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

REFERRAL FORM

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

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

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

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

In completing a Referral Form, the following should occur:

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

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

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

Postal address

Minister for Planning
GPO Box 2392
MELBOURNE VIC 3001

Couriers

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

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

PART 1 PROPONENT DETAILS, PROJECT DESCRIPTION & LOCATION

1. Information on proponent and person making Referral

Name of Proponent:	Roads Corporation (trading as VicRoads)
Authorised person for proponent: **Position:** **Postal address:** **Email address:** **Phone number:** **Facsimile number:**	Agnelo Duarte Director Technical Services Level 1, 3 Prospect Hill Road, Camberwell, Victoria , 3124 agnelo.duarte@roads.vic.gov.au 9811 8363 9811 8329
Person who prepared Referral: **Position:** **Organisation:** **Postal address:** **Email address:** **Phone number:** **Facsimile number:**	Melissa Castle Senior Planning Engineer VicRoads Level 1, 3 Prospect Hill Road, Camberwell, Victoria, 3124 melissa.castle@roads.vic.gov.au (03) 9811 8173 (03) 9811 8248
Available industry & environmental expertise: (areas of 'in-house' expertise & consultancy firms engaged for project)	Project Management – VicRoads, Technical Services – Planning Services Specialist studies undertaken include: • Geotechnical Desktop Study and Risk Register – Melbourne Airport Link to Outer Metropolitan Ring (OMR) and Bulla Bypass Planning Study – VicRoads Geotechnical Services (May 2013) – **Appendix 1** • Melbourne Airport Link to the future Outer Metropolitan Ring and Bulla Bypass Planning Study – Land Use Issues – Including Addendum 1 and 2 – George Ward Consulting Pty Ltd (December 2012) – **Appendix 2** • Melbourne Airport Link to OMR and Bulla Bypass Planning Study Detailed Social Impact Assessment – Sinclair Knight Merz (August 2013) – **Appendix 3** • Outer Metropolitan Ring to Melbourne Airport and Bulla Bypass – Desktop Assessment of Flora and Fauna – Brett Lane and Associates Pty Ltd (February 2011) – **Appendix 4** • Melbourne Airport Link to Outer Metropolitan Ring & Bulla Bypass Planning Study – Flora, Fauna and Net Gain Assessment – Brett Lane and Associates Pty Ltd (May 2013) – **Appendix 5** • Bulla Bypass Planning Study : Alignment Option BB5 – Net Gain Analysis and Flora, Fauna and OBEM Assessment – Brett Lane and Associates Pty Ltd (August 2013) – **Appendix 6**

	• Bulla Bypass and Melbourne Airport Link Planning Study – Regional Economy Assessment – GHD (September 2013) – **Appendix 7** • Bulla Bypass / Melbourne Airport Link Planning Study – Acoustic Report – Renzo Tonin & Associates (VIC) Pty Ltd (August 2013) – **Appendix 8** • Bulla Bypass and Tullamarine Freeway Link – Preliminary Landscape Report – Volume 1: Preliminary Visual and Landscape Impact Assessment and Volume 2: Policy and Strategy Review and Landscape and Visual Assessment and Analysis – Wallbrink Landscape Architecture (November 2010) – **Appendix 9** • Melbourne Airport Link to Outer Metropolitan Ring and Bulla Bypass Planning Study – Detailed Landscape and Visual Assessment – Final Report – Wallbrink Landscape Architecture (August 2013) – **Appendix 10.** • Outer Metropolitan Link to Melbourne Airport and Bulla Bypass – Cultural Heritage – Desktop Assessment Report – Andrew Long and Associates (August 2011) – **Appendix 11** • Draft Aboriginal Cultural Heritage Report – Desktop and Standard Assessment – Bulla Bypass and Melbourne Airport Link to Outer Metropolitan Ring – Dr Vincent Clark & Associates (March 2012) – **Appendix 12** • Bulla Bypass and Melbourne Airport Link to Outer Metropolitan Ring: Historical Archaeology Survey - Dr Vincent Clark & Associates (March 2013) – **Appendix 13** • Preliminary report on archaeological excavations at Bulla for CHMP 11935 - Dr Vincent Clark & Associates (January 2013) – **Appendix 14** • Update on archaeological investigations for CHMP 11935: mechanical excavation at Bulla 1 (VAHR 7822-3278) and radiocarbon dates from Lochton 7 (VAHR 7822-3274) – Dr Vincent Clark & Associates (February 2013) – **Appendix 15** • Preliminary Environmental Site Assessment – 400 Sunbury Road, Bulla VIC – Compass Environmental (January 2013) – **Appendix 16** • Bulla Bypass / Melbourne Airport Link Planning Study – Ultimate Options Strategic Transport Modelling – AECOM (August 2013) – **Appendix 17** • Five radiocarbon dates from Bulla (restricted & public versions) - Dr Vincent Clark & Associates, March 2013 **Appendix 18**

	• Melbourne Airport Master Plan - Melbourne Airport, 2008 - Amended 2010 **Appendix 19** • North Growth Corridor Plan - Growth Areas Authority, 9 August 2012 **Appendix 20** • Sunbury Hume Integrated Growth Area Plan (HIGAP) Delivery & Infrastructure Strategy - Hume City Council, July 2012 **Appendix 21** • Sunbury Hume Integrated Growth Area Plan (HIGAP) Spatial Strategy - Hume City Council, July 2012 **Appendix 22** • Sunbury/Diggers Rest Growth Corridor Plan - Growth Areas Authority, 13 June 2012 **Appendix 23** • Expected Mitigation Measures for Aboriginal Cultural Heritage - Melbourne Airport Link to OMR and Bulla Bypass (Cultural Heritage Management Plan 11935) - Dr Vincent Clark & Associates, November 2013 **Appendix 24** • Bulla Bypass and Melbourne Airport Link - Hydraulic Assessment - Parsons Brinckerhoff Australia Pty Ltd, December 2013 **Appendix25** • Desktop Social Impact Assessment: Outer Metropolitan Ring Link to Melbourne Airport and Bulla Bypass - Final Report - Sinclair Knight Metz, 24 June 2011 **Appendix 26** • Outer Metropolitan Ring Link to Melbourne Airport and Bulla Bypass - Desk Top Assessment of Land Use Issues - George Ward Consulting Pty Ltd, 20 May 2011 **Appendix 27** • Cultural Heritage Assessment of Alignment Options for Bulla Bypass/Melbourne Airport Link planning study using Objectives Based Evaluation Matrix (OBEM) - Dr Vincent Clark & Associates, November 2013 **Appendix 28** • Victoria The Freight State - The Victorian Freight and Logistics Plan - State Government Victoria, August 2013 **Appendix 29**

2. Project – brief outline

Project title: Melbourne Airport Link to Outer Metropolitan Ring and Bulla Bypass

Project location: (describe location with AMG coordinates and attach A4/A3 map(s) showing project site or investigation area, as well as its regional and local context)

The project is situated north of Melbourne Airport near Bulla, approximately 24 kilometres north west of Melbourne CBD (Melways Map 177).

Refer to **Attachment 1** showing the locality plan and investigation area and **Attachment 2** showing the Bulla Bypass (BB5) alignment and the Melbourne Airport Link alignment**.** More detailed functional layout plans are provided as **Attachment 3 & 4.**

MGA Co-ordinates are as follows:

Melbourne Airport link
N5829030.947 E310866.965 (Melbourne Airport) to N5834823.186 E307228.540 (OMR southern ramp) and N5835719.270 E308314.670 (OMR northern ramp).

Melbourne Airport link excluding Commonwealth land
N5831721.787 E309305.870 (Melbourne Airport) to N5834823.186 E307228.540 (OMR southern ramp) and N5835719.270 E308314.670 (OMR northern ramp).

Bulla Bypass
N5833044.600 E309548.594 (east of Oaklands Road) to N5833518.702 E304977.780 (Sunbury Road)

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

The action being referred is the application of a Planning Scheme Amendment to include a Public Acquisition Overlay (PAO) in the short term along with the construction of two related road network components being Melbourne Airport Link and Bulla Bypass within the road reservations in the medium to long term.

1. Melbourne Airport link
The alignment for the Melbourne Airport Link extends from the Tullamarine Freeway and travels in a northerly direction, where it connects to the future proposed Outer Metropolitan Ring (OMR) /E6 Reservation. The alignment is approximately 8km in length. This link will be an ultimate six lane freeway standard facility with freeway interchanges with the OMR/E6 Reservation, Bulla Bypass (at Somerton Road) and Sunbury Road (in the vicinity of Oaklands Road). The alignment also provides for a shared path along its length.

2. Bulla Bypass
Bulla Bypass will provide a high standard arterial east – west link between Sunbury and the Melbourne Airport Business precinct and Melbourne's north. Bulla Bypass will bypass the township of Bulla where the existing road is subject to delays and queuing in peak periods and is constrained by steep grades and tight curves. VicRoads has identified BB5 as the preferred alignment for the Bulla Bypass. The BB5 alignment begins east of Oaklands Road and generally travels west along Somerton Road with widening on the north side, then diverts north between Wildwood Road and Green Street before turning south to cross Deep Creek and connecting with Sunbury Road, in the interim, and the OMR interchange in the ultimate. Ultimately Bulla Bypass will be a six lane divided arterial road (with a shared path) of approximately 4.7km in length.

3. Project description

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

The objectives of the Melbourne Airport Link and Bulla Bypass projects are to:

1. To effectively link the Outer Metropolitan Ring Transport Corridor to Melbourne Airport and employment in Metropolitan Melbourne;
2. To support the long term objectives for the future development of Metropolitan Melbourne, including land use objectives for Sunbury;
3. To improve safety and functionality of the road network for all road users, including in Bulla township and surrounds;
4. To protect and improve residents' amenity and wellbeing, and minimise any dislocation or severance of communities, to the extent practicable;
5. To minimise impacts on biodiversity, including catchment values/waterways;
6. To protect existing land uses and the character of significant landscapes, open space, recreational values, to the extent practicable;
7. To minimise impacts on cultural heritage to the extent practicable; and
8. To support economic performance for the local and regional economy.

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

Melbourne Airport Link to OMR (Airport Link)
The aims of the Melbourne Airport Link to OMR complement the aims of the Outer Metropolitan Ring /E6 Reservation, which are;

- to enhance connectivity between key international transport hubs such as Melbourne Airport, Avalon Airport and Port of Geelong;
- to serve as an important route to interstate and major regional destinations; and
- link residential and employment growth areas in the north and west of Melbourne

This project is dependent on the construction of the OMR. Together, both projects would provide an alternative, more efficient route to Melbourne Airport form the north of Melbourne thus alleviating pressure on other north south routes, particularly the Hume Freeway/M80.

Bulla Bypass
As a result of changes to the Metropolitan Urban Growth Boundary at Sunbury in August 2010, Sunbury's population will rapidly expand as development proceeds. Increased traffic volumes on Sunbury Road are anticipated as it is the main link to employment in the vicinity of Melbourne Airport and industrial areas in Melbourne's north. The current 2 lane 2 way road will not meet the future needs for the anticipated increase in transport demand.

Congestion along Sunbury / Bulla Road through the Deep Creek valley and the township of Bulla has the potential to affect the timing of the future development of Sunbury. The Growth Areas Authority has advised that there is already pressure to develop the north east section of the Sunbury Growth Area, which would increase transport demand for Sunbury Road.

Sunbury / Bulla Road is already congested, carrying approximately 23,000 vehicles per day, resulting in delays and queuing in peak periods through the township of Bulla. The existing route is constrained by steep grades and tight curves as the road crosses Deep Creek. Traffic impacts on Bulla have been of community concern for many years.

Both the Bulla Bypass and the Melbourne Airport Link provide strong support for land use planning objectives as set out in the following strategic documents:

- Sunbury/Diggers Rest Growth Corridor Plan, June 2012 in **Appendix 23**;
- Plan Melbourne - Metropolitan Planning Strategy, October 2013 accessible on the internet at http://www.planmelbourne.vic.gov.au/Plan-Melbourne;
- Victoria The Freight State - The Victorian Freight and Logistics Plan, August 2013 in **Appendix 29**;
- State Planning Policy Framework (SPPF);
- Hume Planning Scheme – Local Planning Policy Framework (LPPF) – although some aspects are out dated due to the introduction of Amendment VC68;

- Sunbury Hume Integrated Growth Area Plan (HIGAP) Delivery & Infrastructure Strategy, July 2012 in **Appendix 21**; and
- Melbourne Airport Master Plan, 2008, Amended 2010 in **Appendix 19**.

The Freight State and Plan Melbourne indicate that Bulla Bypass / MAL are designated as forming part of the future freight network. Refer to the plans in **Attachment 9** showing the Long-Term Metropolitan Freight Network Vision from Victoria the Freight State and **Attachment 10** showing Map 23 – Freight Networks and Gateways by 2050 from Plan Melbourne.

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

Melbourne Airport Link

The proposed alignment begins at the end of the Tullamarine Freeway (east of Melbourne Airport), and is planned as an ultimate six lane freeway typically 75-90m wide. A Y-type interchange with Sunbury Road is to be provided near the north-east corner of Melbourne Airport. The eastbound ramps of this interchange are proposed to underpass the freeway to comply with airport safety requirements.

A diamond interchange (provides for full movements) at Somerton Road will link the Bulla Bypass to the Airport Link. The interchange width is approximately 230m.

From Somerton Road, the alignment then heads north to north west and connects with a freeway-to-freeway interchange with the future OMR/E6 Transport Corridor, widening out to around 1300m. The alignment is about 8km in length. The alignment width includes provision for an off road shared bike path, water sensitive road design (drainage) and noise attenuation where required.

Bulla Bypass

The Bulla Bypass (BB5) alignment begins east of Oaklands Road and generally travels west along Somerton Road with widening on the north side, then diverts north between Wildwood Road and Green Street before turning south to cross Deep Creek and connect with Sunbury Road in the initial phase. An ultimate connection with the OMR interchange (reservation currently in the Hume Planning Scheme) at Sunbury Road forms the ultimate configuration. Bulla Bypass is approximately 4.7 km long. The alignment width is typically 60 – 65 m widening to approximately 130 metres on the approaches to the bridge. Cut depths are up to 13 metres in depth. The main bridge length across Deep Creek is approximately 550m in addition to a 110m (approximately) bridge crossing the gully at chainage 51500. For both bridges in the ultimate 6 lane configuration the eastbound and westbound carriageways will be separate structures.

New access is proposed to extend Bulla Diggers Rest Road to a signalised intersection with Bulla Bypass. Bulla Road will form a T-intersection with Bulla-Diggers Rest Road near the existing roundabout. Green Street will be extended to connect with the Bulla Bypass alignment as a left in, left out arrangement. The Bulla Bypass allows for signalised intersections with both Wildwood Road and Oaklands Road, whilst it would provide for an access point with Blackwells Lane as a left in, left out arrangement.

Bulla Bypass also includes provision for an off road shared bike path, water sensitive road design (drainage) and noise attenuation in accordance with VicRoads - Traffic Noise Reduction Policy.

Refer to **Attachment 3 & 4** for detailed plans of the Bulla Bypass BB5 alignment and the Melbourne Airport Link alignment respectively.

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

Ancillary components include the following:

- Modification of existing utilities and related road infrastructure where necessary;
- New access roads;
- Waste disposal including contaminated materials where required;
- Construction works sites and access routes.

Key construction activities:

Construction activities for the project comprise the normal road building processes, including:

- Clearing of vegetation / site;
- Excavation and stockpiling of topsoil;
- Break up of existing structures and road pavement where necessary;
- Placement of sub grade and road materials;
- Rolling and compaction;
- Trenching and placement of services, drainage and culverts;
- Relocation of services;
- Bitumen, asphalt laying and surfacing;
- Road finishing, line marking and furniture placement;
- Erection of signalling, signage, noise walls (where required) and other structures;
- Bridge construction including excavation, pile driving (possible), formwork construction, concrete pouring, dismantling;
- Landscaping and general clean up.

Key operational activities:

The main operational activity will be ongoing road maintenance consistent with VicRoads' practices and standards, including the maintenance of landscape including grass cutting and weed control, stormwater drains, road pavement, bridges, electrical assets, traffic signals, road furniture and line marking.

Key decommissioning activities (if applicable):

The project will not be decommissioned, but will have on-going maintenance requirements as above.

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

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

The Melbourne Airport Link, between Somerton Road and the OMR could not be built before the Outer Metropolitan Ring component of the OMR/E6 Reservation is constructed.

The Bulla Bypass, however, is a standalone project and could be built at an earlier stage, along with the section of the Melbourne Airport Link between the Tullamarine Freeway and Somerton Road.

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

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

Both components of the project the Melbourne Airport Link and Bulla Bypass will eventually link with the OMR/E6 Transport Corridor Reservation. The OMR/E6 Transport Corridor Reservation is currently subject to a separate Environmental Impact Assessment process (Environment Report) as a result of an earlier referral to the Minister for Planning.

The OMR/E6 Transport Corridor Reservation was published as part of documentation associated with Amendment VC68 to the Wyndham, Melton, Hume, Mitchell and Whittlesea Planning Schemes. The Public Acquisition Overlay, which sets aside the land for the OMR/E6 Transport Corridor reservation, was gazetted in 2010.

4. Project alternatives

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

Ten Options were originally developed to connect from the end of the existing Tullamarine Freeway in the south, cross the Deep Creek valley, and connect to the deviation of Sunbury Rd for the OMR / E6 reservation west of Bulla. The alternative alignments are listed below and shown in **Attachment 5**:

- Options in the Southern corridor south of Bulla township
  - Option A
  - Option B
- Options in the Northern Corridor north of Bulla township
  - Option C
  - Option D
  - Option H
- Options in the Inner Bulla Corridor through the township of Bulla and Immediately South
  - Option E
  - Option F
  - Option G
  - Option F-G
- Option I - Extending the Tullamarine Freeway to the OMR (Melbourne Airport Link) and utilising part of the OMR reservation

As a result of the desktop studies and an evaluation of environmental, economic, social and technical aspects, the Southern Corridor and Inner Bulla Corridor options were eliminated. The northern corridor options were taken forward for further investigation for the Bulla Bypass.

Furthermore the planning study scope was refined to identify two distinct components as follows:

- Melbourne Airport Link – a freeway connection from the end of the existing Tullamarine Freeway to the OMR/E6 reservation
- Bulla Bypass – an arterial connection from the vicinity of Oaklands Rd, across the Deep Creek Valley to Sunbury Rd

Following the decision to further proceed with the Northern corridor options, the Bulla Bypass options were reviewed and further developed. The alignments listed below are shown in **Attachment 6 and 7**.

- Option BB1 South (originally BB1)
- Option BB1 North
- Option BB2 (formerly Option C)
- Option BB3
- Option BB4 (formerly Option H)

At later stages further options were investigated namely:

- Option BB1 North Modified
- Option BB5

In addition, Oaklands Rd duplication between Somerton Rd and Sunbury Rd was considered as an interim alternative to connect Bulla Bypass to Sunbury Rd (east of Bulla).

An evaluation and justification for the elimination of the above options is contained in **Attachment 8**.

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

There are no other key alternatives to be further investigated.

5. Proposed exclusions

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

The section of the Melbourne Airport Link from Chainage 10000 to approximately Chainage 13400 on Commonwealth Land is excluded. There are no relevant Victorian approvals to issue for this section of the project. VicRoads is considering referral of this Commonwealth section of the Project to the Federal Minister under the EPBC Act.

Note: Text in the EES Referral highlighted yellow is specific to Commonwealth land and is to be excluded from assessment.

6. Project implementation

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

The Roads Corporation (trading as VicRoads).

Implementation timeframe:

The Melbourne Airport Link is a longer term strategy i.e. around 20-30 years plus, however interim staging in conjunction with Bulla Bypass could be 15 - 30 years.

Bulla Bypass 5 and any interim staging is medium to long term of 15- 30 years depending on State-wide infrastructure priorities (available funding).

Proposed staging (if applicable):

It is anticipated that Bulla Bypass will be constructed prior to the Melbourne Airport Link. (Somerton Road to OMR section).

Consideration will be given to interim construction options when funding is sought. Staging options for to be considered for Bulla Bypass may include the following:

- an interim two lane arterial road connection
- an interim four lane arterial road link with the Melbourne Airport Link southern section between Tullamarine Freeway and Somerton Road being constructed as a four lane arterial road link

The Melbourne Airport Link is not required in its entirety until the OMR/E6 Transport Corridor is constructed. The OMR/E6 Transport Corridor may be a staged constructed with potential staging yet to be finalised.

7. Description of proposed site or area of investigation

Has a preferred site for the project been selected?

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

The site for the Melbourne Airport Link and Bulla Bypass Option BB5 has been selected as VicRoads preferred alignments.

General description of preferred site, (including aspects such as topography/landform, soil types/degradation, drainage/ waterways, native/exotic vegetation cover, physical features, built structures, road frontages; attach ground-level photographs of site, as well as A4/A3

aerial/satellite image(s) and/or map(s) of site & surrounds, showing project footprint):

Topography/landforms:

The project area comprises undulating plains, low hills and incised creek valleys, including Deep Creek. Deep Creek lies to the north west of the project area. To the east, north of Melbourne Airport is Woodlands Historic Park and Moonee Ponds Creek which follows the park's boundary.

The ground elevation along the Melbourne Airport Link gradually decreases from north to south. Along the Bulla Bypass corridor the ground elevation gradually increases from east to west, with a deeply incised Deep Creek valley at the western end approximately 70m deep.

The main landscape features in the local area are:

- the rural "openness" of the plains and gentle landform rises and associated vegetation;
- the intimate country township character and secluded valley of Bulla;
- steep valley landform of Deep Creek as an incision in the landscape;
- the fine grained land use patterns

Soil types/degradation:

The geology of the Airport Link site consists of recent deposits of Alluvial and Colluvial materials (gravel, sand and silt). Recent deposits around Moonee Ponds Creek may contain organic material. The geology of Bulla Bypass site consists of basalt of the Newer Volcanics series overlying marine siltstone (Deep Creek Siltstone) of Lower Silurian Age. Between Deep Creek and the junction of Green Street and Somerton Road intrusive granite (Bulla Adamelite) is also present. The residual soil derived from the weathering of basalt is commonly characterised as an expansive soil. This material can be highly dispersive and in some instances may have a high degree of erodability.

In relation to the Geomorphology, the site lies on the West Victorian Volcanic Plains. The area is the product of lava flows which spread over extensive plains developed on weathered and reworked Tertiary sediments.[1]

An abandoned Kaolinite quarry is located at the eastern side of Deep Creek upstream of Bulla Road Bridge. The site is listed as a Site of Geological and Geomorphological Significance in Victoria and is used as a teaching site.

Bulla Tip and Quarry is around 500m from the Bulla Bypass (BB5) alignment and a contaminated landfill has been identified between Deep Creek and Sunbury Road[2]. This contaminated site occurs within the Bulla Bypass (BB5) alignment.

Drainage/waterways:

There are two creeks within the local area. Bulla Bypass crosses Deep Creek before it flows through Bulla township. . Moonee Ponds Creek is situated east of and in close proximity to the Melbourne Airport Link.

Native/exotic Vegetation cover:

Most of the original native vegetation has been cleared from the investigation area. Remnant native vegetation is largely confined to one large private property along Deep Creek in the north west of the study area and Woodlands Historic Park on the eastern side of Oaklands Road.

Several remnant patches of vegetation and scattered trees occur along the banks of Deep Creek and extend up onto the large rolling hills. Open woodland dominated by River Red-gum trees (mature and recruiting) occurs along Moonee Ponds Creek in Woodlands Historic Park.

Other than small patches of woodland, scattered trees and creek line vegetation, the vast majority

[1] Page 4 VicRoads Geotechnical Services, Geotechnical Desktop Study and Risk Register (May 2013)

[2] George Ward Consulting, Land Use Issues (August 2013)

of the investigation area supports introduced vegetation and planted trees. The banks of Deep Creek are subject to an Environmental Significance Overlay under the Hume Planning Scheme and the banks of Moonee Ponds Creek within Commonwealth land are subject to the Melbourne Airport Environment Strategy.

Physical features/Built Structures/Road frontages:

The investigation area is approximately 149 hectares of private and public land within Bulla and Melbourne Airport, situated approximately 24 kilometres north-west of the Melbourne CBD.

The area comprises undulating plains, low hills and incised creek valleys. Granite geology occurs in the north-eastern part of the local area while the southern and western parts of the area are dominated by basalt-derived soils. Deep Creek runs roughly north to south through the study area and lies within a deeply incised valley with steep sides.

The key built structure dominating the southern side in the vicinity of the project area is Melbourne Airport. An important consideration is the future development of the airport as outlined in the Melbourne Airport Master Plan 2008, amended in 2010 and the draft Melbourne Airport Master Plan 2013.

The Melbourne Airport Link crosses three local roads, Sunbury Road, Oaklands Road and Somerton Road before linking to the future OMR/E6 Transport Corridor. It traverses a number of properties and the land, houses and other infrastructure within the proposed reservation will need to be acquired. Service infrastructure may also need to be relocated and/or amended.

Properties along Somerton Road currently have road frontage to Somerton Rd. Properties on the south side will retain this road frontage when Bulla Bypass is operational. However, access will change to left in left out.

Site area (if known): Approximately 149 hectares of private and public land within Bulla and Melbourne Airport.
(The site area is approximately 104 hectares excluding the section of Melbourne Airport Link on Commonwealth land).

Route length (for linear infrastructure) **and width.**

Alignment	**Approx. Total length (kilometres)**	**Bridge length (metres) over Deep Creek**	**Width (m)**
Bulla Bypass	4.7	550	Typically 60 – 65 m widening up to approximately 130 m at bridge abutments
Melbourne Airport Link	8 (4.6 km excluding the section of MAL on Commonwealth land)	N/A	Typically 75 - 90 m widening up to 230m at Somerton Road interchange and 1100m at OMR/E6interchange

Current land use and development:

There is a combination of rural residential land, rural lifestyle and hobby farms use, rural grazing and extractive industry uses to the north of Bulla Township. Within Bulla township, there is a mix of community facilities, such as a petrol station, hotel, churches, fire station and a community centre.

Description of local setting (eg. adjoining land uses, road access, infrastructure, proximity to

residences & urban centres):

The project area is set mainly within the rural, rural residential and lifestyle land uses of the broader environs of Bulla to the north of the township.

Between the town of Bulla and Somerton Road land is developed for rural residential purposes with lots averaging between 2ha and 5ha in area. Many of these lots have been developed with a house and related buildings. North of Somerton Road and east of Wildwood Road the broader rural portion of the area is characterised by larger lots ranging from 5ha up to 20ha and over. To the west of Deep Creek land is contained within a number of large parcels which are currently undeveloped and used for farming or non urban activities such as storage of plant and materials. Melbourne Airport is adjacent to the southern end of the project area.

The project impacts a total of 36 private properties and requires the acquisition of 4 residences. Three properties are impacted by both the Bulla Bypass and Melbourne Airport Link.

Bulla Bypass impacts 19 private properties, requires no acquisition of residences and has 20 residences are within 150 metres. Melbourne Airport Link impacts 20 private properties, requires the acquisition of 4 residences, and a further 5 residences are within 150 metres.

Of the private properties that are affected, four of these properties are impacted only marginally by intersection splays and further consideration at the detailed design stage may eliminate impacts on these four properties.

At the closest points Bulla Bypass is approximately 1 kilometre from residential properties in the main part of Bulla township and travels within 360 metres of residences on the west side of Deep Creek. Melbourne Airport Link is approximately 1.9 kilometres from Bulla township at the closest point. For an overview of the local setting refer to the plan in **Attachment 11**.

Bulla has a small town population of 398 people and is located 24 kilometres north-west from Melbourne's CBD and lies just outside the Melbourne Metropolitan Area north of Melbourne Airport.

Nearby suburbs include Sunbury to the north west (approximately 6km away) and Craigieburn Roxburgh Park, situated about 10km to the east. It is anticipated that the township of Bulla will not grow to any great extent as it is constrained by Green Wedge zoning and the Melbourne Airport Environs Overlay.

This project will help facilitate the future development of Sunbury and surrounding areas covered by the expansion of the Urban Growth Boundary around Sunbury as outlined in the recently published Growth Corridor Plans titled *North Growth Corridor Plan* August 2012 and *Sunbury/Diggers Rest Growth Corridor Plan* June 2012[3].

Refer to **Appendix 20** and **Appendix 23** for the North Growth Corridor Plan and the Sunbury/Diggers Rest Growth Corridor Plan respectively.

Further details relating to this section can be located in the Land Use Issues assessment, including Addendums 1 and 2 by George Ward Consulting Pty Ltd (August 2013) and the Social Impact Assessment, by SKM (August 2013) – refer to **Appendices 2 and 3.**

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

Strategic Planning
The Strategic Planning context for this project is the future development of Melbourne as outlined in the Growth Areas Authority's Growth Corridor Plans including the site as an investigation area link to the airport within both the Sunbury/Diggers Rest Growth Corridor and North Growth Corridor Plan.

It is anticipated that there will be limited job opportunities in Sunbury compared to the anticipated

[3] George Ward Consulting, Land Use Issues (August 2013)

population growth. This will put pressure on existing road infrastructure as residents seek to access jobs in Melbourne's north.

State planning policy provides guidance for assessment of proposed projects at a high level in the areas of biodiversity, landscape impact and cultural heritage. Clauses specific to land use include Clause 18.02-4 Management of the road system and Clause 18.04-1 which affords protection for the operation of Melbourne Airport.

The City of Hume recently adopted the Sunbury Hume Integrated Growth Area Plan (HIGAP) and the associated draft Delivery and Infrastructure Strategy. The strategy outlines the changes necessary in Sunbury to facilitate the sustainable growth of the area to the projected population growth of over 80,000 in 30 years and an ultimate capacity of over 100,000.[4]

Council's plan identifies both the construction of the Bulla Bypass in the short term and the Melbourne Airport Link to OMR in the short to medium term, although both are dependent on funding approvals.

Zoning & Overlays
The project area lies in the City of Hume. Bulla township is zoned residential with a restructure overlay to the north of the town. The township zone extends to an area not currently developed centred on Quartz Street within the Deep Creek valley. The Hume Planning Scheme, Local Planning Policies Clause 22.04, Township Local Policy applies to land in the Bulla Township. This is to protect the unique character, heritage and environment of the township and to encourage consolidation of existing allotments where necessary to achieve adequate on-site effluent disposal envelopes. It is applied via a restructure plan. The restructure overlay does not, however, extend to the Quartz Street area.

A majority of the project area and vicinity is within a Green Wedge Zone. This zoning constrains development in the area. However the recent changes to the Green Wedge Zone have broadened the uses that are permissible within the Green Wedge Zone.

Large areas of the surrounding countryside are covered by the Melbourne Airport Environs Overlay, which restricts further development due to air safety.

There is a Heritage Overlay within the project area to conserve heritage places. Woodlands Historic Site is encompassed within this Heritage Overlay.

There is an Environmental Significance Overlay along Deep Creek, with a Public Park and Recreation Zone (PPRZ) along the banks of Deep Creek in the vicinity of Bulla township. Woodlands Historic Park is zoned Public Conservation and Resource Zone (PCRZ).

The Environment Significance Overlay along Deep Creek has the following environmental objective to be achieved:

Ecological Function
- To ensure the health and vitality of the natural systems of rural waterways and their environs.
- To protect and enhance the diversity, integrity and health of the local native riparian, escarpment and plains vegetation associated with waterways.
- To ensure the suitability of the riparian, escarpment and plains vegetation habitat and in-stream habitats for local native animals.
- To improve the water quality of waterways.
- To provide for the retention, restoration and revegetation of local native plant species.
- To improve soil quality to enable the continuation of suitable land use.

Waterway function
- To sustain flood, regional drainage and waterway function to enable appropriate beneficial land use and water-based activities to be undertaken.
- To improve flood mitigation, drainage works and water quality through the creation of more natural bed and bank treatments where these have been modified from the natural.

Recreation use

[4] Page 10 George Ward Consulting, Land Use Issues (August 2013)

- To create a peaceful, passive open space quality in the waterway corridor and surrounding environs.
- To provide a linear open space link along one side of the waterway corridor.
- To provide for links, views and access from surrounding areas to the waterways and open space.

Landscape character

- To protect and enhance the natural and visual character of waterway corridors, deeply incised valleys and their surrounding environs.
- To ensure that the scenic qualities and visual character of waterway corridors, creek valleys and their surrounding environs are not compromised by the inappropriate siting of buildings, the placement of fill, the removal of soil, or lack of screening vegetation.
- To restore those sections of the waterway corridor which have been man modified to create artificial bed, banks and landforms to more natural, visually attractive and ecologically diverse landscapes.

Heritage

- To protect areas of sensitivity for Aboriginal heritage and significant non-Aboriginal heritages sites and areas.
- To protect natural landforms and geological features.

For plans showing the zones and overlays within the project area refer to **Attachment 12** and **Attachment 13** respectively.

Commonwealth Land

All leased federal airports (except of Tennant Creek and Mount Isa) are subject to a planning framework in the *Airports Act 1996*. As part of the planning framework airports are required to prepare:

- A Master Plan – This is a 20 year strategic vision for the airport site which is renewed every five years. The Master Plan includes future land uses, types of permitted development and noise and environmental impacts.
- An Airport Environmental Strategy – This sets out the airports strategy to manage environmental issues within a 5 year period and beyond. It is the basis on which the Commonwealth measures the environmental performance of airports and the document by which airport tenants will determine their environmental responsibilities.

The land between Melbourne Airport and Moonee Ponds Creek is governed by the Melbourne Airport Master Plan 2008. This includes the Melbourne Airport Environment Strategy 2008. Melbourne Airport is undertaking an update of the Master Plan, which is currently with the Commonwealth Government for approval.

Local government area(s):

The Local Government area is the City of Hume

8. Existing environment

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

The key environmental assets and sensitivities in the project area and vicinity include the following and are detailed below:

- Waterways
- Native vegetation, flora and fauna
- Bulla township
- Aboriginal cultural heritage
- Other heritage values
- Landscape values
  Woodlands Historic Park

Waterways

There are 2 significant waterways in the vicinity of the project area. These are Deep Creek which traverses the project are and Moonee Ponds Creek in the vicinity of the project area.

The Moonee Ponds creek catchment area is 33.4 km2 up to the area adjacent to the south end of the Melbourne Airport Link. The Deep Creek and Emu Creek catchments combined have an area of 857.1 km2 down to the confluence of the two creeks just upstream of the Bulla township.

The catchment for Moonee Ponds Creek is predominantly in the Woodlands Historic Park, and is covered by the Public Conversation and Resource Zone, and the Green Wedge Zone overlays in the Hume planning scheme.

The catchment for Deep Creek and Emu Creek are mainly covered by zoning overlays of Farm Zone (FZ), Green Wedge Zone (GWZ), Rural Living Zone (RLZ), and small sections of Residential Zone 1 (RZ1) for the townships of Romsey and Lancefield.

For Moonee Ponds Creek along the proposed Melbourne Airport Link alignment, the channel is natural and unlined with a medium density of vegetation. For Deep Creek between the confluence of Emu Creek and Sunbury Road, the channel is natural and unlined with high density of vegetation.

Deep Creek supports habitat that is suitable for Growling Grass Frog. Runoff from Bulla Bypass and Melbourne Airport Link will enter Deep Creek and Moonee Ponds Creek and their tributaries. Potential impacts to water quality along Deep Creek and Moonee Ponds Creek may occur due to possible pollutants and sediment in the water runoff. Water Sensitive Road Design and environmental management measures will be employed during design, pre-construction and construction phases to manage potential impacts.

Native vegetation, flora and fauna

Native vegetation

Within the vicinity of the project are two bioregions, the Central Victorian Uplands and the Victorian Volcanic Plain occur. The following four ecological vegetation classes were recorded within the vicinity of the project area — Creekline Grassy Woodland (EVC 68), Hills Herb-rich Woodland (EVC 71), Stream Bank Shrubland (EVC 851) and Plains Woodland (EVC 803).

One ecological community listed under the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act) occurs adjacent to the Melbourne Airport Link alignment namely Grey Box Grassy Woodland and Derived Native Grasslands of South-eastern Australia (Eucalyptus mictocarpa). This is listed as endangered. This occurs to the east and north of the junction of Oaklands Road and Sunbury Road on Commonwealth land.

The current field assessment recorded 27 habitat zones, totalling 11.39 habitat hectares (39.76 hectares) and supporting 159 large/very large old trees. An additional 80 scattered trees were also recorded.

Flora

Within the local area there are records of, or there occurs potential suitable habitat for, 51 rare or threatened flora species. Of these, 13 species were listed under the federal EPBC Act, 22 on the state *Flora and Fauna Guarantee Act 1988* (FFG Act) and 49 on DSE's Advisory List for Rare and Threatened Flora (DSE 2007b). Three rare or threatened flora species were detected during the current field survey.

Fauna

The review of existing information and current field survey indicated that 231 fauna species may occur within the vicinity of the project area, including 156 bird (11introduced), 30 mammal (7 introduced), 20 reptile, 11 frog and 14 fish species.

The review of existing information and current field survey indicate that within the search region 39 rare or threatened fauna species (28 bird, 5 mammal, 3 reptile, 2 frog and 1 invertebrate) listed on the EPBC Act, FFG Act and/or the DSE advisory list (DSE 2007c) may occur within the vicinity of the project area. [5]

No EPBC Act listed fauna species were recorded but three were considered likely to occur — Growling Grass Frog, Grey-headed Flying-fox and Swift Parrot. The Growling Grass Frog is known from the Moonee Ponds Creek.

Bulla Township

Bulla is a small township on the outskirts of Melbourne, located between Melbourne Airport and Sunbury within the City of Hume. The Bulla settlement dates back to 1843 with a village surveyed in 1851. Hume City Council is committed to the protection of the unique character, heritage and environment of the township of Bulla.

Traffic volumes in 2011 through Bulla were 23,000 vehicles per day (vpd) weekday average (actual counts). Strategic modelling of the existing conditions has identified approximately 2 km of congestion through Bulla is already at capacity in peak eastbound direction under existing conditions. The existing traffic volumes suggest that improvements to road capacity are required to accommodate existing and future growth in traffic volumes.

With the establishment of the Sunbury Growth Corridor, the existing population of Sunbury/Diggers Rest is envisaged to grow from the existing 38,000 to almost 70,000 by 2031. Even with the electrification of the railway line to Melbourne online, as development proceeds traffic volumes will increase through Bulla township to an unacceptable level. Hence the growth of Sunbury will have a deleterious effect on the township of Bulla if improvements are not made within the surrounding road network.

Significant congestion in peak periods has significant impact on the amenity of the local community. Impacts on amenity include the noise generated, difficulties with access, and difficulty crossing to connect with the other side of the local community.

Aboriginal Cultural heritage

The project area and vicinity is located within the traditional language boundary of the Woi wurrung (Wurundjeri) people. There has been little prior archaeological investigation within the project area and only limited study in the wider geographic region (outer region - volcanic plains and creek networks north west of Port Phillip Bay, inner region - source of Moonee Ponds Creek to confluence of Deep and Emu Creeks, Jacksons Creek to confluence with Deep Creek across Melbourne Airport to Moonee Ponds Creek to Mickleham Road).

Within the project area and vicinity, there are two previously registered Aboriginal cultural heritage places which contain multiple components and artefact scatters. Site Number 7822-0994 (artefact scatter and earth features) is located east of the Melbourne Airport along Sunbury Road and Site Number 77822-2106 (artefact scatter) is located north west of Bulla along Sunbury Road, just north of Bulla-Diggers Rest Road.

Through an archaeological field survey a large number of Aboriginal artefacts were located in areas where there was good visibility which resulted in the registration of 49 previously unrecorded sites with the Victoria Aboriginal heritage Register (VAHR), with a total of 51 VAHR sites situated within the immediate investigation area covering narrower corridors for the Melbourne Airport Link and Bulla Bypass.

[5] Pages 1, 17, 24, 29, 30, & 77 Brett Lane and Associates Pty Ltd, Flora, Fauna and Net Gain Assessment (May 2013)

All Aboriginal material culture that was recorded during the ground survey consists of stone artefacts. Of the 49 newly recorded sites, 26 are scatters of two or more artefacts and 23 are single instances. A scarred tree has been located within the area.

The greatest concentration of sites and artefacts are along Moonee Ponds Creek from the end of the Tullamarine freeway up to the deviation of Oaklands Road, and on both the east and west sides of Deep Creek. The comparison of the two site districts reveals variable patterns in the size, density and makeup of artefacts scatters. There are a higher number of artefacts from Deep Creek compared to Moonee Ponds Creek. Seven artefact scatters near Moonee Ponds creek span a total surface area of 1,518 sq m whereas the six artefact scatters immediately beside Deep Creek span 42,707 sq m. [6]

Other heritage values

The field survey in the immediate investigation area documented a total of thirteen historical features and surface artefacts were recorded at 32 separate sites. The co-occurrence of non aboriginal material at two Aboriginal sites may indicate the places as "contact" sites. Six historical sites have since been registered with the Victorian Heritage Inventory (VHI). Together with the previously identified VHI site (St Mary's Church) makes a total of seven VHI sites within the project area and vicinity. A total of ten VHI and City of Hume Heritage Overlay sites were identified within the project area and vicinity [7]. Refer to Table 2 page 27 of **Appendix 11**.

Landscape values

The following key landscape values and sensitivities have been identified:

The main identified overall important landscape values are:

- The context of rural 'openness' and sometimes remoteness in contrast to the adjacent suburban character.
- A journey out of the suburbs and into the rural plains landscape expressed travelling both from Sunbury to Melbourne and Melbourne to Sunbury.

The main identified sensitive visual receptors are:

- Public realm views from Woodlands Park, views up the deep creek valley from Sunbury Rd and views from Bulla Reserve.
- Private realm views up the Deep Creek Valley from a cluster of private dwellings west of Deep Creek in Bulla.

The main important physical landscape values are:

- Steep creek valley landform as an incision in the plains landscape and the experience of creeks as natural drainage systems.
- The rural setting of public open spaces.
- The amenity and screening value of existing indigenous, native and windrow vegetation[8].

Woodlands Historic Park

Woodlands Historic Park is a valued community asset that has social and cultural heritage values.

The park is one of the most substantial in Greater Melbourne at 820 hectares in size. The park supports a number of activities due to its size such as nature walks, picnics, viewing historic sites, off road cycling and, unlike most other parks, horse riding. Gellibrand Hill within the park is also a significant attractor as it has panoramic views of the wider area including Melbourne Airport. There is also a historic homestead from the 1840's within the park.

Living Legends is a privately run facility situated within Woodlands Historic Park. This site was reported to have a wider significance by Parks Victoria, with visitors drawn from across the

[6] Pages 3, 21, 27, 58 & 71 Dr Vincent Clark & Associates, Draft Desktop and Standard Assessment (March 2012)
[7] Pages 26-27 Dr Vincent Clark & Associates, Historical period archaeological survey (November 2012)
[8] Page 105 Wallbrink Landscape Architecture, Detailed Landscape and Visual Assessment (August 2013)

country and internationally, particularly during the Spring Carnival and other major racing events in Melbourne.

The Woodlands Homestead Historical Site was extended in March 2012 to cover the whole of Woodlands Historical Park. The heritage site includes the homestead, stables, outbuildings and the surrounding landscape. The original part of the homestead consists of a prefabricated building which was erected in 1843.

A small portion of the park on the south-west side is within the Melbourne Airport Link alignment.

9. Land availability and control

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

☐ No ☒ Yes If yes, please provide details.

The BB5 alignment crosses Deep Creek and is partly on Crown Allotment 2001, Township of Bulla, in the Parish of Bulla Bulla.

The Melbourne Airport Link traverses a small portion of Woodlands Historic Park at Crown Allotment 50, Section 1, in the Parish of Bulla Bulla.

Refer to the plan in **Attachment 14** showing the location of Crown land.

Current land tenure (provide plan, if practicable):

Thirty six private properties impacted by the Melbourne Airport Link and Bulla Bypass BB5 are privately owned.

The Sunbury Rd reservation is publically owned by The Roads Corporation (trading as VicRoads). Somerton Road and the roads that intersect with it are managed by Hume City Council.

A section of Melbourne Airport Link is within Melbourne Airport on Commonwealth land. This section is approximately to the east and south of Oaklands Rd between Chainage 10000 and approximately Chainage 134000. This land is not controlled by the Hume Planning Scheme.

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

In general, VicRoads will seek to apply a Public Acquisition Overlay to the Hume Planning Scheme. VicRoads would acquire the land close to the time of construction. Once the road is built VicRoads would seek to rezone the land to Road Zone 1.

For the Commonwealth land managed by Melbourne Airport, VicRoads will negotiate an appropriate outcome with the Commonwealth.

In relation to Crown land over Deep Creek, VicRoads will invoke Section 92 of the *Transport Integrated Act 2010* to use the land for road purposes.

For Woodlands Historic Park, VicRoads will seek approval to transfer the land.

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

Utility providers have been consulted in relation to impacts of the planning study on their existing and future assets. With the exception of Melbourne Water there are no significant assets impacted by the proposed road reservations for Melbourne Airport Link and BB5. More detailed investigation of services will be undertaken during the pre-construction phase.

There is an 1150 mm diameter mild steel enamel lined water main within an easement that crosses diagonally through Oaklands Road and Sunbury Road. It is owned by Melbourne Water

and also used by Yarra Valley Water.

Native title has been extinguished over Deep Creek in the vicinity of Bulla Bypass. Native title is also extinguished over that part of Woodlands Historic Park where the Melbourne Airport Link would cross the park.

10. Required approvals

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

- A Planning Scheme Amendment to include a Public Acquisition Overlay (PAO) and Incorporated Document to the Hume Planning Scheme is proposed. This will provide for permit exemptions in relation to road use under the planning scheme.
- Rezoning of Commonwealth land to road zone following agreement by the Commonwealth.
- Depending on whether items 'm' or 'n' within the *Airports Act 1996* are triggered, a Major Development Plan (MPD) would be required. These items are described as '*a development of a kind that is likely to have a significant environmental or ecological impact or a development which affects an area identified as environmentally significant in the environmental strategy'*. Melbourne Airport would need to sponsor the MDP as they would be the project proponent.
- A referral is required *to the Commonwealth Government under the Environment Protection and Biodiversity Conservation Act 1999* in relation to the Project. The Melbourne Airport Link alignment will avoid the only EPBC referrable EVC (grey box woodland) so any referral on environmental grounds would be limited to potential growling grass frog habitat under the precautionary principle and the potential impacts to water quality along Deep Creek and Moonee Ponds Creek[9].
- A Cultural Heritage Management Plan is required for the project under the *Aboriginal Heritage Act 2006.*
- Permits may be required for potential impact to heritage sites under the *Heritage Act* 1995
- Approvals under the *Flora and Fauna Guarantee* Act 1988 would not be required for the current proposal[10].
- Approvals for works in waterways under the *Water Act* may be required and will be obtained from Melbourne Water.
- EPA works approvals may be required for the management and disposal of any contaminated soil.
- Amendment to the *National Parks Act 1975* would be required to remove the impacted land from the Act.

Have any applications for approval been lodged?

☒ No ☒ Yes If yes, please provide details.

A notice of intent to prepare a Cultural Heritage Management Plan under the *Aboriginal Heritage Act 2006* has been submitted to Aboriginal Affairs Victoria (AAV) and the Wurundjeri Tribe Land and Compensation Cultural Heritage Council. AAV have advised that the CHMP plan number is 11935.

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

Discussions have been held with the following agencies:

- Melbourne Airport;
- Hume City Council;
- Heritage Victoria
- Office of Aboriginal Affairs Victoria

[9] Page 78 Brett Lane and Associates Pty Ltd, Flora, Fauna and Net Gain Assessment (May 2013) and Page 63 Brett Land and Associates Pty Ltd, Alignment Option BB5 – Net Gain Analysis and Flora, Fauna and OBEM Assessment (August 2013)

[10] Page 79 Brett Brett Lane and Associates Pty Ltd, Flora, Fauna and Net Gain Assessment (May 2013) and Page 65 Brett Land and Associates Pty Ltd, Alignment Option BB5 – Net Gain Analysis and Flora, Fauna and OBEM Assessment (August 2013)

- Wurundjeri Tribe Land and Compensation Cultural Heritage Council
- Melbourne Water;
- Environment Protection Authority
- Department of Environment and Primary Industries (Former Department of Sustainability and Environment)
- Department of Transport Planning and Local infrastructure (Former Department of Planning and Community Development and Department of Transport)
- Department of Sustainability, Environment, Water, Population and Communities

VicRoads has held two technical working group (TWG) meetings in November 2011 and April 2012 with key representatives from these organisations above as well as the agencies listed below. TWG members have been given the opportunity to provide specialist input on key environmental considerations during detailed investigations as well as advice of any updates on policy/approval requirements relevant to the planning study. Further advice is proposed to be sought from the TWG in 2014.

Other agencies consulted:

Other agencies represented at TWG meetings are as follows:

- Growth Areas Authority;
- Port Phillip and Westernport Catchment Management Authority;
- Parks Victoria;

Other parties that have or will be consulted during the planning study include:

- Bicycle Victoria;
- Bus operators;
- Freight organisations/operators;
- RACV;
- Victorian Taxi Association;
- Local residents/businesses;
- Community Groups
- Bulla Bypass Committee;
- Utility services;
    - Jemena Electricity Networks (Vic)
    - AGL
    - Telstra
    - Western Region Water Corporation
    - Melbourne Water
    - Yarra Valley Water Ltd
- Sunbury Landcare Association.

PART 2 POTENTIAL ENVIRONMENTAL EFFECTS

11. Potentially significant environmental effects

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

Identified below are key potential effects that may occur.

Native Vegetation, Flora & Fauna

- Loss of native vegetation will occur however it is significantly less than 10 hectares. The potential net gain impacts are as follows:
    - Melbourne Airport Link : Total loss of 0.01 Habitat hectares (area of removal is 0.043 ha)
    - Bulla Bypass: Total loss of 0.82 Habitat hectares (area of removal is 2.843 ha)

- Potential impacts on the Growling Grass Frog through removal or disturbance of habitat and potential impacts to water quality. Growling Grass Frog could potentially be impacted by the crossing of the bridges over Deep Creek on the proposed BB5 alignment. Potential impacts to water quality along Deep Creek and Moonee Ponds Creek could occur from pollutants and sediment in the runoff water. This is a potential indirect impact on Growling Grass Frog.
- Suitable habitat occurs within the study area for one threatened species, Buloke. However, as Buloke was not recorded in the study area during the field assessment it is not considered likely to occur. Therefore, no FFG Act or EPBC Act-listed flora species are considered likely to occur in the study area.

Water Environment

- Potential impact on water quality due to possible sedimentation in runoff from the construction site and completed roadway.
- Potential damage to waterways including riparian vegetation during construction at the bridge crossing of Deep Creek.
- Potential impact on water quality by run-off from a contaminated site that may be disturbed during construction.

Landscape and Soils

- The proposed bridge will be visible within the northern view of the valley from a collection of dwellings west of Deep Creek at Bulla. There are 9 dwellings west of Deep Creek. Trees and some dwellings will provide part screening of the structure for some dwellings. The bridge is located approximately 400m to 700m from the closest residential dwelling within view of the bridge. This is rated as low to moderate significance.
- Visual impacts from Sunbury Rd and private views are likely to be associated with the bridge structure within the Deep Creek valley. The visual dominance of the bridge structure will be reduced by positioning the bridge at a height that is within the valley rather than over the valley. This is rated as low significance.
- Potential impact on slope stability associated with bridge embankments. It is anticipated that the basalt geology of the Deep Creek valley will assist in providing solid foundation and stability for the bridge structure across the valley.

Social Environments

- Land acquisition will be required across thirty six properties with four dwellings to be acquired for Melbourne Airport Link.
- A number of properties will have access impacted that will need to be reinstated. Bulla Bypass will permit left-in left-out access that may require residents to travel slightly further to gain access to and from their properties.
- The Melbourne Airport Link will provide a visual barrier on the western edge of Woodlands Historic Park with the existing park / rural interface replaced with a park freeway interface. Construction activities as well as the operation of the Melbourne Airport Link are likely to result in amenity impacts on users of the park.
- Loss of amenity during construction and operation due to traffic will impact neighbouring properties.

Cultural Heritage

- Bulla Bypass will impact on Aboriginal cultural heritage as the landform in the vicinity of Deep Creek is an area of cultural heritage sensitivity. The main area of potential impact is on the immediate east side of Deep Creek, where cultural material is numerous and in often well-preserved contexts. The BB5 alignment has been selected as it avoids or minimises harm to significant sites located along the granitic spur. The Wurundjeri Tribe Land and Compensation Cultural Heritage Council has agreed that BB5 is an appropriate alignment across Deep Creek.
- Potential impact to aboriginal cultural heritage near Moonee Ponds Creek.
- Potential impacts to non-Aboriginal cultural heritage sites including Woodlands Historic Park and Oaklands Rd paving. Any disturbance and/or damage undertaken will be strictly in accordance with the requirements of Heritage Victoria.

Noise

- Future predicted traffic noise impacts for Bulla Bypass Option BB5 in 2035 for average changes in noise levels compared with a 'future' do nothing are 5.0 dB(A) without mitigation.
- 3 properties will require off reservation treatments for Bulla Bypass.
- Future predicted traffic noise impacts for Melbourne Airport Link (with Bulla Bypass operational) in 2046 for average changes in noise levels compared with a 'future' do nothing are 4.7 dB(A) without mitigation.
- For the Melbourne Airport Link, 2 properties will require off reservation treatments. (This assumes Bulla Bypass is operational and noise barriers are installed).

Geotechnical

- A preliminary investigation of the contaminated site at 400 Sunbury Rd, Bulla has been undertaken which is impacted by the BB5 alignment. The analytical data from the surface sample locations showed contaminant concentrations below the criteria adopted for the protection of ecological receptors at all locations, with the exception of manganese, nickel and vanadium. The analytical data from the surface sample locations showed contaminant concentrations below the criteria adopted for the protection of human health. Given the unknown nature of the uncontrolled filling at the site, other potential contaminants may also be present.

12. Native vegetation, flora and fauna

Native vegetation

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

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

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

Brett Lane and Associates Desktop Assessment of Fauna and Flora dated February 2011 **Appendix 4**
Brett Lane and Associates Brown Toadlet Targeted Survey, June 2012 **Appendix 5**
Brett Lane and Associates Melbourne Airport Link to Outer Metropolitan Ring and Bulla Bypass Planning Study - Flora, Fauna and Net Gain Assessment, May 2013 **Appendix 5**
Brett Land and Associates, Bulla Bypass Planning Study: Alignment Option BB5 - Net Gain Analysis and Flora, Fauna and OBEM Assessment, August 2013 **Appendix 6**

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

☐ NYD Estimated area is less than 3 hectares

Bulla Bypass 5 would result in the clearance of 2.843 hectares of native vegetation.
The Melbourne Airport Link would result in the clearance of 0.043 hectares of native vegetation[11].

Therefore a maximum clearance of vegetation is a total 2.886 ha plus trees.

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

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

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

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

Impacts on the BB5 alignment:

- Creekline Grassy Woodland (EVC 68) considered endangered in the Central Victorian Uplands bioregion, Conservation significance High. This is mainly located to the east of Oaklands Road within Woodlands Historic Park. (0.009 ha removed).
- Hills Herb-rich Woodland (EVC71) listed as vulnerable in the Central Victorian Uplands bioregion, Conservation Significance High – Vey High. These areas are located to the east of Deep Creek. (0.306 ha (high significance) and 0.539 ha (very high significance) removed).
- Stream Bank Shrubland (EVC851) considered endangered in the Victorian Volcanic Plain bioregion Conservation significance High - Very High. These EVC's are located along Deep Creek (0.302 ha (high significance) and 0.210 ha (very high significance) removed; and
- Plains Woodland (EVC803) considered endangered in the Victorian Volcanic Plain bioregion, Conservation significance High. Vegetation for this community is located to the west of Wildwood Road, north of where it meets Somerton Road. This is also located at the junction of Oaklands and Sunbury Road.(1.40 ha removed)[12]
- The removal of 12 scattered trees, 3 of which are large or very large.

Impacts of the Melbourne Airport Link:

- 0.01 Habitat Hectares (0.043 hectares) of high conservation significance Creekline Grassy Woodland (EVC 68);
- One large old tree of high conservation significance;
- Five scattered trees, of which one was very large, one was large and one was medium.

[11] Page 4 Table 1 Brett Lane and Associates Pty Ltd, Flora, Fauna and Net Gain Assessment (May 2013) and Page 7 Table 1 Brett Lane and Associates Pty Ltd, Alignment Option BB5 – Net Gain Analysis and Flora, Fauna and OBEM Assessment (August 2013)
[12] Page 28 Table 4 Brett Lane and Associates Pty Ltd, Alignment Option BB5 – Net Gain Analysis and Flora, Fauna and OBEM Assessment (August 2013)

Impacts of the Melbourne Airport Link excluding the section on Commonwealth land:

- One scattered tree impacted.

Have potential vegetation offsets been identified as yet?

☐ NYD ☒ Yes If yes, please briefly describe.

The amount of native vegetation offsets has been determined as part of the Flora, Fauna and Net Gain Assessment report dated May 2013 and the Net Gain Analysis and Flora, Fauna and OBEM Assessment report dated August 2013, completed by Brett Lane and Associates Pty Ltd. The reports indicate that Bulla Bypass 5 and Melbourne Airport Link would require the following offsets.

Alignment	Habitat hectares replacement habitat	Protection of large trees	Protection of scattered trees	Recruitment of Scattered	Recruit only
BB5[15]	1.38	112	13	218	538
Melbourne Airport Link[14]	0.02	4	9	65	305
Melbourne Airport Link excluding the section on Conmmonwealth land			2	20	60

In line with the Victorian Native Vegetation Management Framework, options to further avoid and minimise vegetation loss through micro-siting will be examined during the detailed design stage.

Further investigations and discussions will occur in relation to the location of offsets with DEPI.

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

A referral to DEPI will be triggered by the Bulla Bypass 5 alignment in relation to net gain as a result of removal of more than 0.5 ha from habitat zones of bioregional conservation status of either endangered and/or vulnerable.

NYD = not yet determined

Flora and fauna

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

Brett Lane and Associates have completed a detailed assessment of Fauna and Flora impacts and net gain assessments in its reports dated May and August 2013 refer **Appendices 5 and 6** respectively. Appendix 3 to the May 2013 report is an Aquatic Fauna Assessment completed in November 2012 by Streamline Research Pty Ltd.

Methodology

Existing information was obtained from a wider search area "search region" based on a 10 km radius from the approximate centre point of the study area coordinates of latitude 37^{o} 37' 41" S and longitude 144^{o} 48' 03" E.

A list of flora species was obtained from the Viridans Flora Information System (FIS) DSE (Viridians Biological Databases 2011a), the Victoria Biodiversity Atlas Flora records and the EPBC Act Protected Matters Search Too l (DSEWPC 2011). Ecological Vegetation Classes were obtained from published EVC benchmarks.

A list of the fauna species was obtained from the Atlas of Victorian Wildlife (AVW) (DSE Viridians Biological Databases 2011b), and the EPBC Act Protected Matters Search Too l (DSEWPC 2011).

The field assessment was carried out over 6 days in October 2011 and a further day in January 2012. The study area was inspected initially by vehicle and areas supporting vegetation and/or fauna habitat were surveyed in more detail on foot.

Incidental records of flora species were made based on intuitive sapling methods within all vegetation types and landforms. Specimens requiring identification using laboratory techniques were collected. Native Vegetation was assessed to the prescribed DSE methods for "remnant patch, scattered trees and degraded treeless vegetation".

The Aquatic Fauna Assessment included a search of Victorian Aquatic Fauna Database DSE 2010, review of reports for Melbourne Water, McGuckin 2005, review of Victorian Index of Stream Condition DSE 2005

Techniques used to detect fauna species inhabiting the study area included:

- Incidental searches for mammal scats, tracks and signs (eg diggings, signs of feeding and nest/burrows;
- Turning over logs and other ground debris of reptiles, frogs, mammals;
- Bird observation during the day;
- General searches for reptiles and frogs; including identification of frog calls in seasonally wet areas.
- A targeted survey was carried out for 3 separate nights in June 2012 for the Brown Toadlet. The survey was conducted at night during cool and moist weather conditions. The Brown Toadlet is more likely to be active and calling under these conditions, making detection more likely.
- Fish survey of Deep Creek at 4 sites (Wildwood Road (electrofishing), 2 sites of Lochton and also Quartz Road) (Fyke nets and light traps set overnight) and Moonee Ponds Creek (electrofishing) Emu Creek (Gellies Road Sunbury electrofishing) and Jackson Creek (Bulla Diggers Rest Road Bulla electrofishing). By capture with fyke nets and light traps may include platypus, water rats, tortoise and crustacean. Electrofishing is an effective fish capture technique in waters that have good water clarity and moderately low conductivity (less than 1800 EC). Fish sampling was made with a Smith Root 12B backpacker electrofisher. For sites where electrofishing was ineffective due to the presence of deep pools, the use of fyke nets and light traps was employed.
- Water quality measurements to determine ability to support a variety of aquatic fauna measured against SEPP guidelines for the Waters of Victoria (EPA 1988).

Fauna habitats were characterised and quality based on:

- High – the majority of fauna habitat components are present and habitat linkages to other remnant ecosystems in the landscape are intact;
- Moderate - the majority of fauna habitat components are present but habitat linkages to other remnant ecosystems in the landscape are absent; or -; the majority of fauna habitat components are absent and habitat linkages to other remnant ecosystems in the landscape are absent
- Low - The majority of fauna habitat components are absent and habitat linkages to other remnant ecosystems in the landscape are absent.

Accuracy and limitations

Sites found to support native vegetation and/or habitat for rare or threatened flora and/or fauna were mapped, through a combination of aerial photograph interpretation and ground truthing using a hand held GPS (accurate to approximately 5 metres).

Detailed flora surveying was carried out in spring, when some annual and winter–emergent plants may have been absent or in the senescent stage of their life cycle and lacking identification characteristics. The timing of the survey and condition of vegetation was otherwise considered

suitable for to ascertain the extent and quality of native vegetation.

The fauna assessment was undertaken during warm and fine weather conditions, considered suitable for detecting most species likely to occur in the study area.

The targeted Brown Toadlet survey was undertaken during the optimal period (March – July).

Wherever appropriate a precautionary approach has been adopted. That is, where insufficient evidence is available on the occurrence or likelihood of occurrence of a species it is assumed that it could be in an area of suitable habitat.

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

☒ NYD ☒ No ☒ Yes If yes, please:

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

Communities

One EPBC Act listed ecological community, Grey Box (Eucalyptus microcarpa) Grassy Woodlands and Derived Native Grasslands of South-eastern Australia, was recorded within Habitat Zone W in the study area.

Flora species

During the field surveys 115 plant species were recorded. Of these 56 (49%) were indigenous and 59(51%) introduced. The list of species recorded is shown on pages 21-24 of the detailed report referred to in **Appendix 5.**

The database search indicated that there are records of or potential suitable habitat for 51 rare or threatened species. Of these 13 were listed under the EPBC Act, 22 on the *Flora and Fauna Guarantee Act 1988* and 49 on DSE's advisory list of Rare and Threatened Flora (DSE 2007b). Three rare or threatened species were detected during the current field survey. Three DSE-listed species were considered to potentially occur in the local area.

Fauna Species

The review of existing information and current field survey indicate that within the search region 39 rare or threatened fauna species (28 bird, five mammal, three reptile, two frog and one invertebrate) listed on the EPBC Act, FFG Act and/or the DSE advisory list (DSE 2007c) may occur within the study area[13]

The Detailed Flora, Fauna and Net Gain Assessment (May 2013) and the BB5 Assessment (August 2013) by Brett Lane and Associates, identified the following species/communities:

- One EPBC Act Fauna species may potentially be impacted, namely Growling Grass Frog. A further two species Grey-headed Flying-fox and Swift Parrot are likely to occur in the study area. The study area is within that foraging range of the Grey-headed Flying-fox and therefore this species has the potential to forage in the flowering eucalypts within the study area. Suitable habitat occurs in the woodland habitats for Swift Parrot and this species may pass through the area occasionally on its migration and feed from the eucalypts.
- There is suitable habitat for the FFG Act-listed Brown Toadlet. During the survey the Brown Toadlet was not recorded and thus it is highly unlikely that the Brown Toadlet is present.
- Habitat suitable for the Victorian temperate woodland bird community was recorded on the slopes above Deep Creek. Some woodland birds that comprise this community were recorded but not enough to determine that the community is present. There is therefore likelihood that the community may be present.

[13] Page 31-34 Table 6 Brett Lane and Associates Pty Ltd, Flora, Fauna and Net Gain Assessment (May 2013)

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

The following key threatening processes are considered relevant for the project:

- Alteration to the natural flow regimes of rivers and streams.
- Alteration to the natural temperature regimes of rivers and streams.
- Degradation of native riparian vegetation along Victorian rivers and streams.
- Habitat fragmentation as a threatening process for fauna in Victoria.
- Infection of amphibians with Chytrid Fungus, resulting in chytridiomycosis.
- Invasion of native vegetation by 'environmental weeds'.
- Prevention of passage of aquatic biota as a result of the presence if instream structures.

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

☒ NYD ☒ No ☒ Yes If yes, please:

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

EPBC Act Impacts

Threatened ecological communities

The realignment of Sunbury Rd in the vicinity of the Melbourne Airport Link and Sunbury Rd interchange has been modified to avoid any impact to the Grey Box adjacent to the alignment. This amendment was made following the recommendation by the Flora and Fauna consultant. No other listed communities were recorded or considered likely to occur in the project area or vicinity.

Threatened flora species

No EPBC Act listed flora species were recorded and none were considered likely to occur in the project area or vicinity. The project will not impact on any EPBC Act listed flora species.

Threatened fauna species

No EPBC Act listed fauna species were recorded but three are considered likely to occur — Growling Grass Frog, Grey-headed Flying-fox and Swift Parrot.

The Growling Grass Frog is known from the Moonee Ponds Creek. No targeted surveys for this highly mobile species were undertaken as surveys may not record the species. Instead, a precautionary approach has been taken whereby it is assumed that Growling Grass Frog is present in the study area along the Moonee Ponds Creek and Deep Creek.

Growling Grass Frog could potentially be impacted by the crossing of the bridges over Deep Creek on the proposed BB5 alignment. Potential impacts to water quality along Deep Creek and Moonee Ponds Creek could occur from pollutants and sediment in the runoff water. This is a potential indirect impact on Growling Grass Frog.

Implications

The proposed BB5 alignment option crosses Deep Creek. Therefore there may be potential impacts on the Growling Grass Frog through removal of habitat and potential impacts to water quality along Deep Creek and Melbourne Airport Link. However, long spans are proposed for the bridge structure across Deep Creek which will span well beyond the width of the creek and thus will reduce the risk to habitat removal. Water sensitive road design will be utilised to manage water quality impacts.

FFG Act Impacts

Threatened ecological communities
One FFG Act listed ecological community (Grey box – Buloke Grassy Woodland) was recorded in Habitat Zone W, on Commonwealth Land. This ecological community will not be impacted by the project.

Threatened/protected flora species
No FFG Act listed flora species were recorded and none were considered likely to occur in the study area. No protected flora values under the FFG Act were recorded on public land within the study area. The project will not impact on any FFG Act listed flora species or protected flora values.

Threatened fauna species
No FFG Act listed fauna species were recorded in the project area and vicinity. Six were considered likely to occur. The three EPBC Act listed fauna species listed above which are considered likely to occur are also FFG Act listed. These are Growling Grass Frog, Grey-headed Flying-fox and Swift Parrot.

Growling Grass Frog could potentially be impacted by the crossing of Deep Creek on the BB5 alignment. The project does not bridge over Moonee Ponds Creek and environmental management controls will be implemented during construction. Therefore it is very unlikely that there will be direct impacts Growling Grass Frog habitat in Moonee Ponds Creek.

A targeted survey was undertaken for the Brown Toadlet. The toadlet was not found during the survey and therefore it is very unlikely to occur in the project area.

Habitat suitable for the Victorian temperate woodland bird community was recorded on the slopes above Deep Creek. Some woodland birds that comprise this community were recorded but not enough to determine that the community is present. There is thus a likelihood that it may be present. The BB5 alignment impacts on a small area of this habitat.

Implications
A Protected Flora Licence under the FFG Act would not be required for the current proposal.

DSE Advisory List

The project will not impact on any flora species from the DSE *Advisory List of Rare and Threatened Plants in Victoria* (DSE 2007b).

Growling Grass Frog listed on the DSE *Advisory List of Threatened Vertebrate Fauna in Victoria* (DSE 2007c) is vulnerable to impacts from the project.

Is mitigation of potential effects on indigenous flora and fauna proposed?
☒ NYD ☒ No ☒ Yes If yes, please briefly describe.

The following mitigation measures drawn from the Flora, Fauna and Net Gain Assessment are to be implemented:

- Minimise disturbance to significant native vegetation (including scattered trees) and habitat through detailed design and the identification and implementation of No-Go Zones during construction. No-Go Zones will be fenced off by a temporary barrier to prevent access by plant or construction staff or the storage of materials during construction, where practicable.
- Avoid removing suitable habitat for the Growling Grass Frog and Brown Toadlet where feasible.
- In accordance with the Catchment and *Land Protection Act 1994*, noxious weed species will be controlled using precision methods that minimize off-target kills (e.g. spot spraying).

- Ensure that structures over Deep Creek avoid impacts on aquatic habitat and do not create a barrier to ensure connectivity for fauna movement. .
- The proposed development should be designed in a way that does not alter the site's hydrology in areas that support native vegetation or act as tributaries to Deep Creek and Moonee Ponds Creek.
- All aquatic habitat remains intact and that water and pollutant runoff to waterways is minimized All temporary stream crossings to be constructed in a manner which does not impede water movement and that no obstruction to fish passage occurs.
- Construction contractors to will be inducted into an environmental management program for construction works.
- All environmental controls to will be checked for compliance on a regular basis.
- Any tree pruning is to be undertaken by an experienced arborist to prevent disease or unnecessary damage to the tree or disturbance to understory vegetation during tree trimming.
- All machinery brought on site to be weed and pathogen free.
- Hazardous wastes to be prevented from entering Deep Creek during construction. Sedimentation and erosion controls to be implemented during construction in accordance with Victorian Environment Protection Authority (EPA) "best practice' guidelines including Environmental Guidelines for Major Construction Sites (1996), Construction Techniques for Sediment Pollution Control (1991) and Doing it right on subdivisions (2004).
- Where an erosion hazard is identified, erosion control activities include:
    - o The use of sediment fences down slope of exposed soil and stockpiles.
    - o Bunding of stockpiles.
    - o Minimisation of the area of disturbed soil at any one time.

- The adoption of best practice drainage management and incorporation of water sensitive road design (Wong et al., 2000) to be incorporated where feasible.
- Undertake water quality monitoring to verify the effectiveness of erosion and sediment controls in the event of rain.
- Weed control, by an experienced bush regenerator, ~~is~~ to be carried out in bushland or wetland areas disturbed after construction so as to control any weed outbreaks.
- Disturbed areas along Deep Creek, Moonee Ponds Creek and their tributaries to be revegetated with appropriate indigenous plants of local genetic provenance.
- The use of local indigenous plant species, of local genetic provenance, to be utilized in the landscaping of any development on the site, where appropriate.

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

13. Water environments

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

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

Previous projects of a similar nature have not used in excess of 1GL/yr. VicRoads Water Usage Policy state that "VicRoads will use recycled or other alternative water in construction and maintenance activities dependant on availability and environmental and human health considerations."

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

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

Road drainage will be captured and part of it treated by water sensitive road design (WSRD) measures. Part of the drainage will discharge to Deep Creek, but will be a negligible amount compared to the volume of flow from the Deep Creek catchment upstream of the crossing.[14]

During construction, rainfall runoff from the construction area will be controlled in accordance with best practices and will conform to EPA and VicRoads guidelines. The freeway and arterial road would be designed in a manner, which would ensure drainage compliance with the required construction and environmental guidelines including water sensitive road design to minimise any impact.

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

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

The project is in close proximity to two creeks including Deep Creek and Moonee Ponds Creek. Moonee Ponds Creek is located to the east of the alignments, east of Melbourne Airport. The Airport Link alignment would not be crossing Moonee Ponds Creek, but is in close proximity to it (approximately 100 metres), which may result in erosion and sedimentation run off during construction and increased water runoff when the freeway is operational.

Water sensitive road design measures, such as grass swales, bioretention swales, drainage pits for bridges etc, will be further designed and investigated. Environmental management practices, eg erosion and sedimentation control and water quality monitoring will be adopted during construction.

The Bulla Bypass 5 alignment crosses Deep Creek. Bridgeworks including piers and abutments will cross the Deep Creek valley. A hydraulic analysis has been undertaken. The width of the Deep Creek floodplain at the location of the BB5 alignment is approximately 60 metres wide for a 1 in 100 year flood event.

VicRoads has sought advice on potential bridge structure options across Deep Creek. It is anticipated that the bridge piers will be approximately 100 metres apart. The span can be reduced to 70m for design purposes without impacting on flood levels[15]. During detailed design, piers locations will be determined so that flood levels are not increased given the proposed span is wider than the floodplain extent.

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

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

Detailed assessment with regard to threatened and migratory species is provided in the Flora and Fauna and Net Gain Assessment reports **(Appendix 3)**, incorporating an Aquatic Fauna Assessment, Brown Toadlet Targeted Survey and assessment of the threatened and migratory species as detailed above in Flora and Fauna Section 12.

Deep Creek is considered of moderate conservation value for aquatic fauna.

[14] Page 12, Bulla Bypass and Melbourne Airport Link - Hydraulic Assessment, Parsons Brinckerhoff Australia Pty Ltd, December 2013

[15] Page 10, Bulla Bypass and Melbourne Airport Link - Hydraulic Assessment, Parsons Brinckerhoff Australia Pty Ltd, December 2013

The Growling Grass Frog, while none were recorded, is assumed to be present under the precautionary principle. The Growling Grass Frog could potentially be impacted by the crossing of Deep Creek on the BB5 alignment.

No threatened fish species were recorded in the study area for Deep Creek. The nationally threatened Yarra Pigmy Perch is known to occur in the upper reaches of Deep Creek and the Australian Grayling is known to occur in the Maribyrnong River which has connectivity with Deep Creek and both species could in the future utilise Deep Creek habitat in and around Bulla although neither species is currently present in the area.[16]

No fish species have been captured in the upper reaches of Moonee Ponds Creek to the north of Melbourne Airport.

Although not listed as a threatened species, the iconic platypus was recorded at Deep Creek in the vicinity of Quartz street.

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

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

Could the project affect streamflows?

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

For the bridge structure across Deep Creek, the span can be 70m for design purposes without impacting on flood levels[17].

Could regional groundwater resources be affected by the project?

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

A Geotechnical Desktop and Risk Register was undertaken in May 2013 refer **Appendix 1** which included the review of existing groundwater information in the DSE groundwater database[18].

The interception of groundwater along the proposed Melbourne Airport Link and Bulla Bypass 5 alignments is highly unlikely due to low groundwater table.[19]

The Melbourne Airport Link is to be constructed mostly on fill, therefore, it is unlikely that regional groundwater would be affected by the project.

For the Bulla Bypass 5 alignment, the lowest level of cut is approximately down to RL 140m and the regional groundwater table is ranged between RL95m and RL88m. As such, the proposed project grade line is approximately 45m above the regional groundwater level. Therefore, the regional groundwater is very unlikely to be affected by the project.

Groundwater may be encountered during construction of the bridge supports (such as bored piles installation to a depth below RL88m) for the Deep Creek crossing however the impact is likely to be temporary and minor within the bridge site local area.

In the vicinity of the contaminated site at 400 Sunbury Rd, appropriate measures will be put in place to ensure either removal or treatment of ground water, if required.

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

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

The *State Environment Protection Policy (Waters of Victoria)* identifies a range of beneficial uses of water environments. Existing DSE groundwater Total Dissolved Solids (TDS) values indicates groundwater beneficial uses include maintenance of ecosystems, potable mineral water supply,

[16] Page xvii Streamline Research, Melbourne Airport Link to OMR/Bulla Bypass – Aquatic Fauna Assessment (November 2012)

[17] Page 10, Bulla Bypass and Melbourne Airport Link - Hydraulic Assessment, Parsons Brinckerhoff Australia Pty Ltd, December 2013

[18] Page 5 & 6 VicRoads Geotechnical Services, Geotechnical Desktop Study and Risk Register (May 2013)

[19] Page i VicRoads Geotechnical Services, Geotechnical Desktop Study and Risk Register (May 2013)

Agriculture, parks and gardens, stock watering, industrial water use, primary contact recreation, buildings and structures.[20]

During construction, environmental controls will be used to ensure storm water run-off is captured and treated in accordance with Victorian EPA guidelines including Environmental guidelines for Major Construction Sites (1996) and Construction Techniques for sediment Control (1991).

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

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

The project will cross Deep Creek and is in close proximity to Moonee Ponds Creek. Contract requirements and Environmental Management Plans will be implemented to minimise the risk of sediment and pollution impacts on these waterways.

Refer to Section 12. in relation to Growling Grass Frog and Brown Toadlet.

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

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

VicRoads has a well established environmental framework for managing the potential environmental impacts of major road projects.

Deep Creek is considered in moderate environmental condition for river health (Victorian Index of Stream Condition DSE 2005, Port Phillip and Westernport Regional River Health Strategy, Melbourne Water 2007).

Potential impacts over the longer term relate to road runoff and impacts from contaminated land. A Water Sensitive Road Design Strategy will be implemented and road runoff will be treated prior to draining into Deep Creek, Moonee Ponds Creek and their tributaries.

A contaminated site has been identified within the project area on the property at 400 Sunbury Rd, Bulla. A Preliminary Environmental Site Assessment for the contaminated site has been undertaken and is contained within **Appendix 16**. Any material disturbed on the contaminated site will be managed in accordance with EPA requirements. Any material excavated for bridge supports to be removed from the contaminated site will be classified and disposed of offsite in accordance with EPA requirements.

Is mitigation of potential effects on water environments proposed?

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

Given the size of the valley it is proposed that the bridges across Deep Creek will have long spans. It is proposed that the bridge spans can be 70m for design purposes without impacting on flood levels[21].

The full width of the floodplain for a 1 in 100 year ARI at the crossing location is approximately 60 metres. Thus the project will be designed to ensure that bridge piers are not located in the main channel of Deep Creek.

VicRoads has a well established environmental framework for managing the potential environmental impacts of major road projects. Environmental Management measures will be put in place to manage both the potential effects of the construction process and any long term effects of runoff from roads to waterways.

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

[20] Page i VicRoads Geotechnical Services, Geotechnical Desktop Study and Risk Register (May 2013)

[21] Page 10, Bulla Bypass and Melbourne Airport Link - Hydraulic Assessment, Parsons Brinckerhoff Australia Pty Ltd, December 2013

14. Landscape and soils

Landscape

Has a preliminary landscape assessment been prepared?

☐ No ☒ Yes If yes, please attach.

A detailed Landscape and Visual Assessment has been undertaken August 2013 by Wallbrink Landscape Architect refer to **Appendix 10**.

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

- **Subject to a Landscape Significance Overlay or Environmental Significance Overlay?**

  ☐ NYD ☐ No ☒ Yes If yes, provide plan showing footprint relative to overlay.

Deep Creek is within an Environmental Significance Overlay (ES01).

The Melbourne Airport Master Plan 2008 applies an Environmental Significant Overlay to land along Moonee Ponds Creek. The overlay includes land between the existing Sunbury Rd and the airport land boundary that coincides with Moonee Ponds Creek. The location of this overlay is shown in **Appendix 2.** The area covered by this overlay has been described as having significant visual and geological significant features of the rural landscape which serve important environmental, drainage and recreational functions. The waterways provide habitat for a range of flora and fauna species and make a significant visual contribution to the overall character, amenity and identity of the municipality.

As part of the Airport Master Plan an Airport Environmental Strategy exists covering Commonwealth land between the existing road and Moonee Ponds Creek.

- **Identified as of regional or State significance in a reputable study of landscape values?**

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

No State Landscape Character Assessment has been undertaken for this region.

Landscape values identified in the detailed Landscape and Visual Assessment (refer to pages 26, 27 and 35 in Appendix 10) are as follows:

Regional Importance - Incised valley landform with steep escarpments & Deep Creek drainage system. The important landscape values of the Deep Creek natural drainage system are a sense of remoteness, views to steep escarpments and a natural and unmodified creek channel.

Local to State Importance - Main visible geological features. The existing geological values considered to be important are those that are highly visible, such as valley rock outcrops and the educational values of the abandoned kaolinite quarry at Deep Creek.

Regional Importance - Woodlands Park. The park is valued for its rural natural setting, heritage values and trail network.

- **Within or adjoining land reserved under the *National Parks Act 1975* ?**

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

Woodlands Historic Park is located to the east of the Melbourne Airport Link. It contains 820 hectares reserved as Woodland Historic Park, under Schedule 3 of the *National Park Act, 1975*.

A small portion of the park on the south-west side is within the Melbourne Airport Link alignment. The area of the park impacted is less than 2 hectares, which equates to less than 0.25 percent. Parks Victoria is not opposed to the alignment through the corner of Woodlands Historic Park.

- **Within or adjoining other public land used for conservation or recreational purposes?**

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

Is any clearing vegetation or alteration of landforms likely to affect landscape values?
☐ NYD ☐ No ☒ Yes If yes, please briefly describe.

Results from the Detailed Landscape and Visual Assessment Report undertaken by Wallbrink Landscape Architect, refer to **Appendix 10**, concluded the following:

Bulla Bypass 5

The proposed grade of the cut batters would fit relatively comfortably with surrounding gently rising landforms and is sympathetic to the existing linear land use patterns. The road does not impact on gently rising landform. The bridge deck spans the Deep Creek Valley and also spans a minor drainage channel in a separate bridge span to the east of Deep Creek Valley. This impact is considered low to moderate. No main identified geological features are impacted. Removal of existing vegetation has been assessed as low to moderate impact. The overall visual impact has been assessed as low to moderate. Refer to Table 17 on pages 92 to 102 for further details on both the interim and ultimate developments.

Melbourne Airport Link - This alignment will represent the principal connection between the Tullamarine Freeway and the OMR. The routing of the alignment along the foot of the gentle wooded rises and generally sensitively fitting into the landform contours elevated this alignment to fitting well with the landscape character. Refer to Table 11 on pages 61 to 64 in the detailed report in **Appendix 10** for further details. General impact of the alignment on the landscape and visual character is low.

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

The incised valley landform with steep escarpments and Deep Creek drainage system is considered to be of Regional Importance. The important landscape values of the Deep Creek natural drainage system are a sense of remoteness, views to steep escarpments and a natural and unmodified creek channel. The Deep Creek valley is recognised in the Planning Scheme as ES01. Protection of the landscape values of the creek valley are also reinforced in Clause 12, Clause 15, Clause 22.02 and GWAZ of the Planning Scheme. The incised valley within the study area is in proximity to Bulla. The valley is of high sensitivity to visual change due to the high visibility of the valley embankments, the context and outlook of Bulla, the natural setting and difficulty of screening visual change.

Main visible geological features within the study area have been assessed as having Local to State importance. The existing geological values considered to be important are those that are highly visible, such as valley rock outcrops and the educational values of the abandoned kaolinite quarry at Deep Creek.

It is noted that the BB5 alignment has low to moderate impact on incised valley landform and Deep Creek drainage system, with low impact on the main visible geological features. The Melbourne Airport Link does not impact on these landscape values.

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

The following VicRoads standard landscape mitigation measures for landscape planning studies are to be implemented:

- Bridge/culverts to be located and designed to complement and accommodate revegetation and creek systems;
- Locate and design watercourse crossings to minimise loss of riparian vegetation and to accommodate erosion control methods;
- Unstable batters to be treated to reduce the risk of erosion;
- Planting to be undertaken between the freeway alignment and the right of way (ROW) boundary to screen adjacent access roads, where relevant;
- Encourage indigenous planting to the ROW freeway boundary to strengthen the extent of the landscape character where relevant;
- Use a combination of landform and planting to screen the freeway from adjacent residencies.

- Use of local materials where possible to identify 'town gateways' within interchange ROW boundaries, or to identify other significant landscape elements, where relevant
- Where noise attenuation is required noise mounds to be considered as the first option, followed by noise walls.

The following mitigation measures drawn from the Detailed Landscape and Visual Assessment are to be implemented:

- Provide min 4m width between edge of shared bike path and ROW fence to allow for replacement planting where existing screen planting is removed by proposed works and planting is to occur within the ROW, where feasible
- Provide vertical (steep) faces for earthworks cut in stable rock to provide a narrower ROW footprint and to celebrate the natural qualities of rock.
- For earthworks cut in possibly highly erodible geologies (such as west of Deep Creek), allow for appropriate batter grades (balancing the ROW footprint) to provide a stable and low erosion outcome. Batters flatter than 3:1 grades, regular benching or cut-off drains may be required.
- Minimise impacts on the natural incised valley landform and maximise views up the valley by minimising bridge abutment fill into the valley, to the extent practicable.
- Lay-back (spill-through) bridge abutments are to be utilised to better transition to creek valley landform, where feasible
- Where noise barrier mitigation is located adjacent to proposed or existing paths, consider locating the noise barrier on the ROW boundary and provision for planting between the barrier and the path, where practicable.
- Use of sympathetic bridge colours.
- Any creek embankment erosion to be repaired at the point of the creek crossing using techniques that reflect the local creek character, such as using local rock or re-planting.

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

Mitigation measures assume the following:

- Planting for remediation screening of visual impacts or remediation of landscape character impacts will not be immediately effective. This assessment assumes that tree planting at 7 years after opening the project is semi-mature and shrub, lower storey and grass planting is mature.
- Mitigation measures do not depend on tertiary remediation measures and potentially short life-cycle remediation measures such as screen planting, however, these measures are still considered and assume a 3 year managed planting establishment period and ongoing management to achieve the required benefits of the planting.
- Planting is assumed adjacent to the ROW boundary when adjacent to major viewing points in order to screen impacts (complying with VicRoads' Standard Mitigation Measure);
- All batters (cut and fill) steeper than 3:1 are planted; and

Planting generally considers compliance with VicRoads' safety clear zone and vehicular sight line requirements.

Soils

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

A Geotechnical desktop study and Risk Register has been completed, refer to **Appendix 1**.

The ability to place fill in the Deep Creek Valley in relation to BB5 has been assessed with a conventional structure although prestressed beams and multiple short spans is considered not feasible at Deep Creek due to the presence of a deep and wide valley, therefore alternative types of structures such as an incrementally launched box girder, a pre-cast segmental post tensioned box girder or a balanced cantilever bridge structures may be considered at this location[22].

In regards to foundation design, the stability of slope will be carefully evaluated when designing the bridge embankments due to the deeply incised nature of the creek valley.

The boundary of each geological unit in the area is not well defined, however the presence of basalt, Deep Creek siltstone and Bulla Adamellite was observed in the inspected site. The residual soil derived from the weathering of basalt is commonly characterised as expansive soil which can undergo significant volume change, either shrinkage or swelling, due to the change in moisture condition; leading to a lower strength and may have a high degree of erodability[23].

The geology of the Melbourne Airport Link consists of recent deposit of Alluvial and Colluvial, the recent deposits surrounding the Moonee Pond Creek may contain organic material, which potentially has long term settlement issues for road pavement.

Are there geotechnical hazards that may either affect the project or be affected by it?
☒ NYD ☐ No ☐ Yes If yes, please briefly describe.

A landfill area was identified during a site inspection between Sunbury Road and Deep Creek at 400 Sunbury Rd, Bulla. The contaminated site on the terrace on the west side of Deep Creek and is partially within the BB5 alignment. A Phase 1 Environmental Site Assessment has been undertaken. The assessment is contained within **Appendix 16**.

The preliminary Environmental Site Assessment identified the presence of soils containing waste that was considered to pose an aesthetic risk at the site, particularly in the east of the site in the area of filling. Further investigations to better understand its associated liabilities, to confirm its contamination status and to enable development of appropriate procedures for management of identified risks will be undertaken in the pre-construction phase of the Project.

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

More information relating to soils and geology is contained within Section 7 of this referral.

15. Social environments

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

It is anticipated that during construction there may be minor temporary disruption caused by construction vehicles entering and exiting sites. A Traffic Management Plan will be established to manage impacts relating to access and traffic movement. Additional measures which may be adopted include: watering down sites using non-potable water, utilising dust gauges to monitor air quality and putting in rumble strips at exit points to minimise material being carried onto nearby roads.

The current Bulla Road / Sunbury Road carries a volume of approximately 23,000 vehicles per day. In its ultimate development (ie 6 lanes on both the Bulla Bypass and Melbourne Airport

[22] Page ii VicRoads Geotechnical Services, Geotechnical Desktop Study and Risk Register (May 2013)
[23] Page 4 VicRoads Geotechnical Services, Geotechnical Desktop Study and Risk Register (May 2013)

Link), traffic modelling indicates that the Bulla Bypass would carry 36,000 vehicles per day with Melbourne Airport carrying 60,000 vehicles per day. The township of Bulla would carry 1,400 vehicles per day (down from the existing volume of 23,000 vehicles per day).

Is there a potential for significant effects on the amenity of residents, due to emissions of dust or odours or changes in visual, noise or traffic conditions?

☐ NYD ☒ No ☐ Yes If yes, briefly describe the nature of the changes in amenity conditions and the possible areas affected.

During construction, it is expected that there could be temporary impacts to residents in relation to dust, noise and visual impacts as well as disruption from changed traffic arrangement. These would be experienced more so by residents in close proximity to the construction area then those travelling through Bulla. There are 20 dwellings in close proximity to Bulla Bypass and a further 5 dwellings in close proximity to the Melbourne Airport Link. These impacts will be managed in accordance with the contract specification and construction environmental management plan (CEMP) to be developed by the Contractor.

These impacts will be managed in accordance with "best practice" environmental management principles as identified in EPA's Publication 960 – Doing it right on subdivisions.. Standard contract specifications clauses require the contractor to identify and implement controls for the management of dust including such things as dust suppression, and the prompt stabilisation of disturbed areas. Noise is generally addressed by restricting the hours of work to normal working hours and traffic conditions are managed through the implementation of a traffic management plan.

A detailed landscape and visual impact study has been undertaken refer **Appendix 10.** For the ultimate Bulla Bypass 5 alignment, the proposed bridge will be seen within the valley directly in line with the main view line down Sunbury Road. The view of the bridge crossing of the Deep Creek Valley will be distant (approx. 1.25 Km away) and partly screened by existing vegetation. The proposed bridge would be seen through trees looking north from Sunbury Rd. The height of the bridge from Sunbury Road means that the bridge would not dominate the northern valley view.

The proposed bridge would be visible within the northern view of the valley from a collection of dwellings west of Deep Creek at Bulla. Trees and some dwellings would provide part screening of the structure for some dwellings.

The Melbourne Airport Link alignment travels very close to existing residences on Oaklands Road between Sunbury and Somerton Roads. This will result in significant visual impacts for the 2 dwellings that are retained.

A noise modelling assessment has been completed by Renzo Tonin & Associates in an Acoustic Report prepared in August 2013, refer to **Appendix 8**.

There are far fewer sensitive receptors along the Bulla Bypass route in comparison to the existing arterial route through Bulla township. Future predicted traffic noise impacts for the Bulla Bypass BB5 alignment in 2035 show that 17 dwellings will be impacted by noise levels of 60 dB(A) or greater. Of these 3 are eligible for noise mitigation in accordance with the VicRoads policy. In 2035, average changes in noise levels compared with a 'future' do nothing are 5.0 dB(A) without mitigation.

Future predicted traffic noise impacts for Melbourne Airport Link (with Bulla Bypass) in 2046 show that 9 dwellings along the Melbourne Airport Link route will be impacted by noise levels of 60 dB(A) or greater (excluding the residences planned to be acquired by the Melbourne Airport Link and the OMR/E6 transport corridor). Four (4) of these dwellings are in common with the impacts from Bulla Bypass. All 9 dwellings will be eligible for noise mitigation. In 2046, average changes in noise levels compared with a 'future' do nothing are 4.7 dB(A) without mitigation.

Mitigation will be provided by noise barriers and off reservation treatments, where required, to achieve internal noise levels consistent with the Policy. The proposed locations of noise barriers are shown in Appendix I of the acoustic report in **Appendix 8.**

In addition to noise barriers, 3 properties will require off reservation treatments for Bulla Bypass Option BB5. When Bulla Bypass is operational, 2 properties will require off reservation treatments for the Melbourne Airport Link.

Noise attenuation for the operation of the road will be provided for in accordance with VicRoads - Traffic Noise Reduction Policy to minimise amenity impacts on affected properties. VicRoads Noise policy does not apply as a result of the widening of an existing road ie, Somerton Road. The application of the Noise Policy may be triggered along the Melbourne Airport Link alignment and the section of BB5 west of Wildwood Road.

Noise from aircraft operations has not been included in the noise modelling for the following reasons:

- Australian Standard for aircraft noise is measured in Lmax as opposed to the L10 metric;
- Impacts to the community from aircraft noise is less frequent when compared to traffic noise;
- Noise mitigation requirements for aircraft noise and road traffic noise are not the same;
- Decisions for adopting road noise mitigation treatments where there is significant contribution from aircraft noise may fail on a reasonable and practical test;
- A reliable noise model excluding aircraft noise can be built.

VicRoads Air Quality Screening Tool, provides assistance to project engineers/planners in using the Air Quality Screening Tool (AQST) to assess compliance against the State Environment Protection Policy (Air Quality Management) criteria using a worst case approach. It provides an initial assessment to determine if vehicle usage and associated emissions projected for the project is likely to exceed air quality intervention levels.

The screening tool has been utilised to assess the Bulla Bypass BB5 alignment. From Green St to Oaklands Rd the air quality is within acceptable levels. The crossing of the Deep Creek valley is outside the topographical limitations of the tool, however emissions in this open environment will disperse freely.

On the east side of Deep Creek there is a deep cut up to 13 metres deep. The deepest section of this cut is located between Chainage 51720 and Chainage 51850. This 120 metre section is outside the limits of the screening tool which can screen for cuts up to a maximum of 10 metres.

West of Deep Creek between Chainage 50200 and Chainage 50600 there is a 200 metre section of steep grade greater than 6 percent. This steep grade is outside the limits of the screening tool.

Generally air quality on Bulla Bypass is acceptable. In relation to the short sections of deep cut and steep grade described above it is noted that there are no residential buildings within the vicinity of these sections.

When the project components are operational, it is anticipated that there will be minimal impact on residents from dust.

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

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

The level of environmental impact caused by the project is considered highly unlikely to create permanent health or safety hazards to human communities. There may be temporary impacts experienced during construction by way of dust, erosion and noise. However, these will be managed through the implementation of a construction environmental management plan.

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

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

Both components of the project will necessitate the acquisition of private property. A total of 114 hectares are to be acquired. Bulla Bypass will necessitate the acquisition of 32 hectares of private property. Melbourne Airport Link will necessitate the acquisition of 83 hectares of private property (including 1 hectare overlaping with Bulla Bypass). The acquisition of Melbourne Airport Link includes 4 dwellings. Residents will be displaced from these 4 dwellings as a result of the project.

For all properties where access is altered, access will be reinstated as part of the project. Thus there will be no severance of access to community resources.

Three new access roads are included within Melbourne Airport Link to reinstate access to the residual parts of severed properties without road frontage. Access along Bulla Bypass will be restricted to left in left out with U-turn facilities located at appropriate spacing. As a result of access changes, it is anticipated that some residents will need to travel a longer distance when travelling to or from their destination, including Bulla township. However, as Somerton Rd is currently severed at Wildwood Rd some residents may have shorter trips and the route may reduce severance.

As traffic is being removed from the residential area of Bulla, overall the project will reduce severance for the community.

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

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

A Regional Economy Assessment, refer to **Appendix 7**, provides an assessment of the impact on agricultural, business, tourism and land uses[24].

The Regional Economy Assessment included the potential impacts in four categories including:

- Direct Loss of Business
- Loss of Highway Visibility:
- Changes to Access
- Short term impacts during Construction[25]

The following is a summary of the specific details for the BB5 alignment and the Melbourne Airport Link:

BB5:

The impacts on service businesses for the local community in terms of lost passing trade is estimated by the consultant to result in the closure of the service station, as this business is not likely to remain viable. The hotel/motel is likely to lose some passing trade through the restaurant and bottleshop. The hotel/ motel is assessed to be able to continue to operate.
There is potential impact on the activities of the Bulla Hill Railway due to loss in passing trade.
It is noted that the potential development opportunities of 1400 Somerton Road/200 Wildwood Road would be impacted by BB5 with the introduction of a Public Acquisition Overlay.

Bulla Road will still be open to the public which will allow continual access to the following community facilities:

- Bulla sports centre, tennis club and community centre;
- The country fire station;
- The former shire's bluestone offices;
- The Calabria Club;
- Bulla Hotel and Petrol Station;
- Tourist attractions including a miniature railway run on the reserve bimonthly by the Tullamarine Live Steam Society and the Alistair Clark Memorial Rose Garden;
- Bulla cemetery. Access will be maintained from Uniting Lane, however, Cemetrery Lane will be terminated.

The major issues with regard to businesses and tourism facilities are mainly general and concern the change in nature of Bulla township as the proposed bypass will reduce disruption by heavy

[24] Pages 39-47 GHD, Regional Economy Assessment (September 2013)
[25] Page 44 GHD, Regional Economy Assessment (September 2013)

commuter traffic flows. This will mean loss of highway exposure to the businesses that are located in Bulla and rely on highway traffic for a significant proportion of their business e.g. the petrol service station and the hotel/motel.

Melbourne Airport Link:
All of the small properties west of Oaklands Road and south of Somerton Rd (9 No.) will be severely affected through direct land loss and severance. Four dwellings are directly affected and others are compromised by severance, changes in access and improvements relocation.

The specific potential impacts includes:

- Access to Woodlands Historic Park near Oaklands Road would need to be relocated
- Wildwood Vineyard and Café is partially within the Airport Link and unlikely to be a viable business and likely to require acquisition to allow the construction of the MAL.
- Solitude Beauty and Relaxation is partially within the Airport Link and unlikely to be a viable business and likely to require acquisition to allow the construction of the MAL
- One transport operator is situated partially under the MAL footprint
- Ponderosa Pet Resort will suffer loss of infrastructure and possibly turnover due to disruption during construction however is assessed to continue to be a viable business

The potential impact of the proposed bypass and MAL is in terms of employment generation and employment loss in the short term and in the long term. Short term impacts are associated with construction employment and the presence of a large number of construction workers in the area who may patronise local businesses for food, petrol and accommodation. Long term impacts are due to loss of highway exposure, poorer access arrangements to some businesses. Long term benefits include, the generation of additional employment in the region due to the increased competiveness of Melbourne Airport, and the increased ease of access to labour markets in metropolitan Melbourne. There is also potential for new business investment due to the improved quality of the road network connecting the Hume Corridor with Melbourne Airport, the Calder Corridor and beyond.

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

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

The Traffic analysis had indicated that much of the traffic on the main roads of Bulla is through traffic to and from Sunbury. Residents are likely to travel to Greenvale or Sunbury for services such as schools, doctors, shopping and other services, which don't exist within Bulla township. Due to the scarcity of local facilities and employment opportunities within Bulla, it is clear that the community of Bulla is heavily dependent on good transport links with neighbouring areas for its proper functioning.

Services within Bulla Township including the Post Office, Hotel and Service Station may experience reduced customers passing through the Bulla township, once the Bulla Bypass is operational.

Is mitigation of potential social effects proposed?

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

The following mitigation measures drawn from the Social Impact Assessment are to be implemented:

- Consider applications for early purchase based on Financial loss or Loss on Sale as a result of the PAO or the proposal
- Inform and discuss with landholders the available process under the LACA to address project impacts on infrastructure or improvements on their properties.
- As early as possible, provide specific advice as to which properties will be subject to a Public Acquisition Overlay and what will be the allowable uses within the overlay subject to the Council's planning conditions.
- Where access to existing business such as the cattery, or valued places such as Living

Legends and Woodlands Historic Park is to be negatively impacted, consider providing adequate signage on the Melbourne Airport Link to advertise the presence of these places, where relevant.
- During construction ensure that access to all properties is maintained to minimise the impact on households and their businesses.
- Implement appropriate landscaping to minimise the impact of the Melbourne Airport Link, Bulla Bypass and other infrastructure on the surrounding environment.
- Continue to engage the community and provide each directly impacted household and landholders the opportunity for a one-on-one briefings about the project and its timelines.
- Integrate the shared path with the existing trails within Woodlands Historic Park to create better bicycle linkages into Melbourne.

The following mitigation measures drawn from the Regional Economy Assessment are to be implemented:

- Provide tourism signage, where appropriate
- Access roads and access restoration to be suitable for trucks for local transport businesses, where appropriate
- Restore access where impacted by the project.
- Restore or provide compensation for infrastructure loss as part of the acquisition and compensation process.

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

Specialist consultants have also interviewed a range of residents[26] and businesses[27] to determine social and business impacts and benefits.

Bicycle Network
In accordance with the VicRoads 'Bicycle Facilities as Part of Road Projects' Policy, August 2010, bicycle facilities must be provided as part of this planning study. The VicRoads' Principle Bicycle Network is shown along Somerton Road, Oaklands Road and Bulla Road, through the township to Green Street. Then there is a gap between Bulla and Sunbury. Refer to the plan in **Attachment 15.**

The provision for an off road shared path facility for pedestrians and cyclists has been included along Bulla Bypass 5 (on the south side of the arterial road) and the Melbourne Airport Link (on the east side) alignments. The provision of these facilities will aid movement towards Craigieburn and other industrial area to the north and Melbourne Airport. This will cater for both recreational and commuter cyclists.

Cultural heritage

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

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

VicRoads has been in consultation with Aboriginal Affairs Victoria and the Wurundjeri Land Compensation Cultural Heritage Council Incorporated. Vincent Clark Pty Ltd has been engaged as a consultant to undertake the cultural heritage assessment.

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

A Cultural Heritage Desktop Assessment was completed by Andrew Long and Associates in

[26] Page Sinclair Knight Merz, Detailed Social Impact Assessment (August 2013)
[27] Pages 28-33 GHD, Regional Economy Assessment (September 2013)

August 2011. Refer **Appendix 11.**

Dr Vincent Clark and Associates Pty Ltd has undertaken a draft Standard Cultural Heritage Assessment in March 2012 (including an update on the desktop assessment), refer **Appendix 12.** Additional complex testing was undertaken at targeted sites and the findings are reported in the archaeological excavations reports in **Appendix 14** dated January 2013 and **Appendix 15** dated February 2013.

Dr Vincent Clark and Associates Pty Ltd completed a Historical Archaeology Survey in March 2013 refer **Appendix 13.**

Methodology and accuracy are provided in the reports.

Is any Aboriginal cultural heritage known from the project area?

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

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

The project is located within the traditional language boundary of the Woi wurrung (Wurundjeri) people. There has been little archaeological investigation within the project area and vicinity and only limited study in the wider geographic region (outer region - volcanic plains and creek networks north west of Port Phillip Bay, inner region - source of Moonee Ponds Creek to confluence of Deep and Emu Creeks, Jacksons Creek to confluence with Deep Creek across Melbourne Airport to Moonee Ponds Creek to Mickleham Road)

Within the project area and vicinity, there are two previously registered Aboriginal cultural heritage places which contain multiple components and artefact scatters. Site Number 7822-0994 (artefact scatted and earth features) is located east of the Melbourne Airport along Sunbury Road and Site Number 77822-2106 (artefact scatter) is located north west of Bulla along Sunbury Road, just north of Bulla-Diggers Rest Road.

Through an archaeological field survey of the project area and vicinity, a large number of Aboriginal artefacts were identified in areas where there was good visibility resulting in the registration of 49 previously unrecorded sites with the Victoria Aboriginal heritage Register (VAHR), with a total of 51 VAHR sites situated within the project area and vicinity.[28]

All Aboriginal material culture that was recorded during the ground survey consists of stone artefacts, Of the 49 newly recorded sites, 26 are scatters of two or more artefacts and 23 are single instances.

A preliminary report on archaeological excavations was completed in January 2013 refer to **Appendix 14**. Lochton 7 was recorded as a single artefact during the survey in 2011, but inspection of a large manna gum tree located a scar along the lower trunk, which was determined to be a cultural marking, which was recorded as a scarred tree[29]. The BB5 alignment was developed following the identification of this tree and has been aligned to avoid it.

Melbourne Airport Link

There are 16 aboriginal cultural heritage sites that occur within the Melbourne Airport Link alignment. These are listed in the table below.

Alignment	VAHR sites within alignment	VAHR sites near alignment (within 20m)
MAL	7822-0994, -3227, -3228, -3229, -3230, -3231, -3232, -	7822-3246, -3247, -3248

[28] Page 72 - 102 Dr Vincent Clark & Associates, Draft Desktop and Standard Assessment (March 2012)
[29] Page 9 Dr Vincent Clark & Associates, Preliminary report on archaeological excavations at Bulla for CHMP 11935 (January 2013)

	3233, -3234, 3235, -3236, -3237, -3238, -3239, -3240, -3241	

Of the affected sites is one (7822-3230) assessed to have high or medium-high significance. Subsurface testing along this alignment is likely to reveal that several of the single artefact instances consist of contiguous artefact deposits, whose significance might therefore increase.[30]

Bulla Bypass
There are 5 aboriginal cultural heritage sites that occur within the BB5 alignment. These are listed in the table below.

Alignment	VAHR sites within alignment	VAHR sites near alignment (within 20m)
BB5	7822-3261, 7822-3584, 7822-3580, 7822-3581, 7822-2106	7822-3260 7822-3268, 7822-3269

Of the affected sites, two (7822-3584 and -3580) have high, or medium to high, significance. However, it is noted that only a small portion of 7822-3584, at its northern tip, will be harmed; the scarred tree that is a component of this site will not be affected.[31]

In terms of cultural heritage, alignment BB5 best fulfils the objective "to minimise impacts on cultural heritage to the extent practicable" by avoiding or minimising harm to significant sites located along the granitic spur. [32]

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

☐ NYD ☐ No ☒ Yes If yes, please list.

A Historical Archaeology Survey has been completed, refer to **Appendix 13**.

Thirteen historical, non-Aboriginal features were recorded within the project area and vicinity.

Five previously unrecorded historical sites were identified, in accordance with Heritage Victoria's criteria for recording historical archaeological sites, and were added to the Victorian Heritage Inventory. One site listed on the Heritage Overlay (Lochton Flour Mill) was recorded and added to the VHI.[33] The registered historical sites located within the project area and vicinity are listed in the following table.

Registration Type	Registration Number/s	Site Name	Description
VHI	H7822-0204	St Mary's Church Site	19th-century church and graveyard site
HO	HO26	Hume & Hovell Memorial	Monument built in 1920s
VHI	H7822-2309	Campbell's Cottage	Chimney stack and remains of 19th-century house
HR, HO	H1612, HO25	Woodlands Homestead Stables	Buildings, features and surrounding landscape in Woodlands Park

[30] Dr Vincent Clark & Associates, Cultural Heritage Assessment of Alignment Options for Bulla Bypass/Melbourne Airport link planning study using Objective Based Evaluation Matrix (OBEM).
[31] Dr Vincent Clark & Associates, Cultural Heritage Assessment of Alignment Options for Bulla Bypass/Melbourne Airport link planning study using Objective Based Evaluation Matrix (OBEM).
[32] Dr Vincent Clark & Associates, Cultural Heritage Assessment of Alignment Options for Bulla Bypass/Melbourne Airport link planning study using Objective Based Evaluation Matrix (OBEM).
[33] Page 26& 27 Dr Vincent Clark & Associates, Bulla Bypass and Melbourne Airport Link to Outer Metropolitan Ring: Historical Archaeology Survey (March 2013)

		and Outbuildings	
HO	HO27	Oaklands Road Bridge	Disused bridge
VHI	H7822-2310	Oaklands Road Cistern	Brick dome shaped cistern
VHI	H7822-2308	Oaklands Road Paving	Brick paving and planted bushes
VHI	H7822-2305	Oaklands Road Homestead	Location of 19th-century house
HO	HO276	House (Ponderosa)	19th-century house
VHI	H7822-2307	Wildwood Road Farmstead	Remains of paving and buildings
VHI, HO	H7822-2306,HO22	Lochton Flour Mill	Bluestone mill complex

Melbourne Airport Link

Within the Melbourne Airport Link alignment and vicinity there are nine historical sites. Of these five are on the Victorian Heritage Inventory, three on the Hume Planning Scheme Heritage Overlay and one with a listing on the Heritage Register and Heritage Overlay. These sites are VHI 7822-0204 (St Mary's Church); VHI 7822-2309 (Campbell's Cottage); VHI 7822-2310 (Oaklands Road Cistern); VHI 7822-2308 (Oaklands Road Paving); VHI 7822-2305 (Oaklands Road Homestead); Woodlands Homestead (H1612 and HO25); Hume & Hovell Monument (HO26); Oaklands Road Bridge (HO27); and Ponderosa House (HO276).

The Melbourne Airport Link alignment impacts a small portion of the Woodlands Homestead Stables and Outbuildings historical sites (H1612 and HO25).

Bulla Bypass

The historical site Oaklands Road Paving (H7822-2308) is within the Bulla Bypass alignment. The historical site, however, is not situated within the carriageway or batters and is located near the outer edge of the Right of Way. It is anticipated that impact to the site will be avoided.

The historical sites Ponderosa House (HO276) and Oaklands Road Homestead (VHI H7822-2305) will not be affected, although the frontage to the properties they are situated on will be impacted.

Is mitigation of potential cultural heritage effects proposed?

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

It is noted that regardless of the proposed mitigation measures described below, the final mitigation measures will be determined through an approved CHMP endorsed by the Wurundjeri Land Compensation Cultural Heritage Council.

The BB5 alignment has been identified as the preferred alignment of Bulla Bypass as it avoids or minimises harm to significant sites located along the granitic spur east of Deep Creek including avoiding the scarred tree.

The following mitigation measures are proposed to be implemented:

- Undertake a complex assessment for the project area at identified sites. This will include subsurface testing to verify the presence, extent, nature and significance of cultural deposits. The extent of the testing will be undertaken is to be determined in consultation with a cultural heritage advisor and the Wurundjeri Tribe Land and Compensation Cultural Heritage Council Inc.
- Finalise a CHMP for the project.
- Design the road alignment to avoid or minimise impacts on aboriginal cultural heritage sites where possible
- Identify No-Go Zones to protect sites or sections of sites (if associated with an artefact scatter) from construction impacts where feasible

- Salvage artefacts as agreed in the CHMP.
- Ensure that contingency measures are prepared in the event of an unexpected discovery of an Aboriginal cultural heritage site or human remains
- Ensure that all staff involved in the construction of the project are inducted and aware of the Aboriginal Cultural Heritage requirements including the protection of sites and the contingency measures should a site be expectantly discovered.

Specific mitigation measures drawn from the cultural heritage investigations proposed to be implemented are as follows:

Bulla Bypass

Greenvale Road 1B IA (VAHR 7822-3261): The site is recorded as a single surface artefact near to a surface artefact scatter on eroded ground north of Somerton Road. Determining the extent of the site is subject to further investigation as part of a complex assessment. Expected mitigation measures include recording and collection of artefacts on the surface.

Lochton 2A (VAHR 7822-3268): The site is recorded as a surface artefact scatter on a south-facing terrace on a spur east of Deep Creek. Complex assessment is needed to determine presence of subsurface artefacts and the extent, nature and significance of the site. Depending on the results, expected mitigation measures include archaeological salvage excavations in parts of the site affected by the activity, recording and collection of artefacts on the surface and fencing off parts of the site not affected by the activity.

Lochton 7 (VAHR 7822-3584): The site is recorded as a subsurface artefact deposit on a south-facing terrace on a spur east of Deep Creek. Complex assessment has been completed in the south part of the site, but the site's continuation to the north remains to be investigated. Depending on the results, expected mitigation measures include archaeological salvage excavations in parts of the site affected by the activity, recording and collection of artefacts on the surface and fencing off parts of the site not affected by the activity.

Bulla 3A (VAHR 7822-3580): The site consists of surface and subsurface artefact deposits across a terrace bordered by a wide meander bend of Deep Creek. Complex assessment has taken place here, though further investigation may be needed, particularly to investigate the possibility of deeply buried cultural deposits, as were found on the adjacent terrace on the east side of the creek, at Bulla 1 (VAHR 7822-3278). Expected mitigation measures include archaeological salvage excavations in parts of the site affected by the activity, recording and collection of artefacts on the surface and fencing off parts of the site not affected by the activity.

Bulla 4A (VAHR 7822-3581): The site consists of a surface artefact scatter on disturbed and eroded ground on the terrace west of Deep Creek. Complex assessment has been completed at this location, which found no subsurface component. Expected mitigation measures include recording and collection of artefacts on the surface.

470 Sunbury Road, Bulla-1 (VAHR 7822-2106): The site consists of a light scatter of surface artefacts above the escarpment above the west of Deep Creek valley. Complex assessment has been completed at this location, which found no subsurface component. Expected mitigation measures include recording and collection of artefacts on the surface

Melbourne Airport Link

On the basis of information available, expected mitigation measures for the 12 identified sites that are within the MAL alignment would include recording and collection of surface artefacts. However, it is likely that there are subsurface components at some or all of the identified sites and also that there are sites yet to be identified, where artefacts are not visible or present on the surface. Sites located and investigated during the complex assessment may be subject to mitigation measures including avoidance and/or archaeological salvage excavations.

Any disturbance and/or damage proposed to non-indigenous historical sites will be strictly in accordance with the requirements of Heritage Victoria.

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

A Cultural Heritage Management Plan will be developed and approved by the Registered Aboriginal Party. This will detail site specific mitigation measures for the project.

In relation to Non-Aboriginal sites, consultation will continue with Heritage Victoria and where required a permit will be submitted for approval.

16. Energy, wastes & greenhouse gas emissions

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

- ☒ Electricity network. If possible, estimate power requirement/output ……
- ☒ Natural gas network. If possible, estimate gas requirement/output ……...
  Generated on-site. If possible, estimate power capacity/output ……..
- ☒ Other. Please describe. Construction equipment will primarily utilise diesel fuel during construction.

Please add any relevant additional information.

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

- ☒ Wastewater. Describe briefly.
- ☒ Solid chemical wastes. Describe briefly.
- ☒ Excavated material. Describe briefly. Excess soil will result from areas of large cut of approximately 200,000m3. Excess soil that is not utilised within the project will be carted offsite. Any material excavated for bridge supports to be removed from the contaminated site at 400 Sunbury Rd, Bulla will be classified and disposed of offsite in accordance with EPA requirements.
- ☒ Other. Describe briefly.

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

During construction waste will be managed through the implementation of a management plan.

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

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

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

Vehicles using the proposed road will generate greenhouse gas emissions, although this is considered an indirect result of project operation. While an assessment has not been conducted on greenhouse gas emissions, implementation of the project is expected to reduce greenhouse gas emissions in the area due to reduced traffic congestion.

The following VicRoads tools/database can be utilised to measure the greenhouse gas emissions at a later date.

- VicRoads Greenhouse pavement option tool;
- VicRoads Greenhouse gas calculator;
- VicRoads Greenhouse Gas Emissions workbook.

17. Other environmental issues

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

☒ No ☒ Yes If yes, briefly describe.

18. Environmental management

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

☒ Siting: Please describe briefly

The Melbourne Airport Link and BB5 have been aligned to minimise impacts to the environment and landowners.

☒ Design: Please describe briefly

In order to minimise environmental effects, detailed design will consider the following:

- Avoidance/minimisation of impacts on significant native vegetation and fauna habitat
- Alternative long span bridging options;
- Noise mitigation and attenuation measures;
- Landscape and urban design measures;
- Water sensitive road design.

☒ Environmental management: Please describe briefly.

VicRoads has a well established environmental system for managing the potential environmental impacts of major road projects.

VicRoads aims to achieve a high standard of environmental performance through a strong organisational commitment to the protection of the environment, supported by a systematic approach and a process of continual improvement.

The details of the systems and processes for management of environmental issues are described in VicRoads Environmental Risk Management Guidelines (2012).

VicRoads approach to environmental management is modelled on the ISO 14001 Environmental Management System. VicRoads Environmental Management System (EMS) incorporates:

- **Policy**: Sustainability and Climate Change Policy, Sustainability and Climate Change Strategy
- **Planning**: Planning and Development Procedure, Sustainability and Climate Change Action Plan, Risk assessment of aspects and impacts, Issue-specific guidelines, Investigations, Commitments Register, Contract Specifications
- **Implementation and operation**: Pre-construction and Delivery Procedure, Post-construction and Maintenance procedures, Environmental systems documentation and tools, Training, Emergency preparedness and response
- **Checking and corrective action**: Audit and surveillance, Monitoring, Incident reporting
- **Management review**: Review for continual improvement, Post project review, Annual report on progress against the Sustainability and Climate Change Action Plan, Monthly review of environmental incidents by the Corporate Management Group.

The VicRoads EMS specifies environmental management processes for construction, operation and maintenance of the road network managed by VicRoads.

Key components of the system for the delivery of a construction contract are:

- VicRoads Project Environment Protection Strategy (PEPS)
- VicRoads contract specification
- Contractor's Environmental Management Plan (EMP)
- Monitoring, surveillance and auditing of contractor activities.

Further details for each of these is as follows:

VicRoads Project Environment Protection Strategy

The Project Environment Protection Strategy (PEPS) is prepared prior to any construction works being undertaken for the Project. The PEPS seeks to document all environmental requirements and its key objectives are to:

- guide the Project team in the design and construction phases of the Project
- protect the environment during construction and operation
- enhance, where possible, the environment in the immediate vicinity of the Project.

The PEPS consolidates procedures and responses to specific environmental issues into one document to identify:

- environmental performance objectives
- key roles and responsibilities
- environmental issues specific to the detailed design, construction and operation of the project
- potential impacts on the environment and proposed measures and objectives for minimising or avoiding these impacts through design, construction and operation
- processes for identifying further issues and protection actions throughout design and construction, involving for example, risk assessment reviews, auditing and surveillance
- conditions of planning and environmental approvals to be met during project implementation.

VicRoads Contract Specification

VicRoads standard environmental clauses provided in Contract Specifications have been developed from best industry practice, legislative requirements and VicRoads knowledge gained through the delivery of road projects. Clauses address the management requirements for all elements of the environment including water quality, air quality, biodiversity (flora and fauna), community (for the impacts of noise and vibration) and Cultural Heritage.

The standard contractual requirements are further customised to ensure that all environmental commitments, risks and objectives specific to the project (as identified in the PEPS) are adequately addressed by the environmental clauses.

Contractor's Environmental Management Plan

The contractor is required to prepare, implement and maintain an Environmental Management Plan (EMP) that will meet the requirements of the Contract Specification and VicRoads PEPS. A review of the EMP will ensure that it contains adequate controls/processes to avoid and/or mitigate environmental impacts associated with construction activities and complies with the requirements of the Contract Specification.

The EMP would include:

- an outline of the regulatory framework, including a list of required approvals
- identification of environmental conditions and issues, particularly where there are sensitive areas
- identification of the environmental risks to be managed and the management measures and methodologies to be taken to meet the project delivery standards
- contingency measures to be adopted if significant environmental risks are either identified through the risk assessment process or otherwise encountered during the project
- management measures to meet the performance objectives specified in the Contract Specification.

Monitoring, surveillance and auditing of contractor activities

Contractors are required to undertake monitoring and audits for construction activities, including works undertaken by subcontractors employed on their behalf to verify compliance with the contract Specification and their Environmental Management Plan

In addition to the contractor auditing and monitoring of the works, VicRoads also conducts its own surveillance and auditing to assess the contractor's compliance with the EMP and the requirements of the Contract Specifications through:

- observation of project activities on a day-to-day basis;
- periodic risk based surveillance of the effectiveness of environmental controls and processes implemented on site; and
- audit of the implementation and effectiveness of the EMP and the effectiveness of the controls and processes implemented on site.

☒ Other: Please describe briefly

Add any relevant additional information.

19. Other activities

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

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

Once constructed, the proposed OMR/E6 Transport Corridor, Melbourne Airport Link and Bulla Bypass will result in the area north of Bulla with excellent access to freeways. The Airport Environs Overlay and the Green Wedge Zoning means that the area is largely undeveloped and currently protected from development.

However, given the area is relatively flat, undeveloped, close to the city and of significant size, the cumulative effect of this project combined with the OMR/E6 Transport Corridor may result in pressure to change zoning controls in order to develop the area in the very long term.

20. Investigation program

Study program

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

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

Has a program for future environmental studies been developed?

☒ No ☒ Yes If yes, briefly describe.

During the pre-construction phase the following are proposed to be undertaken:

- A detailed investigation of the contaminated land at 400 Sunbury Rd, Bulla
- Net Gain Assessment

Consultation program

Has a consultation program conducted to date for the project?

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

A Communications Plan has been prepared for the planning study outlining how VicRoads will consult with and seek input from stakeholders, interest groups and the wider community. VicRoads has undertaken extensive consultation to date during the planning study.

A Technical Working Group (TWG) has been established with Government stakeholders and other key agencies. The purpose of the TWG is to obtain specialist technical input on any issues, to review and provide advice on the consultants detailed reports and provide updates in relation to policy changes and approval/permit requirements. The TWG has representation from the following organisations:

- Hume City Council;
- Melbourne Airport;
- Melbourne Water;
- Port Phillip and Westernport CMA;
- Growth Areas Authority;
- Heritage Victoria;
- Office of Aboriginal Affairs Victoria;
- Wurundjeri Tribe Land and Compensation Cultural Heritage Council;
- Environment Protection Authority;
- Parks Victoria;
- Former Department of Sustainability and Environment (Department of Environment and Primary Industries);
- Former Department of Transport (Department of Transport Planning and Local infrastructure);
- Former Department of Planning and Community Development (Department of Transport Planning and Local infrastructure);
- Department of Sustainability, Environment, Water, Population and Communities.

The TWG has met twice to date and comments have been sought on the detailed investigation reports from relevant agencies. VicRoads will continue to meet with the TWG at stages throughout the planning study, as required.

Utility providers have been consulted in relation to impacts of the planning study on their existing and future assets. The common concern of the utility providers is protection of their existing assets during construction. The utility providers that have been consulted are Melbourne Water, Western Water, Telstra Corporation, Jemena Electricity, and SP Ausnet.

VicRoads has met with Wurundjeri Tribe Land and Compensation Cultural Heritage Council on numerous occasions to consult and obtain input to the alignment options for Bulla Bypass. In particular the meetings have been held to discuss the outcomes of cultural heritage investigations and to minimise the potential impacts on the sensitive area surrounding Deep Creek and agree on a preferred alignment (BB5) to minimise impacts on aboriginal cultural heritage.

BB5 was developed as the preferred option after extensive investigation of options and responding and listening to stakeholders and the community.

VicRoads has met with Melbourne Airport on several occasions to provide an update on the progress of the planning study and discuss pertinent issues. VicRoads continues to communicate with Melbourne Airport on an ongoing basis.

Public information days were held on 16, 17 and 22 September 2011 at the Bulla Community Centre. The purpose of the information days was to inform the community on the alignment corridors being considered, to provide the community with an opportunity to input into the process and to address any concerns regarding property impacts. The information days displayed the original alignments considered in the southern corridor, inner Bulla corridor and northern corridor (Alignments A to I) and advised the community that the northern corridor is the most favourable for a bypass of Bulla and subsequently further investigations will be undertaken within this corridor.

As a result of this consultation alignment BB1 was developed as requested by community members.

Additional public information days were held on 4, 6 and 7 May 2012 at the Bulla Community Centre and on 12 May 2012 at the Sunbury Community Centre. The purpose of the information days was to inform the community on the current options being considered within the northern corridor, to provide the community with an opportunity to input into the process and to address any concerns regarding property impacts. The information days displayed the Bulla Bypass options BB1 South, BB1 North, BB2, BB3, and Melbourne Airport Link. The community were also advised that BB4 had been eliminated and would not be investigated further.

VicRoads released Information updates in September 2011, April 2012 and August 2013, revised the extensive information on the VicRoads website web page and sent letters to landowners and occupiers inviting them to the public information days.

Affected landowners have been provided with the opportunity to meet with VicRoads individually to discuss possible land impacts on their property and future access. These landowner interviews were held between May and August 2012 and during September 2013.

VicRoads continues to receive and respond to telephone enquiries, letters and emails in relation to the planning study.

VicRoads attends meetings held by the Council-based Bulla Bypass Committee. The Committee is made up of a Council representative, Councillors, and community representatives. VicRoads attends the meetings to provide the committee with updates on the progress of the planning study and an opportunity for issues to be raised. The key concern of the committee is the timing of construction of Bulla Bypass.

The consultants undertaking investigations for social impact and the regional economy assessment have undertaken interviews with several affected property owners and businesses within the study area.

During the information days in September 2011, feedback was received from the community suggesting that Bulla Bypass continue along Somerton Rd, as opposed to diverting to the north. Subsequently the BB1 South option (formerly BB1) was developed. Subsequent to that, BB1 North was developed to reduce the social impact to properties along Somerton Rd.

A summary of the key issues raised through the community consultation process in relation to the alignment options includes:

- Development of the BB1 South option (formerly BB1);
- Development of the BB1 North option;
- Consideration of relocating the Melbourne Airport Link and Bulla Bypass interchange further east in order to minimise the impact on houses;
- Concerns regarding access into and out of individual properties including access for trucks;
- Can Oaklands Road be duplicated within the existing road reservation;
- Minimise impacts on properties;
- Impacts and disruption to businesses;
- Noise mitigation;
- Concerns regarding disturbance of a contaminated site;
- Provision of paths for cyclists;
- Concerns about impact on a contaminated site at 125 Green Street, Bulla. This site is not impacted by the BB5 alignment.

In relation to the planning process and construction, key concerns raised included:

- Land acquisition;
- Timing of construction;
- Construction impacts including noise and air pollution.

The community has been advised of VicRoads preferred alignment (BB5 and MAL) through the August 2013 information update and direct mail out to impacted property owners.
Has a program for future consultation been developed? ☐ NYD ☐ No ☒ Yes If yes, briefly describe. A Communication Plan has been prepared for this project. This will be updated during the planning study, as required. Please refer to **Attachment 11**. Further community consultation and/or public exhibition will be undertaken. This will be dependent upon the planning approval process to be adopted. Further information updates and revisions to the web page will be provided following key milestones on the planning study. VicRoads continues to attend the Bulla Bypass Committee meetings held quarterly and to respond to telephone enquiries, letters and emails in relation to the planning study.

Authorised person for proponent:

I, …AGNELO DUARTE..……...(full name),

……DIRECTOR TECHNICAL SERVICES..…(position), confirm that the information contained in this form is, to my knowledge, true and not misleading.

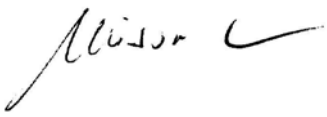
Signature _____

Date 13/12/2013

Person who prepared this referral:

I, …MELISSA CASTLE..……(full name),

……SENIOR PLANNING ENGINEER……..(position), confirm that the information contained in this form is, to my knowledge, true and not misleading.



Signature _____

Date 13/12/2013