Proposed Planning Scheme Amendment
C225
Transport Impact Assessment
to Planning Panels Victoria

15174VCA001E-F.docx
4 October 2017
<table>
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<tr>
<th>Prepared for</th>
<th>Rigby Cooke Lawyers</th>
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<td>Report Date</td>
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<tr>
<td>Prepared by</td>
<td>Kailey Wilson</td>
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<td>Ross Hill</td>
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</tr>
</tbody>
</table>
In accordance with the Planning Panels Victoria, Guide to Expert Evidence, my qualifications, experience and expertise to provide my opinions on this matter are summarised below:

Name: Ross Brendan Hill

Address: 1/59 Keele Street
Collingwood
Victoria 3066

Professional Qualifications: Bachelor of Engineering (Civil), RMIT University 1996

Professional Experience:
- Director, onemilegrid, 2014 – present
- Associate, Cardno, 2007 – 2014
- Associate, Grogan Richards, 2005 – 2007
- Senior Traffic Engineer, Grogan Richards, 1997 – 2005
- Traffic Engineer, City of Monash, 1996 - 1997

Areas of Expertise:
- Car parking and traffic engineering design and compliance.
- Traffic advice and assessment of land use and development proposals to local and state planning authorities, government agencies, corporations and developers for a variety of projects including low, medium & high density residential, commercial, retail, industrial, institutional, service orientated and mixed-use projects.
- Preparation and presentation of expert evidence before VCAT and Planning Panels.

Expertise to Prepare this Report:
My professional qualifications, training and experience over a number of years on all forms of development qualifies me to comment on the car parking and traffic implications of the proposal.

Relationship to the Applicant:
I do not have any private or business relationship with the applicant.

Instructions:
I have been requested by Rigby Cooke Lawyers to provide my expert opinions in relation to the car parking and traffic implications of the proposal.
Facts, Matters, and Assumptions Relied Upon:

Planning Submission, Botanic Ridge 'Stage 4', prepared by KLM Spatial – September 2015

Brompton Lodge PSP, Traffic and Transport Assessment prepared by Cardno – 10 November 2015

Amendment C225 submissions:

➢ Cranbourne Turf Club – 28 April 2017
➢ Resident X – 12 December 2016
➢ VicRoads – 21 December 2016
➢ Royal Botanic Gardens, Cranbourne – 23 December 2016

Concept Plan for 860 Ballarto Road (3885.02 CP01 v1), prepared by KLM Spatial – 25 September 2017

Concept - Development Cells for 860 Ballarto Road (3885.02 CP02 v1), prepared by KLM Spatial – 25 September 2017

Casey City Council, Council Meeting Agenda, Officers’ Reports – 20 June 2017

Transport Impact Assessment prepared by onemilegrid – 2 September 2015

Brompton Lodge PSP – November 2015

Identity of Persons Undertaking the Work:

Ross Hill, Director onemilegrid (BE Civil)
Kailey Wilson, Engineer onemilegrid (BE Civil)

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 Tribunal.

____________________________
Ross Hill
Director – Senior Traffic Engineer
onemilegrid
2 INTRODUCTION

My name is Ross Hill and I am Director at onemilegrid where I practise as a traffic engineer.

I have been requested by Rigby Cooke Lawyers to undertake an assessment of the proposed Planning Scheme Amendment C225 to the Casey Planning Scheme, which includes the rezoning of land at 860 Ballarto Road, Botanic Ridge from Farming Zone 2 to General Residential Zone, and present expert evidence on the traffic implications of the proposal to Planning Panels Victoria.

In the course of preparing this report on the proposal, I have inspected the site and its environs, reviewed collected data and assessed the traffic implications of the proposal. In addition, I have reviewed the various submissions in relation to the proposed Amendment, relevant to traffic and transport.

My firm has previously prepared a Transport Impact Assessment for the proposed rezoning of land for the purposes of a residential development at 860 Ballarto Road, Botanic Ridge, as contained within onemilegrid report 15174TIA001C-F, dated 2nd September 2015.

The analysis contained within this report has been reviewed and updated, for the following additional information:

➢ Recent traffic volume data collected at the intersection of Ballarto Road, Frankston-Cranbourne Road, Pearcedale Road on Wednesday 20th September 2017;
➢ Traffic modelling undertaken as part of the Brompton Lodge PSP, undertaken by Cardno (report CG150179Rep01F01 dated 10/11/2015);
➢ A concept roundabout design for the Cranbourne-Frankston Road/Ballarto Road intersection, provided by VicRoads;
➢ Updated accident statistics downloaded from VicRoads CrashStats; and
➢ A revised concept layout for the potential development of land at 860 Ballarto Road, prepared by KLM Spatial (Ref: 3885.02 CP01 Version 1).

Furthermore, additional analysis has been undertaken as deemed necessary.

The following report summarises the previous assessment, in consideration of the above, and provides responses to the submissions received as part of the Amendment process.
3 EXISTING CONDITIONS

3.1 Site Location

The Amendment area is located on the south side of Ballarto Road, east of the intersection of Cranbourne-Frankston Road, Botanic Ridge, as shown in Figure 1.

Figure 1 Site Location

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The site at 860 Ballarto Road is predominantly farmland, occupied by two residential dwellings, each with access to Ballarto Road. The Amendment area also includes:

➢ Donnelly’s Garden Supplies, at 2/860 Ballarto Road;
➢ A sand extraction operation at 950 Ballarto Road; and
➢ A broiler farm at 980 Ballarto Road.

Cranbourne Royal Botanic Gardens is located further to the south-east. Settlers Run and the adjacent residential development is located to the south-west, whilst residential development is currently progressing to the north. Cranbourne Racecourse and Recreation Reserve is located to the north-east.
3.2 Planning Zones

It is shown in Figure 2 that the Amendment area is located within a Farming Zone (FZ2), for which the permitted uses are listed in Clause 35.07 of the Casey Planning Scheme.

Figure 2 Planning Scheme Zones

Rezoning of 860 Ballarto Road to the General Residential Zone (GRZ) is proposed.
3.3 Road Network

Ballarto Road is a local road generally aligned east-west in the vicinity of the site. Along the site frontage, Ballarto Road provides a well-maintained gravel surface, with grassed and vegetated verges, as shown in Figure 3.

Figure 3 Ballarto Road, looking west across the subject site frontage

Ballarto Road has a recommended speed of 60km/h in the vicinity of the site.
3.4 SmartRoads Road User Hierarchy Maps

In mid-2011 VicRoads developed the SmartRoads Road User Hierarchy Maps which aim to "manage competing interests for limited road space by giving priority use of the road to different transport modes at particular times of the day."

The SmartRoads map, reproduced in Figure 4, identifies the priority modes on each arterial road in the vicinity of the site, and indicates that Cranbourne-Frankston Road is a Traffic Route.

Figure 4 SmartRoads Road User Hierarchy Map
3.5 Traffic Volumes

Traffic volume surveys were undertaken by Trans Traffic Survey on behalf of onemilegrid at the intersection of Cranbourne-Frankston Road and Ballarto Road, on Wednesday 20th September 2017, between 6:30am and 10:00am, and between 3:30pm and 7:00pm.

The peak hour results of the surveys are shown in Figure 5 and Figure 6. It is noted that no traffic volumes were observed for some movements into and out of the west approach, though a volume of 1 is shown for analysis purposes. Furthermore, the percentage value indicates the light vehicle (LV) percentage and heavy vehicle (HV) percentage adopted for analysis purposes.

The survey results indicate the AM peak hour occurs between 8:00am and 9:00am, whilst, the PM peak hour occurs between 3:30pm and 4:30pm.

Figure 5 Existing Traffic Volumes – September 2017 – AM Peak
Figure 6: Existing Traffic Volumes – September 2017 – PM Peak
3.6 Intersection Operation

To assess the existing operation of the intersection of Ballarto Road with Cranbourne-Frankston Road and Pearcedale Road, the traffic volumes have been input into SIDRA Intersection, a traffic modelling software package.

The SIDRA Intersection software package has been developed to provide information on the capacity of an intersection with regard to a number of parameters. Those parameters considered relevant are, Degree of Saturation (DoS), 95th Percentile Queue, and Average Delay as described below.

Table 1  SIDRA Intersection Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree of Saturation (DoS)</td>
<td>The DoS represents the ratio of the traffic volume making a particular movement compared to the maximum capacity for that particular movement. The value of the DoS has a corresponding rating depending on the ratio as shown below.</td>
</tr>
<tr>
<td></td>
<td><strong>Degree of Saturation</strong></td>
</tr>
<tr>
<td>Up to 0.60</td>
<td>Excellent</td>
</tr>
<tr>
<td>0.61 – 0.70</td>
<td>Very Good</td>
</tr>
<tr>
<td>0.71 – 0.80</td>
<td>Good</td>
</tr>
<tr>
<td>0.81 – 0.90</td>
<td>Fair</td>
</tr>
<tr>
<td>0.91 – 1.00</td>
<td>Poor</td>
</tr>
<tr>
<td>Above 1.00</td>
<td>Very Poor</td>
</tr>
</tbody>
</table>

It is noted that whilst the range of 0.91 – 1.00 is rated as ‘poor’, it is acceptable for critical movements at an intersection to be operating within this range during high peak periods, reflecting actual conditions in a significant number of suburban signalised intersections.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Delay (seconds)</td>
<td>Average delay is the time delay that can be expected for all vehicles undertaking a particular movement in seconds.</td>
</tr>
<tr>
<td>95th Percentile (95%ile) Queue</td>
<td>95%ile queue represents the maximum queue length in metres that can be expected in 95% of observed queue lengths in the peak hour</td>
</tr>
</tbody>
</table>

The results of the analysis are provided in Table 2 and Table 3.

Table 2  Ballarto Road / Cranbourne-Frankston Road / Pearcedale Road – AM Peak Hour

<table>
<thead>
<tr>
<th>Approach</th>
<th>D.o.S.</th>
<th>Avg Delay (sec)</th>
<th>Queue (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cranbourne-Frankston Rd (S)</td>
<td>0.355</td>
<td>4.5</td>
<td>13.7</td>
</tr>
<tr>
<td>Pearcedale Rd</td>
<td>0.240</td>
<td>10.5</td>
<td>8.0</td>
</tr>
<tr>
<td>Ballarto Rd (E)</td>
<td>0.056</td>
<td>9.2</td>
<td>1.6</td>
</tr>
<tr>
<td>Cranbourne-Frankston Rd (N)</td>
<td>0.421</td>
<td>3.2</td>
<td>24.6</td>
</tr>
<tr>
<td>Ballarto Rd (W)</td>
<td>0.006</td>
<td>8.7</td>
<td>0.2</td>
</tr>
</tbody>
</table>
Table 3  Ballarto Road / Cranbourne-Frankston Road / Pearcedale Road – PM Peak Hour

<table>
<thead>
<tr>
<th>Approach</th>
<th>D.o.S.</th>
<th>Avg Delay (sec)</th>
<th>Queue (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cranbourne-Frankston Rd (S)</td>
<td>0.485</td>
<td>4.6</td>
<td>21.4</td>
</tr>
<tr>
<td>Pearcedale Rd</td>
<td>0.156</td>
<td>9.9</td>
<td>5.1</td>
</tr>
<tr>
<td>Ballarto Rd (E)</td>
<td>0.074</td>
<td>9.2</td>
<td>2.1</td>
</tr>
<tr>
<td>Cranbourne-Frankston Rd (N)</td>
<td>0.355</td>
<td>3.3</td>
<td>19.3</td>
</tr>
<tr>
<td>Ballarto Rd (W)</td>
<td>0.007</td>
<td>9.5</td>
<td>0.2</td>
</tr>
</tbody>
</table>

As shown above the intersection is currently operating under excellent conditions during both the morning and afternoon peak hours with minimal queues and delays experienced by motorists on all approaches.

3.7 Crash History

Updated crash history information for the intersection of Cranbourne-Frankston Road/Ballarto Road/Pearcedale Road was obtained through VicRoads CrashStats (the Victorian accident statistics and mapping program) for the latest 5-year period (2012 – 2017 inclusive).

There were no accidents recorded at the intersection of Cranbourne-Frankston Road/Ballarto Road/Pearcedale Road, or on Ballarto Road in the vicinity of the site.
3.8  Sustainable Transport

3.8.1  General

An extract of the TravelSmart Map for the City of Casey is shown in Figure 7, highlighting the public transport, bicycle and pedestrian facilities in the area.

Figure 7  TravelSmart Map
3.8.2 Public Transport

The full public transport provision in the vicinity of the site is shown in Figure 8.

Figure 8 Public Transport Provision

It is shown that public transport in the immediate vicinity is currently limited to bus services, with bus routes 791 and 792 servicing Cranbourne-Frankston Road at the Ballarto Road roundabout.

Cranbourne Railway Station is situated approximately 3km to the north-east of the site, which provides for rail services and in excess of 10 bus services.

With the continual redevelopment of the surrounding area for residential purposes, including the Brompton Lodge development to the west, extensions to existing bus services, or new services, are expected as the population increases.

3.8.3 Bicycle Facilities

A shared path is currently provided along Pearcedale Road south of Ballarto Road, and along Cranbourne-Frankston Road north of Ballarto Road, connecting the Botanic Ridge residential area to Cranbourne.

Further cyclist facilities are provided within the residential development north of Ballarto Road, which will ultimately continue to the Ballarto Road abuttal.
4 DEVELOPMENT CONCEPT

The proposed Amendment includes the rezoning of land at 860 Ballarto Road, to allow for a residential development. A concept layout for a residential subdivision design for 860 Ballarto Road has been prepared by KLM Spatial, as shown in Figure 9, containing approximately 260 lots.

Figure 9   Concept Residential Subdivision Design

Of the total lot yield, approximately 200 lots are within Owners Corporation cells, as identified (shaded red) in Figure 10. The remaining lots are serviced from a proposed public road network with two connections to Ballarto Road.
The Amendment area also includes the adjacent land at 2/860 Ballarto Road, 950 Ballarto Road, and 980 Ballarto Road, though rezoning of this land is not proposed.

In order to provide a conservative analysis of the proposed rezoning, it is assumed that a lot yield of up to 300 dwellings may be realised as a result of the rezoning, which makes some allowance for potential future development on 2/860 Ballarto Road. Given the current use (sand extraction) and permitted future use (landfill) for land at 950 Ballarto Road, no assumptions have been made in relation to future redevelopment potential. Similarly, no allowance has been made in relation to the future development of 980 Ballarto Road.
5 CONCEPT DESIGN REVIEW

I have undertaken a general review of the proposed residential subdivision design provided in Figure 9, and provide the following comments for consideration.

➢ The 23m road cross-section provided for the main loop road is considered to be appropriate, given the anticipated daily traffic volumes. The 23m road cross-section may also provide for bus services should these be desired;
➢ The 10m and 13m roads proposed for Owners Corporation private roads through the subdivision are generally expected to accommodate the required traffic function, including vehicles, bicycles and pedestrians. Whilst narrower in road reserve width when compared to the Planning Scheme and VPA standards for Access Streets, as an Owners Corporation road, reduced verges and modified services arrangements can be accommodated in order to minimise the required road reserve;
➢ Owners Corporation Loop Roads are shown running parallel to Ballarto Road, within a 13m private road reserve. It is noted that the proposed Amendment documentation includes a cross-section for Ballarto Road, indicating a 13.8m loop road on the south side of the 20m tree reserve. As an Owners Corporation private road, the reduced 13m private road reserve is considered to be appropriate, and may be reduced further subject to the appropriate provision of services;
➢ The location of the connections to Ballarto Road are generally considered to be appropriate, with good separation between access points, and to the Cranbourne-Frankston Road intersection. Consideration will need to be given to sight distances along Ballarto Road, potential connections to the north (the extension of Bundoran Avenue), and vegetation impacts.
6 TRAFFIC CONSIDERATIONS

6.1 General

In order to assess the potential traffic impact of a residential development at 860 Ballarto Road, an assessment of the likely traffic generation and resultant traffic volumes has been undertaken, as follows.

6.2 Traffic Generation

It is generally accepted that single dwellings on a lot in outer suburban areas may generate traffic at up to 10 vehicle trips per day, whilst in areas with good public transport, and for higher density dwellings, lower traffic generation rates are often recorded.

To confirm the expected traffic generation for the subject site, reference is made to traffic surveys undertaken by other traffic consultants at four residential subdivisions in metropolitan Melbourne. The results of the surveys are summarised in Table 4.

Table 4 Residential Subdivision Traffic Generation

<table>
<thead>
<tr>
<th>Location</th>
<th>No of Occupied Dwellings</th>
<th>Daily Traffic Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yarra Valley Boulevard, Chirnside Park</td>
<td>125</td>
<td>9.35</td>
</tr>
<tr>
<td>The Gateway, Croydon South</td>
<td>240</td>
<td>7.91</td>
</tr>
<tr>
<td>Creekview Drive, Deer Park</td>
<td>165</td>
<td>8.41</td>
</tr>
<tr>
<td>Avenddon Boulevard, Glen Waverley</td>
<td>158</td>
<td>8.37</td>
</tr>
<tr>
<td>Weighted Average</td>
<td>688</td>
<td>8.39</td>
</tr>
</tbody>
</table>

The above results indicate an average traffic generation of approximately 8.4 trips per lot per day. Considering the size of the lots likely to be developed and the proximity of the site to public transport, it is anticipated that a residential development on 860 Ballarto Road may initially generate up to 9 vehicle trips per day per dwelling. Following full development of the site and surrounding area, including schools, recreational facilities, retail developments and public transport routes, a reduction in traffic generation is expected.

Regardless, based on the above rates, and conservatively adopting an upper limit site yield of 300 dwellings, a residential development on 860 Ballarto Road is expected to generate up to approximately 2,700 vehicle trips per day.

6.3 Traffic Distribution

Ultimately, road connections will be provided to Ballarto Road from the residential subdivision to the north. Prior to this, all site access will occur via the intersection with Cranbourne-Frankston Road, and for the purposes of a conservative analysis, it is assumed that this will remain the only site access point.

Considering the location of the site in relation to the arterial road network, public transport facilities, schools, recreation and retail and employment precincts, it is anticipated that 60% of traffic will be generated to and from Cranbourne-Frankston Road to the north, with 35% generated to and from Cranbourne-Frankston Road to the south, and the remaining 5% from Pearcedale Road.

Furthermore, based on typically observed rates, the residential traffic distribution shown in Table 5 has been adopted.
### Table 5  Residential Traffic Distribution - Subdivision

<table>
<thead>
<tr>
<th></th>
<th>Percentage of Daily</th>
<th>Outbound</th>
<th>Inbound</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM Peak</td>
<td>10%</td>
<td>70%</td>
<td>30%</td>
</tr>
<tr>
<td>PM Peak</td>
<td>10%</td>
<td>40%</td>
<td>60%</td>
</tr>
</tbody>
</table>

#### 6.4 Generated Traffic Volumes

Based on the above, the following traffic volumes are expected to be generated by a residential development on 860 Ballarto Road, at the intersection of Cranbourne-Frankston Road and Ballarto Road.

**Figure 11  Generated Traffic Volumes**
6.5 Intersection Capacity Assessment

To ensure that the intersection of Ballarto Road with Cranbourne-Frankston Road and Pearcedale Road will continue to operate appropriately following full development of the subject site, the expected future traffic volumes have been input into SIDRA Intersection.

The results of the analysis are provided in Table 6 and Table 7.

<table>
<thead>
<tr>
<th>Approach</th>
<th>D.o.S.</th>
<th>Avg Delay (sec)</th>
<th>Queue (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cranbourne-Frankston Rd (S)</td>
<td>0.393</td>
<td>5.2</td>
<td>15.7</td>
</tr>
<tr>
<td>Pearcedale Rd</td>
<td>0.279</td>
<td>11.7</td>
<td>10.6</td>
</tr>
<tr>
<td>Ballarto Rd (E)</td>
<td>0.346</td>
<td>11.1</td>
<td>11.9</td>
</tr>
<tr>
<td>Cranbourne-Frankston Rd (N)</td>
<td>0.453</td>
<td>3.4</td>
<td>27.7</td>
</tr>
<tr>
<td>Ballarto Rd (W)</td>
<td>0.006</td>
<td>9.1</td>
<td>0.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Approach</th>
<th>D.o.S.</th>
<th>Avg Delay (sec)</th>
<th>Queue (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cranbourne-Frankston Rd (S)</td>
<td>0.534</td>
<td>5.5</td>
<td>25.3</td>
</tr>
<tr>
<td>Pearcedale Rd</td>
<td>0.177</td>
<td>10.6</td>
<td>6.4</td>
</tr>
<tr>
<td>Ballarto Rd (E)</td>
<td>0.236</td>
<td>10.1</td>
<td>7.5</td>
</tr>
<tr>
<td>Cranbourne-Frankston Rd (N)</td>
<td>0.412</td>
<td>3.7</td>
<td>23.6</td>
</tr>
<tr>
<td>Ballarto Rd (W)</td>
<td>0.007</td>
<td>9.8</td>
<td>0.2</td>
</tr>
</tbody>
</table>

As shown above the intersection is expected to continue to operate under excellent conditions during both the morning and afternoon peak hours following completion of a residential development on the subject site, with minimal queues and delays experienced by motorists.

As expected, due to the increased traffic volumes on Ballarto Road (East), an increase in the Degree of Saturation, queues and delays can be expected, with a 95\textsuperscript{th} percentile back of queue of approximately 12m, or less than two vehicles.

Furthermore, with a maximum Degree of Saturation of only 0.534, the intersection is expected to operate with considerable spare capacity into the future, allowing for substantial traffic volume growth.
6.6 Future Intersection Operation

Whilst the above analysis indicates that the Cranbourne-Frankston Road/Ballarto Road/Pearcedale Road intersection will operate under excellent conditions following development of the subject site, future traffic volumes at the intersection may change considerably, depending on:

➢ Development within the Brompton Lodge PSP Area;
➢ The construction of Ballarto Road between Cranbourne-Frankston Road and Western Port Highway;
➢ The upgrade of the Western Port Freeway, and the potential freeway interchange at Ballarto Road;
➢ The formalisation of Ballarto Road as the primary access for the Cranbourne Gardens.

The Brompton Lodge PSP identifies that the intersection of Cranbourne-Frankston Road/Ballarto Road/Pearcedale Road, whilst outside the PSP boundary, as being a roundabout. The Traffic and Transport Assessment prepared by Cardno, as contained within their report dated 10 November 2015, further identifies that ultimately, the intersection will be signalised.

Analysis of the intersection of Cranbourne-Frankston Road/Ballarto Road/Pearcedale Road was undertaken by Cardno, for interim 2026 conditions, as part of the Brompton Lodge PSP. The analysis concluded that the intersection was expected to operate at “acceptable levels”, though the quoted results of intersection analysis indicate a very good level of operation. The analysis was based on a minor upgrade to the Cranbourne-Frankston Road/Ballarto Road/Pearcedale Road, being the addition of a modified western approach, as identified below.

Figure 12 Brompton Lodge PSP – Interim Roundabout Concept
The Cardno report identifies a number of assumptions in relation to traffic distribution, future volume growth, and road network connections in completing the assessment, including a small amount of traffic generated to Ballarto Road east.

It is expected that the addition of 300 lots to Ballarto Road east (as part of the proposed Amendment) will have only a minor impact on the operation of the roundabout intersection at Cranbourne-Frankston Road, considering that the Ballarto Road East approach currently accommodates very low traffic volumes when compared to other approaches, and given the relatively low traffic volumes expected.

Furthermore, a concept for improved intersection capacity has been produced by VicRoads, as shown in the concept plan provided in Figure 13.

**Figure 13  Concept Plan for Roundabout Improvements**

This identifies the potential for considerable capacity upgrades within the existing road reserves, including additional approach lanes on all intersection approaches, including an additional right turn approach lane on Ballarto Road East.

It is therefore considered that intersection improvement options are available for the Cranbourne-Frankston Road/Ballarto Road/Pearcedale Road intersection, to allow for the potential traffic volume changes which may occur as a result of development and road network changes in the vicinity, to ensure that the intersection can operate appropriately into the future.
7 RESPONSE TO SUBMISSIONS

7.1 Cranbourne Turf Club

The submission by Cranbourne Turf Club indicates a number of concerns relating to the potential for increased traffic activity in the vicinity of the Cranbourne Training Centre, summarised as below:

➢ The proposed vehicle movement around this new subdivision will place a greater risk to the intensive horse stabling area;
➢ We are keen to ensure measures will be put in place to restrict vehicles from entering the sensitive area;
➢ [Laurie Cleary Lane and Cyril Beechey Lane] must remain no through roads to ensure traffic isn’t passing through this area;
➢ Consideration should be given to making this intense horse precinct a gated precinct;

Currently, the only vehicular access to the subject site is from Ballarto Road, via the intersection of Cranbourne-Frankston Road. With road closures in place on both Laurie Cleary Lane and Cyril Beechey Lane, generally no development traffic is anticipated to enter the ‘sensitive’ area. The proposed Amendment is therefore not expected to result in additional traffic volumes on Laurie Cleary Lane or Cyril Beechey Lane. The gating of Laurie Cleary Lane and Cyril Beechey Lane is therefore also considered unnecessary.

Any potential future opening of Laurie Cleary Lane or Cyril Beechey Lane would be subject to assessment of the various impacts at the time.

➢ We formally request the City of Casey includes [the last 500m of Ballarto Road] in the proposed works [road sealing] being undertaken by Stevenson Brothers Industries.

The sealing of the eastern portion of Ballarto Road is not considered relevant to the proposed Amendment, though again, limited additional traffic is anticipated to be generated through this section of Ballarto Road, other than traffic with a destination within the Cranbourne Gardens or Cranbourne Training Centre precinct. The proposed Amendment is therefore not considered to generate a need for upgrades to the eastern end of Ballarto Road.
7.2 VicRoads

VicRoads’ submission requested the inclusion of the following requirements for a Transport Impact Assessment Report:

A Transport Impact Assessment Report (TIAR) that gives considerations to the Ballarto Road/Pearcedale Road/Cranbourne Frankston Road intersection.

The TIAR is to be to VicRoads satisfaction and is to be prepared by a suitably qualified person that addresses, among other things:

- traffic management and control works in adjoining and nearby roads when the development or any stage of the development is completed;
- the means of vehicular ingress and egress to the existing arterial and/or local road network;
- the timing of proposed traffic works relative to the staging of the development; and,
- public transport arrangements and access routes.

It is considered that whilst the preceding assessment satisfies a number of VicRoads’ requirements, the preparation of a TIAR based on a proposed development is appropriate.

7.3 Cranbourne Botanical Gardens

7.3.1 Increased Traffic on Ballarto Road

The submission by the Cranbourne Botanical Gardens includes the following comments in relation to the increased traffic on Ballarto Road:

- Ballarto Road is increasingly used by visitors to the Gardens, despite the unsealed road surface and the unsigned location of the western entry;
- A key goal of the Cranbourne Gardens Master Plan 2016 – 2026 is to upgrade this western entry to become a primary entry point;
- It is anticipated that the number of cars and buses using Ballarto Road will increase significantly, in future years;
- The (proposed 20m) tree reserve (along the south side of Ballarto Road) would provide space for a suitable pedestrian and bicycle path to connect with the local network of paths.

Considerable road reserve width is available along Ballarto Road, with the inclusion of a 20m reserve to the south of the existing 20m road reserve, to ensure that the ultimate road cross-section of Ballarto Road can accommodate daily traffic volumes well in excess of the 2,700 vehicles per day expected to be generated by a residential development at 860 Ballarto Road.

The increased usage of Ballarto Road as the primary access point for the Cranbourne Botanical Gardens is therefore expected to be accommodated by the future design of Ballarto Road.

Furthermore, and as identified in Section 6.6, intersection capacity improvement options are available for the Cranbourne-Frankston Road intersection to facilitate the potential traffic volumes generated as a result of the formalisation of Ballarto Road as the primary access for the Cranbourne Gardens.

The proposed Amendment is therefore not expected to impact the ability for Ballarto Road to serve as the major access point for the Cranbourne Botanical Gardens.
7.3.2 One Access to Ballarto Road

The submission by the Cranbourne Botanical Gardens includes the following comment in relation to the number of access points to Ballarto Road:

- It is suggested that the subdivision is restricted to one main access road to Ballarto Road.

The previous concept plan for the proposed subdivision (as reviewed in the original Transport Impact Assessment by my firm), and the current plan, both indicate the provision of two access points to the proposed residential subdivision at 860 Ballarto Road. In this case, it is considered that the provision of two access points is preferred to a single access point, due to the following:

1. Emergency Access: Considering the potential size of the residential subdivision, it is typically recommended that a second access point is provided, such that in an emergency event, if the sole access point is blocked (through traffic accident, fire adjacent, etc), a secondary access point is available for residents and emergency services.

2. Traffic Distribution: Given the potential traffic generation of the site, and in consideration of the indicative traffic capacity of a connector road, it is preferred to provide an additional access point to distribute residential traffic, and reduce the maximum volume at any point on the internal road network. This should also improve intersection operating conditions to Ballarto Road from the internal road network.

3. Reduction in Traffic Circulation: A well designed local road network minimises vehicle travel distances, and supports the hierarchy of roads proposed through direct connections (i.e. local traffic should be focussed from access streets, to connector roads, and then to arterial roads). With only a single access point to the proposed estate, and with a frontage of approximately 900m to Ballarto Road, traffic circulation through the local road network may be greater than necessary, as traffic may need to travel a considerable distance east or west through the internal roads to reach the access point, rather than being focussed directly towards Ballarto Road. It is therefore preferred to provide additional evenly spaced access points to Ballarto Road, to reduce travel distances for residents.

The Council Officers’ Reports in relation to the above states that “rather than prescribe the number of accesses to the site in the DPO23, officers prefer that the number of accesses be resolved at the Development Plan stage once a proper assessment of the vegetation impact can be undertaken”.

Whilst it is considered preferable to provide two access points to a residential development on 860 Ballarto Road, I support the approach identified by Council, given the concerns related to the provision of a secondary access point are focused on the impact on roadside vegetation, and that a suitable secondary access point may be achieved with limited impact on vegetation.
7.4 Resident X

A submission by a resident poses a number of questions and concerns regarding traffic related items, summarised below:

➢ All traffic emanating from the new proposed residential subdivision(s) would need to enter and exit via this roundabout [at Cranbourne-Frankston Road]. Are any other alternative entry/exit points being considered?

Currently, sole access to the area will be provided via the roundabout at Ballarto Road/Cranbourne-Frankston Road. In the future, additional access may be provided:

➢ via Brookland Greens residential subdivision to the north (the Cranbourne Development Plan, adopted by Council in September 2007, identifies the extension of Bundoran Avenue to Ballarto Road from the north);
➢ via Laurie Cleary Road and Cyril Beechey Lane, subject to the resolution of the concerns identified by the Cranbourne Turf Club, as identified above.

Additional connections to Ballarto Road would be preferred to allow for better permeability, though not essential. Any connections identified above will require further assessment, including the potential for rat-running through local streets.

➢ Will provision be made for an upgrade of the [Cranbourne-Frankston Road/Ballarto Road] roundabout? What is the estimated traffic flow at that new entry point? Could it become another pseudo bypass for traffic travelling from Westernport Highway to Cranbourne South?

As discussed in Section 6.6, options to upgrade the intersection of Cranbourne-Frankston Road/Ballarto Road are available, should they be required in the future.