Traffic Impact Assessment

Merimbula Airport Runway Extension

Lot 100 DP 1201186
DA2019.0359

Prepared for Jenny Symons – Bega Valley Shire Council

Contents

1.0 INTRODUCTION

Bega Valley Shire Council is required to prepare a Traffic Impact Statement of the Merimbula Airport Runway Extension development on the surrounding road network.

This Traffic Impact Statement addresses the likely impacts of the proposed development on the surrounding round network and provides comment on the construction vehicle access arrangements.

This document has been prepared with reference to the following:

- Environmental Impact Statement for Merimbula Airport Upgrade – Runway Extension, Oct 2019 Prepared by NGH Environmental Pty Ltd **(Merimbula Airport EIS)**
- Austroads Guide to Traffic Management Parts 1 – 13
- RTA Guide to Traffic Generating Developments V2.2 Oct. 2002
- Report on Merimbula Airport Intersection (Darcy 2018)

Detail of the proposed development can be found in the Environmental Impact Statement for Merimbula Airport Upgrade – Runway Extension, Oct 2019 prepared by NGH Environmental Pty Ltd.

Figure 1 – Google Map 2020 – Merimbula Airport intersection

2.0 SCOPE OF THE REPORT

The report details the following technical aspects of the proposed development and provides assessment against the relevant Australian Standards Codes, RMS Guides and Bega Shire Council DCP requirements:

- Existing traffic conditions surrounding the development traffic and along the proposed haulage routes.
- The anticipated peak AM and PM traffic flow generated by the proposed development,
- The comparative performance of the intersection of Quondolo Street and Toallo Street, Pambula

The development has two stages with the second being a smaller repetition of the first. This report provides the assessment of the first stage and then applies the outcomes to the second stage.

3.0 PROPOSED DEVELOPMENT STAGE 1

The stage 1 development (DA2019.0359) of Lot 100 DP 1201186, Merimbula Airport, 371 Arthur Kaine Drive consists of a runway extension in both a north and south direction approximately 151m and 158m, respectively. It will provide a further 6000m2 of pavement area to the existing runway.

The figure below, an extract from LAMBERT & REHBEIN runway design, outlines the proposed development site.

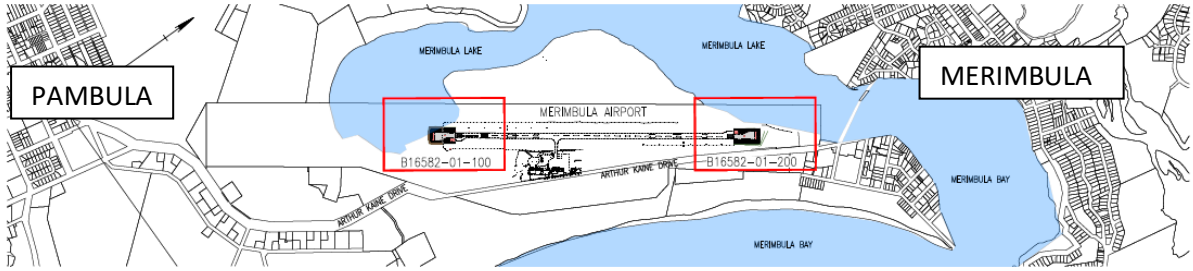


Figure 2 – Site location (extract REHBEIN Airport design)

The stage 1 development will only generate traffic movements during its construction phase, due to the existing airport terminal passenger flow limitations. An increase in traffic flows will only be permitted upon future development approvals within the site.

The duration of construction is estimated to be 18 or 27 weeks (EIS Submissions report) – with the shorter period more likely if both ends of the runway are constructed at once. AS the shorter period generates a more concentrated traffic impact, it has been adopted as a worst-case scenario for this report.

Access to the site for construction and future maintenance requirements is from the airport's main entrance, off Arthur Kaine Drive. It currently services all vehicle access requirements for the airport.

Major construction traffic to and from the airport is anticipated to be via the south only, along Arthur Kaine Drive the Toallo Street Pambula and onto the Princes Highway.

Figure 2 – Construction traffic distribution via Toalla Street, Pambula and onto Princes Highway

4.0 EXISTING TRAFFIC VOLUMES

Traffic generated from the development will impact on the following roads:

1. Arthur Kaine Drive, Merimbula
2. Intersection of Toallo Street and Quondola Street, Pambula
3. Merimbula Airport main access

Traffic Volumes for this report were obtained from the Merimbula Airport EIA Environmental Impact and the RMS traffic statistics and include four sets of traffic counts, referred to in Table 1.

Location	Maximum vehicles per hour
Arthur Kaine Drive 1.4km south of Merimbula Airport northbound	464
Arthur Kaine Drive 1.4km south of Merimbula Airport southbound	470
Arthur Kaine Drive 100m north of Dunns Lane northbound	589
Arthur Kaine Drive 100m north of Dunns Lane southbound	508
Princes Highway(A1) – north of Mount Darragh Road intersection	437

Table 1. Maximum vehicles per hour for Arthur Kaine Drive (2015, 2017) and A1 (2011)

This traffic data was compared against traffic volumes recorded between December 2019 and June 2020, from a permanent traffic recorder located, approximate 800mm north of the airport main access, along Arthur Kaine Drive. The recent data shows a decrease in traffic volumes along Arthur Kaine Drive compared to previous records. This is almost certainly due to the January 2020 Bushfire and the COVID19 pandemic that significantly impacted the Bega Valley. **Therefore, to show a truer**

representation of normal operating conditions the traffic volumes in Table 1 were adopted for use in the following assessment. A graph detailing the recent average daily vehicle volumes is provided in the Appendices.

A survey of the traffic volumes through the Airport main entrance was carried out in March 2018 during peak hours Airport operations.

The resulting peak traffic volumes were:

- 305 vehicles in
- 275 vehicles out

The peak season weekday and weekend pedestrian traffic peaks is 243 and 294, respectively.

5.0 ESTIMATED TRAFFIC IMPACT FROM THE DEVELOPMENT

The estimated traffic movements generated from the proposed development were sourced from the Merimbula Airport EIS, see Table 2.

Type of vehicle	Total construction vehicle movements (one-way)	Maximum vehicles per hour
Semi-Trailers	2160	20
Light Vehicles	1080	10
TOTAL	3240	30

Table 2 – estimated traffic volumes and requirements for the Merimbula Airport - Derived from Merimbula Airport EIS.

As a result of the development there will be a maximum **3.2%** increase to the traffic volumes along Arthur Kaine Drive during peak conditions.

6.0 ANTICIPATED IMPACT TO THE AIRPORT MAIN ENTRANCE

The determine to the adequacy of the airport main entrance, the 3.2% increase to traffic along Arthur Kaine Drive was applied to the volumes derived from *Darcy Report 2018* and plotted on AUSTROADS *Warrant for turn treatment types*- See F*igure 3.* The results show the existing CHR/CHR intersection treatment is adequate for the increase from construction traffic.

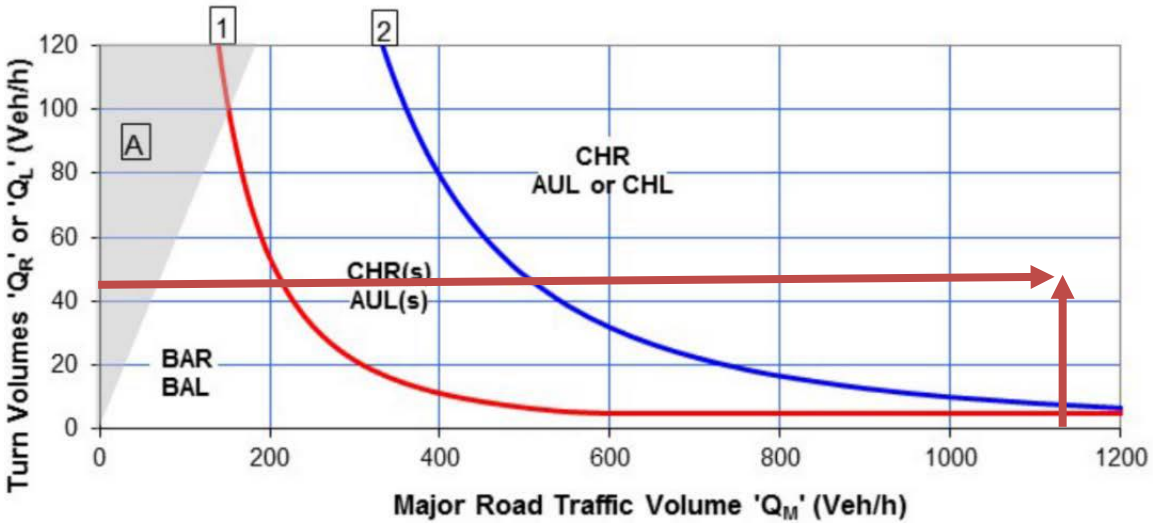


Figure 3 – Figure 2.26 - Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings - Based on figures from Darcy Report 2018

7.0 ASSESSMENT OF TOALLO STREET AND QUONDOLO STREET INTERSECTION

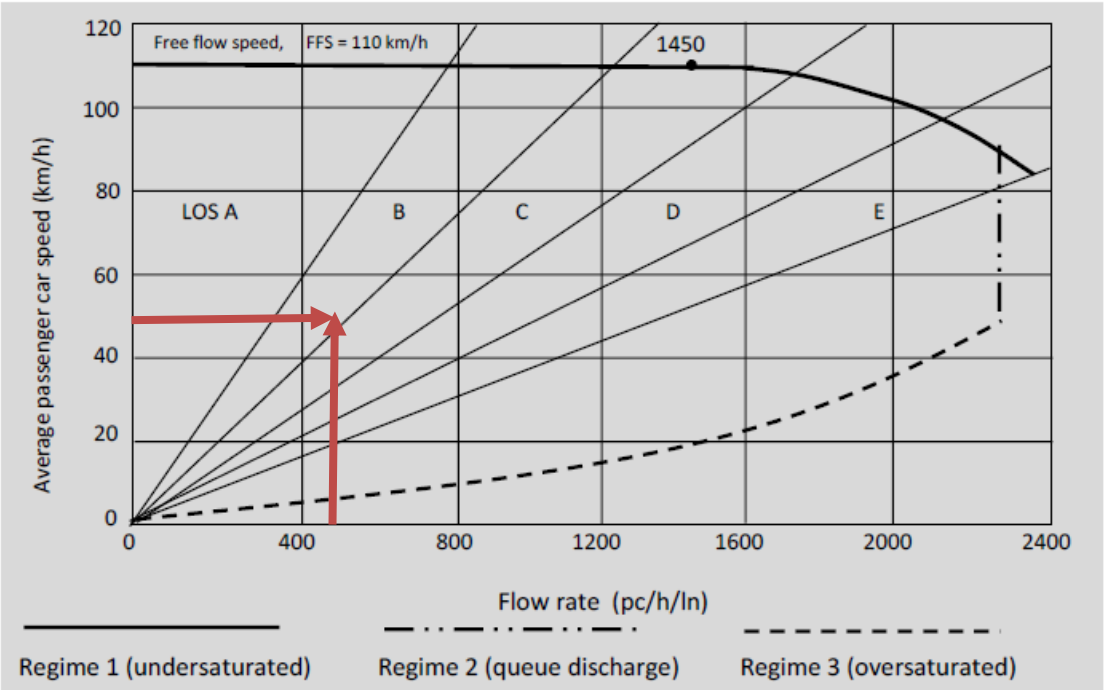
At peak times the intersection of Toallo Street and Quondola Street, Pambula will see an increase of 30 vehicles per hours and the distribution of this traffic is assumed to be 50/50 split per lane (15 veh/l/h) Therefore, the total estimated peak hour traffic during construction is 468 veh/l/h.

Typically, SIDRA analysis of this intersection may be required to determine the traffic impacts based Level of Service (LoS), in this case, due to the low impact of the development the LoS was dervide from the following graph Figure 4 - derived from Austroads Guide to Traffic Management Part 3.

Based on average car speed of 50km/hr at 468 veh/h/l the current LOS is B – see Figure 4.

LoS B – is described in the Austroads guides as –

In the zone of stable flow where drivers still have reasonable freedom to select their desired speed and to manoeuvre within the traffic stream. The general level of comfort and convenience is a little less than with level of service A.



Source: Adapted from Exhibits 11-1, 11-2 and 11-6 in HCM 2010.

Figure 3.1: Levels of service and service flow rates

Figure 4 – Level of service and service flow rates

8.0 PROPOSED DEVELOPMENT STAGE 2

Stage 2 adds a further 80m starter extension to the runway's north and south ends (in addition to the 120m in Stage 1). Stage 2 utilises the same construction techniques and methodology as Stage 1. Therefore, the traffic impacts in Stage 2 will be within the impacts identified in Stage 1.

9.0 CONCLUSION

A traffic impact statement has been carried out to determine the likely impacts of Stage 1 and Stage 2 of the proposed development on the surrounding road network.

It is concluded that the proposed development within of Lot 100 DP 1201186, Merimbula Airport, 371 Arthur Kaine Drive is predicted to generate a maximum 30 vehicle per hour.

Assessment of the Airport main entrance obtained the current CHR/CHL treatment will be adequate for the increase in traffic volumes.

Assessment of the Toallo Street and Princes Highway intersection determined the intersection will operate at a Level of Service B, operating within the intersections capacity and with little to impact to drivers.

It is concluded that the proposed development will not adversely affect the performance or safety of the surrounding road network, if during construction traffic management measures are implemented in accordance the latest Traffic Control at Work site manual.

[redacted]

Prepared by Shaun Bell – 29/10/20

Design Engineering Coordinator - Bega Valley Shire Council

10. APPENDICES

Bega Valley Shire Council permanent traffic counter data for Arthur Kaine Drive, Merimbula

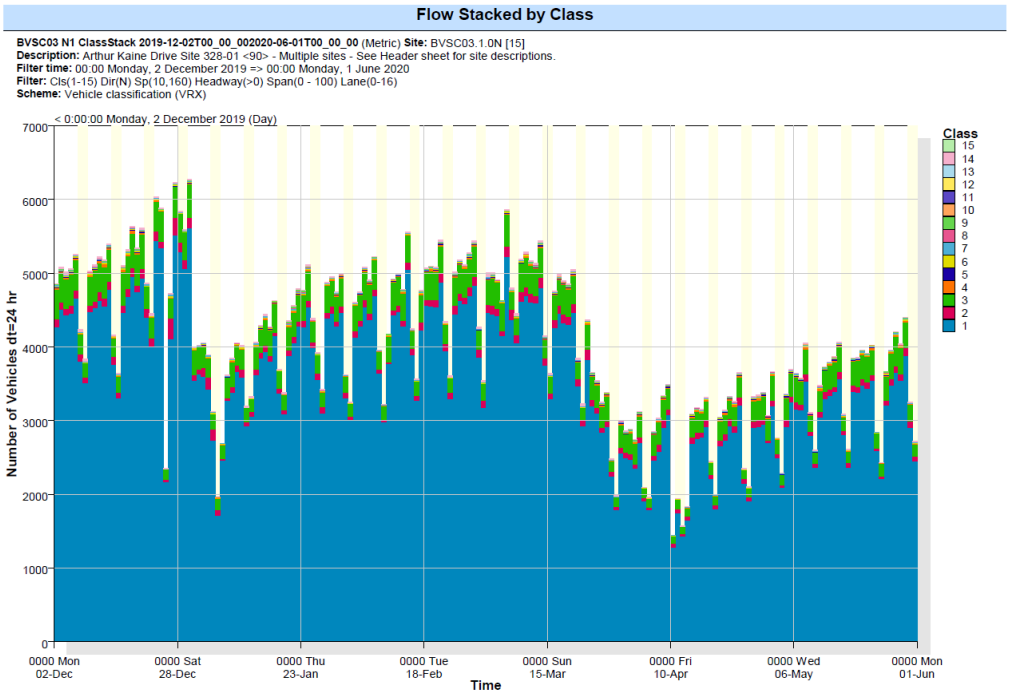


Figure 3 – Graph of Traffic Volumes – Total veh/24hr for Northbound Arthur Kaine Drive (Dec 19 to Jun 20)

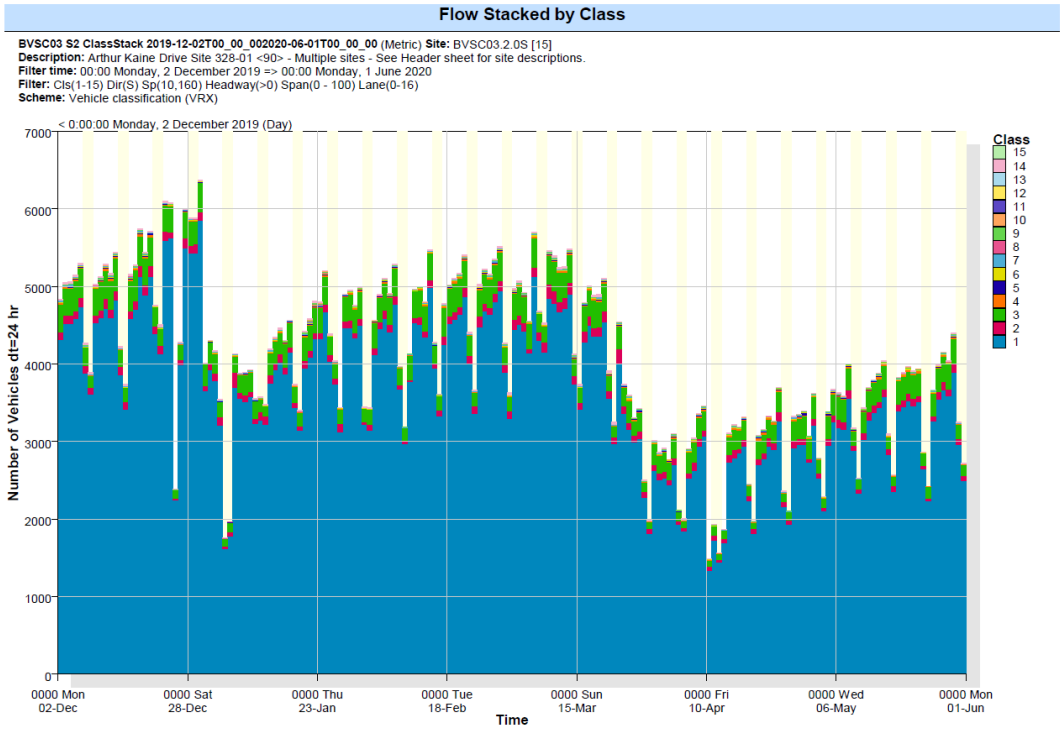


Figure 3 – Graph of Traffic Volumes – Total veh/24hr for Southbound Arthur Kaine Drive (Dec 19 to Jun 20)

Arthur Kaine Drive Cycle Path

Site: BVSCB01 Location: [-36.906248 +149.904374]
Profile: VRX Cls(14-15) Dir(NS0) Sp(0,200) Headway(>0) Span(0 - 100) Lane(0-16)
Created by MTE version 5.0.6

	Cycle Combined													Pedestrian Estimate (f = 2.8)		
	Volume			Speed km/h				Avg Weekday Peaks				Avg Weekend Peaks						
Month Beginning	Total	AWDT	AWET	Mean	85%	99%	%>25	AM Total	AM Time	PM Total	PM Time	AM Total	AM Time	PM Total	PM Time	Total	AWDT	AWET
Dec 2019	7992	243	294	23.9	30.4	38	46.1	39	700	12	1200	47	900	18	1200	10097	363	235
Jan 2020	5856	187	193	22.2	29.3	36.5	37.5	23	700	11	1600	30	900	13	1500	6816	240	161
Feb 2020	3789	128	136	23.1	29.9	39.6	41.4	17	1000	8	1200	21	800	13	1200	4713	180	125
Mar 2020	3444	107	122	23.4	29.9	38.5	43.1	14	1000	9	1200	20	1000	12	1200	3899	143	83
Apr 2020	4060	126	162	22.9	29.5	36	41.4	20	1000	10	1200	28	1000	16	1500	3140	114	79
May 2020	3835	118	136	22.8	29.3	36.2	40.1	17	1000	9	1200	27	1000	14	1200	3187	113	82