

**Prepared for:**

Norton Rose Fulbright on behalf of  
Viewgrange Pastoral Pty Ltd Pty Ltd

**Prepared by:**

Stephen Hunt

**Traffic and Transport Expert Evidence  
Hume Planning Scheme - Amendment C243**

**Sunbury South and Lancefield Road Infrastructure  
Contributions Plan**

8 October 2020

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Pastoral Pty Ltd  
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# 1 Statement of Evidence

## Reference

- 1.1.1 Hume Planning Scheme – Amendment C243

## Name and Address

- 1.1.2 Stephen John Hunt - Principal  
1.1.3 Ratio Consultants Pty Ltd  
1.1.4 8 Gwynne Street, Cremorne, VIC 3121

## Professional Qualifications

- 1.1.5 Bachelor of Engineering (Civil), 1975, Swinburne University of Technology.  
1.1.6 Graduate Diploma of Highway and Traffic Engineering, 1981, Chisholm Institute of Technology.

## Professional Experience

- 2017 – Present: Principal – Traffic, Ratio Consultants.
- 2010 – 2016: Group Manager – Cardno Victoria
- 2007 – 2010: Consultant, Cardno Grogan Richards.
- 1988 – 2006: Director, Grogan Richards.
- 1975 – 1988: Traffic Engineer with Cities of Doncaster and Templestowe, Caulfield and Prahran.

## Professional Expertise

- 1.1.7 I have worked in the area of Traffic and Transportation Engineering throughout my career. My area of expertise includes traffic advice and assessment of a wide range of land use and development proposals for planning authorities, government agencies, corporations and developers.
- 1.1.8 My training, qualifications and experience including involvement with a wide variety of developments over a number of years, qualifies me to comment on the traffic and transport implications of this proposal.

## Instructions which define the scope of this report

- 1.1.9 I have been instructed by Norton Rose Fulbright on behalf of Viewgrange Pastoral Pty Ltd (Villawood) to undertake a review of Amendment C243 to the Hume Planning Scheme and prepare an expert evidence statement for submission and presentation at the upcoming panel hearing detailing my opinions on traffic and transport matters related to the amendment.
- 1.1.10 My instructions from Norton Rose Fulbright are included in Section 2.2.

## Facts, Matters and Assumptions Relied Upon

- 1.1.11 During preparation of this report the facts, matters and assumptions I have relied upon are outlined in Section 2.3

## Identity of Persons Undertaking the Work

- 1.1.12 Stephen Hunt of Ratio Consultants assisted by Hilary Marshall, also of Ratio Consultants.

## Declaration

- 1.1.13 I have read the Planning Panels Victoria Expert Witness guidelines (April 2019) and understand my obligations to the Panel.
- 1.1.14 I have no relationship with the client other than a business engagement to comment on this matter.

- 1.1.15 My involvement in this project commenced in September 2020 and I was not involved in the preparation of the Amendment or any associated planning.
- 1.1.16 I also have had no involvement in on going advice provided to Villawood by Ratio in relation to the progressive development of Redstone Hill which is located within the Sunbury South PSP area and the Sherwood Heights Estate within the Lancefield Road PSP.
- 1.1.17 I have made all the inquiries that I believe are desirable and appropriate and that no matters of significance which I regard as relevant have to my knowledge, been withheld from the Panel.

A handwritten signature in black ink, appearing to be 'S. Hunt', with a stylized, looping flourish at the end.

**Stephen Hunt**  
**Principal: Traffic**  
**Ratio Consultants**

## 2 Introduction

### 2.1 Overview

- 2.1.1 I have been instructed by Norton Rose Fulbright on behalf of Viewgrange Pastoral Pty Ltd (Villawood) to provide my expert opinion with respect to proposed Amendment C243 to the Hume Planning Scheme.
- 2.1.2 Amendment C243 seeks to make changes to the Hume Planning Scheme to replace the existing interim Sunbury South and Lancefield Road Infrastructure Contributions Plan (ICP) with the Ultimate ICP, which was exhibited in April 2020.
- 2.1.3 This report has been prepared in accordance with the recently updated Planning Panels Victoria Expert Witness guidelines.
- 2.1.4 In the course of preparing this assessment, I have reviewed the Interim ICP gazetted in November 2019, and the proposed Final ICP, dated April 2020 as exhibited.
- 2.1.5 I have also reviewed transport modelling undertaken by GTA consultants on behalf of the VPA exhibited in association with the amendment and subsequent supplementary modelling summarised in reports dated 9<sup>th</sup> September and 25<sup>th</sup> September 2020.
- 2.1.6 My opinions with respect to the exhibited amendment and in particular, the proposed delivery of bridges across Jacksons Creek and the funding contribution sought through the Final Sunbury South and Lancefield Road ICP are set out as follows.

### 2.2 Instructions

- 2.2.1 My instructions in this matter were provided by Norton Rose Fulbright on the 8<sup>th</sup> September 2020, seeking my engagement to review Amendment C243 to the Hume Planning Scheme, assess submissions and to provide my expert opinion on traffic matters relevant to the ICP, in particular in relation to traffic demands for bridges across Jacksons Creek to facilitate establishment road connections between Lancefield Road and Racecourse Road referred to as the Northern Link and between Sunbury Road and Vineyard Road referred to as the Southern Link.
- 2.2.2 Specifically, I was advised in a letter from Norton Rose Fulbright in a letter dated 8<sup>th</sup> September 2020 that the client sought to engage me to:
  - (1) review this memorandum and accompanying documents;
  - (2) confer with instructing solicitors and counsel where necessary;
  - (3) prepare an expert witness statement concerning traffic matters relevant to the ICP, in particular in relation to traffic demand for bridges LR-BR-01 and SS-BR-01 and the apportionment allocated to the PSPs in relation to those bridges; and
  - (4) present your expert evidence at the hearing before Planning Panels Victoria.

### 2.3 Facts, Matters and Assumptions

- 2.3.1 During the course of my assessment I have relied on the following facts, matters and assumptions:
  - *Sunbury South and Lancefield Road Infrastructure Contributions Plan (April 2020)* as exhibited
  - *Amendment C243 exhibited documents*
  - *Sunbury South Precinct Structure Plan June 2018 (Amended November 2019)*
  - *Lancefield Road Precinct Structure Plan June 2018 (Amended November 2019)*

- *Strategic Modelling of the Sunbury and Diggers Rest Growth Corridor (October 2015)* – prepared by GTA Consultants for the Metropolitan Planning Authority
- *Sunbury Growth Corridor DCP Modelling Supplementary Report (February 2017)* prepared by GTA Consulting for Villawood / Capitol Property Group.
- *Sunbury Integrated Transport Assessment (February 2011)* prepared by Aecom for the East Sunbury Developer Group.
- *Sunbury Infrastructure Co-Ordination and Delivery Strategy (Draft) (November 2016)* – Victorian Planning Authority.
- *Sunbury Growth Corridor Supplementary Modelling Report prepared by GTA Consultants for the VPA dated 9<sup>th</sup> September 2020.*
- *Supplementary Modelling Reports #2 and #3 prepared by GTA Consultants for the VPA both dated 25<sup>th</sup> September 2020.*
- *Letter from Hall and Wilcox on behalf of the VPA to Planning Panels Victoria dated 25<sup>th</sup> September 2020 summarizing the supplementary modelling reports as filed.*



## 3 Executive Summary

### 3.1 Sunbury South and Lancefield Road ICP

- 3.1.1 The final Sunbury South and Lancefield Road ICP as exhibited provides for financial contributions towards the provision of transport infrastructure to support the development of the Sunbury South and Lancefield Road areas. The projects sought to be funded through the ICP are consistent with projects identified within the Precinct Infrastructure Plans of the Sunbury South and the Lancefield Road Precinct Structure Plans.
- 3.1.2 The ICP includes a number of transport projects which not only benefit the proposed communities in Sunbury South and Lancefield Road, but the wider Sunbury area including established residential precincts. These projects include:
- The construction of a new road between Sunbury Road and Vineyard Road providing a “southern link” crossing of Jacksons Creek and ultimately a grade separated crossing of the rail line to Vineyard Road.
  - The construction of a new road between Racecourse Road and Lancefield Road providing a northern crossing of Jacksons Creek and two grade separated crossings of the Bendigo Rail line to rail line to Lancefield Road.
  - Construction of improved connections to the south to Bulla Diggers Rest Road providing alternate access to the Calder Freeway from Jacksons Hill and existing areas in the Goonawarra area.
  - The opportunity to develop a new railway station in Sunbury South and Sunbury North linking to central Melbourne to take advantage of additional capacity within the rail network resulting from the Melbourne Metro Rail Project.
- 3.1.3 It is proposed that the ICP contribute a total of **\$371.21** million for the construction of 43 separate transport projects within the two precincts, **\$167.46** million within a Standard Levy and **\$203.75** million within a Supplementary Levy. The projects identified have a total estimated cost of **\$424.61** million.
- 3.1.4 It is proposed that 38 of the 43 projects are 100% funded by the ICP, with external contributions allocated to 4 bridge projects forming part of the Northern and Southern Link and one intersection project being the upgrade of the intersection of Sunbury Road / Lancefield Road. An external contribution of **26%** has been allocated to the four bridge projects and **75%** to the intersection project.
- 3.1.5 The external contribution for the bridge projects is assumed to be in recognition of the regional benefit of constructing the bridges to partially facilitate the Link Roads, however the basis of the percentage external contribution as nominated is not clear.
- 3.1.6 Despite the clear regional benefits accrued through the development of the Northern and Southern Link Roads in association with the ICP, external contributions to the development of these routes are limited to the four bridge projects and the connection to the Southern Link Road at the Lancefield Road / Sunbury Road intersection.
- 3.1.7 In my opinion, external contributions should be also allocated to the balance of projects required to complete the two link roads, including:
- construction of the roads as boulevard connectors,
  - construction of intersections at Vineyard Road (for the Southern Link Road) and Racecourse Road and Lancefield Road (for the Northern Link Road),
  - construction of additional bridges over Harpers Creek to facilitate the Southern Link Road.
- 3.1.8 In my opinion, an external contribution for the construction of the Link Roads should be determined in recognition of the external benefits accrued, particularly the early establishment of the Southern Link Road to provide additional connections to the Calder Freeway prior to the duplication of Sunbury Road and development of the Bulla Bypass.

## 3.2 Traffic Modelling

- 3.2.1 It is considered that the transport modelling, initially undertaken by GTA Consulting in 2015 and updated in 2017, provided an appropriate basis for determining the travel demands expected to occur in association with the urban development of the Sunbury Diggers Rest Growth Corridor. The modelling also assisted identification of transport projects adopted in association with the preparation and subsequent approval of the Sunbury South and Lancefield Road Precinct Infrastructure Plans.
- 3.2.2 In particular, the modelling demonstrated that development of the Southern Link as a boulevard connector in association with the early stages of the Sunbury South area would attract approximately 12,500 vehicle movements per day, resulting in moderation of traffic growth on Sunbury Road and a reduction in movements through Sunbury Town Centre.
- 3.2.3 Updated modelling was subsequently undertaken in September 2020, with the results presented within three supplementary reports dated 9<sup>th</sup> September and 25<sup>th</sup> September.
- 3.2.4 The modelling sought to estimate increased travel demands associated with updated population projections for the Melbourne Metropolitan area as well as the Sunbury Diggers Rest Corridor, including population projections for the future Sunbury North and Sunbury West PSP areas.
- 3.2.5 The modelling centered on updating daily volume estimates in the “Option 5” scenario considered in the 2015 modelling, which assumes full development of the corridor by 2046 and completion of both the Southern and Northern Links as boulevard connectors by 2046.
- 3.2.6 The modelling as documented in Supplementary Report #1 and #2 suggests marginally increased volumes on both the Link Roads when compared to the 2015 modelling.
- 3.2.7 Supplementary Report #3, undertaken on instruction from the VPA, sought to test the implications of the Northern Link Road not being constructed in association with the development of the Lancefield Road (and Sunbury North) PSP areas.
- 3.2.8 The results suggest that without the Northern Bridge Crossing, volume increases on the surrounding road network are moderate and confined effectively to Lancefield Road, north of Sunbury Road and Macedon Street between Racecourse Road and Lancefield Road.
- 3.2.9 Notably, volume increases on both the Southern Link bridge and Sunbury Road south east of Lancefield Road are moderate, clearly demonstrating that the benefit of the Northern Link is marginal and confined to improved access between the future Sunbury North PSP area and the Sunbury Town Centre.
- 3.2.10 The deletion of the link also results in significant reductions in traffic volumes on Racecourse Road and on roads within the Lancefield Road PSP.

## 3.3 The Need for Inclusion of the Northern Link in the ICP

- 3.3.1 It is considered that, based on the modelling results detailed in Supplementary Report #3, the benefits of construction of the Northern Link in overall traffic terms are marginal.
- 3.3.2 The construction of the Northern Link appears to predominantly cater for traffic movements between the Lancefield Road and Sunbury North PSP areas and Sunbury Town Centre, with deletion of the link resulting in marginal volume increases on Lancefield Road and Macedon Street only.
- 3.3.3 While the connection would be useful in accommodating local movements within northern Sunbury, I am satisfied that, in traffic terms, deletion of the link through modification to the Lancefield Road PSP and the subsequent removal of the project from the Sunbury South and Lancefield Road ICP could be considered without significant overall traffic impact.
- 3.3.4 Should the Northern Link be deleted from the ICP, the following road and bridge projects would become redundant:
  - LR-RD-02-1B
  - LR-RD-02-02A
  - LR-BR-01.
- 3.3.5 Deletion of these projects would result in a reduction of **\$107.69** million from the ICP.

- 3.3.6 In addition, construction of the bridge over the Bendigo rail line (LR-BR-02) would have no regional benefit if the Link is not completed, effectively being only required to provide access to residential precinct with the Lancefield Road PSP to the west of the railway line. In these circumstances the project should not attract the external contribution of 26% as shown in the exhibited ICP, becoming 100% funded by the ICP.
- 3.3.7 The construction of the LR-BR-01 and LR-BR-02 as shown in the exhibited ICP includes an external contribution totaling **\$29.14** million attributable to the Sunbury North and Sunbury West PSP areas.
- 3.3.8 This contribution would not be required if the Northern Link is not pursued.
- 3.3.9 In the event that the Northern Link is not constructed, modelling suggests that ultimate traffic movements on Lancefield Road at Gellies Road will increase from 44,000 vehicles per day to around 50,000 vehicles per day.
- 3.3.10 The ICP allows for Lancefield Road to be upgrade to a six lane divided arterial road and the additional volumes without the Northern Link can be accommodated without modification to the proposed road cross-section. The ICP allows for the construction of a series of intersections along Lancefield Road to vide access to residential precincts on each side, with the intersection works 100% funded by the ICP.
- 3.3.11 It is possible that some intersection treatments as proposed may need to be upgraded as a consequence of the additional through movement on Lancefield Road resulting from the deletion of the Northern Link. In my opinion, if the Northern Link is not pursued, additional analysis should be undertaking with respect to potential intersection upgrades, with additional works costed into the ICP.
- 3.3.12 In my opinion, any further upgrading of intersections identified should be included in the ICP but assigned as an additional external contribution attributable to the future Sunbury North PSP. Any external contribution identified for intersection upgrades would be unlikely to exceed the current external contribution assigned to the bridge projects to facilitate the Northern Link.

### **3.4 Funding of the Southern Link**

- 3.4.1 Traffic modelling undertaken demonstrates that the Southern Link Road provides an important connection between Lancefield Road / Sunbury Road to the Calder Freeway which is required in the short term to address existing traffic issues along Sunbury Road and through Bulla.
- 3.4.2 While there is significant benefit resulting to the Sunbury South PSP area as a consequence of the link being provided, in my opinion it also identified as a critical regional improvement required in the short term to cater for existing traffic movements in the region and allow connection to Vineyard Road to Bulla Diggers Rest Road from the Goonawarra / Lancefield Road area and reduce congestion through Sunbury Town Centre.
- 3.4.3 The identification of external funding in the ICP for the construction of projects SS BR 01, SS BR 04 and SS IN 03 is appropriate however in my opinion, an external contribution should also be included for the balance of the Southern Link Road, including Bridge Projects SS BR 02 and SS BR 03 and Road Projects SS RD 04 01, SS RD 04 02 , SS RD 04 03, SS RD 04 04 and SS RD 04 05.
- 3.4.4 The exhibited ICP nominates an external contribution of 26% to SS BR 01 and SS BR 04 attributable to the future Sunbury West and Sunbury North PSP areas. I am not aware of the basis of the percentage external contribution and I consider that this should be made available to the Panel.
- 3.4.5 In my opinion, an external contribution of an amount appropriate to the shared benefit should be determined (potentially of a similar magnitude currently proposed for SS BR 01 and SS BR 04 and applied to the construction of the complete Southern link as discussed above.

## 4 Amendment C207 and C208

### 4.1 Expert Evidence

- 4.1.1 The Sunbury South and the Lancefield Road PSPs were initially approved in June 2018 through Amendment C207 and C208 to the Hume Planning Scheme and subsequently amended in November 2019 through Amendment C242.
- 4.1.2 Amendment C242 updated the Sunbury South and Lancefield Road PSPs to ensure alignment with the interim Sunbury South Lancefield Road Infrastructure Contributions Plan, November 2019.
- 4.1.3 Amendments C207 and C208 were considered concurrently by a Planning Panel convened in August 2017.
- 4.1.4 I was instructed by Norton Rose Fulbright on behalf of Villawood to prepare a traffic engineering statement detailing my opinions on the Precinct Structure Plans as exhibited and the section 96A applications for multi lot residential subdivision at Redstone Hill within the Sunbury South PSP area and Sherwood Heights within the Lancefield Road PSP.
- 4.1.5 I subsequently presented expert evidence to the Panel convened to consider the Amendments providing my opinion on the following issues in a report dated 14<sup>th</sup> August 2017.
1. The road and transport network proposed to be developed in association with the Sunbury South Precinct Structure Plan and the Lancefield Road Precinct Structure Plan.
  2. The regional traffic implications of the progressive development of both PSPs
  3. The adequacy of the proposed initial access arrangements to the subdivisions from Sunbury Road and Racecourse Road and the planned roll out of access works as the subdivision and adjacent land is progressively developed.
  4. The proposed cross-section of Sunbury Road adjacent and the proposed staged upgrade of the Lancefield Road / Sunbury Road intersection.
  5. Issues raised in submissions related to the subject proposals.
- 4.1.6 With respect to the road and transport network proposed to be developed in association with each of the Precinct Structure Plans I concluded in my evidence as follows.

#### Sunbury South PSP

*“The Sunbury South Precinct Structure Plan as exhibited provides for the provision of appropriate transport infrastructure to support the urban development of the area.*

*The rezoning of this land for urban development and the consequent requirement to construct new roads and connections to support development, provides the only realistic opportunity to facilitate and fund key “missing” transport links which constrain movement across and around Sunbury currently.*

*The PSP includes a number of transport projects which not only benefit the proposed community of Sunbury South, but the wider Sunbury area including:*

- *The construction of a new road between Sunbury Road and Vineyard Road providing a “southern link” crossing of Jacksons Creek and ultimately a grade separated crossing of the rail line to Vineyard Road.*
- *Construction of improved connections to the south to Bulla Diggers Rest Road providing alternate access to the Calder Freeway from Jacksons Hill and existing areas in the Goonawarra area.*
- *The opportunity to develop a new railway station in Sunbury South linking to central Melbourne to take advantage of additional capacity within the rail network resulting from the Melbourne Metro Rail Project.*

*Sufficient funding is likely to be available through a Sunbury South ICP to largely fund these projects as well as significant regional intersection upgrades such as the ultimate development of the Sunbury Road / Lancefield Road intersection*

*The opportunity also exists through GAIC funding to facilitate regional improvements such as the duplication of Sunbury Road and possibly the Bulla Bypass.*

*Develop of new Activity Centres within the Sunbury South PSP, including the Redstone Hill Major Activity Centre will provide convenient facilities for not only the proposed growth area but also to existing residents of East Sunbury. reducing the intensity of traffic movements to and through the existing Sunbury Town Centre.*

*As evidenced by the traffic modelling undertaken, the development of these transport improvements, particularly the initial construction of the southern Jackson Creek crossing, will provide a net community benefit, offsetting additional traffic generated by the urban development within the Sunbury South PSP."*

#### **Lancefield Road PSP**

*"The Lancefield Road Precinct Structure Plan as exhibited provides for the provision of appropriate transport infrastructure to support the urban development of the area.*

*As with the Sunbury South PSP, the rezoning of this land for urban development and the consequent requirement to construct new roads and connections to support development, provides the only realistic opportunity to facilitate and fund key "missing" transport links which constrain movement across and around northern Sunbury.*

*Within the Lancefield Road PSP, the following projects will not only benefit the proposed community, but the wider Sunbury area:*

- *The construction of a new road between Racecourse Road and Lancefield Road providing a northern crossing of Jacksons Creek and two grade separated crossings of the Bendigo Rail line to rail line to Lancefield Road.*
- *The opportunity to develop a new railway station in Sunbury North linking to central Melbourne to take advantage of additional capacity within the rail network resulting from the Melbourne Metro Rail Project.*

*In conjunction with the Sunbury South PSP, the Lancefield Road PSP provides the opportunity through GAIC funding to facilitate regional improvements such as the duplication of Sunbury Road and possibly the Bulla Bypass.*

*Development of new Activity Centres within the Lancefield Road PSP, will provide convenient facilities for not only the proposed growth areas but also to existing residents of Goonawarra and Rolling Hills and reduce the intensity of traffic movements to and through the existing Sunbury Town Centre.*

*As evidenced by the traffic modelling undertaken, the development of these transport improvements will provide a net community benefit, offsetting additional traffic generated by the urban development within the Lancefield Road PSP"*

## **4.2 Panel Report**

- 4.2.1 The Panel Report for Amendments C207 and C208 was issued on 15<sup>th</sup> December 2017.
- 4.2.2 It stated as follows with respect to regional traffic issues including the northern and southern crossings of Jacksons Creek to facilitate the Sunbury Ring Road.
- 4.2.3 With respect to regional traffic issues the Panel concluded that development of the two PSP areas could proceed without the completion of the regionally significant Bulla Bypass or duplication of Sunbury Road projects, stating as follows:

There is strong support for the early delivery of the Bulla Bypass and the duplication of Sunbury Road. Both are important additions to the regional road network and will relieve traffic conditions in Sunbury (and Bulla). These projects are, however, State government projects and their funding and timing for delivery are a matter for the State to determine. Their priority is outside the scope of this Panel.

Although some submitters expressed concerns over the potential delay in the two regional projects, the Panel was not presented with any evidence to suggest that the development of the two PSPs could not proceed without these two projects being completed. The traffic evidence indicates that with the early delivery of, in particular, the southern Jacksons Creek crossing and the interim connection via an upgraded Watsons Road/Crinnion Road link to divert traffic to the Calder Freeway, the development of the PSPs can proceed with or without the Bulla Bypass. As presented to the Panel, the traffic modelling shows that the introduction of the southern link, and to a lesser extent the northern crossing, will reduce traffic travelling through the Sunbury town centre and potentially on Sunbury Road.

It should be noted, however, that the traffic modelling assumes that the Bulla Bypass and the duplication of Sunbury Road will be in place by the time the PSPs are fully developed by 2046. Indeed, it could be argued that the approval of the two PSPs and the subsequent development in the Sunbury area will add impetus to the delivery of the two State projects.

- 4.2.4 In relation to the northern crossing of Jacksons Creek within the Lancefield Road PSP area the Panel commented as follows:

The evidence presented to the Panel suggests that a northern crossing would be beneficial in terms of improving the connectivity of the road network to the north of Sunbury, enhancing access for the new communities of the planned Sherwood Estate and other parts of the Lancefield Road PSP area to the east of Jacksons Creek and providing a key link in the Sunbury ring road to enable through traffic to divert around the Sunbury township. The traffic experts agreed, however, that this northern crossing was not a priority in comparison with the proposed southern creek crossing and would only be justified in the longer term. The indicative timing for delivery of the northern bridge is shown as U (Ultimate) in the PSP Table 10 (PIP).

The proposed extension of Elizabeth Drive through the Sherwood Estate and connection via a new bridge to the Balbethan Road area to the east of Jacksons Creek would not doubt enhance accessibility for residents on both sides of the Creek. Both these areas in the PSP would have good access via the existing road network and can be developed in the short to medium term before the proposed northern crossing is constructed. Indeed, Villawood has indicated that while they support the northern crossing on the proposed alignment, the development of the Sherwood Estate is not dependent on the delivery of this crossing and the Estate will be developed well in advance of any crossing.

The early delivery of the southern crossing and improved link to the Calder Freeway (see discussion below) will provide a by-pass route for communities in the Lancefield Road PSP to the east of the Creek. It may well be that construction of this southern by-pass route will lessen the strategic need for the northern crossing. The Panel suggests that the strategic justification could be re-assessed closer to the time that its construction is contemplated.

- 4.2.5 The Panel concluded that the northern crossing should be retained in the PSP to provide for its construction in the longer term but that the strategic need for the northern crossing should be confirmed closer to the time of its construction
- 4.2.6 With respect to the southern creek crossing, the Panel report stated as follows:



There is unanimous support for the southern crossing and the upgrading of the route via Watsons Road/Crinnion Road to the Calder Freeway interchange. The issue comes down to the priority given to this project in the PSP and how the PSP should be worded to reflect that priority.

High priority for delivery in the short-term is generally supported by all parties and confirmed by the expert evidence particularly in the absence of construction of the Bulla Bypass and to a lesser degree the Sunbury Road duplication. Should those two state projects be delivered in the short-term, the urgency for the southern creek crossing may be diminished, although the evidence supports the view that there are still substantial benefits in the early delivery of the southern crossing as it would provide an additional creek crossing and Sunbury bypass route thereby reducing congestion levels in the Sunbury township.

The VPA and Council did agree that the priority for early delivery of the crossing could shift if the two State projects are completed in the short-term. Council sought flexibility in the PSP to reflect this possible change in priority and suggested that a relatively short note in the PSP with respect to priority was all that was required.

The Panel suggests that given the acknowledged strategic importance of the southern crossing, its delivery in the short-term will still be highly desirable. The minimalist wording suggested by Council would, in the Panel's view, be insufficient to convey the strategic importance of the crossing, although the Panel is mindful of the need to provide some flexibility in any additional words added to the PSP. Capitol provided some extensive additions to the PSP. The VPA acknowledged that the wording provided by Capitol had merit but needed further detailed consideration. The VPA suggested that the Panel should recommend that the VPA, Council and other relevant parties should consult further to agree on a form of words to be added to the PSP before it is finalised. The Panel concurs with that approach.

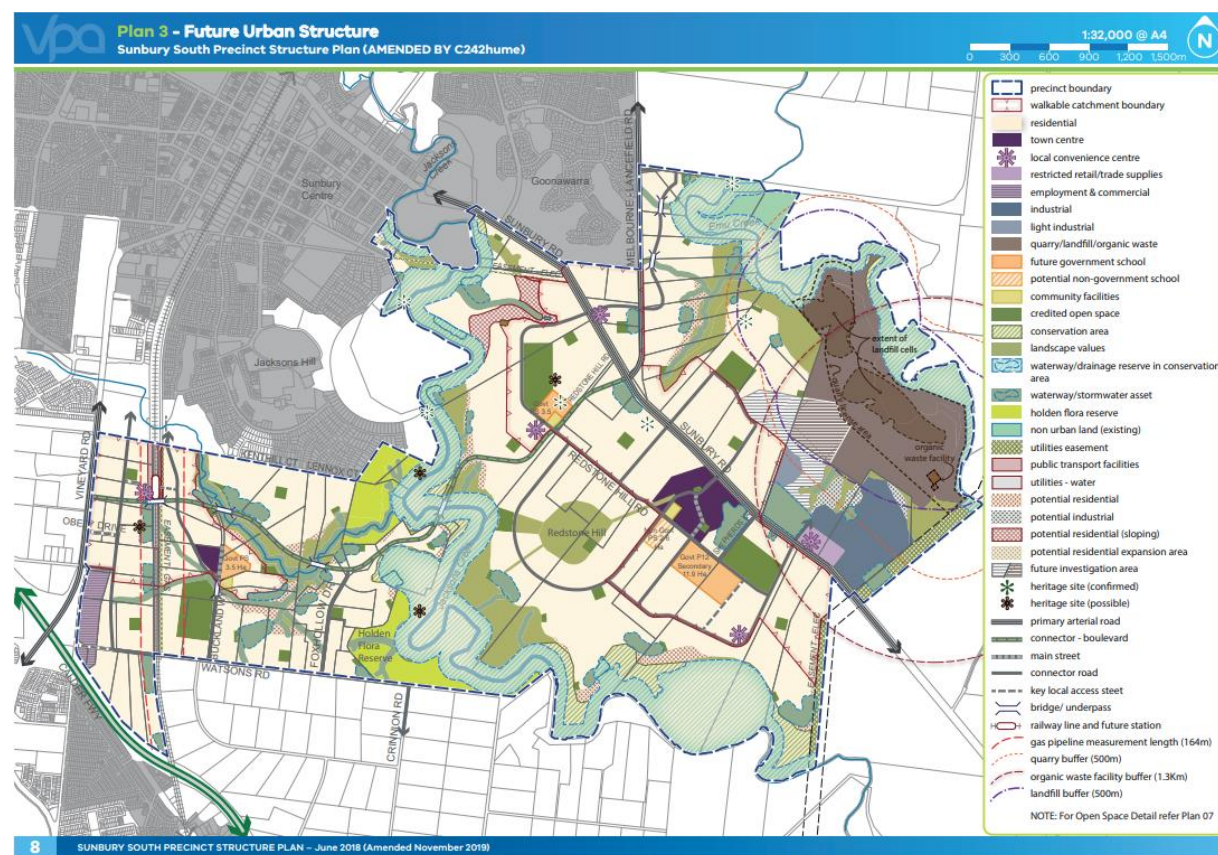
- 4.2.7 The Panel concluded that the early delivery of the southern creek crossing should be given a high priority in the Sunbury South PSP.

# 5 Sunbury South PSP

## 5.1 Location and Future Urban Structure

- 5.1.1 The Sunbury South PSP area is situated to the east and south of the existing Sunbury township, applying to approximately 1759 hectares of land, generally bounded by:
- Vineyard Road to the west,
  - Watsons Road and Jacksons Creek to the south,
  - a high voltage power easement to the east, and
  - Gellies Road and Emu Creek to the north east and north east.
- 5.1.2 The land to the north, on the opposite site of Gellies Road, on the east side of Lancefield Road forms part of the Lancefield Road PSP.
- 5.1.3 The Future Urban Structure Plan for the Sunbury South PSP is shown in Plan 3 of the PSP and reproduced in Figure 5.1.

Figure 5.1 Sunbury South PSP Future Urban Structure Plan (Plan 3)



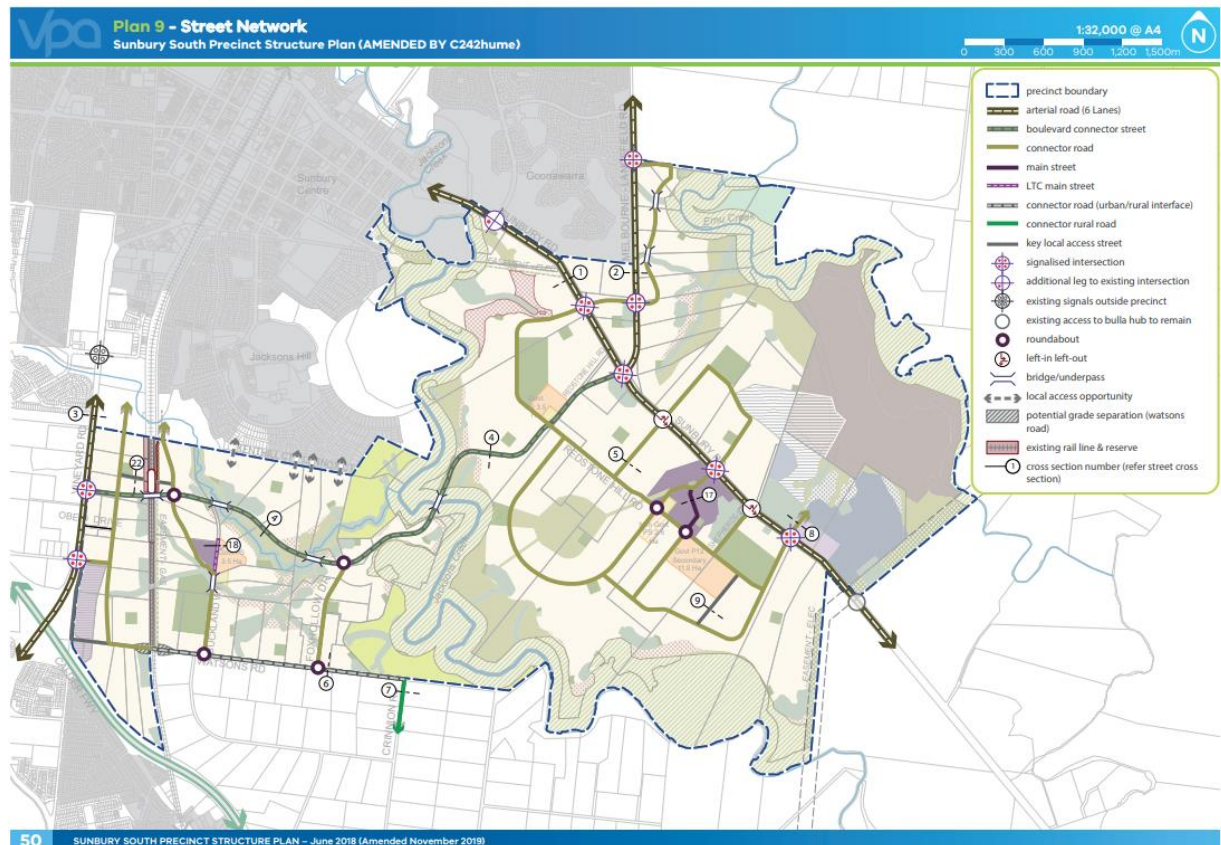
- 5.1.4 The PSP is expected to result in a net developable area of 785 hectares of which 720 hectares will be residential, accommodating up to 11,800 dwellings and 65 hectares industrial development, located on the north side of Sunbury Road east of Shepherds Lane. Employment / commercial uses are also proposed on the east side of Vineyard Road north of the Calder Freeway.
- 5.1.5 The PSP makes provision for a new Major Town Centre at Redstone Hill, providing higher order retail, commercial and community services for the eastern part of the greater Sunbury Growth Area.
- 5.1.6 A new Local Town Centre is also proposed at Harpers Creek to the east of Vineyard Road, supported by a local convenience centre situated adjacent to the proposed Boulevard Connector Street, running south from Sunbury Road at Redstone Hill Road and on the north side of Sunbury Road within the industrial land.



## 5.2 Future Street Network

- 5.2.1 The future street network to serve the Sunbury South PSP area is shown at Plan 9 of the PSP and reproduced in Figure 5.2

Figure 5.2 Sunbury South PSP Street Network Plan (Plan 9)



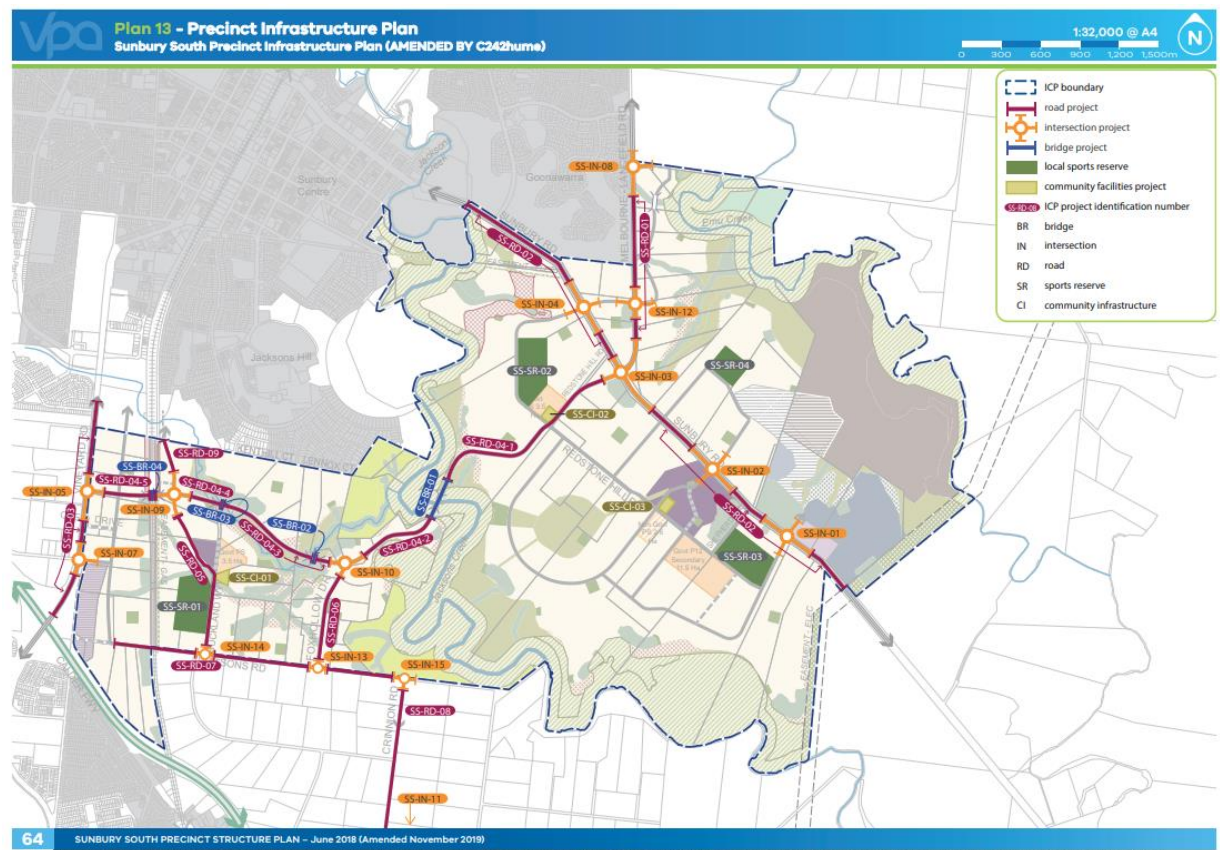
- 5.2.2 It is proposed to deliver a connective street network in conjunction with the development of the PSP area, which is designed to reinforce the established arterial network of Sunbury and to provide for improved local and regional connections.
- 5.2.3 This is sought to be achieved principally by the development of a “southern link” crossing of Jacksons Creek, to provide a new Boulevard Connector link between Sunbury Road and Vineyard Road south of Sunbury Town Centre, connecting the new and existing residential precincts along Sunbury Road and Lancefield Road to the Calder Freeway via Watsons Road / Crinnion Road and Vineyard Road and providing access to the proposed Sunbury South Rail Station.
- 5.2.4 When read in conjunction with the Lancefield Road PSP, the southern link is proposed to form part of an ultimate Sunbury Ring Road, completed by a further northern link crossing of Jacksons Creek, providing a new connection west from Lancefield Road to Racecourse Road at Elizabeth Drive.
- 5.2.5 A connection to the established residential area of Jacksons Hill is also proposed via a northerly extension of Buckland Way from the southern link crossing east of the railway line, providing alternate connection from the Jacksons Hill Precinct to the Sunbury South PSP area and to Vineyard Road.
- 5.2.6 The PSP proposes that Sunbury Road will be developed as a six lane primary arterial road, accommodated within the existing 60 metre reservation, forming a continuous arterial link to the east, ultimately linking to the future Bulla Bypass and the Tullamarine Freeway extension north of Melbourne Airport to the future Outer Metropolitan Ring Road (OMR).
- 5.2.7 Lancefield Road and Vineyard Road are both proposed to be developed as six lane secondary arterial roads, accommodated within proposed 40 to 42 metre reservations.

- 5.2.8 The “southern link” is proposed to be progressively developed as a Connector Boulevard with a 34 metre reservation, providing a divided carriageway accommodating a single traffic lane and a parking lane in each direction separated by a 7 metre landscaped median.
- 5.2.9 Access to Sunbury Road is proposed by a series of new and/or improved intersections, including from northwest to south east.
- 5.2.10 Upgrading of the existing intersection of Lancefield Road / Sunbury Road from the existing two lane roundabout to a signalised interaction, with a new southern leg developed by the realignment of Redstone Hill Road, forming the eastern end of the “southern link” crossing of Jacksons Creek.

### 5.3 Precinct Infrastructure Plan

- 5.3.1 The Precinct Infrastructure Plan (PIP) for the Sunbury South PSP sets out the infrastructure items required to meet the needs of the proposed development within the precinct.
- 5.3.2 The proposed Precinct Infrastructure Plan is shown in Plan 13 of the PSP and reproduced in Figure 5.3.

**Figure 5.3 Sunbury South PSP Precinct Infrastructure Plan (Plan 13)**



- 5.3.3 The works identified within the PIP are proposed to be funded through a number of mechanisms including:
- Subdivision works by developers,
  - Section 173 Agreements,
  - the Sunbury South and Lancefield Road Infrastructure Contributions Plan,
  - Relevant development contributions from adjoining areas,
  - Capital works projects by Council, state government agencies and non-government organizations, and
  - Works in kind projects undertaken by developers.

5.3.4 Notable traffic and transport inclusions in the PIP are as follows:

- The duplication of Lancefield Road south of Gellies Road to a 6 lane arterial road to be constructed by VicRoads as a non ICP item. (SS-RD-01),
- The duplication of Sunbury Road between Jacksons Creek and the Urban Growth Boundary as a 6 lane arterial road to be constructed by VicRoads as a non ICP item (SS-RD-02),
- The ultimate upgrade of Vineyard Road to a 6 lane arterial road by VicRoads as a non ICP Item. (SS-RD-03),
- Land and construction of Sunbury Ring Road – Southern Link between Sunbury Road and Vineyard Road as a 2 lane Boulevard Connector in five sections as an ICP items (SS-RD-04-1 to SS-RD-04-5),
- Construction of Buckland Way, Fox Hollow Road, Watsons Road and Crinion Drive and Jacksons Hill Link Road as 2 lane connector roads as ICP items (SS-RD-05,06,07,08 and 09),
- Signalised intersections along Sunbury Road to be constructed to an interim alignment as an ICP item, with land for the ultimate intersection also an ICP item (SS-IN01, 02, 03 and 04),
- Signalised intersections along Sunbury Ring Road – Southern Link at Fox Hollow Drive, Buckland Way / Jacksons Hill Link and Vineyard Road as ICP items (SS-IN-05, 09 and 10),
- Construction of boulevard connector bridges over Jacksons Creek and Harpers Creek at three locations as ICP items. (SS-BR01,02 and 03), and
- Construction of Sunbury Ring Road - Southern Link underpass of the Sunbury Rail line as an ICP item (SS-BR-04).

5.3.5 The PSP states that the indicative triggers for delivery of key infrastructure projects included in the Sunbury South precinct are outlined in the Sunbury Infrastructure Coordination and Delivery Strategy.



## 6 Lancefield Road PSP

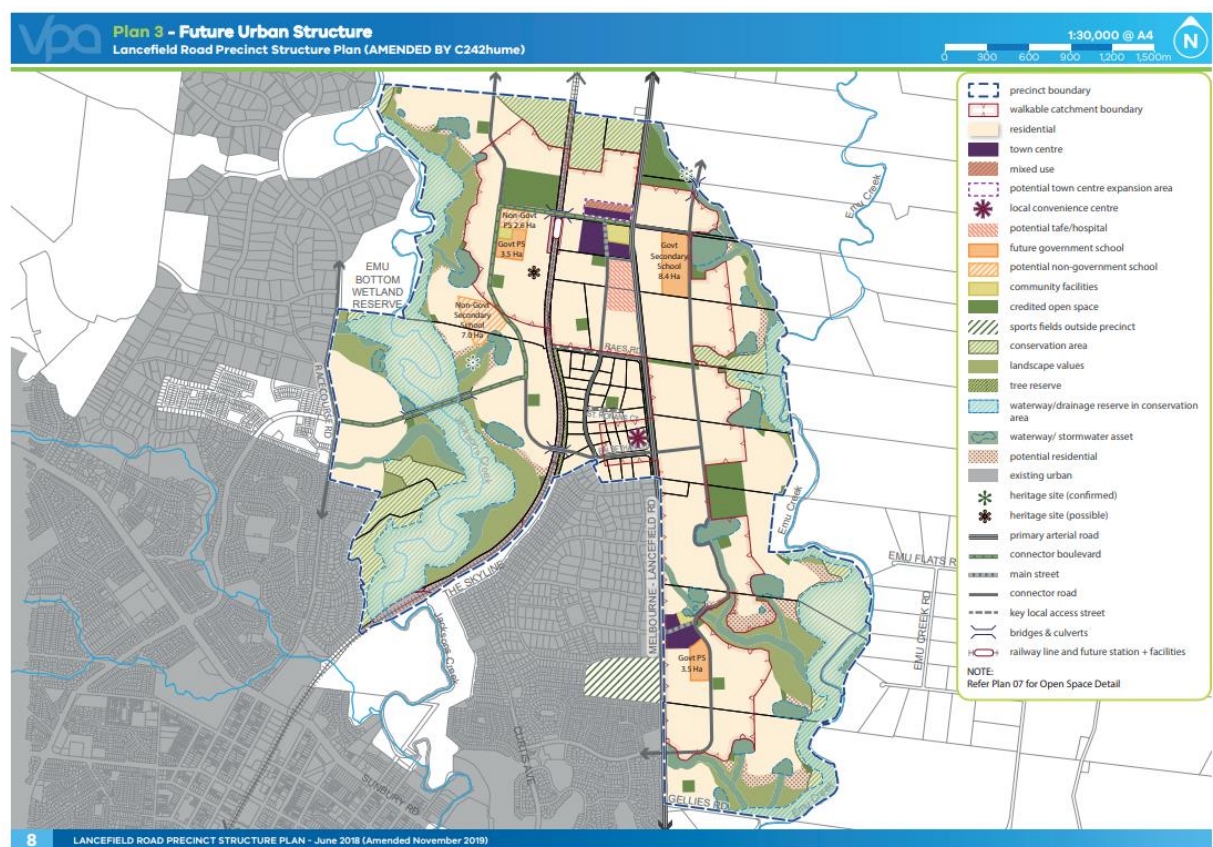
### 6.1 Location and Future Urban Structure

6.1.1 The Lancefield Road Precinct Structure Plan area (PSP 1075) is situated to the north and east of the existing Sunbury township, applying to approximately 1095 hectares of land general bounded by:

- Racecourse Road and Jacksons Creek to the west,
- The Goonawarra and Rolling Hills communities to the south west,
- Gellies Road to the south,
- Emu Creek to the east, and
- A future conservation zone to the north.

6.1.2 The future urban structure for the Lancefield Road PSP area is shown in Figure 6.1.

**Figure 6.1 Lancefield Road PSP Future Urban Structure (Plan 3)**



6.1.3 The PSP is expected to result in a net developable area of 514 hectares accommodating up to 8,080 dwellings.

6.1.4 Two new Local Town Centres are proposed, one at Emu Creek on the east side of Lancefield Road at Rolling Meadows Drive and a second on the west side at Yellow Gum Boulevard.

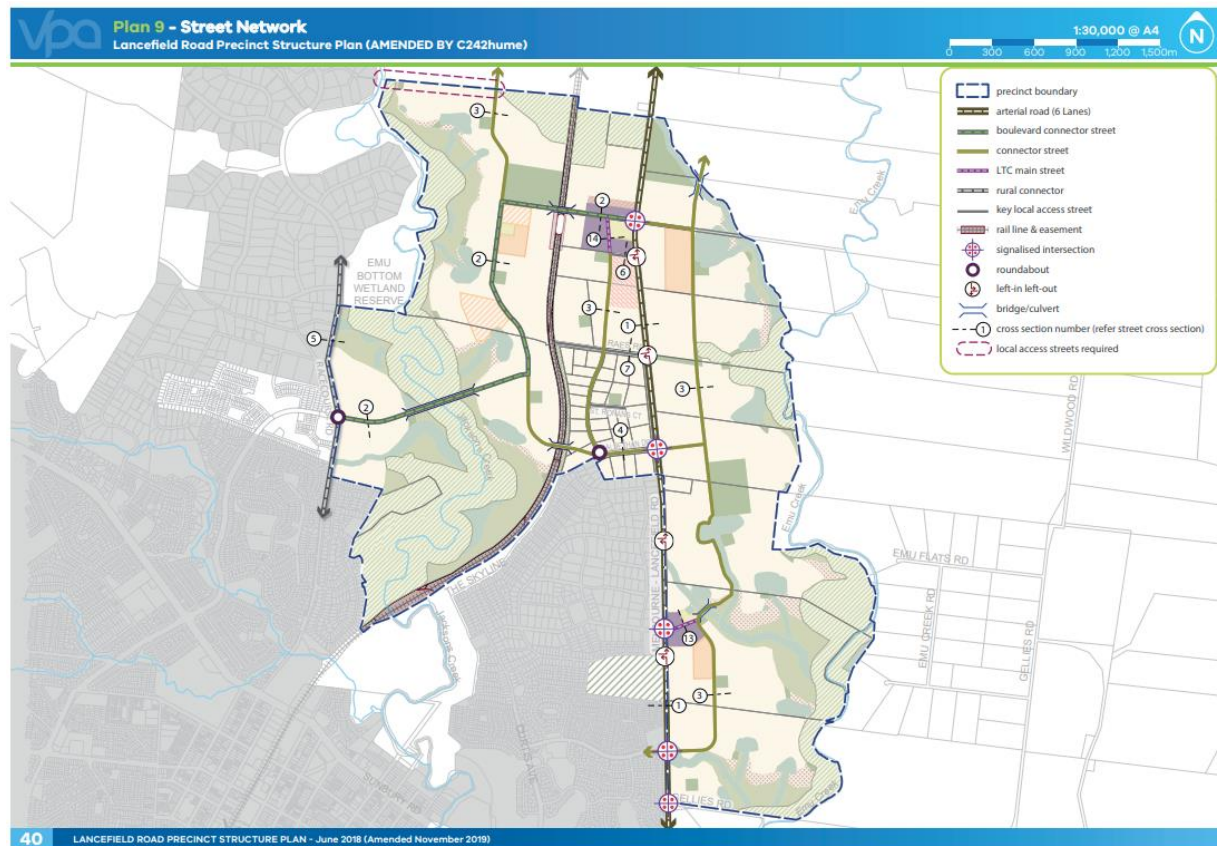
6.1.5 A local convenience centre is also identified on the west side of Lancefield Road at Balbethan Drive.

6.1.6 Residential communities within the western residential precinct between Racecourse Road and Jacksons Creek, are located within the catchment of the proposed Elizabeth Drive Local Town Centre on the west side of Racecourse Road.

## 6.2 Street Network

6.2.1 The proposed Lancefield Road PSP Street network is shown in Figure 6.2.

**Figure 6.2 – Lancefield Road PSP Street Network Plan (Plan 9)**



- 6.2.2 It is proposed to develop a connective street network in conjunction with the PSP which is designed to reinforce the established arterial network of Sunbury and to provide for improved local and regional connections.
- 6.2.3 This is sought to be achieved principally by the development of a “northern link” crossing of Jacksons Creek to provide a new connection between Racecourse Road and Lancefield Road as an easterly extension of Elizabeth Drive.
- 6.2.4 The road is depicted as a Boulevard Connector, running east from Racecourse Road across Jackson Creek. The boulevard connector then proceeds to the north for approximately 800 metres, where it swings east to a grade separation of the Bendigo Rail line to a signalised intersection with Lancefield Road.
- 6.2.5 The proposed northern link is designed to connect the new and existing residential precincts along Racecourse Road to Lancefield Road and the proposed railway station and form part of the ultimate Sunbury Ring Road, completed by a further southern link crossing of Jacksons Creek within the Sunbury South PSP and the southerly extension of Elizabeth Drive from Mitchells Lane to Vineyard Road, completed in 2018.
- 6.2.6 The PSP proposes that Lancefield Road will be developed as a six lane secondary arterial road, accommodated within a 40 metre reservation, forming a continuous arterial link to the east via Sunbury Road, ultimately linking to the future Bulla Bypass and the Tullamarine Freeway extension north of Melbourne Airport to the future OMR.
- 6.2.7 The “northern link” is proposed to be progressively developed as a Connector Boulevard within a 34 metre reservation, providing a divided carriageway accommodating a single traffic lane and a parking lane in each direction separated by a 7 metre landscaped median.
- 6.2.8 Access to Lancefield Road is proposed by a series of four signalised intersections, including:
- A new signalised intersection at the “northern link” Boulevard Connector intersection.



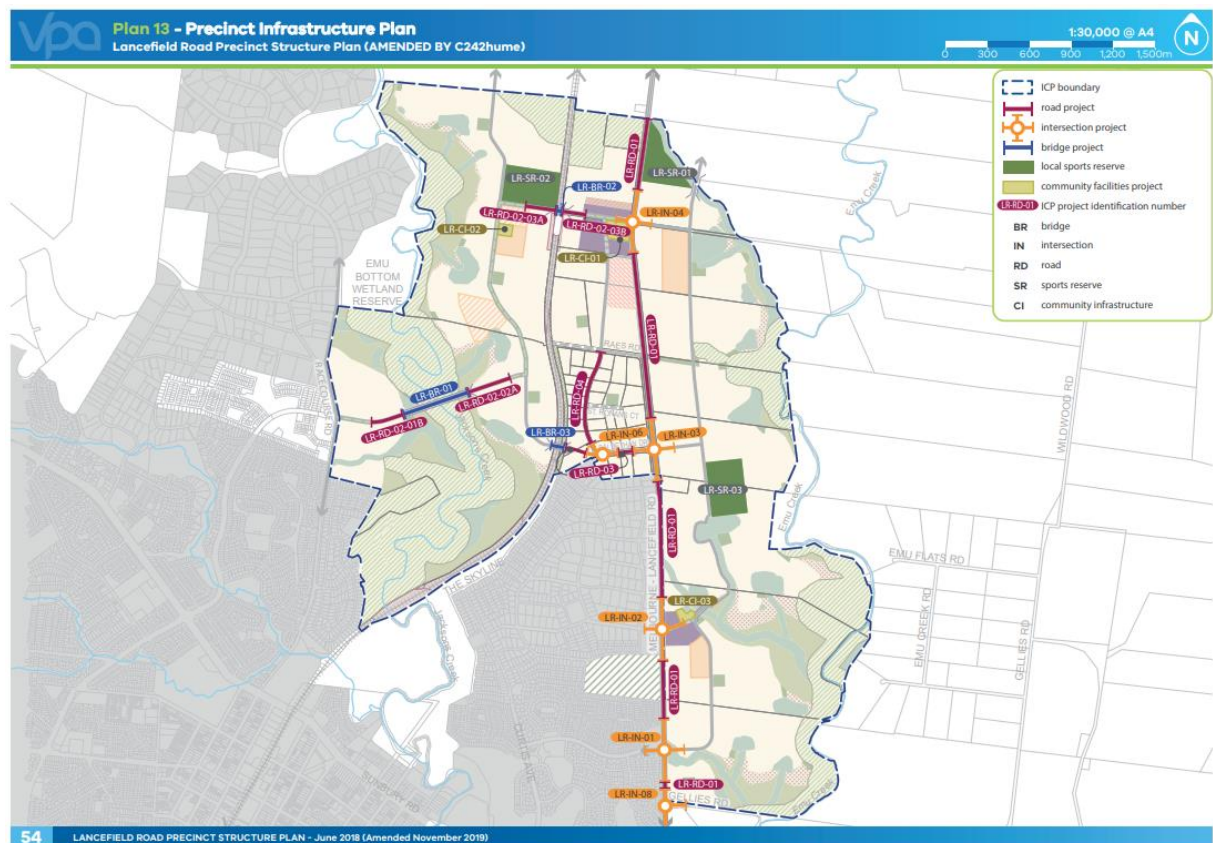
- A signalised intersection at Balbethan Drive which extends to the west to a southern grade separated crossing of the Bendigo Rail line, linking to the Elizabeth Drive extension.
- A signalised intersection at Rolling Hills Drive providing access to the Emu Creek Neighbourhood Centre.
- A signalised intersection at Sunningdale Avenue, with a new connector road forming the eastern approach.

### 6.3 Precinct Infrastructure Plan

6.3.1 The Precinct Infrastructure Plan (PIP) for the Lancefield Road PSP sets out the infrastructure items required to meet the needs of the proposed development within the Precinct.

6.3.2 The proposed Precinct Infrastructure Plan is shown in Figure 6.3

**Figure 6.3 – Lancefield Road PSP – Precinct Infrastructure Plan (Plan 13)**



6.3.3 The works specified in the PIP are proposed to be funded through a number of mechanisms including the Sunbury South and Lancefield Road Infrastructure Contributions Plan.

6.3.4 Notable traffic and transport inclusions in the PIP are as follows:

- The duplication of Lancefield Road to a 6 lane arterial road to be constructed by VicRoads as a non ICP item. (LR-RD-01),
- Signalised intersections along Lancefield Road to be constructed to an interim alignment as a ICP item, with land for the ultimate intersection also an ICP item. (LR-IN01, 02, 03, 04 and 08)
- Construction of the Sunbury Ring Road ("northern link") as a boulevard connector as partially as an ICP item. (LR-RD -02-1B, LR-RD-02-2A and LR-RD-02-03A, LR-RD-02-03B.)
- Construction of a boulevard connector bridge over Jacksons Creek as an ICP item. (LR-BR-01)
- Construction of two bridges over Bendigo Rail line as ICP items, including the southern bridge not on the designated Ring Road. (LR- BR-02 and LR- BR-03)
- Upgrading of Belbethan Drive and Stockwell Drive to connector roads as ICP items (LR-RD-03 and LR-04).

6.3.5 It is noted that the Boulevard Connector Road running north south between LR-RD-02-02A and LR-RD-02-03A (forming part of the designated Ring Road) has not been included in the PIP or as an ICP item.

## 7 Sunbury South and Lancefield Road Infrastructure Contributions Plan (ICP)

### 7.1 Sunbury South and Lancefield Road PSPs

- 7.1.1 Section 1.3 of both the Sunbury South and Lancefield Road PSPs refer to the Sunbury South and Lancefield Road Infrastructure Plan (ICP, which “*will set out the requirements for infrastructure funding across the precinct*”.
- 7.1.2 The PSPs note that the ICP will be a separate document which will be *incorporated into the Hume Planning Scheme*.
- 7.1.3 The PSPs also note that the projects to be included in the ICP are listed in Table 9 and Plan 13 of the Sunbury South PSP and Table 11 and Plan 13 of the Lancefield Road PSP.

### 7.2 Interim ICP (Amendment C230)

- 7.2.1 On 5<sup>th</sup> December 2019, the Minister for Planning, at the request of the VPA, approved an interim Sunbury South and Lancefield Road ICP through Amendment C230 to the Hume Planning Scheme.
- 7.2.2 The Interim ICP, dated November 2019 was implemented at the direction of the Minister to enable the development of the Sunbury South and Lancefield Road precincts to commence, with a permanent ICP to be implemented through a separate amendment, subject to the a standard amendment process including exhibition and consideration of submissions by a panel if required.

### 7.3 Final ICP (Amendment C243)

- 7.3.1 Amendment C243 to the Hume Planning Scheme seeks to introduce the Sunbury South and Lancefield Road Final Infrastructure Contributions Plan (April 2020) into the Hume Planning Scheme replacing the interim ICP.
- 7.3.2 The infrastructure contribution projects proposed to be included in the Standard Levy of the ICP are shown in Plans 2a and 2b of the ICP as exhibited, reproduced in Figure 7.1 and Figure 7.2.
- 7.3.3 Supplementary Levy Transport Projects are shown in Plans 3a and 3b, reproduced in Figure 7.3 and Figure 7.4.
- 7.3.4 It is proposed that the ICP contribute a total of **\$371.21** million for the construction of Transport Projects within the two precincts **\$167.46** million within a Standard Levy and **\$203.75** million within a supplementary levy. The projects identified have a total estimated cost of **\$424.61** million with external contributions applying to the following projects.

**Table 7.1 - ICP Projects with External Contributions**

Project Number	Description	Total Cost	External Contribution	Source
SS IN 03	Construction of interim four-way intersection at Lancefield Road / Sunbury Road / Southern Link Road	\$8.11 m	75%	MRPA Northern Roads Upgrade
LR BR 01	Construction of 2 lane bridge over Jacksons Creek to facilitate Northern Link Road	\$103.87 m	26%	Sunbury North and Sunbury West PSPs
LR BR 02	Construction of 2 lane road underpass of rail line to facilitate Northern Link Road	\$8.22 m	26%	Sunbury North and Sunbury West PSPs
SS BR 01	Construction of 2 lane bridge over Jacksons Creek to facilitate Southern Link Road	\$41.74 m	26%	Sunbury North and Sunbury West PSPs
SS BR 04	Construction of 2 lane road underpass of rail line to facilitate Northern Link Road	\$17.28 m	26%	Sunbury North and Sunbury West PSPs

**Figure 7.1 – Standard Levy Transport Projects (Lancefield Road) - Plan 2a**

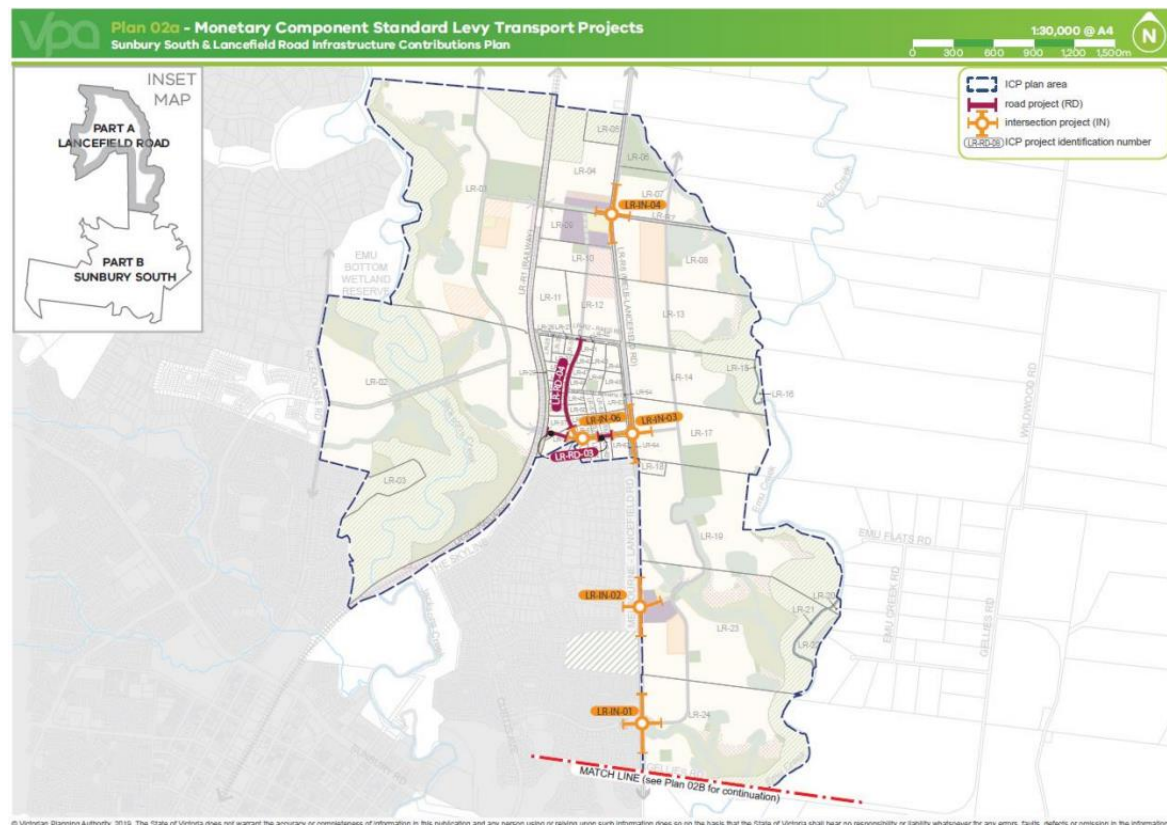




Figure 7.2 – Standard Levy Transport Projects (Sunbury South) - Plan 2b

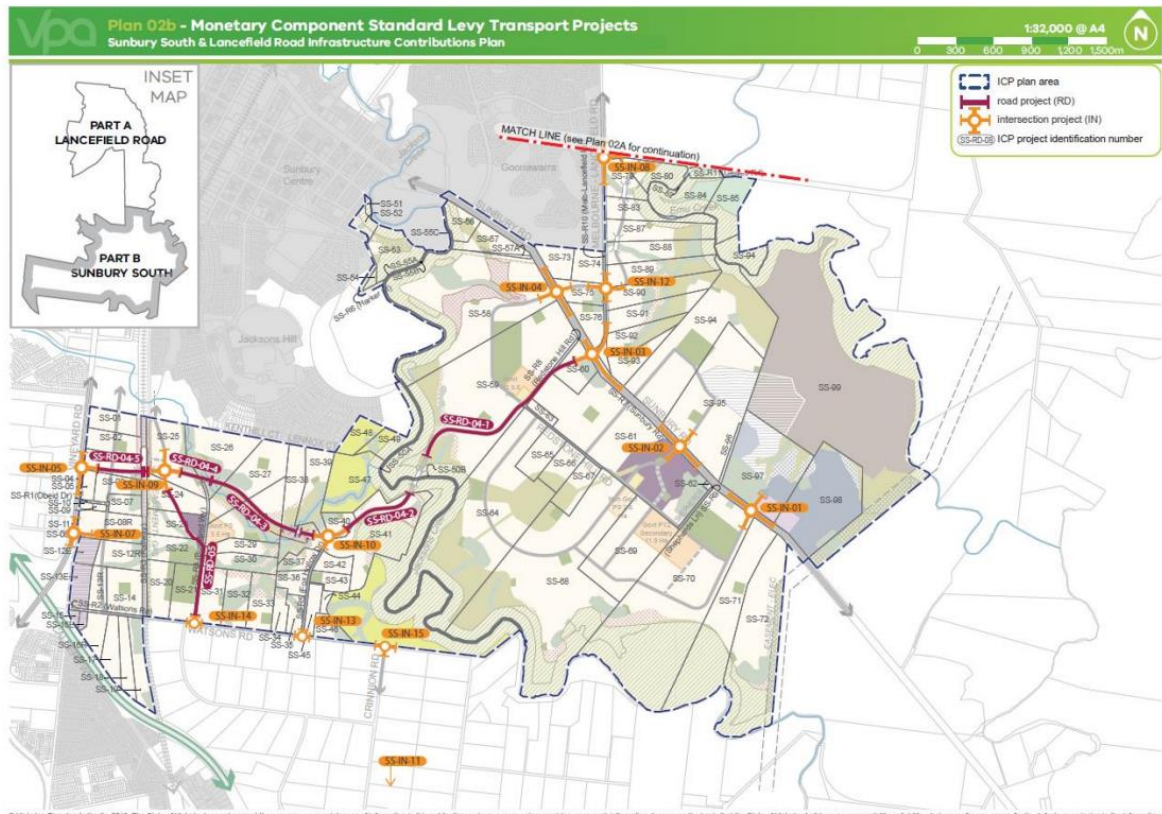


Figure 7.3 – Supplementary Levy Transport Projects (Lancefield Road) - Plan 3a

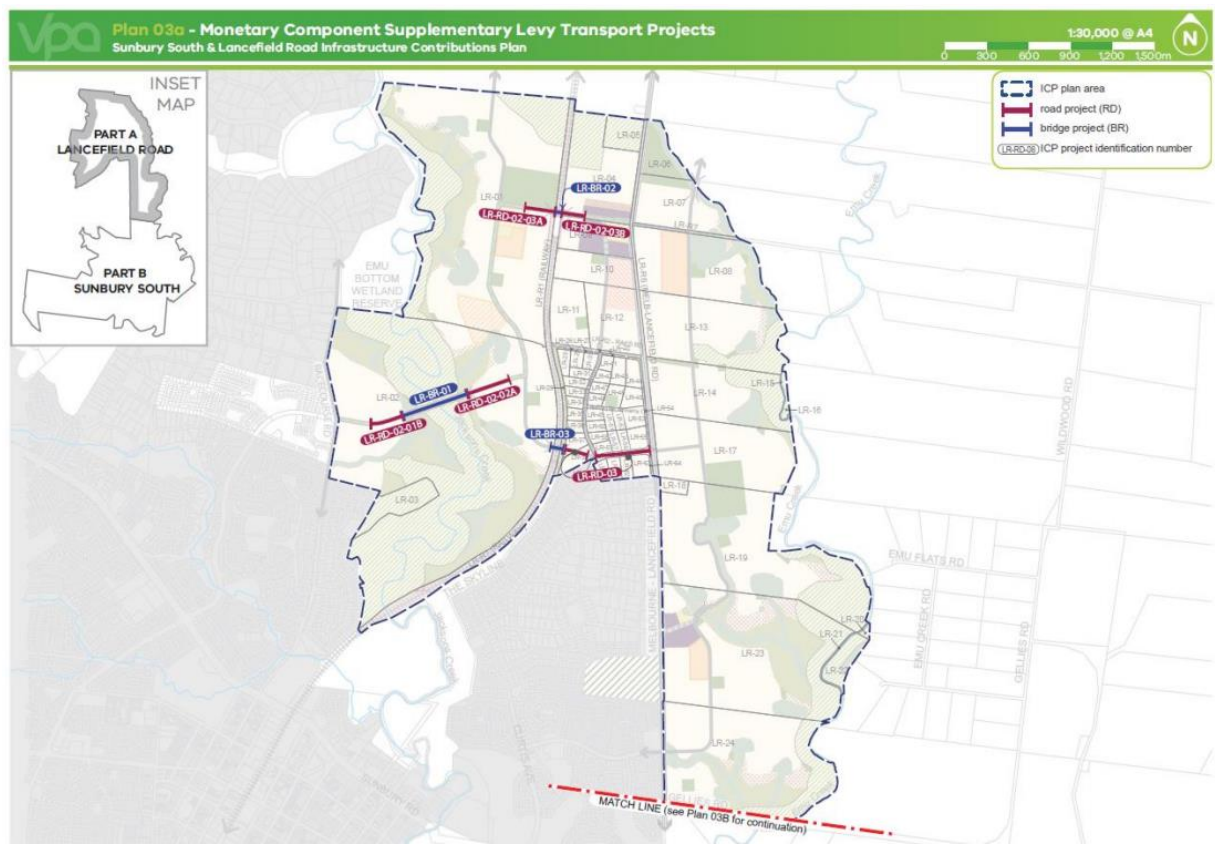
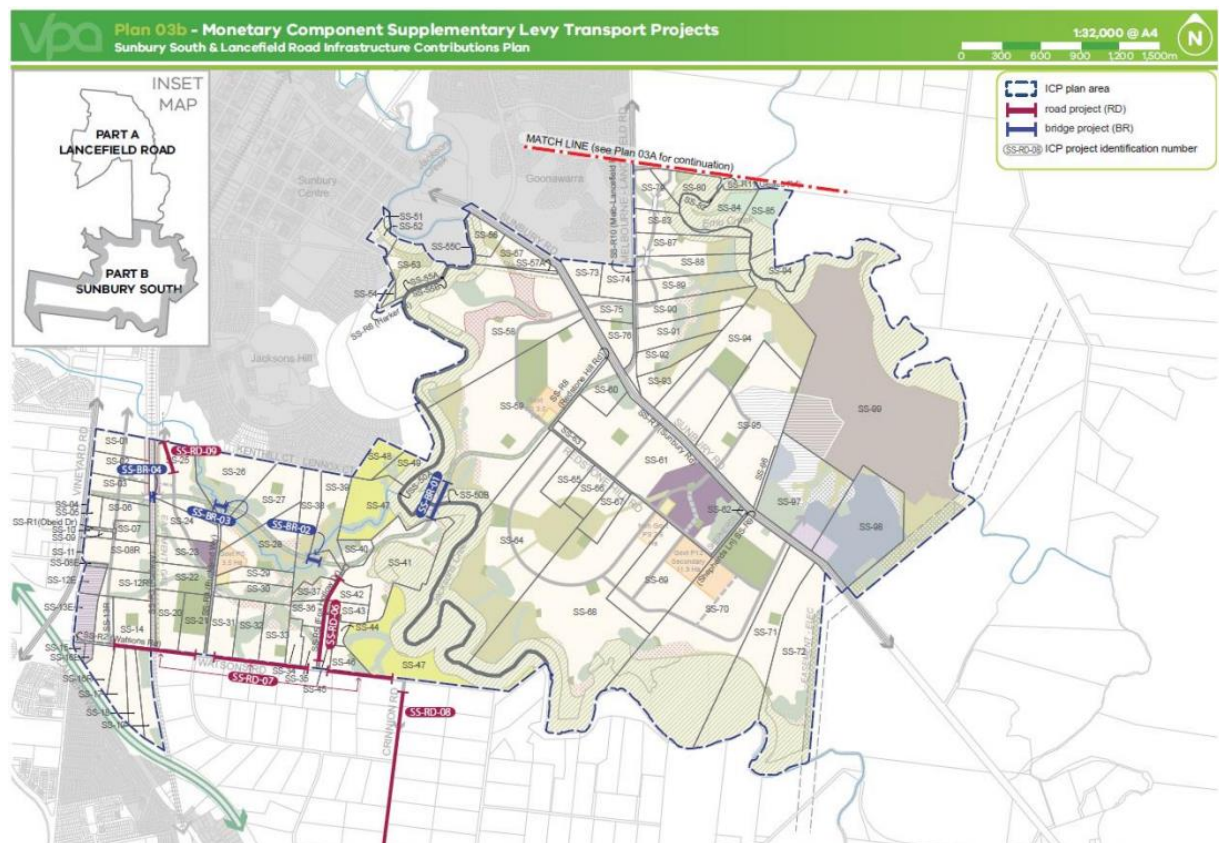


Figure 7.4 – Supplementary Levy Transport Projects (Sunbury South) - Plan 3b

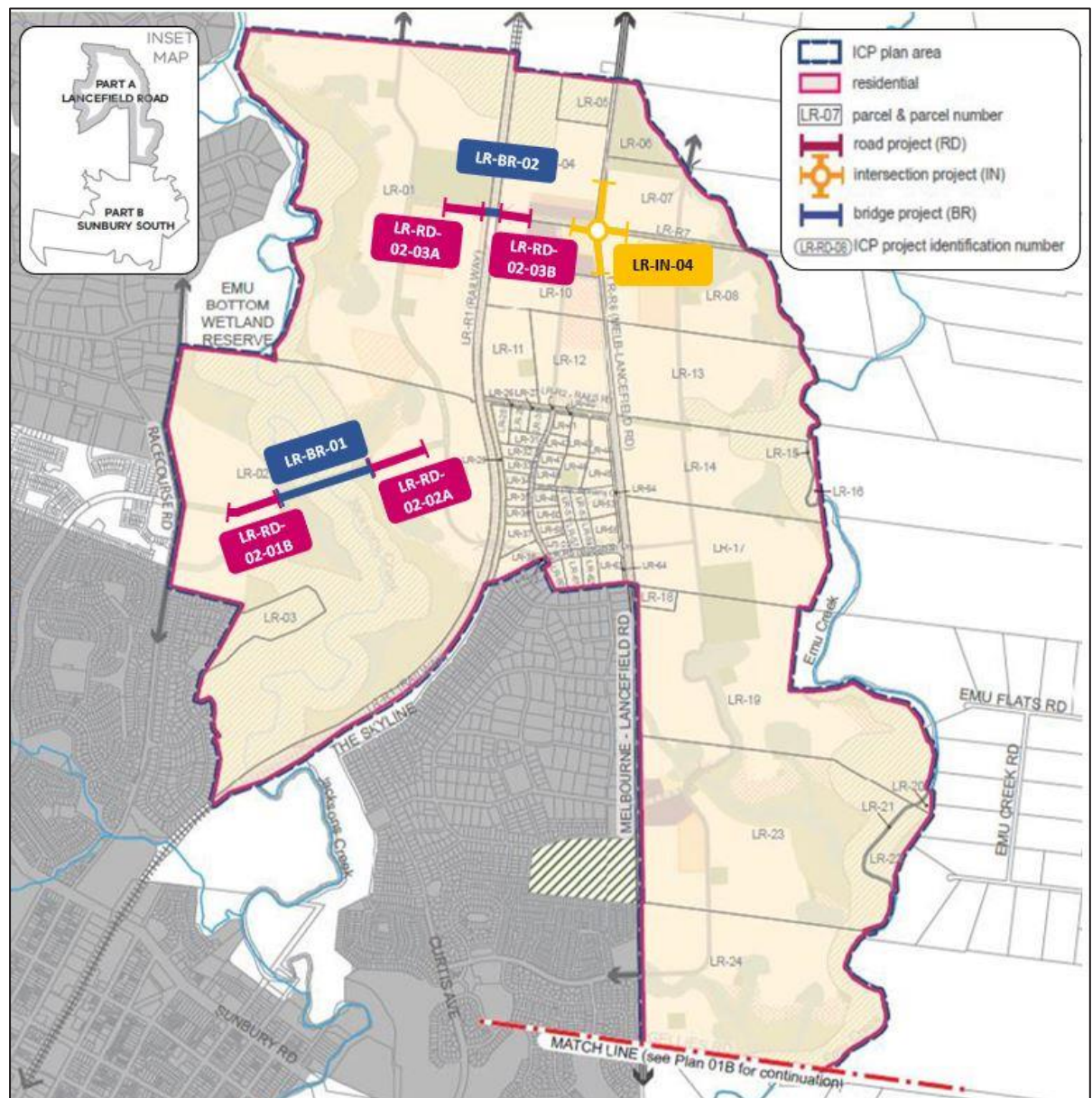


- 7.3.5 It is noted that an external contribution of 26% of the total cost of construction of four bridges has been included in the exhibited ICP, contributing to a two lane bridge over Jacksons Creek (LR BR 01) and an underpass of the railway line (LR BR 02) to facilitate the Northern Link through the Lancefield Road PSP area and similarly for a two lane bridge over Jacksons Creek (SS BR 01) and an underpass of the Sunbury rail line (SS BR 04) to facilitate the Southern Link through the Sunbury South PSP.
- 7.3.6 The external contribution towards these projects, totalling **\$44.49** million is attributed to the Sunbury North and Sunbury West PSP, which are understood to yet to be completed.
- 7.3.7 In addition the upgrading of the Sunbury Road / Lancefield Road intersection (SS IN 03) has been assigned an external contribution of 75% through the MRPA Northern Roads Upgrade Project which is proposed to also fund the duplication of Sunbury Road and Lancefield Road. As such, the ICP is effectively funding the southern leg of the upgraded intersection, which is the easterly connection of the Southern Link Road to the arterial network.
- 7.3.8 The balance of the construction of the Northern and Southern Link Roads is proposed to be funded by the ICP, including:
- the intersections of the Northern Link Road to Lancefield Road (LR IN 04),
  - the intersection of the Southern Link Road to Vineyard Road (SS IN 05),
  - additional bridges over Harpers Creek (SS BR 02 and SS BR 03),
  - road connections to complete the Northern Link Road with the exception of the north south section between LR RD 02 02A and LR RD 02 03A (LR RD 02 01B, LR RD 02 02A, LR RD 02 03A and LR RD 02 03B),
  - road connections to complete the Southern Link Road (SS RD 04 01, SS RD 04 02, SS RD 04 03, SS RD 04 04 and SS RD 04 05).
- 7.3.9 The projects required to be completed to establish the Northern and Southern Link Road connections between Lancefield Road and Racecourse Road and Sunbury Road and Vineyard Road are illustrated in Figure 7.5.

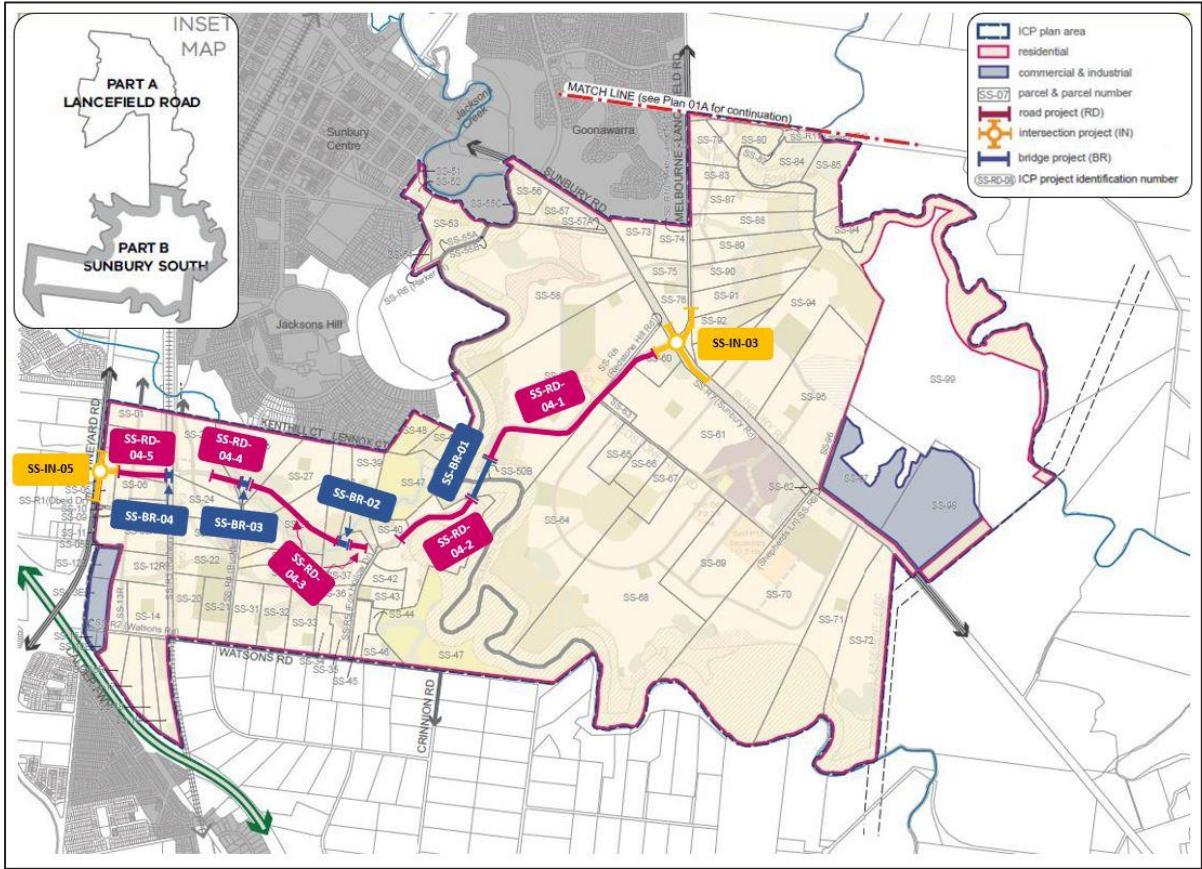


Figure 7.5 – ICP Projects Establishing The Northern and Southern Link Roads

### Northern Link Road



Southern Link Road



7.3.10 The overall cost of establishment of the Northern and Southern Link Roads and the proportion being funded by the ICP is shown in Table 7.2.

**Table 7.2 - Northern and Southern Link Roads – Proposed Overall ICP Funding Contributions**

**Northern Link Road**

Project	Total Cost	ICP Contribution	External Contribution	ICP % Contribution
LR RD 02 01B	\$5.80 m	\$5.80 m	-	100%
LR RD 02 02A	\$25.03 m	\$25.03 m	-	100%
LR RD 02 03A	\$6.47 m	\$6.47m	-	100%
LR RD 02 03B	\$5.93 m	\$5.93m	-	100%
LR IN 04	\$6.74 m	\$ 6.74 m	-	100%
LR BR 01	\$103.87 m	\$76.86 m	\$27.01 m	74%
LR BR 02	\$8.22 m	\$8.22 m	\$2.14 m	74%
<b>Total</b>	<b>\$162.05 m</b>	<b>\$132.91 m</b>	<b>\$29.14 m</b>	<b>82%</b>

**Southern Link Road**

Project	Total Cost	ICP Contribution	External Contribution	ICP % Contribution
SS RD 04 01	\$15.47 m	\$15.47 m	-	100%
SS RD 04 02	\$6.40 m	\$6.40 m	-	100%
SS RD 04 03	\$12.37 m	\$12.37 m	-	100%
SS RD 04 04	\$3.54 m	\$3.54 m	-	100%
SS RD 04 05	\$20.47 m	\$20.47 m	-	100%
SS IN 03	\$8.11 m	\$2.03 m	\$6.08 m	75%
SS IN 05	\$5.25 m	\$5.25 m	-	100%
SS BR 01	\$41.73 m	\$30.88 m	\$10.85 m	74%
SS BR 02	\$2.98 m	\$2.98 m	-	100%
SS BR 03	\$0.47 m	\$0.47 m	-	100%
SS BR 04	\$17.28 m	\$12.79 m	\$4.49 m	74%
<b>Total</b>	<b>\$134.06 m</b>	<b>\$112.63 m</b>	<b>\$21.43</b>	<b>84%</b>

7.3.11 It is noted that, when the overall construction of the Link Roads is considered, it is proposed that the ICP will fund **82%** of the cost of the establishment of the Northern Link and **84%** of the Southern Link. The contribution towards establishment of the two link roads attracts ICP funding of **\$245.54 m**, or **57.8%** the total ICP contribution to transport related projects.

## 8 Traffic Modelling

### 8.1 Sunbury and Diggers Rest Growth Corridor Modelling 2015

- 8.1.1 GTA Consulting were commissioned in 2015 by the VPA (formerly MPA) in consultation with VicRoads and Hume Council to undertake strategic transport modelling of the Sunbury and Diggers Rest Growth Corridor to determine the transport demands expected to occur in association with the urban development of the Sunbury South and Lancefield Road PSPs.
- 8.1.2 The study focused on the transport network requirements of 75% and 100% of development of the two PSP areas by the year 2046, in association with parallel urban development elsewhere within the corridor. In particular the modelling tested the requirement for additional east west road connections across Jacksons Creek and as well as other transport infrastructure potentially required to support the two PSPs.
- 8.1.3 Modelling was undertaken by adapting and building on the Victorian Integrated Transport Model (VITM) developed for the North Growth Corridor by SKM to reflect the land use and transport link options being considered for the two PSPs.
- 8.1.4 A number of key transport infrastructure items were considered and modelled, including the following:
- The construction of a southern link crossing of Jacksons Creek in PSP 1074 (Sunbury South)
  - Developmental a rail station at Jacksons Hill in PSP 1074.
  - The construction of a northern creek crossing of Jacksons Creek in PSP 1075 (Lancefield Road)
  - Development of a rail station in PSP 1075.
  - The construction of an additional road connection to the Calder Freeway south of PSP 1074.
  - Construction of the OMR by 2046.
- 8.1.5 Nine different combinations for provision of infrastructure were modelled assuming the land uses forecast for ultimate development by 2046 and an interim scenario of 75% of completion.
- 8.1.6 For each option, it was assumed that the Bulla Bypass was constructed to the south east.
- 8.1.7 The nine options tested are summarised in Table 8.1.

**Table 8.1 – GTA Strategic Modelling– Options Tested (2046)**

Option	Creek Crossing in PSP 1074	Railway Station in PSP 1074 (Jacksons Hill Station)	Creek Crossing in PSP 1075	Railway Station in PSP 1075 (Raes Road Station)	Additional Connection to Calder Highway south of PSP 1074	Comments
1	✓	✓	✓	✓		
2	✓	✓		✓		
3			✓	✓		
4				✓		
5	✓	✓	✓	✓	✓	
6	✓	✓	✓	✓	✓	No OMR
7	✓	✓		✓	✓	No OMR
8			✓	✓	✓	No OMR
9				✓	✓	No OMR

- 8.1.8 The modelled 2046 daily volumes for 7 key network links were extracted as shown in Table 8.2, with the Link Volume Key Locations shown in Figure 8.1.



Figure 8.1 – GTA October 2015, Link Volume Key Locations

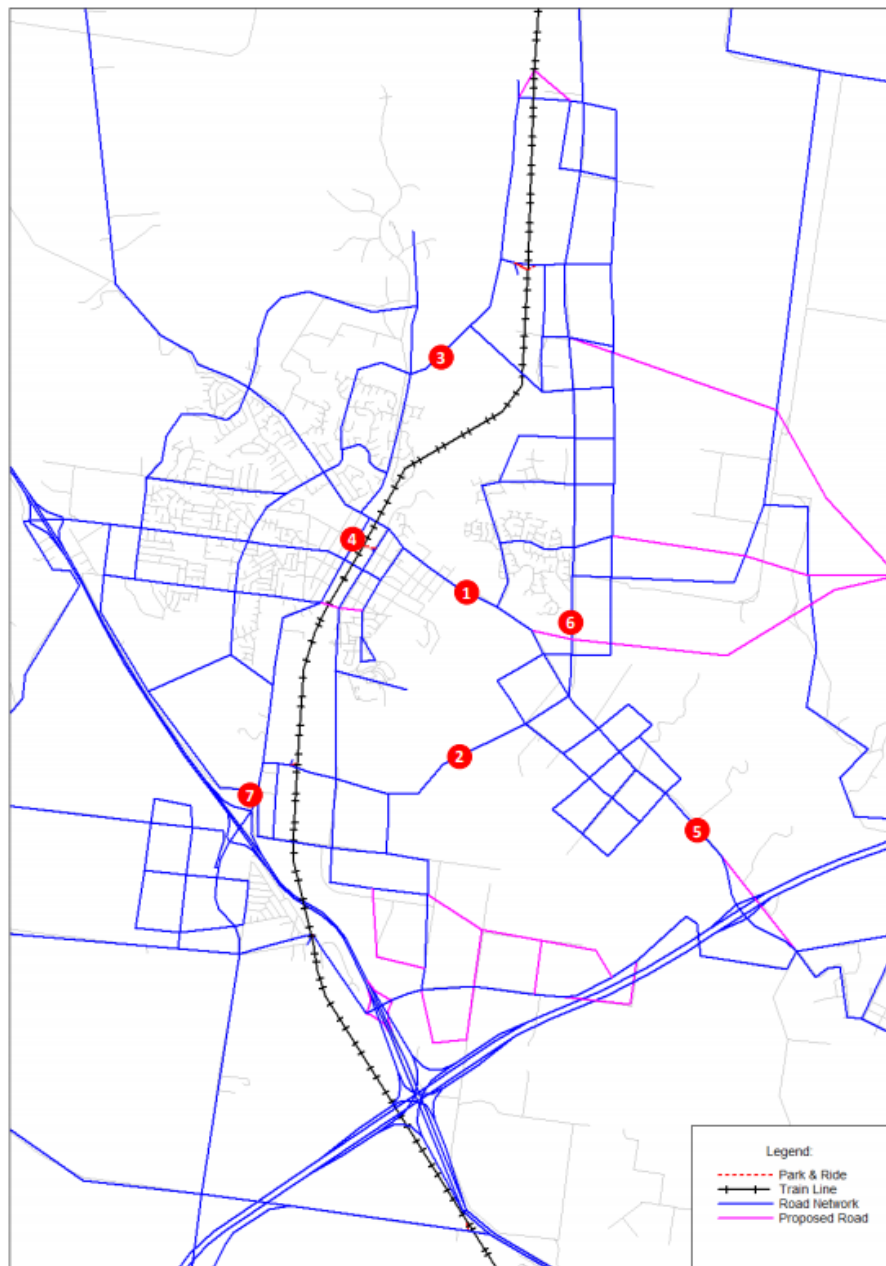


Table 8.2 - Daily Volume Links – 2046 (two-way combined)

No	Road Name	2011	Opt1	Opt2	Opt3	Opt4	Opt5	Opt6	Opt7	Opt8	Opt9
1	Sunbury Road between Evans Street and Francis Boulevard	23,200	37,600	44,400	40,500	47,900	37,900	43,800	44,200	49,300	59,000
2	Jacksons Creek Crossing in Sunbury South PSP	-	10,600	11,200	-	-	11,100	20,800	21,500	-	-
3	Jacksons Creek Crossing in Lancelfield Road PSP	-	14,300	-	15,200	-	14,300	17,400	-	18,700	-
4	Home Street between Gap Road and Riddell Road	16,300	24,100	24,200	26,900	24,600	24,000	28,000	27,800	33,100	32,800
5	Sunbury Road north of Bulla-Diggers Road	24,600	79,900	80,900	79,800	80,700	80,100	60,000	53,000	64,500	64,800
6	Melbourne-Lancelfield Road south of Gellies Road	7,800	40,700	46,200	38,800	44,900	41,000	34,200	40,300	30,600	39,500
7	Vineyard Road north of interchange	17,900	53,300	53,200	54,600	54,400	52,300	60,700	63,300	59,500	59,000

- 8.1.9 The modelling also projected train station usage for the existing Sunbury Station and the two additional stations under consideration for each scenario, with daily patronage levels for each scenario tested summarised in Table 8.3.

**Table 8.3 - Sunbury Corridor – Modelled Rail Station Utilisation (Daily) (Source GTA Oct 2015)**

Station		2011 Base	Interim Year	2046 Opt1	2046 Opt2	2046 Opt3	2046 Opt4	2046 Opt5	2046 Opt6	2046 Opt7	2046 Opt8	2046 Opt9
Sunbury South Station	Boarding	-	-	12,514	12,530	-	-	12,433	11,877	11,674	-	-
	Alighting	-	-	10,796	10,807	-	-	12,326	11,733	11,685	-	-
Sunbury Station	Boarding	5,212	12,341	8,872	9,106	12,426	12,687	8,831	10,189	10,418	13,547	13,855
	Alighting	4,372	12,862	9,213	9,565	11,028	11,417	9,131	10,615	11,017	12,154	12,526
Roes Road Station	Boarding	-	-	18,026	18,370	18,368	18,688	17,953	20,364	20,688	19,578	20,035
	Alighting	-	-	17,144	17,394	17,399	17,617	17,084	19,262	19,469	18,497	18,877
Total	Boarding	5,212	12,341	39,412	40,006	30,794	31,375	39,217	42,430	42,780	33,125	33,890
	Alighting	4,372	12,862	37,153	37,766	28,427	29,034	38,541	41,610	42,171	30,651	31,403

- 8.1.10 The results of the modelling undertaken are understood to have informed the preparation of the Sunbury South and Lancefield Road PSPs as exhibited and the subsequent inclusion of the following infrastructure items in the PSPs:

- the southern connector link across Jackson Creek within the Sunbury South PSP,
- connections to the south to Watsons Road to provide an alternate link to Bulla Diggers Rest Road and the Calder Freeway via Fox Hollow Drive and Crinnion Road,
- connections to Jacksons Hill, and
- the northern connector link across Jacksons Creek within the Lancefield Road PSP.

## 8.2 Sunbury Growth Corridor DCP Modelling Supplementary Report 2017

### Overview

- 8.2.1 GTA was subsequently commissioned in November 2016 by Villawood and Capitol Property Group to assess the impact of initial development within Sunbury South and Lancefield Road PSPs and to model the likely impact of development on the existing road network, particularly to Sunbury Road and within the Sunbury Town Centre.
- 8.2.2 Options for mitigating works were considered in conjunction with initial development including:
- Do nothing (ie. no initial mitigating works)
  - Construction of the southern creek crossing and a link to Watson Road and the Calder Freeway via Bulla Diggers Rest Road
  - Duplication of the Bulla Bridge
  - Duplication of Sunbury Road between Bulla Diggers Rest Road and Wildwood Road, and
  - Duplication of Sunbury Road from Vineyard Road to Wildwood Road.
- 8.2.3 Scenarios tested represented **25%** of development by 2021 (equivalent to 5000 additional lots in the PSP areas, and 8000 additional lots in the wider area) and **50%** by 2026 (equivalent to 10,000 additional lots in the PSP areas and 16,000 overall).
- 8.2.4 Variations of the options were subsequently modelled for progressive development scenarios as shown in Table 2.1 of the November 2016 report reproduced in Table 8.4.



**Table 8.4 – Modelled Options for Mitigating Works (Source: GTA Table 2.1 October 2016)**

Description	Ref. Case	Do Nothing	Option				
			1	2	3	4	5
Development Assumed	0%	25% & 50%	25% & 50%	25% & 50%	25% & 50%	25%	25% & 50%
Jackson Creek Crossing (1 lane in each direction)			✓	✓			✓[1]
Bulla Bridge Duplication (2 lanes in each direction)				✓	✓		
Sunbury Road Duplication between Wildwood Road and Bulla – Diggers Rest Road (2 lanes in each direction)					✓		
Sunbury Road Full Duplication between Vineyard Road and Wildwood Road (2 lanes in each direction)						✓	

Ref. Case = Reference Case (no development in PSPs)

Development Assumed is for PSP's of Lancefield Road, Sunbury South, Sunbury North, Diggers Rest and Sunbury West

Note: Options 1 to 5 above are different to the Option numbering in the 2015 Report in Table 1.1

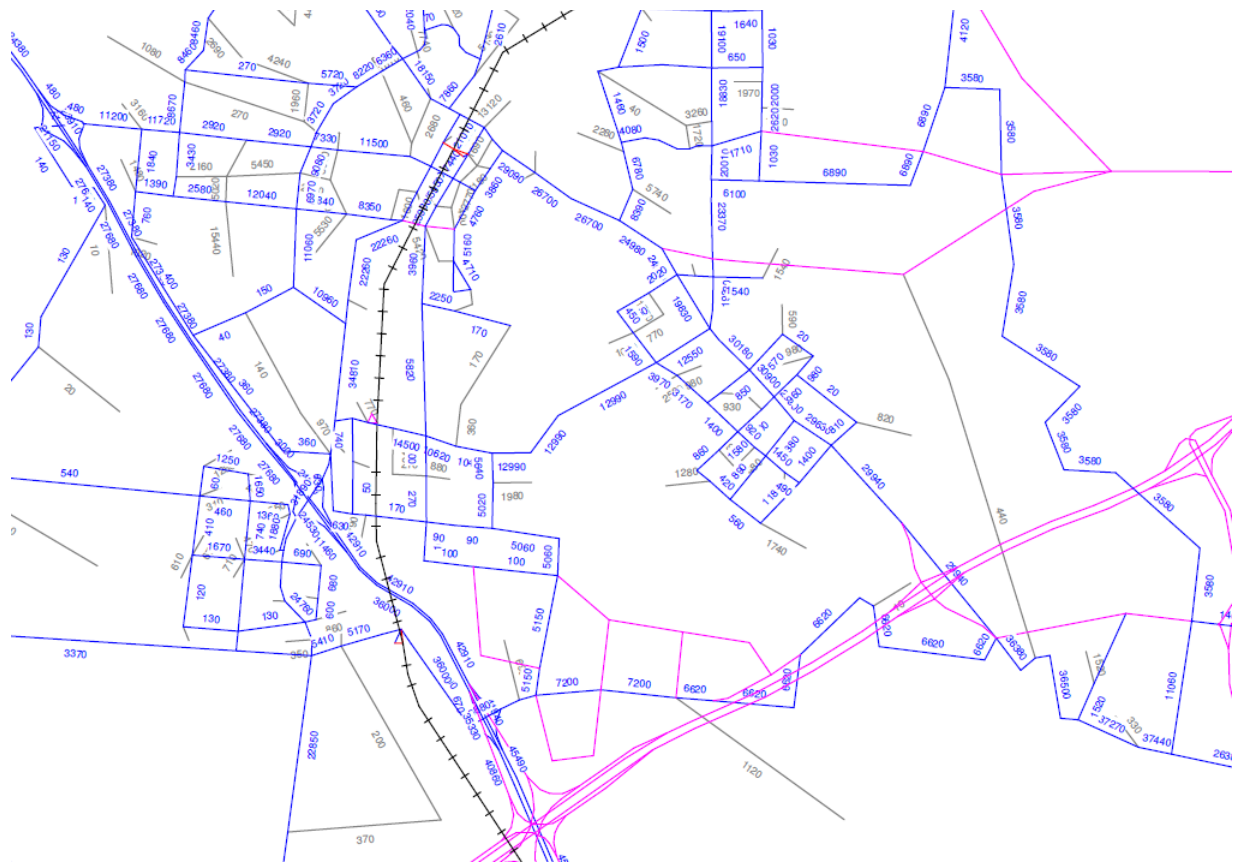
[1] Same scenario as Option 1, except for an at-grade railway level crossing.

- 8.2.5 The aim of the option testing was noted as being to model the relative benefit that potential new links or capacity increases would have on Sunbury Road south of Lancefield Road and on streets within Sunbury Town Centre.
- 8.2.6 Options 1 and 5 were designed to assess the implications of the construction of the southern creek crossing and connections to Watson Road and / or Vineyard Road, while Options 2, 3 and 4 were designed to assess the implications of capacity increases to Sunbury Road, through partial or complete duplication.
- 8.2.7 The report provides details of the analysis undertaken and concludes that the provision of the southern creek crossing of Jacksons Creek and commensurate connections to the south via Watson Road as tested in Option 1, resulted in a net reduction of traffic through Sunbury Town Centre and a shift in traffic movements towards the Calder Freeway, such that traffic increases on Sunbury Road south of Lancefield Road are avoided (or minimised).

#### **Traffic Modelling of Southern Creek Crossing**

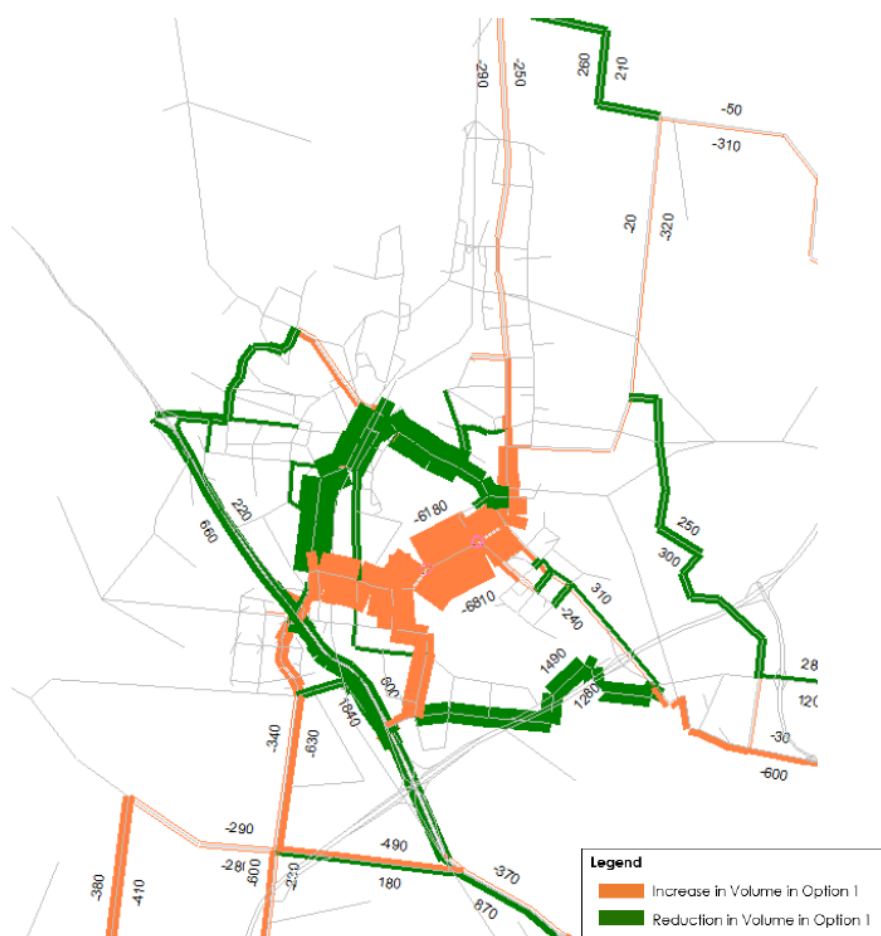
- 8.2.8 Traffic modelling for Option 1 was undertaken assuming 25% of development of the Sunbury South and Lancefield Road PSPs by 2021 and construction of the eastern section of the Southern Creek Crossing and connection to Watsons Road.
- 8.2.9 Development of 8,000 additional lots was assumed by 2021 in the Sunbury / Diggers Rest Corridor, including 5000 new dwellings in the Sunbury South and Lancefield Road PSPs, generating additional volumes of 39,784 vehicle movements per day or 7.96 movements per dwelling per day.
- 8.2.10 Modelled 2021 daily volumes with the southern creek crossing in place are provided in the Appendix to the report reproduced in part in Figure 8.2.

**Figure 8.2 - Daily Volume Plot – Sunbury Growth Corridor Option 1 – 25% Development Scenario (Source GTA November 2017)**



- 8.2.11 The modelling showed that the southern link would be likely to attract in the order of **12,500** vehicles per day, resulting in moderation of traffic growth on Sunbury Road and Vineyard Road and a reduction in movements through Sunbury Town Centre.
- 8.2.12 The net changes to daily volumes, as modelled by GTA in 2017 with the southern Jackson Creek crossing in place are shown in Figure 8.3.

Figure 8.3 Daily Volume Changes 2021 (Option 1 vs Do Nothing) – Source GTA 2017 Fig 3.1)



8.2.13 Based on this modelling, the construction of the southern Jackson Creek crossing could be expected to:

- Reduce traffic volumes through Sunbury Town centre by up to 10,000 vehicles per day.
- Reduce traffic on Bulla Diggers Rest Road south of Sunbury Road by up to 3,000 vehicles per day.
- Moderate traffic growth on Sunbury Road by providing a direct access to the Bulla Diggers Rest interchange to the Calder Freeway.

## 8.3 Updated GTA Modelling 2020

### Overview

- 8.3.1 GTA consultants were commissioned by the VPA in 2020 to undertake updated and supplementary modelling for the Sunbury Growth Corridor in order to inform the Panel convened to consider Amendment C243 as to the implications of updated population figures in the Sunbury South and Lancefield Road PSPs and more recent population forecasts for Sunbury North and Sunbury West.
- 8.3.2 An initial supplementary report (#1) was subsequently issued on the 9<sup>th</sup> September 2020, with subsequent reports #2 and #3 provided on 25<sup>th</sup> September 2020.
- 8.3.3 As advised by Hall and Wilcox in a letter to the Panel dated 25<sup>th</sup> September 2020, each of the supplementary reports was intended to be read in conjunction with the GTA report dated 5<sup>th</sup> October 2015 as summarised in Section 8.1 above.

- 8.3.4 My assessment of the results of the additional modelling in relation to concerns expressed with respect to funding of the additional bridge crossings of Jacksons Creek and the benefits resulting from establishment of the Northern and Southern Link Roads is as follows.

**Sunbury Growth Corridor Supplementary Modelling Report #1 (9 September 2020)**

- 8.3.5 The initial supplementary modelling report issued by GTA on 9<sup>th</sup> September provided updated modelling for “Option 5” of the 2015 report which was the option which included creek crossings of Jackson Creek within both the Lancefield Road and Sunbury South PSP areas, effectively reflecting the PSPs as finally adopted.
- 8.3.6 It also assumes that by 2046, the Outer Metropolitan Ring Road will be completed and that additional railway stations are established within both PSP areas.
- 8.3.7 The modelling for Option 5 (as undertaken in 2015) was based on 2011 population projections for population growth in metropolitan Melbourne through to 2016. The population forecasts were subsequently upgraded in 2018, when it was estimated that Melbourne’s population would increase to 8.01 million people, 1.5 million more than the 2011 estimates used in the initial modelling.
- 8.3.8 The #1 Report notes that projected increases between the 2011 and 2018 estimates were predominantly in other growth areas such as Hume, Whittlesea, Melton and Wyndham but noted in relation to the Sunbury Growth Corridor:

*“In terms of the Sunbury Growth Corridor, some of the land use for Sunbury South and Lancefield Road has been included in the 2018 population forecasts, however the total for Sunbury was estimated at just over 88,000 people which is approximately 33,000 less than the figure used in the 2015 report.*

*“In the interests of maintaining consistency with the previous work, the land use estimates for Sunbury have not been updated.”*

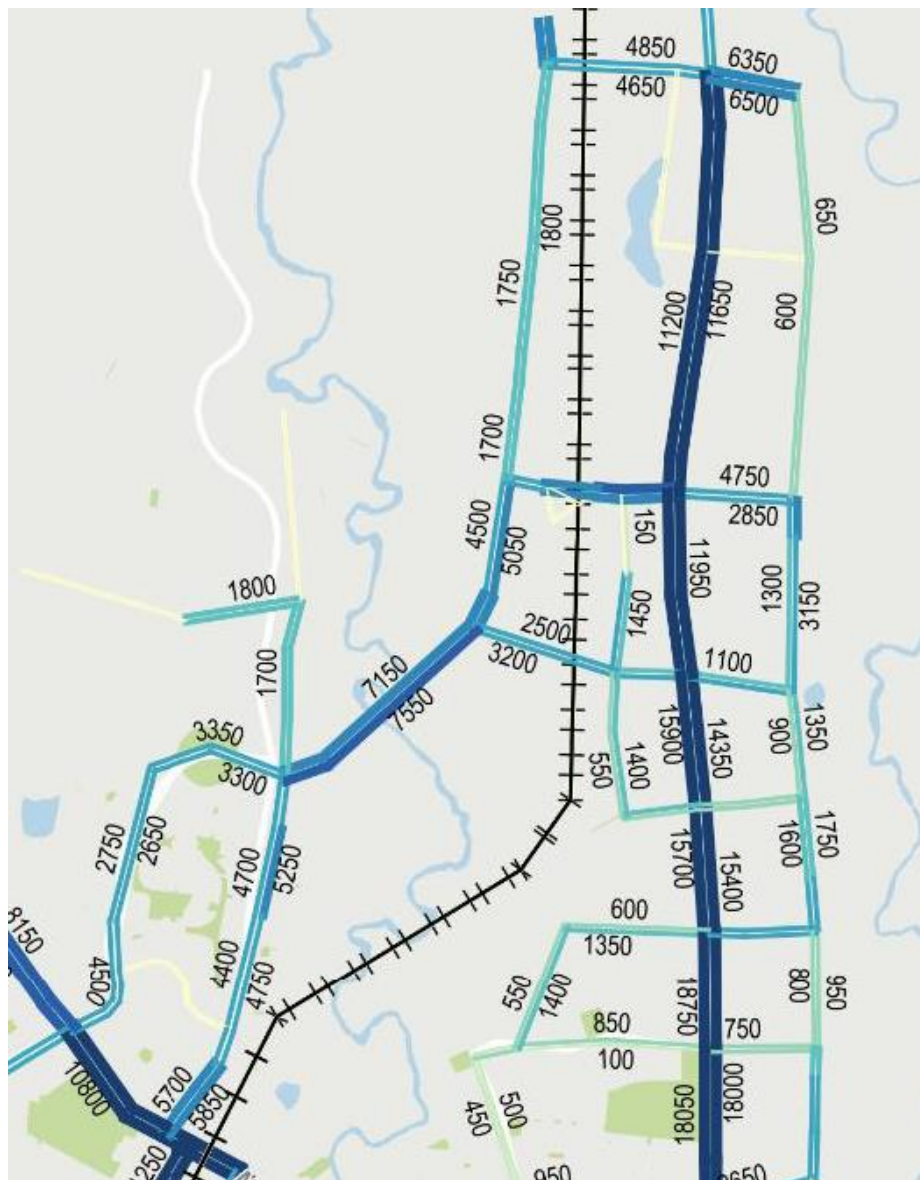
- 8.3.9 The report also notes that a number of significant transport projects have been announced across metropolitan Melbourne since the 2015 report, in particular the West Gate Tunnel Project. The impact on travel patterns in Sunbury was not considered to be significant and as such, transport network assumptions were also not altered in the updated modelling.
- 8.3.10 The updated modelling, not surprisingly given no change to population projections in the Sunbury region or changes to the transport network, reports very similar modelled daily volumes for key road links in the Sunbury area as shown in Table 4.1 of the report reproduced in Table 8.5.

**Table 8.5 – Daily Link Volumes for Option 5 (two way combined) (Source: GTA Table 4.1 9 September 2020)**

No	Road Name	2015 Reported	Updated Model	Difference	%
1	Sunbury Road between Evans Street and Francis Boulevard	37,900	35,800	-2,100	-6%
2	Jacksons Creek Crossing in Sunbury South PSP	11,100	11,300	200	2%
3	Jacksons Creek Crossing in Lancefield Road PSP	14,300	14,700	400	3%
4	Horne Street between Gap Road and Riddell Road	24,000	24,100	100	0%
5	Sunbury Road north of Bulla-Diggers Road	80,100	76,800	-3,300	-4%
6	Melbourne-Lancefield Road south of Gellies Road	41,000	40,800	-200	0%
7	Vineyard Road north of interchange	52,300	52,200	-100	0%

- 8.3.11 The 2016 daily volume plots for the northern creek crossing is shown in Figure 4.1 of the GTA report reproduced in Figure 8.4.

Figure 8.4 - 2046 Daily Volume Plot Northern Creek Crossing Area – (Source GTA 9 September 2020 Fig 4.1)



- 8.3.12 The modelling shows the northern creek crossing carrying daily volumes of 14,700 vpd, a 3% increase on the 2015 modelled daily volumes.
- 8.3.13 The modelling appears to show traffic using the link predominantly as a connection to Racecourse Road and hence south towards Sunbury Town Centre (rather than continuing west along Elizabeth Drive).
- 8.3.14 Movements towards the creek crossing from the Lancefield Road area appear to be predominantly from the north generated from the future Sunbury North PSP area as well as the Lancefield Road area.
- 8.3.15 It is noted that the modelled network includes three east west crossings of the rail line from Lancefield Road, including one within the future Sunbury North PSP area. It also assumes a westerly extension of Raes Road across the railway line, carrying 5700 vehicles per day. This is inconsistent with the gazetted PSP street network which truncates Raes Road at the railway line, with the crossing further south at Balbethan Drive as shown in Figure 8.5.

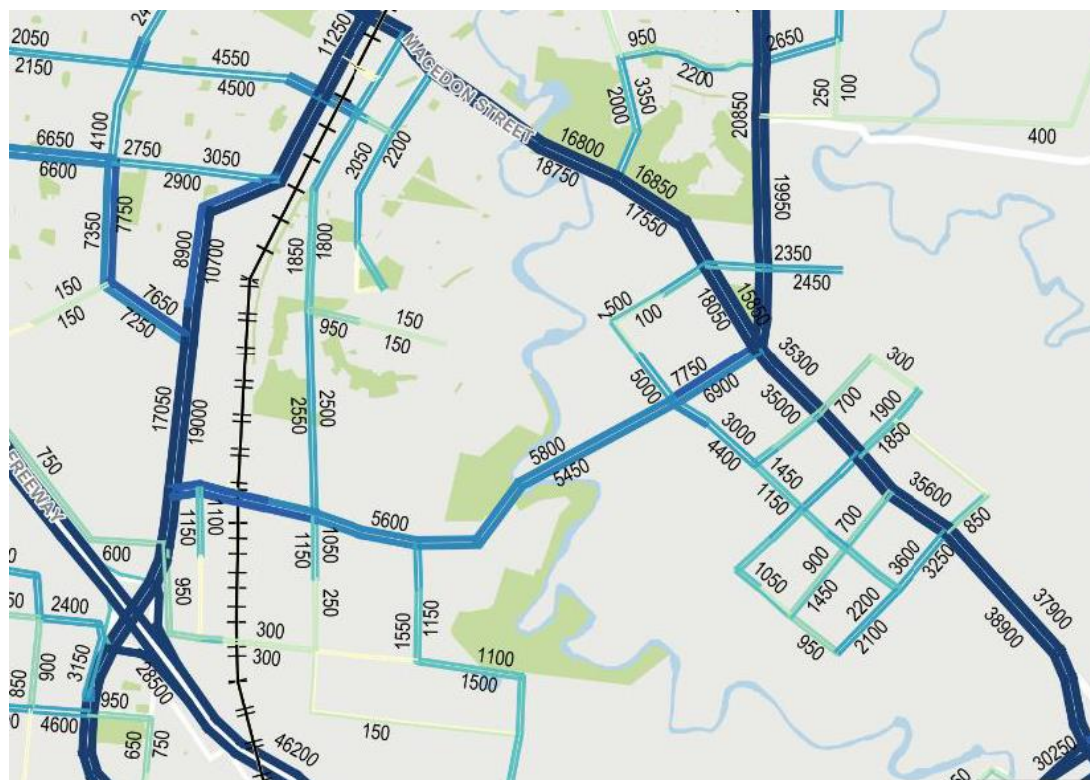
**Figure 8.5 – Lancefield Road PSP Street Network Plan – Railway Crossing Locations**



- 8.3.16 It is unclear whether the assumed direct connection from Raes Road to the Northern Link has resulted in higher modelled volumes for the Northern Link Bridge, compared with the adopted rail crossing 700 metres to the south.
- 8.3.17 The 2016 daily volume plots for the southern creek crossing is shown in Figure 4.1 of the GTA report reproduced in Figure 8.6.
- 8.3.18 The modelling shows the southern creek crossing carrying 11,300 vehicles per day, a 2% increase on the comparable 2015 modelling.
- 8.3.19 Volumes on Redstone Hill Road immediately south of Lancefield Road are modelled at 14,650 vpd suggesting that traffic modelled using the Southern Link bridge has a significant component from Lancefield Road and Macedon Street, including traffic generated from existing estates in the Goonawarra area.



**Figure 8.6 - 2046 Daily Volume Plot Southern Creek Crossing Area – (Source GTA 9 September 2020 Fig 4.1)**



#### **Sunbury Growth Corridor Supplementary Modelling Report #2 (25 September 2020)**

- 8.3.20 Following review of the initial updated report the VPA further instructed GTA to prepare an addendum report, updating the population figures in the modelling:
- In accordance with the PSPs for Sunbury South and Lancefield Road; and
  - In accordance with Councils current figures for Sunbury North and Sunbury West Precincts.
- 8.3.21 Supplementary Report #2 was subsequently filed on 25<sup>th</sup> September which updates the land use inputs for the two PSPs to reflect the population and employment projections contained within the gazetted PSPs, together with updated information for Sunbury North and Sunbury West.
- 8.3.22 The updated land use projections input into the Report #2 modelling are summarised in Table 3.2 of the report representing an increase of 16,521 people and 4,610 dwellings in the Sunbury Region including increases of:
- 2730 people in Sunbury South,
  - 420 people in Lancefield Road,
  - 8942 people in Sunbury North, and
  - 4430 people in Sunbury west.
- 8.3.23 Modest increases in jobs and student enrolments were also input, however no changes to the transport network are included.
- 8.3.24 The results of the modelling of daily volumes on key road links, compared with the initial addendum report are summarised in Table 4.1 of the #2 Report, reproduced in **Table 8.6**.



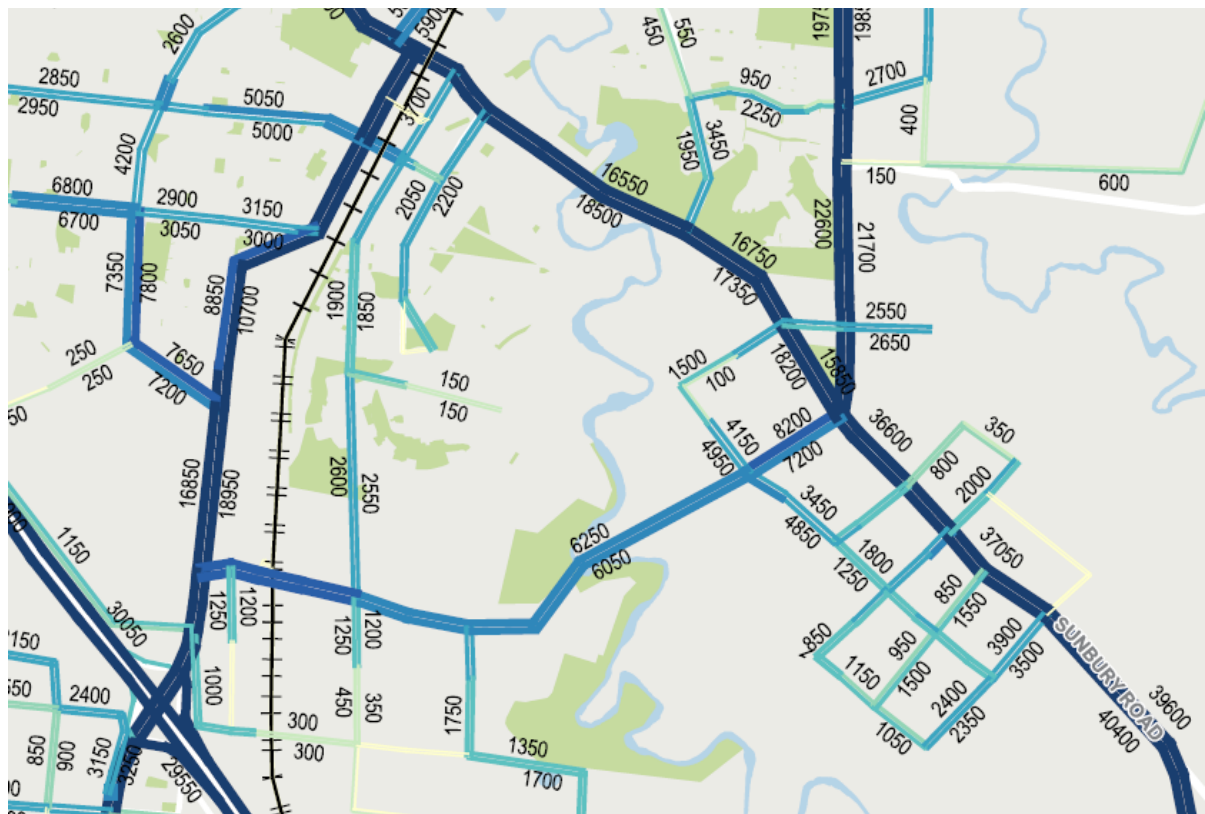


8.3.27 When compared with the similar plot within the Supplementary Report#1 as shown in Figure 8.4 above, the following is noted:

- The modelling still provides for the southern rail crossing at Raes Road rather than at Balbethan Drive as shown in the Lancefield Road PSP.
- Additional traffic using the Northern Link Bridge clearly results from additional traffic generation in the Sunbury North PSP area using the link as a connection to Sunbury Town Centre.

8.3.28 The plot of daily volumes on the road network in the vicinity of the Southern Creek Crossing as shown in Appendix B of the #2 Report is shown in Figure 8.8.

**Figure 8.8 2046 Daily Volume Plot Southern Creek Crossing Area – (Source Appendix B GTA Report #2 25 September 2020)**



8.3.29 When compared with the similar plot within the initial Supplementary Report as shown in Figure 8.6 above, the following is noted:

- Volume increases on the southern creek crossing of an additional 1000 vehicles per day is matched by commensurate increases on Redstone Hill Road south of Sunbury Road, Lancefield Road north of Sunbury Road and Macedon Street to the north west.
- This suggests that volumes using the Southern Link as modelled are increased as a result of increased population projections in Sunbury North and further transfers from existing areas as capacity on Sunbury Road is approached.

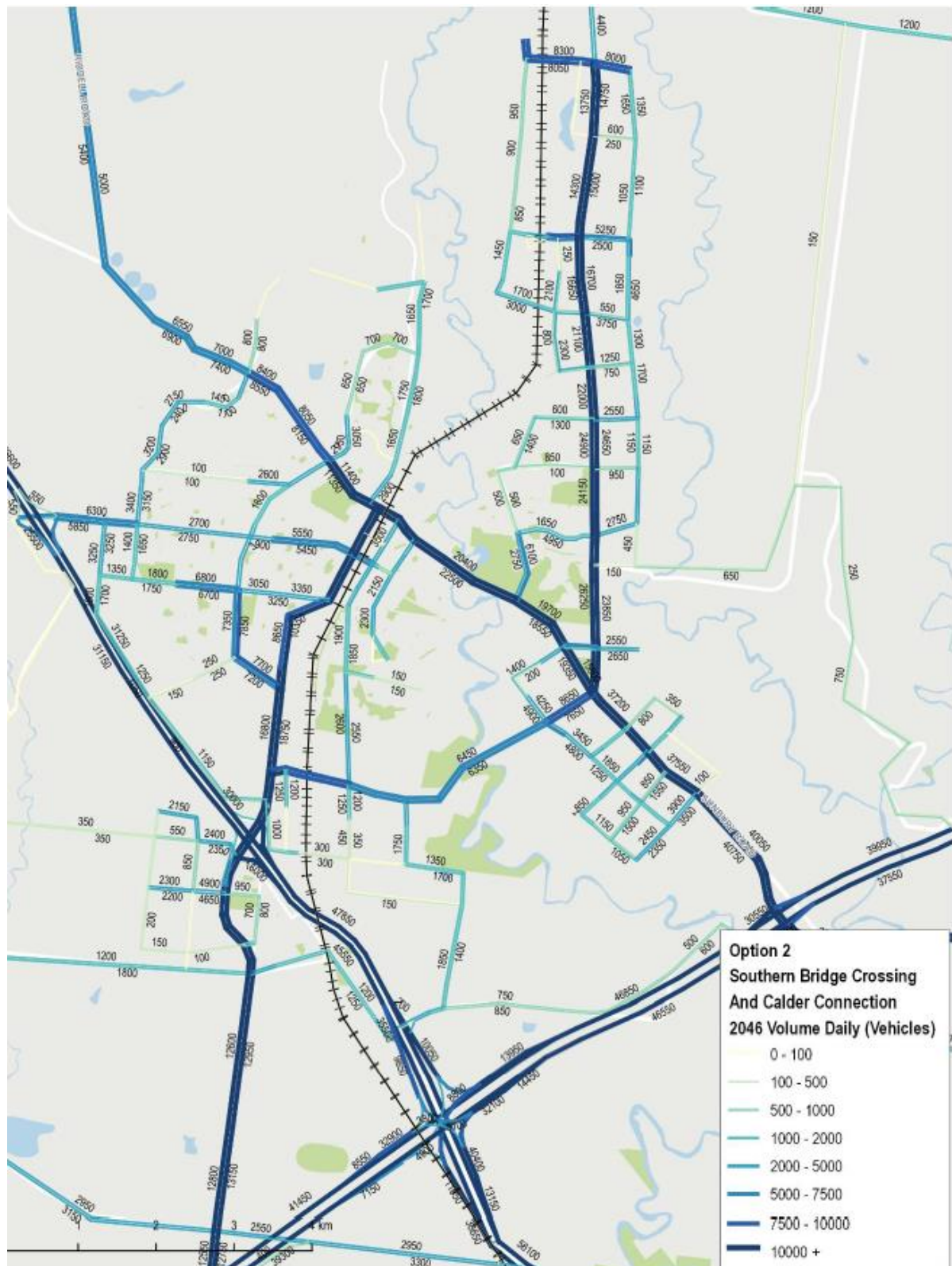
#### **Sunbury Growth Corridor Supplementary Modelling Report #3 (25 September 2020)**

8.3.30 Following completion of the initial addendum report on 9<sup>th</sup> September 2020, GTA was also instructed to undertake further modelling to test, using the updated population input into the initial Addendum Report #1 and the subsequent #2 Report, the implications of the Northern Link (LR BR 01) not being constructed.

8.3.31 The results of that modelling were presented in the Supplementary Modelling Report #3 filed on the 25<sup>th</sup> September 2020.

8.3.32 The modelling results, which are understood to provide a direct comparison of the implications of not constructing the Northern Link Crossing when compared with the updated modelling of Option 5 detailed in the #2 Report are shown in Figure 4.1 of the #3 Report, reproduced in Figure 8.9.

Figure 8.9 2046 Daily Volume Plot Without Northern Bridge – (Source Figure 4.1 GTA Report #3 25 September 2020)



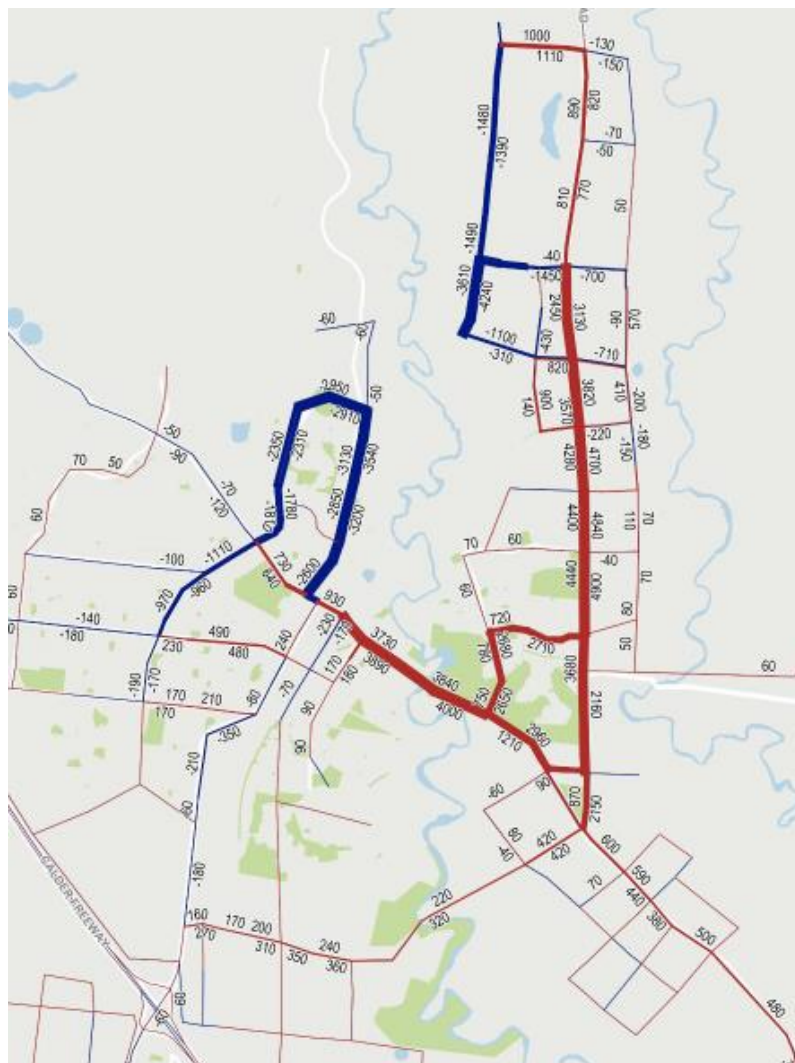
8.3.33 A comparison of the resultant daily volumes is shown in Table 4.1 of the GTA #3 Report reproduced in Table 8.7.

**Table 8.7 – Daily Link Volumes with and without the Northern Bridge - 2046** (Source: Table 4.1 GTA Report #3 25 September 2020)

No	Road Name	With Northern Bridge	Without Northern Bridge	Difference	%
1	Sunbury Road between Evans Street and Francis Boulevard	35,300	42,900	7,600	18%
2	Jacksons Creek Crossing in Sunbury South PSP	12,300	12,800	500	4%
3	Jacksons Creek Crossing in Lancefield Road PSP	15,700	0	N/A	N/A
4	Horne Street between Gap Road and Riddell Road	24,600	24,800	200	1%
5	Sunbury Road north of Bulla-Diggers Road	80,000	80,800	800	1%
6	Melbourne-Lancefield Road south of Gellies Road	44,300	50,100	5,800	12%
7	Vineyard Road north of interchange	53,900	53,900	0	0%

8.3.34 A plot of the daily volume differences is shown in Figure 8.10.

**Figure 8.10 2046 Daily Volume Plot Difference** (Source Figure 4.2 GTA Report #3 25 September 2020)



- 8.3.35 The results suggest that without the Northern Bridge Crossing, volume increases on the surrounding road network are moderate and confined effectively to Lancefield Road, north of Sunbury Road and Macedon Street between Racecourse Road and Lancefield Road.
- 8.3.36 Notably, volume increases on both the Southern Link bridge and Sunbury Road south east of Lancefield Road are moderate, clearly demonstrating that the benefit of the Northern Link is marginal and confined to improved access between the future Sunbury North PSP area and the Sunbury Town Centre.
- 8.3.37 The deletion of the link also results in significant reductions in traffic volumes on Racecourse Road and on roads within the Lancefield Road PSP.

## 9 Opinion on Issues

### 9.1 The Need for Inclusion of the Northern Link within the ICP.

- 9.1.1 It is considered that, based on the modelling results detailed in Supplementary Report #3, the benefits of construction of the Northern Link in overall traffic terms are marginal.
- 9.1.2 The construction of the Northern Link appears to predominantly cater for traffic movements between the Lancefield Road and Sunbury North PSP areas and Sunbury Town Centre, with deletion of the link resulting in marginal volume increases on Lancefield Road and Macedon Street only.
- 9.1.3 While the connection would be useful in accommodating local movements within northern Sunbury, I am satisfied that, in traffic terms, deletion of the link through modification to the Lancefield Road PSP and the subsequent removal of the project from the Sunbury South and Lancefield Road ICP could be considered without significant overall traffic impact.
- 9.1.4 Should the Northern Link be deleted from the ICP, the following road and bridge projects would become redundant:
- LR-RD-02-1B
  - LR-RD-02-02A
  - LR-BR-01.
- 9.1.5 Deletion of these projects would result in a reduction of **\$107.69** million from the ICP.
- 9.1.6 In addition, construction of the bridge over the Bendigo rail line (LR-BR-02) would have no regional benefit if the Link is not completed, effectively being only required to provide access to residential precinct with the Lancefield Road PSP to the west of the railway line. In these circumstances the project should not attract the external contribution of 26% as shown in the exhibited ICP, becoming 100% funded by the ICP.
- 9.1.7 The construction of the LR-BR-01 and LR-BR-02 as shown in the exhibited ICP includes an external contribution totaling **\$29.14** million attributable to the Sunbury North and Sunbury West PSP areas.
- 9.1.8 This contribution would not be required if the Northern Link is not pursued.
- 9.1.9 In the event that the Northern Link is not constructed, modelling suggests that ultimate traffic movements on Lancefield Road at Gellies Road will increase from 44,000 vehicles per day to around 50,000 vehicles per day.
- 9.1.10 The ICP allows for Lancefield Road to be upgraded to a six lane divided arterial road and the additional volumes without the Northern Link can be accommodated without modification to the proposed road cross-section. The ICP allows for the construction of a series of intersections along Lancefield Road to provide access to residential precincts on each side, with the intersection works 100% funded by the ICP.
- 9.1.11 It is possible that some intersection treatments as proposed may need to be upgraded as a consequence of the additional through movement on Lancefield Road resulting from the deletion of the Northern Link. In my opinion, if the Northern Link is not pursued, additional analysis should be undertaken with respect to potential intersection upgrades, with additional works costed into the ICP.
- 9.1.12 In my opinion, any further upgrading of intersections identified should be included in the ICP but assigned as an additional external contribution attributable to the future Sunbury North PSP. Any external contribution identified for intersection upgrades would be unlikely to exceed the current external contribution assigned to the bridge projects to facilitate the Northern Link.



## 9.2 Funding of the Southern Link

- 9.2.1 Traffic modelling undertaken demonstrates that the Southern Link Road provides an important connection between Lancefield Road / Sunbury Road to the Calder Freeway which is required in the short term to address existing traffic issues along Sunbury Road and through Bulla.
- 9.2.2 While there is significant benefit resulting to the Sunbury South PSP area as a consequence of the link being provided, in my opinion it also identified as a critical regional improvement required in the short term to cater for existing traffic movements in the region and allow connection to Vineyard Road to Bulla Diggers Rest Road from the Goonawarra / Lancefield Road area and reduce congestion through Sunbury Town Centre.
- 9.2.3 The identification of external funding in the ICP for the construction of projects SS BR 01, SS BR 04 and SS IN 03 is appropriate however in my opinion, an external contribution should also be included for the balance of the Southern Link Road, including Bridge Projects SS BR 02 and SS BR 03 and Road Projects SS RD 04 01, SS RD 04 02 , SS RD 04 03, SS RD 04 04 and SS RD 04 05.
- 9.2.4 The exhibited ICP nominates an external contribution of 26% to SS BR 01 and SS BR 04 attributable to the future Sunbury West and Sunbury North PSP areas. I am not aware of the basis of the percentage external contribution and I consider that this should be made available to the Panel.
- 9.2.5 In my opinion, an external contribution of an amount appropriate to the shared benefit should be determined (potentially of a similar magnitude currently proposed for SS BR 01 and SS BR 04 and applied to the construction of the complete Southern link as discussed above.
- 9.2.6 Arguably the external funding contribution should be met by the broader region, with the use of GAIC funding considered appropriate.