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The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

GHD has prepared this report on the basis of information provided by VicRoads and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.
Executive summary

VicRoads and the Bulla community have identified issues of congestion around the Sunbury – Bulla Road, in particular with queuing and delays in peak periods through the township of Bulla.

GHD has been engaged by VicRoads to undertake a regional economic assessment for the corridor alignments for Melbourne Airport Link (MAL) and Bulla Bypass. The objectives of this study are to examine the existing conditions and assess the extent of impacts of the proposed options.

This study is assessing the economic impact of five route options for Bulla Bypass (BB1 North, BB1 South, BB2, BB3 and BB5) and the MAL. An additional alignment option for Bulla Bypass (BB4) has been discarded in early stages of the project and therefore has not been included as part of this assessment.

The regional economy planning assessment involved targeted engagement with identified stakeholders in the study area and further afield. Stakeholders consulted with include landowners and businesses located in the study area as well as local government and government department interests that are involved in the planning for the study area.

The major agricultural issues with regard to the project include:

- Potential land loss;
- Severance and loss of facilities that is likely to occur as a result of the project; and
- The impact this would have on the farming community in the area and potentially on regional farming communities.

The business and tourism facilities issues are general and concern the change in nature of Bulla township as the proposed bypass will reduce disruption by heavy 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. Additionally, there will be access issues for those businesses that are located in St John’s Road which is accessed through Wildwood Road.

The proposed bypass and MAL are expected to impact on existing employment numbers and employment generation in both the short term and 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 and less direct access arrangements to some businesses. Long term benefits include, the generation of additional employment in the region due to the increased competitiveness of Melbourne Airport, and the increased ease of access to labour markets in metropolitan Melbourne. There is 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.

To provide consistency across the various specialist studies assessing the impact of the route options for Bulla Bypass and MAL, an Objectives Based Evaluation Matrix (OBEM) has been created and utilised for all studies. The Melbourne Airport Link (MAL) is assessed separately as the objectives for the MAL differ from the objectives of the Bulla Bypass. MAL relies on the OMR for significant justification and the objectives used in its assessment are derived from the objectives for the Outer Metropolitan Ring (OMR) Transport Corridor. The assessment of the MAL is fully reliant on the information provided as background for the OMR planning studies, which does not include a regional economy assessment. It is assumed that the MAL will be dimensioned so it has sufficient capacity to carry Tullamarine Freeway and Melbourne Airport traffic.
The assessment criteria provided for all Bulla Bypass and MAL Planning Studies is presented in the table below.

**Route Options Assessment Criteria**

<table>
<thead>
<tr>
<th>Rating</th>
<th>Defined Values</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Well</td>
<td>Best practice, strong level of compliance, major positive impact</td>
<td>Very Well</td>
</tr>
<tr>
<td>Well</td>
<td>Improved practice, good policy compliance, positive impact</td>
<td>Well</td>
</tr>
<tr>
<td>Moderately Well</td>
<td>Partial policy compliance, no distinct positive or negative impact</td>
<td>Moderately Well</td>
</tr>
<tr>
<td>Poor</td>
<td>Policy non-compliance and negative impact</td>
<td>Poor</td>
</tr>
<tr>
<td>Very Poor</td>
<td>Major policy non-compliance and major negative impact</td>
<td>Very Poor</td>
</tr>
</tbody>
</table>

The regional economy study findings found that Option 1 North was assessed to be the best option fitting with the regional economy study objectives. The option scored well or moderately well for all sub objectives with an average score of well.

A summary of the assessment is presented in the tables below.

**Regional Economy OBEM Assessment Results for Bulla Bypass Options**

<table>
<thead>
<tr>
<th>Study Objective</th>
<th>Sub Objective</th>
<th>Final Assessment (Including Mitigation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>To support economic performance for the local and regional economy</td>
<td>E1. Impact on local business activities.</td>
<td>Option BB1 North: Moderately Well</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Option BB1 South: Moderately Well</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Option BB2: Moderately Well</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Option BB3: Moderately Well</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Option BB5: Moderately Well</td>
</tr>
<tr>
<td>To support economic performance for the local and regional economy</td>
<td>E2 Impact on current and future business activities Sunbury.</td>
<td>Option BB1 North: Very Well</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Option BB1 South: Very Well</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Option BB2: Very Well</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Option BB3: Very Well</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Option BB5: Well</td>
</tr>
<tr>
<td>To support economic performance for the local and regional economy</td>
<td>E3 Impact on local agricultural activities.</td>
<td>Option BB1 North: Well</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Option BB1 South: Moderately Well</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Option BB2: Poor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Option BB3: Poor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Option BB5: Well</td>
</tr>
</tbody>
</table>
### Regional Economy OBEM Assessment Results for MAL

<table>
<thead>
<tr>
<th>Study Objective</th>
<th>Sub Objective</th>
<th>Final Assessment (Including Mitigation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>To support the performance of OMR in improving access between key international</td>
<td>Provide access to OMR from Melbourne Airport and Tullamarine Freeway</td>
<td>MAL: Very Well</td>
</tr>
<tr>
<td>hubs (Avalon Airport, Melbourne Airport, Port of Geelong) and access within</td>
<td></td>
<td></td>
</tr>
<tr>
<td>this employment corridor.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To support the performance of OMR in improving access between key international</td>
<td>Impact on local agricultural activities.</td>
<td>MAL: Moderately Well</td>
</tr>
<tr>
<td>hubs (Avalon Airport, Melbourne Airport, Port of Geelong) and access within</td>
<td></td>
<td></td>
</tr>
<tr>
<td>this employment corridor.</td>
<td></td>
<td></td>
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</table>

### Economy Study Overall Assessment Ranking

<table>
<thead>
<tr>
<th>Alignment Option</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>BB1 North</td>
<td>Well</td>
</tr>
<tr>
<td>BB1 South</td>
<td>Well</td>
</tr>
<tr>
<td>BB2</td>
<td>Moderately Well</td>
</tr>
<tr>
<td>BB3</td>
<td>Moderately Well</td>
</tr>
<tr>
<td>BB5</td>
<td>Well</td>
</tr>
<tr>
<td>MAL</td>
<td>Well</td>
</tr>
</tbody>
</table>
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1. Introduction

GHD has been engaged by VicRoads to undertake a regional economic assessment for the corridor alignments for Melbourne Airport Link (MAL) and Bulla Bypass. The objectives of this study are to examine the existing conditions and assess the extent of economic impacts of the proposed options.

The report presents background context and an assessment of the impacts of the options under investigation on the business and tourism related activities for the Bulla township and wider region area, on agriculture activities and related activities, and on major transport activities for Bulla and surrounding area.

1.1 Project Background

VicRoads and the Bulla community have identified issues of congestion around the Sunbury – Bulla Road, in particular with queuing and delays in peak periods through the township of Bulla. The tight climb and curves on the crossing of Deep Creek from Bulla towards Sunbury have also remained a concern of the local community and road users for some time.

With the establishment of the Sunbury Growth Corridor which is envisaged to accommodate at least 60,000 residents and provide some 10,000 to 15,000 jobs further congestion will be generated by traffic between Sunbury (and beyond) and Melbourne. As mentioned in the Sunbury Growth Corridor Plan, the resulting traffic issues along the Sunbury – Bulla Road will need to be addressed.

Furthermore planning for the Outer Metropolitan Ring (OMR) is well underway. The OMR is a proposed 100 kilometre long transport link for people and freight connecting the Hume Freeway at Kalkallo north of Melbourne, to the Princes Freeway south-west of Werribee. A Public Acquisition Overlay for the reservation was ratified by Parliament in August 2010.

The OMR transport link will connect residential and employment growth areas in Melbourne’s north and west and it will provide an important route to interstate and major regional destinations. It will also enhance connections between international transport hubs such as:

- Melbourne and Avalon Airports;
- The Port of Geelong; and
- The proposed Donnybrook/Beveridge Interstate Freight Terminal.

Preliminary studies have investigated road links to support the anticipated growth in the area and provide an improved link to the Melbourne Airport from the planned OMR without undue impacts on the centre of Bulla. Two links are proposed:

- The MAL is proposed as a freeway standard connection between the Tullamarine Freeway at Melbourne Airport to OMR; and
- The Bulla Bypass link, proposed as a six lane arterial road providing a better standard of road for through traffic to/from Sunbury and beyond to bypass Bulla and removing grade and curve issues associated with the existing route.

In the long term both routes will be needed to accommodate Melbourne’s growing population, as based on preliminary traffic studies. This includes growth areas in Sunbury and Diggers Rest and the continued development of the Melbourne Airport Specialised Activity Centre to accommodate airport traffic growth and associated employment growth.
Further detailed technical specialist studies are now required to assess the impacts of the proposed route options of the Bulla Bypass. This study concerns the local and regional economy impacts of the proposed route options, and presents an analysis of:

- Impact of the corridor under investigation on the business and tourism related activities for the Bulla township and regional area;
- Impact of the corridor under investigation on agriculture activities and related activities for Bulla;
- Impact of the corridor under investigation on major transport activities for Bulla and surrounding area; and
- Evaluation of the impact of the corridor under investigation on affected landowners, business and tourist operators in and around Bulla.

1.2 Study Area

In examining possible route options within the preliminary investigation area and for a bypass of Bulla, VicRoads has been able to reduce the study area for the MAL and the Bulla Bypass as shown in Figure 1.

A wider regional area has also been examined for economy trends in employment patterns, businesses with travel through Bulla to use Melbourne Airport, and businesses in the vicinity of the local study area with travel through Bulla. The wider regional area includes areas to the north west of Bulla and includes the towns of Sunbury, Diggers Rest and Gisborne.

The wider region area is shown in Figure 2.
LEGEND
- Study Area
- SRA Link
- Potential Oaklands Road duplication with Melb Airport Lnk
- Woodlands Historic Park
- Melbourne Airport
- Melbourne Airport Link
- Potential Oaklands Road Duplication or Interchange with Melb Airport Lnk

Date: 18 Feb 2013
Revision: F

Study Area:

Figure 1

GHD | Report for VicRoads - Bulla Bypass and Melbourne Airport Link Planning Study, 31/28377
1.3 Economic Assessment

As mentioned, this report presents background context and an assessment of the impacts of the options under investigation on the business and tourism related activities for the Bulla township and wider regional area, on agriculture and related activities, and on major transport activities for Bulla and the surrounding area.

The objectives of this study are to examine the existing conditions and assess the extent of impacts of the proposed options. Apart from impacts on local businesses, tourism activities and agriculture activities, this study also includes an assessment of:

- The extent to which the proposed bypass and Melbourne Airport Link supports the land use objectives for the future development of Sunbury, including the ability to access employment in metropolitan Melbourne; and
- The extent to which the proposed bypass and MAL complements future Airport Planning.

The methodology used included the following key tasks:

- Gather information and reviewing existing studies, including previous studies undertaken as part of the MAL and Bulla Bypass Link, as well as other policies relevant to business, tourism and agriculture;
- Collect relevant ABS data;
- For the agricultural assessment, assess soils, climate, landform characteristics to determine suitable types of agriculture, Best Management Practice, and review allotment/tenement patterns to determine size of holdings and therefore viability of business;
- For the business and tourism assessment identify the location of business and tourism enterprises, establish highway dependency, estimate floorspace/accommodation and employment;
- Consult with landowners to identify issues and obtain information relevant to the impact assessment and identify issues for agriculture;
- Consult with businesses and other stakeholders to obtain information relevant to the impact assessment and identify issues for business owners;
- Identify any major issues that would impact on the route options;
- Prepare a broad overview of the existing conditions including a description of types of agriculture practised, size and value, existing constraints; types of businesses and tourism operations, size and employment, existing constraints;
- Estimate impacts for each route option including direct loss of land, severance, structures and improvements as well as impacts on retail and commercial sales including passing trade, business premises, industry and tourism dependant businesses; and
- Present the findings in a report.
2. Melbourne Airport Link and Bulla Bypass Route Options

This study is assessing the economic impact of five route options for Bulla Bypass (BB1 North, BB1 South, BB2, BB3 and BB5) and the MAL. An additional alignment option for Bulla Bypass (BB4) has been discarded in early stages of the project and therefore has not been included as part of this assessment. The alignment options are presented in Figure 3 and details of these options are discussed in the sections below. It should be noted that the assessment of the options has assumed that Bulla Bypass and the associated duplication of Somerton Road and Oaklands Road will occur prior to the development of the Outer Metropolitan Ring and the Melbourne Airport Link by a number of years.

2.1 Bulla Bypass

VicRoads has undertaken preliminary investigations to consolidate three (northern, inner and southern) bypass corridor options into one, the northern corridor. Within this corridor, there are five bypass options as shown in Figure 3. Each of these options commence along the existing Somerton Road alignment (between Oaklands Road and Wildwood Drive). There are currently two opportunities under consideration for this eastern connection of the bypass, these include:

- A proposed interchange with MAL at Somerton Road; and
- An upgrade to the Somerton Road/Oaklands Road intersection, and duplication of both of these routes between Wildwood Road (approximately 1.5 km to the west) and Sunbury Road (approximately 1.5 km to the south).

The Bulla Bypass will be a six lane arterial road connecting from the MAL to Sunbury Road. The design accommodates a 10 metre median to separate the carriageways, where the median will narrow to allow for two turning lanes at intersections and access to properties will be permitted on a left in and left out basis. In the interim it is likely that the road will be constructed with fewer lanes until there is the demand for the additional lanes.

2.1.1 BB1 North

The BB1 North option follows Somerton Road with widening to the north of the road. The alignment deviates from the current Somerton Road alignment after the intersection with Green Street. The alignment crosses Deep Creek furthest south and links to the existing Sunbury Road/Bulla Diggers Rest Road.

2.1.2 BB1 South

The BB1 South option follows Somerton Road with widening to the south of the road. The alignment deviates from the current Somerton Road alignment after the intersection with Green Street. The alignment links into Sunbury Road further west and crosses Deep Creek north of all other options.

2.1.3 BB2

The BB2 alignment deviates to the north from the current Somerton Road alignment east of the Wildwood Road intersection. The route connects to BB3 east of Deep Creek to become the one option. Both options connect to a proposed interchange with the OMR south of Sunbury Road in the ultimate case and connect to Sunbury Road west of this interchange as an interim solution.
2.1.4 BB3

The BB3 alignment deviates to the north from the current Somerton Road alignment east of the Wildwood Road intersection; however the deviation is closer to Wildwood Road than BB2. The route connects to BB2 east of Deep Creek to become the one option. Both options connect to a proposed interchange with the OMR south of Sunbury Road in the ultimate case and connect to Sunbury Road west of this interchange as an interim solution.

2.1.5 BB5

The BB5 alignment follows Somerton Road with widening to the north of the road. The alignment deviates from the current Somerton Road alignment midway between Wildwood Road and Green Street, The alignment links into Sunbury Road on the same alignment as BB1 South, BB2 and BB3. The alignment has a short curve north of Somerton Road, and the apex of the cure is further west than alignment options BB2 and BB3.

2.2 Melbourne Airport Link

The MAL is currently planned to provide an ultimate six-lane freeway connection between the end of the Tullamarine Freeway and the OMR.

The current proposed alignment is for a connection to the OMR between Wildwood Road and Oaklands Road, crossing Somerton Road and then utilising the existing Sunbury Road corridor. The exact alignment of this new road connection is subject to change based on the findings from the specialist’s reports that are currently being undertaken for VicRoads.
3. **Existing Conditions**

3.1 **Planning Policy Context**

An overview of the Planning Policy context in which the proposed MAL and Bulla Bypass, is provided in an Assessment of Land Use Issues, prepared by George Ward Consulting Pty Ltd, Draft, July 2012 (preliminary draft provided May 2011).

The study finds that the primary influence on future traffic demand for the proposed link will be the growth of Sunbury. As outlined in the Amendment VC68 to the Hume Planning Scheme, substantial expansion in the urban area of Sunbury through the amendment of the urban growth boundaries is expected.

The plans for Sunbury are presented in the report Growth Corridor Plans\(^1\), particularly in Chapter 7 which concerns Sunbury. The Sunbury/Diggers Rest Growth Corridor Map, which shows the development context for Sunbury in relation to Bulla and the OMR, is shown in Figure 4.

Another important influence on future traffic demand for the proposed link will be the further development of Melbourne Airport. Melbourne Airport is the second busiest airport in Australia for passengers and provides the main aviation hub for the southern part of the continent. The airport is recognised by the Victorian Government as a key component of Victoria’s transport infrastructure. It is located 22km northwest of the CBD adjacent to the Tullamarine Freeway and with its northern boundary is approximately 2.5km from Bulla township.

A masterplan for development at the airport was completed in 2008 as required by the Airports Act 1996. The masterplan provides concept plans for maintaining and expanding aviation facilities at high levels of services, whilst achieving a commercial return to shareholders through expansion of on-ground business activities. As required by the Airports Act, the masterplan is renewed every five years and the 2013 preliminary draft masterplan, has been issued for public comment, with the exhibition period ending August 2013. A final draft masterplan, incorporating public comments will be submitted to the Commonwealth Government late 2013.

The 2013 preliminary draft masterplan covers the planning for the next 20 years. During this period, a third runway is expected to be built at Melbourne Airport on an East West alignment of 3km in length and situated 2km south of the existing East West runway. The masterplan also designates five land use precincts as a precursor to an application for a rezoning of airport land to the new Activity Centre Zone (with airport specific variations). The Airside Operations Precinct (comprising airfield facilities and the airport’s firestation) is the most critical precinct for airport operations and is located along Sunbury Road. Outside this precinct is the Airport Expansion Precinct which incorporates Sunbury Road to Moonee Ponds Creek and the aircraft viewing carpark in Oaklands Road.

To ensure that any development is compatible with the future airport activities, the Hume Planning Scheme contains the Melbourne Airport Environs Overlay (MAEO). The overlay is a ‘use’ control around the airport and was introduced in 2007. The overlay has two schedules (AEO1 and AEO2). Schedule 1 applies to areas where high levels of noise are forecast, and limits residential development and some sensitive uses. Subdivision to increase the number of dwellings is prohibited in Schedule 1. Schedule 2 applies to areas that are subject to moderate levels of noise and does not prohibit any uses, but limits subdivision of land for residential purposes into lots with an average area of 300m\(^2\) or over.

\(^1\) Growth Corridor Plans – Managing Melbourne’s Growth, GAA
Figure 4  Sunbury Growth Plan

In terms of agriculture, the Legislative and Policy Context that affects the route most directly is the Hume City Municipal Strategic Statement (MSS) and Local Planning Policy Framework (LPPF). These policies are consistent with the State Policy Planning Framework (SPPF).

The objective of Section 14.01-1 Protection of agricultural land of the State Policy Planning Framework is:

- “To protect productive farmland which is of strategic significance in the local or regional context.”

A key statement within this policy is:

- “Permanent removal of productive agricultural land from the State’s agricultural base must not be undertaken without consideration of its economic importance for the agricultural production and processing sectors.”

The Hume Municipal Strategic Statement outlines the key strategic planning, land use and development objectives specific to the municipality and provides strategies and actions for achieving those objectives.

The relevant strategy specific to this clause is:

- To maintain and protect agriculture as a strong and sustainable economic activity within the municipality.

This strategy implies the need to give special consideration to high quality agricultural land that is likely to be affected by any of the route options.

The Hume City Local Planning Policy Framework identifies long-term directions for land use and development within the Shires and provides rationale for zone overlay requirements and particular provisions of Planning Schemes.

The relevant agricultural strategies appropriate to the LPPF are found in Clause 35.04 Green Wedge Zone and include:

- To provide for the use of land for agriculture;
- To recognise, protect and conserve green wedge land for its agricultural, environmental, historic, landscape, recreational and tourism opportunities, and mineral and stone resources;
- To encourage use and development that is consistent with sustainable land management practices;
- To encourage sustainable farming activities and provide opportunity for a variety of productive agricultural uses;
- To protect, conserve and enhance the cultural heritage significance and the character of open rural and scenic non-urban landscapes; and
- To protect and enhance the biodiversity of the area.

The major agricultural impacts that Highway or Freeway development tends to have are the direct loss of land, infrastructure loss, severance of land holdings and the need for rehabilitation to previous condition. It is with the knowledge of these impacts that the strategies above need to be considered.

### 3.2 Traffic and Transport

The township of Bulla is located approximately 5.5km north-west of Melbourne Airport. The Sunbury/Bulla Road is currently the only arterial road that passes through Bulla; Sunbury Road connects with the Tullamarine Freeway at Melbourne Airport. Extending north from the Freeway, Sunbury Road is a two lane undivided road and intersects Oaklands Road where it diverts to the west at an existing roundabout. Oaklands Road provides access to the Woodlands Historic Park located north-east of this intersection. Sunbury/Bulla Road continues directly west and passes through the centre of the Bulla residential area, before diverting to the north to pass over Deep Creek. Between Wildwood Road (east of the township) and Deep Creek,
Sunbury/Bulla Road has three lanes, with two lanes provided in the southbound direction. West of Deep Creek, Sunbury Road incorporates several long curves as it negotiates a steep gradient before continuing north-west to Sunbury and further west to Gisborne.

Strategic traffic modelling undertaken for VicRoads highlighted that current traffic volumes along this route vary from 14,700 vpd near Sunbury to 26,000 vpd near Melbourne Airport. This indicates that Sunbury Road would experience interrupted flows, and is approaching capacity near the airport. Through the Bulla residential area, traffic volumes are approximately 23,000 vpd, approximately 1,400 of these are heavy vehicles. There are concerns being raised by the Bulla community, with the queuing of peak period traffic being experienced regularly.

The Calder Freeway provides an alternate link to the CBD for Sunbury residents. The recent upgrade of Vineyard Road (connecting Sunbury Road to the Calder Freeway) has reduced traffic volumes along Sunbury/Bulla Road slightly. However, for trips originating at the Melbourne Airport or at Oakland quarry, Sunbury/Bulla Road is a more desirable route, hence the reason for high heavy vehicle volumes. Based on the existing traffic volumes along Sunbury Road, it is evident that this is still being used as a through route for Sunbury residents.

The land-use along the Sunbury/Bulla Road corridor is predominantly rural (east of Bulla), residential (through Bulla) and parklands (east of Oaklands Road). Due to the close proximity of Melbourne Airport, a relatively high proportion of the freight traffic is experienced within the region.

The current Bulla Road alignment which travels through the major gully of Deep Creek provides a significant barrier to larger vehicles and the freight route through the area to and from Sunbury and the expanding areas to the north. The steep grades limit larger vehicles and the narrow bridge alignment around tight steep bends creates both congestion and potential safety issues for traffic through this road link.

Heavier vehicles access is limited on the current alignment and the implementation of a broader overpass eliminating the grades and narrow bridge alignment will open up traffic flows between Melbourne (via the Tullamarine Freeway) and the north Western areas enabling improved links and increased efficiencies for future developments in this area of Melbourne.

Freight traffic including quarry products and other general freight will be provided with more direct links with little impact on other traffic.

3.3 Agriculture

3.3.1 Landform and Soils

The farming environment in the study area is strongly influenced by natural features such as climate, landform, soil type and vegetation. These tend to favour broadacre cropping and grazing farming systems. However, there are a number of modifying features which influence land use patterns. They include:

- Creek systems that incise through the basalt plains with steep sideslopes that are difficult to manage through poor soils, susceptibility to erosion and weed ingestion;
- Changes in landform and soil type forming vegetative hills, wetlands and environmentally sensitive areas; and
- Small lot subdivision which encourages rural living rather than productive agriculture.

The regional study area extends north of Sunbury and east to Mickleham. It is mostly a broad undulating plain derived from basalt with some granitic and Silurian wash in places known as the Footscray Land System\textsuperscript{2}. Soils are grey calcareous clays with a uniform, heavy texture, low

\textsuperscript{2} Land System is a mapping unit that consists of a number of environmental features including climate, landform, soil type and vegetation that are unique in their occurrence within a particular locality
permeability and hard setting soil surfaces. The low lying areas are subject to periodic water logging and increases in soil salinity. There are a number of other Land Systems within the study area namely Mickleham, Sunbury and Greenvale. They are less predominant in area and their differentiating feature tends to be geology and landform.

3.3.2 Climate

Climate is another important natural feature to the district. Annual rainfall is low and variable in the 450-550mm range. Most is derived from the west with a weak maximum in late spring. The predominant winds come from the southwest, west and northwest. The windiest and most changeable season is spring. The combination of wind and temperature results in an evapotranspiration rate that exceeds rainfall for 4-5 months of the year.

The normal agricultural growing season commences with the autumn break which can be from mid April through to late May. Growth continues through the winter months, usually with some cessation in July due to low soil temperatures and peaks during the spring months with drying off mid to late November. The period from December through to March is usually dry and there is insufficient rainfall to allow plant growth. These climatic conditions suit dry land cropping and pasture production. Intensive agriculture requires an irrigation source to be successfully practised.

3.3.3 Vegetation

The majority of the study area has been cleared of vegetation and sown to introduce pasture and clover species for grazing purpose. However, reversion to volunteer and weed species has extensively occurred through the combined effects of variable seasons, small farm size, moderate to low stocking rates and low fertiliser input.

Several Environmental Vegetation Classes occur across the study area. The three main classes are EVC 61 Plains Grassy Woodland, EVC 71 Hills Herb Rich woodland and EVC 851 Stream Bank Shrubland.

A brief description of each is as follows:

- Hills Herb Rich Woodland which comprises a dry, open eucalypt woodland with a sparse shrub layer. Major tree species are Grey Box (Eucalyptus microcarpa), Yellow Box (Eucalyptus melliodora) and River Red-gum (Eucalyptus camaldulensis). A carpet of herbs and grasses dominates the understorey. They are located on the sideslopes that fall to the creek lines;
- Plains Grassy woodland comprising an open eucalypt woodland to 15m tall and an understorey consisting of a few sparse shrubs over a species-rich grassy and herbaceous ground layer. They are located on the basalt plains; and
- Stream bank Shrub land which occurs along rivers and major streams. The vegetation comprises shrubs to 8 m tall above a ground layer of sedges and herbs. A sparse eucalypt overstorey to 15m may be present.

3.3.4 Land Capability

The district is of moderate land capability. It is grazing dominant due to heavy basalt soils, low permeability and susceptibility to winter waterlogging. Cropping is conducted but requires careful selection of soils, freedom from stone and suitable landform. Productivity levels are moderate to low due to the combined effects of variable soil conditions, high drought frequency and small farm size.


4 Environmental Vegetation Class

5 See EVC Benchmarks – Victorian Volcanic Plains
3.3.5 Regional Land Use Patterns

ABS\(^6\) data from the Hume Statistical District (2005-06) provides an agricultural profile of the immediate district. The geographical boundaries are the Calder Highway to the west, Gisborne to the north, Keilor to the south and the Hume Highway to the west. Total holding area is 16,599 ha.

Table 1 indicates the area by land use.

**Table 1 Regional Agricultural Land Use Area**

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Unit</th>
<th>Hume Statistical Local Area</th>
<th>Hume Statistical Local Area (%)</th>
<th>Number of Holdings</th>
</tr>
</thead>
<tbody>
<tr>
<td>All crops</td>
<td>ha</td>
<td>2026</td>
<td>12.2</td>
<td>29</td>
</tr>
<tr>
<td>Grazing</td>
<td>ha</td>
<td>12391</td>
<td>74.6</td>
<td>81</td>
</tr>
<tr>
<td>Woodland</td>
<td>ha</td>
<td>223</td>
<td>1.3</td>
<td>11</td>
</tr>
<tr>
<td>Forestry</td>
<td>ha</td>
<td>54</td>
<td>0.3</td>
<td>2</td>
</tr>
<tr>
<td>Wetlands</td>
<td>ha</td>
<td>95</td>
<td>0.6</td>
<td>3</td>
</tr>
<tr>
<td>Environmentally sensitive</td>
<td>ha</td>
<td>49</td>
<td>0.3</td>
<td>5</td>
</tr>
<tr>
<td>Unproductive</td>
<td>ha</td>
<td>295</td>
<td>1.8</td>
<td>25</td>
</tr>
<tr>
<td>Unreported &amp; balance</td>
<td>ha</td>
<td>1467</td>
<td>8.8</td>
<td>97</td>
</tr>
<tr>
<td><strong>Area of holding (total)</strong></td>
<td>ha</td>
<td><strong>16599</strong></td>
<td><strong>100</strong></td>
<td><strong>97</strong></td>
</tr>
</tbody>
</table>

The land use table indicates the following:

- A significant proportion (13%) of land is in alternative use while the rest (87%) is directed to agriculture; and
- Grazing is the dominant agricultural use at 75% of holding area while cropping is 12%. However, cropping importance by area is understated as it generally has a higher earning capacity to grazing, cropping intensity can be greater than one crop per annum and it can facilitate pasture improvement to the benefit of livestock production.

The major crop types are broadacre in nature, including cereals (wheat, barley, oats, and triticale), legumes (vetch) and oilseeds (canola). Intensive crops include nurseries, fruit orchards (olives), grapes and vegetables. Their combined value is relatively modest. One exception is a mushroom farm which uses little land area and is not shown but is high value in turnover.

Because of the high proportion of grazing land, livestock enterprises are significant in numbers and gross annual value. Cattle and sheep are the major enterprises with a small proportion of horses. The key features of the respective livestock enterprises are:

- On a dry sheep equivalent basis\(^7\) cattle are most important at 85% followed by sheep (11%) and horses (4%); and
- Stocking rate is modest at 7.5 dse/ha, a reflection of the farming environment and small farm size. Under Best Management Practice stocking rates of up to 12 dse/ha are possible.

Table 2 indicates the annual agricultural commodity value, based on the latest data available at the time of assessment. It indicates the relative importance of crop and stock and a breakdown by crop type. Other horticulture is high due to the inclusion of a mushroom farm which has a high annual turnover although relatively insignificant in terms of land use.

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\(^6\) Australian Bureau of Statistics

\(^7\) Dry sheep equivalent (dse) is that amount of dry matter required by one mature wether per annum. Cattle are weighted at 10dse/head, sheep at 1.5dse/head and horses at 10dse/head
### 3.3.6 Enterprise Profitability

Table 3 and Table 4 provide a rudimentary indication of enterprise profitability for district crops and stock based on gross margin analysis. Gross margins measure yield, price and direct costs to provide a comparative margin between crops. The margins can change between years because of different commodity prices and seasonal conditions which make them district specific. They are also linked through crop rotation constraints where soil fertility and disease incidence can determine crop selection.

#### Table 3  Gross Margins: Crops

<table>
<thead>
<tr>
<th>Unit</th>
<th>Wheat</th>
<th>Barley</th>
<th>Oats</th>
<th>Canola</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yield t/ha</td>
<td>3.5</td>
<td>3.25</td>
<td>2.9</td>
<td>1.7</td>
</tr>
<tr>
<td>Price $/t</td>
<td>250</td>
<td>220</td>
<td>180</td>
<td>450</td>
</tr>
<tr>
<td>Variable costs $/ha</td>
<td>400</td>
<td>400</td>
<td>280</td>
<td>460</td>
</tr>
<tr>
<td>Gross margin $/ha</td>
<td>475</td>
<td>315</td>
<td>242</td>
<td>305</td>
</tr>
</tbody>
</table>

Livestock operations are generally less profitable than cropping activities; however their incidence is often determined by land constraints such as presence of stone, wetlands or unsuitable cropping soils. These conditions occur extensively through the district hence the dominance of livestock.

#### Table 4  Gross Margins: Stock

<table>
<thead>
<tr>
<th></th>
<th>Wool</th>
<th>Lamb</th>
<th>Feed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stocking rate dse/ha</td>
<td>7.5</td>
<td>7.5</td>
<td>7.5</td>
</tr>
<tr>
<td>Gross margin $/dse</td>
<td>25</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>Gross margin $/ha</td>
<td>188</td>
<td>225</td>
<td>150</td>
</tr>
</tbody>
</table>

\(^8\) ABS Agriculture Commodities
3.4 Mineral Resources

Extractive industry refers to the various industrial operations associated with the production, processing and distribution of stone resources such as rock, gravel, sand and clay.

The extractive industry is important to the economy of Victoria. Metropolitan Melbourne is a major user of outputs from the extractive industry because of the significant construction activities that occur in the metropolitan area, in particular with development of new housing, upgrades to existing road networks and construction of new roads in growth areas.

According to Department of Primary Industries (DPI) online mapping tool GeoVic, there are four current extractive industry tenements (Work Authorities or WA) that are applicable for land within the study area. These are shown in Figure 5 and are the following:

- WA1430;
- WA1409;
- WA578; and
- WA1123.

These Work Authorities (WA) all pertain to land located north of Bulla on the high ground at the top of the steep rise after the Deep Creek crossing.

WA1409 and WA1430 are on the OMR corridor. These resources are at the proposal stage and do not have planning permission to proceed. WA1409 is a significant hard basalt (Old) deposit of some 160 ha, while WA1430 is a smaller clay and clayshale deposit of approximately 45 ha which would be useful for gravel. According to the Department of Primary Industries, some materials from these mineral deposits can potentially be used in the construction of the OMR or other major road projects in this area, which would provide a cut in which to site the OMR at this location. A proposal was once submitted for WA578 which is a small 5 ha deposit of Basalt (New), but this proposal is no longer current. WA578 is bounded on three sides by WA1409.

Only the southern corner of the land covered by WA1123 is within the Study Area. The northernmost quarry (WA1123) is mentioned in Melbourne Supply Area: Extractive Industries Interest Areas, by Geological Survey of Victoria, 1996. This quarry was active in 1996 with extraction of basalt, possibly of Older Volcanic age. According to Department of Primary Industries, this quarry contains significant reserves of sand, gravel, and hard rock.

A small extractive industries tenement is located outside the Study Area directly west of Melbourne Airport’s east-west runway. This tenement, WA 806 is a current quarry, operated since 2003 by Anglopac Construction Company. It contains minor reserves of sedimentary rock.

The Oaklands Junction quarry is a large quarry located in the area immediately east of the Study Area. Oaklands Junctions quarry is a basalt quarry producing hornfels and granite, which has been in operation for many years. It is operating under WA176. This quarry is mentioned in the overview of extractive industries interest areas mentioned above as being the only granite quarry in the Melbourne Supply Area that is not located in Melbourne’s eastern region. It is identified as a strategically placed quarry with good access to the Hume Highway (now Freeway).
3.5 Population and Employment

The town which is proposed to be bypassed, Bulla, is a small township on the outskirts of Melbourne, just northwest of the northern perimeter of Melbourne Airport and 29kms northwest from Melbourne’s CBD. The Bulla settlement dates back to 1843 with a village surveyed in 1851. It was established to exploit local mineral resources, and also had a role in dairy production as the Bulla Cream Company started in Bulla and supplied cream to a processing facility in Moonee Ponds.

The population of Bulla State Suburb (SSC) is approximately 650 (ABS Census 2011), of which approximately 350 live in the township. The population profile in Bulla is an older population and differs markedly from the population profile of City of Hume, which Bulla is a part of. In particular, there is a greater proportion of residents in the 55 to 64 years age group, and fewer children in the 0 to 4 years age group. The population profile compared with City of Hume is shown in Table 5.

**Table 5 Bulla Population Profile, 2011**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Population Bulla Number</th>
<th>Population Bulla % of Total</th>
<th>Population City of Hume %</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4 years</td>
<td>30</td>
<td>4.6%</td>
<td>7.5%</td>
</tr>
<tr>
<td>5-14 years</td>
<td>94</td>
<td>14.3%</td>
<td>15.2%</td>
</tr>
<tr>
<td>15-24 years</td>
<td>83</td>
<td>12.7%</td>
<td>15.3%</td>
</tr>
<tr>
<td>25-54 years</td>
<td>249</td>
<td>38.1%</td>
<td>43.1%</td>
</tr>
<tr>
<td>55-64 years</td>
<td>109</td>
<td>16.8%</td>
<td>9.8%</td>
</tr>
<tr>
<td>65 years and over</td>
<td>87</td>
<td>13.5%</td>
<td>9.1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>652</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

The township is centred around a small number of community features, including a petrol service station with a postal outlet, a hotel motel, a produce store, a community centre, a heritage rose garden and the Bulla Miniature Railway. The township had a primary school until 1996, when this facility was closed down. Most of the residents in Bulla (SSC) are born in Australia (71%) followed by Italy (5%) and Syria (2%). There is an Italian club located in the township.

In 2011, there were 249 dwellings in the suburb of which 132 dwellings were located in the township. Most dwellings are occupied - occupancy rate is 91% in the suburb and 95% in the township itself. Housing in the suburb and Bulla township is characterised by separate houses, while settlement pattern around Bulla is characterised by rural living and some larger farms.

Labour force is defined by the ABS as the population aged 15 years and over who are employed or seeking employment. In Bulla at the Census of Population and Housing conducted in 2011, some 327 residents or 50% of the population is in the labour force. Of these, 59% were employed full-time, and 28% were employed part-time. 6% were unemployed. ABS Quickstats for Bulla indicate that industries of employment included the following:

- School education (5%)
- Cafés, restaurants and takeaway food services (4%);
- Residential building construction (4%);
- Air and space transport (4%); and
- Residential building construction (3%).

Sunbury is located approximately 9 km to the northwest of Bulla. Sunbury is also a historic settlement and dates back to approximately the same era as Bulla, namely 1836 when Emu Bottom, Victoria’s first homestead, was built. Land around Sunbury was used mainly for grazing,
farming and vineyards. The township of Sunbury was surveyed in 1851, and the railway line opened in 1859. Growth took place in the township during the late 1800s; however the area remained largely rural until the 1970s. Rapid growth took place during the 1970s and 1980s. The population continued to increase from the early 1990s, a result greenfield subdivision around Sunbury. Rural land is used mainly for grazing and dairy farming, with some viticulture.

Today, Sunbury is a regional centre with a population of approximately 36,000 people\(^9\) (31,002 in the 2006 Census and 35,162 enumerated population in the 2011 Census before adjustments to allow for absentees and other anomalies) and servicing the residents of Sunbury, Diggers Rest and the broader region. The broader region includes the towns of Gisborne, Riddells Creek, Romsey and Lancefield located north west to north east of Sunbury in the Macedon Ranges Shire. Due to its size Sunbury provides some services not available in these towns, for example a cinema, large format hardware store, and larger supermarkets.

Set in a gently undulating rural landscape, Sunbury offers an attractive combination of a town with a rural ‘feel’ and good access to employment centres, education, shopping, and entertainment in metropolitan Melbourne. Sunbury has access to metropolitan Melbourne via the Calder and the Tullamarine Freeway and with a rail connection which was recently electrified, resulting in an increase in the number and capacity of trains between Sunbury and Melbourne.

<table>
<thead>
<tr>
<th>Table 6</th>
<th>Labour Force Participation and Place of Work, Sunbury SLA, 2006</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
</tr>
<tr>
<td>Labour Force &amp; LF Participation Rate</td>
<td>23,712</td>
</tr>
<tr>
<td>Location of Employment</td>
<td></td>
</tr>
<tr>
<td>Hume – Sunbury SLA</td>
<td>3,906</td>
</tr>
<tr>
<td>Hume – Craigieburn SLA</td>
<td>1,317</td>
</tr>
<tr>
<td>Hume - Broadmeadows SLA</td>
<td>1,156</td>
</tr>
<tr>
<td>Macedon Ranges (S)</td>
<td>510</td>
</tr>
<tr>
<td>Melbourne (C)</td>
<td>2,194</td>
</tr>
<tr>
<td>Brimbank (C)</td>
<td>1,180</td>
</tr>
<tr>
<td>Moonee Valley (C)</td>
<td>760</td>
</tr>
<tr>
<td>Moreland (C)</td>
<td>388</td>
</tr>
<tr>
<td>Maribyrnong (C)</td>
<td>335</td>
</tr>
<tr>
<td>Wyndham (C)</td>
<td>321</td>
</tr>
<tr>
<td>Port Philip (C)</td>
<td>304</td>
</tr>
<tr>
<td>Hobsons Bay (C)</td>
<td>250</td>
</tr>
<tr>
<td>Darebin (C)</td>
<td>250</td>
</tr>
<tr>
<td>Other locations VIC, interstate &amp; not stated</td>
<td>3,153</td>
</tr>
<tr>
<td>Total</td>
<td>16,029</td>
</tr>
</tbody>
</table>

Source: ABS Census 2006, Journey to Work data

As shown in Table 6 above, 24% of the employed labour force in the Sunbury SLA is employed within their SLA of residence. However, another 53% are employed in locations south or east of Sunbury which require travel along the major road networks or on public transport.

The issue is highlighted in the Sunbury Corridor Plan as follows, “there is relatively limited employment within Sunbury due in main part to its proximity to other larger employment locations. As a result, there is pressure on the local road network and rail services at peak times”.

As outlined and planned for in the Growth Corridor Plans, it is envisaged that the area of Sunbury and Diggers Rest that is covered by the Growth Corridor Plan will accommodate a population of at least 60,000 and some 10,000 to 15,000 jobs. Population growth is forecast at between 2.0% per annum (Victoria In Future 2012) and 2.6% per annum (ID consulting 2012). In 2012, a Precinct Structure Plan (PSP) has been developed for Diggers Rest. In this PSP the area available for residential and other development within the Sunbury – Diggers Rest area has been further expanded, which will have further implications for the size of the labour force and travel for work for residents in this region.

The commuting patterns of residents in the southern parts of Macedon Ranges are similar to those of Sunbury: residents in this area commute to metropolitan Melbourne for employment and education.

Industries of employment of Bulla, Sunbury and Macedon Ranges residents are presented in Table 7 below.

\[10\] Growth Corridor Plans, P96
Analysis of the jobs held by the resident population in Sunbury in 2011 shows the three most popular industry sectors were:

1. Retail Trade (2.04 persons or 11.6%);
2. Construction (1,957 persons or 11.1%); and
3. Transport, Postal and Warehousing (1,922 persons or 10.9%).
4. Retail trade and Transport, Postal and Warehousing held similar positions in 2006, while Construction has replace Manufacturing as one of the three most popular industry sectors.
In comparison, analysis of employment by residents in Macedon Ranges show that the three most popular industry sectors were:

a. Construction (2,266 persons or 11.2%);
b. Health Care and Social Assistance (2,129 persons or 10.5%); and

c. Retail Trade (2,012 persons or 10.0%).

Since 2006, Health Care and Retail Trade have replaced Manufacturing and Transport, Postal and Warehousing in the most popular industries, while Construction continues to provide the most employment to residents. The decline in manufacturing employment for both Sunbury and Macedon Ranges resident is in line with a general decline in manufacturing employment in Victoria.

Sunbury has a visitor information centre and a number of tourism attractions. Of particular note is Rupertswood Mansion, regarded as the ‘birthplace of the Ashes’ and of significance to fans of the game of cricket. Craiglee Winery and Goona Warra Vineyard at the southern town entry are noted producers of Shiraz and other red wines, and Emu Bottom Homestead is well regarded as a venue for weddings and other celebrations.

Table 8 below provides an estimate of the employment (Full Time Equivalent, FTE) in the businesses in and immediately surrounding the study area, i.e. in Bulla and surrounds. These estimates are based on information obtained during the consultation process and in some cases broad assumptions about the employment profile of the individual businesses.

Table 8  Estimated Employment, Businesses and Tourism Facilities in/near Study Area

<table>
<thead>
<tr>
<th>Business/Facility Type</th>
<th>Type of Employment</th>
<th>Estimated Employment - Persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service businesses for local community</td>
<td>Four businesses in Bulla. A combination of full time, part time and casual labour.</td>
<td>30 FT/PT</td>
</tr>
<tr>
<td>Visitor services, tourist attractions/services and recreation areas</td>
<td>Eight establishments in Bulla and in the study area. A combination of full time, part time, casual and volunteer labour.</td>
<td>20 FT/PT 10+ volunteers</td>
</tr>
<tr>
<td>Community Clubs</td>
<td>Two establishments identified. A combination of full time, part time and volunteer labour.</td>
<td>5 FT/PT and 30 - 40 casuals 20+ volunteers</td>
</tr>
<tr>
<td>Businesses of regional or state significance</td>
<td>Two large businesses and four smaller businesses identified.</td>
<td>91 FT/PT and 30 casuals</td>
</tr>
<tr>
<td>Total Estimated employment</td>
<td>Total</td>
<td>146 FT/PT, and 90 – 100 casuals</td>
</tr>
</tbody>
</table>

Abbreviations: FTE = Full Time Equivalent jobs.

Businesses and tourism facilities/attractions in the remainder of the Wider Region Area include Melbourne Airport immediately south of Bulla, Sunbury and Gisborne town centres, and smaller centres such as Romsey and Diggers Rest. The majority of these businesses are not impacted by the Bulla Bypass and the Melbourne Airport Link except in terms of the benefits of reduced travel time. However, some of these businesses have significant dependence or interaction with...
Melbourne Airport, including some transport service operators that pick up parcels and deliver parcels to the airport, and also airport passenger transfers that service the area between Bendigo and Sunbury. Such Businesses are likely to experience temporary travel time delays during the construction phase.
4. Targeted Stakeholder Consultation

The regional economy planning assessment involved targeted engagement with identified stakeholders in the study area and further afield. This involved identification of landowners and businesses located in the study area as well as local government and government department interests that are involved in the planning for the study area and for areas that would potentially benefit from the development of the proposed Bulla Bypass and MAL. Preliminary lists were provided to VicRoads for consideration and comment before finalising the stakeholder engagement plan.

4.1 Agriculture

A total of eight landholders were interviewed to gain responses to the impacts that the Bypass was likely to impose. The interviews were conducted on site to provide the opportunity of inspection as well as discussing the nature of impact. The selection of landholders was based on the severity of impact, size of land holding and nature of use. A number of classes were considered:

- Commercial landowners that were significantly affected;
- Small area landowners, essentially of a rural living nature; and
- Landowners with an industry or environmental orientation.

The land owners consulted with are presented in Figure 6 and include:

- 525 Sunbury Road;
- 20 Loemans Road, Bulla;
- 125, Green St, Bulla;
- 145 Green Street, and 1350, 1290 Somerton Road;
- 400 Sunbury Rd, Bulla;
- Wildwood Café and Vineyards - 80 St John’s Road, Oaklands Junction;
- Inglis Horse Sales - 285 Oaklands Road, Oaklands Junction;
- 135 Oaklands Roads Somerton Road, Greenvale; and
- Woodlands Historic Park - Main Car Park, Somerton Road, Greenvale.

4.1.1 Commercial landowners

Three commercial landowners were interviewed of which two were significantly affected by one or more of the northern options. The issues raised by the landowners are summarised as follows:

- The entry of BB2 and BB3 to Sunbury Road is particularly severe imposing a direct land loss of approximately 14 ha and severance (three parcels) of over 26 ha. The fragmentation that it causes places severe constraints on the use and management of the property, loss of commercial opportunity (quarry), reduces future planning certainty and is expected to lower land value. The impact is compounded by the route of the OMR which also passes across the property;
- The arc, north of Somerton Road and common to BB2, BB3 and BB5 is also of concern. Depending on alignment, direct land loss varies between 16-20ha. Severance is most severe for BB3 at 23ha. One tenement is particularly affected by the amount of land involved and the isolation of farm buildings, residence and other farm infrastructure from the previous access route. The landowner concerned strongly prefers BB1 South followed by BB1 North; and
- Other issues that arose out of the interview process were concerns about noise, loss of historical significance (heritage) and declining land values.
4.1.2 Rural living

Oaklands Road widening, MAL, BB1 North and BB1 South all impact in some way on rural living properties, generally in the 4 ha range. Two residents were interviewed, one within Oaklands Road widening option and the other affected by BB1 North and BB1 South. Both were making serious attempts at being rural producers, one through equine activities and the other through practising diversified intensive agriculture based on olives, vines and fruit. Both enterprises were of a part time nature. The issues that arose included:

- The equine enterprise is a viable business but has buildings and other infrastructure located close to Oaklands Road. Road widening will force their relocation and upset the organisation of the current management system;
- The residence will be brought closer to the highway to the detriment of the living environment, particularly noise;
- If MAL is constructed the property will be severed, the training track eliminated and its total size reduced to 2 ha but split by the alignment. It will force the business to cease and further lower the quality of the rural living environment.
- The intensive agriculture enterprise affected by BB1 North and BB1 South has a productive base that is partly commercial in nature. Both alignment options sever the northern section of the property with BB1 South being the more severe. The impacts are mostly infrastructure affects although some crop is removed; and
- The owner is concerned with direct land loss and considers that it will terminally affect his farming operation.

These sorts of issues can be extrapolated to the larger rural living population. However, the area of productive agricultural land that they command is relatively small as is the area directly affected. The alignment options are more to do with socio-economic impacts than productive agriculture.

4.1.3 Industry and Environment

There are a number of business enterprises within the region that are significant to the recreation, tourism, equine and environmental sectors. Three were interviewed encompassing wine, equine and environment. The common features to all were considered to be:

- It is important for the proposed transport network to provide effective access to the respective organisations. All to a greater or lesser degree depend upon ready public access to their facilities;
- The environmental sector (Woodlands) saw improved access as an opportunity to increase public participation into their enterprises including picnic area, Living Legends, Historic Homestead and other nature based activities; and
- The equine enterprise has a large resource base which depends upon the ready movement of animals and people, often from interstate. It is largely independent of land agricultural capability but its location is required to be strategic so as to facilitate the interaction of buyers and sellers.

4.2 Businesses and Tourism/Recreation Facilities

Targeted stakeholder engagement in the form of one-on-one meetings or by telephone were held with businesses in the area, with selected transport businesses with routes through Bulla, with the Sunbury Business Association and with key local government and government contacts.

The businesses contacted include:

- Bendigo Airport Services;
- Black Horse Hotel, Bulla Hotel Motel;
- Bill Kerry Machinery Transport;
- Bulla BP Service Station and Post Office;
- Bulla Hill Miniature Railway;
Bulla Produce Store;
Calabria Club;
Department of Primary Industries;
Inglis Horse Sales;
Macedon Ranges Freight Services, Gisborne;
Micallef, Somerton Road;
Mobile Vendor – FNA Coffee Van;
Oakland Quarry;
Ponderosa Boarding Kennels and Cattery;
Roadside Vendor – Gelati Van;
Sampenny Kennels and Cattery;
Sunbury Business Association;
Tullamarine Bus Services;
Wildwood Café and Vineyard;
Woodlands Historic Park; and
200 Wildwood Road and 1400 Somerton Road.

The majority of businesses that were contacted were aware of the proposals. However, in some instances, larger businesses where management and key contacts resided outside of the study area, there was limited knowledge of the process and the consultation process provided an opportunity to make businesses aware of the proposal and where to obtain additional information in the future.

The consultation process provided information regarding employment in businesses in the study area. The process also highlighted potential impacts of the proposed bypass in terms of loss of passing trade, loss or impediments to access, loss of infrastructure, and/or potential loss of land for future development. Some suggestions for mitigation of impacts were also provided. VicRoads were provided with feedback on the consultation outcomes and mitigation suggestions.

The businesses that are located in and near the Study Area include the following:
- Service businesses for the local community of Bulla;
- Tourist attractions and recreation areas of local, regional and state significance;
- Community clubs of regional and state significance; and
- Businesses of regional to state significance.

Figure 6 shows the location of the businesses and tourism facilities/attractions in the area.

4.2.1 Service businesses for the local community

Services for the local community include a petrol service station and post office, a Hotel Motel, produce store, and a home-based beauty and massage business. In total, these businesses are estimated to employ 30 people and they play an important role for the local community.

4.2.2 Tourist attractions/services and recreation areas

Tourist attractions and recreation areas in and near the study area include a winery with cafe, the Woodlands Historic Park and the Living Legends equine attraction that is based at the homestead. The Woodlands homestead is heritage listed and operates as tea rooms and provides interpretation of the construction methods used 150 years ago. Living Legends is a ‘home of rest’ for champion horses and includes two Melbourne Cup winners amongst its attractions, namely Might and Power and Saintly.

At Bulla Hill in Bulla there is the Bulla Hill Miniature Railway, which is open two Sundays a month providing rides and snacks for families within a regional catchment. The railway is operated by volunteers and is regarded as an affordable entertainment option in the region.
Two kennels and catteries operate in the area; the Airport Farmhouse B&B and the motel component of the Black Horse Inn are facilities catering to visitors to the area. The Motel caters for travellers from regional Victoria who stay overnight before travelling from Melbourne Airport and the kennels/catteries also have a large share of business that is airport related.

Furthermore, two mobile vans provide a food and beverage service at the Aircraft Viewing Area at the Sunbury Road/Oaklands Road roundabout carpark. This carpark is used for ‘plane spotting’ as aircraft approach Melbourne Airport for landing. It is also used for parking by people waiting to pick up passengers at Melbourne Airport, by some commuters for carpooling, and as a starting point for bicycle rides.

4.2.3 Community Clubs of Regional or State Significance

Two major clubs are located in the area, namely DOGS Victoria and the Calabria Club. DOGS Victoria (Victorian Canine Association) is the peak body representing owners and breeders of purebred dogs in Victoria and has a history dating back to 1877. More than 280 individual clubs representing a single breed, a group of breeds or all breeds are affiliated with DOGS Victoria. The Calabria Club is an Italian club with a function venue, restaurant and bar and extended membership amongst the Italian heritage population in Melbourne’s north and west.

Employment at these facilities is limited as they rely on a significant volunteer component.

4.2.4 Businesses of regional or state significance

There are two major businesses located in the area, namely Inglis Horse Sales and Oaklands Junction Quarry. Inglis Horse Sales is a thoroughbred sale yards facility operating from ‘Oaklands’ at 285 Oaklands Road, Oaklands Junction VIC 3063. Eight auctions are held annually by Inglis at the Oaklands Junction facility – a total of 20 sale days per annum as some sales are multi-day events. Harness racing interests also use the facility for two annual sales of standard bred horses.

Oaklands Junction Quarry is owned and operated by Holcim Australia, Oaklands Road, Oaklands Junction, VIC 3063. It is a hard rock quarry producing hornfels and granite aggregate for ready mix concrete. The hornfels resource is estimated to be exhausted in approximately 15 years, but the granite resource is extensive and there is sufficient supply to meet demand for another 60 plus years.

The quarry is designated as regionally significant according to Department of Primary Industries.

There are also four smaller businesses based in Somerton Road, Blackwell Lane and Oaklands Road that service the northern region of Melbourne. These businesses operate heavy vehicles and have located in this area because of the good access to the road network and the limited residential development in the area.

In total, these businesses employ an estimated 91 people and approximately 30 people on a casual basis at the sale yards.

4.2.5 Businesses Development Plans in the Study Area

Through the consultation process, the following business development plans emerged:

- Expansion of accommodation at Black Inn Hotel; and
- Development of an education facility in Somerton Road.

Expansion of accommodation in Bulla is an investment decision that can be accommodated within the existing Hume Planning Scheme.
Development of an education facility in Somerton Road is possible under the Hume Planning Scheme. The proposed site is Green Wedge Zone, and this was amended in August 2013 Zone to permit education facilities (primary school, secondary school).

With the implementation of the changed Green Wedge Zone, it is possible that the proposed development of an education facility could proceed on the site in Somerton Road pending approval for this development.
5. Justification, Issues and Constraints

5.1 Strategic Justification

5.1.1 Melbourne Airport Link

Melbourne’s west is developing rapidly both in a residential and commercial sense. This has created a number of road infrastructure issues, resulting in the need for increased traffic capacity of the arterial road network, and the need to plan for a higher rate of traffic growth. Outer municipalities such as Hume City Council have experienced these issues with expansion of existing residential areas, and development in growth areas, in this case Sunbury. As a result of the above and recent extension of the Urban Growth Boundary (UGB), a number of major transport corridors have been identified in Melbourne’s north-west including the Outer Metropolitan Ring (OMR).

A key objective of the OMR is to improve links to international transport hubs. VicRoads identified the need for a new northern connection (from OMR) to the Tullamarine Freeway via Melbourne Airport; this is referred to as the MAL. Preliminary traffic investigations have indicated that the MAL alone will not provide sufficient capacity to cater for the future traffic demands in the north-west. Traffic generated north west of OMR (in particular Sunbury), would have the option of using the Calder Freeway or the proposed MAL to access inner Melbourne. Early traffic studies (completed by AECOM) have indicated that under this scenario, future traffic volumes (2046) would result in congestion on the following routes:

- Sunbury Road;
- OMR / OMR Link Freeway ramps;
- OMR Link, south of Sunbury Road; and
- OMR (northbound approaching OMR Link, and southbound approaching Calder Freeway).\(^\text{11}\)

It is noted that an upgrade of Sunbury Road and other local routes was considered as part of this analysis. This indicated that traffic would be reduced on the Calder Freeway however traffic volumes through the Bulla township would still be over capacity. This investigation concluded that a new east-west arterial route between the OMR and MAL was required to improve access options for the Sunbury growth area. Due to the existing constraints on Sunbury / Bulla Road, there is little opportunity for traffic growth to occur in this local area, subsequently a third arterial link was proposed, referred to as the ‘Bulla Bypass’.

5.1.2 Bulla Bypass

The Bulla Bypass will aim to minimise through traffic on the currently congested routes of Sunbury / Bulla Road, with these ultimately servicing local Bulla trips only. The bypass will reduce travel times for trips between the Melbourne Airport, Sunbury and further north-west, and will provide an additional and more direct crossing over Deep Creek.

Already the Bulla / Sunbury Road carries some truck movements that is related to transporting of quarry materials to developing areas from the Oaklands Junction Quarry. Furthermore, with the proposed expansion of Sunbury, areas along the Sunbury / Bulla Road are identified for future industrial development, which will further increase truck traffic along this route.

The existing Bulla Road crossing over Deep Creek presents safety concerns, on the western side of the Creek, where the crossing consists of tight radius back-to-back curves and steep terrain. The Bypass will also enable an alternate option for heavy vehicles to access Sunbury and Gisborne from the Melbourne Airport without passing through the Bulla residential area.

\(^{11}\) AECOM, Melbourne Airport Link to OMR/Bulla Bypass
5.2 Agriculture

5.2.1 Local Scale

The issues that impact on local agriculture are generally defined as direct land loss, severance of properties, loss of facilities and infrastructure and changes in access.

Direct land loss can be minor in its production impact because of the small amount of land involved. However, when associated with severance as is the case for most of the options, then the production loss can be more severe through isolating land from the main holding, require the duplication of facilities because of reduced access and increasing labour costs in the management of the property. Individual properties will be affected in this way but also in a broader context when the construction of the Northern Corridor and the MAL interact to isolate a large area of land between them.

All of the options will have some impact on facilities either requiring their replacement or relocation. Such facilities may include housing, access, buildings, handling facilities and drainage. Minor adjustments to the route may be able to reduce or eliminate impact on facilities.

5.2.2 Regional Scale

The regional affects are more likely to be felt through the positive benefits of a more effective transport flow of farm commodities to the marketplace including grain, livestock and farm inputs. The loss of production affects are likely to be minor due to the small area of land involved and relatively low per hectare earning rates. Equine enterprises and agistment services are people dependent and likely to benefit due to improved ease of access.

5.3 Business and Tourism

5.3.1 Local Scale

From a business and tourism perspective there are mainly general issues and constraints associated to the bypass and the MAL rather than specific constraints /issues for each option. The construction of these two roads as well as the OMR itself are likely to change the nature of the Bulla area significantly; it is now a quiet rural area burdened with significant amounts of commuter traffic, whereas the new road infrastructure is likely to be visible in the landscape and be the source of increased traffic background noise. The loss of through traffic in the township presents as an opportunity for positive change with a re-emergence of a town centre with character and amenity.

Access into Wildwood Road and onwards into St John’s Road will be made more difficult with the bypass. This will affect access for customers to Wildwood Vineyard and Café and to Solitude Beauty and Relaxation, both which are located in St John’s Road. Access issues are likely to be particularly important for Wildwood Vineyard and Café as they would rely on tourism trade for a large proportion of their business. Their business is likely to be further impacted by a deterioration in amenity of the location with the construction of the OMR and the MAL. The Vineyard would be located in the nook of a major road network, whereas its present location is a quiet and remote and with a rural aspect from the café and function area.

Loss of highway exposure will be significant for the businesses that are located in Bulla Road, in particular the Service Station and the drive-through bottleshop at the Hotel Motel. Petrol stations rely on a high turnover to be a viable business and the increased competition from supermarket owned service stations has further reduced margins in this industry. It may not be possible for a petrol station to be viable if it is only serving the township of Bulla and it is unlikely that there will be commuter traffic from Sunbury and further afield that chose Bulla Road once the bypass is constructed. The loss of a petrol station would be a major loss for a small community such as
Bulla. There is no impact on the development opportunities of the Hotel Motel. Accommodation services in Bulla are unlikely to be impacted by the proposed Bypass, as a large share of accommodation trade is derived from on-line bookings from customers in regional Victoria that chose the location due to its proximity to Melbourne Airport or to events held in Bulla and environs.

Detailed information about impacted lots is provided in the Land Use Assessment, December 2012 (Addendum 2 of August 2013) and is shown on the map provided in Figure 7. However, this information does not provide exact details as to loss of actual inhabited dwellings in the study area. Dwelling loss depends on whether the lot has been developed as yet, whether the dwelling is occupied, and whether the dwelling will remain occupied after construction of the project. It is clear that there will be some dwelling loss along Oaklands Road as a result of the MAL. Rural property loss in the area may impact on the total turnover of the produce store, as it relies on a local catchment of residents keeping horses, poultry, pets and the like for its business.

5.3.2 Regional Scale

On a regional scale the Bulla Bypass and the MAL has some issues in terms of the extent to which they compromise mineral resources or other resources of regional importance.

The Oaklands Junction Quarry has been identified by DPI as a quarry of State significance. It is therefore important that access to this resource is not compromised and that the road infrastructure does not reduce the future expansion of this quarry to be able to extract more of the granite. According to the quarry management, neither the proposed Bulla Bypass nor the MAL would compromise the future expansion of the quarry. It is likely, however, that there will be some delays in travel time for transport of material from the quarry during the construction process. There are potential benefits to the quarry if material from the quarry is used in the construction of either project.

There are also other mineral resources identified in this area for which Work Authorities have been granted. The importance of these resources for future generations needs to be considered, and if they are important, a means for how to minimise impacts on future access to these resources needs to be identified. It is however noted that majority of the impact will be by the OMR/E6 and therefore these planning studies and investigations should address this issue.
Figure 7  Existing land use and development on project route options

Source: Melbourne Airport Link to the future Outer Metropolitan Ring and Bulla Bypass Planning Study Land Use Issues, George Ward Consulting, 2012
6. Impact Assessment

This section summarises the performance of each of the alignments against the overall study objectives. This is further subdivided into sub-regional categories considering both Agricultural and Business and Tourism impacts.

6.1 Regional Economy Sub-objectives - Agriculture

The route options have been evaluated according to the regional economy sub-objectives that relate to agriculture. Option performance has been measured on the following basis:

- Direct land loss for agricultural land holdings;
- Severance of agricultural land holdings; and
- Impact on structures of agricultural land holdings.

The alignments being investigated include the Northern Corridor (options BB1 North, BB1 South, BB2, BB3 and BB5), Oaklands Road Duplication and Melbourne Airport Link.

A brief description of each is as follows.

6.1.1 Northern Corridor

The Northern Corridor comprises five options, BB1 North, BB1 South, BB2, BB3 and BB5. The agricultural evaluation of these options commences at the western boundary of the proposed MAL alignment, Oaklands Road-Somerton Road intersection. The options travel west, cross Deep Creek and link up with Sunbury Road from Loemans Road to Batey Court, a distance of approximately 4.5km.

6.1.2 Option BB1 North

This option is located north of Somerton Road, crosses Wildwood Road and at Green Street turns to cross Deep Creek and enter Sunbury Road at the Loemans Road roundabout. Its characteristics are:

- The first section of the alignment imposes direct land loss along the frontage of five rural properties through road widening;
- The section from Green Street to Deep Creek imposes direct land loss and severance of moderate severity to two properties;
- From Deep Creek to Loemans Road, direct land loss is along the boundary lines of three properties; and
- The Bulla-Diggers Rest Road requires realignment to enter Sunbury Road in the south.

6.1.3 Option BB1 South

This option is located immediately south of Somerton Road passing through the front boundaries of numerous (12) rural living developments to Green Street from where it veers to cross Deep Creek and align with Sunbury Road north-west of the Loemans Road roundabout. Its characteristics are:

- The cumulative direct land loss to Green Street is low but a number of property improvements are negatively affected;
- The direct land loss and severance impacts from Green Street to Sunbury Road is relatively severe especially after crossing Deep Creek; and
- The Bulla-Diggers Rest Road to Sunbury Road imposes significant severance to one property.
6.1.4 Option BB2

This option lies north of Somerton Road and west of Wildwood Road. The option arcs north through two properties before aligning with Deep Creek and crossing directly. West of Deep Creek it crosses Sunbury Road before arcing back to enter the highway north-west of Batey Court.

There are three impacts:

- The northern arc creates severance and access difficulties to the rural properties west of Wildwood Road;
- The four properties from Deep Creek to Sunbury Road suffer severe severance; and
- The rural property south of Sunbury Road is severely affected by severance.

6.1.5 Option BB3

This option lies north of Somerton Road and after its commencement arcs strongly to the north, crossing over Wildwood Road before aligning directly to cross Deep Creek. West of Deep Creek it follows the same route as BB2.

The impacts are the same as BB2 except severance is greater.

6.1.6 Option BB5

This option is similar to BB2 in its northern section. However, it crosses Deep Creek at a different angle and aligns directly onto Sunbury Road. This eliminates imposing severance on the rural properties south-west of Sunbury Road and significantly reduces direct land loss and severance.

6.1.7 Bulla Bypass Option Performance

The performance of each option was evaluated according to direct loss, severance, infrastructure and residential loss. Severance was measured as the land proportion that was severed from the main land holding where the facilities were present or access could be gained. Infrastructure loss includes farm sheds, stock yards, training tracks, access lanes and dams. Residential loss includes the loss of residential dwellings (i.e. house).

Table 9 provides a summary of the performance of each option.

<table>
<thead>
<tr>
<th>Table 9 Bulla Bypass Options Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact</td>
</tr>
<tr>
<td>Direct land loss</td>
</tr>
<tr>
<td>Severance</td>
</tr>
<tr>
<td>Infrastructure loss</td>
</tr>
</tbody>
</table>

From this analysis, Option 1 (BB1 North) has the lowest agricultural impact through requiring less land and imposing minimal severance. There are a number of reasons for this:

- A large section of the alignment is limited to road widening across relatively large holdings thereby reducing direct land loss, access and infrastructure affects;
- From Green Street to Sunbury Road the route is direct and as far as possible, follows property boundaries. Some severance occurs but is on land which has low agricultural capability; and
- The Bulla-Diggers Rest Road interchange to Sunbury Road is short and direct.
BB1 South has similar characteristics but with slightly higher levels of severance and direct land loss. Further, being on the south side of Somerton Road imposes significant impact to rural living allotments through changes to access and infrastructure and residential loss.

BB2 and BB3 are similar in their route pattern except that BB3 ascribes a stronger arc from Somerton Road which increases the amount of severance incurred. Both perform poorly in terms of direct land loss and severance. Severance is particularly severe in two sections; the arc north of Somerton Road affecting several properties and the link to Sunbury Road which fragments the McKenzie property. Even through amelioration strategies such as facilities duplication or alternative access arrangements the negative impact of severance cannot be fully recovered.

BB5 is aligned between BB2 and BB3, closer to the road reserve for Somerton Road. It performs better to BB2 and BB3 as its northern arc to Somerton Road commences later and flows more directly across Deep Creek. It then aligns to Sunbury Road avoiding severance to the property at 525 Sunbury Road.

6.1.8 Oaklands Road Duplication

The duplication of Oaklands Road from the Sunbury Road-Tullamarine Freeway roundabout to the Oaklands Road-Somerton Road intersection is a critical link to the northern corridor options if the OMR link is not being built or its phasing delayed. The duplication covers a distance of approximately 2 km involving thirteen landholdings of which six are developed (residential).

Based on discussions with the land owners and our previous experience, the impacts are likely to be as follows:

- The developed properties will be affected to a greater or lesser effect depending on how close the residences and associated infrastructure are to the road reservation. At least two properties appear significantly affected;
- Land use is a mixture of grazing, rural living, olive growing and horse activities. The impacts imposed are direct land loss, infrastructure loss, possible residential loss and changes in access; and
- The agricultural impacts are generally low as the area of land loss is small, agricultural productivity low and most effects can be ameliorated against through compensation. However, there are exceptions. One property is run as a horse training establishment with yards and facilities close to the existing highway. Considerable adjustment will be required to return the property to its normal function.

6.1.9 Melbourne Airport link

The southern commencement of this link is east of the roundabout at Oaklands Road. It crosses the Woodlands property and Oaklands Road to take a northerly route. All of the small holdings west of Oaklands Road (13) will be severely affected through direct land loss and severance. At least five residences are directly affected and others are compromised by severance, changes in access and improvements relocation. This can be more severe where properties suffer the combined effects of MAL and road widening of Oaklands Road. In some cases, full property acquisition may be the best form of amelioration.

North of Somerton Road the alignment arcs to the west to link with the OMR. There are a number of effects:

- The landholdings are larger in size but the route passage is diagonal which maximises severance impacts on diagonal blocks. Two properties are significantly affected;
- The interchange at Somerton Road and the direct link to OMR have high land requirements. When combined with the route length total land requirement is 71 ha with severance at 22 ha;
- As noted earlier, the small properties south of Somerton Road are severely affected by the alignment. Those north of Somerton Road to OMR, while larger and better able to
accommodate land loss, are still severely affected through the combined effects of direct land loss, severance and the alignment’s diagonal passage; and

- Land use in the locality is mostly equine and beef production.

### 6.1.10 Economic

An economic assessment of the cost to regional agriculture is measured through direct land loss and severance. No attempt has been made to measure other forms of amelioration (access, infrastructure, residential) as these are best determined at an individual property level through the compensation process.

For direct land loss, a gross margin\(^2\) of $300/ha is used which is a considered average between crop and livestock performance throughout the region. Direct land loss area has been measured on an individual property basis by VicRoads. The values are on an annual basis.

Severance is considered to be the parcel of landholding that has been severed from the main landholding through the passage of the alignment. While not lost directly, it suffers management inefficiencies in its separation including increased labour and machinery costs, duplication of facilities and loss of timing. To take account of these inefficiencies, the gross margin is discounted by 50% from what reasonably could be earned. The area affected was estimated from aerial photography. Table 10 summarises this position.

#### Table 10 Economic Impact Direct Loss & Severance

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit</th>
<th>BB1 North</th>
<th>BB1 South</th>
<th>BB2</th>
<th>BB3</th>
<th>BB5</th>
<th>MAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct loss</td>
<td>ha</td>
<td>19</td>
<td>24</td>
<td>45</td>
<td>45</td>
<td>26</td>
<td>71</td>
</tr>
<tr>
<td>Productivity loss (Direct loss)</td>
<td>$</td>
<td>5,700</td>
<td>7,200</td>
<td>13,500</td>
<td>13,500</td>
<td>7,800</td>
<td>21,300</td>
</tr>
<tr>
<td>Severed</td>
<td>ha</td>
<td>6</td>
<td>18</td>
<td>48</td>
<td>60</td>
<td>19</td>
<td>22</td>
</tr>
<tr>
<td>Productivity loss (Severed)</td>
<td>GM/ha</td>
<td>900</td>
<td>2,700</td>
<td>7,200</td>
<td>9,000</td>
<td>2,850</td>
<td>3,300</td>
</tr>
<tr>
<td>Consolidated</td>
<td>GM/ha</td>
<td>6,500</td>
<td>9,900</td>
<td>20,700</td>
<td>22,500</td>
<td>10,650</td>
<td>23,400</td>
</tr>
</tbody>
</table>

BB1 N is identified as the least cost option due to the low level of impact incurred. BB1 S and BB 5 are the same in their economic impact and only slightly ahead of BB1 N. The other options (BB2, BB3) incur greater losses in agricultural production due to their greater impact in direct land loss and severance.

### 6.2 Regional Economy Sub-Objectives - Business and Tourism

The route options as described above do not vary significantly in their impacts on businesses and tourism facilities/attractions in the study area. However, there are some variations which are discussed below.

With regard to regional economy sub-objectives that concern business and tourism facilities and attractions, the potential impact of the Bulla Bypass options and the Melbourne Airport Link are evaluated in terms of the extent which they would:

- Cause direct loss of business and/or business infrastructure;
- Cause loss of passing trade;
- Cause significant changes to business access; and
- Cause direct impacts on trade related to construction, and short term construction employment.
Direct loss of business

There are no differences between the bypass options in regard to direct loss of business, as no business is directly under the footprint of any of the bypass options. The Wildwood Vineyard and Café and Solitude Beauty and Relaxation are partially under the footprint of the Melbourne Airport Link but are also under the footprint of the OMR, so it is assumed that the impacts on these businesses would already have occurred by the time the MAL would commence. There is one transport operator partially under the footprint of the MAL. This impact is attributed to MAL, as the MAL will have significant impact on access to the business.

Loss of passing trade

There are no substantial differences between the bypass options in regard to access to Bulla township. Local traffic would use the existing road and Sunbury traffic the bypass.

There are no differences between the bypass options in regard to highway visibility for such businesses in Bulla that benefit from passing trade due to visibility to highway traffic.

There are some differences in bypass option impacts on properties along Somerton Road.

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. There is little visible evidence of new investment in equipment/facilities at the service station, and through consultation it emerged that in recent years, consideration has been given to closing the business. The hotel/motel is likely to lose some passing trade through the restaurant and bottleshop. According to the operator, a reduction in trade would result in a reduction in staffing. 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. Wildwood Café & Vineyard would be affected by all bypass options and this would result in loss of jobs, but it would remain in operation (until it is acquired to allow the construction of the MAL in its currently proposed location). Ponderosa Pet Resort would suffer loss of infrastructure, and possibly turnover due to disruption during construction. However, this business is assessed to continue to be a viable business.

The MAL does not cause further impacts on businesses that benefit from highway visibility. It is unlikely to cause additional impacts on businesses in Bulla township. The MAL would cause infrastructure impacts on Wildwood Café and Solitude Beauty and Relaxation. However, as these businesses are also under the footprint of the OMR, these impacts should be attributed to the OMR, and not the MAL.

Changes to business access

The bypass options have potential impacts on a concrete business, a truck parts business and a transport operator that rely on access to affected roads. In the short term these businesses would remain viable if suitable alternative access arrangements are provided. Alternative access arrangements will likely provide indirect access to the highway network, and ease of access would have been a locational factor when initially selecting the premises. Change in access arrangements may therefore result in relocation of the businesses. In the longer term, one operator is likely to have to relocate, as its business premises (and dwelling) are partially under the footprint of the MAL.

Access to the Living Legends tourist attraction in Oaklands Road would also be made more difficult with the duplication of Oaklands Road and a new indirect route would evolve with the construction of the MAL.

12 Gross margin is gross income less enterprise variable costs expressed on a per ha basis
Short term impacts during construction

Road construction is likely to have short term impacts on the local area. The increase in truck traffic, and partial or full road closures will cause delays for local residents and workers using the road network. The increased number of workers in the area may increase turnover in local food, petrol and accommodation businesses. An increase in noise level and decreased amenity may impact on patronage levels at the cafés and dog kennel and cattery.

6.2.1 Option BB1

A concrete business and truck parts business located on the south side of Somerton Road would be impacted by Option BB1 South in terms of land loss. These businesses currently have direct access to Somerton Road, but this access may become indirect with the proposed duplication of Somerton Road as part of the bypass. It is likely that one business would need to relocate as a result of the duplication, unless suitable alternative access arrangements can be provided. There is likely to be access issues causing delay to trucks and workers entering and exiting the business during the construction period.

The potential development opportunities of 1400 Somerton Road/200 Wildwood Road would be impacted by Option BB1 North. An education facility is proposed to be located on land that is covered by Melbourne Airport Environs Overlay Schedule 2. The remainder of the land is under Melbourne Airport Environs Overlay Schedule 1. The recent change in the permitted uses in the Green Wedge Zone includes ‘education facility’ as a permitted use in Green Wedge Zone.

6.2.2 Option BB2

It is noted that the potential development opportunities of 1400 Somerton Road/200 Wildwood Road would be impacted by Option BB2 to a greater degree than Option BB1 North as the property’s land loss for BB2 is greater.

If BB2 from Oaklands Road is routed along BB1 South, then the impacts on the concrete business will be as identified above under Option BB1. There is likely to be impacts on a truck parts business as identified under BB1 south.

6.2.3 Option BB3

It is noted that the potential development opportunities of 1400 Somerton Road/200 Wildwood Road would be impacted by Option BB3 to a greater degree than Option BB2 as the property’s land loss for BB3 is greater.

If BB3 from Oaklands Road is routed along BB1 South, then the impacts on the concrete business will be as identified above under Option BB1. There is likely to be impacts on a truck parts business as identified under BB1 south.

6.2.4 Option BB5

It is noted that the potential development opportunities of 1400 Somerton Road/200 Wildwood Road would be impacted by BB5 with a loss of 19,299 square meters or 11.3% of the property area. This option reduces the amount of land that is covered by Melbourne Airport Environs Overlay Schedule 2 where an education facility is a permitted use.

6.2.5 Oaklands Road Duplication

This alignment is the duplication of Oaklands Road from the Sunbury Road-Tullamarine Freeway roundabout to the Oaklands Road-Somerton Road intersection, a distance of approximately 2km.
Oaklands Road duplication would impact on one business, namely a transport operator that relies on truck access to/from the place of business and the Living Legends tourist attraction. The business currently has direct access to Oaklands Road, but this access may become indirect with the proposed upgrade and duplication. There is likely to be access issues causing delay to trucks and workers entering and exiting the business during the construction period.

A kennel/cattery located on the north east corner of Somerton Road and Oaklands Road will be impacted by the duplication through loss of buildings and other kennel infrastructure.

### 6.2.6 Melbourne Airport Link

The southern commencement of this link is near the roundabout at Oaklands Road. It crosses over Oaklands Road to take a northerly route. There are a number of effects:

- The business site of the transport operator in Oaklands Road is affected by the alignment passage and the business would likely need to relocate (this business was already affected by the Oaklands Road Duplication);
- The tourist attraction Living Legends in Oaklands Road would no longer have easy access for passing trade on Oaklands Road which may result in its closure; and
- The business site of a kennel and cattery on the corner of Oaklands Road and Somerton Road would be affected by the passage of the alignment and required road widening causing loss of buildings and other kennel infrastructure.

### 6.2.7 Summary of Business and Tourism Impacts

The estimated long term impacts on employment of the Bulla Bypass and the Melbourne Airport Link are quantified in Table 11 and Table 12 below based on assessment by the consultant and outcomes of consultation with these businesses.

It is likely that there will be additional short term impacts in terms of delay to businesses and potential loss of trade due to noise impacts or other changes in amenity during the construction period.

There will be additional short term benefits in terms of construction employment during construction of the road projects. There is also potential for local suppliers to increase sales during the construction period, for example fuels sales, food and liquor from the service station and hotel and supply of quarry material as input for the construction projects. These short term benefits have not been quantified as they are unlikely to change the employment in existing businesses, and employment at potential new businesses is uncertain.
### Table 11 Estimated Impact on Business Employment, in/near Study Area of Bypass Options

<table>
<thead>
<tr>
<th>Service businesses for local community</th>
<th>Estimated Employment Number of FT/PT</th>
<th>Estimated Employment Impact Number of FT/PT</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service businesses for local community</td>
<td>30 FT/PT</td>
<td>14 FT/PT</td>
<td>Loss of employment due to likely closure of service station which is also the provider of postal services at Bulla and loss of some trade at hotel.</td>
</tr>
<tr>
<td>Visitor services, tourist attractions and recreation areas</td>
<td>20 FT/PT 30 casuals 10+ volunteers</td>
<td>No impact</td>
<td>Potential impact on activities of Bulla Hill Railway; mitigation possible with tourism signage on Bulla Bypass.</td>
</tr>
<tr>
<td>Community Clubs</td>
<td>5 FT/PT 30-40 casuals 20+ volunteers</td>
<td>No impact</td>
<td>Clubs are not reliant on passing trade or visibility to passing traffic for trade. Site not affected by alignment.</td>
</tr>
<tr>
<td>Businesses of regional or state significance</td>
<td>91 FT/PT 30 casuals</td>
<td>3 FT/PT</td>
<td>Potential impact on a concrete business that rely on access to Somerton Road. Change in access may drive this business to relocate to more suitable premises with employment impact as a result.</td>
</tr>
<tr>
<td><strong>Total Estimated Employment and Employment Impacts</strong></td>
<td>146 FT/PT 90 – 100 casuals</td>
<td>17 FT/PT</td>
<td>Impacts represent approximately 12% of jobs in the area.</td>
</tr>
</tbody>
</table>
Table 12  Estimated Additional Impacts on Business Employment, in/near Study Area of Melbourne Airport Link

<table>
<thead>
<tr>
<th>Visitor services, tourist attractions and recreation areas</th>
<th>Estimated Employment № of FT/PT</th>
<th>Estimated Employment Impact № of FT/PT</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20 FT/PT 30 casuals 10+ volunteers</td>
<td>2 FT/PT</td>
<td>Potential loss of infrastructure ($250,000 to $500,000) at Ponderosa Pet Resort due to entry to ONR Link from Somerton Road. MAL would complicate access to Living Legends may result in closure.</td>
</tr>
<tr>
<td>Businesses of regional or state significance</td>
<td>91 FT/PT 30 casuals</td>
<td>2 FT/PT</td>
<td>Potential impact on a transport operator that rely on access to Oaklands Road. It is assumed that this business would need to relocate to more suitable premises on construction of the MAL 2PT/FT.</td>
</tr>
<tr>
<td>Total Estimated Employment and Employment Impacts</td>
<td>146 FT/PT 90 - 100 casuals</td>
<td>4 FT/PT</td>
<td>Impacts represent approximately 3% of jobs in the area.</td>
</tr>
</tbody>
</table>
6.3 Objectives Based Evaluation Matrix (OBEM) Impact Assessment

To provide consistency across the various studies assessing the impact of the route options for Bulla Bypass, an OBEM has been created and utilised for all specialist studies.

The Melbourne Airport Link (MAL) is assessed in a separate table as the objectives for the MAL differ from the objectives of the Bulla Bypass. MAL relies on the OMR for significant justification and the objectives used in its assessment are derived from the objectives for the Outer Metropolitan Ring (OMR) Transport Corridor. The assessment of the MAL is fully reliant on the information provided as background for the OMR planning studies, which does not include a regional economy assessment. It is assumed that the MAL will be dimensioned so it has sufficient capacity to carry Tullamarine Freeway and Melbourne Airport traffic. Any additional studies are outside the brief for this assessment.

Table 13 presents the assessment criteria while Table 14 presents a summary of the impacts for the various Bulla Bypass Options assessed for the Economy Assessment Study related objectives. Table 15 presents a high level assessment of the MAL.

- The key findings of the assessment include: All options were assessed to meet the impact on local business activities as moderately well;
- All options were assessed to meet the impact on current and future business activities Sunbury well; and
- The options were scored differently for the impact on local agricultural activities, where:
  - Option BB 1 North and BB 5 were assessed to meet the criteria well;
  - Option BB 1 South was assessed to meet the criteria moderately well; and
  - Options BB 2 and BB 3 were assessed to meet the criteria poorly.

Overall, Option BB 1 North was assessed to be the best option fitting with the regional economy study objectives. The option scored very well, well or moderately well for all sub objectives with an average score of well.

Table 13 Route Options Assessment Criteria

<table>
<thead>
<tr>
<th>Rating</th>
<th>Defined Values</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Well</td>
<td>Best practice, strong level of compliance, major positive impact</td>
<td>Very Well</td>
</tr>
<tr>
<td>Well</td>
<td>Improved practice, good policy compliance, positive impact</td>
<td>Well</td>
</tr>
<tr>
<td>Moderately Well</td>
<td>Partial policy compliance, no distinct positive or negative impact</td>
<td>Moderately Well</td>
</tr>
<tr>
<td>Poor</td>
<td>Policy non-compliance and negative impact</td>
<td>Poor</td>
</tr>
<tr>
<td>Very Poor</td>
<td>Major policy non-compliance and major negative impact</td>
<td>Very Poor</td>
</tr>
<tr>
<td>Study Objectives</td>
<td>Regional Economy Sub Objectives</td>
<td>Assessment Criteria</td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------------</td>
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</tr>
<tr>
<td>To support economic performance for the local and regional economy</td>
<td>E1. Impact on local business activities.</td>
<td>• Direct loss of business and/or business infrastructure, loss of highway visibility, significant changes to business access and/or direct impacts on trade related to construction. (number of jobs gained/lost). • Short term impacts related to trade and project construction employment (number of jobs gained/lost).</td>
</tr>
<tr>
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<td></td>
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<tr>
<td>Study Objectives</td>
<td>Regional Economy Sub Objectives</td>
<td>Assessment Criteria</td>
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<tr>
<td>To support economic performance for the local and regional economy</td>
<td>E1. Impact on local business activities</td>
<td>• Direct loss of business and/or business infrastructure, loss of highway visibility, significant changes to business access and/or direct impacts on trade related to construction, (number of jobs gained/lost). • Short term impacts related to trade and project construction employment (number of jobs gained/lost).</td>
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<tr>
<td>Study Objectives</td>
<td>Regional Economy Sub Objectives</td>
<td>Assessment Criteria</td>
</tr>
<tr>
<td>--------------------------------------------------------------------------------</td>
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</table>
| To support economic performance for the local and regional economy              | E1. Impact on local business activities. | • Direct loss of business and/or business infrastructure, loss of highway visibility, significant changes to business access and/or direct impacts on trade related to construction, (number of jobs gained/lost).  
• Short term impacts related to trade and project construction employment (number of jobs gained/lost). | Option BB5: Moderately Well | Policy compliance, but local job loss estimated at 21 jobs (full and part time) or 15% of local jobs.  
However Bulla residents have good access to employment opportunities in metropolitan Melbourne and current and future opportunities in Sunbury.  
Impact on future development opportunity at 200 Wildwood Road is noted but not quantified. | Streetscape works in Bulla (parking, shaded areas, seating, toilets) for locals and to develop as a location to wait to pick up airport passengers, as a meeting point for tours, cyclists groups etc.  
Opportunity for café/food outlet.  
Tourism: signage on bypass & OMR for Bulla Hill Miniature Rail.  
Access roads suitable for trucks for local transport businesses.  
Estimated loss reduced to 10 jobs or 7% of local jobs. | Option BB5: Moderately Well |
<table>
<thead>
<tr>
<th>Study Objectives</th>
<th>Regional Economy Sub Objectives</th>
<th>Assessment Criteria</th>
<th>Assessment</th>
<th>Reason for Rating</th>
<th>Mitigation Measures</th>
<th>Updated Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>To support economic performance for the local and regional economy</td>
<td>E2 Impact on current and future business activities Sunbury.</td>
<td>Impact on current Sunbury retail employment (no of jobs gained/lost).</td>
<td>Option BB1 North: Well</td>
<td>Good policy compliance in facilitating growth policy for Sunbury. No expected impacts on retail in Sunbury. Retail impacts will flow from population growth. Project will encourage industrial development along Sunbury Road north of Bulla with road upgrade and Melbourne and Airport travel time improvements.</td>
<td>With streetscape works identified above and retention of post office, and new café/shops Bulla can have a role as a small service centre.</td>
<td>Option BB1 North: Very Well</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Option BB1 South: Well</td>
<td>Good policy compliance in facilitating growth policy for Sunbury. No expected impacts on retail in Sunbury.</td>
<td>With streetscape works identified above, Bulla can have a role as a small service centre.</td>
<td>Option BB1 South: Very Well</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Option BB2: Well</td>
<td>Good policy compliance in facilitating growth policy for Sunbury. No expected impacts on retail in Sunbury.</td>
<td>With streetscape works identified above, Bulla can have a role as a small service centre.</td>
<td>Option BB2: Very Well</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Option BB3: Well</td>
<td>Good policy compliance in facilitating growth policy for Sunbury. No expected impacts on retail in Sunbury.</td>
<td>With streetscape works identified above, Bulla can have a role as a small service centre.</td>
<td>Option BB3: Very Well</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Option BB5: Moderately Well</td>
<td>Moderate levels of direct land loss &amp; severance. Direct route with good entry to Sunbury Road.</td>
<td>Restore access and infrastructure loss. Restore functionality of severed areas.</td>
<td>Option BB5: Well</td>
</tr>
<tr>
<td>Study Objectives</td>
<td>Regional Economy Sub Objectives</td>
<td>Assessment Criteria</td>
<td>Assessment</td>
<td>Reason for Rating</td>
<td>Mitigation Measures</td>
<td>Updated Assessment</td>
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</tr>
</tbody>
</table>
| To support economic performance for the local and regional economy | E3 Impact on local agricultural activities. | • Direct land loss (hectares) for agricultural land.  
• Severance for agricultural land holdings (number of properties impacted).  
• Impact on structures of agricultural land holdings ($ value to replace structures). | Option BB1 North: Well | Low level of agricultural impact. | Restore access and infrastructure loss. Consider acquisition of small severed areas | Option BB1 North: Well |
<p>| | | | Option BB1 South: Moderately Well | Rural residential impact; some severance. | Restore access and infrastructure loss. Restore functionality of some severed areas | Option BB1 South: Moderately Well |
| | | | Option BB2: Poor | Moderate to significant levels of severance. | Restore access and infrastructure loss. Restore functionality of severed areas | Option BB2: Poor |
| | | | Option BB3: Poor | Moderate to significant levels of severance. | Restore access and infrastructure loss. Restore functionality of severed areas | Option BB3: Poor |
| | | | Option BB5: Moderately Well | Moderate levels of direct land loss &amp; severance. Direct route with good entry to Sunbury Road. | Restore access and infrastructure loss. Restore functionality of severed areas | Option BB5: Well |</p>
<table>
<thead>
<tr>
<th>Study Objectives</th>
<th>Regional Economy Sub Objectives</th>
<th>Assessment Criteria</th>
<th>Assessment</th>
<th>Reason for Rating</th>
<th>Mitigation Measures</th>
<th>Updated Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>To support the performance of OMR in improving access between key international hubs (Avalon Airport, Melbourne Airport, Port of Geelong) and access within this employment corridor</td>
<td>Provide access to OMR from Melbourne Airport and Tullamarine Freeway</td>
<td>• Link well with traffic from Melbourne Airport and Tullamarine Freeway</td>
<td>MAL: Well</td>
<td>Strong policy compliance, and assumed regional benefits. Some local business impact due to property loss, difficulties with access and loss of buildings/infrastructure which would cause business closure, relocation or reduce their ability to operate.</td>
<td>Facilitate suitable business location with truck access. Provide alternative business access and tourism signage in appropriate locations. Construction of replacement buildings/infrastructure prior to road development.</td>
<td>MAL: Very Well</td>
</tr>
</tbody>
</table>
| Impact on local agricultural activities.                                         |                                                                              | • Direct land loss (hectares) for agricultural land.  
• Severance for agricultural land holdings (number of properties impacted).  
• Impact on structures of agricultural land holdings ($ value to replace structures). | MAL: Poor        | High direct land loss overall  
Creates severe direct land loss and severance on small properties south of Somerton Road  
Diagonal passage north of Somerton Road accentuates management difficulties associated with direct land loss & severance. | Restore access and infrastructure loss.  
Restore functionality of some severed areas through facilities duplication.  
Consider acquisition of severely affected small properties. | MAL: Moderately Well |
The overall ranking for each alignment option to meet the project objective of “To support economic performance for the local and regional economy” is presented in Table 16. This overall ranking has been identified based on the rankings presented in Table 14 and Table 15 and the following assumptions:

- Evaluating the Bulla Bypass Project only now that the MAL is regarded as a separate project;
- The overall assessment takes mitigating measures into account; and
- That the three sub-criteria are weighted equally in the assessment.

**Table 16: Economy Study Overall Assessment Ranking**

<table>
<thead>
<tr>
<th>Alignment Option</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>BB1 North</td>
<td>Well</td>
</tr>
<tr>
<td>BB1 South</td>
<td>Well</td>
</tr>
<tr>
<td>BB2</td>
<td>Moderately Well</td>
</tr>
<tr>
<td>BB3</td>
<td>Moderately Well</td>
</tr>
<tr>
<td>BB5</td>
<td>Well</td>
</tr>
<tr>
<td>MAL</td>
<td>Well</td>
</tr>
</tbody>
</table>
7. **Summary**

This report presents a background study and an assessment of the impacts of the proposed Bulla Bypass and MAL under investigation on the business and tourism related activities for the Bulla township and wider region area, and on agriculture related activities. As previously mentioned, the route options for Bulla Bypass do not vary significantly in their impacts on businesses and tourism facilities/attractions in the study area.

The major issues with regard to the project is for agriculture - the potential land loss, severance and loss of facilities that is likely to occur as a result of the project and the impact this would have on the farming community in the area and potentially on regional farming communities.

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 bypasses will reduce disruption by heavy 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. Finally, there will be access issues for those businesses that are located in St John’s Road which is accessed through Wildwood Road.

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.

The five Bulla Bypass options and MAL have been assessed against the study objectives and sub-objectives. The MAL is assessed separately as the objectives differ from the objectives of the Bulla Bypass. MAL relies on the OMR for significant justification and the objectives used in its assessment are derived from the objectives for the Outer Metropolitan Ring (OMR) Transport Corridor.

The assessment of the Bulla Bypass options has indicated that the five options are relatively similar. All options met the impact on local business activities sub objective moderately well and met the impact on current and future business activities in the Sunbury Region sub objective well. The options scored differently for the agricultural sub objective where BB2 and BB3 both ranked poor whereas BB1 North was assessed to meet the criteria well and BB1 South and BB5 met the criteria moderately well. Following mitigation measures all options improved to be ranked very well against the business activities sub objective. The overall ranking for BB1 North, BB1 South and BB5 is “Well” and the overall ranking for BB2 and BB3 is “Moderately Well”.

The assessment of the MAL indicates that the proposed alignment meets the access to OMR and Tullamarine Freeway sub objective well and meets the agriculture sub objective poor. However, following mitigation measures the MAL was assessed to meet the access sub objective very well and the agricultural sub objective moderately well. The overall ranking for MAL meeting the regional economy project objective is: “Well”.

Overall, BB1 North was assessed to be the best option fitting with the regional economy study objectives. The option scored very well, well or moderately well for all sub objectives with an average score of well.
8. References

This report draws on information from a range of documents and sources, including but not limited to:

- AECOM, 2012, Melbourne Airport Link to OMR / Bulla Bypass Study, Melbourne
- Australia Pacific Airports (Melbourne) Pty Ltd, 2008, Melbourne Airport Master Plan
- Extractive industries resources in the Melbourne metropolitan area, Report 7, Geological Survey of Victoria, 1972/2
- EVC Benchmark-Victorian Volcanic Plains
- Hume Planning Scheme
- Inquiry into Sustainable Development of Agribusiness in Outer Suburban Melbourne, Outer Suburban/Interface Services and Development Committee, May 2010
- Melbourne Airport, 2009, Melbourne Airport Ground Transport Plan
- P J Jefferies, Soil Conservation Authority, 1981, A Study of the land in the Catchments to the North of Melbourne
- SKM, April 2008, The Impact of Melbourne Airport
- Bureau of Meteorology
<table>
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<tr>
<th>Rev No.</th>
<th>Author</th>
<th>Reviewer</th>
<th>Signature</th>
<th>Name</th>
<th>Signature</th>
<th>Date</th>
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</thead>
<tbody>
<tr>
<td>B</td>
<td>R. Phillips M. Stockenup</td>
<td>D. Rolland</td>
<td></td>
<td>D. Rolland</td>
<td></td>
<td>23.7.12</td>
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<td>D. Rolland</td>
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<td>*Signed on original</td>
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</table>
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