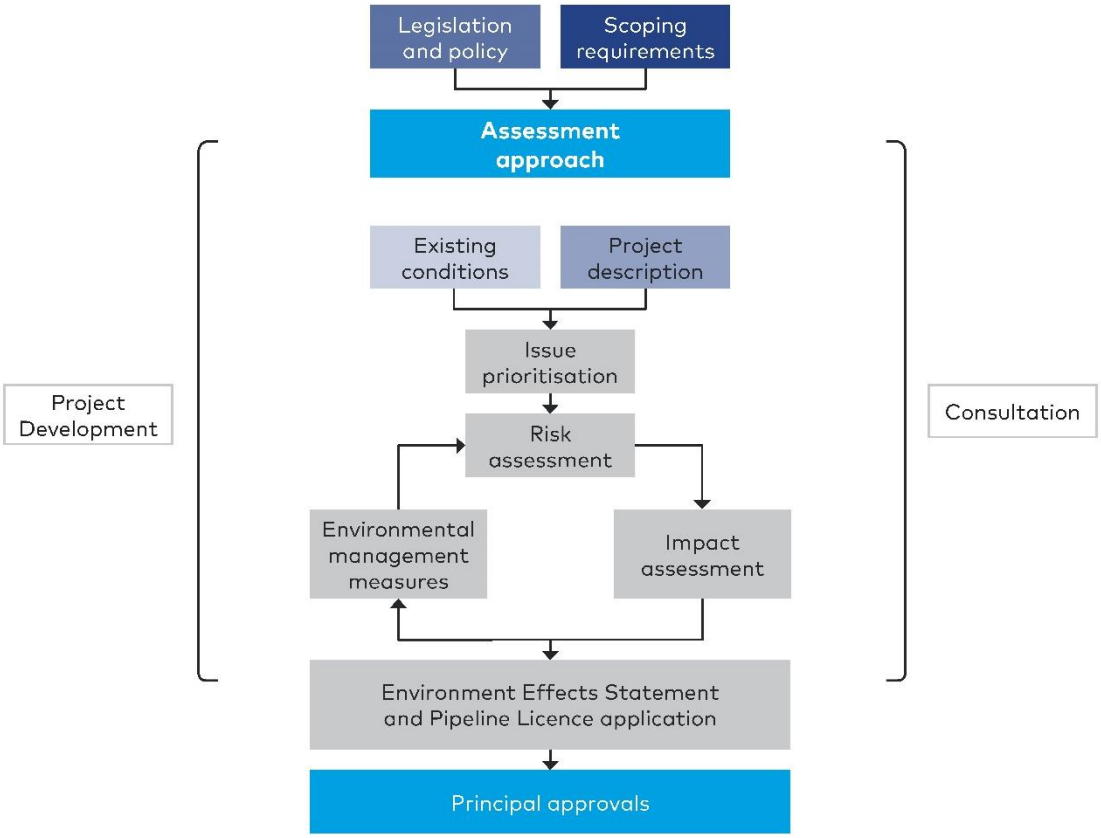


Figure 2 Overview of assessment method

4.2 Study area

For the purposes of this report, the study area is defined as a 659 m radius from the centreline of the Project Area (which generally includes a 30m wide temporary construction footprint and an operational easement generally 15 m wide).

A 659 m study area was nominated as this captures key land uses in the vicinity of the Project that need to first be understood, before project impacts are identified and addressed. 659 m would also comprise the pipeline 'measurement length' when the pipeline is in operation, which is defined in Australian Standard 2885 - Gas and liquid petroleum as the distance from the pipeline at which the radiation intensity from an ignited full-bore rupture is 4.7kW/m. The measurement length at 659 m is the area within which the determination of pipeline location class occurs.

At the time of preparing this report, the measurement length was advocated to be the notification area to be incorporated into plans and policies of any future PSPs along the alignment. APA has now undertaken further assessment and determined that the notification area will be the reduced Area of Consequence based on the highest credible consequence.

The Area of Consequence for the WORM pipeline has been determined to be 65 metres each side of the pipeline, which is significantly less than the measurement length. The notification area, within which APA seeks ongoing visibility of sensitive use related planning applications to assess if they are compatible with the pipeline design, will be the Area of Consequence.

APA will continue to have statutory responsibilities pursuant to AS 2885 outside the area of consequence and within the measurement length.

Project land use impacts include those that are direct and indirect, including acquisition, easement reservation and temporary occupation of land, changes to current and ongoing land use, implications for strategic policy and land use character.

While the study area sets the parameters for understanding the existing conditions and impacts in the immediate surrounds, broader consideration was also given to significant land uses, known significant redevelopments and planning scheme amendments outside the study area which have the potential to influence the Project and vice versa.

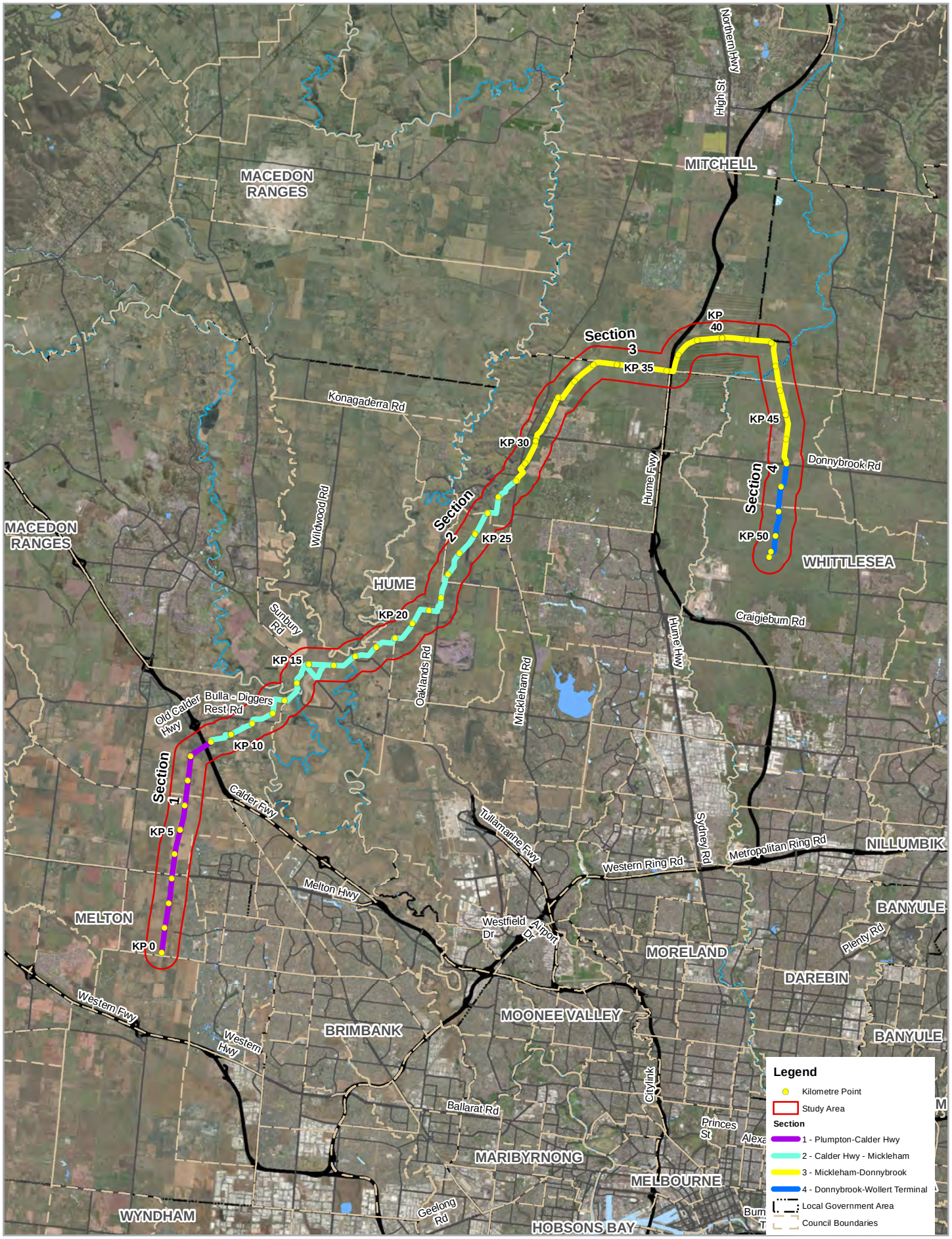
Four sections have been identified for discussion purposes:

- Section 1 – Plumpton to Calder Highway (KP 0-9)
- Section 2 – Calder Highway to Mickleham Road (KP 9-28)
- Section 3 – Mickleham Road to Donnybrook (KP 28-46.8)
- Section 4 – Donnybrook to Wollert Compressor Station (KP 46.8-50.8)

These sections have been defined with regards to the location of project components, municipal boundaries, the extent of the Urban Growth Boundary (UGB), and the location and extent of current and planned PSPs.

An access road running adjacent to the railway line in Beveridge is a possible access option for use by the Project. The access road is an existing access track recently constructed by Yarra Valley Water and no physical construction works is proposed by the Project. As such this access track has not been considered further with regards to the assessment for land use. A second informal access track option may be used by machinery and equipment to access the construction footprint from the north. This track follows the existing APA easement. No physical construction is expected to be required to establish this access and therefore this access track has not been considered further with regards to the assessment for land use.

Refer to the study area in Figure 2.



Paper Size ISO A4

0 1.5 3 4.5 6

Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

APA VTS (Operations) Pty Ltd
Western Outer Ring Main Gas Project

Project No. 31-12529997
Revision No. B
Date 04/03/2021

Pipeline Sections

Figure 3

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner

4.3 Existing conditions method

Existing conditions have been identified to provide an understanding of the baseline land use planning conditions in the study area, along with established plans for reasonably foreseeable future land use within the study area.

To inform an understanding of existing conditions, a desktop and baseline data review drew upon a wide range of land use planning policies, databases, strategies and reports. The following sources were reviewed as part of this assessment:

- Publicly accessible aerial imagery and ground level photography, including aerial imagery overlaid with the Project Area
- Publicly accessible strategic planning documentation, including current and future Precinct Structure Plans along the Project
- Publicly accessible land use planning data, including planning scheme maps
- The legislative context applicable to the Project and land within 659 m of the Project (the study area), including a review of:
  - *Plan Melbourne 2017-2050*
  - Melton planning scheme
  - Hume planning scheme
  - Mitchell planning scheme
  - Whittlesea planning scheme
- A review of land tenure along the Project

By incorporating the above, this report seeks to:

- Describe existing and reasonably foreseeable land uses within and adjacent to the proposed project area, including the types of land ownership present along the Project and land uses associated with precinct structure plans
- Identify existing and reasonably foreseeable land uses and businesses occupying land to be traversed by, adjacent to, or otherwise affected by impacts from the Project

4.4 Risk assessment method

A risk assessment for the Project was carried out using an approach that is consistent with Australian/New Zealand Standard AS/NZS ISO 31000:2018 Risk Management Process.

This risk assessment was used to identify the issues for assessment and apply a structured approach to the level of assessment and analysis undertaken of potential environmental effects within each technical study. Applying the risk framework facilitated an approach for the EES to identify and then investigate issues with a focus proportionate to the risk, and to consider management measures focused on reducing identified risks.

The risk assessment methodology included:

- Defining the context for the risk assessment based on the existing assets, values and uses (baseline) assessments of each technical area and the proposed Project activities which interact with those existing conditions
- Identifying the risk pathways for the Project based on a specific cause and effect
- Identifying standard management/mitigation measures (including those in guidelines and standards) and whether additional mitigation measures may be required

- Analysing the consequence and likelihood of the identified hazard (risk pathway) based on a consequence guide developed for each technical area and a likelihood guide
- Defining the risk level based on the risk matrix

The risk assessment provided a framework for the impact assessment, which included a stronger focus on those risks with a medium or higher rating and/or where additional management/mitigation measures may be required.

The identification, analysis and evaluation of risks was conducted within each technical area and across technical areas where there was input or connection across disciplines.

The identification, analysis and evaluation of risks was conducted within each technical area and across technical areas where there was input or connection across disciplines.

The consequences of a land use risk occurring were assigned using consequence categories from insignificant to severe, developed for land use, based on the existing conditions and values in the study area. The consequence levels and descriptors are provided in Appendix A.

A likelihood rating for each identified risk was assigned ranging from 'frequent' where the event is expected to occur to 'rare', where the event may occur only in exceptional circumstances. The likelihood levels and descriptors are provided in Appendix A.

The risk matrix used to define each risk level is also provided in Appendix A.

The risk ratings were revisited during the impact assessment where additional environmental management measures were applied to identify the residual impacts and risks.

4.5 Impact assessment method

The assessment of impacts to existing and planned (known or reasonably foreseeable) land uses during the construction and operation of the Project across the four identified sections, having regard to the requirements identified in the EES scoping requirements, included addressing the following:

- Potential land use planning related impacts during construction and operation phases of the Project, and implications for existing and reasonably forseeable land uses occupying land within the study area, including consideration of:
  - The location of the UGB and green wedges
  - Existing and planned PSPs
- Permanent and temporary changes to land use due to occupation during construction
- Permanent and temporary changes to the ongoing use of the land within and adjacent to the Project easement
- Potential for inconsistencies with planning policies, strategic plans and PSPs
- Potential impacts were identified as stemming from the risk assessment and focussed on risks identified as medium risk or higher under the risk assessment framework

During the preparation of this impact assessment, other technical specialists were consulted and their reports were reviewed as outlined at Section 2.3, where interrelationships and linkages are identified.

The impact assessment seeks to:

- Identify mitigation measures to be implemented to avoid or minimise impacts on existing or proposed land uses within and surrounding the Project area
- Assess potential effects on current land uses and reasonably foreseeable changes in land uses, including the likely extent and duration of any temporary or permanent disruption to existing land uses arising from project construction
- The significance of impacts were assessed with reference to the consequence criteria as described through the risk assessment in Appendix A, which provides a framework for levels of inconsistency with defined outcomes in strategic and statutory planning policy, timeframes of impacts, and significance of impacts from easements and acquisition
- Outline measures to monitor the success of commitments to mitigate or manage effects on land use values during all phases of the Project
- Describe the approach to monitor effects and develop contingency measures to be implemented in the event of adverse residual effects on land use values requiring further management

4.6 Rationale

The land use planning assessment has been undertaken in accordance with the scoping requirements and is focussed on identifying the potential impacts of the WORM on the study area.

As described in Section 4.2, the study area methodology was based on land uses within a 659 m buffer, measured from the centreline of the Project Area. The buffer was selected as it provided a reasonable representation of the range of land uses across the Project.

The four sections identified for discussion assisted in focussing discussions of impacts to geographic locations in the context of the peri-metropolitan growth areas and UGBs which intersect with the Project Area.

Similarly, previous experience and a robust methodology adopted by other major infrastructure projects informed a desktop assessment and data review as a comprehensive method for assessing the baseline conditions, ultimately informing potential project impacts within the study area.

4.7 Limitations, uncertainties and assumptions

The finding of this report are subject to the following limitations, uncertainties and assumptions:

- Reasonably foreseeable land uses in the UGB and urban growth areas:
  - While the UGB may change slightly over the life of the Project, its basic premise and general location is not expected to change, as evidenced by Plan Melbourne, and other strategies which seek to protect green wedge land for agriculture, extractive industry and the like
  - Similarly, land within urban growth corridors may change in the future, and further PSPs may be devised within the Urban Growth Zone
- Construction: The works would be staged and sequential, limiting the duration of local construction works and land use impacts across properties

- Acquisition and easements:
  - Land acquisition from third parties would be minimal, only identified as possible acquisition at MLV sites
  - Land affected by easements would only be restricted by limiting the construction of structures and planting of significant vegetation (such as trees with deeper root systems) over the easement and the rights of access for maintenance and inspection
- Information: Information and policy is current at the date of issuing this report.

4.8 Stakeholder engagement

At the date of issuing this report, APA consultation with landowners and the community was ongoing.

Questions from property owners and asset owners raised during consultation to date relate to future land use on and around the pipeline during operation, such as continuation of agricultural activities and impact to existing infrastructure e.g. roads and other pipelines. There was also interest from some local councils about the impact of pipeline construction on sites marked for future development. These matters are addressed in this report.

EES Attachment III Community and Stakeholder Consultation Report provides details of the consultation activities undertaken for the Project more broadly and outcomes from those activities. Table 2-1 summarises the feedback in relation to land use and APA's response to that feedback.

Table 2-1 Project response to issues and concerns (land use)

Issue/concern	APA response and mitigation measures
Land use impacts: Potential impacts on current or planned land use and character of those land uses including residential, rural, commercial, industrial and recreational values	• APA encourage return of land occupied by easements to previous use that would either be current or permitted uses (e.g. agricultural use including cropping) • APA seeks to obtain typically a 15 m wide easement over the pipeline where the pipeline is constructed on private land. APA is committed to reaching an agreement with landholders within commercial terms wherever possible. Legal obtainment is possible but would be used as a last resort. The easement would solely be for the purpose of this pipeline and would be owned and operated by APA, to protect and maintain the pipeline. Under the Pipelines Act, APA is required to provide various levels of protection — including, for example, warning signs above ground. Easement is a form of protection to maintain land use and protect the asset. • The alignment option of the Gunns Gully Road Extension was avoided due to the quantum of sensitive land uses (including several schools, a civic centre and an aged care facility, etc.) proposed on or in proximity to the extension. • APA would seek to minimise ongoing land use impacts from the operation of the pipeline as far as practicable by: – Co-locating the alignment with other utility and transport infrastructure projects to avoid impacts on net developable land where practicable – Locating the pipeline at a distance from sensitive land uses that generally replicates the standards prescribed in Precinct Structure Plans (PSPs) where the alignment is accommodated • Providing for future uses along the pipeline (e.g. shared use paths) in accordance with the APA Site Planning and Landscape National Guidelines (APA 2020)

5. Legislation, policy and guidelines

5.1 Legislation, policy and guidelines

This EES is prepared under the EE Act and will inform assessment of approvals required for the Project. The legislation relevant to the principal approvals required for the Project is:

- Commonwealth approval under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act). For the component of the Project that is located outside of the Melbourne Strategic Assessment (MSA) program area, the Project requires assessment and approval under the EPBC Act, under the assessment bilateral agreement with Victoria made under section 45 of the EPBC Act.

  The MSA program is the Victorian Government's approach to managing the impact of urban development in Melbourne's growth areas on significant vegetation communities, plants and animals. Areas within the approved Melbourne Strategic Assessment (MSA) area occur between approximately KP 0 to KP 3.2, KP 28.16 to KP 28.57, and KP 32.07 to KP 51.04. Areas outside of the MSA occur approximately between KP 3.2 to KP 28.1, and KP 28.57 to KP 32.07.

- Pipeline Licence approval is required under the *Pipelines Act 2005* (Vic) (Pipelines Act) and *Pipelines Regulations 2017* (Pipelines Regulations) for the Western Outer Ring Main Project. The Pipeline Licence application is exhibited with the EES.

  – Section 3 of the Pipelines Act sets out the objectives of the Act including:

    (a) to facilitate the development of pipelines for the benefit of Victoria

    (e) to protect the public from environmental, health and safety risks resulting from the construction and operation of pipelines

    (f) to ensure that pipelines are constructed and operated in a way that minimises adverse environmental impacts and has regard for the need for sustainable development

  – Section 4 of the Pipelines Act sets out the principles of sustainable development to be given regard in implementing the Act including that decision-making should be guided by a careful evaluation to avoid serious or irreversible damage to the environment wherever practicable and an assessment of the risk-weighted consequences of various options.

  – Section 49 of the Pipelines Act requires that the following matters be considered before granting a licence:

    (a) the potential environmental, social, economic and safety impacts of the proposed pipeline

    (f) the assessment of the Environment Effects Minister in relation to the proposed pipeline, if an assessment has been made

    (g) any written comments received from the Planning Minister or the relevant responsible authority on the effect of the proposed pipeline on the planning of the area through which it is to pass

    (h) any written comments received from the Water Minister and from the relevant Crown Land Minister on the impact of the proposed pipeline

- Section 54(c) of the Pipelines Act states that conditions on a licence may include conditions concerning the protection of the environment
- Regulation 8 of the Pipelines Regulations requires that an application for a licence contains:

  (vii) 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

  (ix) outline of the measures to be undertaken to control, mitigate and manage identified impacts arising from the proposed pipeline and pipeline operation

- Cultural Heritage Management Plan (CHMP) under the *Aboriginal Heritage Act 2006* (Vic) (AH Act). Two CHMPs are currently in progress for the Project (CHMP 16593 and CHMP 16594).

The key legislation, policy and guidelines that apply to the land use impact assessment for the Project are summarised in Table 5-1. Further detail is provided in Section 5.2 to 5.5.

Table 5-1 Key legislation and policy applicable

Legislation/policy	Relevance to this impact assessment
Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)	The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), and primarily the Melbourne Strategic Assessment (MSA) agreement under this Act are considered relevant. Areas subject to the MSA intersect the Project
Environment Effects Act 1978 (Victoria)	The *Environment Effects Act 1978* (EE Act) provides for the assessment of potential environmental impacts and effects of a proposed development through the preparation of an Environment Effects Statement (EES) where the Minister determines, following a referral, that an EES is required.
Planning and Environment Act 1987 (Victoria)	The *Planning and Environment Act 1987* (PE Act) provides the framework for planning, land use and development within Victoria. Planning schemes prepared under the provisions of the Act apply to each municipality in Victoria.
Pipelines Act 2005 (Victoria) *Pipelines Regulations 2017* (Victoria)	The *Pipelines Act 2005* is the primary Act governing the construction and operation of high transmission pipelines in Victoria, and is accompanied by the *Pipelines Regulations 2017*. Section 49 of the Pipelines Act requires that the following matters relevant to land use and planning be considered before granting a licence: *(a) the potential environmental, social, economic and safety impacts of the proposed pipeline* *(f) the assessment of the Environment Effects Minister in relation to the proposed pipeline, if an assessment has been made;* *(g) any written comments received from the Planning Minister or the relevant responsible authority on the effect of the proposed pipeline on the planning of the area through which it is to pass;* *h) any written comments received from the Water Minister and from the relevant Crown Land Minister on the impact of the proposed pipeline.*

Legislation/policy	Relevance to this impact assessment
	Regulation 8 of the Pipelines Regulations requires that an application for a licence contains: *(vii) 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* *(ix) outline of the measures to be undertaken to control, mitigate and manage identified impacts arising from the proposed pipeline and pipeline operation*

5.2 Commonwealth legislation

The principal piece of Commonwealth legislation considered relevant to land use is the *Environment Protection and Biodiversity Compensation Act 1999* (EPBC Act), and primarily the Melbourne Strategic Assessment (MSA) agreement under this Act. Areas subject to the MSA intersect the Project Area at several points, including at Plumpton, Mickleham, Donnybrook and Wollert.

The MSA focuses on matters of national environmental significance (MNES) and mitigation measures in relation to projected development within Melbourne's growth corridors. Within the areas subject to the MSA, no further approvals are required under the EPBC Act, providing that the development proceeds in accordance with the MSA.

The Project intersects with two conservation areas identified within the *Biodiversity Conservation Strategy for Melbourne's Growth Corridors (Victorian Government Department of Environment and Primary Industries 2013)*, under the Melbourne Strategic Assessment (MSA), which are within an existing pipeline easement. APA has been advised by the Department of Agriculture, Water and Environment (DAWE) that it can rely on the approval decision made under Part 10 of the EPBC Act for those parts of the Project within the approved MSA areas between KP 0 to approximately KP 0 to KP 3.2, KP 28.16 to KP 28.57, and KP 32.07 to KP 51.04. The MSA and potential impacts to biodiversity are discussed within the Biodiversity Technical Report (Technical Report A).

5.3 Victorian legislation, policy and guidelines

An overview of Victorian legislation, policy and guidelines relevant to the Project is summarised in Table 5-2, with discussion of key legislation and policies below.

Table 5-2 Victorian legislation, policy and guidelines

Legislation/policy	Relevance to this impact assessment
Legislation	
Aboriginal Heritage Act 2006	The *Aboriginal Heritage Act 2006* provides for the protection of tangible and intangible Aboriginal cultural heritage in Victoria, and empowers traditional owners to protect and manage their heritage. The principal method of protecting cultural heritage under the Act is the preparation and implementation of Cultural Heritage Management Plans. Under Section 49 of the Act, a Cultural Heritage Management Plan (CHMP) must be prepared for any project where an EES is required. Two CHMPs is currently in progress for the Project concurrently with the EES process.
Crown Land (Reserves) Act 1978	The *Crown Land (Reserves) Act 1978* provides for the reservation of Crown land for certain public purposes by the Governor in Council and sets out the administrative and legal framework for managing reserved Crown land and the processes for revoking Crown land reservation.
Environment Effects Act 1978	The *Environment Effects Act 1978* provides for the assessment of potential environmental impacts and effects of a proposed development through the preparation of an Environment Effects Statement (EES), where the Minister for Planning decides that one is required. An EES, which this technical report will form part of, is currently under preparation for the WORM.
Environment Protection Act 1970	The *Environment Protection Act 1970* provides for the preparation of the State Environment Protection Policies (SEPPs) which are used to implement the policies outlined in the primary legislation to protect the environment. The SEPPs relate to emissions to air, water and land in Victoria, including contaminated soils. The Act also provides for Industrial Waste Management Policies and regulations relating to transport and handling of wastes. It is noted that the amended *Environment Protection Act 2017* will come into force in July 2021.
Heritage Act 2017	The *Heritage Act 2017* provides for the protection and conservation of heritage in Victoria, including the establishment of the Victorian Heritage Register (VHR) for places and objects, and the Victorian Heritage Inventory (VHI) for archaeological sites. Any impacts to VHR or VHI sites as part of the Project will require a permit or permit exemption under the *Heritage Act 2017*.
Land Acquisition and Compensation Act 1986	The *Land Acquisition and Compensation Act 1986* allows for and manages the procedure for the acquisition of land in Victoria, and provides for the determination of the compensation payable where land is acquired. The Act allows for acquisition and compensation to occur as per Part 6 of the *Pipelines Act 2005*.
Pipelines Act 2005	The *Pipelines Act 2005* is the primary Act governing the construction and operation of high transmission pipelines in Victoria. Under the Act, a licence to construct and operate a pipeline must be obtained by the proponent of a pipeline development.

Legislation/policy	Relevance to this impact assessment
Planning and Environment Act 1987	The PE Act provides the framework for planning, land use and development within Victoria. Planning schemes prepared under the provisions of the Act apply to each municipality in Victoria, Refer to Section 5.3.2 below for further discussion of the PE Act and the implications for the Project.
Water Act 1989	The *Water Act 1989* provides a legal framework for managing Victoria's water resources, including water supply catchments and groundwater. The Act is relevant as the Project crosses several waterways.
Policy or guideline	
Plan Melbourne 2017-2050 (DELWP 2019)	Plan Melbourne (and the accompanying Plan Melbourne 2017-2050: Addendum 2019) is the primary metropolitan planning strategy document for Melbourne, and is incorporated into planning schemes as a policy reference document in the VPP at Clause 11.01-1S Settlements. The strategy sets out principles, outcomes, directions and strategies to manage Melbourne's growth and integrate long-term land use, infrastructure and transport planning to allow for societal, economic and environmental benefit. A discussion of policies within Plan Melbourne that apply to the Project is at Section 5.3.1.
Helping Victoria Grow – Extractive Resource Strategy (DJPR 2018)	Helping Victoria Grow – Extractive Resource Strategy is an overarching strategy for the future protection of extractive resources in Victoria, such as stone, sand, and clay. The strategy identifies Extractive Industry Interest Area (EIIAs), which the Project intersects with near Wollert. The municipalities of Mitchell and Whittlesea are also identified as being within the top 20 strategic resource LGAs in Victoria.
Protecting Melbourne's strategic agricultural land (DELWP - Draft for consultation 2019)	Protecting Melbourne's strategic agricultural land report will examine planning controls for strategic agricultural land in Victoria. An initial draft, was issued for initial community comment in 2019. Following this consultation, and targeted consultation with stakeholders, the report will be refined, and a further period of public consultation will begin on 12 August 2020. At the time of writing, the draft report was not publicly available. As part of the background research informing the report, an assessment of agricultural land capability in Melbourne's green wedge and peri-urban areas was undertaken, which specifies that land in the study area has low-moderate agricultural capability.

Legislation/policy	Relevance to this impact assessment
OMR/E6 Transport corridor	The OMR/E6 Transport corridor is a future 100 km long high-speed transport corridor across the outer western and northern suburbs of Melbourne. Planning scheme amendment VC68 introduced a Public Acquisition Overlay into the relevant planning schemes for the proposed OMR/E6 Transport corridor alignment in August 2010. The WORM Project Area overlaps with the OMR/E6 Transport corridor for approximately half of its length, and crosses the OMR/E6 Transport corridor alignment at two additional points. APA is conducting ongoing discussions with the Department of Transport (DoT) to appropriately co-locate the WORM easement adjacent to the future OMR/E6 Transport corridor where possible. APA and the DoT have assessed the potential for the Project to impact on the OMR/E6 Transport corridor with consideration of the Project alignment, design and construction methodology. Consequently, APA and the DoT have agreed upon specific requirements for the Project and these have been incorporated into a draft Coordination Deed, to be executed by APA and the DoT prior to the commencement of construction.
Victoria's 30-year Infrastructure Strategy (Infrastructure Victoria, December 2016)	Infrastructure Victoria is an independent advisory body tasked with providing advice to the Victorian government on specific infrastructure issues and projects, as well as producing the 30-year infrastructure strategy for Victoria. The strategy includes specific provisions for the OMR /E6 Transport corridor (recommendation 11.5.7), and states that it is a "high-performing" proposal that has wide benefits for the outer northern and western suburbs, but that land use integration is important in its planning, to prevent dispersed land use patterns. The strategy also acknowledges that gas has the potential to assist with managing the transition from brown coal in the future, but that the Victorian system has interconnector limitations.

5.3.1 Plan Melbourne 2017-2050

Plan Melbourne was developed to guide the growth of Melbourne and set the strategy for supporting jobs, housing and transport while building on Melbourne's distinctiveness, liveability and sustainability.

Directions and policies in Plan Melbourne that apply to the Project primarily relate to:

- Protection of agricultural land, agricultural production and extractive industries in Melbourne's non-urban areas, including land within green wedges and peri-urban areas (Direction 1.4). The Project intersects with agricultural land (primarily used for cropping and grazing) between the Calder Highway and Mickleham, and land used for extractive industries near Wollert.
- Providing for and managing the supply of new housing to meet anticipated population growth (Direction 2.1). The WORM would facilitate a key capacity constraint within the VTS amid population growth and associated change in the location of demand for natural gas.
- Protecting and enhancing Melbourne's peri-urban areas, including green wedges (Direction 4.5). The Project intersects with two green wedges, being the Western Plains North Green Wedge (for which a Green Wedge Management Plan has been prepared), and the Sunbury Green Wedge.

A discussion of the Project's consistency and response to Plan Melbourne can be found within Section 8 - Impact Assessment (refer to Section 8.1.1).

5.3.2 Planning and Environment Act 1987

The *Planning and Environment Act 1987* (PE Act) provides the framework for planning, land use and development within Victoria. Planning schemes prepared under the provisions of the Act apply to each municipality in Victoria.

Section 85 of the *Pipelines Act 2005* provides that a planning permit is not required where a pipeline licence is issued for the construction and operation of a pipeline:

> *If a licence is issued under this Act for the construction and operation of a pipeline, nothing in a planning scheme under the Planning and Environment Act 1987 —*
>
> > *(a) requires a permit under that Act for the use or development of land or the doing or carrying out of any matter or thing for the purpose of the pipeline; or*
> >
> > *(b) prevents the use or development of land or the doing or carrying out of any matter or thing for the purpose of the pipeline.*

The planning matters are instead considered as part of the Pipelines Act processes. Section 49 of the Pipelines Act states that, in granting a Pipeline Licence, the Minister must consider the following—

> *(a) the potential environmental, social, economic and safety impacts of the proposed pipeline*
>
> *(b) the potential impact of the proposed pipeline on cultural heritage (including Indigenous cultural heritage)*
>
> *(c) the benefit of the proposed pipeline to Victoria relative to its potential impacts*
>
> *(d) the submissions received under section 34 in relation to the application*
>
> *(e) the report of the panel (if any) on the submissions received in relation to the application*
>
> *(f) the assessment of the Environment Effects Minister in relation to the proposed pipeline, if an assessment has been made*

(g) any written comments received from the Planning Minister or the relevant responsible authority on the effect of the proposed pipeline on the planning of the area through which it is to pass; and

(h) any written comments received from the Water Minister and from the relevant Crown Land Minister on the impact of the proposed pipeline

An assessment against the legislation, policies and clauses within the relevant planning schemes would allow for consideration by the Minister for Planning and the relevant responsible authorities (including the Minister for Energy) of the applicable land use planning matters through the Pipeline Licence assessment process.

Land use planning matters to be considered under an application for a Pipeline Licence have been discussed in the following sections of this report:

- State and regional planning policies - Planning Policy Framework (Section 5.3.3)
- Municipal planning policies - Municipal Strategic Statement (Section 5.4.1)
- Statutory planning trigger assessment (Appendix B)

Further consideration of alignment with policy described in the above sections has been addressed in the impact assessment section of this report (Section 8.1).

5.3.3 Planning Policy Framework (PPF)

The PPF outlines State-wide and regional strategic planning issues and is common in content across all Victorian planning schemes. The PPF seeks to ensure the objectives of planning in Victoria are fostered through appropriate land use and development planning policies and practices which integrate relevant environmental, social and economic factors in the interests of net community benefit and sustainable development.

The key state-wide and regional policies that apply to the land use considerations of the Project are listed below (Table 5-3) Other relevant EES technical reports provide detail on policies that apply to other considerations of the Project (refer to Section 2.3). Discussion of the alignment of the Project with the below policies is within the impact assessment section of this report (refer to Section 8.1.

In line with the transitional provisions of Planning Scheme Amendment VC148, policies of local significance are included in the Municipal Strategic Statement (MSS) and Local Planning Policies (LPP) (of the Local Planning Policy Framework (LPPF)), until the future introduction of the Municipal Planning Strategy (MPS) and integration of local content into the PPF. Refer to Section 5.4.1 for a discussion of the relevant MSS policies.

Table 5-3 Relevant PPF Clauses

Clause	Sub clause
Clause 11 Settlement	Strategies under this clause generally seek to promote orderly development to allow for population growth, notably while protecting green wedges, while providing for structure planning to ensure adequate supply of urban land and development sequencing in growth areas.
Clause 12 Environment & Landscape Values	This clause acknowledges the importance of protecting ecological systems, biodiversity and conservation areas with identified environmental value, including strategically valuable biodiversity sites. Clause 12.05-1S specifically acknowledges Merri Creek as an environmentally sensitive area with environmental and recreational values that may be threatened by development.

Clause	Sub clause
Clause 13 Environmental Risks and Amenity	Relevant strategies under this clause relate to preventing and mitigating noise, dust, erosion and other potentially detrimental impacts from construction and operation of the built environment
Clause 14 Natural Resource Management	This Clause generally seeks to protect agricultural, water, irrigation and earth resources.
Clause 15 Built Environment and Heritage	Recognises that planning should ensure all land use and development appropriately responds to its surrounding landscape and built form character and cultural context and should protect places and sites with significant heritage, architectural, aesthetic, scientific and cultural value.
Clause 17 Economic Development	This Clause recognises that planning should contribute to the economic wellbeing of the state, and should provide for a strong and innovative economy.
Clause 18 Transport	This Clause seeks to ensure planning provides for an integrated and sustainable transport system.
Clause 19 Infrastructure	Strategies under this Clause seek to encourage timely, orderly and cost-effective provision of various forms of infrastructure, including gas pipelines.

Relevant PPF clauses to the Project are discussed further below.

Clause 11.01-1R Green Wedges and Settlement (Metropolitan Melbourne) aims to maintain a permanent urban growth boundary around Melbourne to create a more consolidated, sustainable city, protect values of non-urban land and to protect Melbourne's green wedges from inappropriate development.

Clause 11.02-2S Supply of urban land seeks to ensure a sufficient supply of land is available for residential, commercial, retail, industrial, recreational, institutional and other community uses. Key strategies developed to achieve this include to ensure the ongoing provision of land and supporting infrastructure to support sustainable urban development and planning to accommodate projected population growth over at least a 15 year period.

Clause 11.03-2S Growth areas encourages urban growth to be located close to transport corridors and services and provide efficient and effective infrastructure to create sustainability benefits while protecting primary production, major sources of raw materials and valued environmental areas while **Clause 11.03-3S** seeks to manage growth in peri-urban areas to protect and enhance their identified valued attributes.

Clause 12 Environmental and Landscape Values encourages planning to protect the health of ecological systems and the biodiversity they support and conserve areas with identified environmental and landscape values.

Planning must implement environmental principles for ecologically sustainable development that have been established by international and national agreements, in particular, the Intergovernmental Agreement on the Environment, which sets out the key principles for environmental policy in Australia. Strategies under the relevant subclauses provide further guidance as outlined below:

- *Ensure that decision making takes into account the impacts of land use and development on Victoria's biodiversity, including consideration of:*
  - *Cumulative impacts. Fragmentation of habitat*
  - *The spread of pest plants, animals and pathogens into natural ecosystems*

  - *Avoid impacts of land use and development on important areas of biodiversity*
- *To ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation*
- *Protect the environmental, cultural and landscape values of all water bodies and wetlands. Ensure development responds to and respects the significant environmental, conservation, cultural, aesthetic, open space, recreation and tourism assets of water bodies and wetlands*
- *Protect environmentally sensitive areas with significant recreational value from development that would diminish their environmental conservation or recreational values*

Clause 12.05-2S Landscapes aims to *protect and enhance significant landscapes and open spaces that contribute to character, identity and sustainable environments.*

Clause 13.03-1S Floodplain management manages floodplains, including identifying land affected by flooding, avoiding inappropriately located development, and protecting life, property and community infrastructure from flood hazard.

Clause 13.04-2S Erosion and landslip seeks to protect areas prone to land degradation, including erosion and landslip, by identifying such areas in planning schemes, preventing inappropriate development, and promoting vegetation retention.

Clause 13.04-2S Salinity aims to minimise impacts of salinity and rising water tables, including identifying areas subject to salinity in planning schemes, promoting vegetation retention, and preventing inappropriate development in areas subject to groundwater salinity.

Clause 13.05-1S Noise abatement assists in the control of noise effects on sensitive land uses and ensures that development is not prejudiced and community amenity is not reduced by noise emissions.

Clause 13.06-1S Air quality aims to assist in the protection and improvement of air quality by ensuring that land use planning and transport infrastructure provision contribute to improved air quality by:

- *Integrating transport and land use planning to improve transport accessibility and connections. Locating key developments that generate high volumes of trips in the Central City, Metropolitan Activity Centres and Major Activity Centres*
- *Providing infrastructure for public transport, walking and cycling*

The clause also ensures, wherever possible, that there is suitable separation between land uses that reduce air amenity and sensitive land uses.

Clause 13.07-1S Land use compatibility seeks to protect community amenity, human health and safety while facilitating appropriate commercial, industrial, infrastructure or other uses with potential adverse off-site impacts.

Clause 13.07-2S Major Hazard Facilities aims to minimise risk to humans and property from incidents that may occur at a major hazard facility, while ensuring the ongoing viability of major hazard facilities.

Clause 14.01-1R Protection of agricultural land – Metropolitan Melbourne aims to protect agricultural land in Metropolitan Melbourne's green wedges and peri-urban areas to avoid the permanent loss of agricultural land in those locations.

Clause 14.02-1S Catchment planning and management assists in the protection and restoration of catchments, water bodies, groundwater and the marine environment.

Clause 14.03-1S Resource exploration and extraction seeks to encourage exploration and extraction of natural resources in accordance with acceptable environmental standards to provide for the long term protection of natural resources in Victoria.

The objective of **Clause 15.01-1S Urban design** is to 'create urban environments that are safe, healthy, functional and enjoyable and that contribute to a sense of place and cultural identity', including ensuring development minimises detrimental impacts on amenity, the natural and built environment, and the safety and efficiency of roads.

Clause 15.01-3S Subdivision design aims to ensure the design of subdivisions achieves 'attractive, safe, accessible, diverse and sustainable neighbourhoods', including in the development of new residential areas.

Clause 15.02-1S Energy and resource efficiency seeks to encourage land use and development that is energy and resource efficient, supports a cooler environment and minimises greenhouse gas emissions. The strategy of particular relevance to the Project encourages the retention of existing vegetation and planting of new vegetation as part of development.

Clause 15.03-1S Heritage conservation and **Clause 15.03-2S Aboriginal cultural heritage** seek to ensure the conservation of places of heritage and Aboriginal cultural heritage significance and protect places of aesthetic, archaeological, architectural, cultural, scientific or social significance. Further, the clauses seek to:

- *Encourage appropriate development that respects places with identified heritage values*
- *Retain those elements that contribute to the importance of the heritage place*
- *Encourage the conservation and restoration of contributory elements of a heritage place*
- *Identify, assess and document places of Aboriginal cultural heritage significance, in consultation with relevant Registered Aboriginal Parties, as a basis for their inclusion in the planning scheme*
- *Provide for the protection and conservation of pre-contact and post-contact Aboriginal cultural heritage places*

Clause 18.01-2S Transport system aims to coordinate development of all transport modes, including reserving land for strategic transport infrastructure, and planning or regulating new uses and development near existing or proposed transport routes.

Clause 18.04-1R Melbourne Airport seeks to protect the curfew-free status of Melbourne Airport, ensuring any new use or development does not prejudice the optimum operation of Melbourne Airport.

Clause 18.05-1S Freight links aims to develop and protect key Transport Gateways and freight links, and encouraging adjacent complementary uses.

Clause 19.01-1S Energy supply aims to facilitate appropriate development of energy supply infrastructure. **Clause 19.01-3S Pipeline Infrastructure** seeks to ensure that gas, oil and other substances are safely delivered to users and to and from port terminals at risk to people, other critical infrastructure and the environment. Strategies in place to achieve this are as outlined below:

- *Plan for the development of pipeline infrastructure subject to the Pipelines Act 2005*
- *Recognise existing transmission-pressure gas pipelines in planning schemes and protect from further encroachment by residential development or other sensitive land uses, unless suitable additional protection of pipelines is provided*

- *Plan new pipelines along routes with adequate buffers to residences, zoned residential land and other sensitive land uses and with minimal impacts on waterways, wetlands, flora and fauna, erosion prone areas and other environmentally sensitive sites*
- *Provide for environmental management during construction and on-going operation of pipeline easements*

5.4 Local legislation, policy and guidelines

An overview of local legislation, policy and guidelines relevant to the Project is summarised in Table 5-4, with discussion of key legislation and policies below.

Table 5-4 Local legislation and policies

Legislation/policy	Relevance to this impact assessment
Legislation	
Melton Planning Scheme Hume Planning Scheme Mitchell Planning Scheme Whittlesea Planning Scheme	A planning scheme is a statutory document, implemented through Section 2 of the PE Act, which sets out objectives, policies and provisions which regulate the use, development, protection and conservation of land. Each local government area has its own planning scheme, containing state standard policy and provisions (refer to the PPF discussion at Section 5.3.3), as well as local policy and provisions. The Melton, Hume, Mitchell and Whittlesea planning schemes apply to the WORM at various points. A review of local policies under the Municipal Strategic Statement for each planning scheme within the Project area is at Section 5.4.1 below.
Policy or guideline	
Western Plains North Green Wedge Management Plan (City of Melton 2014)	The Western Plains North Green Wedge Management Plan (GWMP) aims to ensure the ongoing, long-term sustainability of the Western Plains North green wedge. The GWMP ultimately sets out objectives and strategies for the green wedge, including environmental, land use, and social strategies. The Project crosses the Western Plains Green Wedge between the Plumpton PSP and the Calder Highway, within Precinct 4: Hillside Interface, an area the GWMP described as being characterised by relatively flat grassy plains. Precinct 4 is cut off from the remainder of the green wedge by the proposed OMR /E6 Transport corridor, and is subject to the MAEO, with the “future gas pipeline” also acknowledged. It is envisaged that a planning study should be prepared for Precinct 4 in the future to ascertain whether this area should transition to more urban uses in areas not affected by the MAEO.
North Growth Corridor Plan (VPA 2012)	The North Growth Corridor Plan (NGCP) is a high-level integrated transport and land use plan for the northern growth corridor of Melbourne, located to the north of the existing urban areas of Craigieburn and Broadmeadows and within the vicinity of the Melbourne-Sydney rail corridor and the Hume Highway. The NGCP broadly identifies and will ultimately guide delivery of housing, employment and transport infrastructure across the growth corridor for the next 30-40 years. The Project crosses the area subject to the NGCP between Mickleham and the terminal in Wollert. The APA gas facility at Wollert is acknowledged in the background discussion document for the NCGP (Growth Corridor Plans, VPA 2012) as requiring consideration during Precinct Structure Planning process for the area.

Legislation/policy	Relevance to this impact assessment
West Growth Corridor Plan (VPA 2012)	The West Growth Corridor Plan (WGCP) is an integrated and high-level land use and transport plan for Melbourne's western growth corridor, being generally west of the existing urban area of Caroline Springs and north of Werribee. The WGCP broadly identifies and will ultimately guide delivery of housing, employment and transport infrastructure across the growth corridor for the next 30-40 years. The Project is within the area subject to the WGCP between the terminus at the border of the Kororoit and Plumpton PSPs, and the northern extent of the Plumpton PSP. While the Project is not directly acknowledged in the WGCP, at this location the pipeline is within an existing easement, which has since been acknowledged in the Plumpton and Kororoit PSPs.
Melbourne Airport Environs Strategic Plan (2003)	The Melbourne Airport Environs Strategy Plan (MAESP) provides a framework of planning controls and initiatives to manage the interests of Melbourne Tullamarine Airport, including maintaining its key competitive advantage of 24 hour curfew-free operation and rural surrounds. Under Part 3C of the PE Act, planning schemes must comply with the MAESP, which is primarily achieved through the implementation of the Melbourne Airport Environs Overlay (MAEO) in planning schemes. The Project intersects with the MAEO at two locations, being between the northern extent of the Plumpton PSP and east of Diggers Rest, and north of the township of Bulla. Under the MAEO, no permit would be required for a utility installation and therefore the WORM is not considered to be inconsistent with the MAESP. It is noted that the State Government has agreed to review the MAESP, however this review process has not yet been made public. The review will ultimately be informed by Melbourne Airport's Runway Development Plan and the Melbourne Airport Master Plan (2018).
Hume Corridor Integrated Growth Area Plan – Spatial Strategy (Hume City Council, October 2014) *Sunbury Integrated Growth Area Plan – Spatial Strategy (Hume City Council, October 2014)*	The *Hume Corridor Integrated Growth Area Plan* and *Sunbury Integrated Growth Area Plan – Spatial Strategy* (HIGAP) are spatial plans for the Hume City Council areas of the northern Hume growth corridor, while the Sunbury Integrated Growth Area Plan is a spatial plan for the Sunbury growth areas. Both documents are integrated as a reference document in the planning scheme at Clause 21.02-5 of the Hume MSS. The plans provides for planned areas of major change in the Hume and Sunbury growth corridors and aims to manage this change while minimising impacts on the environment. The plans incorporate residential growth, and associated growth in employment areas, activity centres, transport (incorporating the future OMR/E6 Transport corridor) and community facilities.
Hume Integrated Land Use and Transport Strategy (HILATS) 2011-2014 (Hume City Council, 2011)	The Hume HILATS describes land use and transport initiatives and objectives which aim to effectively integrate transport and land use planning, including walking and cycling, public transport, and roads and freight.
Hume Bicycle Network Plan (Hume City Council, May 2015)	The Hume Bicycle Network Plan is a comprehensive cycling network plan of off-road and on-road paths, instigated by the objectives of the Hume HILATS. The Project does not intersect with any proposed or existing bicycle routes identified in the plan.

5.4.1 Municipal Strategic Statement (MSS)

Melton Planning Scheme

A number of Clauses under the Melton MSS are considered relevant to the Project. Refer to Table 5-5 below and a discussion of the Melton MSS as follows.

Table 5-5 Melton MSS – Relevant provisions

Clause	Subclauses
Clause 21.01 Introduction	Clause 21.02-1 Municipal Profile Clause 21.02-1 Key Influences Clause 21.01-3 Key Issues
Clause 21.02 Settlement	Clause 21.02-1 Urban Growth Areas Clause 21.02-3 Non-Urban Land
Clause 21.03 Environmental and Landscape Values	Clause 21.03-2 Biodiversity Clause 21.03-2 Significant environments and landscapes
Clause 21.05 Natural Resource Management	Clause 21.05-1 Agriculture
Clause 21.07 Built Environment and Heritage	Clause 21.07-1 Local character and sense of place Clause 21.07-3 Heritage
Clause 21.08 Housing	Clause 21.08-1 Housing Clause 21.08-2 Rural residential development
Clause 21.09 Economic Development	Clause 21.08-1 Economic growth Clause 21.09-3 Industry
Clause 21.10 Transport	Clause 21.10-1 Integrated Transport
Clause 21.11 Infrastructure	Clause 21.11-1 Provision of infrastructure Clause 21.11-2 Protection of infrastructure

The City of Melton's MSS recognises that Melton is within Melbourne's western growth corridor, with a population expected to grow from 146,979 in 2017 to over 381,000 by 2041. This population growth is identified within the MSS as presenting both an opportunity and a challenge for the municipality.

The MSS identified that the municipality can broadly be divided into three sections:

- Established residential areas, such as Melton and Caroline Springs
- Growth areas, such as Plumpton, Truganina and Rockbank, located within the Urban Growth Boundary
- Rural areas outside of the Urban Growth Boundary (UGB), which are part of the 'Green Wedge' around Melbourne

Clause 21.02-1 Urban Growth Areas discusses the mechanism for appropriately planning the development of land within the UGB, which is facilitated by the Victorian Planning Authority (with contribution from the City of Melton) through Precinct Structure Plans (PSPs) in accordance with *Plan Melbourne 2017-2050* and the Growth Corridor Plans (including the *West Growth Corridor Plan August 2012*, which the Project Area intersects).

Non-urban land, or land outside of the UGB, is referred to as the 'Green Wedge' and is discussed at **Clause 21.02-3**. The Project Area intersects with the Western Plains North Green Wedge which is covered by the *Western Plains North Green Wedge Management Plan 2014*. The Plan provides '*a framework to support sustainable land use, land management and development within the non-urban area'*. The MSS notes that agriculture within the green wedges plays an important role in Melton's economy.

At **Clause 21.03-1.1**, the MSS also highlights that the municipality is located on the Victorian Volcanic Plains, which is Victoria's only biodiversity hotspot, and has been largely cleared over 150 years of agriculture, grazing and urban development, with as little as 1% of these grasslands remaining today. Conserving the remaining grasslands is therefore of particular importance to Melton.

The provision and protection of infrastructure is highlighted at **Clause 21.11 Infrastructure**, which discusses the need to provide infrastructure in a staged, sensible and timely matter, whilst being deployed sensitively. Notably, the MSS specifically highlights 'high pressure gas transmission pipelines which make up an integral section of the Victorian gas transmission system' as a key asset which must be protected from development encroachment.

Hume Planning Scheme

A number of Clauses under the Hume MSS are considered relevant to the Project. Refer to Table 5-6 below and a discussion of the MSS as follows.

Table 5-6 Hume MSS – Relevant provisions

Clause	Subclauses
Clause 21.01 Municipal Profile	Clause 21.01-1 Locality and Regional Context Clause 21.01-2 Key Issues and Influences
Clause 21.02 Urban Structure and Settlement	Clause 21.02-1 Managing Growth and Increasing Choice Clause 21.02-2 Hume Corridor Clause 21.02-3 Sunbury Clause 21.02-4 Non-Urban Land
Clause 21.03 Liveable Neighbourhoods and Housing	Clause 21.03-1 Liveable Communities Clause 21.03-2 Housing
Clause 21.04 Built Environment and Heritage	Clause 21.04-3 Landscape Character Clause 21.04-4 Heritage
Clause 21.06 Economic Development	Clause 21.06-1 Economic Development
Clause 21.07 Transport Connectivity and Infrastructure	Clause 21.07-1 Connectivity and Choice
Clause 21.08 Natural Environment and Risk	Clause 21.08-1 Natural Heritage Clause 21.08-2 Environmental Land Management

Hume City Council is divided into two urban areas at the north and west of the Melbourne metropolitan area, being Sunbury in the west and the Hume Corridor in the east. The two areas are separated by non-urban land incorporating Melbourne Airport and the township of Bulla.

The populations of both Sunbury and the Hume Corridor are expected to grow rapidly into the future, from 198,500 in 2016 to around 420,000 when all growth land has been developed. Growth land within both urban areas is, or will be, subject to PSPs which set out the nature of proposed development, including providing for major sites or easements required for public utilities. A large portion of Hume is outside of the UGB and within a designated green wedge, which provides for agriculture and other rural land uses. The MSS stipulates that growth should be contained to areas within the UGB, while planning for land use within the green wedge should allow for sustainable management of the land while recognising 'erosion and land management issues and the native vegetation and visual qualities of the area.'

Clause 21.08 Natural Environment and Environmental Risk discusses the natural heritage and character of the municipality, comprising native vegetation, grasslands and waterways, including the Jacksons and Deep Creeks. Native vegetation within Hume is protected by the Melbourne Strategic Assessment (MSA) under the EPBC Act, and a number of Native Vegetation Precinct Plans under Clause 52.16 of the planning scheme.

Mitchell Planning Scheme

A number of Clauses under the Mitchell MSS are considered relevant to the Project. Refer to Table 5-7 and the discussion of relevant provisions below.

Table 5-7 Mitchell MSS – Relevant provisions

Clause	Subclauses
Clause 21.01 Mitchell Shire	Clause 21.01-1 Municipal Profile Clause 21.01-2 Key planning issues
Clause 21.02 Settlement	Clause 21.02-1 Urban growth
Clause 21.03 Environmental and Landscape Values	Clause 21.03-1 Biodiversity Clause 21.03-2 Significant environments and landscapes
Clause 21.04 Environmental Risks	Clause 21.04-2 Floodplains Clause 21.04-3 Soil degradation Clause 21.04-4 Noise and air
Clause 21.05 Natural Resource Management	Clause 21.05-1 Agriculture Clause 21.05-2 Water
Clause 21.06 Built Environment and Heritage	Clause 21.06-3 Heritage
Clause 21.07 Housing	Clause 21.07-1 Residential development Clause 21.07-2 Rural living development
Clause 21.08 Economic Development	Clause 21.08-1 Economic growth Clause 21.08-2 Industry
Clause 21.09 Transport	Clause 21.09-1 Road network
Clause 21.10 Infrastructure	Clause 21.10-2 Development infrastructure

The MSS indicates that Mitchell Shire, in metropolitan Melbourne's north, is primarily rural with a number of small and medium townships interspersed across the municipality. The majority of the shire's population is located closer to its southern boundary which sits to the north of metropolitan Melbourne and the northern extent of the UGB. Some areas within Mitchell are included within the UGB and are subject to current and future PSPs, including the areas subject to the Project.

Clause 21.03 Environment and Landscape Values describes the important biodiversity and significant landscape elements of the municipality, with objectives to 'protect and enhance indigenous flora, fauna and habitat' and 'protect and enhance the visual quality of rural and urban landscapes.'

The protection of agricultural land outside of the UGB is also important to the municipality, with **Clause 21.05-1 Agriculture** describing underlying objectives aiming to protect agricultural land from incompatible uses, while supporting the diversification of agriculture. The Clause states that the productive capacity of agricultural land should be maintained.

Issues relating to water and catchment protection are described at **Clause 21.05-2 Water**, which states that Mitchell has 'many waterways that have economic, environmental and social benefits', including Merri Creek within the Port Phillip Catchment, which are threatened by land clearing, salinity, stormwater runoff, and impacts from agricultural chemicals and grazing.

Whittlesea Planning Scheme

A number of Clauses under the Whittlesea MSS are considered relevant to the Project. Refer to Table 5-8 and a discussion of the relevant provisions below.

Table 5-8 Whittlesea MSS – Relevant provisions

Clause	Subclauses
Clause 21.02 Municipal Profile	Clause 21.02- General Overview Clause 21.02-2 Locational and Regional Context Clause 21.02-3 Key Issues
Clause 21.05 Environmental and Landscape Values	Clause 21.05-1 Environmental Assets Clause 21.05-2 Biodiversity Clause 21.05-3 Rural Land Character Areas
Clause 21.06 Natural Resource Management	Clause 21.06-1 Agriculture Clause 21.06-3 Resource exploration and extraction
Clause 21.07 Environmental Risk	Clause 21.04-5 Environmental Degradation
Clause 21.08 Built Environment and Heritage	Clause 21.08-1 Urban Design Clause 21.08-4 Heritage Conservation
Clause 21.09 Housing	Clause 21.09-1 Capacity and Location
Clause 21.10 Economic Development	Clause 21.10-1 Employment Opportunities
Clause 21.11 Transport	Clause 21.11-1 Integrated Transport
Clause 21.12 Infrastructure	Clause 21.12-3 Development Infrastructure

The City of Whittlesea is located on Melbourne's northern metropolitan fringe, and is predominantly an urban growth area at its southern extent, with the remaining areas located outside of the UGB and within a green wedge. The key issues within the municipality relate to meeting the demands of a fast-growing population, with the population of Whittlesea expected to rise from 194,500 in 2015 to 300,000 by 2030.

Strategies and objectives relating to providing for rapid urban growth within the municipality are described at **Clause 21.04-2 Urban Growth**. Policies seek to ensure environmental assets are not lost, and for non-urban areas to be protected from incremental decision-making or ill-defined urban limits. Notable, the strategy seeks to ensure appropriate planning of residential areas 'where infrastructure planning can be undertaken effectively'.

Green wedge areas, which cover the majority of the north and east of the municipality as part of the Plenty Ranges and Plenty Valley, are discussed at **Clause 21.04-6 Green Wedge Areas**. The green wedge within the City of Whittlesea provides for a variety of land uses, including farming, rural living, recreation, water storage, and extractive industries, while supporting significant flora and fauna, Aboriginal and European heritage places. Objectives aim to protect this land from urban encroachment and land use conflict, while protecting and supporting the rural land use character. Similarly, **Clause 21.06-1 Agriculture** aims to preserve productive agriculture within the green wedge.

Areas of ecological significance are outlined at **Clause 21.05-1 Environmental Assets**, and include waterways, strategic habitat links and general areas of environmental significance, primarily within the green wedge. Areas of significance relevant to the Project include Merri Creek, which is described at various points as being a significant habitat link and an area of environmental significance. Objectives of this clause aim to improve habitat connectivity, and to improve the quality and health of waterways throughout the municipality.

The significant biodiversity assets of the City are also described at **Clause 21.05-2**, including the Golden Sun Moth, Growling Grass Frog and Striped Legless Lizard, which are found within the nationally significant and critically endangered Victorian Volcanic Plains Grassland. As much of the native vegetation within the municipality has been cleared previously, the MSS outlines policies which seek to preserve and improve the remaining remnant native vegetation, including the Grasslands of the Merri Corridor.

The provision of infrastructure is discussed at **Clause 21.12-3 Development Infrastructure**. While primarily focussed around the provision of transport and community infrastructure, the strategy ultimately seeks to provide infrastructure for new and existing development in a timely and efficient manner.

5.5 Planning zones and overlays

Planning zones are the primary tool for managing land uses in Victoria. Zones set expectations about the land use and development activity that is or may be appropriate and control development by requiring a planning permit for specified types of development. Overlays generally seek to control a specific aspect of the development of land.

The following sections outline the zones and overlays affecting the Project works in each section and provide a brief summary of the outcomes each set out to achieve. Zone and overlay maps for each Section can be found at Section 6.

5.5.1 Section 1 – Plumpton to Calder Highway

The proposed pipeline works impact on land within the City of Melton. The zones and overlays affecting the pipeline works (construction footprint) in the Section 1 are outlined in Table 5-9 and Table 5-10 below.

Table 5-9 Section 1 Zones

Planning zone	Purpose
Melton Planning Scheme	
Green Wedge Zone (GWZ)	Recognises and protects green wedge land for its agricultural, environmental, historic, landscape, recreational and tourism opportunities and mineral and stone resources.
Public Use Zone - Service and Utility (PUZ1) - Transport (PUZ4)	Recognises public land use for public utility and community services and facilities such as transport infrastructure and utilities.

Planning zone	Purpose
Road Zone Category 1 (RDZ1)	Identifies significant existing roads and land which has been acquired for a significant proposed road.
Urban Growth Zone – Schedule 11 (UGZ11) Plumpton Precinct Structure Plan	Manages the transition of non-urban land into urban land and provides for a range of uses and development generally in accordance with an approved precinct structure plan.

Table 5-10 Section 1 Overlays

Planning overlay	Application
Melton Planning Scheme	
Environmental Significance Overlay – Schedule 1 (ESO1) Remnant Woodlands, Open Forests and Grasslands	Identifies areas where the development of land may be affected by environmental constraints and ensures development is compatible with identified environmental values. The ESO1, applied to remnant woodlands, open forests and grasslands, aims to retain forested areas and enhance the natural vegetation character and important features of the landscape while managing the interface between urban and rural areas.
Public Acquisition Overlay – Schedule 3 (PAO3) Roads Corporation (OMR/E6)	Identifies land which is proposed to be acquired by a Minister, public authority or municipal council, reserving land for a public purpose and ensuring that changes to the use or development of the land does not prejudice the purpose for which the land is to be acquired.
Melbourne Airport Environs Overlay - Schedule 1 (MAEO1) - Schedule 2 (MAEO2)	Ensures that land use and development are compatible with the operation of Melbourne Airport in accordance with the relevant airport strategy or master plan and with safe air navigation for aircraft approaching and departing the airfield and assists in shielding people from the impact of aircraft noise by requiring appropriate noise attenuation measures in dwellings and other noise sensitive buildings.
Infrastructure Contributions Overlay – Schedule 1 (ICO1) Plumpton & Kororoit Infrastructure Contributions Pan, October 2019	Identifies areas where a contributions plan applies for the purpose of imposing contributions for the provision of infrastructure. Schedule 1 apples the Plumpton & Kororoit Infrastructure Contributions Plan.

5.5.2 Section 2 – Calder Highway to Mickleham Road

The proposed pipeline works impact on land within the City of Hume. The zones and overlays affecting the pipeline works (construction footprint) in the Section 2 are outlined in Table 5-11 and Table 5-12

Table 5-11 Section 2 Zones

Planning zone	Application
Hume Planning Scheme	
Road Zone Category 1 (RDZ1)	Identifies significant existing roads and land which has been acquired for a significant proposed road.
Green Wedge A Zone (GWAZ)	Provides for the use of land for agriculture and ensures use and development promotes sustainable land management practices and infrastructure provisions while protecting and enhancing the biodiversity, natural resources, scenic landscapes and heritage values of the area.

Table 5-12 Section 2 Overlays

Planning overlay	Application
Hume Planning Scheme	
Environmental Significance Overlay – Schedule 1 (ESO1) Rural Waterways and Environs	Rural waterways and environs aim to protect and enhance the diversity, integrity and health of the local native riparian, escarpment and plains vegetation associated with waterways, improve water and soil quality and provide for the retention, restoration and revegetation of local native plant species.
Bushfire Management Overlay (BMO)	Ensures development of land prioritises the protection of human life and strengthens community resilience to bushfire and identifies areas where bushfire hazard warrants bushfire protection measure to be implemented.
Public Acquisition Overlay – Schedule 3 (PAO3) Roads Corporation (OMR/E6)	Identifies land which is proposed to be acquired by a Minister, public authority or municipal council, reserving land for a public purpose and ensuring that changes to the use or development of the land does not prejudice the purpose for which the land is to be acquired.
Melbourne Airport Environs Overlay - Schedule 1 (MAEO1) - Schedule 2 (MAEO2)	Ensures that land use and development are compatible with the operation of Melbourne Airport in accordance with the relevant airport strategy or master plan and with safe air navigation for aircraft approaching and departing the airfield and assists in shielding people from the impact of aircraft noise by requiring appropriate noise attenuation measures in dwellings and other noise sensitive buildings.
Specific Controls Overlay – Schedule 10 (SCO10) Sunbury Road (Powlett Street to Bulla-Diggers Rest Road) Upgrade Project, Incorporated Document, October 2019	Applies specific controls designed to achieve a particular land use and development outcome in extraordinary circumstances and is generally associated with an Incorporated Document, in this case the Sunbury Road (Powlett Street to Bulla—Diggers Rest Road) Upgrade Project – Oct 2019)

5.5.3 Section 3 – Mickleham Road to Donnybrook

The proposed pipeline works impact on land within the Cities of Hume and Whittlesea and the Shire of Mitcham. The zones and overlays affecting the pipeline works (construction footprint) in Section 3 are outlined in Table 5-13 and Table 5-14.

Table 5-13 Section 3 Zones

Planning zone	Purpose
Hume planning scheme	
Green Wedge Zone (GWZ)	Recognises and protects green wedge land for its agricultural, environmental, historic, landscape, recreational and tourism opportunities and mineral and stone resources.
Special Use Zone - Schedule 11 (SUZ11) Lindum Vale Precinct Structure Plan – Electricity Easement	Recognises and provides for the use and development of land for specific purposes as identified in the schedule to the zone. In this case, Schedule 11 applies to the Lindum Vale PSP Electricity Easement.
Urban Growth Zone (UGZ)	Manages the transition of non-urban land into urban land and provides for a range of uses and development generally in accordance with an approved precinct structure plan.

Planning zone	Purpose
Urban Growth Zone – Schedule 4 (UGZ4)	Applies the Merrifield West PSP
Urban Growth Zone – Schedule 5 (UGZ5)	Applies the Lockerbie PSP
Urban Growth Zone – Schedule 11 (UGZ11)	Applies the Lindum Vale PSP
Public Use Zone - Service & Utility (PUZ1) - Transport (PUZ4)	Recognises public land use for public utility and community services and facilities such as transport infrastructure and utilities.
Road Zone Category 1 (RDZ1)	Identifies significant existing roads and land which has been acquired for a significant proposed road.
Mitchell planning scheme	
Urban Growth Zone (UGZ)	Manages the transition of non-urban land into urban land and provides for a range of uses and development generally in accordance with an approved precinct structure plan.
Urban Growth Zone – Schedule 1 (UGZ1)	Applies the Lockerbie PSP
Urban Growth Zone – Schedule 4 (UGZ4)	Applies the Donnybrook-Woodstock PSP
Road Zone Category 1 (RDZ1)	Identifies significant existing roads and land which has been acquired for a significant proposed road.
Rural Conservation Zone (RCZ)	Encourages development and use of land which is consistent with sustainable land management and land capability practices and which takes in to account the conservation values and environmental sensitivity of the locality and provides of the agricultural use consistent with the conservation of these values.
Whittlesea planning scheme	
Urban Growth Zone (UGZ)	Manages the transition of non-urban land into urban land and provides for a range of uses and development generally in accordance with an approved precinct structure plan.
Urban Growth Zone – Schedule 6 (UGZ6)	Applies the Donnybrook-Woodstock PSP
Farming Zone (FZ)	Provides for the use and encourages the retention of productive agricultural land by ensuring that non-agricultural uses do not adversely affect the use of the land for agriculture while encouraging the retention of employment and population to support rural communities.
Rural Conservation Zone (RCZ)	Encourages development and use of land which is consistent with sustainable land management and land capability practices and which takes in to account the conservation values and environmental sensitivity of the locality and provides of the agricultural use consistent with the conservation of these values.
Road Zone Category 1 (RDZ1)	Identifies significant existing roads and land which has been acquired for a significant proposed road.

Table 5-14 Section 3 Overlays

Planning overlay	Purpose
Hume Planning Scheme	
Public Acquisition Overlay - Schedule 3 (PAO3) Roads Corporation (OMR/E6) - Schedule 1 (PAO1) Roads Corporation	Identifies land which is proposed to be acquired by a Minister, public authority or municipal council, reserving land for a public purpose and ensuring that changes to the use or development of the land does not prejudice the purpose for which the land is to be acquired.
Infrastructure Contributions Overlay – Schedule 2 (ICO2) Lindum Vale Infrastructure Contributions Plan, March 2019	Identifies areas where an infrastructure contributions plan applies for the purpose of imposing contributions for the provision of infrastructure – In this case, the Lindum Vale Infrastructure Contributions Plan, March 2019
Development Contributions Plan Overlay - Schedule 4 (DCPO4) Merrifield West Precinct Structure Plan Development Contributions Plan - Schedule 5 (DCPO5) Lockerbie Development Contributions Plan	Identifies areas which required the preparation of a development contributions plan for the purpose of levying contributions for the provision of works, services and facilities before development can commence – In this case, the DCPO4 applies to all land within the Merrifield West PSP while the DCPO5 applies to all land within the Lockerbie PSP as shown on the planning scheme maps.
Land Subject to Inundation Overlay (LSIO)	Ensures development maintains the free passage and temporary storage of floodwaters, minimises flood damage, is compatible with the flood hazard and local drainage conditions and will not cause any significant rise in flood level or flow velocity.
Mitchell Planning Scheme	
Public Acquisition Overlay - Schedule 7 (PAO7) Roads Corporation (OMR/E6) - Schedule 9 (PAO9) Yarra Valley Water	Identifies land which is proposed to be acquired by a Minister, public authority or municipal council, reserving land for a public purpose and ensuring that changes to the use or development of the land does not prejudice the purpose for which the land is to be acquired.
Environmental Significance Overlay - Schedule 4 (ESO4) Rural Conservation Area - Schedule 6 (ESO6) Urban Conservation Area	Identifies areas where the development of land may be affected by environmental constraints and ensures development is compatible with identified environmental values.
Vegetation Protection Overlay – Schedule 2 (VPO2) Freeway Environs Protection	Ensures that development minimises loss of vegetation, preserves existing trees and other vegetation and recognises vegetation protection areas as locations of special significance, natural beauty, interest and importance
Incorporated Plan Overlay – Schedule 3 (IPO3) Donnybrook-Woodstock Precinct Structure Plan – Biodiversity Conservation Strategy Areas	Identifies areas which required the form and conditions of future use and development to be shown on an incorporated plan before a permit can be granted to use or develop the land. The IPO3 applies to the Biodiversity conservation strategy areas of the Donnybrook-Woodstock PSP.
Development Contributions Plan Overlay – Schedule 1 (DCPO1) Lockerbie Development Contributions Plan	Identifies areas which required the preparation of a development contributions plan for the purpose of levying contributions for the provision of works, services and facilities before development can commence – In this case, the DCPO1 applies to all land within the Lockerbie PSP as shown on the planning scheme maps.

Planning overlay	Purpose
Infrastructure Contributions Overlay – Schedule 1 (ICO1) Donnybrook-Woodstock Infrastructure Contributions Plan, April 2019	Identifies areas where an infrastructure contributions plan applies for the purpose of imposing contributions for the provision of infrastructure – In this case, the ICO implements the Donnybrook-Woodstock ICP.
Land Subject to Inundation Overlay (LSIO)	Ensures development maintains the free passage and temporary storage of floodwaters, minimises flood damage, is compatible with the flood hazard and local drainage conditions and will not cause any significant rise in flood level or flow velocity.
Whittlesea Planning Scheme	
Incorporated Plan Overlay – Schedule 6 (IPO6) Donnybrook-Woodstock Precinct Structure Plan – Biodiversity Conservation Strategy Areas	Identifies areas which required the form and conditions of future use and development to be shown on an incorporated plan before a permit can be granted to use or develop the land. The IPO6 applies to the Biodiversity conservation strategy areas of the Donnybrook-Woodstock PSP.
Environmental Significance Overlay - Schedule 4 (ESO4) Rural Conservation Area - Schedule 6 (ESO6) Urban Conservation Area	Identifies areas where the development of land may be affected by environmental constraints and ensures development is compatible with identified environmental values.
Infrastructure Contributions Overlay – Schedule 1 (ICO1) Donnybrook-Woodstock Infrastructure Contributions Plan, April 2019	Identifies areas where an infrastructure contributions plan applies for the purpose of imposing contributions for the provision of infrastructure – In this case, the ICO implements the Donnybrook-Woodstock ICP.
Public Acquisition Overlay - Schedule 6 (PAO6) Road Corporation (OMR/E6) - Schedule 7 Director of Public Transport (OMR/E6 Rail Connections)	Identifies land which is proposed to be acquired by a Minister, public authority or municipal council, reserving land for a public purpose and ensuring that changes to the use or development of the land does not prejudice the purpose for which the land is to be acquired.

5.5.4 Section 4 – Donnybrook to Wollert Compressor Station

The proposed pipeline works impact on land within City of Whittlesea. At this section, the route is within an existing gas pipeline easement or land where APA has existing tenure (Wollert Compressor Station).

The zones and overlays affecting the pipeline works (construction footprint) in Section 4 are outlined in Table 5-15 and Table 5-16.

Table 5-15 Section 4 Zones

Planning zone	Purpose
Whittlesea Planning Scheme	
Road Zone Category 1 (RDZ1)	Identifies significant existing roads and land which has been acquired for a significant proposed road.
Urban Growth Zone (UGZ)	Manages the transition of non-urban land into urban land and provides for a range of uses and development generally in accordance with an approved precinct structure plan.

Planning zone	Purpose
Rural Conservation Zone – Schedule 1 (RCZ1) Conservation Values	Encourages development and use of land which is consistent with sustainable land management and land capability practices and which takes in to account the conservation values and environmental sensitivity of the locality and provides of the agricultural use consistent with the conservation of these values.
Farming Zone (FZ)	Provides for the use and encourages the retention of productive agricultural land by ensuring that non-agricultural uses do not adversely affect the use of the land for agriculture while encouraging the retention of employment and population to support rural communities.

Table 5-16 Section 4 Overlays

Planning overlay	Purpose
Whittlesea Planning Scheme	
Public Acquisition Overlay – Schedule 2 (PAO2) Vic Roads	Identifies land which is proposed to be acquired by a Minister, public authority or municipal council, reserving land for a public purpose and ensuring that changes to the use or development of the land does not prejudice the purpose for which the land is to be acquired.
Environmental Significance Overlay – Schedule 4 (ESO4) Rural Conservation Area	Identifies areas where the development of land may be affected by environmental constraints and ensures development is compatible with identified environmental values.

6. Existing conditions

The existing conditions of the assets, values and uses being considered throughout this assessment are described in the following sections.

6.1 Overview

The existing land use conditions within the study area are discussed below. Generally, land uses within the study area have been considered, along with reasonably foreseeable land uses as described in the various PSPs that intersect with or adjoin the Project.

Four sections of the Project area have been identified to assist in identifying and defining existing land use nt, as follows:

- Section 1 – Plumpton to Calder Highway (KP 0-9)
- Section 2 – Calder Highway to Mickleham Road (KP 9-28)
- Section 3 – Mickleham Road to Donnybrook (KP 28-46.9)
- Section 4 – Donnybrook to Wollert Compressor Station (KP 46.9-51)

Land uses in each section generally comprise a range of residential, agricultural, open space and conservation, commercial, industrial and quarrying, community facilities, and transport and infrastructure-based land uses. Broadly, land across all sections is generally within a growth area subject to a current or future PSP, or within a green wedge.

Refer to Table 6-1 below which summarises the proportion of planning zones present across the Project construction footprint.

Table 6-1 Planning zones across all sections

Zone	Area (%)
Green Wedge Zone *(Incorporating Green Wedge A Zone)*	50.9
Urban Growth Zone *(Incorporating various schedules)*	29.6
Farming Zone	11.1
Public Use Zone *(Incorporating utility and transport)*	4.3
Rural Conservation Zone	3.6
Road Zone	0.4
Special Use Zone	0.1
TOTAL	**100.0**

A PSP is a master plan, incorporated under the relevant planning scheme that provides guidance for integrated planning of a local area, typically being located within a growth area. A PSP will provide strategic context for the development, and will include plans for projected land use, employment, community facilities, transport, native vegetation, heritage, open space, and utilities. The PSP also incorporates a staging plan to ensure development proceeds in an orderly fashion. Detailed maps of the PSPs that apply to the Project are at Appendix C.

Where the Project is located within an existing pipeline easement (KP 0 – KP 9 and KP 42 – KP 51.04), land use strategies in the applicable PSP account for intersection with the existing pipelines, both from an application notification perspective and for broader land use patterns. However, as the gas pipeline easement is existing at these locations, the resulting land use patterns do not directly relate to the provision of the future WORM. PSPs where this is the case include the Plumpton, Kororoit, and Donnybrook-Woodstock PSPs. Additionally, PSPs currently in preparation along the Project (such as the Merrifield North Employment PSP) would incorporate a pipeline easement.

Under the Schedule to Clause 66.06 *Notice of permit applications under local provisions*, where a pipeline is incorporated into a PSP, permit applications for use or buildings and works associated with the following land uses require notice to the pipeline license holder (APA) where they occur within the pipeline measurement length (as defined in the PSP):

- Accommodation (other than dwelling and dependent persons unit)
- Child care centre
- Cinema based entertainment facility
- Corrective institution Education centre
- Hospital
- Place of assembly Service station

A ‘green wedge’ is a non-urban area of metropolitan Melbourne that is outside of the urban growth boundary, and is protected by zoning that restricts uses to agriculture and lower-density uses such as infrastructure, quarries, and environmental conservation areas. Areas within a designated green wedge are also provided with protections within the PE Act to prevent them from urban encroachment, such as subdivision requiring ratification by parliament. The green wedges that would be impacted by the WORM are the Western Plains North green wedge, and the Sunbury green wedge.

A review of publicly available future Planning Scheme Amendments (PSAs) was also conducted as part of this assessment. PSAs proposed within the Project area include the future Merrifield North Employment PSA (Section 3) and the Shenstone Park PSA (Section 4).

A description of the nature of the land uses within each section is discussed below.

6.2 Section 1 – Plumpton to Calder Highway (KP 0-9)

This section is characterised by land within the urban growth boundary and the western growth corridor to the south of the Melton Highway, and land within the Western Plains North green wedge between the Melton Highway and the Calder Highway. Other features include the Melbourne-Bendigo rail corridor, managed by VicTrack. All land within this section is within the City of Melton and subject to the Melton planning scheme.

Despite the delineation between areas within the green wedge and land within the growth corridor, land uses within this section are currently uniformly agricultural and rural-residential in nature, with little to no commercial, industrial, open space land uses or community facilities. This uniformity is not anticipated to continue into the future, given the planned residential development within the western growth corridor, and the approval of the Kororoit and Plumpton PSPs, while land within the green wedge is not currently projected to undergo further development in the future. The Kororoit and Plumpton PSPs specifically account for the existing easement and the pipeline location was considered in terms of land uses provided for within the PSPs.

Land within this section is predominantly privately held, apart from public road reserves and the Melbourne-Bendigo rail reserve. Notably, this section of WORM would be constructed entirely within an existing APA gas pipeline easement.

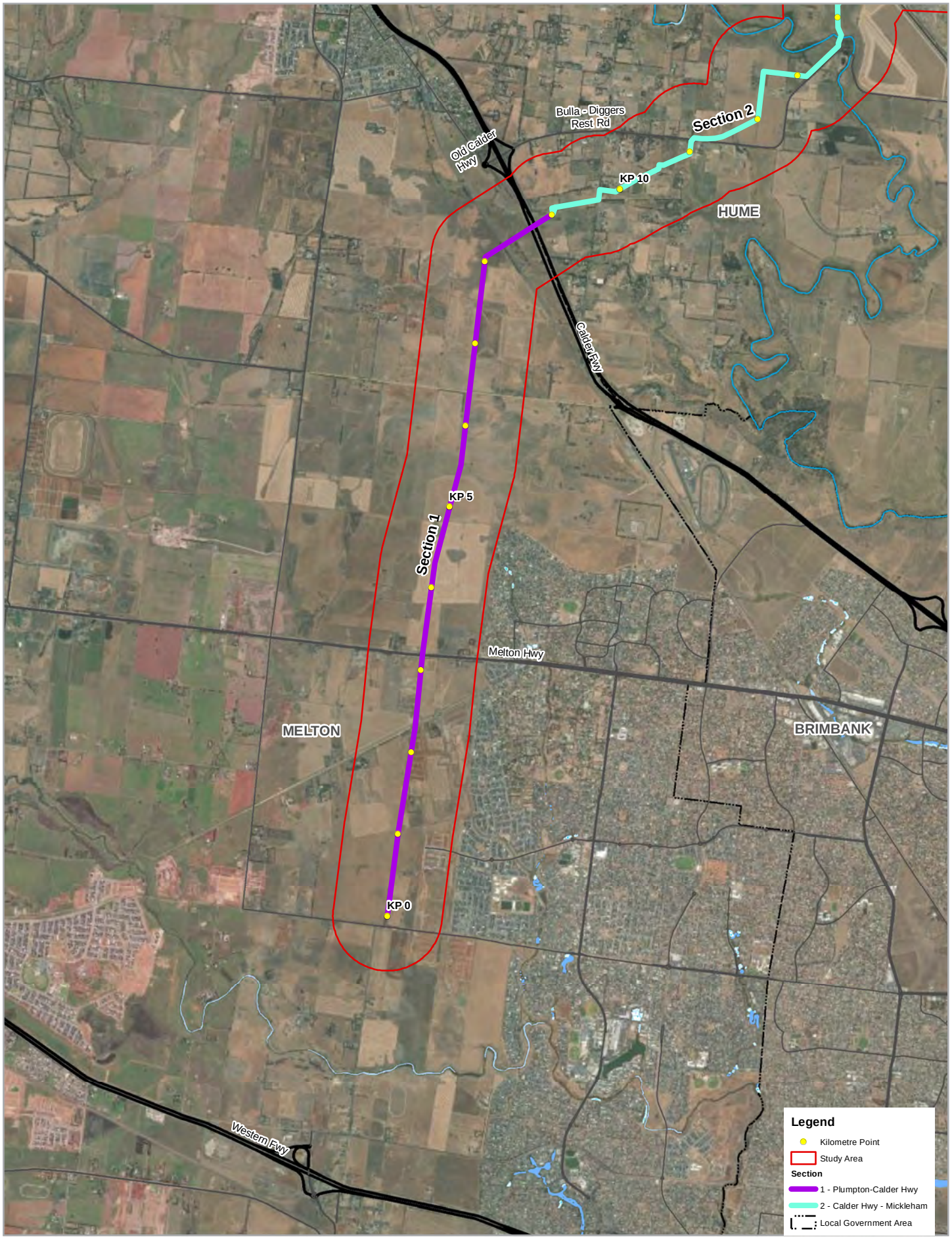
Refer to Figure 4 for a Section 1 overview, Figure 5 for an overview of public and Crown land, and Figure 6 for a map of PSPs in Section 1.

Refer to Table 6-2 below for a discussion of PSPs within the study area.

Table 6-2 PSPs in Section 1 – Plumpton to Calder Highway

PSP	LGA	Discussion
Kororoit PSP	Melton	The Kororoit PSP was gazetted on 1 February 2018. While it does not apply directly to the Project Area, it is within the study area, being located south of Taylors Road. The Kororoit PSP specifically accounts for the existing gas pipeline at this location. Reasonably foreseeable land uses within the study area will be predominantly residential in nature, with some provision for drainage and a “conservation area”. Typical examples of residential interfaces with the gas pipeline easement are shown at Sections 31-32 (page 124-125) of the PSP, which show a shared use path over the easement, and carriageways adjacent acting as a buffer between the easement at residential properties. Assessment of native vegetation within land subject to this PSP is under the Melbourne Strategic Assessment pursuant to the EPBC Act, and Clause 52.17 Native Vegetation does not apply.

PSP	LGA	Discussion
Plumpton PSP	Melton	The Plumpton PSP was gazetted on 1 February 2018 and broadly applies to the initial 3 km of the study area, within the Melton LGA, from Taylors Road to the Melton Highway. The existing gas pipeline easement is accounted for in the PSP, with relevant key objectives and requirements seeking to utilise gas easements for their open space benefits, and to ensure sensitive uses are located outside of the gas pipeline measurement length. Reasonably foreseeable land uses alongside the pipeline easement are predominantly shown to be residential in nature. The easement crossing several minor roads and being flanked by water retention ponds at the southern end. Other reasonably foreseeable land uses within the study area include local open space, education, and community facilities. Typical examples of residential interfaces with the gas pipeline easement are shown at Sections 32-33 (page 136-137) of the PSP, which show a shared use path over the easement, and carriageways adjacent acting as a buffer between the easement at residential properties. Assessment of native vegetation within land subject to this PSP is under the Melbourne Strategic Assessment pursuant to the EPBC Act, and Clause 52.17 Native Vegetation does not apply.
Taylors Hill West PSP	Melton	The Taylors Hill West PSP was gazetted in July 2010 and lies to the east of the Project, with a small section at its western extent within the study area. The land within the study area has been developed for residential purposes.



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Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

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Western Outer Ring Main Gas Project

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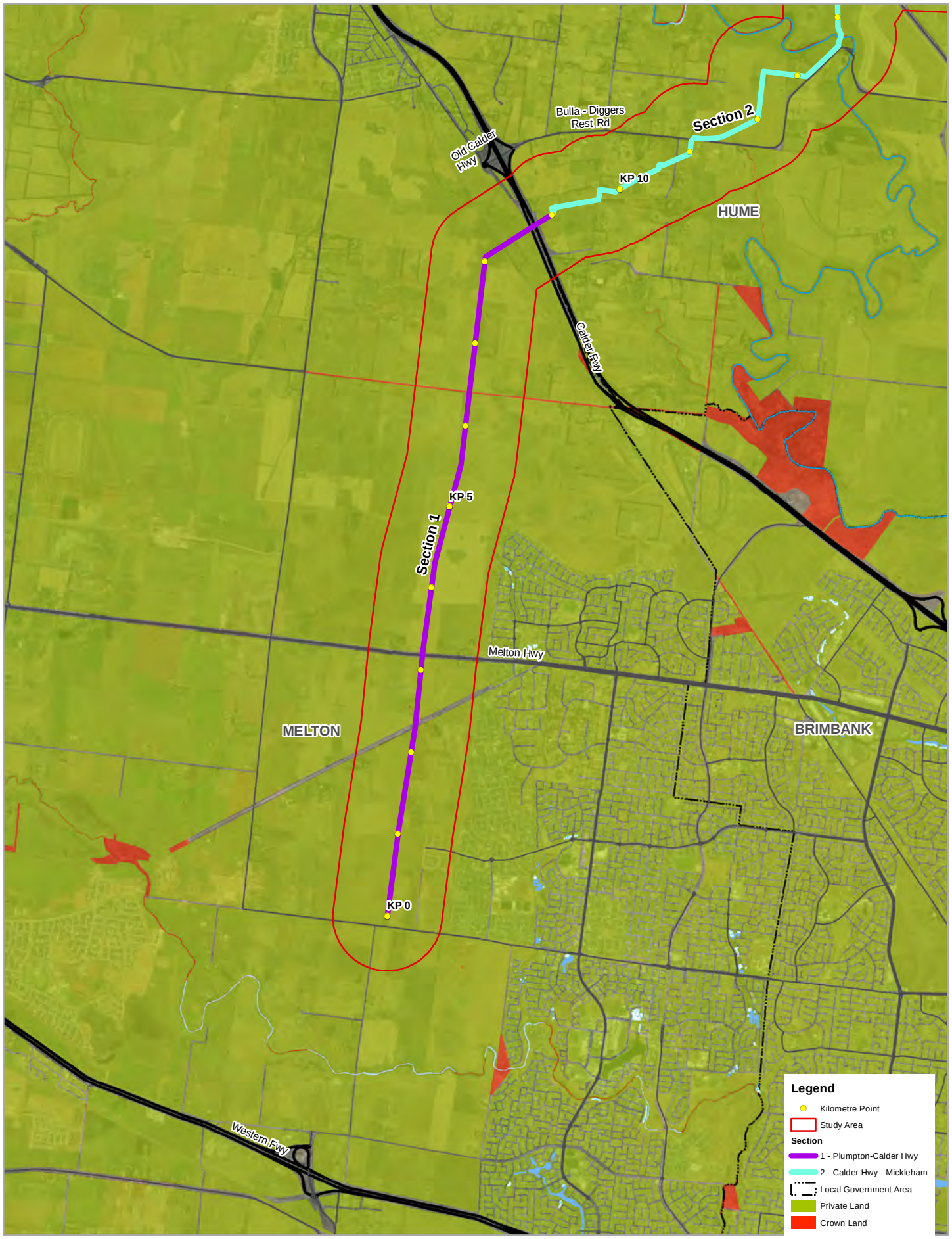
Pipeline Sections

Figure 4

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner



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Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

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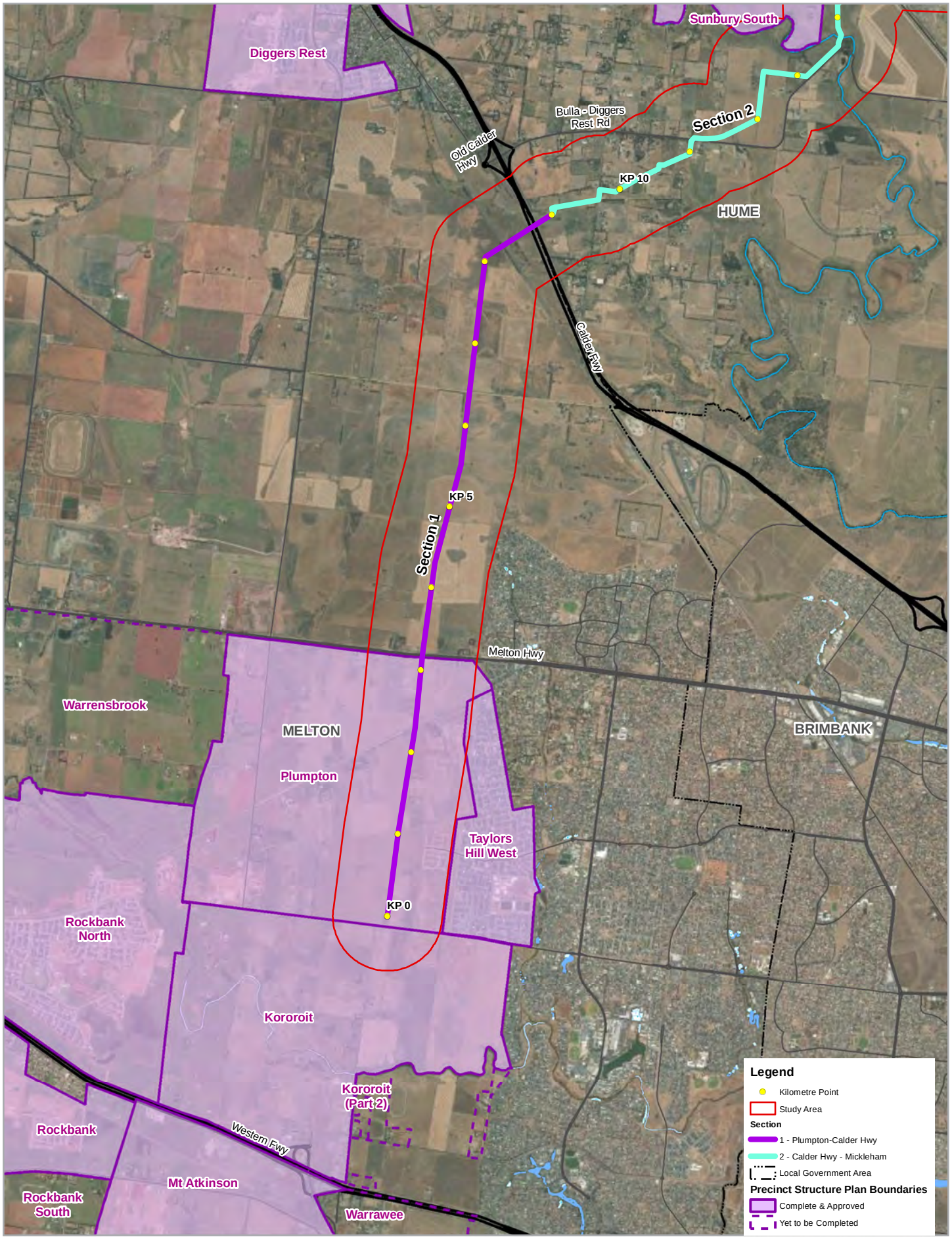
Western Outer Ring Main Gas Project

Project No. 31-12529997
Revision No. C
Date 04/03/2021

Crown Land

Figure 5

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner



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Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

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Western Outer Ring Main Gas Project

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Precinct Structure Plan

Figure **6**

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner

6.2.1 Residential

Residential land uses are not currently prevalent in the section; however there are a number of existing low-density detached rural residential properties of various architectural forms, particularly along Plumpton Road, Beattys Road and Taylors Road.

Large areas of this section south of the Melton Highway are currently undergoing planning or development in accordance with the approved Plumpton and Kororoit PSPs and as such, the land use within this section will ultimately comprise varying residential densities in the future. Development of this land for residential purposes is reflective of the *West Growth Corridor Plan (2012)* and Clause 21.02-1 *Urban Growth Areas* which identify land within the urban growth corridor as being planned for residential purposes in accordance with PSPs developed by the Victorian Planning Authority.

Specifically, the Plumpton PSP will aim to deliver a minimum 10,800 new dwellings with a 'diversity of dwelling sizes' providing 'both affordable and flexible housing', with higher density dwellings located in defined walkable residential catchments situated around planned town centres. The Kororoit PSP will deliver a minimum 9,200 dwellings with a 'diversity of dwelling sizes and types' to allow for 'affordable and flexible housing and live-work opportunities', with increased density within a 'walkable catchment of high amenity features and public transport.' In both instances, increased densities are not planned for areas within the study area. Subdivision and dwelling types within and adjacent to the pipeline corridor will need to comply with the provision of the General Residential Zone (GRZ) under the Melton planning scheme.

However, the Project would not directly intersect with any existing or proposed residential land.

In contrast, land between the Melton Highway and the Calder Highway will not be developed as a residential area in the future, which is recognised by its status as part of the Western Plains North green wedge, being outside of Melbourne's urban growth boundary. The proximity of this land to current and future urban areas contributes to pressure for further subdivision or rezoning of this land, which is recognised at Clause 21.02-3 *Non-Urban Land* and the *Western Plains North Green Wedge Management Plan*. Some rural residential land uses associated with agricultural activities persist, and can be maintained under the provisions of the Green Wedge Zone. Further subdivision within the green wedge would require ratification by parliament under Part 3AA of the PE Act.

6.2.2 Agriculture

Agricultural land uses are widespread within this section, with varying forms and intensities present, such as cropping (primarily wheat, barley and oats), livestock grazing, and fruit growing. Clause 21.02-3 *Non-Urban Areas* indicates that in recent years, equine land uses have also become common in the area, including horse breeding and harness racing.

In the future, agricultural uses are expected to be replaced by urban residential uses to the south of the Melton Highway in the short-medium term, as this area is within the UGB and is subject to approved PSPs (refer to Table 6-2 for discussion).

Land to the north of the Melton Highway, however, is within the *Western Plains North* green wedge, and will persist as predominantly agricultural and rural-residential into the future. The *Western Plains North Green Wedge Management Plan* discusses the implications of the eastern section of this land being "cut off" when the OMR /E6 Transport corridor is constructed in the future. The report anticipates that this eastern section will transition to urban uses at this point, but stresses that future development of this land should not be prejudiced by residential development.

Figure 7 shows the view across flat to gently undulating farmland from Taylors Road, Plumpton.

Figure 7 View north across flat to gently undulating farmland from Taylors Road, Plumpton

Challenges of agriculture within Melton's green wedges are also discussed at Clause 21.02-1 of the MSS, which describes the strategic location of agricultural areas (being close to Melbourne's ports and airport), but also notes the threats of land fragmentation to agriculture in peri-urban areas.

6.2.3 Open space and conservation

Formal open space is not currently prevalent throughout this section. There is currently no land zoned Public Park and Recreation Zone or Public Conservation and Resource Zone across this section, nor are there passive recreation opportunities on publicly accessible land.

Providing open space for new urban communities is a key objective of the Settlement clause of the MSS (Clause 21.02), with Strategy 1.2 under Clause 21.02-1.3 being to 'Provide open space that facilitates a range of recreational opportunities in appropriate locations with good connectivity.'

As such, formal open space within this section is expected to be provided as part of the Plumpton and Kororoit PSPs in the future. This will include a shared use path along the length of the pipeline easement, local parks and sports reserves within the study area, and passive open space associated with swales and retarding basins adjacent to the Project.

There are some elements of conservation land uses across this section, with approximately the first three kilometres of the pipeline being located within the MSA. For discussion of conservation and biodiversity impacts, please refer to the Biodiversity Technical Report (Technical Report A).

6.2.4 Commercial

Commercial land uses are largely absent throughout this section, with no land being zoned Commercial 1 Zone or Commercial 2 Zone. There are no commercial uses directly located within the construction footprint.

Further afield, there are some existing commercial uses (primarily service stations and fast food) located along the Calder Highway, retail within the Diggers Rest township to the north, and neighbourhood centre commercial areas in Frasers Rise to the east.

Commercial land uses are also planned to be incorporated into developments subject to the Plumpton and Kororoit PSPs, in the form of town centres, however no commercial land uses are currently planned within the study area.

The green wedge and the future zone of land within the urban growth boundary (General Residential Zone) within and adjacent to the Project have limited allowances for commercial developments. As such, commercial land uses are not anticipated to be a major consideration within this section.

6.2.5 Industrial and extractive industries

There is limited industrial and extractive industry-based land use within the section. The Plumpton Road Recycling Centre located to the west along Plumpton Road (operating within the Green Wedge Zone), and the Rockbank Quarry (zoned Special Use Zone - Schedule 1) located further to the west.

There is some provision for industrial land within the Plumpton PSP, in the form of an industrial precinct adjacent to the future OMR /E6 Transport corridor alignment and Melton Highway. This land is not within the study area. Land within the study area will be zoned GRZ, where land used for industry (other than car wash) is a prohibited use.

In terms of land north of the Melton Highway, within the green wedge, extractive industries will likely feature to into the future, as there is provision for materials recycling, refuse station and waste transfer uses within the GWZ.

6.2.6 Community facilities

Community facilities are currently absent from this section, however are prevalent within the existing urban areas to the east of the Project (Hillside, Fraser Rise, Sydenham).

Community facilities are planned within the Kororoit and Plumpton PSPs, in the form of areas designated for schools, town centres, and local convenience centres.

There are no community facilities directly within or adjacent to the construction footprint.

6.2.7 Infrastructure and transport

Section 1 intersects with some local roads, including Taylors Road, Beatty Road and Holden Road, along with the Melton Highway and Calder Highway, which are managed by the DoT. Known planned future roads within this section include the extension to Tarletons Road, which will become an arterial road, along with future local roads (E-W RD 4 and Kennedy Drive) outlined within the Plumpton PSP. Additionally, this section crosses the future location of the OMR/E6 Transport corridor near its intersection with the Calder Highway.

Section 1 also crosses the Melbourne-Bendigo rail line, which is managed by VicTrack.

Utilities within the Project area include a number of low voltage electricity assets, managed by Jemena to the north and Powercor to the south, along with various water, telecommunications, liquefied natural gas and sewer assets. To the east of the study area, between Taylors Road and through to the north of the Melton Highway is an easement for high voltage electricity transmission lines.

Future utilities that may be constructed within this section include the Western Victorian Transmission Network Project, which will consist of a new overhead electricity transmission line from western Victoria to the western suburbs of Melbourne. An alignment has yet to be publicly identified for this project, however the northern extent of its area of interest intersects with the westerly extent of the Project, where the Project is within an existing easement.

6.2.8 Planning context

Planning zones and overlays applying to Section 1 of the study area are summarised at Table 6-3 and Table 6-4.

Table 6-3 Planning zones applicable to Section 1

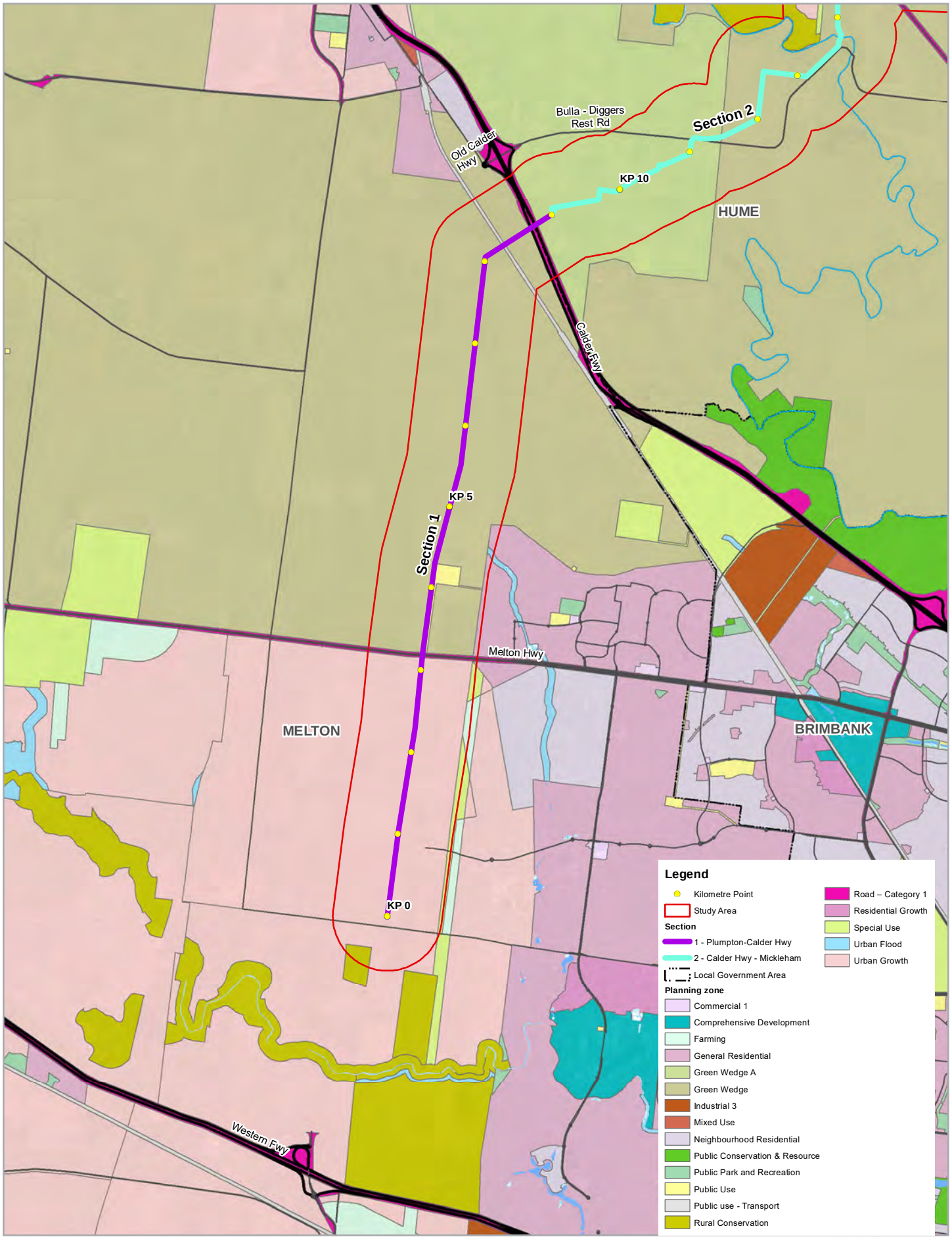
Planning zone	Application
Melton Planning Scheme	
Rural Conservation Zone – Schedule 4 (RCZ4)	The RCZ4 applies to land within the Kororoit PSP that is set aside for nature conservation purposes in accordance with the MSA (congruent with the ESO6, IPO4).
Urban Growth Zone – Schedule 12 (UGZ12)	The UGZ12 applies to land subject to the Kororoit PSP.
Urban Growth Zone – Schedule 11 (UGZ11)	The UGZ11 applies to land subject to the Plumpton PSP.
Public Use Zone 1 – Service and Utility (PUZ1)	The PUZ1 applies to land set aside for future service and utility uses, to the north of the Melton Highway and adjacent to the Project.
General Residential Zone – Schedule 1 (GRZ1)	The GRZ1 applies to existing housing within the suburb of Hillside to the east of the Project.
Green Wedge Zone (GWZ)	The Western Plains North green wedge is zoned GWZ.
Public Use Zone 4 – Transport (PUZ4)	The Sunbury line, which the Project crosses at the north of Section 1, is zoned PUZ4.
Road Zone Category 1 (RDZ1)	RDZ1 is applied to both the Melton Highway and the Calder Highway.
Farming Zone (FZ)	The FZ applies to farming land south of Beattys Road adjacent to the alignment.

Table 6-4 Planning overlays applicable to Section 1

Planning overlay	Application
Melton Planning Scheme	
Environmental Significance Overlay – Schedule 6 (ESO6)	The ESO6 applies to land within the Kororoit PSP that is set aside for nature conservation purposes in accordance with the MSA (congruent with the RCZ4, IPO4).

Planning overlay	Application
Incorporated Plan Overlay – Schedule 4 (IPO4)	This Clause implements the Kororoit PSP. Under Clause 2.0 of the Schedule, a permit granted where the IPO4 applies must generally be in accordance with the PSP. The IPO4 applies to land within the Kororoit PSP that is set aside for nature conservation purposes in accordance with the MSA (congruent with the RCZ4, ESO6).
Infrastructure Contributions Overlay – Schedule 1 (ICO1)	The Plumpton and Kororoit Infrastructure Contributions Plan is applied via the ICO1.
Heritage Overlay 55 (HO55)	The HO55 applies to 997-1058 Melton Highway, specifically the house, dry stone wall, and cypresses around the house.
Heritage Overlay 58 (HO58)	The HO58 applies to 911-935 Melton Highway, specifically the house and boundary plantings of Monterey cypresses.
Melbourne Airport Environs Overlay – Schedule 1 (MAEO1)	The MAEO1 applies to “areas that are or will be subject to high levels of aircraft noise based on the 25 Australian Noise Exposure Forecast (ANEF) contour”.
Melbourne Airport Environs Overlay – Schedule 2 (MAEO2)	The MAEO2 applies to “areas that are or will be subject to moderate levels of aircraft noise based on the 20-25 Australian Noise Exposure Forecast (ANEF) contours”.
Development Plan Overlay – Schedule 5 (DPO5)	The DPO5 allows for the provision of a development plan regulating development within Banchory Grove and Bellevue Hill (part of the suburb of Hillside, to the east of the Project).
Public Acquisition Overlay – Schedule 3 (PAO3)	The PAO3 reserves land for the purposes of the future OMR/E6 Transport corridor.
Environmental Significance Overlay – Schedule 1 (ESO1)	The ESO1 provides protection for ‘remnant woodlands, open forests and grasslands’. In this instance, it applies to land within the Sunbury rail line corridor.
Development Contributions Plan Overlay – Schedule 1 (DCPO1)	The DCPO1 implements the Taylors Hill West Development Contributions Plan and applies to the Taylors Hill West PSP area.
Development Plan Overlay – Schedule 1 (DPO1)	The DPO1 allows for the provision of a development plan regulating development within the Melton East Growth Area, to the east of the Project.

Refer to Figure 8 for a map of planning zones, and Figure 9 for a map of planning overlays.



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Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

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APA VTS (Operations) Pty Ltd
Western Outer Ring Main Gas Project

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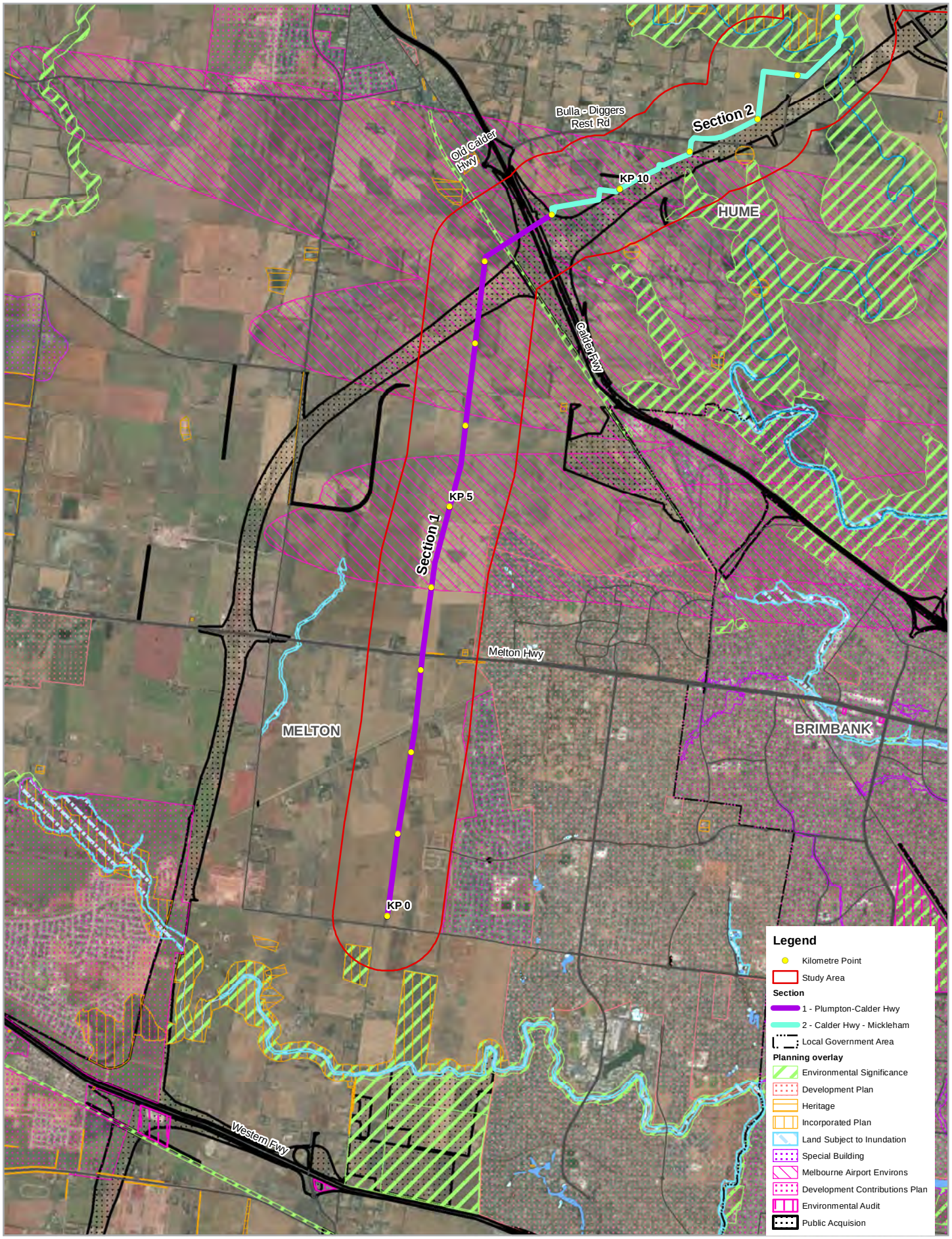
Date 04/03/2021

Planning Zones

Figure 8

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner



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Kilometers

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Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

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Planning Overlays

Figure 9

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner

6.3 Section 2 – Calder Highway to Mickleham Road (KP 9-28)

From the Calder Highway to Mickleham Road, the Project is located entirely within the Sunbury green wedge, though the Project does pass within 659 m of land within the Sunbury South PSP (refer to Table 6-5 below for a discussion of PSPs within the study area). This portion of green wedge is entirely within the City of Hume, who are currently preparing a Green Wedge Management Plan for the area (though this is not yet publicly available).

Land within this section is almost wholly included within the Green Wedge Zone. Exceptions to this are a small section to the east of Diggers Rest (Green Wedge A Zone), a section associated with the Sunbury South PSP (Rural Conservation Zone and Urban Growth Zone - Schedule 9) and an area included within a Special Use Zone, Schedule 1 (Earth and Energy Resources Industry), associated with the Oaklands Junction quarry.

Notably, the Melbourne Airport Environs Overlay, associated with Melbourne Airport to the southeast of the study area, also covers a large area within this section. The purpose of this overlay is to protect Melbourne Airport's operations from inappropriate development, and its application constrains further urban development within areas subject to this overlay.

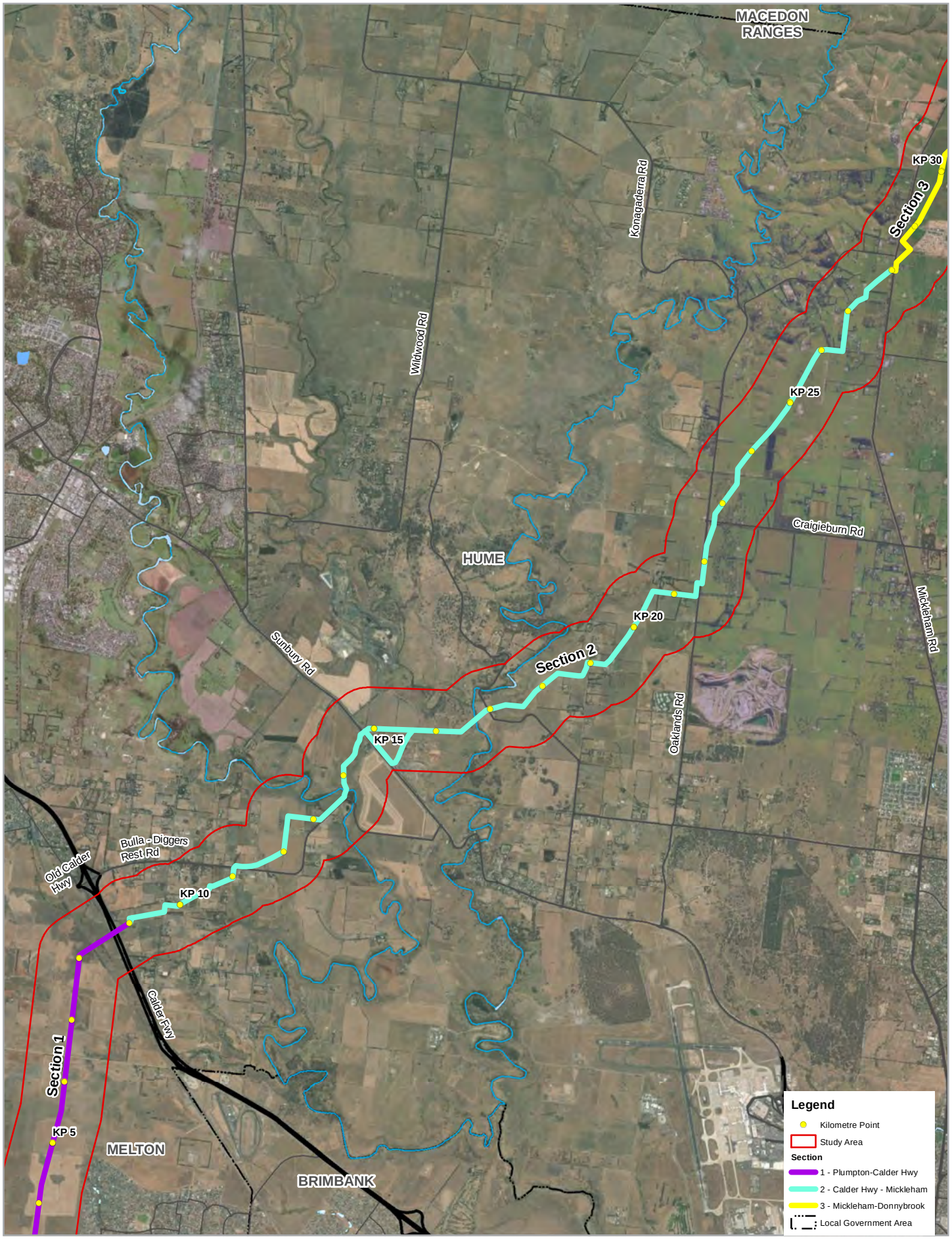
Land within this section is somewhat undulating, with steep creek valleys associated with several waterways, some of which the Project crosses (Jacksons Creek and Deep Creek). Land uses are primarily rural and agricultural in nature, with some low-density residential uses located to the east of Diggers Rest, at the locality of Wildwood, and north of the township of Bulla. Industrial and extractive industry-based land uses are also present in close proximity to the Project in the form of refuse, recycling and waste transfer stations and quarries.

Land at this section is predominantly privately held, however there is some Crown land at various waterways and along designated roads. There is no existing APA easement in this section.

Refer to Figure 10 for an overview of Section 2, Figure 11 for an overview of public and Crown land, and Figure 12 for PSPs within Section 2.

Table 6-5 PSPs in Section 2 – Calder Highway to Mickleham Road

PSP	LGA	Discussion
Sunbury South PSP	Hume	The Sunbury South PSP does not directly interface with the Project Area, but is within the study area. The PSP was gazetted in January 2019 and applies to an area to the southeast of the existing Sunbury township. Reasonably foreseeable land uses defined in the PSP within the study area are a mix of residential, local open space, drainage, and utility (electricity) easement. The PSP does not include the Project within its underlying plans, objectives or requirements. Assessment of native vegetation within land subject to this PSP and zoned UGZ9 is under the Melbourne Strategic Assessment pursuant to the EPBC Act, and Clause 52.17 Native Vegetation does not apply, except where native vegetation is identified as to be retained in the PSP. Clause 52.17 would also apply to native vegetation within this PSP under areas zoned RCZ and SUZ9.



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Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

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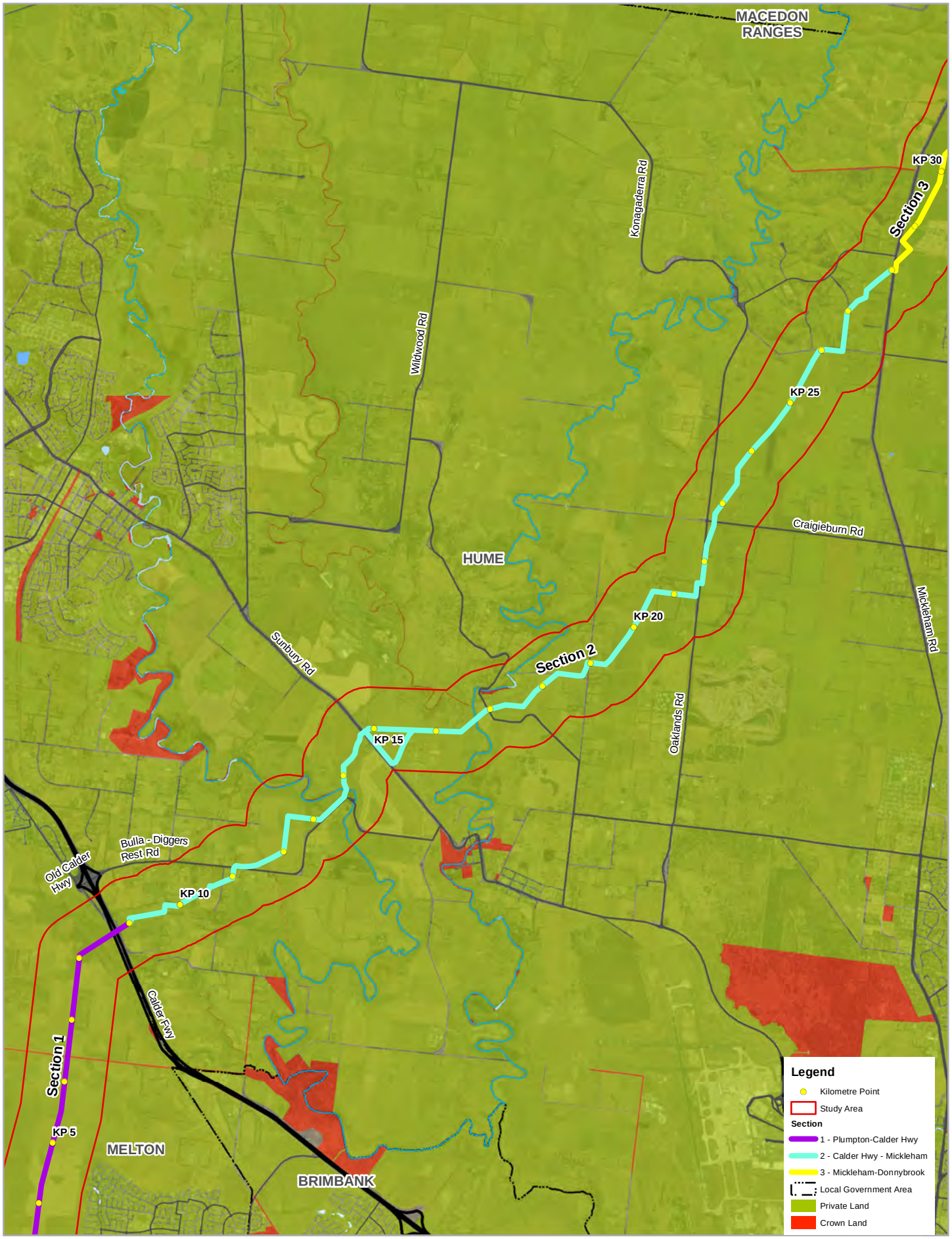
Pipeline Sections

Figure 10

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner



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Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

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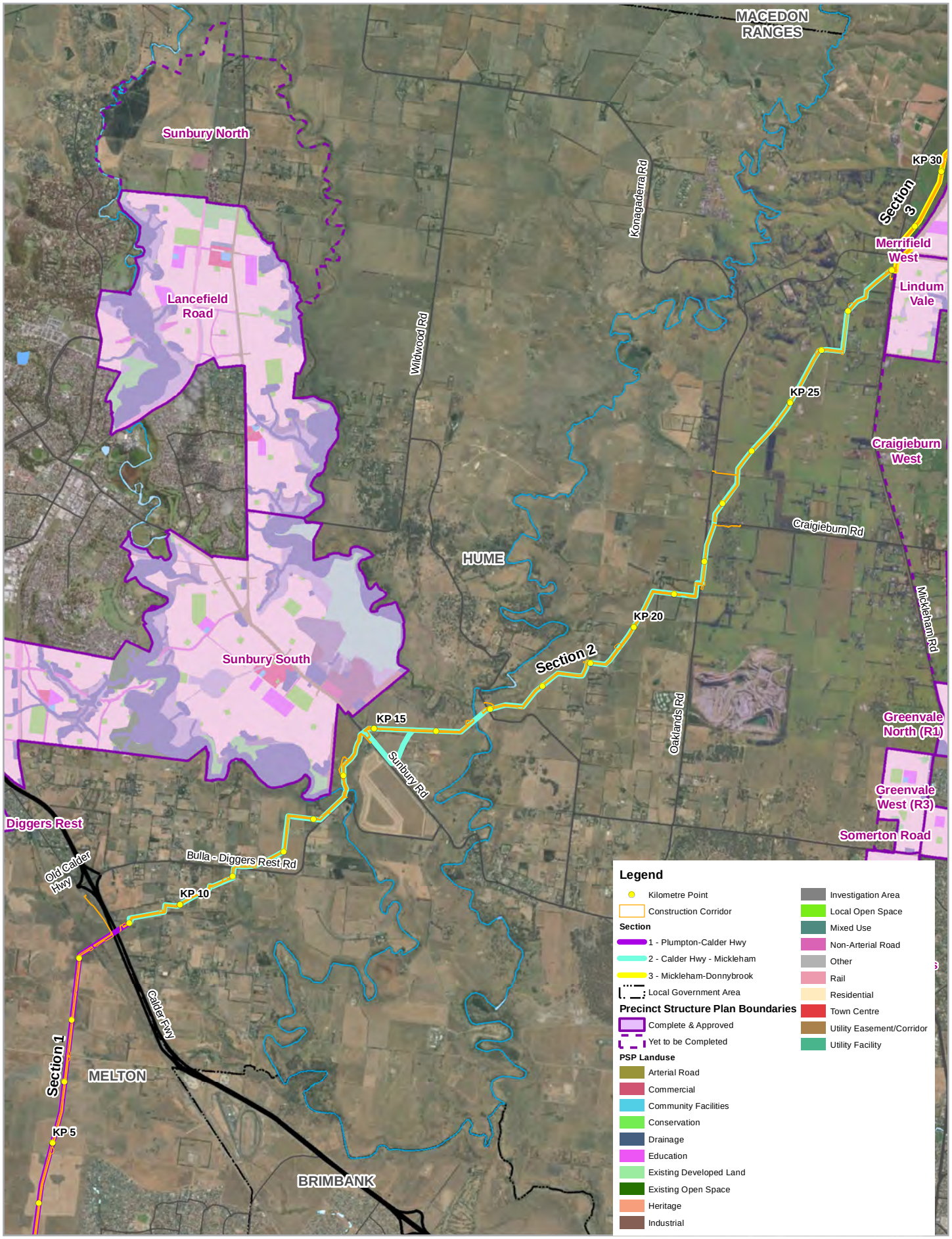
APA VTS (Operations) Pty Ltd
Western Outer Ring Main Gas Project

Project No. 31-12529997
Revision No. C
Date 04/03/2021

Crown Land

Figure 11

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner



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Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

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APA VTS (Operations) Pty Ltd
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PSP Landuse

Figure 12

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner

6.3.1 Residential

There are some low-density residential land uses within this section, predominantly to the east of Diggers Rest, around Wildwood, and to the north of the township of Bulla. The majority of these residential uses are associated with agricultural activities of various intensities, typically being smaller scale towards Diggers Rest, Wildwood and Bulla, and larger scale away from these townships.

Clause 21.02-4 of the Hume MSS aims to protect land within the green wedge from further residential development and discourages small-lot excisions. Further subdivision within the green wedge would require ratification by parliament under Part 3AA of the PE Act and therefore increased residential uses are unlikely to occur in the future within this section. Further residential development is also constrained by the Melbourne Airport Environs Overlay, which is applicable to much of the land within this section.

The Project does travel within 659 m of the Sunbury South PSP, where the applied zone provision is General Residential Zone. Future residential dwellings at this location will be separated from the Project by both a water retarding basin and a high voltage electricity easement.

Figure 13 shows the view east of a dwelling on Duncans Lane, Diggers Rest.

Figure 13 View east of a dwelling on Duncans Lane, Diggers Rest

6.3.2 Agricultural

Agricultural land use is prevalent within this section, in the form of small-to-medium scale cropping, grazing, livestock and equestrian uses. Typically it accompanies rural residential living (refer to Section 6.3.1), however further residential development is not encouraged within the Green Wedge Zone.

Clause 21.01-2 *Key issues and influences* of the MSS indicates that farming is less prevalent in the rural areas of Hume than it once was as it has become less feasible and profitable, and that there will be ongoing pressure for urban expansion into non-urban areas into the future. However, it is acknowledged that maintaining this land for agricultural uses into the future is important, as it protects the operations of Melbourne Airport and maintains the rural gap between Sunbury and metropolitan Melbourne.

6.3.3 Open space and conservation

There are a number of creeks that the Project crosses or are within the study area at this section, including Jacksons Creek, Deep Creek and its tributary, Emu Creek. These creeks provide passive open space and some formal recreational areas within the study area, including the Jackson Creek-Glencoe Drive Reserve (Jacksons Creek), Martin Dillon Reserve (Deep Creek), and the Bulla Streamside Reserve (Deep Creek).

Reasonably foreseeable future open space is also included within the Sunbury South PSP, which identifies conservation areas along Jacksons Creek.

While the Project does not directly intersect with any land zoned PCRZ or PPRZ across Section 2, it is noted that conservation of biodiversity is an objective of the Green Wedge Zone and Green Wedge A Zone which cover the majority of this section. For further discussion of conservation and biodiversity impacts, please refer to the Biodiversity Technical Report (Technical Report A).

6.3.4 Commercial

Commercial uses are generally absent throughout this section. No land is zoned Commercial 1 Zone or Commercial 2 Zone throughout the section and there are no commercial uses directly located within the construction footprint.. The closest commercial uses to the Project are in the township of Bulla to the southeast, along the Calder Highway to the west, and within Sunbury to the northwest.

The major commercial land use feature within the vicinity of the Project in this section is the Melbourne Airport at Tullamarine to the southeast. The positioning of the airport restricts the land uses within the green wedge under the Melbourne Airport Environs Overlay, with the zoning of the land within the green wedge also discouraging further commercial developments.

6.3.5 Industrial and extractive industries

There are some extractive industry-based land uses within this section, located within the study area, including the Oaklands Junction quarry, which is included within the Special Use Zone – Schedule 1. Other facilities in the study area, including the Hi-Quality Group Sunbury Eco-Park and the Bulla Tip & Quarry, are within the Green Wedge Zone, where there is provision for materials recycling, refuse station and waste transfer use.

Non-extractive industry or waste transfer based industrial uses are absent from this section at present, however there is provision for materials recycling, refuse station and waste transfer uses within the GWZ.

6.3.6 Community facilities

There are minimal formal community facilities within the study area in Section 2, including the Cao Dai Temple of Victoria, Diggers Rest, and the Mickleham Community Centre, Mickleham. Other facilities within the vicinity, but not directly within, the study area include the Tibetan Buddhist Society, Yuroke, the Buddhist Temple Daham Niketanaya, Yuroke, and the Jack Mckenzie Community Centre, Bulla.

Community facilities servicing this area are generally located in nearby Sunbury, Caroline Springs, Diggers Rest and Craigieburn.

There are no community facilities directly within or adjacent to the construction footprint.

6.3.7 Transport and infrastructure

Section 2 crosses numerous local roads, including Bulla-Diggers Rest Road, Wildwood Road and Oaklands Road. DoT managed roads crossed at this section include the Calder Highway, Sunbury Road, and Mickleham Road.

The Project is located partially alongside the PAO for the future OMR/E6 Transport corridor at this section, and crosses the PAO at the northern extent of the section.

Additionally, the Project may have an interface with the future Bulla Bypass/Melbourne Airport Link at approximately KP 15 and 18-19, however due to the Project position to the north of the future OMR /E6 Transport corridor at this location, the Project is not likely to directly intersect with these planned roads. It is also noted that the Bulla Bypass/Melbourne Airport Link is yet to be approved by the Minister for Planning.

Utilities within the Project area include a number of low voltage electricity assets, managed by Jemena, along with various water, telecommunications and sewer assets. The Project also crosses a high voltage powerline easement near Bulla-Diggers Rest Road and Jacksons Creek.

6.3.8 Planning context

Planning zones and overlays applied within the study area of Section 2 are summarised in Table 6-6 and Table 6-7.

Table 6-6 Planning zones applicable to Section 2

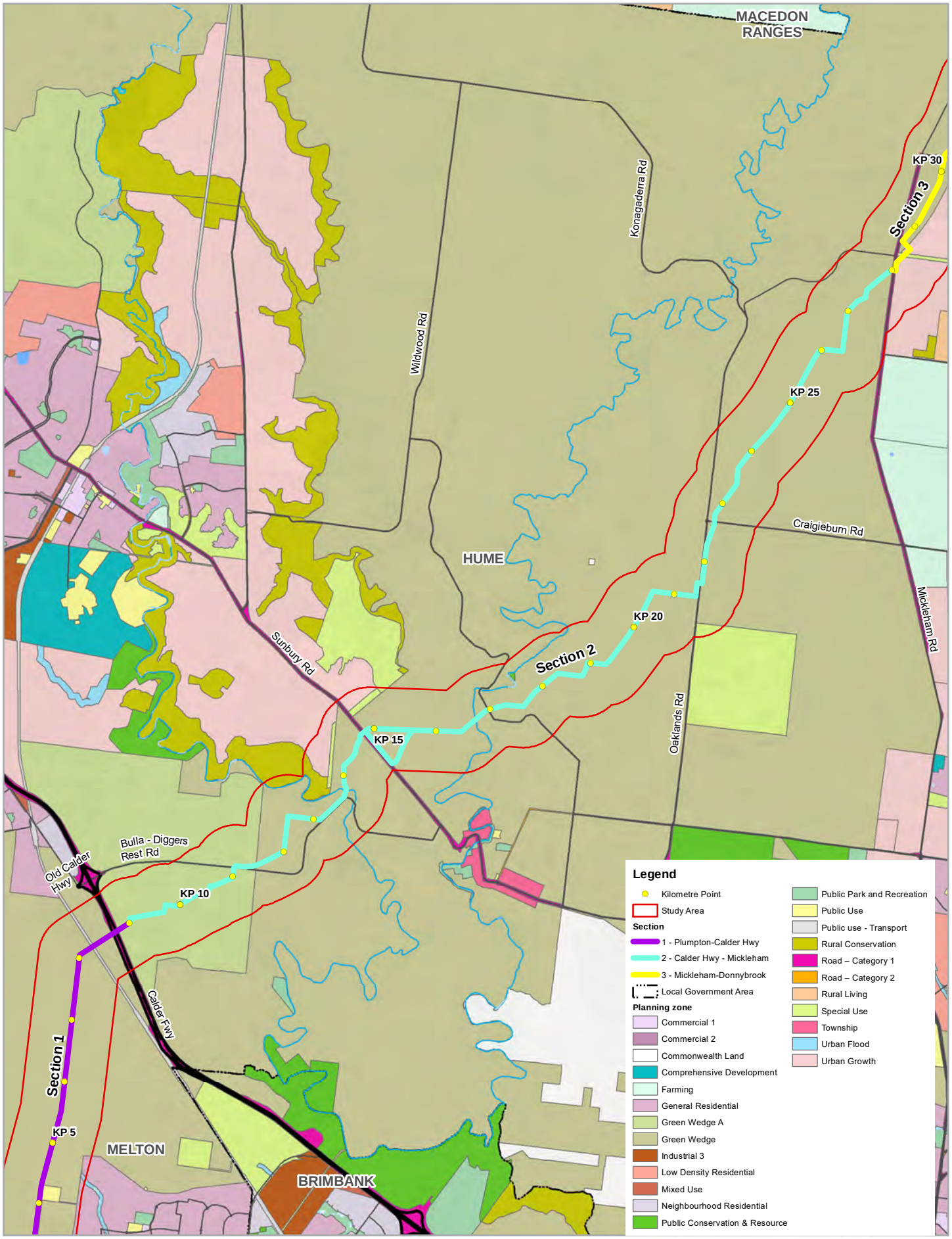
Planning zone	Application
Hume Planning Scheme	
Road Zone Category 1 (RDZ1)	The Calder Hwy, Sunbury Road and Mickleham Road are zoned RDZ1.
Road Zone Category 2 (RDZ2)	Oaklands Road is zoned RDZ2.
Green Wedge A Zone (GWAZ)	The area within the Sunbury green wedge immediately east of Diggers West and south of Sunbury is zoned GWAZ.
Green Wedge Zone (GWZ)	The majority of Section 2 is within the Sunbury green wedge and is subsequently zoned GWZ.
Rural Conservation Zone (RCZ)	The RCZ is applied to part of Jacksons Creek, as part of the conservation areas specified in the Sunbury South PSP (congruent with the IPO3 and IPO4).
Urban Growth Zone – Schedule 9 (UGZ9)	The UGZ is applied to the area subject to the Sunbury South PSP.
Special Use Zone – Schedule 1 (SUZ1)	The SUZ1 (Earth and Energy Resources Industry) is applied to the Hi-Quality Victoria Pty Ltd quarry and the Oaklands quarry.
Special Use Zone – Schedule 9 (SUZ9)	The high voltage electricity easements within the Sunbury South PSP are zoned SUZ9.
Public Conservation and Resource Zone (PCRZ)	The Bulla Streamside Reserve along Deep Creek is zoned PCRZ.

Table 6-7 Planning overlays applicable to Section 2

Planning overlay	Application
Hume Planning Scheme	
Public Acquisition Overlay – Schedule 3 (PAO3)	The PAO3 reserves land for the purposes of the future OMR /E6 transport corridor.
Public Acquisition Overlay – Schedule 2 (PAO2)	The PAO2 reserves land for the purposes of the future road construction and widening.
Melbourne Airport Environs Overlay – Schedule 1 (MAEO1)	The MAEO1 applies to "areas that are or will be subject to high levels of aircraft noise based on the 25 Australian Noise Exposure Forecast (ANEF) contour".
Melbourne Airport Environs Overlay – Schedule 2 (MAEO2)	The MAEO2 applies to "areas that are or will be subject to moderate levels of aircraft noise based on the 20-25 Australian Noise Exposure Forecast (ANEF) contours".
Environmental Significance Overlay – Schedule 1 (ESO1)	The ESO1 is applied to several waterways and their surrounds within the Project Area.
Environmental Significance Overlay – Schedule 10 (ESO10)	The ESO10 is applied to rural conservation areas, being along Emu Creek adjacent to the existing Hi-Quality Victoria quarry.
Environmental Significance Overlay – Schedule 11 (ESO11)	The ESO11 is applied to the River Red-Gum and Grassy Woodlands area. This applies to land along Mickleham Road east of the Study Area.
Incorporated Plan Overlay – Schedule 3 (IPO3)	The IPO3 is applied to conservation area(s) under the Sunbury South PSP.
Incorporated Plan Overlay – Schedule 4 (IPO4)	The IPO4 is applied to conservation area(s) under the Sunbury South PSP.
Bushfire Management Overlay (BMO)	The BMO generally applies to areas around Emu Creek and Deep Creek to the southeast of Wildwood.
Infrastructure Contributions Overlay – Schedule 1 (ICO1)	The Sunbury South and Lancefield Road Infrastructure Contributions Plan is applied via the ICO1.
Specific Controls Overlay – Schedule 10 (SCO10)	The SCO10 applies the controls within the *Sunbury Road (Powlett Street to Bulla-Diggers Rest Road) Upgrade Project, Incorporated Document, October 2019* to Sunbury Road.
Heritage Overlay 24 (HO24)	The HO24 applies to the Wildwood Road Bridge (over Deep Creek) along Wildwood Road.
Heritage Overlay 29 (HO29)	The HO29 applies to the Holden Ford & Bridge (over Jacksons Creek) along Bulla-Diggers Rest Road, Diggers Rest.
Heritage Overlay 233 (HO233)	The HO233 applies to Oakbank (barn, dairy and tank) at 185 Bulla-Diggers Rest Road, Diggers Rest.
Heritage Overlay 261 (HO261)	The HO261 applies to Tulloch Outbuilding (former Cheese Factory ruin) at 30 Farleigh court, Mickleham.
Heritage Overlay 268 (HO268)	The HO268 applies to Brookville, at 65 Kongaderra Road, Oaklands Junction.
Heritage Overlay 271 (HO271)	The HO271 applies to Oaklands, at 380 Oaklands Road, Oaklands.

Planning overlay	Application
Heritage Overlay 272 (HO272)	The HO272 applies to the Oaklands Quarry, at 380 Oaklands Road, Oaklands.
Heritage Overlay 273 (HO273)	The HO273 applies to Warlaby, at 395 Oaklands Road, Oaklands.
Heritage Overlay 390 (HO390)	The HO390 applies to Willow Bank (former Craig Bank) at 400 Wildwood Road, Wildwood.

Refer to Figure 14 for a map of planning zones, and Figure 15 for a map of planning overlays.



Paper Size ISO A4

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Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

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Western Outer Ring Main Gas Project

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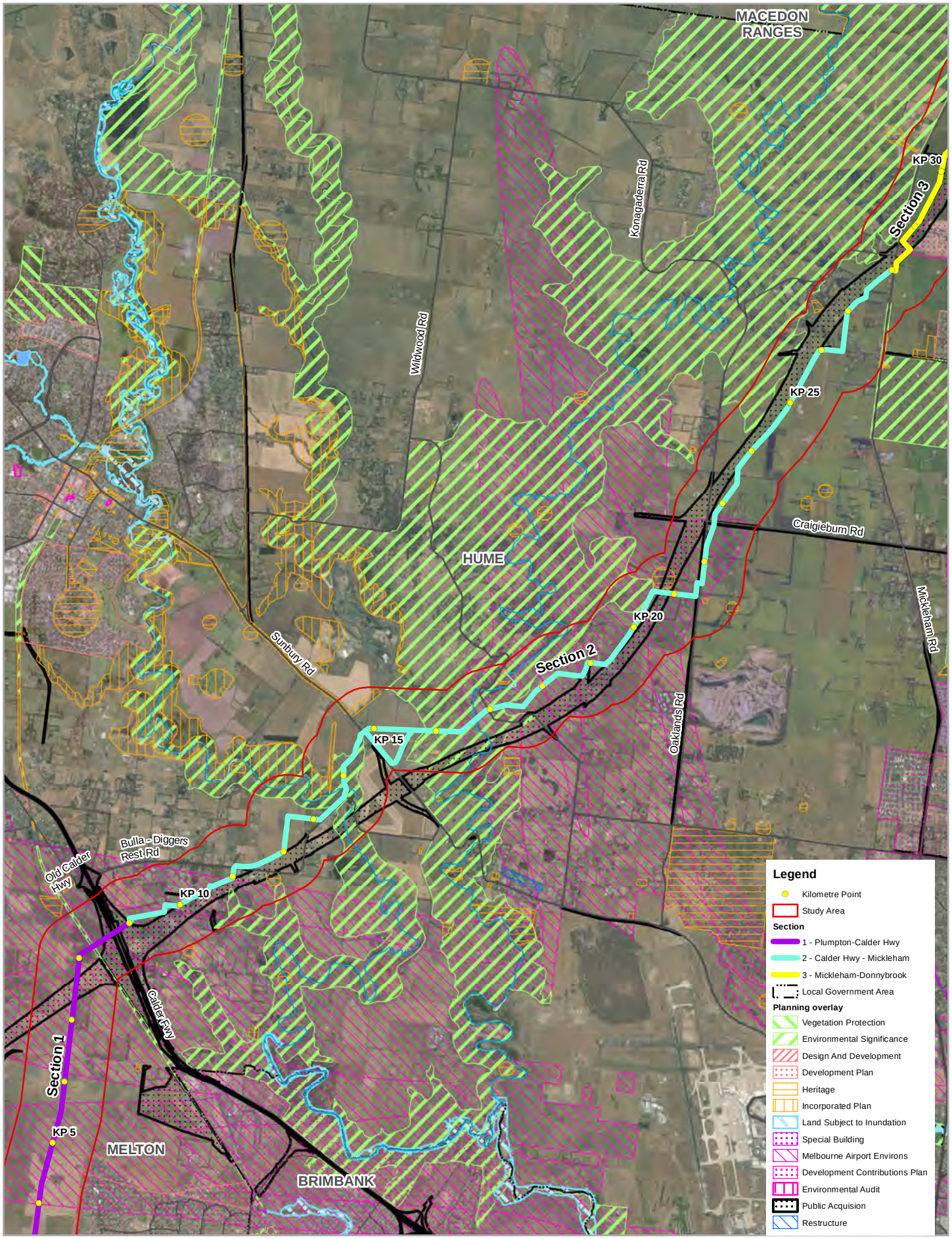
Planning Zones

Figure 14

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner



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Kilometers

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Western Outer Ring Main Gas Project

Project No. 31-12529997
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Date 04/03/2021

Planning Overlays

Figure 15

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner

6.4 Section 3 – Mickleham to Donnybrook (KP 28-46.9)

The section from Mickleham to Donnybrook traverses the Hume, Mitchell and Whittlesea Councils. The route adjoins two green wedges (the Sunbury green wedge to the west, and the Whittlesea green wedge to the east), and is otherwise wholly within Melbourne's northern growth corridor. The Project also crosses the North Eastern rail line reserve and the Hume Freeway within Section 3.

At this location, the route is primarily located within or adjacent to the future OMR/E6 Transport corridor route, which is subject to a Public Acquisition Overlay. Reasonably foreseeable future land uses accounted for in the Donnybrook-Woodstock PSP took into account the existing gas pipeline easement, although the PSP does not specifically provide for this Project.

Land uses in this section are currently predominantly rural and agricultural in nature, however they will gradually transition to urban residential in the future. A number of PSPs have been approved or are in development along the route within this section, including the Lindum Vale, Merrifield West, Merrifield North, Lockerbie North, Lockerbie, Donnybrook-Woodstock and Shenstone Park PSPs (refer to Table 6-8 below for discussion of the relevant PSPs).

Land within this section is predominantly privately held, with the exception of a parcel of land north of Kalkallo, roadways, the North Eastern rail line reserve, and Merri Creek. In this section, 74% (14 km)of the Project is not within an existing easement, with the remaining 26% (4.9 km) in an existing easement.

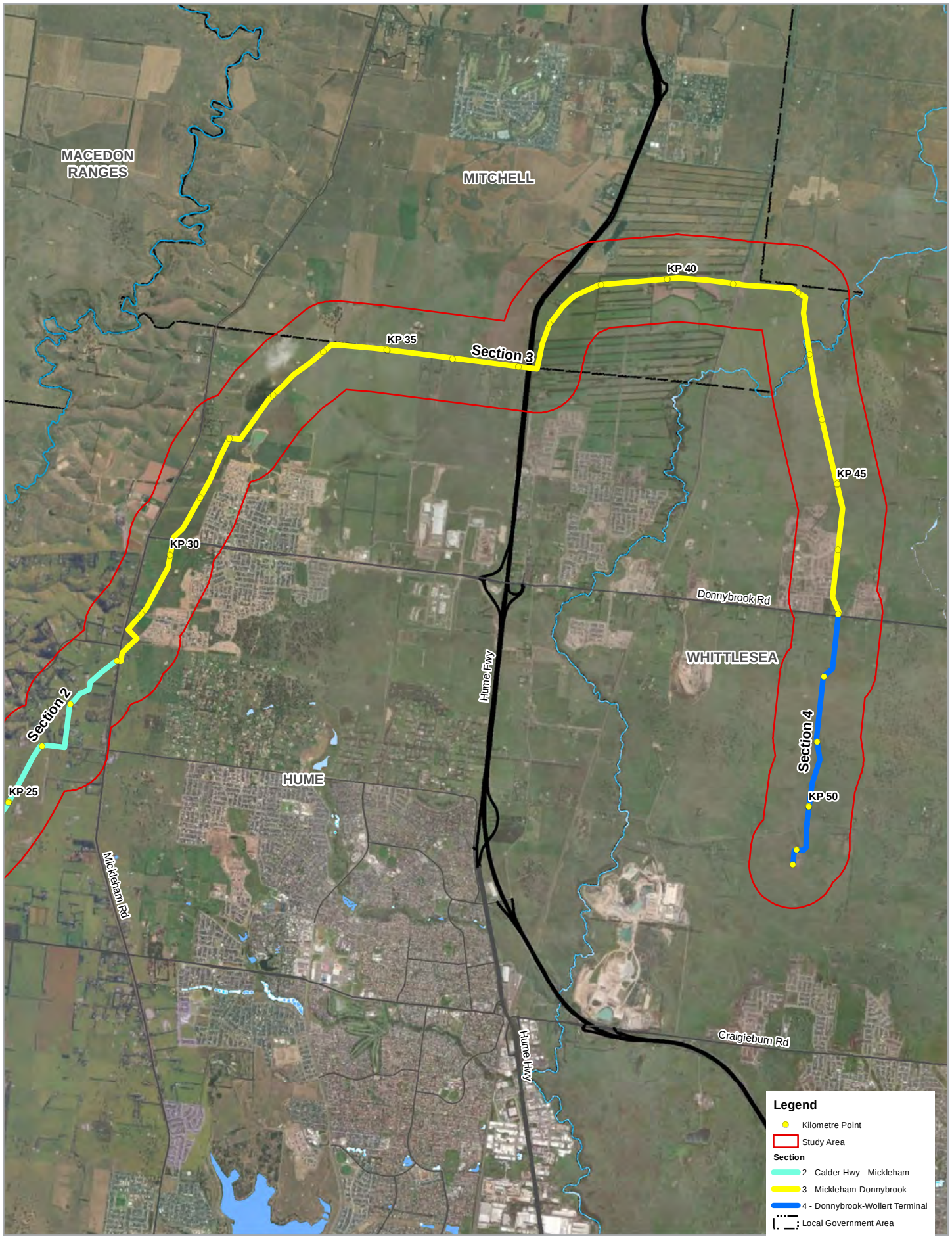
Refer to Figure 16 for an overview of Section 3, Figure 17 for an overview of public and Crown land, and Figure 18 for PSPs within Section 3.

Table 6-8 PSPs in Section 3 – Mickleham to Donnybrook

PSP	LGA	Discussion
Lindum Vale PSP	Hume	The Lindum Vale PSP was gazetted in July 2019 and applies to land bordered by Mt Ridley Road to the south, Mickleham Road to the west, the Merrifield West PSP to the north, and the suburb of Mickleham to the east. At this location, the Project is within or directly beside the Public Acquisition Overlay for the OMR/E6 Transport corridor, which is defined and protected within the PSP. The PSP does not include the Project within its underlying plans, objectives or requirements. Land adjacent to the future pipeline is shown to be developed for residential land uses and open space, with a utilities easement (electricity transmission) also adjoining the works footprint at the northern extent. Assessment of native vegetation within land subject to this PSP is via the *Lindum Vale Native Vegetation Precinct Plan (September 2018)* under Clause 52.16.

PSP	LGA	Discussion
Merrifield West PSP	Hume	The Merrifield West PSP was gazetted in June 2018, after the initial Merrifield West Structure Plan was approved by the Minister for Planning in June 2012. It applies to land bordered by the OMR/E6 Transport corridor PAO to the west, the future Merrifield North PSP to the north, the Merrifield Central Employment and Folkstone Employment Area PSPs to the east, and Mickleham to the south. At this location, the Project is within or adjacent to the Public Acquisition Overlay for the OMR/E6 Transport corridor, which is defined and protected within the PSP. The PSP does not include the Project within its underlying plans, objectives or requirements. Following alterations to the initial alignment identified through discussions between DoT and APA, the alignment will largely be located on the western side of the PAO for the OMR /E6 Transport Corridor and will not directly abut the Merrifield West PSP until KP 32, where the alignment will cross the OMR /E6 Transport Corridor and then run along the east, within the PAO boundary. The PSP indicates that the future land use directly along the Project will be “conventional density residential”, with open space, education, mixed use, town centre and community facility uses also located within the study area. For assessment of native vegetation within land subject to this PSP, the *Merrifield West Native Vegetation Precinct Plan (March 2012)* is relevant (ordinarily under Clause 52.16), while also being subject to the MSA area approvals.
Merrifield North Employment PSP	Hume Mitchell	Planning and background studies are currently underway for the proposed Merrifield North Employment PSP, which lies across both Hume and Mitchell councils. No documents or background investigations are publicly available.
Beveridge South West PSP	Mitchell	Beveridge South West PSP is a proposed PSP to the north of the Merrifield North Employment PSP. Commencement of the PSP and background investigations has not yet been scheduled by the VPA.
Lockerbie North PSP	Mitchell Whittlesea	The Lockerbie North PSP was gazetted in June 2012 and is bordered by the Beveridge Township to the west, and the future OMR /E6 Transport corridor to the south. The PSP does not directly interface with the Project area, however its southern extent is within the study area. The PSP indicates that the future land use within the study area will be “conventional density residential”, along with two water retarding basins. Assessment of native vegetation within land subject to this PSP is via the *Lockerbie North Native Vegetation Precinct Plan (March 2012)* under Clause 52.16.

PSP	LGA	Discussion
Lockerbie PSP	Mitchell Hume Whittlesea	The Lockerbie PSP was gazetted in June 2012, and applies to land generally bordered by the township of Kalkallo to the southwest, the future OMR /E6 Transport corridor to the north, Merri Creek to the east, and Donnybrook Road to the south. At this location, the WORM works footprint is at the southern extent of the Public Acquisition Overlay for the OMR /E6 Transport corridor. The PSP does not include the Project within its underlying plans, objectives or requirements. The PSP indicates that future land uses directly adjacent to the works footprint will be “conventional residential”, with other land uses within the study area including education, open space, and commercial uses. Assessment of native vegetation within land subject to this PSP is via the *Lockerbie Native Vegetation Precinct Plan (May 2012)* under Clause 52.16.
Northern Freight PSP	Mitchell Whittlesea	The proposed Northern Freight PSP is to the north of the Donnybrook-Woodstock PSP, and east of the Melbourne-Sydney rail corridor. Commencement of the PSP and background investigations has not yet been scheduled by the VPA.
Donnybrook-Woodstock PSP	Mitchell Whittlesea	The Donnybrook-Woodstock PSP was gazetted in November 2017, and is bordered by the future OMR /E6 Transport corridor to the north and east, Donnybrook Road to the south, and the Melbourne-Sydney rail corridor to the west. The existing gas pipeline easement at this location is provided for in the PSP. Guidelines within the PSP specify that subdivision design adjacent should ensure road crossings are at 90 degrees to the pipeline. There is also provision for a shared use path along the gas pipeline, with designs shown at Page 91, which shows a shared use path over the easement, and carriageways adjacent acting as a buffer between the easement at residential properties. Adjacent land uses shown in the PSP will be predominantly residential, with some water retarding basins, and a conservation area associated with Merri Creek at the northern extent of the PSP. Assessment of native vegetation within land subject to this PSP is under the Melbourne Strategic Assessment pursuant to the EPBC Act, except where native vegetation or scattered trees are identified as ‘to be retained’ in Plan 9 of the Donnybrook-Woodstock PSP.



Paper Size ISO A4

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Kilometers

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Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

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APA VTS (Operations) Pty Ltd
Western Outer Ring Main Gas Project

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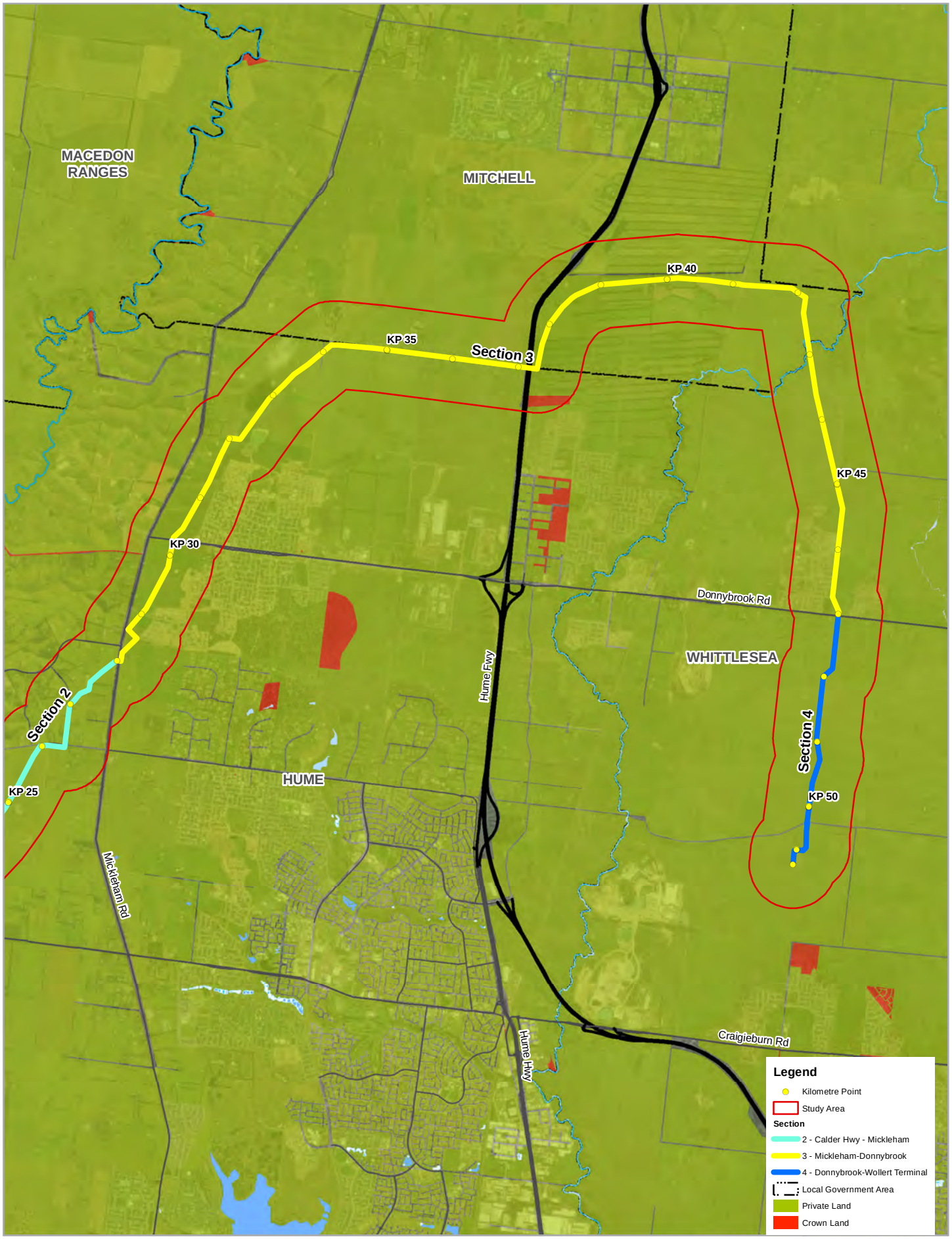
Pipeline Sections

Figure 16

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner



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Kilometers

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APA VTS (Operations) Pty Ltd
Western Outer Ring Main Gas Project

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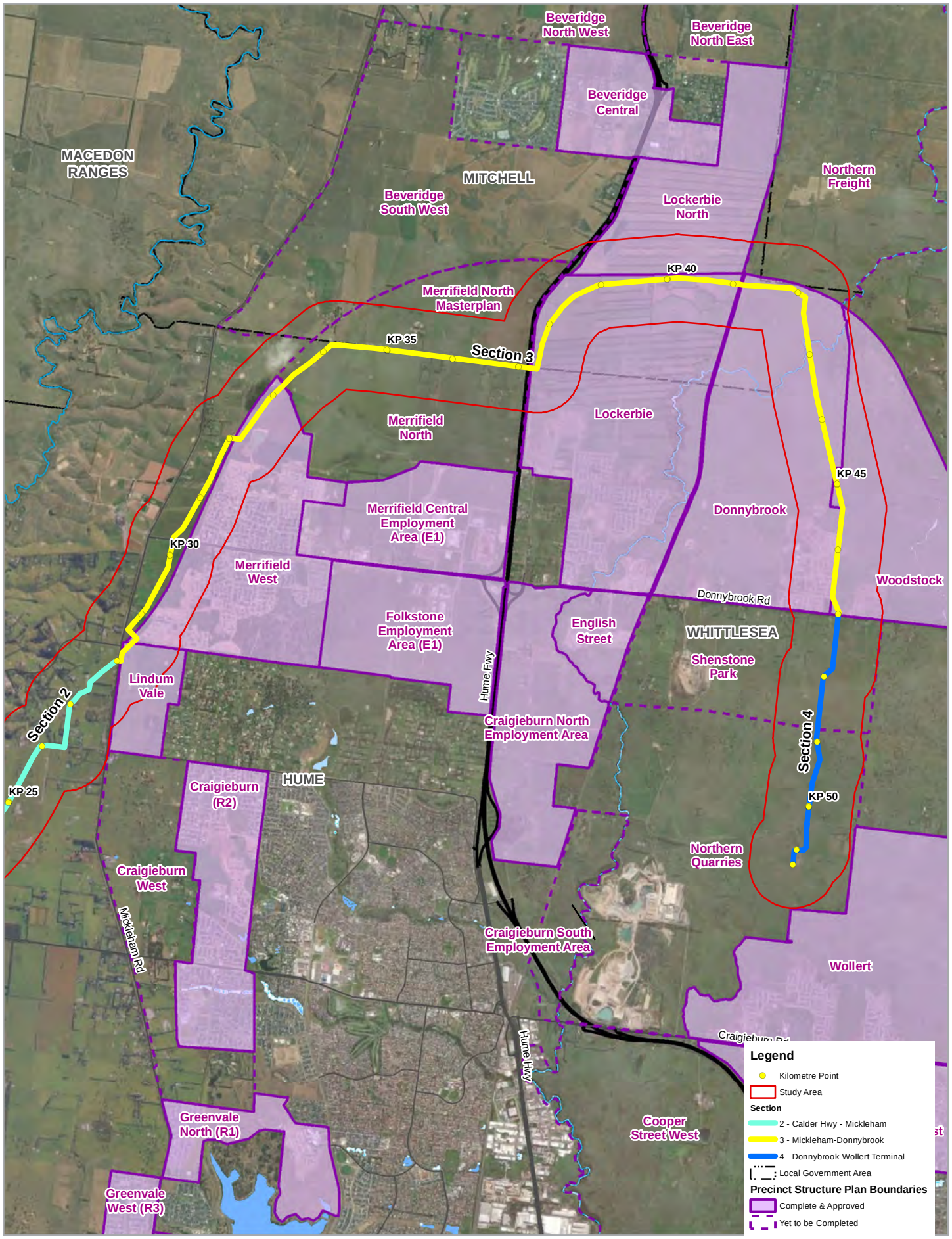
Date 04/03/2021

Crown Land

Figure 17

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner



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Kilometers

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Horizontal Datum: GDA 1994
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Precinct Structure Plan

Figure 18

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner

6.4.1 Residential

Residential uses are currently more prevalent in this section than other sections, with some rural residential land uses present within land adjacent to the pipeline within land zoned Green Wedge Zone to the east and west. At some locations along this section, where land is within the urban growth boundary, development in accordance with PSPs has begun and residential land uses are more intense (though still suburban in nature), particularly at Merrifield West and Donnybrook-Woodstock.

Residential land use within this section will continue to increase in intensity into the future, as land within the urban growth boundary transitions from rural farming land, to urban residential land. In contrast, land to the west, within the Sunbury green wedge, and land to the east, within the Whittlesea green wedge, will remain rural in nature, with rural residential uses expected to persist.

The Project would not intersect any existing or planned residential development, but will abut conventional density residential uses in the future as per the planned uses described in the applicable PSPs. Generally this will be in locations where the pipeline easement and measurement length or Area of Consequence has or will be incorporated into PSPs.

The exceptions are at Lindum Vale and Merrifield West PSPs, where the pipeline and its pipeline measurement length is not reflected in the plans and policies set out in these PSPs. At these locations, the pipeline is within the PAO for the OMR /E6 Transport Corridor. From KP 28.5-32 the alignment travels along the western edge of the PAO and does not directly abut residential areas, except for KP 28-28.5 (Lindum Vale) and KP 32-33.3 (Merrifield West) where the alignment is on the eastern edge of the PAO. Refer to Table 6-8 for a discussion of PSPs along the pipeline corridor in section 3.

Figure 19 shows the view south-west of dwellings along Inkerman Crescent, Mickleham.

Figure 19 View south-west of dwellings along Inkerman Crescent, Mickleham

6.4.2 Agricultural

Agricultural land uses are currently a predominant feature along the Project in this section, and are varied in nature are varied, from grazing and livestock, to equestrian-based land uses, and cropping. Land to the west, within the Sunbury green wedge, and land to the east, within the Whittlesea green wedge, is expected to remain rural and agricultural into the future.

A small portion of the alignment (approximately KP 28.5-32) is within the Green Wedge Zone. However, the alignment will be co-located along the OMR /E6 Transport Corridor at this location and is therefore not expected to increase cumulative impacts to agricultural land.

Clause 21.06-1 Agriculture of the Whittlesea MSS aims to 'secure and promote the ongoing productive capacity of the Whittlesea Green Wedge for sustainable agriculture and resource utilisation into the future', including protecting rural land from urban intrusion and land fragmentation, which is echoed at Clause 21.01-2 of the Hume MSS, and Clause 21.05-1 of the Mitchell MSS.

However, agricultural uses are not expected to persist within land located within the urban growth boundary, which is subject to future residential developments under approved PSPs (refer to Table 6-8).

6.4.3 Open space and conservation

Formal public open space is currently provided the study area at this section at Merrifield Park, Annandale Park and Foundation Park (all within the Merrifield West PSP).

Further open space is also outlined in the approved PSPs within this section, including the Lindum Vale, Lockerbie, Lockerbie North, and Donnybrook-Woodstock PSPs, in the form of conservation areas around Merri Creek, local parks, and local sports reserves.

In Section 3, the entirety of the Project has previously been assessed for biodiversity and conservation values as part of the MSA and PSP processes. Generally, due to being in a growth area and being aligned with the OMR /E6 Transport corridor and Gunns Gully Road at this section, the pipeline does not impact conservation values that are reasonably expected to be maintained into the future.

The exception to the above is at Merri Creek, where the Project will cross an area identified under the MSA to be protected as a conservation area (Conservation Area 34a – Northern Growth Corridor for Growling Grass Frog Corridor conservation). At this location, the pipeline will utilise an existing pipeline easement.

For discussion of conservation and biodiversity impacts, please refer to the Biodiversity Technical Report (Technical Report A).

6.4.4 Commercial

Commercial uses are currently largely absent throughout this section, no land is zoned Commercial 1 Zone or Commercial 2 Zone, and there are no commercial uses directly located within the construction footprint.

There are some minor food and retail services in the study area within the constructed areas of the Merrifield West PSP and the Lockerbie PSP, with some additional food and highway service centres also located to the south of the study area along the Hume Highway in the township of Kalkallo. Major commercial land uses are generally located to the south of the study area in Craigieburn.

6.4.5 Industrial and extractive industries

Industrial and extractive industry-based uses are largely absent from this section, with no land zoned for industry or extractive industry uses, and no provision for industrial land uses in the relevant PSPs at present (noting that the Merrifield North Employment PSP is not yet at draft stage).

Quarries to the south of Donnybrook Road are discussed below within Section 4.

6.4.6 Community facilities

There are some community facilities available within the study area, including:

- Kool Kidz Childcare Merrifield (Merrifield West PSP)
- Happy Hippo Childcare (Merrifield West PSP)
- Annadale Family Medical Centre (Merrifield West PSP)
- Annadale Interim Community Centre (Merrifield West PSP)
- Hume Anglican Grammar Donnybrook Campus (Donnybrook-Woodstock PSP)

There are no community facilities directly within or adjacent to the construction footprint. There is a childcare centre (Kool Kidz Childcare Merrifield) located approximately 640 m from the centre of the pipeline alignment, 160 m north of Donnybrook Road.

Community services are generally available in Craigieburn to the south, and within the Lockerbie PSP area at the intersection of Donnybrook Road and the Hume Highway.

6.4.7 Transport and infrastructure

Section 3 crosses or runs parallel to some minor local roads within this section, including Gunns Gully Road, which the Project travels alongside and where MLV3 will be located. It is noted that Gunns Gully Road is planned to be upgraded to an arterial road in the future.

DoT managed roads crossed at this section include Mickleham Road and the Hume Highway, while the Project also crosses the Melbourne-Sydney Railway Line, managed by VicTrack.

The Project is located partially alongside the PAO for the future OMR /E6 Transport corridor at this section. Other future roads which the Project intersects with include the future Aitken Boulevard (designated as a key local access street in the Merrifield West PSP) and an unnamed planned arterial road within the Lockerbie PSP.

Utilities within the Project area include a number of low voltage electricity assets, managed by Jemena to the west and AusNet to the east, along with various water, telecommunications and sewer assets. The Project also crosses a high voltage powerline easement near Mickleham Road, and is entirely within an existing APA gas easement to the east of the Hume Highway.

6.4.8 Planning context

Planning zones and overlays within in Section 3 are summarised in Table 6-9 and Table 6-10.

Table 6-9 Planning zones within Section 3

Planning zone	Application
Hume Planning Scheme	
Road Zone Category 1 (RDZ1)	The RDZ1 applies to Mickleham Road, Donnybrook Road and the Hume Highway.
Green Wedge Zone (GWZ)	Land zoned GWZ is generally to the west of the Project through to Gunns Gully Road, and is part of the Sunbury green wedge.
Special Use Zone - Schedule 11 (SUZ11)	The SUZ11 applies to land for the high voltage electricity easement defined within the Lindum Vale PSP.
Urban Growth Zone – Schedule 11 (UGZ11)	The UGZ11 applies to land subject to the Lindum Vale PSP.
Urban Growth Zone – Schedule 4 (UGZ4)	The UGZ4 applies to land subject to the Merrifield West PSP.
Urban Growth Zone (UGZ)	The UGZ is located to the north of the Merrifield West PSP. The VPA is currently undertaking background studies to prepare the Merrifield North Employment PSP for this area.
Urban Growth Zone – Schedule 5 (UGZ5)	The UGZ5 applies to land subject to the Merrifield West PSP.
Public Use Zone 1 – Service & Utility (PUZ1)	The PUZ1 applies to the Kalkallo Retarding Basin.
Mitchell Planning Scheme	
Urban Growth Zone (UGZ)	The UGZ is located to the north of the Merrifield West PSP. The VPA is currently undertaking background studied to prepare the Merrifield North Employment PSP for this area.

Planning zone	Application
Farming Zone (FZ)	The area zoned FZ within Mitchell is a small area directly north of the PUZ1 in the Hume planning scheme. This area will be incorporated into the Merrifield North Employment PSP in the future.
Urban Floodway Zone (UFZ)	The UFZ applies to some waterways prone to flooding to the north of the Project.
Road Zone Category 1 (RDZ1)	The RDZ1 applies to the Hume Highway.
Urban Growth Zone – Schedule 1 (UGZ1)	The UGZ1 applies to land subject to the Lockerbie PSP.
Urban Growth Zone – Schedule 2 (UGZ2)	The UGZ2 applies to land subject to the Lockerbie North PSP.
Rural Conservation Zone (RCZ)	The RCZ applies both to land defined as a conservation area within the Lockerbie PSP, and land adjacent to Merri Creek within the Lockerbie and Donnybrook-Woodstock PSPs.
Public Use Zone 4 – Transport (PUZ4)	The Melbourne-Sydney railway line is zoned PUZ4.
Urban Growth Zone – Schedule 4 (UGZ4)	The UGZ4 applies to land subject to the Donnybrook-Woodstock PSP.
Whittlesea Planning Scheme	
Rural Conservation Zone (RCZ)	The RCZ applies both to land adjacent to Merri Creek and other land defined as a conservation area within the Donnybrook-Woodstock PSP.
Urban Growth Zone – Schedule 6 (UGZ6)	The UGZ6 applies to land subject to the Donnybrook-Woodstock PSP.
Farming Zone (FZ)	The FZ applies to land north of the Project, within the Project Area.
Road Zone Category 1 (RDZ1)	The RDZ1 applies to Donnybrook Road.
Green Wedge Zone (GWZ)	The GWZ applies to land east of the Project, within the Study Area.

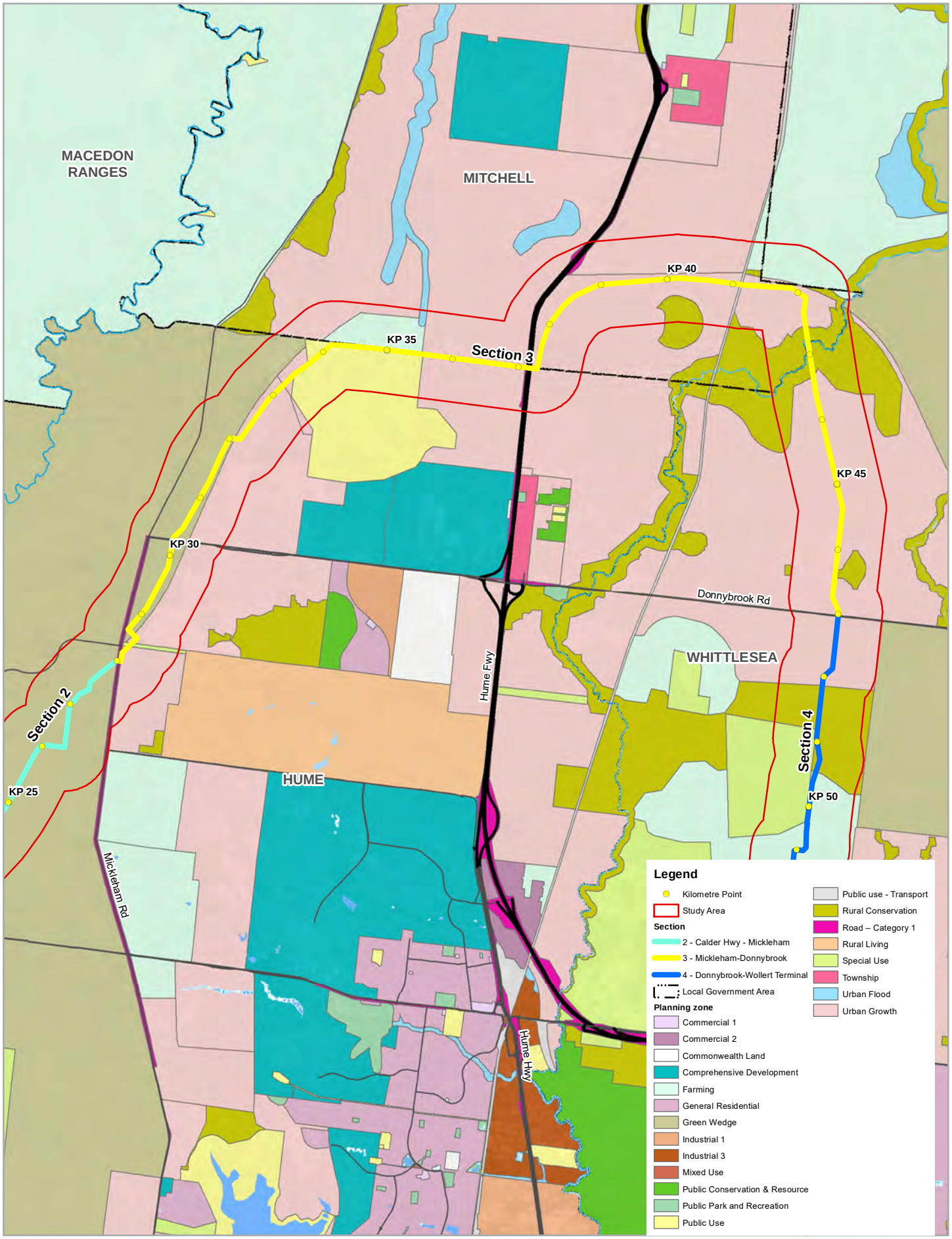
Table 6-10 Planning overlays within Section 3

Planning overlay	Application
Hume Planning Scheme	
Public Acquisition Overlay – Schedule 3 (PAO3)	The PAO3 reserves land for the purposes of the future OMR /E6 transport corridor.
Infrastructure Contributions Overlay – Schedule 2 (ICO2)	The ICO2 implements the Lindum Vale Infrastructure Contributions Plan October 2019, and generally applies to the Lindum Vale PSP area.
Development Contributions Plan Overlay – Schedule 4 (DCPO4)	The DCPO4 implements the Merrifield West PSP Development Contributions Plan, and generally applies to the Merrifield West PSP area.

Planning overlay	Application
Environmental Significance Overlay – Schedule 1 (ESO1)	Land adjacent to Deep Creek to the west of the Project has the ESO1 applied.
Land Subject to Inundation Overlay (LSIO)	The LSIO applies to the Kalkallo Retarding Basin.
Public Acquisition Overlay – Schedule 1 (PAO1)	The PAO1 reserves land for road widening by the Roads Corporation, along the Hume Highway.
Development Contributions Plan Overlay – Schedule 5 (DCPO5)	The DCPO5 implements the Lockerbie Development Contributions Plan and generally applies to the Lockerbie PSP area.
Heritage Overlay 262 (HO262)	The HO262 applies to Bleak House (ruin) at 155 Gunns Gully Road, Mickleham, south of the Project.
Heritage Overlay 264 (HO264)	The HO264 applies to Marnong at 155 Old Sydney Road, Mickleham, west of the Project.
Rural Floodway Overlay (RFO)	The RFO is applied along Merri Creek.
Mitchell Planning Scheme	
Public Acquisition Overlay – Schedule 5 (PAO5)	The PAO5 reserves land for road widening by the Roads Corporation, along the Hume Highway.
Public Acquisition Overlay – Schedule 7 (PAO7)	The PAO7 reserves land for the purposes of the future OMR /E6 transport corridor.
Public Acquisition Overlay – Schedule 8 (PAO8)	The PAO8 reserves land for the purposes of the rail connections component of the future OMR /E6 Transport Corridor.
Public Acquisition Overlay – Schedule 9 (PAO9)	The PAO9 reserves land for the Amaroo and Lockerbie Main Sewer Project by Yarra Valley Water.
Vegetation Protection Overlay – Schedule 2 (VPO2)	The VPO2 (Freeway Environs Protection) applies to land either side of the Hume Highway.
Environmental Significance Overlay – Schedule 3 (ESO3)	The ESO3 is for watercourse conservation, and it applies to a small area adjacent to Merri Creek and the border with Whittlesea.
Environmental Significance Overlay – Schedule 4 (ESO4)	The ESO4 is for rural conservation, and it applies to a small area adjacent to Merri Creek and the border with Whittlesea.
Environmental Significance Overlay – Schedule 6 (ESO6)	The ESO6 is for urban conservation, and it generally applies to land adjacent to Merri Creek (congruent with the RCZ and IPO3), to the south of the ESO3 and ESO4.
Land Subject to Inundation Overlay (LSIO)	The LSIO is applied along Merri Creek.
Development Contributions Plan Overlay – Schedule 1 (DCPO1)	The DCPO1 implements the Lockerbie Development Contributions Plan.
Development Contributions Plan Overlay – Schedule 2 (DCPO2)	The DCPO2 implements the Lockerbie North Development Contributions Plan.
Infrastructure Contributions Overlay – Schedule 1 (ICO1)	The ICO implements the Donnybrook-Woodstock Infrastructure Contributions Plan, April 2019.

Planning overlay	Application
Incorporated Plan Overlay – Schedule 3 (IPO3)	The IPO3 implements the Donnybrook-Woodstock Precinct Structure Plan – Biodiversity Conservation Strategy Areas incorporated document. It is generally congruent with the ESO6 and RCZ and lies along Merri Creek.
Vegetation Protection Overlay – Schedule 2 (VPO2)	The VPO2 is implemented to protect Freeway Environs. The VPO2 is located along Hume Fwy.
Whittlesea Planning Scheme	
Incorporated Plan Overlay – Schedule 6 (IPO6)	The IPO3 implements the Donnybrook-Woodstock Precinct Structure Plan – Biodiversity Conservation Strategy Areas incorporated document. It is generally congruent with the ESO6 and RCZ and lies along Merri Creek.
Environmental Significance Overlay – Schedule 3 (ESO3)	The ESO3 is for 'Merri Creek and Environs' and generally applies to Merri Creek through to its junction with the future OMR /E6 Transport corridor.
Environmental Significance Overlay – Schedule 4 (ESO4)	The ESO4 is for rural conservation, and generally applies to Merri Creek through to its junction with the future OMR /E6 Transport corridor.
Environmental Significance Overlay – Schedule 6 (ESO6)	The ESO6 is for urban conservation, and it generally applies to land adjacent to Merri Creek to the south of the future junction with the OMR /E6 Transport corridor, through to the Melbourne-Sydney railway line (congruent with the RCZ).
Infrastructure Contributions Overlay – Schedule 1 (ICO1)	The ICO implements the Donnybrook-Woodstock Infrastructure Contributions Plan, April 2019.
Public Acquisition Overlay – Schedule 2 (PAO2)	The PAO2 reserves land for road widening along Donnybrook Road by VicRoads.
Public Acquisition Overlay – Schedule 6 (PAO6)	The PAO6 reserves land for the purposes of the future OMR /E6 transport corridor.
Public Acquisition Overlay – Schedule 7 (PAO7)	The PAO7 reserves land for the purposes of the rail connections component of the future OMR /E6 Transport Corridor.
Rural Floodway Overlay (RFO)	The RFO is applied along Merri Creek.
Heritage Overlay 186 (HO186)	The HO186 is applied to Donnybrook Road Homestead at 1145 Donnybrook Road, Donnybrook, east of the Project.

Refer to Figure 20 for a map of planning zones, and Figure 21 for a map of planning overlays.



Paper Size ISO A4

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Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

APA VTS (Operations) Pty Ltd
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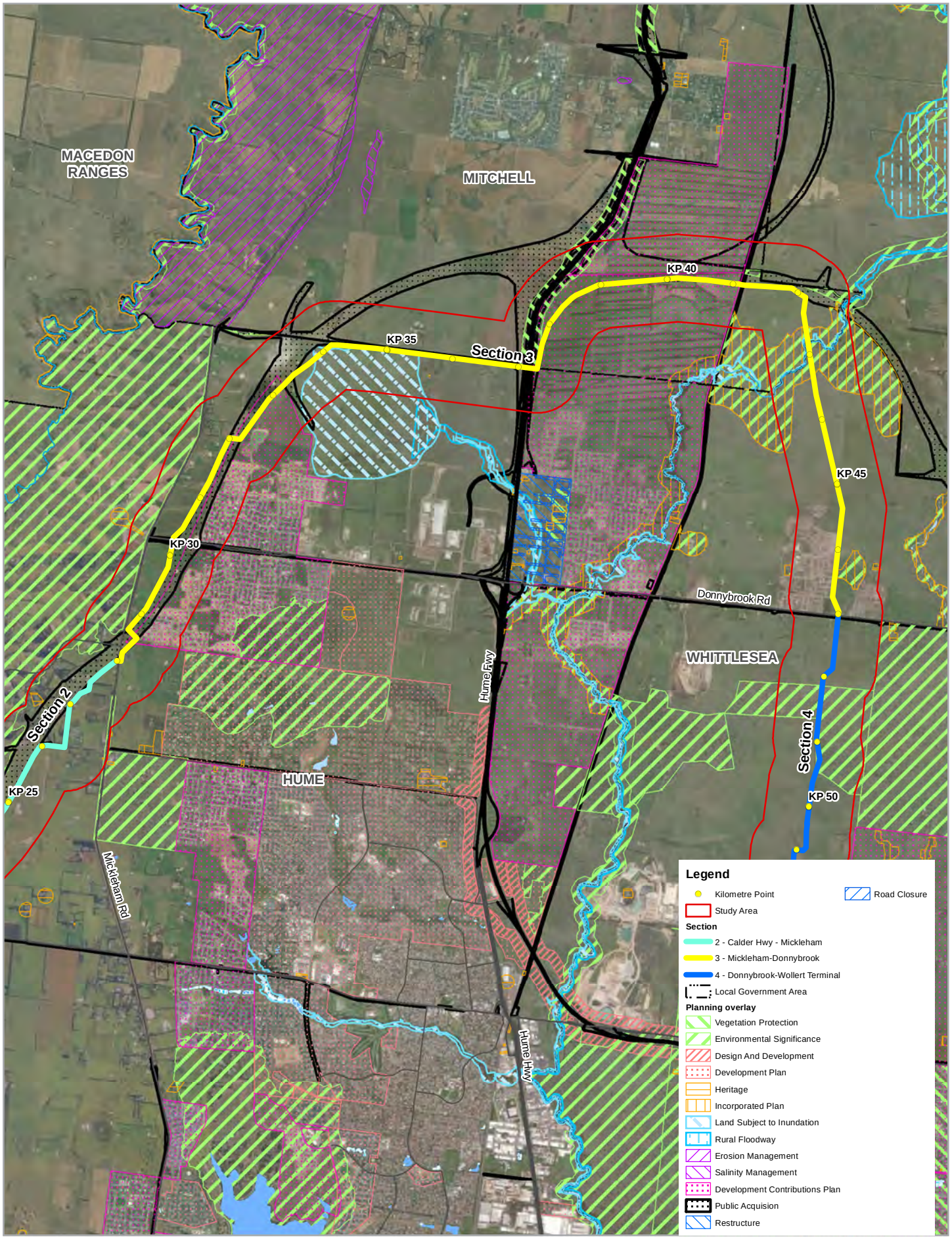
Planning Zones

Figure 20

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner



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Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

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Planning Overlays

Figure 21

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner

6.5 Section 4 – Donnybrook to Wollert Compressor Station (KP 46.9-51.0)

This section extends approximately 3.8km from Donnybrook Road through to the terminus of the Project at Wollert, entirely within the City of Whittlesea local government area.

This section, while within the urban growth boundary, is not subject to any current PSPs, and is zoned Urban Growth Zone, Rural Conservation Zone – Schedule 1, Special Use Zone – Schedule 4, and Farming Zone. Land uses within the area are currently agricultural or extractive industry-based, with an absence of commercial, industrial, community and open space uses, along with the existing APA Wollert Compressor Station.

One PSP is currently in development for the area subject to the Urban Growth Zone (refer to Table 6-11).

Land within this section is entirely privately held, with the exception of roadways. At this section, the route is entirely within an existing gas pipeline easement or land where APA has existing tenure (Wollert Compressor Station).

Refer to Figure 22 for an overview of Section 4, Figure 20 for an overview of public and Crown land, and Figure 24 for a review of PSPs within Section 1.

Table 6-11 PSPs in Section 4 – Donnybrook to Wollert

PSP	LGA	Discussion
Shenstone Park PSP	Whittlesea	The Shenstone Park PSP is currently in preparation, and was exhibited to the public in late 2019, with submissions being reviewed by the VPA at the time of writing this report. The area subject to the proposed PSP is bordered by the Donnybrook-Woodstock PSP to the north and the Melbourne-Sydney train line to the west. The draft PSP (September 2019) provides for the existing gas pipeline easement at this location, with land use patterns described in the draft PSP being influenced by the location of this easement. Requirements in the PSP specify that “All infrastructure (including but not limited to roads, drainage, or utility) must only cross the APA gas pipeline at 90 degrees unless with the consent of the pipeline owner or operators (APA VTS) and be engineered to protect the integrity of the pipeline.” Adjacent future land uses are proposed to be residential in nature, with some areas of open space along the Project.
Northern Quarries	Whittlesea	Northern Quarries was a proposed PSP to the south of the future Shenstone Park PSP that has not proceeded.

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Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

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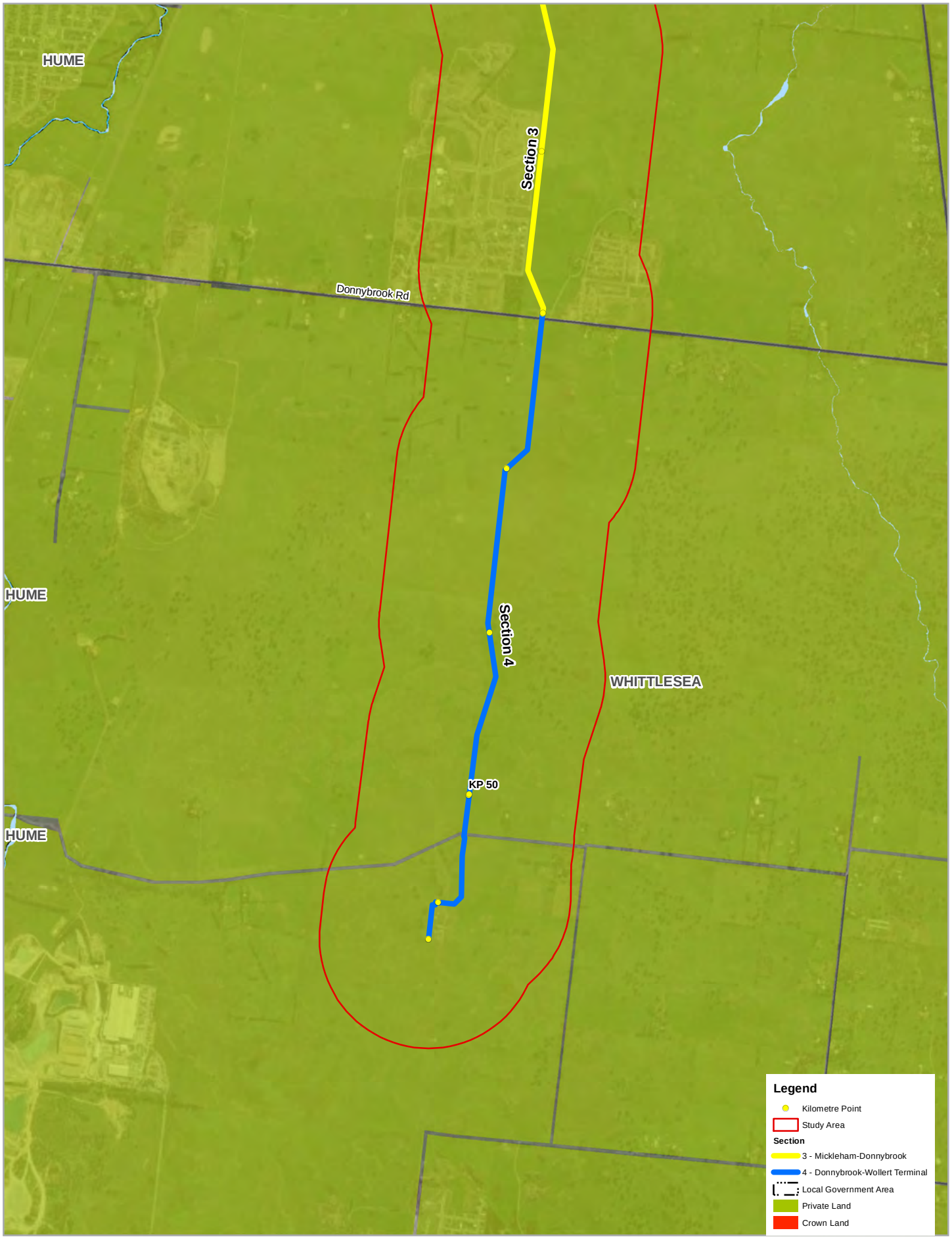
Pipeline Sections

Figure 22

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner



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Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

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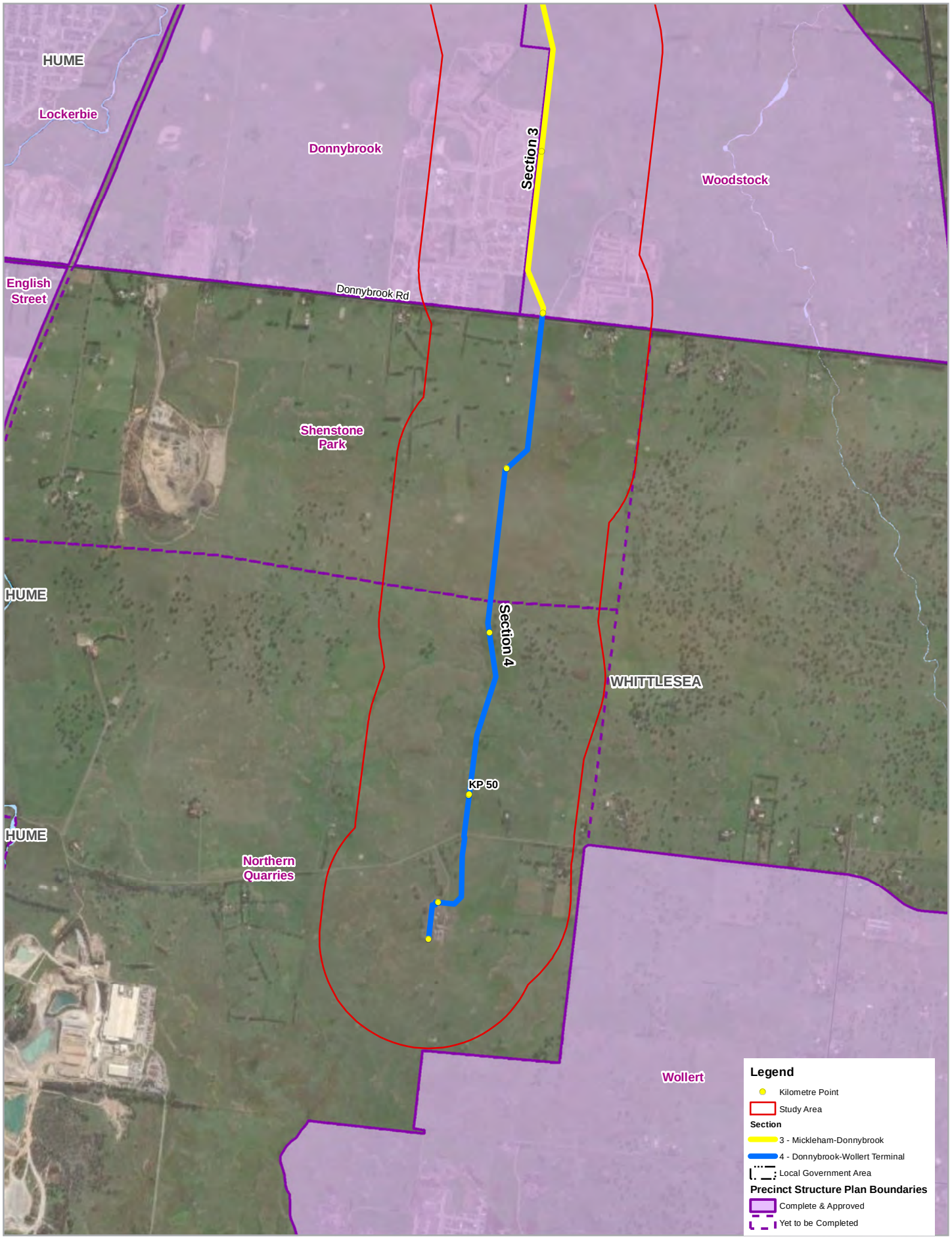
Crown Land

Figure 23

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner



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Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

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APA VTS (Operations) Pty Ltd
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Precinct Structure Plan

Figure **24**

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner

6.5.1 Residential

There are minimal residential properties within the vicinity of the Project at this section, with some low-density rural residential properties stemming off both Donnybrook Road and Summerhill Road.

There will likely be future urban residential development at the north of this section, within the Urban Growth Zone, where the Shenstone Park PSP is currently under development (and was exhibited to the public as a draft in 2019). The draft PSP shows that land adjacent to the Project will be residential, with the gas pipeline easement accounted for within the PSP.

However, the Project would not directly intersect with any existing or proposed residential land.

The remainder of the land subject to the Project is predominantly zoned Farming Zone and Rural Conservation Zone – Schedule 1, both of which list a dwelling as a Section 2 (permit required) use, provided that the dwelling is the only dwelling on the lot. As such, further residential development in the southern extent of this section is not anticipated in the future.

6.5.2 Agricultural

One of the primary land uses within this section is agriculture, particularly livestock grazing. Agricultural uses are the primary purpose of the Farming Zone, as well as generally being permissible within the Rural Conservation Zone at lower intensities. While agricultural uses are expected to be replaced with urban residential uses within the Urban Growth Zone at the north of this section in the future, they are expected to persist in the south alongside extractive industry-based uses.

Figure 25 shows the view south-west along the Project alignment from Wildwood Road

Figure 25 View south-west along the Project alignment from Wildwood Road

6.5.3 Open space and conservation

Currently, there is no open space land use present within this section. However, there is provision for open space in the north of this section within the draft Shenstone Park PSP, in the form of conservation areas, the Merri Creek tributary, local parks, and a shared-use path along the gas pipeline easement.

In Section 4, the entirety of the Project has previously been assessed for biodiversity and conservation values as part of the MSA process, and may be subject to PSPs in the future, with the Shenstone Park PSP currently in planning stages.

At Section 4, the Project crosses Conservation Area 34a Northern Growth Corridor: Growling Grass Frog Corridor (between KP 42 and KP 44) and 28b – Summerhill Road (East), Wollert (between KP 48 and KP 50)under the MSA. However, the Project utilises an existing easement at this location. For discussion of conservation and biodiversity impacts, please refer to the Biodiversity Technical Report (Technical Report A).

6.5.4 Commercial

Currently, there are no commercial uses within the study are or construction footprint along this section, with the closest commercial land uses being located in Craigieburn to the southwest. Future commercial uses are incorporated in the draft Shenstone Park PSP, which provides for a local town centre and local convenience centre within the vicinity of the Project.

6.5.5 Industrial and extractive industries

There are a number of quarries and extractive industry-based land uses within the vicinity of this section. Extractive industries are supported under the Whittlesea MSS at Clause 21.06-3, which states that the 'extractive industry provides valuable economic benefits for the municipality, having a number of associated economic investment and indirect employment benefits.'

The facilities include:

- Woody Hill Quarry, Donnybrook (incorporated into the draft Shenstone Park PSP)
- AustralBricks Wollert, Wollert
- Phillips Quarry, Wollert (future)

The future Phillips Quarry is located within the study area, directly adjacent to the Project north of Summerhill Road, while Mountain View Quarries and AustralBricks Wollert are located close to the study area.

Industrial land uses are generally absent from the area, however, are anticipated to be incorporated to the northwest of the Mountain View Quarry under the draft Shenstone Park PSP.

6.5.6 Community facilities

Community facilities are currently absent from the study area this section, and are concentrated within Craigieburn to the west. Some community facilities will be provided in the future under the draft Shenstone Park PSP, including a government school and sports reserves.

6.5.7 Transport and infrastructure

Section 4 crosses very few roads, including Donnybrook Road (managed by DoT) and Summerhill Road (managed by Whittlesea Council).

Utilities within the Project area include a number of low and high voltage electricity assets, managed by AusNet, along with various water, telecommunications and sewer assets.

Within this section, the Project is also entirely within an existing APA high pressure gas easement, which concludes at the Wollert compressor station. The use of land for the compressor station is existing and is generally surrounded by agricultural land uses.

6.5.8 Planning context

Planning zones and overlays applied in Section 4 are summarised in Table 6-12 and Table 6-13.

Table 6-12 Planning zones within Section 4

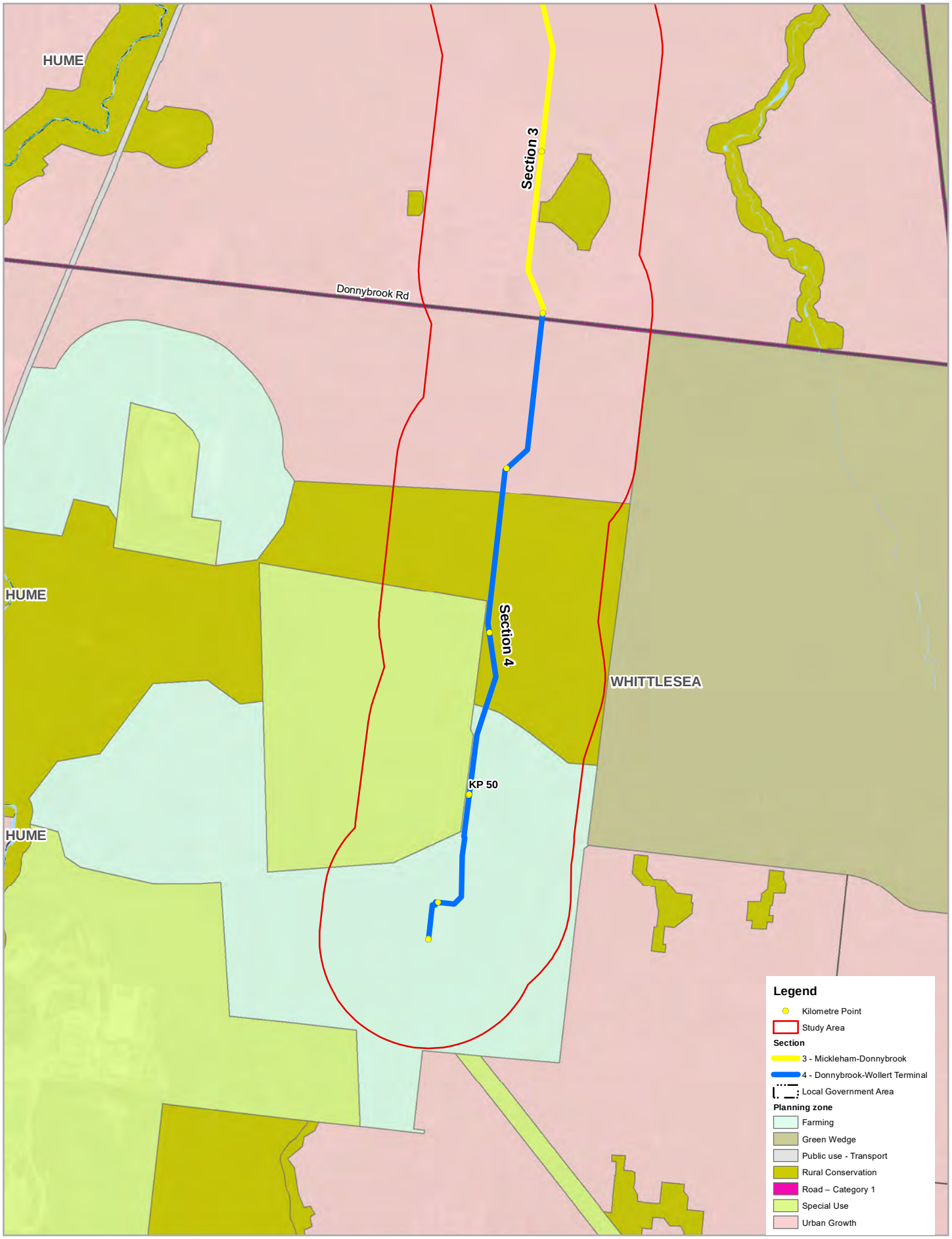
Planning zone	Application
Whittlesea Planning Scheme	
Road Zone Category 1 (RDZ1)	The RDZ1 applies to Donnybrook Road.

Planning zone	Application
Urban Growth Zone (UGZ)	The UGZ applies to land which will be part of the future Shenstone Park PSP, which is currently in preparation.
Rural Conservation Zone – Schedule 1 (RCZ1)	The RCZ1 applies to an area of land between the UGZ and the FZ and SUZ4.
Farming Zone (FZ)	The FZ applies to farming land in the vicinity of Summerhill Road, as well as the Wollert City Gate.
Special Use Zone – Schedule 4 (SUZ4)	The future Phillips Quarry off Summerhill Road is zoned SUZ4.
Green Wedge Zone (GWZ)	The GWZ applies to land east to the Study Area, south of Donnybrook Road.

Table 6-13 Planning overlays within Section 4

Planning overlay	Application
Whittlesea Planning Scheme	
Public Acquisition Overlay – Schedule 2 (PAO2)	The PAO2 reserves land for road widening along Donnybrook Road by VicRoads.
Environmental Significance Overlay – Schedule 1 (ESO1)	The ESO1 is for rural conservation and is located to the east of the Project, south of Donnybrook Road.
Environmental Significance Overlay – Schedule 4 (ESO4)	The ESO4 is for rural conservation and is generally congruent with the RCZ1 at this location.
Environmental Significance Overlay – Schedule 5 (ESO5)	The ESO1 is for rural conservation and is located to the east of the Project, south of Donnybrook Road.

Refer to Figure 26 for a map of planning zones, and Figure 27 for a map of planning overlays.



Paper Size ISO A4

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Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

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APA VTS (Operations) Pty Ltd
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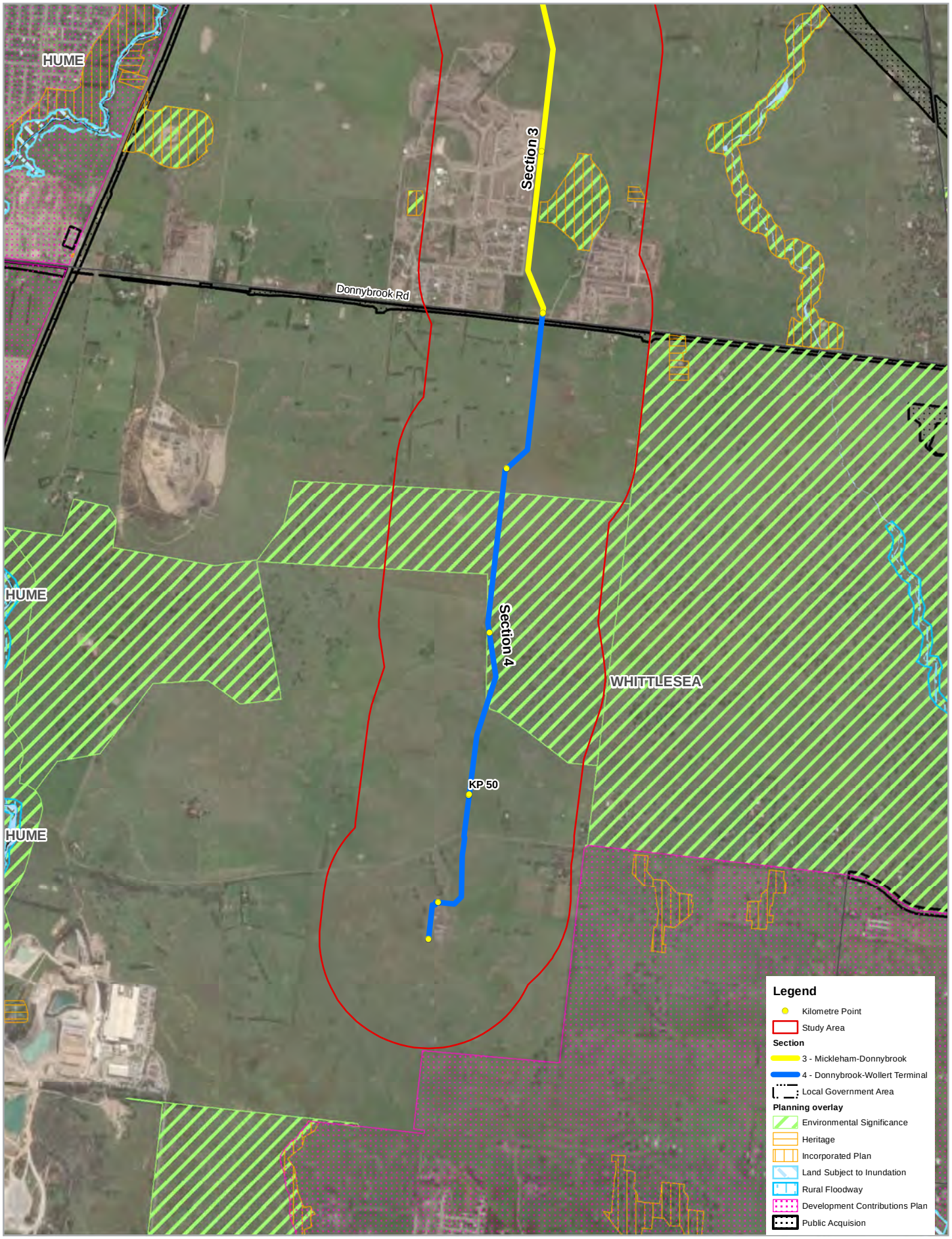
Planning Zones

Figure 26

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner



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Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

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APA VTS (Operations) Pty Ltd
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Planning Overlays

Figure 27

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner

7. Risk assessment

A risk assessment of project activities was undertaken in accordance with the methodology described in Section 4.4, which identified the potential impacts of the Project activities on existing and reasonably foreseeable land uses prior to mitigation.

The initial risk ratings considered an initial set of mitigation measures (where relevant), which are based on compliance with legislation and standard requirements that are typically incorporated into the delivery of infrastructure projects of similar type, scale and complexity. Risk ratings were applied to each of the identified risk pathways assuming that these mitigation measures were in place.

The key risks identified following the initial risk assessment were a focus of the impact assessment and additional management measures were considered (where possible) as part of the impact assessment (refer to the environment management measures in Section 9).

The initial risk assessment identified three risks, associated with both construction and operation. A summary of the risk assessment results is presented in Table 7-1. The initial risk rating for Risk ID LU3 was considered to be a low, due to the minimal extent of land acquisition and the rigour and standardisation of the easement agreement process, and did not require further additional mitigation measures.

Risk ID LU1 describes potential land use impacts by the Project on areas subject to a PSP, where the pipeline easement has not previously been taken into account within the approved and gazetted PSP. In this instance, the Project may result in inconsistencies with the PSP where development cannot proceed as described within the PSP. For example, if the Project intersected with a planned residential area, any development would not be allowed within the pipeline easement without the approval of APA. The pipeline section where this risk is applicable is Section 3, where some PSPs do not include the Project in their underlying plans and objectives.

Risk ID LU2 identifies potential impacts to existing land uses during both construction and operation phases. Such interruptions may include removal of land from agricultural production during the construction period, while limitations may result in land being unable to be developed due to the restrictions associated with the pipeline easement.

The assessment of the potential impacts associated with the identified risks during the construction and operation of the Project is presented in Section 8 of this report.

The risk register showing the risk pathways and findings of the risk assessment for land use is attached in Appendix A.

.

Table 7-1 Risk results

Risk ID	Risk description	Construction/operation	Pipeline/ MLV/ compressor	Initial mitigation measure	Initial risk rating	Additional mitigation measures	Residual risk rating
LU1	**Inconsistencies with PSPs limits planned residential land uses in growth areas** Construction of the pipeline in growth areas where the alignment has not been planned for within PSPs means planned land uses (i.e. residential, commercial, community) may not proceed as planned.	Construction and operation	Pipeline	Consistency or inconsistency with approved PSPs to be addressed through Pipelines Licence application process.	Med	**EMM LU1** The pipeline will, as far as practicable, minimise impacts to PSPs and growth areas by providing for consistency with approved and future PSPs. This be achieved by: • Co-locating the alignment with other utility and transport infrastructure projects to avoid impacts on net developable land • The proposed easement and Area of Consequence (at 65 m) would be incorporated into the plans and policies of any future PSPs along the alignment, which is significantly smaller than the measurement length • Rehabilitating land within existing PSPs in accordance with EMM LU2 • Providing for future uses along the pipeline (e.g. shared use paths) in accordance with the *APA Site Planning and Landscape National Guidelines* (APA 2020) • Where the pipeline alignment has not been provided for in an existing PSP, minimising impacts by designing the pipeline in accordance with AS 2885 with consideration to current land use, and, where applicable, the future land use prescribed by the PSP.	Low

Risk ID	Risk description	Construction/operation	Pipeline/ MLV/ compressor	Initial mitigation measure	Initial risk rating	Additional mitigation measures	Residual risk rating
LU2	**Presence of pipeline and easement causes restrictions or interruptions to continuation of existing and planned land uses** Construction and/or operation activities leads to short or long-term impacts on the continuation of existing land uses, including limiting landowner access and causing amenity issues through noise and dust.	Construction and operation	All	Consistency with existing and reasonably foreseeable land uses to be addressed through inclusion in PSPs and consistency with existing land uses addressed through Pipeline Licence application process.	Med	**EMM LU2** Construction and operation of the Project will be undertaken in accordance with EMM AQ1, AQ3, AQ4, NV1, NV2, NV3, NV4, NV5 to minimise amenity impacts and ensure the continuation of existing land uses during construction and operation phases. Rehabilitation of land will be in accordance with the Project CEMP. Continuation of agricultural land uses will be managed under EMM S2. Where the pipeline intersects with a current PSP and landscaping has commenced along the alignment, land will be rehabilitated in accordance with the *APA Site Planning and Landscape National Guidelines* (APA 2020). Landowners and occupiers will be informed of the construction commencement, and details of the proposed construction programme, in accordance with the Project Construction Plan. **EMM LU4** Traffic Management Plans will be implemented to manage and minimise disruptions to roads during construction where practicable. Trenchless construction methods will be used to avoid disruptions to major roads and railway lines as far as practicable.	Low

Risk ID	Risk description	Construction/operation	Pipeline/ MLV/ compressor	Initial mitigation measure	Initial risk rating	Additional mitigation measures	Residual risk rating
LU3	**Land acquisition for MLVs and presence of easements causes severance of land uses and limits access** Changes to land use patterns and severance of land, relating to position of easement or acquisition.	Construction and operation	Pipeline	**EMM LU3** Compensation for the reservation of the easement and acquisition of land for MLV in accordance with *Pipelines Act 1985* and *Land Acquisition and Compensation Act 1986*. Alignment amendments in consultation with stakeholders and with regard to planning policy.	Low	Not applicable	Low

8. Impact assessment

Section 8 provides an assessment of the potential impacts the Project may have on the land uses, assets and values of the area adjacent to and within the Project area, as outlined in this report, during construction and operational activities.

A number of EMMs have been recommended as part of the impact assessment process, and are outlined at Section 9.

8.1 Land use planning policy and strategies

This section assesses the Project against relevant state, regional and local land use planning policies, including the metropolitan planning strategy, Plan Melbourne 2017-2050, and the relevant PPF and LPPF policies.

8.1.1 Plan Melbourne

As outlined in Section 5.3.1, Plan Melbourne 2017-2050 provides the overarching strategic vision for metropolitan Melbourne and its peri-urban areas. The strategy sets out principles, outcomes, directions and strategies to manage Melbourne's growth and integrate long term land use, infrastructure and transport planning to allow for societal, economic and environmental benefit.

Generally, Plan Melbourne seeks to manage population and housing growth with careful development of growth areas, supported by economic growth, creation of affordable and accessible housing, development of "20-minute neighbourhoods", and provision of improved transport infrastructure.

Notably, Plan Melbourne seeks to maintain and grow agricultural, extractive industry, state infrastructure and renewable energy land uses outside of the UGB, within green wedges. The Plan ultimately seeks to protect land outside of the UGB and within green wedges, from further residential and commercial development. Simultaneously, the plan seeks to concentrate population growth within growth corridors adjacent to green wedges.

The Project achieves the directions and policies of Plan Melbourne by:

- Providing additional capacity in the VTS to improving efficiency and location of gas transmission and accommodating demand for natural gas in the context of new housing and population growth, particularly in the northern and western growth corridors
- Where possible, locating the majority of the pipeline alignment within (construction only) or adjacent to (operation) the OMR /E6 Transport corridor, or within existing pipeline easements, which would minimise intrusion into developable land or land within the green wedge.
- Rehabilitating land within the pipeline construction area, which would allow it to continue to be used for agricultural (i.e. grazing, cropping and livestock) and open space uses where the pipeline easement intersects with the green wedge zone

8.1.2 State and local planning policies

Planning Policy Framework

The Project is also consistent with a number of state and regional planning policies within the PPF, as described in Table 8-1 below. Refer to Section 5.3.3 for a detailed review of relevant sub-clauses.

Table 8-1 Assessment against relevant PPF policies

Clause	Discussion
Clause 11 Settlement	The Project would facilitate the provision of additional capacity in the VTS, therefore providing greater capacity for gas supply to be supplied to residential growth areas in Melbourne's north and west. The pipeline route, being within an existing pipeline easement or within/adjacent to the OMR /E6 Transport corridor where possible, would not prejudice future land uses within residential growth areas, while also allowing land to continue to be used for agricultural uses outside of the UGB.
Clause 12 Environment and Landscape Values	The Project utilises existing pipeline easements and the OMR/E6 Transport corridor where possible, therefore limiting further impacts to environmental values. Clearing impacts would be limited to the construction corridor and site rehabilitation would be site-sensitive in consideration of existing vegetation and consultation with landowners, in accordance with EMM B7.
Clause 13 Environmental Risk and Amenity	Construction would be undertaken in accordance with a CEMP which would ensure best practice environmental and risk management approaches would be adhered to.
Clause 14 Natural Resource Management	Some areas of the Project traverse areas of productive agricultural land, particularly through Section 2, which intersects with the Sunbury green wedge. Productivity of this agricultural land would be temporarily impacted during construction (though impacts would be limited to areas required for access, which would be negotiated with landowners, and within the corridor), however livestock grazing and cropping would be able to continue throughout the operation of the Project.
Clause 15 Built Environment and Heritage	The Project does not intersect with any current major settlement; however, it does impact a number of approved and draft PSPs where future residential development would occur. Where possible, the Project has been placed within an existing pipeline easement, which has previously been incorporated into PSPs, or within/adjacent to the OMR /E6 Transport corridor. The inclusion of a pipeline easement also provides an opportunity to incorporate linear green open space within the PSP areas, in accordance with the *APA Site Planning and Landscape National Guidelines* (APA 2020). Therefore, the Project is unlikely to significantly diminish the existing or reasonably foreseeable future built environment.
Clause 17 Economic Development	The Project would provide for some employment opportunities during the construction and operation phases, and would strengthen the VTS, allowing for a stronger security of supply of natural gas in Victoria.

Clause	Discussion
Clause 18 Transport	The Project would not significantly disrupt transport routes during the construction or operation phases. Construction under sealed roads and railway lines would occur through HDD or horizontal drilling where feasible, which would not interrupt road or rail traffic. Additional traffic impacts during construction would be minimal, with 10-15 heavy vehicles accessing the work site per day, and a traffic management plan would be implemented.
Clause 19 Infrastructure	The Project would secure reliable future natural gas supply for Victoria, by addressing a key gap in the VTS. Notably, the Project would be built in accordance with *Pipelines Act 2005*. It would appropriately manage risks recognised at Clause 19.01-3S *Pipeline infrastructure* through utilising existing pipeline easements co-locating with other linear infrastructure where possible, minimising impacts on land use and the environment.

Municipal Strategic Statement

The Project is supported by the MSS of the Melton, Hume, Mitchell and Whittlesea planning schemes through the following:

- The Project would not inappropriately impact the productivity of agricultural land. While agricultural land within the construction corridor would be temporarily impacted during construction, livestock grazing and cropping would be able to continue throughout the operation phase of the Project
- Where possible, the Project utilises existing pipeline easements or the OMR/E6 Transport corridor, which would minimise additional impacts on environmental values, green wedges and growth areas
- Each MSS highlights the pressures caused by rapid population growth in the northern and western growth corridors. The Project provides for additional natural gas capacity in the VTS, which will support the requirement for timely, sensitive development of infrastructure required to support growth areas within each council.
- The use of land for the Project (utility installation) is not a prohibited use within the applicable planning zones across each council (refer to Appendix B)

Refer to Section 5.4.1 for a discussion of the relevant MSS of each council.

8.1.3 Summary

Generally, the land use profile of each Council area follows the typology described by the above land use planning policies:

- Growth areas within the UGB, which are anticipated to feature increasing residential development and population growth as land within the northern and western growth corridors is developed into the future, with the structure of future development planned through PSPs. Land within growth areas is typically zoned Urban Growth Zone. Population increase in defined growth areas is described as a key land use pressure in each municipality and aligns with Plan Melbourne and the PPF. The proportion of the Project area within the Urban Growth Zone is 29.6% (refer to Table 6-1).

- Green wedges, which are located outside of the UGB, are predominantly used for agricultural and resource-based land uses, with some lower density residential uses associated with agricultural uses. Land outside of the UGB is typically zoned Green Wedge Zone and is otherwise subject to the provisions of Clause 51.02 Metropolitan Green Wedge Land: Core Planning Provisions. Land uses within the green wedge are not anticipated to change significantly into the future. However, intense growth being undertaken within the UGB adjacent to green wedge areas is noted as presenting a potential land use conflict. The proportion of the Project within the Green Wedge Zone is 50.9% (refer to Table 6-1).

The Project is generally consistent with the above land use typologies, or the underlying land use policies. Notably, it is supported by policy within Plan Melbourne, the PPF and MSS of each municipality, in that it addresses a key gap in the VTS, while not prejudicing existing agricultural land uses within green wedges.

Considering the above, factors influencing land use across the study area include:

- The presence of a “hard” UGB. The UGB is legislated, reflected in state-wide, regional and local planning strategy, and cannot be changed without parliamentary agreement
- Continued population growth and the need for housing and employment within growth areas, and associated requirement for infrastructure to support this growth
- The need to preserve productive agricultural land in peri-urban areas
- Environmental values and resources, and recognition of their finite value

The above influences may manifest in pressure upon the UGB, which would be balanced against the need to maintain productive agricultural land within the green wedge, and against the protection of environmental values.

It is noted that expected design life of the Project throughout the operation phase is 60 years. While the likely nature of land use across the study area can be anticipated through interpretation of land use policy, factors affecting land use are likely to change over this timeframe.

The Project is generally consistent with relevant land use policy. With the Project easement and Area of Consequence incorporated into future PSPs, the Project would have a minor impact on land use planning policy across the Project area.

8.2 Section 1 – Plumpton to Calder Highway (KP 0-9)

This section discusses the potential impacts to land use within Section 1 during the construction and operation phases of the Project.

At present, land uses in Section 1 are predominantly agricultural, with some associated low density residential uses. However, land use in Section 1 to the south of the Melton Highway is likely to proceed in accordance with the Plumpton and Kororoit PSPs, with ongoing agricultural land uses expected to continue in the green wedge to the north of Melton Highway. Notably, the Project in this section is wholly within an existing gas pipeline easement, which has previously been accounted for in the Plumpton and Kororoit PSPs.

Refer to Table 8-2 below for a list of land use typologies that would be impacted by the construction corridor.

Table 8-2 Current land uses impacted by construction corridor in Section 1

Land use typology	Area impacted by construction area (sqm)	Proportion of total	Pipeline within existing easement Y/N
Growth area (adjacent future residential)	104,935	36.86%	Y
Agricultural (Green wedge)	173,492	60.94%	Y
Transport and infrastructure	6,222	2.20%	Y
TOTAL	**284,649**	**100%**	

For a detailed overview of existing and reasonably foreseeable land uses within Section 1, refer to Section 6.2 of this report.

The Project components proposed within Section 1 are described below in Table 8-3 (refer to Section 3 for further discussion of the Project description).

Table 8-3 Section 1 project components

Works	Description
Pipeline	Buried pipeline, to be constructed within a 30 m wide construction corridor, generally constructed through open trench construction, with trenchless construction utilised to avoid interruptions to selected roads, railways and waterways. In Section 1, the pipeline is within the existing easement for the Sunbury Pipeline.
Pipeline marker signs	Small pipeline marker signs would be placed along the Project, at a frequency to ensure continual line of sight, at changes in direction of the pipeline, at property boundary fences, and at roads, railway and waterway crossings.
Mainline Valve	MLVs allow for isolation and depressurisation of sections of pipeline during maintenance or emergency conditions. MLVs are essentially a set of buried and aboveground piping, valves and equipment, in a fenced compound. In Section 1, MLV1 would be constructed to the north of Holden Road and would be co-located with the existing Sunbury Pipeline MLV in a chain wire fenced compound (approximately 20 m x 15 m). The land for the MLV compound would be acquired by APA.

8.2.1 Construction impacts

Potential impacts on land use within Section 1 during construction, and relevant mitigation measures, are described in Table 8-4 below.

A key mitigation measure during construction is the agreement of access with landowners to minimise impacts on the continuation of land uses in the section (primarily agricultural), including negotiation of compensation under the legislative framework. It is recommended that a specific mitigation measure (EMM LU2) be included to ensure the process is undertaken as a priority. Property access and biosecurity arrangements would be established with agricultural properties (refer Social EMMs).

Additional mitigation measures to reduce and minimise impacts should include reinstatement of fencing and other infrastructure required for access, the implementation of Traffic Management Plans to manage disruptions to roads during construction, and utilising trenchless construction methods to avoid disruptions to major roads and railway corridors (EMM LU4).

With the identified mitigation the residual impacts during construction in Section 1 are assessed as minor.

Table 8-4 Section 1 construction impacts and mitigation measures

Possible impact	Land use typology impacted	Relevant mitigation measures and discussion	Residual impacts
Continuation of land uses (Risk ID LU2) The continuation of land uses along the Project in Section 1 (primarily agricultural, with some residential development occurring adjacent to the Project area) would be interrupted by temporary occupation during construction. The Agricultural Impact Assessment (Appendix C of Technical Report L - Social Impact Assessment) found that there would be some temporary impacts (lasting one year or less) to agricultural production during construction. Subject to the staging of the works, construction of the entire Project is expected to take approximately 9 months. General timeframes to complete works in any one area from site establishment to rehabilitation is nominally four to six months. However, the construction programme is expected to move at a rate of approximately 700 m per day.	Agricultural, residential (future)	The impact to the continuation of land uses in Section 1 is expected to be minor and temporary, particularly given the construction would occur predominately within an existing easement (with the exception of a temporary construction space to facilitate construction works). Under EMM LU3, construction access and operational activities would be undertaken in consultation with relevant stakeholders, in accordance with the Project Consultation Plan (EMM S6) and Project EMMs S3 and S5. Access would be negotiated with private landowners, fencing would be reinstated after construction (with temporary fencing utilised during construction where required), and any construction impacts to land would be rehabilitated in accordance with a CEMP.	With the implementation of EMMs to minimise impacts on agricultural operation and compensation agreements in place, the Project would have a low impact on agricultural operations. There will be no impact on continuation of residential land uses. Future residential land uses can be constructed within the Area of Consequence provided it is outside the easement.

Possible impact	Land use typology impacted	Relevant mitigation measures and discussion	Residual impacts
Construction of the pipeline would occur at an existing pipeline easement in Section 1, and would predominantly be undertaken via open trench construction within a 30 m corridor (this width is approximately 10-15 m wide in addition to the existing easement).	Agricultural	As per the Agricultural Impact Assessment, impacts to agricultural land uses are predominately mitigated through EMM S2. including measures for consultation with relevant landholders regarding property-specific avoidance and minimisation measures (including access, biosecurity and continuation of property use) as well ensuring that compensation is provided to directly affected landholders. Some of the land within the construction corridor is identified for future residential uses within the Plumpton PSP (i.e. land within the construction footprint which is outside of the existing easement), however development in this section is being coordinated with any Project construction activities to avoid and minimise any impact to urban construction activities.	

Possible impact	Land use typology impacted	Relevant mitigation measures and discussion	Residual impacts
Traffic movements and restrictions (Risk ID LU2) The Project construction has the potential to impact traffic and rail movements where the Project crosses sealed roads and railway lines. Construction access would be required within some existing road reserves during construction for pipeline laying purposes, which may cause residual temporary impacts to traffic flow and access.	Transport and infrastructure	To avoid impacts to traffic, where the pipeline crosses selected sealed roads and railway lines, trenchless construction would be utilised (through boring or HDD). In Section 1 this would include Beatty's Road, Melton Highway, Holden Road, the Bendigo rail line reserve, and Calder Freeway. Impacts to traffic and roads would be managed via Traffic Management Plans in consultation with the relevant authority (i.e. Council or DoT). Road closures would be minimised through trenchless construction methods where the pipeline intersects with key roads. The above mitigation measures (as described in LU4) mean the Project would result in a negligible impact to transport and infrastructure land uses in Section 1.	The mitigation measures (as described in EMM LU4) mean the Project would result in a negligible residual impact to transport and infrastructure land uses.

Possible impact	Land use typology impacted	Relevant mitigation measures and discussion	Residual impacts
Amenity impacts (Risk ID LU2) The Project may cause amenity impacts to surrounding land uses, particularly established residential areas to the east, including noise, dust and vibration during construction. According to the noise assessment undertaken for the Project and detailed within Technical report E – Noise and vibration, vibration that would occur as a result of the Project's construction works and in particular excavation may be perceptible by nearby residents. Vibration from blasting activities may also be perceptible by residents. However, blasting impacts would be intermittent and temporary in some locations only. Technical report F – Air quality states that dust would be generated from construction activities such as clearing and grading, open trench construction, lowering and backfilling. There are no residences within 35 m of the construction corridor (primary impact zone for dust) but there are residences within 75 m where there is potential for dust to exceed the relevant EPA criteria during some construction activities.	Residential, agricultural	Amenity impacts would be managed and minimised where possible, in accordance with the EMF and CEMP and in accordance with specific mitigation measures identified through the Air Quality and Noise technical reports (refer to EMM LU2). These EMMs would minimise potential dust impacts through identified separation distances to residencies where dust impacts could occur and implementing measures such as watering or wind barriers where required due to weather conditions and activities in progress. EMMs would seek to minimise noise and, vibration, impacts through monitoring construction activities and noise levels, consulting with affected residents, and implementing measures such as noise barriers where required due to location and activities. Further discussion of social impacts to residential land uses caused by amenity impacts are discussed in Technical Report L - Social Impact Assessment.	Amenity impacts to established land uses during construction would be minor and temporary. Dust, noise and vibration impacts would be minimised through the EMMs adopting specific measures related to construction activities and location.

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8.2.2 Operation impacts

Potential impacts on land use within Section 1 during operation are described in Table 8-5 below.

Due to the Project being located within an existing pipeline easement in Section 1, operational impacts are expected to be negligible. Communication with landowners as part of easement management would be ongoing (EMM LU3), and it is anticipated that the Project would generally have a low impact on farming operations (EMM LU2).

The primary impact associated with operation in Section 1 is the use of land for the purposes of MLV1. This use of land is minimal in area and compensation for the reservation of the land required would be provided in accordance with the *Land Acquisition and Compensation Act 1986* as a priority where applicable. APA currently has an easement over the land on which MLV1 is proposed. APA would seek to reach a commercial agreement with the owner of the land for the acquisition of the MLV site. As an easement exists over the MLV footprint already, if APA cannot reach an agreement with the landowner, no further action would be taken and the existing easement would serve as APA's interest in the land on which the MLV1 is located.

With the identified mitigation measures, the residual impacts across Section 1 during operation is assessed as minor.

Table 8-5 Section 1 operation impacts and mitigation measures

Possible impact	Land use typology impacted	Relevant mitigation measures and discussion	Residual impacts
Consistency with PSPs (Risk ID LU1) Whist the Project at this location directly intersects with the Plumpton PSP, it is within an existing pipeline easement which has been factored into the PSP and its underlying plans and objectives (refer to Table 6-2). Therefore the Project at this location is not expected to impact future land uses within this PSP during operation, as the existing pipeline has been accounted for.	Residential, open space (future)	The Project provides for consistency with the Plumpton PSP, which is in accordance with EMM LU1. Therefore, there are no impacts to consistency with PSPs in Section 1.	As the impact has been avoided, no residual impacts are anticipated.
Continuation of existing land uses and limitations on future construction in easements (Risk ID LU2) The presence of the pipeline easement would limit the use of land within the easement, as construction of agricultural buildings (e.g. sheds) and any digging and excavation would be prohibited within the pipeline easement without permission from APA. However, within Section 1, the Project is within an existing pipeline easement. Therefore the Project at this location is not expected to further impact current or future land uses within or adjacent to the construction corridor directly or indirectly.	Agricultural	As the pipeline is within an existing easement within Section 1, operational impacts to agricultural land uses caused by the presence of a gas pipeline are generally pre-existing and would not be amplified by the Project. The Agricultural Impact Assessment (Appendix C of Technical Report L - Social Impact Assessment) found that normal agricultural production along the easement would be able to resume during operation of the Project after a nominal timeframe of 12 months post-construction. Impacts to agricultural land uses are predominately mitigated through EMM S2 and anticipated that the Project would have a low impact on farming operations generally.	There are expected to be minimal residual impacts, with no additional limitations being placed on the use of land along the alignment due to the existing pipeline easement at this location.

Possible impact	Land use typology impacted	Relevant mitigation measures and discussion	Residual impacts
Impacts to land tenure through acquisition (Risk ID LU3) One MLV would be constructed in Section 1, within private agricultural land to the north of Holden Road. The land for the MLV compound would be acquired by APA. Acquisition of land could result in severance of land, reduced accessibility, and permanent loss of productive agricultural land.	Agricultural	The land required for the MLV1 is minor and small in size, and would be located within the existing easement, and co-located with the existing Sunbury Pipeline MLV. Compensation for the acquisition of the land required for the MLV would be provided in accordance with the *Pipelines Act 2005* and the *Land Acquisition and Compensation Act 1986* (EMM LU3). Generally, the impact to agricultural land uses for acquisition for the MLV is considered to be low, considering the provision of appropriate compensation under the above acts and the minimal area required. It is noted that the monetary unmitigated economic impact to agriculture at the construction stage is estimated at $0.2 million across the full project, which is equivalent to 0.0013% of the annual value of agricultural production within the regional study area, as determined by the Agricultural Impact Assessment. However, this value would be mitigated through appropriate landowner compensation in accordance with EMM LU3.	Following landowner agreement and compensation, there is not expected to be residual impacts from acquisition.
Increases to traffic during operation (Risk ID LU2) A minimal increase in traffic may occur due to ongoing gas pipeline maintenance and inspections during the operation phase, compared to operation for the existing pipeline easement.	Transport and infrastructure	Additional traffic movements caused by maintenance and inspections is considered to be negligible in the context of background traffic volumes and are considered to be consistent with the general use of the road network, with no further mitigation required.	No residual impacts are anticipated.

Possible impact	Land use typology impacted	Relevant mitigation measures and discussion	Residual impacts
Constraints to existing and future roads and utilities (Risk ID LU2) It is expected that there would be some impacts to planning of future roads and utilities in Section 1, as all infrastructure (including but not limited to roads, drainage, or utility) would be required to cross the APA gas pipeline at 90 degrees, unless with the consent of APA, and be engineered to protect the integrity of the pipeline. The Project may also directly or indirectly constrain the design and construction of the OMR /E6 Transport Corridor, which the Project crosses at the northern extent of Section 1.	Transport and infrastructure	Known future roads and utility infrastructure at this section is generally planned within the Plumpton PSP, which incorporates the existing pipeline easement into its plans and objectives. The pipeline is therefore not considered to present further limitations to road and utility design in Section 1. APA and the DoT have assessed the potential for the Project to impact on the OMR/E6 Transport corridor. The assessment has considered the Project alignment, design and construction methodology. Consequently, APA and the DoT have agreed upon specific requirements for the Project and these have been incorporated into a draft Coordination Deed, to be executed by APA and the DoT prior to the commencement of construction. The Coordination Deed includes requirements relating to the depth of cover to the pipeline, and reduction of the width of the pipeline easement within the Public Acquisition Overlay as required.	The residual impact would relate to the pipeline constraining or preventing the construction of the OMR/E6 Transport corridor. APA has worked together with the DoT during the development of the EES to address the potential for the Project to impact upon the OMR/E6 Transport corridor. Given APA and the DoT have agreed upon specific requirements for the Project to mitigate the potential impacts, it is anticipated that the residual impact to the OMR/E6 Transport corridor would be minor.

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8.3 Section 2 – Calder Highway to Mickleham Road (KP 9-28)

This section discusses the potential impacts to land use within Section 2 during the construction and operation phases of the Project.

Section 2 is wholly within the Sunbury green wedge, with a predominantly rural and agricultural land use character, including some associated low-density residential uses and nearby extractive industry uses. Land at Section 2 is outside of the UGB and therefore the land use typology is not expected to change significantly into the future, with agricultural, resource and rural residential land uses likely to persist.

Refer to Table 8-9 below for a list of land use typologies that would be impacted by the construction corridor in Section 2.

Table 8-6 Current land uses impacted by construction corridor in Section 2

Land use typology	Area impacted by construction area (sqm)	Proportion of total	Pipeline within existing easement Y/N
Agricultural (Green wedge)	670,606	99.22%	N
Transport and infrastructure	5273	0.78%	N
TOTAL	**675,879**	**100%**	

For further detailed discussion of existing and foreseeable land use conditions in Section 2, refer to Section 6.3 of this report.

The Project components proposed within Section 2 are described below in Table 8-7 (refer to Section 3 for further discussion of the Project description).

Table 8-7 Section 2 project components

	Description
Pipeline	Buried pipeline, to be constructed within a 30 m wide construction corridor, generally constructed through open trench construction, with trenchless construction utilised to avoid interruptions to selected roads, railways and waterways. In Section 2, the pipeline would be within a new 15 m wide pipeline easement, generally located within agricultural properties.
Pipeline marker signs	Small pipeline marker signs would be placed along the alignment, at a frequency to ensure continual line of sight, at changes in direction of the pipeline, at property boundary fences, and at roads, railway and waterway crossings.
Mainline Valve	MLVs allow for isolation and depressurisation of sections of pipeline during maintenance or emergency conditions. MLVs are essentially a set of buried and aboveground piping, valves and equipment, in a fenced compound. In Section 2, MLV2 would be constructed to the east of Oaklands Road and would be in a chain wire fenced compound (approximately 12 m x 12 m). The land for the MLV compound would be acquired by APA.

8.3.1 Construction impacts

Potential impacts on land use within Section 2 during construction is described in Table 8-8 below.

The primary impact to Section 2 during construction relates to the temporary removal of land from agricultural production during construction, which is expected to occur at any one location for a period of 4-6 months (with construction moving at around 700 m per day). However, as per the Agricultural Impact Assessment, impacts to agricultural land uses are predominately mitigated through EMM S2, and anticipated that the Project would have a low impact on farming operations. Property access and biosecurity arrangements would be established with agricultural properties (refer Social EMMs).

Additional mitigation measures to reduce and minimise impacts should include reinstatement of fencing and other infrastructure required for access (EMM LU2), the implementation of Traffic Management Plans to manage disruptions to roads during construction, and utilising trenchless construction methods to avoid disruptions to major roads and waterways (EMM LU4).

With the identified mitigation the residual impacts to land use within Section 2 during construction are assessed as minor.

Table 8-8 Section 2 construction impacts and mitigation measures

Potential impact	Land use typology impacted	Relevant mitigation measures and discussion	Residual impacts
Continuation of land uses (Risk ID LU2) The continuation of land uses along the Project in Section 2 (primarily agricultural) would be interrupted temporarily by occupation during construction. The Agricultural Impact Assessment (Appendix C of the Social Impact Assessment) found that there would be some temporary impacts (lasting one year or less) to agricultural production during construction. Subject to the staging of the works, construction for the entire Project is expected to take approximately 9 months. General timeframes to complete works in any one area from site establishment to rehabilitation is nominally four to six months. However, construction activity itself is expected to move at a rate of approximately 700 m per day. Construction of the pipeline would predominantly be undertaken via open trench construction and backfill within a 30 m corridor.	Agricultural	The impact to the continuation of land uses in Section 2 is expected to be minor and temporary. Under EMM LU3, construction access and operational activities would be undertaken in consultation with relevant stakeholders, in accordance with the Project Consultation Plan (EMM S6) and EMMs S3 and S5. Access would be negotiated with private landowners and fencing reinstated after construction (with temporary fencing utilised during construction where required). Rehabilitation of land would also occur post-construction. As per the Agricultural Impact Assessment, impacts to agricultural land uses are predominately mitigated through EMM S2. including measures for consultation with relevant landholders regarding property-specific avoidance and minimisation measures (including access, biosecurity and continuation of property use) as well ensuring that compensation is provided to directly affected landholders.	With the implementation of EMMs to minimise impacts on agricultural operation and compensation agreements in place, the Project would have a low impact on agricultural operations. As per the Agricultural Impact Assessment, impacts to agricultural land uses are predominately mitigated through EMM S2, and anticipated that the Project would have a low impact on farming operations.
Traffic movement and restrictions (Risk ID LU2) The Project construction has the potential to impact traffic movements where the pipeline crosses sealed roads, including but not limited to the Calder Highway, Bulla-Diggers Rest Road, and Sunbury Road in Section 2. Construction access would be required within some existing road reserves during construction for pipeline laying purposes, which may cause residual; impacts to traffic flow and access.	Transport and infrastructure	To avoid impacts to traffic, where the pipeline crosses selected sealed roads trenchless construction techniques would be utilised. In Section 2 this would include the Calder Freeway, Morefield Court, Bulla-Diggers Rest Road, Sunbury Road, Wildwood Road, St Johns Road, Oaklands Road, Craigieburn Road, Mt Ridley Road, and Parkland Crescent. Whilst Hume City Council has raised concerns with the impacts on future works in the Parklands Crescent road reserve, APA has determined the pipeline alignment, including this section between KP 26 to KP 27 (Parkland Crescent) considering impacts to ecological values, adjacent properties, pipeline length and constructability.	The mitigation measures (as described in EMM LU4) mean the Project would result in a negligible residual impact to transport and infrastructure land uses.

Potential impact	Land use typology impacted	Relevant mitigation measures and discussion	Residual impacts
		An option involving the construction of the WORM pipeline alignment alongside the OMR PAO to the west was considered however, was not the preferred solution due to its impact on private property and close proximity to residences. Utilising an existing road reserve to collocate the WORM with other services is considered an appropriate planning outcome as it minimises impact to private property. APA is progressing discussions with Hume City Council relating to Parkland Crescent, on the following: • Future maintenance and upgrade works on Parkland Crescent • Specific requirements in relation to working in proximity to the pipeline with consideration to the scope of the works to be provided by Hume City Council HDD construction method would also be utilised at the crossing of Deep Creek to avoid construction disturbance. However, this is not possible at all waterways due to ground conditions (refer to 'Impact to waterways' as discussed below). Impacts to traffic and roads would be managed via Traffic Management Plans in consultation with the relevant authority (i.e. Council or DoT). Road closures would be minimised through trenchless construction methods where the pipeline intersects with key roads.	

Potential impact	Land use typology impacted	Relevant mitigation measures and discussion	Residual impacts
Amenity impacts (Risk ID LU2) The Project may cause amenity impacts to surrounding land uses, including noise, dust and vibration during construction. According to the noise assessment undertaken for the Project and detailed within Technical report E – Noise and vibration, vibration that would occur as a result of the Project's construction works and in particular excavation may be perceptible by nearby residents. Vibration from blasting activities may also be perceptible by residents. However, blasting impacts would be intermittent and temporary in some locations only. Technical report F – Air quality states that dust would be generated from construction activities such as clearing and grading, open trench construction, lowering and backfilling. There are no residences within 35 m of the construction corridor (primary impact zone for dust) but there are residences within 75 m where there is potential for dust to exceed the relevant EPA criteria during some construction activities.	Residential, agricultural	Amenity impacts would be managed and minimised where possible, in accordance with the EMF and CEMP and in accordance with specific mitigation measures identified through the Air Quality and Noise technical reports (refer to EMM LU2). These EMMs would minimise potential dust impacts through identified separation distances to residencies where dust impacts could occur and implementing measures such as watering or wind barriers where required due to weather conditions and activities in progress. EMMs would seek to minimise noise and, vibration, impacts through monitoring construction activities and noise levels, consulting with affected residents, and implementing measures such as noise barriers where required due to location and activities. Further discussion of social impacts to residential land uses caused by amenity impacts are discussed in Technical Report L - Social Impact Assessment.	Amenity impacts to established land uses during construction would be minor and temporary. Dust and noise impacts would be minimised through the Air quality and noise EMMs adopting specific measures related to construction activities and location. .

Potential impact	Land use typology impacted	Relevant mitigation measures and discussion	Residual impacts
Impacts to waterways (Risk ID LU2) The Project crosses select waterways at Section 2, including Jacksons Creek, Deep Creek and its tributary, Emu Creek. Construction of the pipeline could temporarily impact the use of land as a waterway and existing vegetation identified within Environmental Significance Overlays and Vegetation Protection Overlays and result in inconsistencies with planning policy involving open space and conservation land uses if not appropriately managed. The objectives of these overlays are to protect and enhance the diversity, integrity and health of the local native riparian, escarpment and plains vegetation associated with waterways, and provide for the retention, restoration and revegetation of local native plant species. Specific impact to waterways such as erosion, waterway quality and riparian values are outlined in Technical Report B - Biodiversity and habitats and Technical Report O - Water.	Open space and conservation	Construction at Deep Creek would be conducted via HDD and in accordance with the CEMP, which would avoid land use risks at this location. At other waterways, where HDD or boring is not possible due to geotechnical and other construction limitations, trenched construction would be undertaken in accordance with a CEMP to manage impacts to the waterway and surrounds. Once the pipeline is in place, there are not expected to be any residual ongoing impacts to waterway land uses. For trenched construction, diversion dams would be constructed of appropriate materials which would minimise watercourse sedimentation, such as steel plates, sand bags or inflatable dams. The pipeline alignment selected for the Project has sought to avoid impacts to vegetation as much as possible. Vegetation required to be impacted by the Project would be further avoided, minimised or rehabilitated through EMMs identified in Chapter 7 Biodiversity and habitats. EMM B1 includes measures such as ensuring that all vegetation clearing works are confined to the defined construction area and the loss of native vegetation would be further minimised wherever feasible, through detailed design and construction planning that considers narrowing the construction corridor, such as reducing the width of the construction corridor where practicable.	With the relevant EMMs applied during construction, residual impacts are anticipated to be minor and once the pipeline is in place, there are not expected to be any residual ongoing impacts to waterway land uses.

8.3.2 Operation impacts

Potential impacts on land use within Section 2 during operation are described in Table 8-9 below.

As with Section 1, the primary land use impact during operation would be restrictions to construction of structures and planting of certain vegetation within the 15 m easement. Communication with landowners as part of easement management would be ongoing (EMM LU3), and it is anticipated that the Project would have a low impact on farming operations (EMM LU2).

Additionally, there would be a minor impact to agricultural land use caused by the acquisition of land for the MLV2. Compensation for the acquisition of land required for the MLV would be provided in accordance with the *Pipelines Act 2005* or the *Land Acquisition and Compensation Act 1986* (EMM LU3).

With the identified mitigation measures, the residual impact to land use in Section 2 during operations is assessed as minor.

Table 8-9 Section 2 operation impacts and mitigation measures

Potential impact	Land use impacted	Applicable mitigation measures	Residual impacts
Continuation of existing land uses (direct and indirect) and limitations on future construction in easements (Risk ID LU2) The presence of the pipeline easement would limit the use of land within the easement, as construction of agricultural buildings (e.g. sheds) and any digging and excavation would be prohibited within the pipeline easement without permission from APA. The inclusion of a pipeline easement may also constrain future subdivision and development of land across the Project.	Agricultural	Impacts to agricultural land uses within Section 2 would be mitigated through rehabilitation post-construction, which would occur within six months of construction (EMM LU2). Grain crops, grazing and livestock husbandry would be able to continue along the Project, though agricultural buildings (e.g. sheds) would be prohibited within the easement. The Agricultural Impact Assessment (Appendix C of the Social Impact Assessment) found that normal agricultural production along the easement would be able to resume during operation of the Project after a nominal timeframe of 12 months post-construction. Impacts to agricultural land uses are predominately mitigated through EMM S2 and it is anticipated that the Project would have a low impact on farming operations.	Residual impacts are expected to be minor. It is not anticipated there would be significant impacts on development of land within Section 2, which is located entirely in the green wedge, where further development and subdivision is heavily restricted.
Impacts to land tenure through acquisition (Risk ID LU2) One MLV would be constructed in Section 2, and the land for the MLV compound would be acquired by APA The land required for MLV2 is relatively small and gated access during operation would be maintained via Oaklands Road. Acquisition of land could result in severance of land, reduced accessibility, and permanent loss of productive agricultural land.	Agricultural	The land required for the MLV2 is minor, small in size and adjacent to a property boundary. Compensation for the acquisition of the land required for the MLV would be provided in accordance with the *Pipelines Act 2005* and the *Land Acquisition and Compensation Act 1986* (EMM LU3). Generally, the impact to agricultural land uses for acquisition for the MLV is considered to be low, considering the provision of appropriate compensation under the above acts and the location and minimal area required. It is noted that the monetary unmitigated economic impact to agriculture at the construction stage is estimated at $0.2 million across the full Project, which is equivalent to 0.0013% of the annual value of agricultural production within the regional study area, as determined by the Agricultural Impact Assessment. However, this value would be mitigated through appropriate landowner compensation in accordance with EMM LU3.	Following landowner agreement and compensation, there is not expected to be residual impacts from acquisition.

Potential impact	Land use impacted	Applicable mitigation measures	Residual impacts
Increases to traffic during operation (Risk ID LU2) A minimal increase in traffic may occur due to ongoing gas pipeline maintenance and inspections during the operation phase.	Transport and infrastructure	Additional traffic movements caused by maintenance and inspections are considered to be negligible in the context of background traffic volumes and are considered to be consistent with the general use of the road network, with no further mitigation required.	No residual impacts are anticipated.
Constraints to existing and future roads and utilities (Risk ID LU2) It is expected that there would be some impacts to planning for future roads and utilities in Section 2, as all infrastructure (including but not limited to roads, drainage, or utility) would be required to cross the APA gas pipeline at 90 degrees, unless with the consent of APA, and be engineered to protect the integrity of the pipeline. The Project may also directly or indirectly constrain the design and construction of the OMR /E6 Transport Corridor, which the Project crosses or runs parallel with for much of Section 2.	Transport and infrastructure	The Project would present some constraints to future road and utility planning in Section 2, as the Project is not within an existing easement at this location. This impact is considered to be of minor consequence, as the presence of a pipeline would not prevent the construction of future roads or utilities. Additionally, it is understood that APA is conducting ongoing discussions with the DoT to appropriately co-locate the WORM easement adjacent to the future OMR /E6 Transport corridor where possible. A risk assessment has been undertaken by APA and the DoT to assess the potential impact of the WORM pipeline on the future development of the OMR/E6 Transport corridor, based on the preliminary OMR/E6 Transport corridor concept design undertaken by DoT. The risk assessment has considered the Project alignment, design and construction methodology. Consequently, APA and the DoT have agreed upon specific requirements for the Project and these have been incorporated into a draft Coordination Deed, to be executed by APA and the DoT prior to the commencement of construction. The Coordination Deed includes requirements relating to the depth of cover to the pipeline in the OMR/E6 Transport corridor, backfill requirements and consideration of a reduced pipeline easement within the OMR/E6	The residual impact would relate to the pipeline constraining or preventing the construction of the OMR/E6 Transport corridor. Given APA and the DoT are finalising specific requirements to be incorporated into a Coordination Deed for the Project to mitigate the potential impacts, and are involved in ongoing discussions, it is anticipated that the residual impact to the OMR/E6 Transport corridor would be minor.

8.4 Section 3 – Mickleham Road to Donnybrook (KP 28-46.8)

This section discusses the potential impacts to land use within Section 3 during the construction and operation phases of the Project.

Section 3 is within the northern growth corridor, and sits across the Hume, Mitchell and Whittlesea councils. At this location, the Project traverses through or is adjacent to a number of PSPs which control future development, not all of which account for the pipeline easement. However, the Project is predominantly within the OMR /E6 Transport corridor, and at the eastern extent of Section 3 the Project is within an existing pipeline easement, which is accounted for in the Donnybrook-Woodstock PSP.

Refer to Table 8-15 below for a quantified list of land use typologies that would be impacted by the construction corridor in Section 3.

Table 8-10 Current land uses impacted by construction corridor in Section 3

Land use typology	Area impacted by construction area (sqm)	Proportion of total	Pipeline within existing easement Y/N
Agricultural (Green wedge)	212,691	29.69%	N
Growth area (adjacent future residential) – Project not incorporated into current PSP	177,733	24.81%	N
Growth area (adjacent future residential) – Project incorporated into current PSP	167,546	23.39%	Y
Growth area (adjacent future residential) – Project would be incorporated into future PSP	53,940	7.54%	N
Transport and infrastructure	79,555	11.10%	N
Open space and conservation	24,858	3.47%	Y
TOTAL	**716,326**	**100%**	

For further detailed discussion of existing and foreseeable land use conditions in Section 3, refer to Section 6.4 of this report.

The Project components proposed within Section 3 are described below in Table 8-11 (refer to Section 3 for further discussion of the Project description).

Table 8-11 Section 3 project components

Works	Description
Pipeline	Buried pipeline, to be constructed within a 30 m wide construction corridor, generally constructed through open trench construction, with trenchless construction utilised to avoid interruptions to selected roads, railways and waterways. In Section 3, the pipeline would be predominately within a new pipeline easement, generally located within the existing PAO for the future OMR /E6 Transport corridor, or within existing road reserves, before joining the Victorian Northern Interconnect (VNI) easement.

Works	Description
Pipeline marker signs	Small pipeline marker signs would be placed along the Project, at a frequency to ensure continual line of sight, at changes in direction of the pipeline, at property boundary fences, and at roads, railway and waterway crossings.
Mainline Valve	MLVs allow for isolation and depressurisation of sections of pipeline during maintenance or emergency conditions. MLVs are essentially a set of buried and above ground piping, valves and equipment, in a fenced compound. In Section 3, MLV3 would be constructed to the south of Gunns Gully Road and would be in a chain wire fenced compound (approximately 12 m x 12 m). The land for the MLV compound would be acquired by APA.

8.4.1 Construction impacts

Potential impacts on land use within Section 3 during construction are described in Table 8-12 below.

As Section 3 is within an urban growth area, the Project is, at some points, close to residential properties. As such, there may be temporary amenity impacts caused during construction, which would need to be managed through a Project Consultation Plan (EMM S6) and mitigated through various EMMs relating to construction impacts (EMM AQ1, AQ3, AQ4, NV1, NV2, NV3, NV4, NV5).

Additional mitigation measures to reduce and minimise impacts are recommended to include reinstatement of fencing and other infrastructure required for access, the implementation of a Traffic Management Plan to manage disruptions to roads during construction, and utilising trenchless construction methods to avoid disruptions to major roads such as the Hume Highway (EMM LU4).

With the identified mitigation the residual impacts to land use during construction in Section 3 are assessed as minor.

Table 8-12 Section 3 construction impacts and mitigation measures

Potential impact	Land use typology impacted	Relevant mitigation measures	Residual impact
Continuation of land uses (Risk ID LU2) The continuation of land uses along the Project in Section 3 (agricultural, with some residential growth located adjacent) may be interrupted temporarily by occupation during construction. It is noted that part of Section 3 (from KP 42-43) is within an existing pipeline easement. Subject to the staging of the works, construction for the entire Project is expected to take approximately 9 months. General timeframes to complete works in any one area from site establishment to rehabilitation is nominally four to six months. However, the construction front itself is expected to move at a rate of approximately 700 m per day. Construction of the pipeline in Section 3 would predominantly be undertaken via open trench construction and backfill within a 30 m corridor.	Agricultural, residential (future)	The impact to the continuation of land uses in Section 3 is expected to minor and temporary. Under EMM LU3, construction access and operational activities would be undertaken in consultation with relevant stakeholders, in accordance with the Project Consultation Plan (EMM S6) and Project EMMs S3 and S5. Access would be negotiated with private landowners and fencing reinstated after construction (with temporary fencing utilised during construction where required). As per the Agricultural Impact Assessment, impacts to agricultural land uses are predominately mitigated through EMM S2. including measures for consultation with relevant landholders regarding property-specific avoidance and minimisation measures (including access, biosecurity and continuation of property use) as well ensuring that compensation is provided to directly affected landholders. It is noted that the construction corridor does not impact any land that is currently occupied by residential land uses in Section 3, nor does it intersect with any land reasonably anticipated to be developed for residential land uses during the construction timeframe. As such, physical limits to continuation of residential land uses are not anticipated.	With the implementation of EMMs to minimise impacts on agricultural operation and compensation agreements in place, the Project would have a low impact on agricultural operations. There will be no impact on continuation of residential land uses. Future residential land uses can be constructed within the Area of Consequence provided it is outside the easement.

Potential impact	Land use typology impacted	Relevant mitigation measures	Residual impact
Traffic movement and restrictions (Risk ID LU2) The Project construction has the potential to impact traffic movements where the pipeline crosses sealed roads or railway lines. Construction access would be required within some existing road reserves during construction for pipeline laying purposes, which may cause residual impacts to traffic flow and access.	Transport and infrastructure	To avoid impacts to traffic, where the pipeline crosses selected sealed roads trenchless construction techniques would be utilised. In Section 3, this includes Mickleham Road, Donnybrook Road, Gunns Gully Road, the Hume Freeway, and the North Eastern rail line reserve. Impacts to traffic and roads would be managed via Traffic Management Plans in consultation with the relevant authority (i.e. Council or DoT). Road closures would be minimised through trenchless construction methods where the pipeline intersects with key roads. The above mitigation measures (as described in LU4) mean the Project would result in a negligible impact to transport and infrastructure land uses in Section 3.	The mitigation measures (as described in EMM LU4) mean the Project would result in a negligible residual impact to transport and infrastructure land uses.

Potential impact	Land use typology impacted	Relevant mitigation measures	Residual impact
Amenity impacts (Risk ID LU2) The Project may cause amenity impacts to surrounding land uses, particularly established residential areas that abut the Project at the western extent of Section 3 (near the Merrifield West PSP), include noise, dust and vibration during construction. There is a child care centre (Kool Kidz Childcare Merrifield) located approximately 640 m from the centre of the pipeline alignment (near KP 30), north of Donnybrook Road. According to the noise assessment undertaken for the Project and detailed within Technical report E – Noise and vibration, vibration that would occur as a result of the Project's construction works and in particular excavation may be perceptible by nearby residents. Vibration from blasting activities may also be perceptible by residents. However, blasting impacts would be intermittent and temporary in some locations only. Technical report F – Air quality states that dust would be generated from construction activities such as clearing and grading, open trench construction, lowering and backfilling. There are no residences within 35 m of the construction corridor (primary impact zone for dust) but there are residences within 75 m where there is potential for dust to exceed the relevant EPA criteria during some construction activities.	Residential, agricultural	Amenity impacts would be managed and minimised where possible, in accordance with the EMF and CEMP and in accordance with specific mitigation measures identified through the Air Quality and Noise technical reports (refer to EMM LU2). These EMMs would minimise potential dust impacts through identified separation distances to residencies where dust impacts could occur and implementing measures such as watering or wind barriers where required due to weather conditions and activities in progress. For three childcare centres located between 500 m to 1 km from the construction corridor, the noise assessment (Chapter 12 Noise and vibration) indicates that noise level changes are expected to be minor at this distance. To mitigate these impacts, the Project would be undertaken in accordance with EPA Publication 1834 Civil Construction, Building and Demolition Guide (EMM LU2, NV1). EMMs would minimise noise and vibration impacts through monitoring construction activities and noise levels, consulting with affected residents, and implementing measures such as noise barriers where required due to location and activities. Further discussion of social impacts to residential land uses caused by amenity impacts are discussed in the Social Impact Assessment report.	Amenity impacts to established land uses during construction would be minor and temporary. Dust and noise impacts would be minimised through the Air quality and noise EMMs adopting specific measures related to construction activities and location.

Potential impact	Land use typology impacted	Relevant mitigation measures	Residual impact
Impacts to waterways (Risk ID LU2) The Project crosses Merri Creek at Section 3, within an existing pipeline easement. Construction of the pipeline could impact the ongoing use of land as a waterway and existing vegetation identified within Environmental Significance Overlays and Vegetation Protection Overlays and could result in inconsistencies with planning policy involving open space and conservation land uses if not appropriately managed. The objectives of these overlays are to protect and enhance the diversity, integrity and health of the local native riparian, escarpment and plains vegetation associated with waterways, and provide for the retention, restoration and revegetation of local native plant species. Specific impact to waterways such as erosion, waterway quality and riparian values are outlined in Technical Report B - Biodiversity and habitats and Technical Report O - Water.	Open space and conservation	Construction at Merri Creek would occur through trenched construction and would be undertaken in accordance with a CEMP to manage impacts to the waterway and surrounds. Once the pipeline is in place, there are not expected to be any residual ongoing impacts to waterway land uses. For trenched construction, diversion dams would be constructed of appropriate materials which would minimise watercourse sedimentation, such as steel plates, sand bags or inflatable dams. The pipeline alignment selected for the Project has sought to avoid impacts to vegetation as much as possible. Vegetation required to be impacted by the Project would be further avoided, minimised or rehabilitated through EMMs identified in Chapter 7 Biodiversity and habitats. EMM B1 includes measures such as ensuring that all vegetation clearing works are confined to the defined construction area and the loss of native vegetation would be further minimised wherever feasible, through detailed design and construction planning that considers narrowing the construction corridor, such as reducing the width of the construction corridor where practicable.	With the relevant EMMs applied during construction, residual impacts are anticipated to be minor and once the pipeline is in place, there are not expected to be any residual ongoing impacts to waterway land uses.

8.4.2 Operation impacts

Potential impacts on land use within Section 3 during operation are described in Table 8-13 below.

While the pipeline Project is not included in several PSPs in Section 3 (Lindum Vale, Merrifield West, Lockerbie North and Lockerbie), mitigation measures have been implemented under EMM LU1 which would mitigate impacts to planned land uses in each PSP. Planned future PSPs along the Project (including Merrifield North and Beveridge South West PSPs) would incorporate the proposed easement (EMM LU1).

Communication with landowners as part of easement management would be ongoing, and compensation would be provided in accordance with the *Pipelines Act 2005* or the *Land Acquisition and Compensation Act 1986* (EMM LU3). Additional land required for MLV3 is minimal.

With the identified mitigation measures, the residual impact to land uses during operation in Section 3 is assessed as minor.

Table 8-13 Section 3 operation impacts and mitigation measures

Potential impact	Land use typology impacted	Relevant mitigation measures	Residual impact
Consistency with PSPs (Risk ID LU1) The Project is not incorporated into a number of PSPs within Section 3, including the Lindum Vale, Merrifield West and Lockerbie PSPs. There is a risk that the Project may result in inconsistencies with the PSP where development cannot proceed as described within the PSP. For example, if the Project intersected with a planned residential area, any development would not be allowed within the pipeline easement without the approval of APA (noting that there are no incidences of the Project intersecting with future residential land, however the alignment will abut residential uses at some points). It is noted that in the Merrifield West PSP, some sections of a shared use path may need to be removed temporarily for construction of the pipeline (approximately KP 32-33), though this could be reinstated post-construction (and typically shared use paths are an acceptable or encouraged land use along a pipeline). Additionally, uses that may not typically be encouraged in the 659 m pipeline measurement length (such as schools or other community facilities) may have been planned for in the PSPs. This is the case within both the Merrifield West and Lockerbie PSPs. There is a child care centre (Kool Kidz Childcare Merrifield) located approximately 640 m from the centre of the pipeline alignment (near KP 30), north of Donnybrook Road.	Residential, community facilities	The inconsistency with PSPs in Section 3 would be primarily mitigated through EMM LU1, which states that the Project will minimise impacts as far as reasonably practicable to PSPs and growth areas by providing for consistency with approved and future PSPs, which would be achieved by: • Co-locating the Project with other utility and transport infrastructure projects to avoid impacts on net developable land • Where the pipeline has not been provided for in an existing PSP: – locating the pipeline at a distance from residential dwellings that generally replicates the standards prescribed in PSPs where the Project is provided for – designing the pipeline in accordance with AS 2885 with consideration to current land use. If co-location with infrastructure projects is not possible at a particular location, the Project should avoid parcels that have or would be developed for residential or community land uses. It is preferable that the Project be located where land can be appropriately rehabilitated (e.g. agricultural land uses, or alongside roads and/or other linear infrastructure). After discussion with DoT, the alignment was moved to the western side of the PAO for the OMR /E6 Transport Corridor between KP 28.5-32, which achieves greater separation with residential land uses in the Merrifield West PSP.	With the relevant EMMs and measures within PSPs, the residual impact is expected to be minor.

Potential impact	Land use typology impacted	Relevant mitigation measures	Residual impact
It is noted that schools and community facilities are not prohibited within the pipeline measurement length, and indeed they are planned for within the pipeline measurement length in the Donnybrook-Woodstock PSP, which does take the pipeline into account. Where schools and community facilities or other sensitive land uses currently exist within the pipeline measurement length, the pipeline will be designed in accordance with these land uses. Whist the Project at this location directly intersects with the Donnybrook-Woodstock PSP, it is within an existing pipeline easement which has been factored into the PSP and its underlying plans and objectives (Table 6-2). Therefore, the Project at this location is not expected to impact future land uses within this PSP during operation, as the existing pipeline has been accounted for.		APA is undertaking ongoing consultation and discussion with the VPA to ensure the Project is appropriately provided for in all future PSPs along the Project. With regard to the Kool Kidz childcare centre, the noise assessment (refer to Technical report F *Noise and vibration*) indicates that noise level changes are expected to be minor at this distance. To mitigate these impacts, the Project would be undertaken in accordance with EPA Publication 1834 Civil Construction, Building and Demolition Guide (EMM LU2, NV1). The inclusion of a pipeline easement also provides an opportunity to enhance social and visual outcomes by incorporating linear green open space within the PSP areas, in accordance with the *APA Site Planning and Landscape National Guidelines* (APA 2020).	

Potential impact	Land use typology impacted	Relevant mitigation measures	Residual impact
Continuation of existing land uses (direct and indirect) and limitations on future construction in easements (Risk ID LU2) The presence of the pipeline easement would limit the use of land within the easement, as construction of agricultural buildings (e.g. sheds) and any digging and excavation would be prohibited within the pipeline easement without permission from APA. The inclusion of a pipeline easement may also constrain future subdivision and development of land across the Project.	Agricultural, residential	Impacts to existing agricultural land uses within Section 2 would be mitigated through rehabilitation post-construction, which would occur within six months of construction (EMM LU2). Grain crops, grazing and livestock husbandry would be able to continue along the Project, though agricultural buildings (e.g. sheds) would be prohibited within the easement. The Agricultural Impact Assessment (Appendix C of Technical Report L - Social Impact Assessment) found that normal agricultural production along the easement would be able to resume during operation of the Project after a nominal timeframe of 12 months post-construction. Impacts to agricultural land uses are predominately mitigated through EMM S2 and anticipated that the Project would have a low impact on farming operations. Additionally, it is also noted that agricultural land uses are unlikely to persist in Section 3 as the land is within the UGB. The land will transition to residential and commercial uses in the future, which are planned for through PSPs (see above for discussion). Indirect impacts to planning for these land uses may occur, but can be managed with low risk through PSPs. The inclusion of a pipeline easement also provides an opportunity to enhance social and visual outcomes by incorporating linear green open space within the PSP areas, in accordance with the *APA Site Planning and Landscape National Guidelines* (APA 2020). However, the location of the Project (being predominately parallel with existing or future roads) means the easement is unlikely to prejudice future residential or commercial construction. Limitations to roads and utility construction are discussed below.	Residual impacts are expected to be minor with the EMMs applied

Potential impact	Land use typology impacted	Relevant mitigation measures	Residual impact
Impacts to land tenure through acquisition (Risk ID LU3) One MLV would be constructed in Section 2, and the land for the MLV compound would be acquired by APA The land required for MLV3 is relatively small and gated access during operation would be maintained via Gunns Gully Road. Acquisition of land could result in severance of land, reduced accessibility, and permanent loss of productive agricultural land.	Agricultural	The land required for the MLV3 is minor and small in size. Compensation for the acquisition of the land required for the MLV would be provided in accordance with the *Pipelines Act 2005* and the *Land Acquisition and Compensation Act 1986* (EMM LU3). Generally, the impact to agricultural land uses for acquisition for the MLV is considered to be low when considering the provision of appropriate compensation under the above acts and the minimal area required. It is noted that the monetary unmitigated economic impact to agriculture at the construction stage is estimated at $0.2 million across the full Project, which is equivalent to 0.0013% of the annual value of agricultural production within the regional study area, as determined by the Agricultural Impact Assessment. However, this value would be mitigated through appropriate landowner compensation in accordance with EMM LU3.	Following landowner agreement and compensation, there is not expected to be residual impacts from acquisition.
Increases to traffic during operation (Risk ID LU2) A minimal increase in traffic may occur due to ongoing gas pipeline maintenance and inspections during the operation phase.	Transport and infrastructure	Additional traffic movements caused by maintenance and inspections is negligible in the context of background traffic volumes and are considered to be consistent with the general use of the road network, with no further mitigation required.	No residual impacts are anticipated.

Potential impact	Land use typology impacted	Relevant mitigation measures	Residual impact
Constraints to existing and future roads and utilities (Risk ID LU2) It is expected that there would be some impacts to planning for future roads and utilities in Section 3, as all infrastructure (including but not limited to roads, drainage, or utility) would be required to cross the APA gas pipeline at 90 degrees, unless with the consent of APA, and be engineered to protect the integrity of the pipeline. The Project may also directly or indirectly constrain the design and construction of the OMR/E6 Transport corridor, which the Project runs parallel with for much of Section 3.	Transport and infrastructure	The Project would present some constraints to future road and utility planning in Section 3, as the Project is predominately not within an existing easement at this location. This impact is considered to be of minor consequence, as the presence of a pipeline would not prevent the construction of future roads or utilities, and the Project has been considered in the road and utilities planning in the large Donnybrook-Woodstock PSP. Additionally, it is understood that APA is conducting ongoing discussions with the DoT to appropriately co-locate the WORM easement adjacent to the future OMR/E6 Transport corridor where possible. A risk assessment has been undertaken by APA and the DoT to assess the potential impact of the WORM pipeline on the future development of the OMR/E6 Transport corridor, based on the preliminary OMR/E6 concept design undertaken by DoT. The risk assessment has considered the Project alignment, design and construction methodology. Consequently, APA and the DoT have agreed upon specific requirements for the Project and these have been incorporated into a draft Coordination Deed, to be executed by APA and the DoT prior to the commencement of construction. The Coordination Deed includes requirements relating to the depth of cover to the pipeline in the OMR/E6 Transport corridor, backfill requirements and consideration of a reduced pipeline easement within the OMR/E6 Transport corridor.	The residual impact would be minor and manageable in planning for future roads and utilities. Given APA and the DoT are finalising specific requirements to be incorporated into a Coordination Deed for the Project to mitigate the potential impacts, and are involved in ongoing discussions, it is anticipated that the residual impact to the OMR/E6 Transport corridor would be minor.

8.5 Section 4 – Donnybrook to Wollert Compressor Station (KP 46.8-51.0)

This section discusses the potential impacts to land use within Section 4 during the construction and operation phases of the Project.

Section 4 is also within the northern growth corridor and is within the Whittlesea Shire. Notably, the Project in this section is wholly within an existing gas pipeline easement, which has been accounted for in the draft Shenstone Park PSP. Surrounding land uses are predominantly agricultural or extractive-industry based, though given the growth corridor status of the surrounding land, residential growth may occur in the future. At the end of the Project is the existing APA Wollert compressor station.

Refer to Table 8-14 below for a quantified list of land use typologies that would be impacted by the construction corridor in Section 4.

Table 8-14 Current land uses impacted by construction corridor in Section 4

Land use typology	Area impacted by construction area (sqm)	Proportion of total	Pipeline within existing easement Y/N
Agricultural	94,654	55.16%	Y
Open space and recreation	42,038	24.50%	Y
Growth area (adjacent future residential)	34,286	19.98%	Y
Transport and infrastructure	612	0.35%	Y
TOTAL	**171,590**	**100%**	

For further detailed discussion of existing and foreseeable land use conditions in Section 4, refer to Section 6.5 of this report.

The Project components proposed within Section 4 are described below in Table 8-15 (refer to Section 3 for further discussion of the Project description).

Table 8-15 Section 4 project components

Works	Description
Pipeline	Buried pipeline, to be constructed within a 30 m wide construction corridor, generally constructed through open trench construction, with trenchless construction utilised to avoid interruptions to selected roads, railways and waterways. In Section 4, the pipeline would be wholly within the existing VNI easement.
Pipeline marker signs	Small pipeline marker signs would be placed along the Project, at a frequency to ensure continual line of sight, at changes in direction of the pipeline, at property boundary fences, and at roads, railway and waterway crossings.

Works	Description
Wollert compressor station upgrade	The pipeline terminates at the existing APA Wollert compressor station at 365 Summerhill Road, Wollert. Project components to be constructed within the existing compressor station include: • One new Solar Centaur 50 compressor – a gas turbine driven compressor unit with associated valves, pipework and equipment • End of line scraper station – ongoing maintenance of gas pipelines require the use of a pipeline inspection tool (pig), which are retrieved by a scraper station at the end of the pipeline • Regulation station – a regulating station is required to enable flor of gas from the proposed high-pressure WORM to the existing lower pressure Pakenham-Wollert pipeline

8.5.1 Construction impacts

Potential impacts on land use within Section 4 during construction are described in Table 8-16 below.

Construction impacts at Section 4 are generally considered to be low risk due to the location of the pipeline in an existing easement, and the distance from residential properties.

At Section 4, the Project crosses two conservation areas under the MSA.

- Conservation Area 34a Northern Growth Corridor: Growling Grass Frog Corridor (between KP 42 and KP 44)
  - The construction corridor follows the existing VNIE pipeline easement within Conservation Area 34a. The extent of the construction corridor within the conservation area and within the existing VNIE easement is 2.39 hectares, with 0.59 hectares being outside of the existing easement.
- Conservation Area 28b – Summerhill Road (East), Wollert (between KP 48 and KP 50).
  - This area is largely within the existing VNIE pipeline easement. The extent of the construction corridor within this conservation area and within the existing VNIE easement is 1.78 hectares, with 0.53 hectares being outside of the existing easement.

On this basis, it is considered that the Project would not result in a change to the current use of the land at these locations. For discussion of conservation and biodiversity impacts, refer to Technical report A Biodiversity and habitats. At these conservation areas APA reviewed the alignment to identify locations where the Project Area could be narrowed or bored to avoid impacts to ecological values, yet still meet constructability constraints and landowner considerations.

In addition, although not under a formal conservation arrangement, the properties at 910 Craigieburn Road, 430 Oaklands Road and 380 Oaklands Road have been identified by Hume City Council as locations where conservation investment has occurred. APA has revised the alignment at 910 Craigieburn Road (at KP 23) to avoid several large trees and the construction corridor has been narrowed to minimise the impact to native vegetation. The width of the construction corridor has been reduced at 430 Oaklands Road to minimise impact to native vegetation. No native vegetation has been identified within the construction corridor at 380 Oaklands Road.

A Works in Conservation Area (WICA) approval is required for any works proposed in a Conservation Area. WICA applications are submitted for DELWP's consideration, with some applications also requiring Commonwealth approval prior to commencement of the development. APA would seek to ensure these approvals are submitted to DELWP and approved prior to undertaking any development for the Project within a Conservation Area. A key mitigation measure during construction is the arrangement of access with landowners to minimise impacts on the continuation of land uses in the section (primarily agricultural), including negotiation of compensation under the legislative framework. It is recommended that a specific mitigation measure (EMM LU3) be included to ensure the process is undertaken as a priority. Property access and biosecurity arrangements would be established with agricultural properties (refer Social EMMs).

Additional mitigation measures to reduce and minimise impacts should include reinstatement of fencing and other infrastructure required for access, the implementation of a Traffic Management Plan to manage disruptions to roads during construction, and utilising trenchless construction methods to avoid disruptions to major roads and railway corridors (EMM LU4).

With the identified mitigation the residual impact to land use associated with construction impacts at Section 4 are assessed as insignificant.

Table 8-16 Section 4 construction impacts and mitigation measures

Potential impact	Land use typology impacted	Relevant mitigation measures	Residual impacts
Continuation of land uses (Risk ID LU2) The continuation of land uses along the Project in Section 4 (currently agricultural) would be interrupted temporarily by occupation during construction. The Agricultural Impact Assessment (Appendix C of Technical Report L - Social Impact Assessment) found that there would be some temporary impacts (one year or less) to agricultural production during construction. Subject to the staging of the works, construction for the entire Project is expected to take approximately 9 months. General timeframes to complete works in any one area from site establishment to rehabilitation is nominally four to six months. However, the construction front itself is expected to move at a rate of approximately 700 m per day. Construction of the pipeline would occur entirely within an existing pipeline easement in Section 4, and would predominantly be undertaken via open trench construction and backfill within a 30 m corridor (with an area approximately 10-15 m wide in additional to the existing easement required for construction).	Agricultural	The impact to the continuation of land uses in Section 4 is expected to be minor and temporary, particularly given the construction will occur predominately within an existing easement. Under EMM LU3, construction access and operational activities would be undertaken in consultation with relevant stakeholders, in accordance with the Project Consultation Plan (EMM S6) and Project EMMs S3 and S5. Access would be negotiated with private landowners and fencing reinstated after construction (with temporary fencing utilised during construction where required). As per the Agricultural Impact Assessment, impacts to agricultural land uses are predominately mitigated through EMM S2. including measures for consultation with relevant landholders regarding property-specific avoidance and minimisation measures (including access, biosecurity and continuation of property use) as well ensuring that compensation is provided to directly affected landholders.	With the implementation of EMMs to minimise impacts on agricultural operation and compensation agreements in place, the Project would have a low impact on agricultural operations.

Potential impact	Land use typology impacted	Relevant mitigation measures	Residual impacts
Traffic movement and restrictions (Risk ID LU2) The Project construction has the potential to impact traffic movements where the pipeline crosses sealed roads. Construction access would be required within some existing road reserves during construction for pipeline laying purposes, which may cause residual impacts to traffic flow and access.	Transport and infrastructure	To avoid impacts to traffic, where the pipeline crosses selected sealed roads, trenchless construction techniques would be utilised. In Section 4 this would include Donnybrook Road. Impacts to traffic and roads would be managed via Traffic Management Plans in consultation with the relevant authority (i.e. Council or DoT). Road closures would be minimised through trenchless construction methods where the pipeline intersects with key roads. The above mitigation measures (as described in LU4) mean the Project would result in a negligible impact to transport and infrastructure land uses in Section 4.	The mitigation measures (as described in EMM LU4) mean the Project would result in a negligible residual impact to transport and infrastructure land uses.

Potential impact	Land use typology impacted	Relevant mitigation measures	Residual impacts
Amenity impacts (Risk ID LU2) The Project may cause amenity impacts to surrounding land uses, including noise, dust and vibration during construction. According to the noise assessment undertaken for the Project and detailed within Technical report E – Noise and vibration, vibration that would occur as a result of the Project's construction works in particular, excavation, may be perceptible by nearby residents. Vibration from blasting activities may also be perceptible by residents. However, blasting impacts would be intermittent and temporary in some locations only. Technical report F – Air quality states that dust would be generated from construction activities such as clearing and grading, open trench construction, lowering and backfilling. There are no residences within 35 m of the construction corridor (primary impact zone for dust) but there are residences within 75 m where there is potential for dust to exceed the relevant EPA criteria during some construction activities.	Residential, agricultural	Amenity impacts would be managed and minimised where possible, in accordance with the EMF and CEMP and in accordance with specific mitigation measures identified through the Air Quality and Noise technical reports (refer to EMM LU2). These EMMs would minimise potential dust impacts through identified separation distances to residencies where dust impacts could occur and implementing measures such as watering or wind barriers where required due to weather conditions and activities in progress. EMMs would minimise noise and vibration impacts through monitoring construction activities and noise levels, consulting with affected residents, and implementing measures such as noise barriers where required due to location and activities. Further discussion of social impacts to residential land uses caused by amenity impacts are discussed in Technical Report L - Social Impact Assessment.	Amenity impacts to established land uses during construction would be minor and temporary. Dust and noise impacts would be minimised through the Air quality and noise EMMs adopting specific measures related to construction activities and location.

8.5.2 Operation impacts

Potential impacts on land use within Section 4 during operation are described in Table 8-17 below.

Generally, due to the location of the pipeline within an existing easement (which has been factored into the planning for the draft Shenstone Park PSP), and the construction of upgrades to the Wollert compressor station occurring entirely within land owned by APA and not representing an increase in intensity at the site, impacts are low and the application of EMMs during operation is not required.

The residual impact to land uses within Section 4 during operation are considered to be insignificant.

Table 8-17 Section 4 operation impacts and mitigation measures

Potential impact	Land use typology impacted	Relevant mitigation measures	Residual impacts
Consistency with PSPs (Risk ID LU1) While the Project at this location directly intersects with the draft Shenstone Park PSP, it is within an existing pipeline easement which has been factored into the PSP and its underlying plans and objectives (refer to Table 6-11). Therefore, the Project at this location is not expected to impact future land uses within this PSP during operation, as the existing pipeline has been accounted for.	Residential, open space (future)	The Project provides for consistency with the Shenstone Park PSP, which is in accordance with EMM LU1. Therefore, there are no impacts to consistency with PSPs in Section 4.	No residual impacts are anticipated.
Continuation of existing land uses (direct and indirect) and limitations on future construction in easements (Risk ID LU2) The presence of the pipeline easement would limit the use of land within the easement, as construction of agricultural buildings (e.g. sheds) and any digging and earthworks would be prohibited within the pipeline easement. However, within Section 4, the Project is within an existing pipeline easement and existing APA owned land at the Wollert Compressor Station. Therefore, the Project at this location is not expected to further impact current or future land uses.	Agricultural	As the pipeline is within an existing easement within Section 4, operational impacts to land uses caused by the presence of a gas pipeline and upgrades to Wollert compressor station are generally pre-existing and would not be amplified by the Project. The construction of the upgrades to Wollert compressor station are also expected to be low scale in intensity and do not represent a departure from the existing land use conditions, nor do they present a significant increase in the intensity of land use at the site.	No residual impacts are anticipated.
Increases to traffic during operation (Risk ID LU2) A minimal increase in traffic may occur due to ongoing gas pipeline maintenance and inspections during the operation phase.	Transport and infrastructure	Additional traffic movements caused by maintenance and inspections is considered to be negligible in the context of background traffic volumes and are considered to be consistent with the general use of the road network, with no further mitigation required.	No residual impacts are anticipated.

Potential impact	Land use typology impacted	Relevant mitigation measures	Residual impacts
Constraints to existing and future roads and utilities (Risk ID LU2) There may be some impacts to planning for of future roads and utilities in Section 4, as all infrastructure (including but not limited to roads, drainage, or utility) would be required to cross the APA gas pipeline at 90 degrees, unless with the consent of APA, and be engineered to protect the integrity of the pipeline.	Transport and infrastructure	The Project is within an existing easement at Section 4 and has been considered in future road planning under the Shenstone Park PSP. As such, the operation of the pipeline would not present any additional road or utility planning constraints in Section 4.	No residual impacts are anticipated.

8.6 Cumulative impacts

A number of major linear infrastructure and utility projects are being undertaken in the area. As such, cumulative impacts for the Project have been considered in relation to other approved and/or likely infrastructure projects in the region. The EES has identified four major projects for consideration of cumulative impacts (refer Chapter 5 *Evaluation and assessment framework)*, including:

- OMR/E6 Transport corridor (Approved, not commenced)
- Western Victorian Transmission Network Project (Currently not approved)
- Bald Hill to Yan Yean Pipeline Project (Approved, in progress)
- Sunbury Road Upgrade (Approved, in progress)

Impacts have not been considered in relation to subdivisions and residential/commercial development in urban growth areas within and adjacent to the Project area.

The Project would not increase the cumulative land use impacts caused by the above projects.

As discussed in Section 8.2 the pipeline is located within peri-urban Melbourne, with approximately half of the Project being located within the UGB, and the remaining area being within the green wedge. This area of Melbourne is undergoing significant change in land use structure which would continue for the foreseeable future, and construction of utility and transport infrastructure in this area is to be expected.

Initial alignment selection sought to eliminate risks of impacts to sensitive land uses in residential areas, with impacts predominately located in agricultural areas. The Project would have low risk and temporary impacts to land uses during construction, and due to the nature of the pipeline (i.e. located underground), agricultural land uses are able to continue along the easement, and the Project can be incorporated into future growth areas with minimal impact on reasonably foreseeable land uses.

Impacts to land use have then been minimised where possible by placing the Project within an existing pipeline easement (therefore not contributing to cumulative impacts) or by co-locating where possible and appropriate with other linear infrastructure, such as current and future roads. Further discussion on the avoidance measures that have been considered and implemented for the Project is provided in Chapter 3 *Project development*.

Therefore, the Project presents a minimal increase to cumulative impacts to land use in the area.

9. Environmental management measures

9.1 Recommended measures

Table 9-1 lists the recommended Environmental Management Measures (EMMs) relevant to the land use and planning assessment as discussed in Section 8. All EMMs apply to both construction and operation phases.

In developing the EMMs, the land use report adhered to the mitigation hierarchy that is, an obligation to first avoid, minimise, restore and only after exhausting those measures, offset the residual impacts that remain. Avoidance of all potential impacts to land uses is generally not considered feasible due to the nature of land use as a concept (by moving the alignment from one land use, the Project would likely impact another), and the nature of construction limitations (i.e. it is not financially or technically feasible to bore the entire length of the pipeline, therefore necessitating open trench construction).

However, minimisation of impacts has been achieved where possible, primarily during alignment selection by avoiding land where rehabilitation would not be feasible (e.g. commercial, residential, industrial and community land uses), and by implementing a CEMP, Project Consultation Plan, and Traffic Management Plans. Where construction impacts cannot be minimised or avoided through HDD or boring, land rehabilitation would be undertaken.

With the implementation of the initial and additional mitigation measures and associated monitoring and contingency measures, the residual risk to land use is considered to be low across all risks identified in Section 7.

Table 9-1 Recommended environmental management measures

EMM #	Environmental management measure	Mitigation hierarchy
LU1	**Impacts to** Precinct Structure Plans (**PSPs**) **and growth areas** Minimise impacts as far as reasonably practicable to PSPs and growth areas by providing for consistency with approved and PSPs that are yet to be approved. This must include: • Co-locating the alignment with other utility and transport infrastructure projects to avoid impacts on net developable land where practicable • Where the pipeline has not been provided for in an existing PSP: – designing the pipeline in accordance with AS 2885 with consideration to current land use • Incorporating the proposed easement and notification area based on the Area of Consequence into any future PSPs along the alignment • Rehabilitating land within existing PSPs in accordance with EMM LU2 • Providing for future uses along the pipeline (e.g. shared use paths) in accordance with the APA Site Planning and Landscape National Guidelines (APA 2020).	Avoidance and Minimisation

EMM #	Environmental management measure	Mitigation hierarchy
LU2	**Continuation of existing land uses** Construct and operate the Project in accordance with EMM AQ1, AQ3, AQ4, NV1, NV2, NV3, NV4, NV5 to minimise amenity impacts and support the continuation of existing land uses during construction and operation phases. Rehabilitate land in accordance with the Project CEMP. Continuation of agricultural land uses must be managed in accordance with EMM S2. Inform landowners and occupiers of the construction commencement, and details of the proposed construction programme, in accordance with the Project Consultation Plan.	Minimisation
LU3	**Impacts to land tenure and access** Provide compensation for the reservation of the easement and acquisition of land for the Project in accordance with *Pipelines Act 1985* and *Land Acquisition and Compensation Act 1986*. Consult relevant stakeholders in relation to construction access and operational activities in accordance with the Project Consultation Plan and Project EMMs S3 and S5.	Minimisation
LU4	**Interruptions to roads and railways** Develop and implement Traffic Management Plans in accordance with EMM S3. Use trenchless construction methods to avoid disruptions to major roads and railway lines as far as reasonably practicable.	Avoidance and Minimisation

9.2 Ongoing monitoring and contingency measures

Ongoing monitoring and contingency measures for each land use EMM are listed in Table 9-2 below.

Note that, providing that easement agreements are entered into with relevant landowners and both APA and the landowner conduct activities in accordance with the agreement, additional ongoing monitoring and contingency measures are not considered relevant for EMM LU3.

Table 9-2 Ongoing monitoring and contingency measures

EMM #	Monitoring and contingency measure
LU1	APA will consult with the relevant authority (e.g. Department of Transport, Council) to allow for appropriate co-location with other infrastructure projects (e.g. OMR/E6 Transport corridor). APA is to undertake ongoing consultation and discussion with the VPA to ensure the alignment is appropriately accommodated in all future PSPs along the alignment.
LU2	Following completion of rehabilitation works after construction, a more intensive monitoring would occur for the first 12 months to ensure that reinstatement has been completed to the satisfaction of each land owner and APA. This would include any weed control or reseeding requirements (where required).. It is anticipated this would occur as part of regular post-construction, operations and pipeline maintenance.

EMM #	Monitoring and contingency measure
LU4	Contingency measures for road disruptions should be incorporated as part of the Traffic Management Plans. Where trenchless construction methods are not possible (i.e. if access to properties is blocked temporarily), consultation with any affected residents should be undertaken in accordance with the Project Consultation Plan.

10. Conclusion

The purpose of this report is to provide a land use impact assessment to inform the preparation of the EES required for the Project.

It is considered that the Project design, construction methodology, and proposed mitigation measures (including those recommended in this report and other EES technical reports) provide sufficient mitigation measures to manage and appropriately reduce the risk of land use impacts caused by the Project.

A summary of the key assets, values or uses potentially affected by the Project, and the associated impact assessment are summarised below.

10.1 Existing conditions

A review of existing conditions concluded that land uses in the Project area generally comprise a range of residential, agricultural, open space, commercial, industrial (including extractive industry such as quarries) and community facilities-based land uses. Broadly, land across all sections is generally within a growth area subject to a current or future Precinct Structure Plan (PSP), or within a green wedge.

Generally, PSPs across the study area provided for the Project where it is within an existing pipeline easement but did not account for the Project where a new easement would be required. Generally, land subject to PSPs is currently used for agricultural and rural residential uses, however development has commenced in accordance with the Merrifield West and Lindum Vale PSPs, which are located adjacent to the Project in Section 3.

The Project also intersects with two green wedges, being the Western Plains North and the Sunbury green wedges. Land uses within the green wedges are generally rural residential or agricultural in nature.

The existing conditions assessment also found that the majority of the land subject to the pipeline was privately held, with Crown Land in the study area limited to waterways and roadways.

10.2 Impact assessment

The assessment of impacts to existing and planned (known or reasonably foreseeable) land uses during the construction and operation of the Project were discussed.

Generally, impacts are confined to agricultural land uses due to the existing land use patterns (i.e. at the precipice of the UGB and green wedge) where land is typically used for agricultural purposes and are expected to remain into the future (within the green wedge), or where land is currently used for agricultural uses but is expected to be redeveloped under a PSP. Where the latter is the case, the alignment is reflected in existing PSP's or has been designed to either avoid or manage foreseeable sensitive uses. As such, adverse impacts to existing and reasonably foreseeable land uses are not expected or will be negligible following the application of EMMs.

Construction related activities will temporarily impact land uses in the construction corridor, namely agricultural land uses, which would be managed through a CEMP and appropriately rehabilitated after construction is complete (EMM LU2). Access to private properties may be impacted during construction and would be negotiated with private landowners through the Project Consultation Plan and legislative framework for compensation. Potential noise and dust impacts to agricultural and residential land uses would be managed through a CEMP (EMM LU2).

The Project crosses Conservation Area 34a Northern Growth Corridor: Growling Grass Frog Corridor (between KP 42 and KP 44) and 28b – Summerhill Road (East), Wollert (between KP 48 and KP 50) under the MSA. The construction corridor follows the existing VNIE pipeline easement within Conservation Area 34a. The extent of the construction corridor within the conservation area and within the existing VNIE easement is 2.39 hectares, with 0.59 hectares being outside of the existing easement. With regard to Conservation Area 28b - Summerhill Road (East), Wollert, this area is largely within the existing VNIE pipeline easement. This extent of the construction corridor within the conservation area and within the existing VNIE easement is 1.78 hectares, with 0.53 hectares being outside of the existing easement. On this basis, it is considered that the Project would not result in a change to the current use of the land at these locations. For discussion of conservation and biodiversity impacts, refer to Technical report A Biodiversity and habitats.

At these conservation areas APA reviewed the alignment to identify locations where the Project Area could be narrowed or bored to avoid impacts to ecological values, yet still meet constructability constraints and landowner considerations.

In addition, although not under a formal conservation arrangement, the properties at 910 Craigieburn Road, 430 Oaklands Road and 380 Oaklands Road have been identified by Hume City Council as locations where conservation investment has occurred. APA has revised the alignment at 910 Craigieburn Road (at KP 23) to avoid several large trees and the construction corridor has been narrowed to minimise the impact to native vegetation. The width of the construction corridor has been reduced at 430 Oaklands Road to minimise impact to native vegetation. No native vegetation has been identified within the construction corridor at 380 Oaklands Road.

Whilst Hume City Council has raised concerns with the impacts on future works in the Parklands Crescent road reserve, APA has determined the pipeline alignment, including this section between KP 26 to KP 27 (Parkland Crescent) considering impacts to ecological values(no native vegetation has been mapped within the road reserve), adjacent properties, pipeline length and constructability.

An option involving the construction of the WORM pipeline alignment alongside the OMR PAO to the west was considered however, was not the preferred solution due to its impact on private property including close proximity to residences. Utilising an existing road reserve to collocate the WORM with other services is considered an appropriate planning outcome as it minimises impact to private property.

APA is progressing discussions with Hume City Council relating to Parkland Crescent, on the following:

- Future maintenance and upgrade works on Parkland Crescent
- Specific requirements in relation to working in proximity to the pipeline with consideration to the scope of the works to be provided by Hume City Council

Subject to the staging of the works, construction for the entire Project is expected to take approximately 9 months. General timeframes to complete works in any one area from site establishment to rehabilitation is nominally four to six months. Construction activities are expected to move at a rate of approximately 700 m per day. For agricultural land uses, normal agricultural production along the easement would be able to resume during operation of the Project after a nominal timeframe of 12 months post-construction. Impacts to agricultural land uses are predominately mitigated through EMM S2 and it is anticipated that the Project would have a low impact on farming operations generally.

Land use impacts during the operation phase were found to include ongoing minor limitations on land use within the green wedge, where an easement is not already present, with land unable to be used for structures or large vegetation. However, cropping and grazing can continue in the easement.

Additionally, potential impacts to land use resulting from inconsistencies with existing PSPs can be appropriately mitigated through co-locating the pipeline with existing infrastructure, locating the pipeline in accordance with AS 2885 with consideration to current land use, and generally locating, designing and constructing the pipeline in areas that are not scheduled for sensitive land uses (EMM LU1). Where a PSP has not yet been gazetted, APA is undertaking ongoing consultation and discussion with the VPA to ensure the Project is appropriately incorporated in future PSPs.It is determined that the Project design, construction methodology and recommended mitigation measures in the relevant EES technical assessment and reports provide sufficient mitigation measures to manage and appropriately reduce the risk of land use impacts caused by the Project.

APA has worked together with the Department of Transport during the development of the EES to address the potential for the Project to impact upon the OMR/E6 Transport Corridor.

Given APA and the Department of Transport are finalising specific requirements to be incorporated into a Coordination Deed for the Project to mitigate the potential impacts, and are involved in ongoing discussions, it is anticipated that the residual impact to the OMR/E6 Transport corridor would be minor

The Project also provides land use opportunities, in that the inclusion of a pipeline easement also provides an opportunity to enhance social and visual outcomes by incorporating linear green open space within the PSP areas, in accordance with the *APA Site Planning and Landscape National Guidelines (APA 2020),* which could include linear shared use paths or similar.

The Project is not expected to increase cumulative impacts to land use when considered in conjunction with other linear infrastructure projects occurring in the area. As this area of Melbourne is undergoing significant change in land use structure which will continue for the foreseeable future, construction of utility and transport infrastructure in this area is to be expected, and the Project can be incorporated into future growth areas with minimal impact on reasonably foreseeable land uses. Impacts to land use have then been lowered where possible by placing the Project within an existing pipeline easement (therefore not contributing to cumulative impacts) or by co-locating where possible and appropriate with other linear infrastructure, such as current and future roads.

The Project is in accordance with the relevant strategic state, regional and local planning policy, and supports the security of supply or energy, namely natural gas, including facilitating access to energy for planned residential growth in Melbourne's northern and western growth areas, as outlined in Plan Melbourne.

Impacts to land use through construction and operation can be managed and mitigated through the relevant EMMs and the residual impacts compared to no-project would be low.

In conclusion, the Project is consistent with relevant state and local land use planning policy and impacts to land use during construction and operation phases are considered to be low with the application of the relevant EMMs.

11. References

National

APA 2020, APA Group, *APA Site Planning and Landscape National Guidelines*

State

DEDJTR 2018, Victoria Department of Economic Development, Jobs, Transport and Resources, *Helping Victoria Grow – Extractive Resource Strategy*

DELWP 2019, Victorian Department of Environment, Land, Water and Planning, *Plan Melbourne 2017-2050*

DELWP 2019, Victorian Department of Environment, Land, Water and Planning, *Protecting Melbourne's strategic agricultural land (Draft for consultation)*

DELWP, Victorian Department of Environment, Land, Water and Planning, *Browse amendments*, <https://www.planning.vic.gov.au/schemes-and-amendments/browse-amendments>

DEPI 2013, Victorian Department of Environment and Primary Industries, *Biodiversity conservation strategy for Melbourne's growth corridors*

DSI 2003, Department of Sustainability and Environment, *Melbourne Airport Environs Strategy Plan 2003*

Infrastructure Victoria 2016, *Victoria's 30-Year Infrastructure Strategy December 2016*

VicRoads, Outer metropolitan ring/E6 transport corridor, <https://www.vicroads.vic.gov.au/planning-and-projects/melbourne-road-projects/outer-metropolitan-ring-e6-transport-corridor>

Victorian Planning Authority 2012, *Growth Corridor Plans – Managing Melbourne's Growth June 2012*

Victorian Planning Authority, *PSP Interactive Status Map*, <https://vpa.vic.gov.au/greenfield/interactive-status-map/>

Local

City of Melton 2014, *Western Plains North Green Wedge Management Plan September 2014*

DELWP, Victorian Department of Environment, Land, Water and Planning, *Melton Planning Scheme*, <https://www.planning.vic.gov.au/schemes-and-amendments/browse-planning-scheme/planning-scheme?f.Scheme%7CplanningSchemeName=Melton>

DELWP, Victorian Department of Environment, Land, Water and Planning, *Hume Planning Scheme*, <https://www.planning.vic.gov.au/schemes-and-amendments/browse-planning-scheme/planning-scheme?f.Scheme%7CplanningSchemeName=Hume>

DELWP, Victorian Department of Environment, Land, Water and Planning, *Mitchell Planning Scheme*, <https://www.planning.vic.gov.au/schemes-and-amendments/browse-planning-scheme/planning-scheme?f.Scheme%7CplanningSchemeName=Mitchell>

DELWP, Victorian Department of Environment, Land, Water and Planning, *Whittlesea Planning Scheme*, <https://www.planning.vic.gov.au/schemes-and-amendments/browse-planning-scheme/planning-scheme?f.Scheme%7CplanningSchemeName=Whittlesea>

Hume City Council 2011, *Hume Integrated Land Use and Transport Strategy (HILATS) Action Plan 2011-2014*

Hume City Council 2012, *Sunbury HIGAP Spatial Strategy July 2012*

Hume City Council 2014, *Hume Corridor Integrated Growth Area Plan (HIGAP) Spatial Strategy October 2014*

Hume City Council 2015, *Hume Bicycle Network Plan May 2015*

Victorian Planning Authority 2012, *Lockerbie North Precinct Structure Plan March 2012*

Victorian Planning Authority 2012, *Lockerbie Precinct Structure Plan May 2012*

Victorian Planning Authority 2017, *Donnybrook-Woodstock Precinct Structure Plan October 2017*

Victorian Planning Authority 2017, *PSP 1078 Plumpton – Precinct Structure Plan December 2017*

Victorian Planning Authority 2017, *PSP 1090 Kororoit – Precinct Structure Plan December 2017*

Victorian Planning Authority 2018, *Lindum Vale Precinct Structure Plan September 2018*

Victorian Planning Authority 2018, *Merrifield West Precinct Structure Plan March 2012 (updated June 2018)*

Victorian Planning Authority 2019, *Shenstone Park Precinct Structure Plan September 2019 (Draft for public comment)*

Victorian Planning Authority 2019, *Sunbury South Precinct Structure Plan June 2018 (Amended November 2019)*

EES Technical Reports

Technical Report A - Biodiversity

Technical Report B Surface water

Technical Report F - Noise and vibration

Technical Report G - Air quality

Technical Report H - Landscape and visual

Technical Report L - Social

Appendices

Appendix A – Risk assessment

Risk Assessment

The scoping requirements require a risk-based approach to be adopted during the design of EES studies, so that a greater level of effort is directed at investigating and managing those matters that pose relatively higher risk of adverse effects.

The risk assessment as part of the assessment framework for the EES, is described in Chapter 5 Evaluation and assessment framework.

The consequence of the risk occurring were assigned using a consequence guide specific for each technical discipline. The consequence guide is provided in Table A1.

The likelihood was assigned using a likelihood guide applied to all technical disciplines. The likelihood guide is provided in Table A2.

The risk rating was determined using the risk matrix developed for this EES. The risk matrix is shown in Table A3.

The risk pathways define the cause and effect topics relevant to land use based on an understanding of the existing conditions and the Project activities. The risk pathways are provided in Table A4. Each pathway shows the initial risk rating based on standard management measures, and a residual risk rating based on additional management measures (if required) recommended through the impact assessment process.

Table A1 Consequence approach

Level	Qualitative and/or quantitative description
Insignificant	Land use changes generally consistent with planning policies and zoning. Small impact, short-term (less than 3-6 months), recoverable changes affecting a limited number of existing and potential land uses locally. Easement arrangements that result in negligible land use restriction or change.
Minor	Land use changes result in minor inconsistency with local or state planning policies and zoning. Small impact, short-lived (less than 1-2 years) change affecting a limited number of existing and potential land uses locally. Easement arrangements that result in minor land use restriction or change.
Moderate	Land use changes result in moderate inconsistency with local or state planning policies and zoning. Moderate impact, reversible (up to 2-5 years) change affecting many existing and potential land uses locally. Easement arrangements that result in moderate land use restriction or change.
Major	Land use changes result in a major inconsistency with local or state planning policies and zoning. Large impact, reversible (5-10 years) change affecting existing and potential land uses across a local or wider area. Easement arrangements that result in major land use restriction or change.
Severe	Land use changes result in extensive and significant conflict with local or state planning policies and zoning. Very large, permanent (10+ years) change affecting existing and potential land uses across a wider area or region. Easement arrangements that result in severe land use restriction or change.

Table A2 Likelihood approach

Level		Description
1	Rare	The event is conceivable and may occur only in exceptional circumstances
2	Remote	The event could occur but is not anticipated and may occur if certain abnormal circumstances prevail
3	Unlikely	The event is unlikely but could occur if certain circumstances prevail
4	Likely	The event will probably occur in most circumstances
5	Almost certain	The event is expected to occur in most circumstances or is planned to occur

Table A3 Risk rating approach

		Consequence rating				
		Insignificant	Minor	Moderate	Major	Severe
Likelihood rating	Almost certain	Low	Medium	High	Very high	Very high
	Likely	Low	Low	Medium	High	Very high
	Unlikely	Negligible	Low	Medium	High	High
	Remote	Negligible	Negligible	Low	Medium	High
	Rare	Negligible	Negligible	Negligible	Low	Medium

Table A4 Risk pathways

	Pipeline or Compressor or MLV	Construction and/or operation	Risk description	Initial mitigation measure	Consequence, likelihood, risk	Additional mitigation measure	Consequence, likelihood, risk (residual)
LU1	Pipeline	Construction and operation	**Inconsistencies with PSPs limits planned residential land uses in growth areas** Construction of the pipeline in growth areas where the alignment has not been planned for within PSPs means planned land uses (i.e. residential, commercial, community) cannot proceed as planned.	Consistency with approved PSPs to be addressed through Pipelines Licence application process.	Moderate Unlikely **Medium**	The pipeline will, as far as practicable, minimise impacts to PSPs and growth areas by providing for consistency with approved and future PSPs. This be achieved by: • Co-locating the alignment with other utility and transport infrastructure projects to avoid impacts on net developable land • The proposed easement and Area of Consequence (at 65 m) would be incorporated into the plans and policies of any future PSPs along the alignment • Rehabilitating land within existing PSPs in accordance with EMM LU2 • Providing for future uses along the pipeline (e.g. shared use paths) in accordance with the *APA Site Planning and Landscape National Guidelines* (APA 2020) • Where the pipeline alignment has not been provided for in an existing PSP, minimising impacts by designing the pipeline in accordance with AS 2885 with consideration to current land use, and, where applicable, the future land use prescribed by the PSP.	Moderate Remote **Low**

	Pipeline or Compressor or MLV	Construction and/or operation	Risk description	Initial mitigation measure	Consequence, likelihood, risk	Additional mitigation measure	Consequence, likelihood, risk (residual)
LU2	All	Construction and operation	**Presence of pipeline and easement causes restrictions or interruptions to continuation of existing and planned land uses** Construction and/or operation activities leads to short or long-term impacts on the continuation of existing land uses, including limiting landowner access and causing amenity issues through noise and dust.	Consistency with future land uses to be addressed through inclusion in PSPs and addressed through Pipeline Licence.	Moderate Occasional **Medium**	Construction and operation of the Project will be undertaken in accordance with EMM AQ1, AQ3, AQ4, NV1, NV2, NV3, NV4, NV5 to minimise amenity impacts and ensure the continuation of existing land uses during construction and operation phases. Rehabilitation of land will be in accordance with the Project CEMP. Continuation of agricultural land uses will be managed under EMM S2. Where the pipeline intersects with a current PSP and landscaping has commenced along the alignment, land will be rehabilitated in accordance with the *APA Site Planning and Landscape National Guidelines* (APA 2020). Landowners and occupiers will be informed of the construction commencement, and details of the proposed construction programme, in accordance with the Project Construction Plan. Traffic Management Plans will be implemented to manage and minimise disruptions to roads during construction where practicable. Trenchless construction methods will be used to avoid disruptions to major roads and railway lines as far as practicable.	Moderate Remote **Low**

	Pipeline or Compressor or MLV	Construction and/or operation	Risk description	Initial mitigation measure	Consequence, likelihood, risk	Additional mitigation measure	Consequence, likelihood, risk (residual)
LU3	Pipeline and MLV	Construction and operation	**Land acquisition for MLVs and presence of easement causes severance of land uses and limits access** Changes to land use patterns relating to position of easement or acquisition	Compensation for the acquisition or reservation of the easement in accordance with *Pipelines Act 1985* and *Land Acquisition and Compensation Act 1986*.	Moderate Remote **Low**	Not applicable	Moderate Remote **Low**

Appendix B – Planning assessment

Zones

Table B1 identifies the planning zones within the Project and discusses where a permit would ordinarily be triggered if s85 of the Pipelines Act did not apply.

Table B1 Zone planning assessment

Zone planning assessment	
Melton planning scheme	
Clause 35.04 Green Wedge Zone (GWZ)	Utility installation is a Section 2 (Permit required) use (Clause 35.04-1). A permit is required to construct a building or carry out works for a Section 2 use, and to undertake earthworks (Clause 35.04-5).
Clause 36.01 Public Use Zone 1 – Service & Utility (PUZ1)	A permit is not required to use land for a utility installation, provided that the use is carried out by or on behalf of the public land manager. If the works are not carried out by or on behalf of the public land manager, the use will be a Section 2 (Permit required) use (Clause 26.01-1) and a permit is also required to construct a building and carry out works (Clause 36.01-2).
Clause 36.01 Public Use Zone 4 – Transport (PUZ4)	Utility installation is a Section 2 (Permit required) use (Clause 36.01-1). A permit is required to construct a building or carry out works for a Section 2 use (Clause 36.01-2).
Clause 36.04 Road Zone Category 1 (RDZ1)	Utility installation is a Section 2 (Permit required) use (Clause 36.04-1). A permit is required to construct a building or carry out works for a Section 2 use (Clause 36.04-2).
Clause 37.07 Urban Growth Zone - Schedule 11 (UGZ11)	The applied zone provisions for the Project under the UGZ11 are the GRZ and RDZ1. Under the GRZ and RDZ1, a permit is required to use land and construct building or carry out works comprising a utility installation.
Hume planning scheme	
Clause 35.04 Green Wedge Zone (GWZ)	Utility installation is a Section 2 (Permit required) use (Clause 35.04-1). A permit is required to construct a building or carry out works for a Section 2 use, and to undertake earthworks (Clause 35.04-5).
Clause 35.05 Green Wedge A Zone (GWAZ)	Utility installation is a Section 2 (Permit required) use (Clause 35.05-1). A permit is required to construct a building or carry out works for a Section 2 use, and to undertake earthworks (Clause 35.05-5).

Zone planning assessment	
Clause 36.01 Public Use Zone 1 – Service & Utility (PUZ1)	A permit is not required to use land for a utility installation, provided that the use is carried out by or on behalf of the public land manager. If the works are not carried out by or on behalf of the public land manager, the use will be a Section 2 (Permit required) use (Clause 26.01-1) and a permit is also required to construct a building and carry out works (Clause 36.01-2).
Clause 36.04 Road Zone Category 1 (RDZ1)	Utility installation is a Section 2 (Permit required) use (Clause 36.04-1). A permit is required to construct a building or carry out works for a Section 2 use (Clause 36.04-2).
Clause 36.04 Road Zone Category 2 (RDZ2)	Utility installation is a Section 2 (Permit required) use (Clause 36.04-1). A permit is required to construct a building or carry out works for a Section 2 use (Clause 36.04-2).
Clause 37.01 Special Use Zone – Schedule 11 (SUZ11) 'Lindum Vale Precinct Structure Plan – Electricity Easement'	Utility installation is a Section 2 (Permit required) use (Clause 1.0 to the Schedule). Gas holder works must be at least 30 meters from land (not a road) in a residential zone, or land used for a hospital or education centre, or the use is Section 3 (Prohibited).
Clause 37.07 Urban Growth Zone (UGZ)	Utility installation is a Section 2 (Permit required) use (Clause 37.07-1). A planning permit is required to construct a building or carry out works for a Section 2 use (Clause 37.07-4).
Clause 37.07 Urban Growth Zone – Schedule 4 (UGZ4)	The applied zone provision for the Project location under the UGZ4 is the GRZ. Under the GRZ, a permit is required to use land and construct building or carry out works comprising a utility installation.
Clause 37.07 Urban Growth Zone – Schedule 5 (UGZ5)	The applied zone provision for the Project location under the UGZ5 is the GRZ. Under the GRZ, a permit is required to use land and construct building or carry out works comprising a utility installation.
Clause 37.07 Urban Growth Zone – Schedule 11 (UGZ11)	The applied zone provision for the Project location under the UGZ11 is the GRZ and RDZ1. Under the GRZ, a permit is required to use land and construct building or carry out works comprising a utility installation. Under the RDZ1, a permit is required to use land and construct building or carry out works comprising a utility installation.

Zone planning assessment	
Mitchell planning scheme	
Clause 35.06 Rural Conservation Zone (RCZ)	Utility installation is a Section 2 (Permit required) use (Clause 35.06-1). A permit is required to construct a building or carry out works for a Section 2 use, and to undertake earthworks (Clause 35.06-5).
Clause 36.01 Public Use Zone 4 – Transport (PUZ4)	Utility installation is a Section 2 (Permit required) use (Clause 36.01-1). A permit is required to construct a building or carry out works for a Section 2 use (Clause 36.01-2).
Clause 37.07 Urban Growth Zone – Schedule 1 (UGZ1)	The applied zone provision for the Project location under the UGZ1 is the GRZ. Under the GRZ, a permit is required to use land and construct building or carry out works comprising a utility installation.
Clause 37.07 Urban Growth Zone – Schedule 4 (UGZ4)	The applied zone provision for the Project location under the UGZ4 is the GRZ and RDZ1. Under the GRZ, a permit is required to use land and construct building or carry out works comprising a utility installation. Under the RDZ1, a permit is required to use land and construct building or carry out works comprising a utility installation.
Whittlesea planning scheme	
Clause 35.06 Rural Conservation Zone (RCZ)	Utility installation is a Section 2 (Permit required) use (Clause 35.06-1). A permit is required to construct a building or carry out works for a Section 2 use, and to undertake earthworks (Clause 35.06-5).
Clause 35.06 Rural Conservation Zone – Schedule 1 (RCZ1)	Utility installation is a Section 2 (Permit required) use (Clause 35.06-1). A permit is required to construct a building or carry out works for a Section 2 use, and to undertake earthworks (Clause 35.06-5).
Clause 35.07 Farming Zone (FZ)	Utility installation is a Section 2 (Permit required) use (Clause 35.07-1). A permit is required to construct a building or carry out works for a Section 2 use, and to undertake earthworks (Clause 35.07-4). It is noted that the use within this section (pipeline easement and Wollert Compressor Station) is existing and therefore a permit for use would not be triggered.

Zone planning assessment	
Clause 36.04 Road Zone Category 1 (RDZ1)	Utility installation is a Section 2 (Permit required) use (Clause 36.04-1). A permit is required to construct a building or carry out works for a Section 2 use (Clause 36.04-2).
Clause 37.07 Urban Growth Zone (UGZ)	Utility installation is a Section 2 (Permit required) use (Clause 37.07-1). A planning permit is required to construct a building or carry out works for a Section 2 use (Clause 37.07-4).
Clause 37.07 Urban Growth Zone – Schedule 6 (UGZ6)	The applied zone provision for the Project location under the UGZ6 is the GRZ and RDZ1. Under the GRZ, a permit is required to use land and construct building or carry out works comprising a utility installation. Under the RDZ1, a permit is required to use land and construct building or carry out works comprising a utility installation.

Overlays

Table B2 identifies the planning overlays within the Project and discusses where a permit would ordinarily be triggered if s85 of the Pipelines Act did not apply.

Table B2 Overlays planning assessment

Overlays planning assessment	
Melton planning scheme	
Clause 42.01 Environmental Significance Overlay - Schedule 1 (ESO1)	A permit is required to construct a building or carry our works, and to remove, destroy or lop any vegetation (Clause 42.01-2).
Clause 45.08 Melbourne Airport Environs Overlay – Schedule 1 (MAEO1)	No permit required.
Clause 45.08 Melbourne Airport Environs Overlay – Schedule 2 (MAEO2)	No permit required.
Clause 45.11 Infrastructure Contributions Overlay – Schedule 1 (ICO1)	This Clause implements the Plumpton & Kororoit Infrastructure Contributions Plan, October 2019.

Overlays planning assessment	
Hume planning scheme – Overlays	
Clause 42.01 Environmental Significance Overlay – Schedule 1 (ESO1)	A planning permit is required to remove native vegetation (Clause 2.0 of the Schedule and Clause 42.01-2).
Clause 44.04 Land Subject to Inundation Overlay (LSIO)	A planning permit is required to construct a building or carry out works, including roadworks (if the water flow path is redirected or obstructed), and a fence (Clause 44.04-2).
Clause 44.06 Bushfire Management Overlay (BMO)	No permit required.
Clause 45.01 Public Acquisition Overlay 1 (PAO1) – Roads Corporation for road construction and widening	A permit is required to use land for a utility installation, to construct a building or carry out works, to damage, demolish or remove a building or works, and to damage, remove, destroy or lop vegetation (except for vegetation which has been planted for pasture or crop) (Clause 45.01-1).
Clause 45.01 Public Acquisition Overlay 2 (PAO2) – Hume City Council for road construction and widening	A permit is required to use land for a utility installation, to construct a building or carry out works, to damage, demolish or remove a building or works, and to damage, remove, destroy or lop vegetation (except for vegetation which has been planted for pasture or crop) (Clause 45.01-1).
Clause 45.01 Public Acquisition Overlay 3 (PAO3) – Roads Corporation for Outer Metropolitan Ring/E6 Transport corridor	A permit is required to use land for a utility installation, to construct a building or carry out works, to damage, demolish or remove a building or works, and to damage, remove, destroy or lop vegetation (except for vegetation which has been planted for pasture or crop) (Clause 45.01-1).
Clause 45.06 Development Contributions Plan Overlay – Schedule 4 (DCPO4)	The DCPO4 implements the Merrifield West Precinct Structure Plan Development Contributions Plan.
Clause 45.06 Development Contributions Plan Overlay – Schedule 5 (DCPO5)	The DCPO5 implements the Lockerbie Development Contributions Plan.
Clause 45.08 Melbourne Airport Environs Overlay – Schedule 1 (MAEO1)	No permit required.
Clause 45.08 Melbourne Airport Environs Overlay – Schedule 2 (MAEO2)	No permit required
Clause 45.11 Infrastructure Contributions Overlay – Schedule 2 (ICO2)	The ICO2 implements the Lindum Vale Infrastructure Contributions Plan, Mach 2019.
Clause 45.12 Specific Controls Overlay – Schedule 10 (SCO10)	The SCO10 implements the *'Sunbury Road (Powlett Street to Bulla-Diggers Rest Road) Upgrade Project, Incorporated Document, October 2019'* to land subject to the SCO10.

Overlays planning assessment	
Mitchell Planning Scheme – Overlays	
Clause 42.01 Environmental Significance Overlay – Schedule 4 (ESO4)	A permit is required to construct a building or carry our works (Clause 42.01-2). A permit is also required, to remove, destroy or lop native vegetation, except for vegetation proclaimed as a weed under the *Catchment and Land Protection Act 1994*, and vegetation that has growth for aesthetic or amenity purposes (Clause 42.01-2 and Clause 3.0 of the Schedule).
Clause 42.01 Environmental Significance Overlay – Schedule 6 (ESO6)	A permit is required to construct a building or carry our works (Clause 42.01-2). A permit is also required, to remove, destroy or lop any vegetation, except for vegetation proclaimed as a weed under the *Catchment and Land Protection Act 1994*, and vegetation that has growth for aesthetic or amenity purposes (Clause 42.01-2 and Clause 3.0 of the Schedule).
Clause 42.02 Vegetation Protection Overlay – Schedule 2 (VPO2)	A planning permit is required to remove, destroy or lop any native vegetation, except for dead native vegetation.
Clause 43.03 Incorporated Plan Overlay – Schedule 3 (IPO3)	This Clause implements the Donnybrook-Woodstock Precinct Structure Plan – Biodiversity Conservation Strategy Areas. Under Clause 2.0 of the Schedule, a permit granted where the IPO3 applies must generally be in accordance with the PSP.
Clause 44.04 Land Subject to Inundation Overlay (LSIO)	A planning permit is required to construct a building or carry out works, including roadworks (if the water flow path is redirected or obstructed), and a fence (Clause 44.04-2).
Clause 45.01 Public Acquisition Overlay 7 (PAO7) – Roads Corporation, for Outer Metropolitan Ring/E6 Transport corridor	A permit is required to use land for a utility installation, to construct a building or carry out works, to damage, demolish or remove a building or works, and to damage, remove, destroy or lop vegetation (except for vegetation which has been planted for pasture or crop) (Clause 45.01-1).
Clause 45.01 Public Acquisition Overlay 9 (PAO9) – Yarra Valley Water, for Amaroo and Lockerbie Main Sewer Project	A permit is required to use land for a utility installation, to construct a building or carry out works, to damage, demolish or remove a building or works, and to damage, remove, destroy or lop vegetation (except for vegetation which has been planted for pasture or crop) (Clause 45.01-1).
Clause 45.06 Development Contributions Plan Overlay – Schedule 1 (DCPO1)	The DCPO1 implements the Lockerbie Development Contributions Plan.
Clause 45.11 Infrastructure Contributions Overlay – Schedule 1 (ICO1)	The ICO1 implements the Donnybrook-Woodstock Infrastructure Contributions Plan, April 2019.

Overlays planning assessment	
Whittlesea planning scheme	
Clause 42.01 Environmental Significance Overlay – Schedule 4 (ESO4)	A permit is required to construct a building or carry our works (Clause 42.01-2). A permit is also required, to remove, destroy or lop native vegetation, except for vegetation proclaimed as a weed under the *Catchment and Land Protection Act 1994*, and vegetation that has growth for aesthetic or amenity purposes (Clause 42.01-2 and Clause 3.0 of the Schedule).
Clause 42.01 Environmental Significance Overlay – Schedule 6 (ESO6)	A permit is required to construct a building or carry our works (Clause 42.01-2). A permit is also required, to remove, destroy or lop any vegetation, except for vegetation proclaimed as a weed under the *Catchment and Land Protection Act 1994*, and vegetation that has growth for aesthetic or amenity purposes (Clause 42.01-2 and Clause 3.0 of the Schedule).
Clause 43.03 Incorporated Plan Overlay – Schedule 6 (IPO6)	This Clause implements the Donnybrook-Woodstock Precinct Structure Plan – Biodiversity Conservation Strategy Areas. Under Clause 2.0 of the Schedule, a permit granted where the IPO6 applies must generally be in accordance with the PSP.
Clause 45.01 Public Acquisition Overlay 2 (PAO2) – VicRoads, acquisition by VicRoads for Road Purposes	A permit is required to use land for a utility installation, to construct a building or carry out works, to damage, demolish or remove a building or works, and to damage, remove, destroy or lop vegetation (except for vegetation which has been planted for pasture or crop) (Clause 45.01-1).
Clause 45.01 Public Acquisition Overlay 6 (PAO6) – Roads Corporation, for Outer Metropolitan Ring/E6 Transport corridor	A permit is required to use land for a utility installation, to construct a building or carry out works, to damage, demolish or remove a building or works, and to damage, remove, destroy or lop vegetation (except for vegetation which has been planted for pasture or crop) (Clause 45.01-1).
Clause 45.01 Public Acquisition Overlay 7 (PAO7) – Director of Public Transport, for Outer Metropolitan Ring/E6 Transport corridor – Rail Connections	A permit is required to use land for a utility installation, to construct a building or carry out works, to damage, demolish or remove a building or works, and to damage, remove, destroy or lop vegetation (except for vegetation which has been planted for pasture or crop) (Clause 45.01-1).
Clause 45.11 Infrastructure Contributions Overlay – Schedule 1 (ICO1)	The ICO1 implements the Donnybrook-Woodstock Infrastructure Contributions Plan, April 2019.

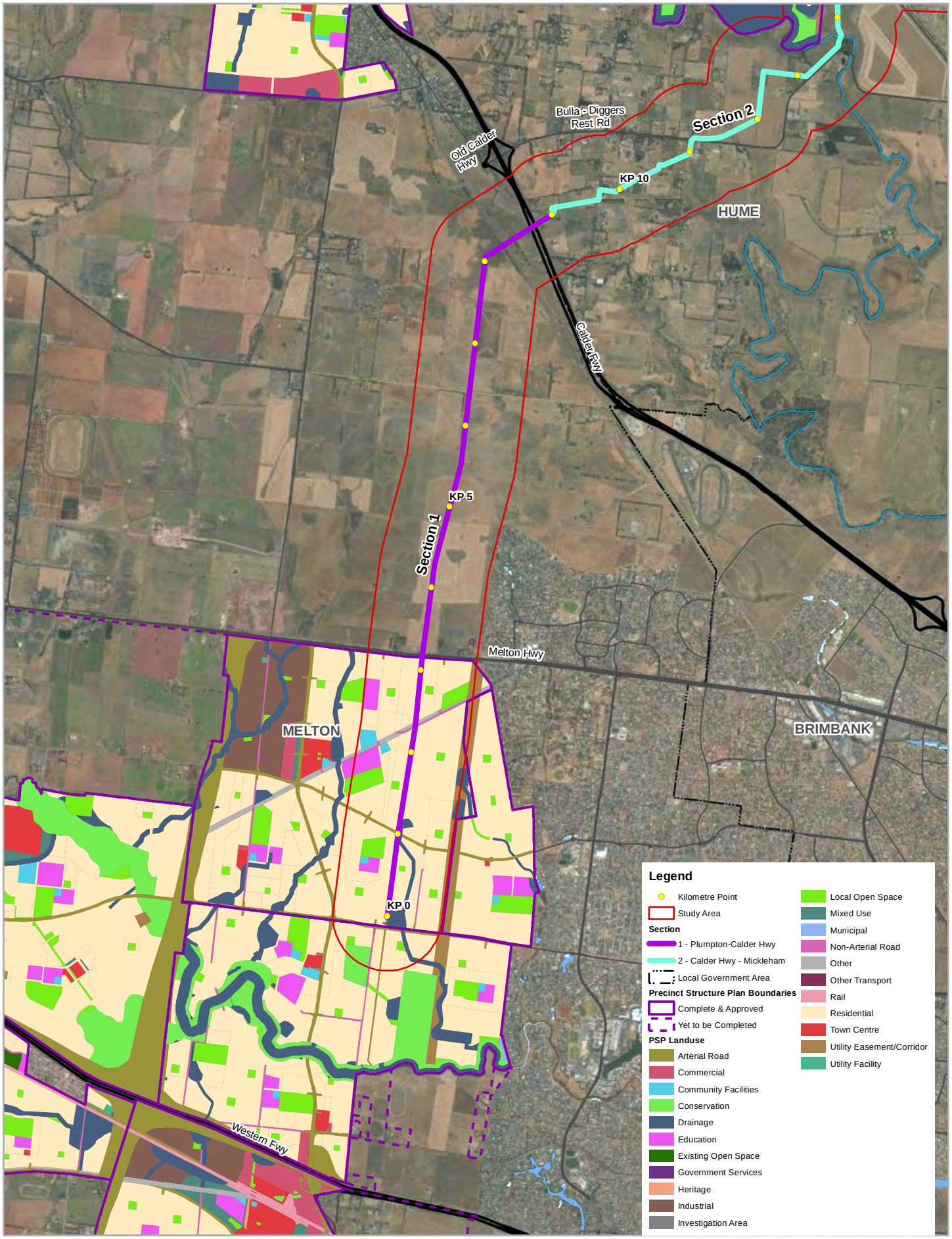
Particular provisions

Table B3 outlines the relevant particular provisions and outlines where a permit would ordinarily be required if s85 of the Pipelines Act did not apply.

Table B3 Particular provisions planning assessment

Clause	Relevance to project
Clause 51.02 – Metropolitan Green Wedge Land: Core Planning Provisions	The purpose of Clause 52.02 is to protect metropolitan green wedge land from inappropriate development "that would diminish its agricultural, environmental, cultural heritage, conservation, landscape natural resource or recreation values". The table to Clause 51.02-2 (Use of land) lists the land uses that are prohibited within green wedge land (as defined at Clause 51.02-1). A utility installation is not a prohibited land use under this Clause.
Clause 52.04 – Melbourne Airport Environs Strategy Plan	The purpose of Clause 51.04 is to "ensure consistency between this planning scheme and the Melbourne Airport Environs Strategy Plan pursuant to the requirements of Part 3C of the Planning and Environment Act 1987".
Clause 52.09 – Extractive Industry and Extractive Industry Interest Area	This Clause seeks to ensure that the use of land for extractive industries does not adversely impact the environment or amenity of the area, while protecting stone resources from inappropriate use and development. The WORM project will intersect with an area zoned Special Use Zone 4 (SUZ4) – Earth and Energy Resources Industry. Under the SUZ4, a utility installation is a Section 2 (permit required) use.
Clause 52.16 – Native Vegetation Precinct Plan	Clause 52.16 aims to provide for the protection of native vegetation through the incorporation of native vegetation precinct plans (NVPP) in the planning scheme. There are a number of NVPPs that apply to the Project Area. Ordinarily, planning approval would be required to remove, destroy or lop any vegetation for the project where the removal, destruction or lopping is not in accordance with the relevant NVPP. PSPs with approved NVPPs within the Project Area are the Lindum Vale PSP, Merrifield West PSP, Lockerbie North PSP and the Lockerbie PSP.
Clause 52.17 - Native Vegetation	The purpose of Clause 52.17 is to "ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation." Clause 52.17-1 states that a planning permit is required to remove, destroy or lop native vegetation, other than where Clause 52.16 is relevant or where an exemption applies. Ordinarily, planning approval would be required under this Clause to remove, destroy or lop native vegetation for the project.

Appendix C – Detailed PSP maps



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Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

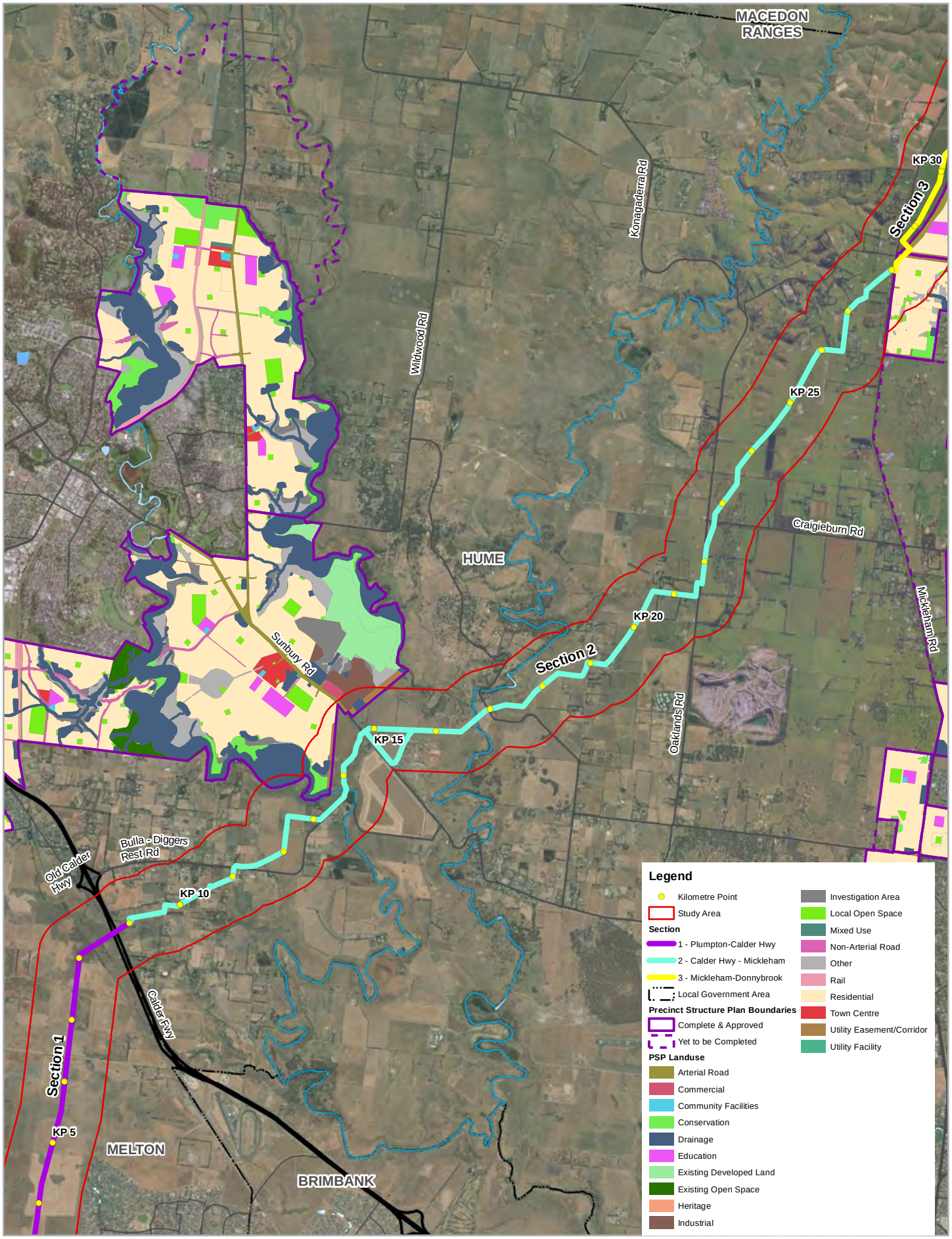
APA VTS (Operations) Pty Ltd
Western Outer Ring Main Gas Project

Project No. 31-12529997
Revision No. E
Date 04/03/2021

Precinct Structure Plan - Land use

Appendix C-1

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner



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Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

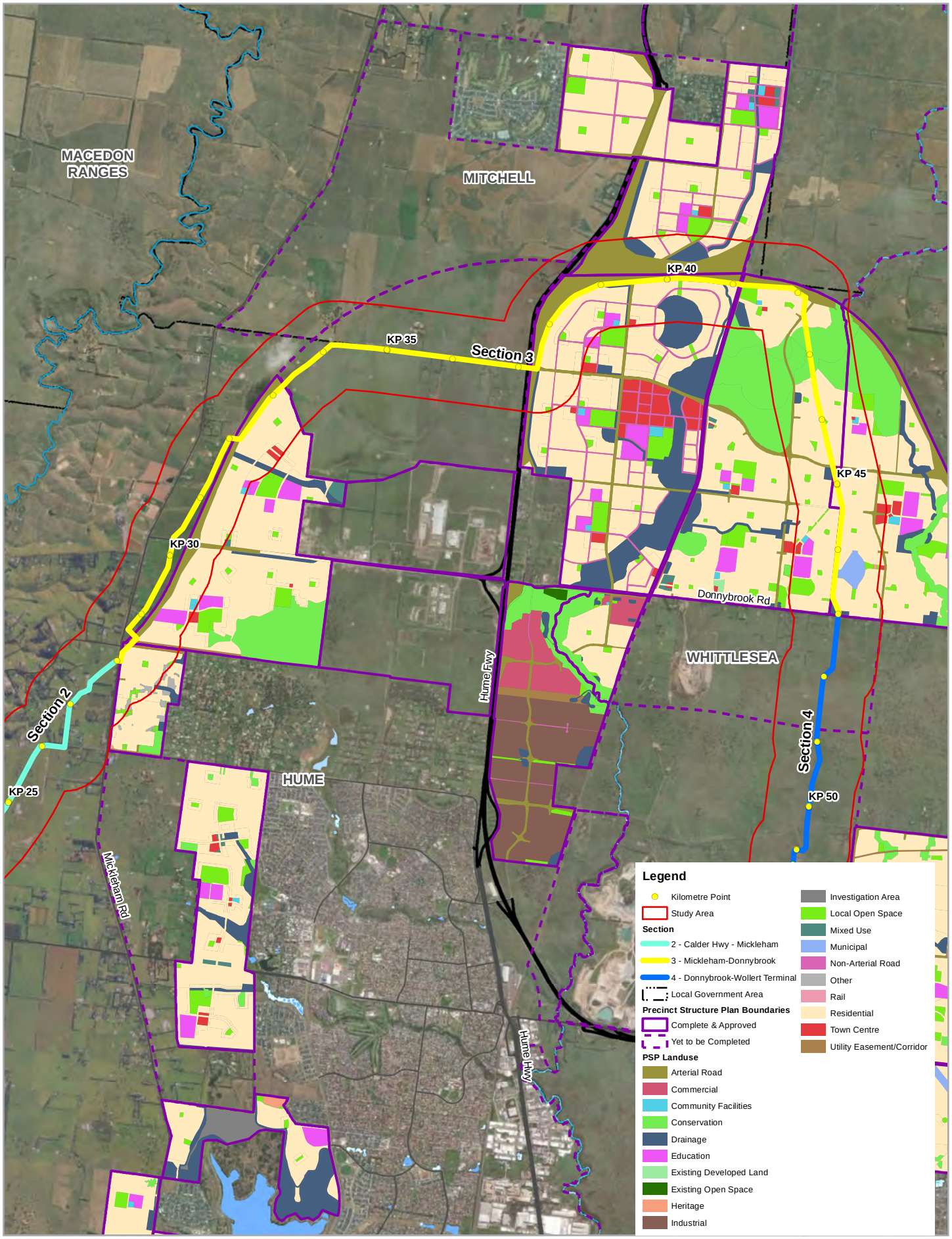
APA VTS (Operations) Pty Ltd
Western Outer Ring Main Gas Project

Project No. 31-12529997
Revision No. E
Date 04/03/2021

Precinct Structure Plan - Land use

Appendix C-2

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner



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Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

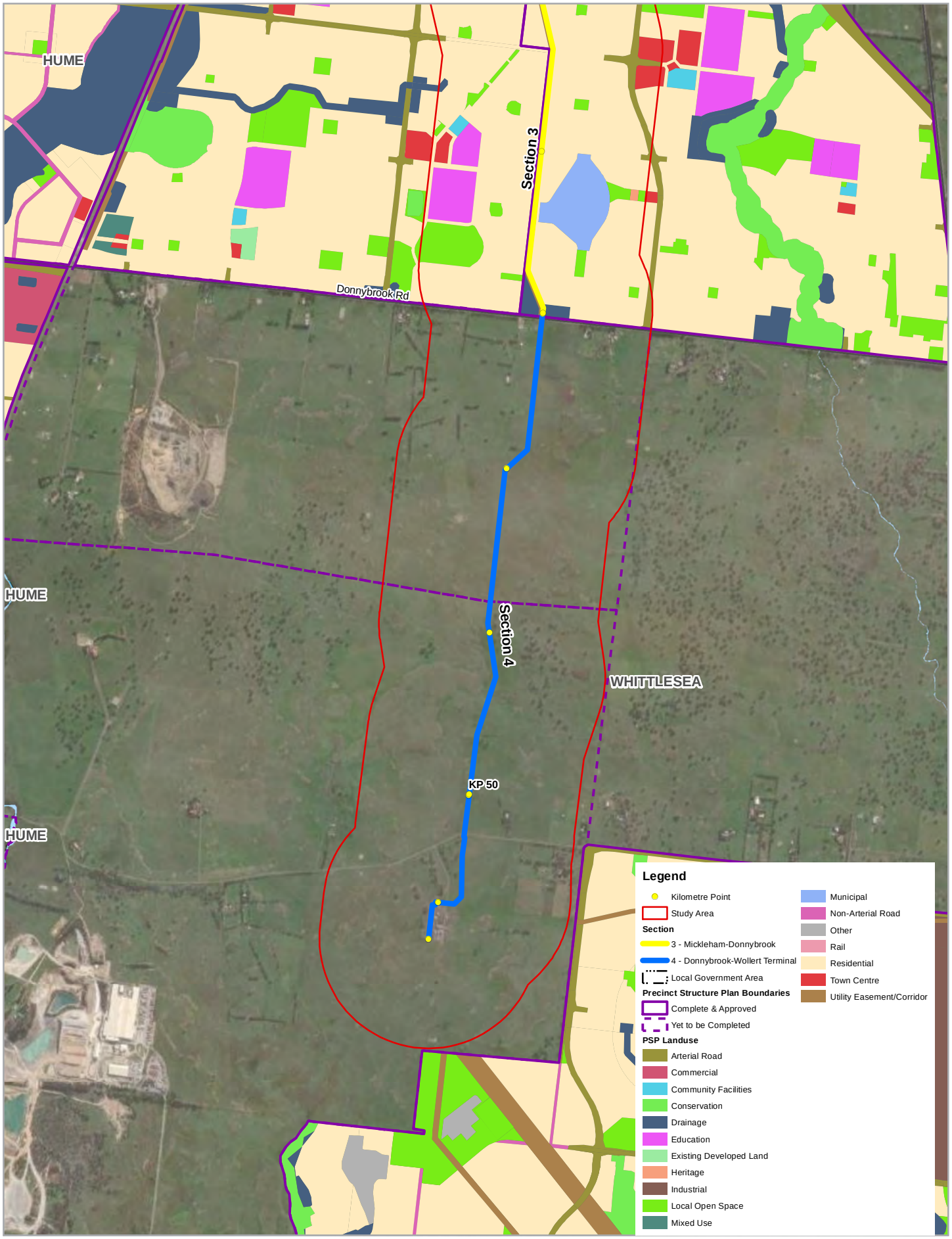
APA VTS (Operations) Pty Ltd
Western Outer Ring Main Gas Project

Project No. 31-12529997
Revision No. E
Date 04/03/2021

Precinct Structure Plan - Land use

Appendix C-3

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner



Paper Size ISO A4

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Kilometers

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

APA VTS (Operations) Pty Ltd
Western Outer Ring Main Gas Project

Project No. 31-12529997
Revision No. E
Date 04/03/2021

Precinct Structure Plan - Land use

Appendix C-4

Data source: DELWP, VicMap, 2020; Geoscience australia 2012, GHD, 2020,Vicmap basemap imagery Created by: kgardner

GHD

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Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
1	R.Muster, K.Nelson	B.George		S.Brattle		13/05/2021

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