

### **REZONING FOR FUTURE RESIDENTIAL SUBDIVISION**

### **5 ANDERSON ROAD, GLENNING VALLEY**

**PREPARED FOR: PYOAND PTY LTD** 

**MARCH 2011** 



REF: 10/014

TRAFFIC IMPACT ASSESSMENT PYOAND PTY LTD

#### **5 ANDERSON ROAD, GLENNING VALLEY**

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Traffic Impact Assessment - 5 Anderson Road, Glenning Valley - Pyoand Pty Ltd



### **EXECUTIVE SUMMARY**

Intersect Traffic Pty Ltd (Intersect) was engaged by Pyoand Pty Ltd to prepare a traffic impact assessment for a rezoning for future residential subdivision at 5 Anderson Road, Glenning Valley. This traffic impact assessment is required to support a rezoning application to Wyong Council for the proposal.

The aim of the assessment was to determine the likely impact on the adjacent local road network due to traffic generated by the proposed development. Current traffic volumes and conditions were determined as well as any likely future road network upgrades likely to impact on the capacity of the existing road network. The likely traffic generation from the site was then added to existing traffic and the impacts of this additional traffic determined from an analysis of the road network capacity and in particular intersection capacity. Site access and internal road layout was also assessed against local Council, RTA and Austroads requirements. Finally an assessment of the impact of the development on alternate transport modes was also assessed to determine if additional services / facilities would be required as a result of additional demand from the proposed development.

This assessment determined the following;

- The local road network likely to be directly impacted by any additional traffic generated by the proposal includes Wyong Road, Beckingham Road, Hillside Drive and Anderson Road.
- There are no proposed road network improvements in the immediate future that will either increase the existing capacity of the local road network or reduce traffic volumes on the network. Some thought to implementation of Bus Transit lanes on Wyong Road are being considered however are currently at a very preliminary planning stage.

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- The existing peak hour traffic volumes on the adjoining road network occur in the PM peak and are 3,369 vph on Wyong Road, 535 vph on Beckingham Road and 238 vph on Hillside Drive / Anderson Road. The average historical traffic growth rate on Wyong Road was found to be 3 % per annum.
- Based on Table 4.3 of the RTA's Guide to Traffic Generating Developments and the physical geometry of the local road network the two way mid block road capacities for the local road network are 3,800 vph for Wyong Road and 1,800 vph for Beckingham Road / Hillside Drive / Anderson Road. Therefore the existing road network is operating below its technical capacity and subject to satisfactory intersection performance would have some spare capacity to accommodate additional development.
- The site is well serviced with public transport with Red Bus Services running regular seven day a week services along Wyong Road past the site.
- Pedestrian and cycle facilities are available along Wyong Road and for a short distance along Beckingham Road and Hillside Drive.
- The existing site is vacant cleared land which currently does not generate any traffic on the local road network.
- As a 23 lot residential subdivision and using rates contained within the RTA's *Guide to Traffic Generating Developments* it is estimated that the proposal will generate an additional 207 vehicle trips per day or more importantly for traffic assessment purposes approximately 20 vehicle trips within the AM and PM peak hour traffic periods.
- The two main intersections likely to be directly impacted by the development are the Wyong Road / Beckingham Road roundabout and the Hillside Drive / Beckingham Road give way controlled T-intersection.
- After distributing the additional development traffic onto these intersections in line with current traffic distribution patterns and modelling the intersections using the Sidra 5 intersection modelling program it was found that both the Wyong Road / Beckingham Road roundabout and the Beckingham Road / Hillside Drive T-intersection will continue to operate satisfactorily at least up until 2020. Average delays and queue lengths at these intersections will increase by less than 1 second and 1 metre respectively as a result of the development therefore the impact of the development will not be noticeable. Levels of service for all traffic movements through these intersections will remain high.
- The additional demand generated by the development for alternate transport modes such as public transport, walking and cycling will be low due to the small scale nature of the subdivision. As such it is considered additional services or facilities for these transport modes are not warranted except perhaps for a pedestrian footpath connection to the existing pedestrian footpath to Wyong Road at the end of Hillside Drive.
- The proposed internal subdivision layout is considered suitable given the constraints of the small site and an aim of seeking efficient use of the land. The standard of road construction will ultimately be up to Wyong Council and likely to be specified in any future conditions of consent.
- It is considered that a safe subdivision access can be provided to Anderson Road as suitable sight distance in accordance with Austroads Standards could be achieved in both directions.

Overall it is concluded that the additional traffic generated by the proposed residential subdivision will not have an adverse impact on the local road network. Access to the site is also considered to be in accordance with Austroad requirements. Therefore it is considered the proposed rezoning to allow future residential subdivision of the site can be supported by Wyong Council from a traffic impact perspective.





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# 1. INTRODUCTION

Intersect Traffic Pty Ltd (Intersect) was engaged by Pyoand Pty Ltd to prepare a traffic impact assessment for a proposed rezoning and residential subdivision at 5 Anderson Road, Glenning Valley. This traffic impact assessment is to support a rezoning application to Wyong Council. Development plans are provided within *Appendix 1*.

The aim of the assessment is to determine the likely impact of the proposal on the adjacent local road network due to traffic generated by the development.

This report presents the findings of the traffic impact assessment and includes the following:

- 1. An outline of the existing road network in the vicinity of the proposed development.
- 2. An assessment of the likely peak traffic generation from the development.
- An assessment of the likely traffic impacts of the proposal on the adjacent road network in particular in regard to the operation of existing intersections linking to the sub-arterial road network.
- 4. An assessment of the proposed subdivision access intersection and internal road layout.
- 5. An assessment of the impact of the development on alternate transport mode services and facilities in the vicinity of the site.
- 6. Presentation of conclusions and any recommendations.

This assessment has been carried out with reference to the RTA's Guide to Traffic Generating Developments and Wyong Council's consolidated DCP as well as utilising information provided by the clients planning consultant Andrews Neil Urban Design Group Pty Ltd.





# 2. SITE LOCATION

The subject site is located in Glenning Valley near Wyong on the NSW Central Coast. *Figure 1* below shows the location of the site.

The subject land has an area of approx 1.9 hectares and is currently zoned 7(c) Scenic Protection Small Holdings under the provisions of the Wyong LEP.

The site is addressed as 5 Anderson Road, Glenning Valley. Anderson Road runs off Hillside Drive and the site is located adjacent to this intersection. The land adjoins existing residential parcels along its northern boundary.

The immediate connection from the site to the sub-arterial road network is via Anderson Road, Hillside Drive and then Beckingham Road to a three legged roundabout on Wyong Road (MR 335).

Anderson Road, Hillside Drive and Beckingham Road are local roads under the care and control of Wyong Council which provide access to properties in the area. Wyong Road is a classified state road that connects Wyong and the Pacific Highway to the Long Jetty area and the Central Coast Highway. Therefore under a functional road hierarchy it would be considered a sub-arterial road. It is under the care and control of the RTA.

In terms of traffic impact it is considered that the local road network that will be directly impacted on by the proposed development includes Anderson Road, Hillside Drive, Beckingham Road and Wyong Road.



Figure 1. – Site Location Plan.

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# 3. EXISTING ROAD NETWORK

### 3.1 Wyong Road

Wyong Road is a classified state road (MR335) under the care and control of the RTA. In the vicinity of the site it is a two way four lane urban road with kerb and gutter. A 70 km/h speed zoning applies in the vicinity of the site and at the time of inspection it was found to be in good condition.



Photograph 1 – Wyong Road



### 3.2 Beckingham Road & Hillside Drive

Both Beckingham Road and Hillside Drive are local access roads under the care and control of Wyong Council. They are a two way two lane urban roads with kerb and gutter though Hillside Drive does have areas with table drains rather than kerb and gutter. A 60 km/h speed zoning applies to the short section of Beckingham Road providing access to the site while Hillside Drive has a 50 km/h speed zoning signposted for most of its length. Both roads were considered to be in good condition at the time of inspection.



Photograph 2 – Beckingham Road



Photograph 3 – Hillside Drive



### 3.3 Anderson Road

Anderson Road is also a local access road under the care and control of Wyong Council. It is a two way two lane urban road with some kerb and gutter near Hillside Drive however for most of its length is characterised with sealed shoulders and table drains giving it a rural character. A 50 km/h speed zoning applies in the vicinity of the site. Anderson Road was considered to be in good condition at the time of inspection.



Photograph 4 – Anderson Road



## 4. ROAD NETWORK IMPROVEMENTS

Discussions with RTA officers have determined that there are no immediate road network improvements planned that will impact on the proposed development by providing additional capacity in the local road network in particularly Wyong Road. Some thoughts on the implementation of bus transit lanes on Wyong Road were expressed however these are only at very preliminary planning stage at the moment.





# 5. TRAFFIC VOLUMES

The nearest RTA permanent traffic counter site is on Wyong Road near Tumbi Umbi. Traffic volumes recorded at this location *Station 05.627 Tumbi Umbi* – 0.6 km S of Berkeley Rd since 1988 are shown in Table 5.1 below.

		Contraction of the second second
Table 5.1 – Traffic Volumes	AADT) recorded at RTA station 05.627 – Tumb	i Umbi

1988	1990	1992	1995	1998	2001	2004
16,547	17,450	20,976	25,881	29,521	32,326	35,208

Table 5.2 below shows that the average annual traffic growth rates over these periods up to 2004.

#### Table 5.2 – Average annual traffic growth recorded at RTA station 05.627 – Tumbi Umbi

Period	Traffic Growth
1988 - 2004	4.8% pa
1990 - 2004	5.1% pa
1992 - 2004	4.4% pa
1995 - 2004	3.5% pa
1998 - 2004	3.0% pa
2001 - 2004	2.9% pa

Based on this data it is considered a traffic growth rate of 3% per annum on Wyong Road is appropriate to adopt for this assessment. Using this traffic growth rate it is possible to predict current 2010 volumes by extrapolating the 2004 count volumes. This results in a predicted 2010 AADT of 42,040 vpd. Peak hour traffic volumes generally fall within the range of 8 % to 15 % of AADT volumes with busy sub-arterial roads generally falling closer to the bottom of this range due to the fact that the road is reasonably busy all day and as such the usually spiked peak period is broader than on less busy roads. Adopting 8 % as the percentage of AADT represented by the peak hour traffic volumes on Wyong Road results in an estimated 2010 peak hour traffic volume on Wyong Road of 3,363 vph.

However to be able to assess the performance of the intersections impacted by the proposal Intersect carried out manual traffic counts at the Wyong Road / Beckingham Road roundabout on Friday 26<sup>th</sup> November 2010. Whilst essentially used to determine turning movements through the intersection it also allows you to determine total traffic volumes on the roads. The tally sheets for these manual traffic counts are provided within *Appendix 2*.

This traffic count determined that the peak hour daily traffic volume on Wyong Road was 3,352 vph in the AM peak (7.30 am - 8.30 am) and 3,369 vph in the PM peak (3.30 pm - 4.30 pm). This correlates well with the RTA data indicating that adoption of a 3 % per annum traffic growth rate on Wyong Road is appropriate. It shows the manual traffic count data is suitable for use in this assessment.

This count also showed that Beckingham Road had a peak hour traffic volume of 311 vph in the AM peak and 485 vph in the PM peak. This shows the critical period for assessment in this traffic study is the PM peak i.e. (3.30 pm - 4.30 pm).

Intersect also carried out manual traffic counts on the Beckingham Road / Hillside Drive give way controlled T-intersection on Tuesday 30<sup>th</sup> November 2010 mainly to determine the level of traffic on Hillside Drive. This count found that Hillside Drive had a peak hour traffic volume of 106 vph in the AM peak (8.00 am to 9.00 am) and 238 vph in the PM peak (4.30 pm to 5.30 pm). Again this shows the PM peak period is the critical traffic period for assessment. Interestingly this count found a PM peak hour traffic volume in Beckingham Road of 553 vph which is slightly higher than the results of the Friday count.

Therefore the following existing peak hour traffic volumes have been adopted for this assessment.

#### Table 5.3 – Adopted existing peak hour traffic volumes on the local road network

Road	Peak Hour Traffic Volume (vph)
Wyong Road (MR335)	3,369
Beckingham Road	535
Hillside Drive / Anderson Rd	238

# 6. ROAD CAPACITIES

The capacity of urban roads is generally determined by the capacity of intersections. However, Table 4.3 of the RTA's *Guide to Traffic Generating Developments* provides some guidance on mid block capacities for urban roads. This table is reproduced below.

Type of Road	One-Way Mid-block Lane Capacity (pcu/hr)		
	Divided Road	1,000	
Median or inner tane:	Undivided Road	900	
	With Adjacent Parking Lane	900	
Outer or kerb lane:	Clearway Conditions	900	
	Occasional Parked Cars	600	
	Occasional Parked Cars	1,500	
4 lane undivided:	Cleanway Conditions	1,800	
4 lane divided:	Clearway Conditions	1,900	

	Table 4.3	
Typical mid-block capacities	for urban	roads with interrupted flow

Based on this table and the current geometric layout of the local road network it is considered the roads in the local road network have the following capacities as shown in Table 6.1 below;

#### Table 6.1 - Peak hour two way mid block road capacities

Road	Two way mid block road capacity (vph)		
Wyong Road (MR335)	3,800		
Beckingham Road	1,800		
Hillside Drive / Anderson Rd	1,800		

As the existing peak hour traffic volumes on the local road network determined in **Section 5** above are less than these figure it is concluded the local road network impacted upon by the proposed development is operating within its technical capacity therefore has spare capacity to cater for additional traffic.



# 7. ALTERNATE TRANSPORT MODES

Red Bus Services runs public bus services past the site along Wyong Road seven days a week. Routes 15, 25 & 47 run past the site with bus stops near Pindarri Avenue, some 200 metres from the site. Pedestrian access is available to bus stops on Wyong Road via a concrete footpath within a section of unformed road near the Anderson Road / Hillside Drive intersection (see **Photograph 5** below). These services provide links to Wyong, Tuggerah and Gosford as well as many of the shopping centres in the area. Current route maps and timetables are provided within **Appendix 3**.

Pedestrian facilities via constructed pedestrian pathways in the area are provided along Wyong Road and extend up both Beckingham Street and Hillside Drive for a short distance of 200 metres. The rest of Hillside Drive connecting to the site in Anderson Road does not have constructed pedestrian facilities requiring pedestrians to share the road carriageway with vhicular traffic.

Wyong Road also provides a line marked on road cycleway which links the site to other cycleways within the area. However from the site to Wyong Road via Hillside Drive and Beckingham Road no on or off road cycle facilities exist. Thus cyclists from Wyong Road to the site would be required to share the travel lane with vehicular traffic.



Photograph 5 – Concrete Footpath to Wyong Road

## 8. EXISTING SITE DEVELOPMENT

The site is currently vacant land and thus generates little if any traffic on the road network. The land is primarily cleared with some existing vegetation along the southern boundary.



# 9. PROPOSED DEVELOPMENT

The proposed development on the site is a residential subdivision comprising up to 23 allotments. This will require the site to be rezoned to a 2(a) Residential zone, or similar. It is expected that the average allotment size will be in the order of 700 m<sup>2</sup>. Development plans are provided in **Appendix 1**. It is not known if the development will be staged therefore this assessment has been carried out on the basis of the site being fully developed.



## **10. TRAFFIC GENERATION**

RTA's *Guide to Traffic Generating Development's* provides specific advice on the traffic generation potential of various land uses. In regard to residential development (dwelling houses) the guide rates are;

Daily Vehicle Trips = 9 per day and;

Weekday peak hour vehicle trips = 0.85 per dwelling.

Therefore the likely traffic generation from the proposed 23 lot residential subdivision will be;

Daily Vehicle Trips = **207 vpd**; and Weekday peak hour vehicle trips = **20 vph**.

It is considered likely that the AM and PM peak traffic periods for traffic generated by this development will coincide with the existing peak hour traffic periods for the road network.



## **11. TRIP DISTRIBUTION**

Before carrying out an assessment of the impacts of the additional traffic on the local road network the additional vehicle trips from the development have to be assigned to the network. The manual traffic counts carried out at the Hillside Drive / Beckingham Road intersection and the Beckingham Road / Wyong Road intersection provide the necessary data to assign these trips. The distribution of traffic generated by the development has been assumed to mirror current distribution patterns at the intersection. It is assumed that all traffic will either head to or generate from Beckingham Road during the AM and PM peak periods.

The manual traffic counts determined the following

#### Beckingham Road / Hillside Drive intersection:

#### AM Peak

- 50 % of traffic is into Hillside Drive and 50 % of traffic is out of Hillside Drive;
- 85 % of traffic from Hillside Drive turns left into Beckingham Road; and
- 85 % of traffic from Beckingham Road turns right into Hillside Drive.

### PM Peak

- 60 % of traffic is into Hillside Drive and 40 % of traffic is out of Hillside Drive;
- 80 % of traffic from Hillside Drive turns left into Beckingham Road; and
- 70 % of traffic from Beckingham Road turns right into Hillside Drive.

#### Wyong Road / Beckingham Road roundabout;

AM Peak

 54 % of traffic turning from Wyong Road into Beckingham Road is from the west; and,

67 % of traffic turning into Wyong Road from Beckingham Road heads west.

PM Peak

- 60 % of traffic turning from Wyong Road into Beckingham Road is from the west; and,
- 67 % of traffic turning into Wyong Road from Beckingham Road heads west.

Using these trip distribution rates the following trip distribution patterns for the traffic generated by the proposed residential development have been determined for both intersections as shown in *Figures 2 to 9* below.



Figure 2 Beckingham Road / Hillside Drive intersection - AM peak – current traffic volumes



Figure 3 Beckingham Road / Hillside Drive intersection - AM peak – post development traffic volumes



Figure 4 Beckingham Road / Hillside Drive intersection - PM peak – current traffic volumes



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Figure 5 Beckingham Road / Hillside Drive intersection - PM peak – post development traffic volumes



Figure 6 Wyong Road / Beckingham Road roundabout - AM peak – current traffic volumes.



Figure 7 Wyong Road / Beckingham Road roundabout – AM peak – post development traffic volumes.





Figure 8 Wyong Road / Beckingham Road roundabout – PM peak – current traffic volumes.



Figure 9 Wyong Road / Beckingham Road roundabout – PM peak – post development traffic volumes.



# 12. TRAFFIC IMPACT ASSESSMENT

### 12.1 Road Network Capacity

This assessment has determined (**Section 6**) that the existing road network around the site, Wyong Road, Beckingham Road, Hillside Drive and Anderson Road, is currently operating below its technical capacity and subject to satisfactory intersection performance has some spare capacity to cater for additional traffic. **Section 10** of this report determined that the proposed residential subdivision is only likely to generate up to 20 additional vehicle trips per hour on this road network.

Even with this additional development traffic on it, the road network will still be operating below its technical capacity. Therefore it is concluded that there is sufficient spare capacity within the local road network to cater for the proposed residential subdivision.

### 12.2 Access Intersection Capacity

It has been determined that the two road network intersections likely to be affected by the proposed residential subdivision are the Hillside Drive / Beckingham Road give way controlled T-intersection and the Wyong Road / Beckingham Road roundabout.

To determine whether these intersections have spare capacity to cater for the proposed development they have been modelled using the SIDRA 5 intersection modelling program for current traffic volumes, post development traffic volumes and predicted 2020 traffic volumes. Both the AM and PM peak periods were modelled. 2020 traffic volumes were determined by using a traffic growth rate of 3 % per annum on Wyong Road and 1 % per annum for Beckingham Road, Hillside Drive and Anderson Road. These growth rates have been determined from historical records in the case of Wyong Road and on the basis of minor development on the minor roads over the next 10 years. The results of this modelling are shown **Tables 12.1, 12.2, 12.3 and 12.4** below. Sidra movement summary sheets are provided within **Appendix 4**.

MOVEMENT	EXISTING PEAK			POST	POST DEVELOPMENT PEAK			2020 PEAK		
MOVEMENT	LEVEL OF	AVERAGE	95% BACK OF	LEVEL OF	AVERAGE DELAY	95% BACK OF	LEVEL OF	AVERAGE	95% BACK OF	
IDENTIFICATION	SERVICE	DELAY (sec)	QUEUE (m)	SERVICE	(sec)	QUEUE (m)	SERVICE	DELAY (sec)	QUEUE (m)	
BECKINGHAM RD SOUTH										
L	A	6.5	0	A	6.5	0	A	6,5	0	
Τ	A	o	0	Α	o	0	Α	0	0	
BECKINGHAM RD NORTH										
т	A	0.5	3	A	0.5	3.2	A	0.6	3.6	
R	A	7,3	3	A	7.4	3.2	Α	7,4	3.6	
HILLSIDE DRIVE WEST										
L	A	7.4	1,9	A	7.4	2,3	А	7.6	2.6	
R	А	7.7	1.9	А	7.8	2.3	А	7.9	2.6	

#### Table 12.1 – Sidra results Beckingham Road / Hillside Drive T-intersection – AM Peak.

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MOVEMENT	EXISTING PEAK			POST DEVELOPMENT PEAK			2020 PEAK		
MOVEMENT	LEVEL OF	AVERAGE	95% BACK OF	LEVEL OF	AVERAGE DELAY	95% BACK OF	LEVEL OF	AVERAGE	95% BACK OF
IDENTIFICATION	SERVICE	DELAY (sec)	QUEUE (m)	SERVICE	(sec)	QUEUE (m)	SERVICE	DELAY (sec)	QUEUE (m)
BECKINGHAM RD SOUTH									
ι	A	6.5	0	A	6,5	o	Α	6.5	0
т	A	0	0	A	o	0	Α	0	0
BECKINGHAM RD NORTH									
т	A	1	12	A	1	12,5	Α	1.1	14.4
R	A	7.8	12	A	7.8	12,5	A	8	14.4
HILLSIDE DRIVE WEST									
L	A	8.8	4	А	8.8	4.4	A	9,2	5,1
R	A	9.1	4	A	9.1	4.4	A	9.5	5.1

### Table 12.2 – Sidra results Beckingham Road / Hillside Drive T-intersection – PM Peak.

### Table 12.3 – Sidra results Wyong Road / Beckingham Road Roundabout – AM Peak.

MOVEMENT	EXISTING PEAK			POST DEVELOPMENT PEAK			2020 PEAK		
MOVEMENT	LEVEL OF	AVERAGE	95% BACK OF	LEVEL OF	AVERAGE	95% BACK OF	LEVEL OF	AVERAGE	95% BACK OF
IDENTIFICATION	SERVICE	DELAY (sec)	QUEUE (m)	SERVICE	DELAY (sec)	QUEUE (m)	SERVICE	DELAY (sec)	QUEUE (m)
BECKINGHAM RD SOUTH									
L	A	9.9	10	A	9.9	10.5	с	31,3	38.5
R	В	16.6	6.2	В	16.6	6.6	с	34.3	22.6
WYONG RD EAST									
L	A	7.2	65.5	A	7.3	66.6	А	8.2	201.7
тт	A	7.6	66.2	A	7.6	67.2	A	8.6	201.7
WYONG RD WEST									
т	A	7.3	30.6	A	7.4	30.9	A	7.5	50.1
R	A	11.7	29.9	A	11.7	30.2	A	11.9	49

### Table 12.4 – Sidra results Wyong Road / Beckingham Road Roundabout – PM Peak.

MOVEMENT	EXISTING PEAK		POST DEVELOPMENT PEAK			2020 PEAK			
MOVEMENT	LEVEL OF	AVERAGE	95% BACK OF	LEVEL OF	AVERAGE DELAY	95% BACK OF	LEVEL OF	AVERAGE	95% BACK OF
IDENTIFICATION	SERVICE	DELAY (sec)	QUEUE (m)	SERVICE	(sec)	QUEUE (m)	SERVICE	DELAY (sec)	QUEUE (m)
BECKINGHAM RD SOUTH									
L	A	7	5.1	A	7	5.4	Α	8.5	9.5
R	A	12.8	3	Α	12.8	3.3	A	14.5	5.7
WYONG RD EAST									
L	A	8	39.3	А	8.1	40	Α	10	88.1
т	A	8.4	39.3	A	8.5	40	Α	10.6	88.7
WYONG RD WEST	· · · · · · ·								
т	A	7.4	69	A	7.4	70	A	7.9	180.6
R	A	11.7	68.3	А	11.8	69.3	A	12.4	170.7



It can be seen from the SIDRA results that the proposed development will have very little impact on the operation of both intersections. The increased average delays are likely to be less than 1 second while the increase in the 95 % back of queue length at the intersections are predicted to be less than 1 metre, hence will not be noticeable. Both intersections operate with good levels of service for all traffic movements post development.

Future modelling to 2020 shows these intersections will continue to operate satisfactorily with acceptable levels of service, average delays and 95% back of queue lengths.

Overall it is concluded that the proposed residential development will not have an adverse impact on the operation of either the Wyong Road / Beckingham Road roundabout or the Beckingham Road / Hillside Drive intersections.

### 12.3 On-Site Car Parking

The development as a residential subdivision does not generate an immediate on-site parking demand however future development of the individual allotments will generate an on-site parking demand. The allotments with an average size expected to be in the order of 700 m<sup>2</sup> are large enough to ensure on-site parking provisions can be accommodated within the lots.

Future development will need to comply with Wyong Council's Consolidated DCP (Chapter 61 – Car Parking) in regard to the provision of on-site car parking.

### **12.4** Alternate Transport Modes

Red Bus Services currently services the Glenning Valley area well (seven days a week, three services) with a public transport service (bus) that links to most of the major employment, shopping and service precincts in the area as well as broader public transport facilities such as train stations. This service currently travels along Wyong Road and would require future residents of the proposed residential subdivision to walk to and from bus stops located on Wyong Road.

However it is unlikely that the additional demand for public transport generated from a 23 lot residential subdivision would be enough to encourage the bus company to service the site directly. Therefore it is considered that no additional public transport facilities are required with the construction of this development.

Similarly whilst the proposed residential subdivision is likely to generate additional pedestrian and cycle traffic the size of the development is such that the additional demand will be small. Therefore apart from the extension of the existing pedestrian network from the end of Hillside Drive to the site it is considered unreasonable to require further pedestrian and cycle facilities.



### 12.5 Subdivision Design

The subdivision design provided in *Appendix 1* is currently only a concept plan and subject to further refinement during the development approval process. Therefore the following comments may need to be reviewed should the concept change significantly as the approval process continues.

The internal layout consists of two small cul-de-sacs with turning heads which will be constructed to the standards required by Wyong Council and expected to be a condition of consent. Cross intersections have been avoided and overall it is considered the internal layout complies with current best practice and is satisfactory. The constraints of the small site will mean that there will not be too many workable alternatives to this concept whilst still maintaining an efficient use of the land.

The main concern in regard to traffic safety will be the location of the subdivision access intersection with Anderson Road. To ensure suitable levels of road safety, sight distance at the intersection should at least comply with the safe intersection sight distance (SISD) criteria provided within Austroads "Guide to Traffic Engineering Practice – Part 5 Intersections at Grade". Table 6.3 of this document indicates that for a 50 km/h speed zoning the desirable SISD is 96 metres while the absolute minimum SISD is 89 metres. It is thought some grade correction is also required at the site and the target SISD should at least be 90 to 95 metres.

An inspection of the site found that sight distance along Anderson Road was limited however it is considered that the requirements of Austroads for SISD could be met. Sight distance to the north back to Hillside Drive is likely to be right on the minimum requirement however vehicles entering Anderson Road from Hillside Drive are also likely to be travelling less than 50 km/h due to the sharp left turn that needs to be negotiated. Sight distance south along Anderson Road is likely to be slightly better being in excess of 100 metres and could be further improved with clearing of the vegetation on the bend south of the site.

Overall it is concluded that a safe subdivision access intersection could be constructed off Anderson Road however careful design will need to be carried out during the detail design stage to ensure the SISD requirements of Austroads are met.





# 13. CONCLUSIONS

This traffic impact assessment for a proposed 23 lot residential subdivision at 5 Anderson Road, Glenning Valley has determined the following;

- The local road network likely to be directly impacted by any additional traffic generated by the proposal includes Wyong Road, Beckingham Road, Hillside Drive and Anderson Road.
- There are no proposed road network improvements in the immediate future that will either increase the existing capacity of the local road network or reduce traffic volumes on the network. Some thought to implementation of Bus Transit lanes on Wyong Road are being considered however are currently at a very preliminary planning stage.
- The existing peak hour traffic volumes on the adjoining road network occur in the PM peak and are 3,369 vph on Wyong Road, 535 vph on Beckingham Road and 238 vph on Hillside Drive / Anderson Road. The average historical traffic growth rate on Wyong Road was found to be 3 % per annum.
- Based on Table 4.3 of the RTA's Guide to Traffic Generating Developments and the physical geometry of the local road network the two way mid block road capacities for the local road network are 3,800 vph for Wyong Road, 1,800 vph for Beckingham Road / Hillside Drive / Anderson Road. Therefore the existing road network is operating below its technical capacity and subject to satisfactory intersection performance would have some spare capacity to accommodate additional development.
- The site is well serviced with public transport with Red Bus Services running regular seven day a week services along Wyong Road past the site.
- Pedestrian and cycle facilities are available along Wyong Road and for a short distance along Beckingham Road and Hillside Drive.
- The existing site is vacant cleared land which currently does not generate any traffic on the local road network.
- As a 23 lot residential subdivision and using rates contained within the RTA's *Guide to Traffic Generating Developments* it is estimated that the proposal will generate an additional 207 vehicle trips per day or more importantly for traffic assessment purposes approximately 20 vehicle trips within the AM and PM peak hour traffic periods.
- The two main intersections likely to be directly impacted by the development are the Wyong Road / Beckingham Road roundabout and the Hillside Drive / Beckingham Road give way controlled T-intersection.
- After distributing the additional development traffic onto these intersections in line with current traffic distribution patterns and modelling the intersections using the Sidra 5 intersection modelling program it was found that both the Wyong Road / Beckingham Road roundabout and the Beckingham Road / Hillside Drive T-intersection will continue to operate satisfactorily at least up until 2020. Average delays and queue lengths at these intersections will increase by less than 1 second and 1 metre respectively as a result of the development therefore the impact of the development will not be noticeable. Levels of service for all traffic movements through these intersections will remain high.
- The additional demand generated by the development for alternate transport modes such as public transport, walking and cycling will be low due to the small scale nature of the subdivision. As such it is considered additional services or facilities for these transport modes are not warranted except perhaps for a pedestrian footpath connection to the existing pedestrian footpath to Wyong Road at the end of Hillside Drive.
- The proposed internal subdivision layout is considered suitable given the constraints of the small site while achieving the aim of efficient use of the land. The standard of road construction will ultimately be up to Wyong Council and likely to be specified in any future conditions of consent.
- It is considered that a safe subdivision access can be provided to Anderson Road as suitable sight distance in accordance with Austroads Standards could be achieved in both directions.



## 14. RECOMMENDATION

On the basis of this traffic impact assessment of the proposed 23 lot residential subdivision at 5 Anderson Road, Glenning Valley it is recommended that the proposal can be supported from a traffic impact perspective as it is considered the local road network has sufficient capacity to cater for the additional demand generated by the proposal. Therefore the proposal will not adversely impact on the local road network.

JR Garry BE (Civil), Masters of Traffic Director Intersect Traffic Pty Ltd

In raffic

# **APPENDIX 1** DEVELOPMENT PLANS

APPENDIX 1



# **APPENDIX 2** MANUAL TRAFFIC COUNT SHEETS

Date	30-11-10
Day	Tuesday
Time	
Weather	Fine
Conducted by:	Brad

Movement	1	2	3	4	5	6	Hourly Volumes
6.45 - 7.00	1	3	1	9	12	0	
7.00 - 7.15	5	6	6	6	11	1	
7.15 - 7.30	2	11	8	10	19	1	
7.30 - 7.45	1	8	8	7	27	3	166
7.45 - 8.00	0	11	13	19	22	2	207
8.00 - 8.15	3	15	11	24	30	3	258
8.15 - 8.30	1	12	10	13	33	1	277
8.30 - 8.45	1	7	14	10	28	0	283
8.45 - 9.00	4	11	9	11	29	4	284

	18	84	80	109	211	15
Peak hour	9	45	44	58	120	8



Beckingham East	267
Beckingham West	195
Hillside	106

Date	19-11-10	
Day	Friday	
Time		
Weather	Fine	
Conducted b	y: Brad / Matt	

Movement	1	2	3	4	5	6	Hourly Volumes
3.30 - 3.45	79	496	340	42	2	21	
3.45 - 4.00	69	488	359	38	15	42	
4.00 - 4.15	51	408	315	31	19	18	
4.15 - 4.30	16	401	255	23	8	11	3547
4.30 - 4.45	38	352	251	32	6	47	3293
4.45 - 5.00	67	373	232	24	12	40	3030
5.00 - 5.15	34	321	207	17	9	26	2802
5.15 - 5.30	27	274	221	22	11	18	2661
	381	3113	2180	229	82	223	
Peak Hour	215	1793	1269	134	44	92	

Beckingham	485
Wyong Rd South	3240
Wyong Rd North	3369

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14

Date	26-11-10	
Day	Friday	
Time		
Weather	Fine	
Conducted I	ov: Brad / Matt	

Movement	the state of	2	3	4	V 0 5	6	Hourly Volumes
6.45 - 7.00	1	97	217	11	7	9	
7.00 - 7.15	3	130	308	21	8	13	
7.15 - 7.30	5	208	359	15	7	13	
7.30 - 7.45	20	289	527	17	8	38	2331
7.45 - 8.00	12	303	578	13	15	53	2963
8.00 - 8.15	10	266	446	14	14	15	3245
8.15 - 8.30	20	324	425	8	28	26	3469
8.30 - 8.45	4	346	413	21	33	17	3404
8.45 - 9.00	8	298	371	13	26	20	3166

	83	2261	3644	133	146	204
Peak Hour	62	1182	1976	52	65	132



Beckingham	311
Wyong Rd South	3275
Wyona Rd North	3352

Date	30-11-10	
Day	Tuesday	
Time		
Weather	Fine	
Conducted	oy: Brad	

Movement	1	2	3	4	5	6	Hourly Volumes
3.30 - 3.45	3	11	18	27	22	2	
3.45 - 4.00	7	9	13	21	11	5	
4.00 - 4.15	11	8	22	30	14	8	
4.15 - 4.30	8	13	15	26	25	10	339
4.30 - 4.45	5	11	21	42	29	16	380
4.45 - 5.00	8	21	26	63	35	13	480
5.00 5.15	2	22	32	67	44	5	559
5.15 - 5.30	4	16	27	59	38	9	615
	48	111	174	335	218	68	
Peak Hour	19	70	106	231	146	43	



Beckingham East Rd	553
Beckingham West Rd	439
Hillside Drive	238

# **APPENDIX 3** BUS ROUTE PLANS / TIMETABLES





### The Entrance to Wyong

via Bay Village, Berkeley Vale & Tuggerah

### **Monday to Friday**

Route	16	24	16	15	24	16	15	24	16	15	24	16	15	24
	am	am	am	am	am	am	am	am	am	am	am	am	am	am
The Entrance (Torrens Av)	4.33	4.49	5.12		5.20	5.43		5.47	6.11		6.15		36666	6,4
Central Coast Hwy & Pacific St	4.37		5.16			5.47			6.15			6.47		
Stella St & Bay Rd		4.55			5.26	****	19175	5.53			6.21			6.5
Bay Village				5.17			5.49			6.17			6.48	
Wyong Rd & South St	4.43	5.03	5.21		5.34	5.53		6.02	6.21		6.30			7.0
Eastern Rd & Sherry St		5.07	••••	5.22	5.38	****	5.54	6.06	••••	6.22	6.34		6.53	7.0
Mingara Recreation Club		****												
Wyong Rd & Pindarri Av				5.28			6.00			6.28		the second s	7.00	
Jubilee Pde & Kilkenny Pde	4.50	5.15	5.28		5.46	6.00		6.14	6.28	****	6.42	7.00		7.1
<b>Berkeley Vale Retirement Villag</b>	e					*****								
Wyong Rd & Berkeley Rd		5.18		5.29	5.49		6.01	6.17		6.29	6.45		7.01	7.1
Berkeley Rd & Bundeena Av		5.19		5.30	5.50		6.02	6.18		6.30	6.46		7.02	7.1
Bottlebrush Dr & Torrellia Wy												s		6 24
Lakedge Av & Albatross Rd	4.54	5.24	5.32		5.55	6.04		6.23	6.32		6.51	7.04		7.2
Albatross Rd & Platypus Rd	****													
Kalua Dr & Aloha Dr														
Wyong Rd & Chittaway Rd	4.57	5.27	5.35	5.35	5.58	6.07	6.07	6.26	6.35	6.35	6.54	7.07	7.07	7.2
Geoffrey Rd & Henry St														
Tuggerah Station East	5.02	5.32	5.40	5.40	6.03	6.12	6.12	6.31	6.40	6.40	6.58		7.12	7.3
Train to Sydney departs	5.07	5.38	<b>N</b> 5.45 i	N5.45	6.08	<b>N</b> 6.17 i	N6.17	6.38	<b>N</b> 6.45 I	<b>N</b> 6.45	7.03	N7.17	<b>N</b> 7.17	7.4
Train to Newcastle departs	5.35				6.09	6.33	6.33		6.50	6.50		7.17	7.17	
Westfield Tuggerah					24428	-	2000			(1999)	7.03	7.17		7.3
Woodbury Park Dr & Brickendon Av	v 5.07	5.37			6.08			6.36	6.45		7.08	7.22		7.4
Tuggerah Station West							6.16						7.16	
Wyong Station	5.13	5.43			6.13		6.20	6.42	6.51		7.14	7.28	7.20	7.4
Wyong Plaza							****					<b>T</b> 7.32		<b>T</b> 7.5
Wyong Hospital												7.44		

### Explanations

G - Route 19 operates between Gosford and Bay Village as per Route 23 then continues to Wyong as per Route 26.

N – Train operates to or from North Sydney.

R - Bus operates via Reliance Dr and Pioneer Av (Tuggerah Business Park) in lieu of Wyong Rd.

T - Bus operates via Wyong TAFE.

.... - Bus does not operate past this timing point.

### Wheelchair accessible buses

Over 50% of our fleet are low floor wheelchair accessible air conditioned buses. We operate



these buses on the majority of our services. To ensure an accessible bus is operating on the service you wish to catch please call our office on 4332 8655 on the day of travel.

(I/ L. C. L.

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### **The Entrance to Wyong**

via Bay Village, Berkeley Vale & Tuggerah



### Monday to Friday (cont...)

				00		10	05			05	10	00		10
ref Route	25	26	25	26	25	19	25	26	26	25	19	26	25	19
	am	am	am	am	am	am	am	am	am	am	am	am	am	am
A The Entrance (Torrens Av)	6.58	<b>7.09</b>	7.13	7.30	7.45	••••	8.08	<mark>8.1</mark> 0	8.30	8.40		9.00	9.23	•••
Central Coast Hwy & Pacific St		7.14		7.35				8.15	8.35			9.05		
Stella St & Bay Rd	7.03		7.19		7.51	G	8.14			8.46			9.29	G
Bay Village	7.14	7.19	7.30	7.40	8.02	8.00	8.25	8.20	8.40	9.00	9.00	9.10	9.40	9.40
Wyong Rd & South St		7.25	****	7.46		8.05	****	8.26	8.46		9.05	9.16		9.45
Eastern Rd & Sherry St	7.19		7.35		8.07		8.30			9.05		12122	9.45	
G Mingara Recreation Club	1000			- menes		(1999)				9.12			****	
Wyong Rd & Pindarri Av	7.21		7.42		8.14		8.37			9.16			9.52	
Jubilee Pde & Kilkenny Pde		7.32	****	7.53		8.12	****	8.33	8.53		9.12	9.23		9.52
Berkeley Vale Retirement Village		7.36		7.57		8.16		8.37	8.57		9.16	9.27		9.56
Wyong Rd & Berkeley Rd	7.22		7.43		8.15		8.38			9.17			9.53	
Berkeley Rd & Bundeena Av	7.23		7.44		8.16		8.39			9.18			9.54	
Bottlebrush Dr & Torrellia Wy	7.26		7.47		8.19		8.42			9.21			9.57	
Lakedge Av & Albatross Rd	7.31	7.40	7.52	8.01	8.24	8.20	8.47	8.41	9.01	9.26	9.20	9.31	10.02	10.00
Albatross Rd & Platypus Rd	7.32		7.53		8.25		8.48		10000	9.27			10.03	
B Kalua Dr & Aloha Dr					8.31								10.09	
Wyong Rd & Chittaway Rd	7.35	<b>R</b> 7.43	7.59	8.04	8.34	8.23	8.54	8.44	9.04	9.33	9.23	9.34	10.12	10.03
B Geoffrey Rd & Henry St														
S Tuggerah Station East	7.42	7.50	8.06	8.09	8.41	8.28	8.59	8.49	9.09	9.40	9.28	9.39	10.19	10.08
Train to Sydney departs	8.01	8.01	8.28	8.28	8.53		0.01.11	8.53	9.30	9.47	9.47	9.47	10.29	10.29
Train to Newcastle departs	7.49				1.1.1		9.08	9.08		9.51				
Westfield Tuggerah	7.47	7.55	8.11	8.14	8.46	8.33	9.04	8.54	9.14	9.45	9.33	9.44	10.24	10.13
Woodbury Park Dr & Brickendon Av		8.00		8.19		8.38		8.59	9.19		9.38	9.49	33332	10,18
Tuggerah Station West	7.51		8.15		8.50		9.08			9.49			10.28	
Wyong Station	7.55	8.06	8.19	8.26	8.54	8.42	9.12	9.05	9.26	9.53	9.42	9.55	10.32	10.24
Wyong Plaza		<b>T</b> 8.10						<b>T</b> 9.09			<b>T</b> 9.46			
Wyong Hospital								9.21						



For Monday to Friday timetables from Wyong to The Entrance go to page 12, For Route Map see pages 2 and 3.

For Route 19 journeys from Gosford please see page 20.



### Please have exact fare ready

Paying the exact fare helps speed up the bus service for everyone. Better still, PrePay with a discounted multi-ride MyBus TravelTen ticket. Visit www.myzone.nsw.gov.au for a list of ticket outlets.

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# The Entrance to Wyong



via Bay Village, Berkeley Vale & Tuggerah

## Monday to Friday (cont...)

Route	26	27	25	19	26	25	19	26	27	25	19	26	26	25
	am	am	am	am	am	am	am	pm	pm	pm	pm	pm	pm	pn
The Entrance (Torrens Av)	10.00	ä.,	10.23		11.00	11.23	••••	12.00	2000	12.23		12.50	1.10	1.2
Central Coast Hwy & Pacific St	10.05				11.05			12.05				12.55	1.15	
Stella St & Bay Rd		e	10.29	G		11.29	G			12.29	G			1.4
Bay Village	10.10		10.40	10.40	11.10	11.40	11.40	12.10		12.40	12.40	1.00	1.20	1.4
Wyong Rd & South St	10.16			10.45	11.16		11.45	12.16	54444	****	12.45	1.06	1.26	
Eastern Rd & Sherry St			10.45	-		11.45				12.45	****			1.4
Mingara Recreation Club			10.52							12.52				,
Wyong Rd & Pindarri Av			10.56			11.52				12.56				1.
Jubilee Pde & Kilkenny Pde	10.23			10.52	11.23		11.52	12.23			12.52	1.13	1.33	
<b>Berkeley Vale Retirement Village</b>	10.27			10.56	11.27		11.56	12.27			12.56	1.17	1.37	
Wyong Rd & Berkeley Rd			10.57			11.53				12.57				1.
Berkeley Rd & Bundeena Av			10.58			11.54				12.58		••••	••••	1.
Bottlebrush Dr & Torrellia Wy			11.01			11.57				1.01				1.
Lakedge Av & Albatross Rd	10.31		11.06	11.00	11.31	12.02	12.00	12.31		1.06	1.00	1.21	1.41	2.0
Albatross Rd & Platypus Rd			11.07			12.03				1.07				2.0
Kalua Dr & Aloha Dr						12.08								
Wyong Rd & Chittaway Rd	10.34		11.13	11.03	11.34	12.11	12.03	12.34	201000	1.13	1.03	1.24	1.44	2.
Geoffrey Rd & Henry St		10.13							12.13					
Tuggerah Station East	10.39		11.20	11.08	11.39	12.18	12.08	12.39		1.20	1.08	1.29	1.49	2.
Train to Sydney departs	10.47		11.29	11.29	11.47	12.29	12.29	12.47		1.29	1.29	1.47		2.
Train to Newcastle departs	10.50		11.50	à 19.17	11.50			12.50		1.50		1.50		
Westfield Tuggerah	10,44	10.20	11.25	11.13	11.44	12.23	12.13	12.44	12.20	1.25	1.13	1.34	1.54	2.
Woodbury Park Dr & Brickendon Av	10.49	10.24		11.18			12.18	12.49	12.24		1.18	1.39	1.59	
Tuggerah Station West			11.29			12.27				1.29				2.
Wyong Station	10.55	10.28		11.24		12.31	12.24	12.55	12.28	1.33	1.24	1.45	2.05	2.
Wyong Plaza	T10.59		<b>T</b> 11.37					T12.59		T1.37				
Wyong Hospital	11.12							1.12						

#### Explanations

G - Route 19 operates between Gosford and Bay Village as per Route 23 then continues to Wyong as per Route 26.

T – Bus operates via Wyong TAFE.

.... - Bus does not operate past this timing point.

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these buses on the majority of our services. To ensure an accessible bus is operating on the service you wish to catch please call our office on 4332 8655 on the day of travel.



# The Entrance to Wyong via Bay Village, Berkeley Vale & Tuggerah



#### Monday to Friday (cont...)

Route	19	27	26	25	26	25	19	25	19	26	26	25	19	26
	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm
The Entrance (Torrens Av)			1.55	1.58	2.15	2.23		2.43		3.00	3.30	3.43		4.10
Central Coast Hwy & Pacific St			2.00		2.20			****		3.05	3.35			4.1
Stella St & Bay Rd	G			2.04	****	2.29	G	2.49	G			3.49	G	
Bay Village	1.40		2.05	2.15	2.25	2.40	2.40	3.00	3.00	3.10	3.40	4.00	4.00	4.20
Wyong Rd & South St	1.45		2.11		2.31		2.45		3.05	3.15	3.46		4.05	4.26
Eastern Rd & Sherry St	10000	nese:		2.20		2.45		3.05		1000		4.05	••••	
Mingara Recreation Club	****	exerv.	****		10000	2.52	24393					4.12		***
Wyong Rd & Pindarri Av				2.27		2.56		3.12				4.16		
Jubilee Pde & Kilkenny Pde	1.52		2.18		2.38		2.52		3.12	3.22	3.53		4.12	4.3
Berkeley Vale Retirement Village	1.56	••••	2.22		2.42		2.56		3.16	3.26	3.57	90.000	4.16	4.37
Wyong Rd & Berkeley Rd			660×	2.28		2.57	3464	3.13		****		4.17		
Berkeley Rd & Bundeena Av				2.29		2.58		3.14				4.18		
Bottlebrush Dr & Torrellia Wy				2.32		3.01		3.17				4.21		
Lakedge Av & Albatross Rd	2.00		2.26	2.37	2.46	3.06	3.00	3.22	3.20	3.30	4.01	4.26	4.20	4.41
Albatross Rd & Platypus Rd				2.38		3.07	00000	3.23				4.27		
Kalua Dr & Aloha Dr				2.44										
Wyong Rd & Chittaway Rd	2.03		2.29	2.47	2.49	3.13	3.06	3.29	3.23	3.33	4.04	4.33	4.23	4.44
Geoffrey Rd & Henry St	****	1.40		2.52			3.13							222
Tuggerah Station East	2.08		2.34	3.00	2.54	3.20	3.19	3.36	3.28	3.38	4.09	4.40	4.28	4.49
Train to Sydney departs			2.59		2.59			3.42	3.42	3.42	4.21			
Train to Newcastle departs		1	2.54			3.54	3.54	3.54	3.54	3.54	4.34	4.49	4.34	5.01
Westfield Tuggerah	2.13	1.47	2.39	3.05	2.59	3.25	3.24	3.41	3.33	3.43	4.14	4.45	4.33	4.54
Woodbury Park Dr & Brickendon Av	2.18	1.51	2.44	300	3.04	149.63	3.29		3.38	3.48	4.19		4.38	4.59
Tuggerah Station West						3.29		3.45				4.49		
Wyong Station	2.24	1.55	2.50		3.10	3.33	3.35	3.49	3.44	3.54	4.25	4.53	4.44	5.05
Wyong Plaza							<b>T</b> 3.39			<b>T</b> 3.58			<b>T</b> 4.48	
Wyong Hospital										4.11				

For Monday to Friday timetables from Wyong to The Entrance go to page 12. For Route Map see pages 2 and 3.

For Route 19 journeys from Gosford please see page 20.

# Pensioner **Excursion Ticket**

The PET allows eligible concession holders unlimited all day travel on buses, trains and ferries across much of NSW for only \$2.50. Conditions apply. Contact our office for details.

#### The Entrance to Wyong via Bay Village, Berkeley Vale & Tuggerah

Red BUS Services

Monday to Friday (cont...)

Route	26	25	19	26	25	19	26	15	26	24	15	26	24	26	24
	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pr
The Entrance (Torrens Av)	4.30	4.43		5.20	5.43		6.00		6.30	6.40		<mark>7.15</mark>	7.37	8.05	8.3
Central Coast Hwy & Pacific St	4.35			5.25			6.05		6.35			7.20		8.10	
Stella St & Bay Rd		4.49	G		5.49	G				6.46			7.43		8.
Bay Village	4.40	5.00	5.00	5.30	6.00	6.00	6.10	6.12	6.40	6.56	6.43	7.25	7.52	8.15	8.
Wyong Rd & South St	4.46		5.05	5.36		6.05	6.16		6.45	7.01	330406	7.31	7.57	8.21	8.
Eastern Rd & Sherry St		5.05			6.05			6.17		7.05	6.48		8.01		9.
Mingara Recreation Club		5.12			6.12					7.10			8.06		9,
Wyong Rd & Pindarri Av		5.16			6.16			6.23		- (2000	6.54				
Jubilee Pde & Kilkenny Pde	4.53	1112	5.12	5.43	****	6.12	6.23		6.52	7.15		7.38	8.11	8.28	9
Berkeley Vale Retirement Village	4.57		5.16	5.47		6.16	6.27		6.56			7.42		8.32	
Wyong Rd & Berkeley Rd		5.17	****		6.17			6.24		7.19	6.55		8.15		9
Berkeley Rd & Bundeena Av		5.18			6.18			6.25		7.20	6.56	2112	8.16		9
Bottlebrush Dr & Torrellia Wy		5.21	****	19444	6.21			2222	1999		\$3040C	044440		analosi (	
Lakedge Av & Albatross Rd	5.01	5.26	5.20	5.51	6.26	6.20	6.31		7.00	7.25		7.46	8.20	8.36	9
Albatross Rd & Platypus Rd		5.27	****		6.27										
Kalua Dr & Aloha Dr				****											
Wyong Rd & Chittaway Rd	5.04	5.33	5.23	5.54	6.33	6.23	6.34	6.30	7.03	7.28	7.01	7.49	8.23	8.39	9
Geoffrey Rd & Henry St		(ace)ere		0000	0.430	****									
Tuggerah Station East	5.09	5.40	5.28	5.59	6.40	6.28	6.39	6.35	7.07	7.32	7.06	7.54	8.27	8.44	9
Train to Sydney departs	5.20		5.59		6.51	6.35	6.51	6.51	7.18	7.59	7.18	7.59	8.32	8.47	9.
Train to Newcastle departs	5.25	5.53	5.53	6.26	6.48	6.48	6.48	6.48	7.24			8.04	8.59	8.59	9
Westfield Tuggerah	5.14	5.45	5.33	6.04	6.45	6.33	6.44		7.12	7.37		7.58	8.32	8.48	9.
Woodbury Park Dr & Brickendon Av	5.19		5.38	6.09		6.38	6.49		7.17	7.42		8.03	8.37	8.53	9
<b>Tuggerah Station West</b>		5.49			6.49										
Wyong Station	5.25	5.53	5.42	6.15	6.53	6.42	6.55		7.23	7.48		8.09	8.43	8.59	9
Wyong Plaza	((*****))	00000			****		****								
Wyong Hospital															

#### Explanations

BV - Bus starts at Bay Village.

G - Route 19 operates between Gosford and Bay Village as per Route 23 then continues to Wyong as per Route 26.

T - Bus operates via Wyong TAFE.

X - Bus operates on Saturday only. This service does not operate on Sunday or Public Holidays.

- .... Bus does not operate past this timing point.
- K Wheelchair accessible service.

For Monday to Friday timetables from Wyong to The Entrance go to page 12. For Route Map see pages 2 and 3.



# The Entrance to Wyong

via Bay Village, Berkeley Vale & Tuggerah



#### **Weekends & Public Holidays**

		(L)	6	الح)	5	E.	6	E.	E.	6	E.	L.	6	Ŀ.	E.	5
nap ref	Route	24	24	25	26	19	25	26	19	25	26	19	25	26	19	25
		am	am	am	am	am	am	am	am	am	am	am	am	am	am	am
Q	The Entrance (Torrens Av)	<b>X</b> 4.46	5.46	5.54	6.06		6.54	7.06		7.33	8.06		8.31	9.06		9.33
Õ	Central Coast Hwy & Pacific St	<u> </u>			6.11			7.11			8.11			9.11		
Q	Stella St & Bay Rd	<b>X</b> 4.52	5.52	6.00		BV	7.00		G	7.39		G	8.37		G	9.39
Q	Bay Village			6.11	6.16	6.50	7.11	7.16	7,50	7.50	8.16	8.50	8.48	9.16		9.50
Õ	Wyong Rd & South St	<b>X</b> 5.01	6.01		6.21	6.55		7.21	7.55		8.21	8.55		9.21	9.55	
õ	Eastern Rd & Sherry St	<b>X</b> 5.05	6.05	6.16			7.16		253652	7.55			8.53			9.55
Q	Mingara Recreation Club		30000	****		80.00				8.02						10.02
Q	Wyong Rd & Pindarri Av	****		6.23			7.23	****		8.06			9.02			10.06
Q	Jubilee Pde & Kilkenny Pde	<b>X</b> 5.12	6.12		6.28	7.02		7.28	8.02		8.28	9.02			10.02	
Q	Berkeley Vale Retirement Village				6.32	7.06		7.32	8.06		8.32	9.06		9.32	10.06	
Q	Wyong Rd & Berkeley Rd	<b>X</b> 5.16	6.16	6.24			7.24			8.07			9.03			10.07
Q	Berkeley Rd & Bundeena Av	<b>X</b> 5.17	6.17	6.25			7.25			8.08			9.04			10.08
Q	Bottlebrush Dr & Torrellia Wy			6.28			7.28	••••		8.11			9.07			10.11
Q	Lakedge Av & Albatross Rd	<b>X</b> 5.22	6.22	6.33	6.36	7.10	7.33	7.36	8.10	8.16	8.36	9.10	9.12	9.36	10.10	10.16
000	Albatross Rd & Platypus Rd Kalua Dr & Aloha Dr			6.35			7.35			8.18			9.14		 	10.18
00	Wyong Rd & Chittaway Rd Geoffrey Rd & Henry St	<b>X</b> 5.25	6.25	6.40	6.39	7.13	7.40	7.39	8.13	8.23	8.39	9.13	9.19 9.22	9.39	10.13	10.23
ğ	Tuggerah Station East	X5.30	6.30	6.47	6.44	7.18	7.47	7.44	8.18	8.30	8.44	9.18	9.30	9.44	10.18	10.30
	Train to Sydney departs	5.36	6.36	6.53	6.53	7.36	7.53	7.53	8.36	8.36	8.53	9.36	9.36	9.53	10.36	10.36
風	Train to Newcastle departs	5.37				7.34					8.57		9.49	9.49		10.49
õ	Westfield Tuggerah			6.52	6.49	7.23	7.52	7.49	8.23	8.35	8.49	9.23	9.35	9.49	10.23	the second s
ð			6.35	(august)	6.54	7.28		7.54	8.28		8.54	9.28		9.54	10.28	
ŏ	Tuggerah Station West			6.56			7.56			8.39			9.39			10.39
Ď	Wyong Station	<b>X</b> 5.41	6.41	7.00	7.00	7.34	8.00	8.00	8.34	8.43	9.00	9.34		10.00	10.34	
õ	Wyong Plaza										<b>T</b> 9.04					
Õ	Wyong Hospital									24444	9.15		- 1000			

For Weekend & Public Holiday timetables from Wyong to The Entrance go to page 17. For Route Map see pages 2 and 3.

The Weekend timetable operates on all Public Holidays except Christmas Day. For Christmas Day timetables go to pages 28 and 29.

For Route 19 journeys from Gosford please see page 20.

# Wheelchair accessible buses

Over 50% of our fleet are low floor wheelchair accessible air conditioned buses. We operate



these buses on the majority of our services. To ensure an accessible bus is operating on the service you wish to catch please call our office on 4332 8655 on the day of travel.

# The Entrance to Wyong via Bay Village, Berkeley Vale & Tuggerah



# Weekends & Public Holidays (cont...)

		E.	E.	齿	(La	L	よ	E	Ŀ	Ł	F	لح ا	F	F	F	F
map ref	Route	26	19	25	26	19	25	26	19	25	26	19	25	26	19	25
-		am	am	am	am	am	am	pm	pm	pm	pm	pm	pm	pm	pm	pm
0	The Entrance (Torrens Av)	10.06	••••	10.33				12.06		12.31	1.06		1.33	2.06	•••*	2.33
0	Central Coast Hwy & Pacific St	10.11			11.11			12.11			1.11			2.11		
Θ	Stella St & Bay Rd		G	10.39		G	11.39			12.37		G	1.39		G	2.39
0	Bay Village	10.16	10.50							12.48	1.16	1.50	1.50	2.16	2.50	2.50
Θ	Wyong Rd & South St	10.21			11.21			12.21			1.21	1.55		2.21	2.55	
Ø	Eastern Rd & Sherry St			10.55			11.55			12.53			1.55			2.55
G	Mingara Recreation Club						12.02						2.02			
0	Wyong Rd & Pindarri Av			11.00			12.06			1.00	10.22	(1993) (1993)	2.06		11122	3.02
0	Jubilee Pde & Kilkenny Pde	10.28	11.02		11.28	12.02			1.02		1.28	2.02		2.28	3.02	
0	<b>Berkeley Vale Retirement Village</b>	10.32	11.06		11.32	12.06		12.32	1.06		1.32	2.06		2.32	3.06	,
Ø	Wyong Rd & Berkeley Rd			11.01			12.07			1.01			2.07		****	3.03
O	Berkeley Rd & Bundeena Av			11.02			12.08			1.02	1992		2.08	660 F	2127	3.04
Ø	Bottlebrush Dr & Torrellia Wy			11.05			12.11			1.05			2.11			3.07
Õ	Lakedge Av & Albatross Rd	10.36	11.10	11.10	11.36	12.10	12.16	12.36	1.10	1.10	1.36	2.10	2.16	2.36	3.10	3.12
Õ	Albatross Rd & Platypus Rd			11.12			12.18			1.12			2.18			3.14
Õ	Kalua Dr & Aloha Dr								1464	4						
Õ	Wyong Rd & Chittaway Rd	10.39	11.13	11.17	11.39	12.13	12.23	12.39	1.13	1.17	1.39	2.13	2.23	2.39	3.13	3.19
Õ	Geoffrey Rd & Henry St			11.24						1.22						
ð	Tuggerah Station East	10.44	11.18	11.32	11.44	12.18	12.30	12.44	1.18	1.30	1.44	2.18	2.30	2.44	3.18	3.26
Ø	Train to Sydney departs	10.53	11.38	11.38	11.53	12.36	12.36	12.53	1.36	1.36	1.53	2.36	2.36	2.58	3.38	3.38
0	Train to Newcastle departs	10.49		11.49	11.49		12.49	12.49		1.49	1.49		2.49	2.49		3.49
Õ	Westfield Tuggerah	10.49	11.23	11.37	11.49	12.23	12.35	12.49	1.23	1.35	1.49	2.23	2.35	2.49	3.23	3.31
Ō	Woodbury Park Dr & Brickendon Av	10.54	11.28		11.54	12.28		12.54	1.28		1.54	2.28		2.54	3.28	
ŏ	Tuggerah Station West			11.41			12.39			1.39			2.39			3.35
ŏ	Wyong Station	11.00			12.00	12.34		1.00	1.34	1.43	2.00	2.34	2.43	3.00	3.34	3.39
ŏ	Wyong Plaza	T11.04												<b>T</b> 3.04		
ŏ	Wyong Hospital	11.15												3.15		
	in yong noopilai									00005				3113	Bennie	

#### **Explanations**

G - Route 19 operates between Gosford and Bay Village as per Route 23 then continues to Wyong as per Route 26.

- Bus operates via Wyong TAFE. Т

X - Bus operates on Saturday only. This service does not operate on Sunday or Public Holidays.

.... - Bus does not operate past this timing point.

<u>L</u> – Wheelchair accessible service.

# The Entrance to Wyong



via Bay Village, Berkeley Vale & Tuggerah

#### Weekends & Public Holidays (cont...)

12.		E.	6	6.	6	E.	B	E)	E.	6	B.	L.	E.	L	齿	6
nap ref	Route	26	19	25	26	19	25	26	19	25	26	25	24	24	24	24
		pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm
Ð	The Entrance (Torrens Av)	3.06		3.33	4.06		4.33	<b>5.06</b>		5.33	6.06	6.33	7.09	7.54	<b>X</b> 8.24	<b>X</b> 9.5
Э	Central Coast Hwy & Pacific St	3.11			4.11			5.11	1010		6.11			600		
Ð	Stella St & Bay Rd		G	3.39		G	4.39		G	5.39		6.39	7.15		<b>X</b> 8.30	
Ð	Bay Village	3.16	3.50	3.50	4.16	4.50	4.50	5.16	5.50	5.50	6.16	6.50	7.25		<b>X</b> 8.40	
€	Wyong Rd & South St	3.21	3.55		4.21	4.55		5.21	5.55		6.21		7.30	<mark>8.15</mark>	<b>X</b> 8.45	<b>X</b> 10.
Э	Eastern Rd & Sherry St			3.55			4.55		1100	5.55	1000	6.55	7.34	8.19	<b>X</b> 8.49	<b>X</b> 10.
9	Mingara Recreation Club			4.02						6.02			7.39	8.24	<b>X</b> 8.54	<b>X</b> 10.
D	Wyong Rd & Pindarri Av			4.06			5.02			6.06		7.02				
	Jubilee Pde & Kilkenny Pde	3.28	4.02		4.28	5.02		5.28	6.02	****	6.28		7.43	8.28	X8.58	<b>X1</b> 0.
	<b>Berkeley Vale Retirement Village</b>	3.32	4.06		4.32	5.06		5.32	6.06		6.32					
3	Wyong Rd & Berkeley Rd			4.07			5.03			6.07		7.03	7.47	8.32	<b>X</b> 9.02	<b>X</b> 10.
•	Berkeley Rd & Bundeena Av			4.08			5.04			6.08		7.04	7.48	8.33	X9.03	X10.
D	Bottlebrush Dr & Torrellia Wy			4.11			5.07			6.11		7.07				
D	Lakedge Av & Albatross Rd	3.36	4.10	4.16	4.36	5.10	5.12	5.36	6.10	6.16	6.36	7.12	7.53	8.38	X9.08	X10.
)	Albatross Rd & Platypus Rd			4.18			5.14			6.18		7.14				
	Kalua Dr & Aloha Dr															
)	Wyong Rd & Chittaway Rd	3.39	4.13	4.23	4.39	5.13	5.19	5.39	6.13	6.23	6.39	7.19	7.56	8.41	X9.11	X10.
5	Geoffrey Rd & Henry St														-	2
)	Tuggerah Station East	3.44	4.18	4.30	4.44	5.18	5.26	5.44	6.18	6.30	6.44	7.26	8.00	8.45	X9.15	<b>X</b> 10.4
	Train to Sydney departs	3.53	4.36	4.36	4.53	5.36	5.36	5.53	6.36	6.36	6.53	7.45	8.05	8.50	9.20	10.5
	Train to Newcastle departs	3.49		4.49	4.49		5.51	5.51		6.49	6.49	7.49		8.53		11.0
)	Westfield Tuggerah	3.49	4.23	4.35	4.49	5.23	5.31	5.49	6.23	6.35	6.49	7.31	8.05	8.50	<b>X</b> 9.20	X10.
5	Woodbury Park Dr & Brickendon Av	3.54	4.28		4.54	5.28		5.54	6.28		6.54		8.10	8.55	<b>X</b> 9.25	X10.
5	Tuggerah Station West			4.39			5.35			6.39		7.35				
Ď	Wyong Station	4.00	4.34	4.43	5.00	5.34	5.39	6.00	6.34	6.43	7.00	7.39	8.16	9.01	<b>X</b> 9.31	X10.
5	Wyong Plaza				T5.04								2222			
5	Wyong Hospital				5.15											

For Weekend & Public Holiday timetables from Wyong to The Entrance go to page 17. For Route Map see pages 2 and 3.

The Weekend timetable operates on all Public Holidays except Christmas Day. For Christmas Day timetables go to pages 28 and 29.

For Route 19 journeys from Gosford please see page 20.



Please clearly signal the driver of the bus you wish to board when at the bus stop. Also give the driver plenty of notice when you wish to alight. This helps the driver to stop the bus safely and comfortably.



# Wyong to The Entrance

via Tuggerah, Berkeley Vale & Bay Village



#### **Monday to Friday**

Route	16	15	16	19	15	19	15	25	26	19	26	25	26	19
	am	am	am	am	am	am	am	am	am	am	am	am	am	am
Wyong Hospital				••••				344452		••••	• * * *	-		
Wyong Plaza						(****				••••		- 1016-	<b>T</b> 7.51	
Wyong Station	5.20	21225		5.59		6.19	6.33		6.48	7.16	7.34	7.39	7.56	8.1
Tuggerah Station West					****		6.37		****			7.43		
Woodbury Park Dr & Brickendon Av	5.25			6.04		6.24		1921	6.53	7.21	7.39		8.01	8.2
Westfield Tuggerah				6.09		6.29			6.59	7.27	7.45	7.47	8.07	8.2
Train from Sydney arrives		5.35	5.35	6.09	6.09		6.33	6.33	7.00	7.17	7.29	7.29	7.49	
Train from Newcastle arrives	5.07	5.38	5.38	6.08	6.08		6.38	6.38		7.13		7.41	8.01	8.:
Tuggerah Station East	5.32	5.42	5.42	6.13	6.20	6.33	6.42	6.48	7.04	7.32	7.50	7.52	8.12	8.3
Geoffrey Rd & Henry St								6.56						
Wyong Rd & Chittaway Rd	5.36	5.46	5.46	6.17	6.23	6.37	6.47	7.01	7.08	7.37	7.55	7.59	8.17	8.
Kalua Dr & Aloha Dr						(2222)	2222							1
Albatross Rd & Platypus Rd							12222	7.07				8.05		
Lakedge Av & Albatross Rd	5.39		5.49	6.20		6.40		7.08	7.12	7.40	7.58	8.06	8.20	8.
Bottlebrush Dr & Torrellia Wy								7.14				8.12		-
Berkeley Rd & Bundeena Av		5.51			6.28		6.52	7.18				8.16		
Wyong Rd & Berkeley Rd		5.52			6.29	12555	6.53	7.19	10000		12223	8.17		-
Berkeley Vale Retirement Village				6.24		6.44			7.16	7.44	8.02		8.24	8.
Jubilee Pde & Kilkenny Pde	5.43		5.53	6.28		6.48			7.20	7.48	8.08		8.28	8.
Wyong Rd & Pindarri Av		5.53			6.30		6.54	7.20				8.18		
Mingara Recreation Club						22222					12252	1212		
Eastern Rd & Sherry St		5.59			6.36		7.01	7.28				8.25		
Wyong Rd & South St	5.50		6.00	6.35		6.55			7.28	7.55	8.15		8.35	8
Bay Village		6.03		6.40	6.40	7.00	7.06	7.35	7.35	8.00	8.20	8.30	8.40	9.
Stella St & Bay Rd			1.1.	G	6.50	G	7.16	7.47		G	· · · ·	8.40		
Central Coast Hwy & Pacific St	5.56		6.06		0.00				7.40		8.25		8.45	
The Entrance (Torrens Av)	6.01		6.11		6.57		7.22	7.54	7.45		8.30	8.47	8.50	

#### Explanations

G - Route 19 operates between Wyong and Bay Village as per Route 26 then continues to Gosford as per Route 23.

P - Bus operates via St Peters College Tuggerah.

T - Bus operates via Wyong TAFE.

---- Bus does not operate past this timing point.





Wyong Rd

# Wyong to The Entrance



### via Tuggerah, Berkeley Vale & Bay Village

#### Monday to Friday (cont...)

ap ef	Route	25	26	25	26	19	25	26	25	26	27	19	26	25	19
		am	am	am	am	am	am	am	am	am	am	am	am	am	am
2	Wyong Hospital									<mark>9.3</mark> 9					
3	Wyong Plaza	<b>T8.10</b>							<b>T</b> 9.50	<b>T</b> 9.52					
9	Wyong Station	8.16	8.36	8.35	8.56	9.16	9.08	9.36	9.54	9.56		10.16	10.36	10.48	10.5
)	Tuggerah Station West	8.20		8.45			9.12		9.58		10.02			10.52	
)	Woodbury Park Dr & Brickendon Av		8.41	Р	9.01	9.21		9.41		10.01		10.21			11.0
	Westfield Tuggerah	8.24	8.47	8.51	9.07	9.27	9.16	9.47	10.02	10.07	10.06	10.27	10.47	10.56	11.0
	Train from Sydney arrives		8.30		9.08			9.31	9.51	9.51			10.30	10.50	10.5
	Train from Newcastle arrives							9.30					10.29		
)	Tuggerah Station East	8.29	8.52	8.56	9.12	9.32	9.22	9.52	10.07			10.32	10.52	11.01	11.1
)	Geoffrey Rd & Henry St										10.13		••••		
)	Wyong Rd & Chittaway Rd	8.36	8.57	9.03	9.17	9.37	9.27	9.57	10.14	10.17	1849 -	10.37	10.57	11.08	11.
	Kalua Dr & Aloha Dr								10.17						
)	Albatross Rd & Platypus Rd	8.41		9.08			9.32							11.13	-
)	Lakedge Av & Albatross Rd	8.42	9.00	9.09	9.20	9.40	9.34	10.00	10.22	10.20		10.40	11.00	11.14	11.2
5	Bottlebrush Dr & Torrellia Wy	8.48		9.15			9.40		10.28		12+24			11.20	,
	Berkeley Rd & Bundeena Av	8.51		9.18			9.43		10.31					11.23	
)	Wyong Rd & Berkeley Rd	8.52		9.19			9.44		10.32		2			11.24	
	Berkeley Vale Retirement Village		9.04		9.24	9.44		10.04		10.24		10.44	11.04		11.2
	Jubilee Pde & Kilkenny Pde		9.08	****	9.28	9.48		10.08		10.28		10.48	11.08		11.2
	Wyong Rd & Pindarri Av	8.53		9.20			9.45		10.33		4.494			11.25	
)	Mingara Recreation Club			9.24			9.49							11.29	÷
	Eastern Rd & Sherry St	9.00		9.30			9.55		10.40	5000				11.35	
)	Wyong Rd & South St		9.15		9.35	9.55		10.15		10.35		10.55	11.15		11.0
	Bay Village	9.05	9.20	9.35	9.40	10.00	10.00	10.20	10.45	10.40		11.00	11.20	11.40	11.4
)	Stella St & Bay Rd	9.15		9.45		G	10.10		10.55			G		11.50	
	Central Coast Hwy & Pacific St		9.26		9.45	-		10.26		10.46	****		11.26		
)	The Entrance (Torrens Av)	9.22	9.31	9.52	9.50		10.17	10.31					11.31	11.57	

For Monday to Friday timetables from The Entrance to Wyong go to page 4. For Route Map see pages 2 and 3.

For Route 19 journeys to Gosford please see page 21.

### Wheelchair accessible buses

Over 50% of our fleet are low floor wheelchair accessible air conditioned buses. We operate



these buses on the majority of our services. To ensure an accessible bus is operating on the service you wish to catch please call our office on 4332 8655 on the day of travel.

# For more information

For more information about bus services operating across the Central Coast, refer to the Central Coast Bus Guide. This Guide covers bus routes from Nords Wharf and Lake Haven in the north, through Wyong, **Tuggerah, The Entrance and Ourimbah and** south to Gosford, Erina, Woy Woy, Kincumber, Wagstaffe and Patonga.



# Wyong to The Entrance



# via Tuggerah, Berkeley Vale & Bay Village

## Monday to Friday (cont...)

Route	26	25	19	27	26	25	19	26	27	25	19	25	19	26
	am	am	am	am	pm	pm	pm	pm	pm	pm	pm	pm	pm	pn
Wyong Hospital	11.14							1.14	2222	63232	20.00	3665	36664	
Wyong Plaza		T11.46						<b>T</b> 1.27		<b>T</b> 1.47				
Wyong Station		11.54			12.31		12.56	1.31	1.25	1.50	1.56	2.09	2.16	2.
Tuggerah Station West	and the second se	11.58		12.02		12.52			1.29	1.54		2.12		
Woodbury Park Dr & Brickendon Av	11.36		12.01		12.36	****	1.01	1.36	****	101436	2.01		2.21	2.
Westfield Tuggerah	11.42	12.02	12.07	12.06	12.42	12.56	1.07	1.42	1.33	1.58	2.07	2.16	2.27	2.
Train from Sydney arrives	11.30	11.51			12.30	12.50		1.30		1.50	1.50			2.
Train from Newcastle arrives	11.29			17 - Litte	12.29			1.29		1000	li par	- Ganet	1 220	2.
Tuggerah Station East	11.47	12.07	12.12		12.47	1.01	1.12	1.47	****	2.03	2.12	2.21	2.32	2
Geoffrey Rd & Henry St				12.13					1.40					
Wyong Rd & Chittaway Rd	11.52	12.14	12.17		12.52	1.08	1.17	1.52		2.11	2.17	2.28	2.37	2
Kalua Dr & Aloha Dr		12.17								2.14				_
Albatross Rd & Platypus Rd		12.21				1.13				2.18		2.33		
Lakedge Av & Albatross Rd	11.55	12.22	12.20		12.55	1.14	1.20	1.55	3844	2.19	2.20	2.34	2.40	З
Bottlebrush Dr & Torrellia Wy		12.28				1.20				2.25		2.40		
Berkeley Rd & Bundeena Av		12.31				1.23			****	2.28	(*****)	2.43		
Wyong Rd & Berkeley Rd		12.32				1.24			in the second se	2.29		2.44		
Berkeley Vale Retirement Village	11.59		12.24		12.59		1.24	1.59	• • • •	****	2.24		2.44	3
Jubilee Pde & Kilkenny Pde	12.03		12.28		1.03		1.28	2.03			2.28		2.48	3
Wyong Rd & Pindarri Av		12.33				1.25				2.30		2.45		
Mingara Recreation Club						1.29						2.49		
Eastern Rd & Sherry St		12.40			****	1.35				2.37		2.55		
Wyong Rd & South St	12.10		12.35		1.10		1.35	2.10			2.35		2.55	3
Bay Village		12.45	12.40		1.15	1.40	1.40	2.15		2.42	2.40	3.00	3.00	3
Stella St & Bay Rd		12.55	G			1.50	G			2.52	G	3.10	G	
Central Coast Hwy & Pacific St	12.21				1.21			2.21						3
The Entrance (Torrens Av)	12.26	1.02			1.26	1.57		2.26		2.59		3.17		3

#### Explanations

G - Route 19 operates between Wyong and Bay Village as per Route 26 then continues to Gosford as per Route 23.

N - Train operates to or from North Sydney.

R - Bus operates via Reliance Dr and Pioneer Av (Tuggerah Business Park) in lieu of Wyong Rd.

T - Bus operates via Wyong TAFE.

.... - Bus does not operate past this timing point.

## Wheelchair accessible buses

Over 50% of our fleet are low floor wheelchair accessible air conditioned buses. We operate



these buses on the majority of our services. To ensure an accessible bus is operating on the service you wish to catch please call our office on 4332 8655 on the day of travel.



# **Wyong to The Entrance**



via Tuggerah, Berkeley Vale & Bay Village

# Monday to Friday (cont...)

P Route	26	25	19	26	26	25	19	25	26	25	19	26	25	16
	pm	pm	pm	pm	pm	pm	pm	рт	pm	pm	pm	pm	pm	pn
Wyong Hospital				••••					4.21					
Wyong Plaza			39.93		<b>T</b> 3.38	<b>T</b> 3.46	100000		<b>T</b> 4.34		****			
Wyong Station	2.56	3.08	3.16	3.36	3.44	3.49	4.16	4.25	4.38	5.17	5.16	5.42	5.45	5.
Tuggerah Station West		3.12				3.53		4.29		5.21			5.49	
Woodbury Park Dr & Brickendon Av	3.01		3.21	3.41	3.49		4.21	****	4.44		5.21	5.48		5.
Westfield Tuggerah	3.07	3.16	3.27	3.47	3.55	3.57	4.27	4.33	4.50	5.25	5.27	5.54	5.54	6.
Train from Sydney arrives	2.54				3.54	3.54		4.34	4.49	5.25	5.25	5.53	5.53	
Train from Newcastle arrives		1		3.42	3.42	3.42	4.21	4.21	4.29	5.20	5.20	5.29	5.29	5.
Tuggerah Station East	3.12	3.21	3.32	3.52	<b>R</b> 4.00	4.02	4.32	4.38	4.55	5.31	5.32	5.59	5.58	6.
Geoffrey Rd & Henry St						4.10		3000	304000	6000		30000		
Wyong Rd & Chittaway Rd	3.17	3.28	3.37	3.57	4.07	4.16	4.37	4.45	5.00	5.36	5.37	6.04	6.05	6
Kalua Dr & Aloha Dr					4.12									
Albatross Rd & Platypus Rd		3.33			****	4.22		4.50		5.40			6.09	
Lakedge Av & Albatross Rd	3.20	3.34	3.40	4.00	4.14	4.23	4.40	4.51	5.03	5.41	5.40	6.07	6.10	6
Bottlebrush Dr & Torrellia Wy		3.40				4.29		4.57		5.47			6.17	
Berkeley Rd & Bundeena Av		3.43				4.32		5.00		5.50			6.20	
Wyong Rd & Berkeley Rd		3.44				4.33		5.01		5.51			6.21	
Berkeley Vale Retirement Village	3.24		3.44	4.04	4.17		4.44		5.07		5.44	6.11		
Jubilee Pde & Kilkenny Pde	3.27		3.48	4.07	4.20		4.48		5.11		5.48	6.15		6
Wyong Rd & Pindarri Av		3.45				4.34		5.02		5.52			6.22	
Mingara Recreation Club		3.49						5.06					6.26	
Eastern Rd & Sherry St	1000	3.55		1444	19110	4.41		5.12	1112	5.58			6.32	
Wyong Rd & South St	3.35		3.55	4.15	4.28		4.55		5.18		5.55	6.22		6
Bay Village	3.40	4.00	4.00	4.20	4.32	4.46	5.00	5.17	5.23	6.03	6.00	6.27	6.37	
Stella St & Bay Rd		4.10	G			4.56	G	5.27		6.13	G		6.47	
Central Coast Hwy & Pacific St	3.46	2393		4.26	4.37		· · · ·		5.29			6.33		6
The Entrance (Torrens Av)	3.51	4.17		4.31	4.42	5.03		5.34	5.34	6.20		6.38	6.54	6.



For Monday to Friday timetables from The Entrance to Wyong go to page 4. For Route Map see pages 2 and 3.



For Route 19 journeys to Gosford please see page 21.

# **School Timetables**

Red Bus Services transport thousands of school children safely between school and home daily in the region. For details of school services please visit www.redbus.com.au or call 4332 8655.



#### Wyong to The Entrance via Tuggerah, Berkeley Vale & Bay Village

Bay Village



#### Monday to Friday (cont...)

Route	15	16	15	16	15	16	15	24	26	24	26	24	24	26	24
	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pn
Wyong Hospital			2022			1222	••••	10000	2000	••••	0000	****	34		0.00
Wyong Plaza													••••		
Wyong Station		6,23		6.50		6.59		7.15	7.35	7.55	8.20	8.50		9.25	9.
Tuggerah Station West										2010					6
Woodbury Park Dr & Brickendon Av		6.28	10000	6.55		7.04		7.20	7.40	8.00	8.25	8.55			10.
Westfield Tuggerah		6.34		7.01		7.10		7.26	7.46	8.06	8.31	9.01	<b>Y</b> 9.01	9.36	10.
Train from Sydney arrives	<b>N</b> 6.05	<b>N</b> 6.34	N6.34	<b>N</b> 7.01	N7.01	N7.10	<b>N</b> 7.10	7.24	7.46	8.04	8.30	8.59	8.59	9.30	9.
Train from Newcastle arrives	5.59	6.29	6.29	6.51	6.51			7.18	<u></u>	7.59	in the	8.57	8.57		9.
Tuggerah Station East	6.10	6.39	6.39	7.06	7.06	7.15	7.15	7.30	7.50	8.10	8.35	9.05	<b>Y</b> 9.05	9.40	10
Geoffrey Rd & Henry St		(													
Wyong Rd & Chittaway Rd	6.15	6.44	6.44	7.11	7.11	7.20	7.20	7.35	7.55	8.15	8.40	9.09	<b>Y</b> 9.09	9.44	10
Kalua Dr & Aloha Dr			5/63		2002				4.2.5	220220					
Albatross Rd & Platypus Rd						2244				2000			1000		
Lakedge Av & Albatross Rd	****	6.47		7.14		7.23		7.38	7.58	8.18	8.43	9.12	Y9.12	9.47	10
Bottlebrush Dr & Torrellia Wy															
Berkeley Rd & Bundeena Av	6.20		6.49		7.16		7.25	7.42		8.22		9.16	<b>Y</b> 9.16		10
Wyong Rd & Berkeley Rd	6.21		6.50		7.17		7.26	7.43	12,000	8.23	14222	9.17	<b>Y</b> 9.17		10
Berkeley Vale Retirement Village								****	8.02		8.47			9.51	
Jubilee Pde & Kilkenny Pde		6.51		7.18		7.27		7.47	8.06	8.27	8.51	9.21	<b>Y</b> 9.21	9.55	10
Wyong Rd & Pindarri Áv	6.22		6.51		7.18		7.27			1111	12.22			1111	
Mingara Recreation Club							10000	7.53	201211	8.33		9.27			10
Eastern Rd & Sherry St	6.29		6.59		7.25		7.35	7.59		8.39		9.33	<b>Y</b> 9.29		10
Wyong Rd & South St		6.58		7.25		7.34		8.05	8.13	8.45	8.58	9.39	<b>Y</b> 9.34	10.02	10
Bay Village	6.34		7.04		7.30		7.40	8.10	8.18	8.50	9.03	9.42	<b>Y</b> 9.47	10.07	10
Stella St & Bay Rd						N	12222	8.20		9.00		9.52	<b>Y</b> 9.48		10
Central Coast Hwy & Pacific St		7.03		7.30		7.39			8.23		9.08			10.12	
The Entrance (Torrens Av)		7.08		7.35		7.44		8.26	8.28	9.06	9.13		<b>Y</b> 9.53	10.17	11

#### Explanations

G - Route 19 operates between Wyong and Bay Village as per Route 26 then continues to Gosford as per Route 23.

N – Train operates to or from North Sydney.

T - Bus operates via Wyong TAFE.

X - Bus operates on Saturday only. This service does not operate on Sunday or Public Holidays.

Y - Bus operates on Thursday night only.

---- Bus does not operate past this timing point.

<u>–</u> Wheelchair accessible service.



For Monday to Friday timetables from The Entrance to Wyong go to page 4.

For Route Map see pages 2 and 3.

# Wyong to The Entrance

via Tuggerah, Berkeley Vale & Bay Village



#### Weekends & Public Holidays

		6	5	L.	5	6	E.	6	6	A	L	Ł	Ł	Ł	L	L
nap ref	Route	24	24	19	25	26	19	25	26	19	25	26	19	25	26	19
_		am	am	am	am	am	am	am	am	am	am	am	am	am	am	am
N.	Wyong Hospital	•••%		• • • •					••••	8.47			••••		•••	10.4 T10.5
2	Wyong Plaza	NE 45	0.45	7.00	7.05	7.40	8.02	0.05		T8.58 9.02	9.05	0.40	10.00	10.05	10.40	
	Wyong Station	<b>X</b> 5.45	6.45	7.03	7.05	7.40	8.02	8.05 8.09	8.40		9.05	9.40		10.05	10.40	11.0
	Tuggerah Station West	VE EA	0 51	7.08	7.09	7.45	8.07		8.45	9.07		0 45	10.07	and the second second	10.45	110
	Woodbury Park Dr & Brickendon Av Westfield Tuggerah	<b>X</b> 5.51	6.51	7.14	7.13	7.45	8.13	8.13	8.51	9.13	9.13		10.07			
i	Train from Sydney arrives		6.33	7.34	7.34	7.34		and the owner where the	8.29	8.57		9.49	the second second	_	10.29	
à	Train from Newcastle arrives	5.36	6.36	7.04	7.04	7.36			8.36	0.07		9.36			1.36	
5	Tuggerah Station East	<b>X</b> 5.56	6.56	7.19	7.18	7.56	8.18	8.18	8.56	9.18	9.18		10.18	10.18	A DESCRIPTION OF THE OWNER OWNER OF THE OWNER OWNER OF THE OWNER OWNER OF THE OWNER OWN	
5	Geoffrey Rd & Henry St				-						0.10	0.00	10.10	10.10	10.00	1 4 . 1
5	Wyong Rd & Chittaway Rd	X6.00	7.00	7.23	7.25	8.01	8.23	8.25	9.01	9.23	9 25	10.01	10 23	10 25	11 01	11.2
5	Kalua Dr & Aloha Dr		7.00				0.20	0.20			0.20		10.20	10.20	11.01	11.4
5	Albatross Rd & Platypus Rd				7.30			8.30			9.30			10.30		
5	Lakedge Av & Albatross Rd	X6.03	7.03	7.26	7.32	8.04	8.26	8.32	9.04	9.26		10.04			11.04	11.2
5	Bottlebrush Dr & Torrellia Wy				7.37			8.37			9.37			10.37		
5	Berkeley Rd & Bundeena Av	X6.08	7.08		7.38			8.38			9.38			10.38		
3	Wyong Rd & Berkeley Rd	X6.09	7.09		7.39	sasitu		8.39			9.39			10.39		
5	<b>Berkeley Vale Retirement Village</b>			7.30		8.08	8.30		9.08	9.30		10.08	10.30		11.08	11.3
Ì	Jubilee Pde & Kilkenny Pde	X6.13	7.13	7.34		8.12	8.34	****	9.12	9.34		10.12	10.34		11.12	11.3
Ď	Wyong Rd & Pindarri Av				7.40			8.40			9.40			10.40		
)	Mingara Recreation Club										9.44			10.44		
	Eastern Rd & Sherry St	<b>X</b> 6.20	7.20		7.47			8.47			9.51			10.51		
)	Wyong Rd & South St	<b>X</b> 6.24	7.24	7.41		8.19	8.41		9.19	9.41		10.19	10.41		11.19	11.4
)	Bay Village		7.29	7.46	7.52	8.24	8.46	8.52	9.24	9.46	9.56	10.24	10.46	10.56	11.24	11.4
)	Stella St & Bay Rd	<b>X</b> 6.33	7.40	G	8.02		G	9.02		G	10.06		G	11.06		
)	Central Coast Hwy & Pacific St					8.30	54444		9.30	2522		10.30	14444		11.30	
	The Entrance (Torrens Av)	<b>X</b> 6.38	7.46	****	8.09	8.35		9.09	9.35		10.13	10.35		11.13	11.35	

For Weekend & Public Holiday timetables from The Entrance to Wyong go to page 9. For Route Map see pages 2 and 3.

The Weekend timetable operates on all Public Holidays except Christmas Day. For Christmas Day timetables go to pages 28 and 29.

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For Route 19 journeys to Gosford please see page 21.

# Wheelchair accessible buses

Over 50% of our fleet are low floor wheelchair accessible air conditioned buses. We operate



these buses on the majority of our services. To ensure an accessible bus is operating on the service you wish to catch please call our office on 4332 8655 on the day of travel.

# Wyong to The Entrance



via Tuggerah, Berkeley Vale & Bay Village

# Weekends & Public Holidays (cont...)

	6	6	6	6	6	F	6	6	Ċ.	F	F	F	F	F	Ŀ
<sup>p</sup> Route	25	26	19	25	26	19	25	26	19	25	26	19	25	26	19
	am	am	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	рп
Wyong Hospital							200908	•••*				2.47			•
Wyong Plaza												T2.58			2
Wyong Station	11.05	11.40	12.02	12.05	12.40	1.02	1.05	1,40	2.02	2.05	2.40	3.02	3.05	3.40	4.
Tuggerah Station West	11.09			12.09			1.09			2.09			3.09		-38
Woodbury Park Dr & Brickendon Av		11.45			12.45	1.07		1.45	2.07		2.45	3.07		3.45	4.
Westfield Tuggerah	11.13	11.51	12.13	12.13	12.51	1.13	1.13	1.51	2.13	2.13	2.51	3.13	3.13	3.51	4.
Train from Sydney arrives	10.49	11.28	11.49	11.49	12.29	12.49	12.49	1.29	1.49	1.49	2.29	2.49	2.49	3.29	З.
Train from Newcastle arrives		11.38			12.36	and the second		1.36			2.36			3.38	
Tuggerah Station East	11.18	11.56	12.18	12.18	12.56	1.18	1.18	1.56	2.18	2.18	2.56	3.18	3.18	3.56	4.
Geoffrey Rd & Henry St	11.26					****	1.26						3.26		
Wyong Rd & Chittaway Rd	11.31	12.01	12.23	12.25	1.01	1.23	1.31	2.01	2.23	2.25	3.01	3.23	3.31	4.01	4.
Kalua Dr & Aloha Dr										****				****	
Albatross Rd & Platypus Rd	11.36			12.30			1.36			2.30			3.36		
Lakedge Av & Albatross Rd	11.38	12.04	12.26	12.32	1.04	1.26	1.38	2.04	2.26	2.32	3.04	3.26	3.38	4.04	4
Bottlebrush Dr & Torrellia Wy	11.43			12.37			1.43			2.37		****	3.43	3223	
Berkeley Rd & Bundeena Av	11.44			12.38			1.44			2.38			3.44		
Wyong Rd & Berkeley Rd	11.45			12.39			1.45		24000	2.39			3.45		
Berkeley Vale Retirement Village		12.08			1.08	1.30		2.08	2.30		3.08	3.30		4.08	4
Jubilee Pde & Kilkenny Pde		12.12			1.12	1.34	10000	2.12	2.34		3.12	3.34	(1994)	4.12	4.
Wyong Rd & Pindarri Av	11.46			12.40			1.46			2.40			3.46		
Mingara Recreation Club				12.44						2.44					
Eastern Rd & Sherry St	11.53			12.51			1.53			2.51			3.53	0000	
Wyong Rd & South St		12.19			1.19	1.41		2.19	2.41	and the second	3.19	3.41		4.19	4
Bay Village	11 58	12.24		12 56	1.24	1.46	1.58	2.24	2.46	2.56	3.24	3.46	3.58	4.24	4
Stella St & Bay Rd	12.08	12.2.1	G	1.06		G	2.08		G	3.06		G	4.08		-
Central Coast Hwy & Pacific St		12.30	-	1.00	1.30	-	2.00	2.30		0.00	3.30			4.30	
The Entrance (Torrens Av)		12.35		1.13	1.35		2.15	2.35		3.13	3.35		4.15	4.35	

#### **Explanations**

BV - Bus terminates at Bay Village.

**G** – Route 19 operates between Wyong and Bay Village as per Route 26 then continues to Gosford as per Route 23.

T - Bus operates via Wyong TAFE.

X - Bus operates on Saturday only. This service does not operate on Sunday or Public Holidays.

.... - Bus does not operate past this timing point.

<u>6</u> – Wheelchair accessible service.

# Wyong to The Entrance



via Tuggerah, Berkeley Vale & Bay Village

#### Weekends & Public Holidays (cont...)

		E	E	6	es.	B	(L	Ŀ	Ł	E.	Ł	F	Ŀ	5	E.	ۍ ا
map ref	Route	25	26	19	25	26	19	25	26	19	25	26	24	24	24	24
•	Whene Heesitel	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm
00	Wyong Hospital Wyong Plaza	****	****	4.47 <b>T</b> 4.58	•••(*)			••••			****				••••	
ŏ	Wyong Station	4.05	4.40	5.02	5.05	5.40	6.02	6.05	6.40	7.02	7.05	7.40	8.20	9.05	X9.55	X11.00
Õ	Tuggerah Station West	4.09			5.09			6.09			7.09					
Q	Woodbury Park Dr & Brickendon Av		4.45	5.07		5.45	6.07		6.45	7.07		7.45	<mark>8.25</mark>		<b>X</b> 10.00	
Q	Westfield Tuggerah	4.13	4.51	5.13	5.13	5.51	6.13	6.13	6.51	7.13	7.13	7.51	8.31	-	<b>X</b> 10.06	-
	Train from Sydney arrives	3.49	4.29	4.49	4.49	5.29	5.51	5.51	6.29	6.49	6.49	7.49		8.53		11.02
0	Train from Newcastle arrives Tuggerah Station East	4.18	4.36 4.56	5.18	5.18	5.36 5.56	6.18	6.18	6.36 6.56	7.18	7.18	7.56	8.05 8.36	8.50	X10.11	10.54 <b>X11 16</b>
ŏ	Geoffrey Rd & Henry St	4.10	4.50	5.10	5.10	0.00	0.10	0.10	0.00	7.10	7.10	7.00	0.00	0.21	A10.11	<b>A</b> 11.10
ŏ	Wyong Rd & Chittaway Rd	4.25	5.01	5.23	5.25	6.01	6.23	6.25	7.01	7.23	7.25	8.01	8.41	9.26	X10.16	X11.21
Θ	Kalua Dr & Aloha Dr															
Q	Albatross Rd & Platypus Rd	4.30	-235	ana	5.30	3337	144466	6.30	-	sine	7.30	****				
Q	Lakedge Av & Albatross Rd	4.32	5.04	5.26	5.32	6.04	6.26	6.32	7.04	7.26	7.32	8.04	8.44	9.29	<b>X</b> 10.19	<b>X</b> 11.24
Q	Bottlebrush Dr & Torrellia Wy	4.37	••••	••••	5.37 5.38		••••	6.37 6.38			7.37 7.38			0.04	¥10.04	
00	Berkeley Rd & Bundeena Av Wyong Rd & Berkeley Rd	4.38			5.38			6.39			7.38		8.49		X10.24 X10.25	
ŏ	Berkeley Vale Retirement Village	4.00	5.08	5.30	0.00	6.08	6.30	0.03	7.08	7.30	1.00	8.08	0.50	0.00	A10.20	<b>X</b> 11.00
ŏ	Jubilee Pde & Kilkenny Pde		5.12	5.34		6.12	6.34		7.12	7.34		8.12	8.54		X10.29	<b>X</b> 11.34
Ō	Wyong Rd & Pindarri Av	4.40			5.40	••••		6.40			7.40					
G	Mingara Recreation Club	4.44				****	****	6.44		si	7.44		9.00		<b>X</b> 10.35	
	Eastern Rd & Sherry St	4.51			5.47			6.51			7.51		9.06		<b>X</b> 10.41	
Q	Wyong Rd & South St	4 56	5.19 5.24	5.41 5.46	5.52	6.19 6.24	6.41 6.46	6.56	7.19	7.41	7.56	8.19 8.24	9.10		X10.45	
8	Bay Village Stella St & Bay Rd	4.56 5.06	5.24	5.40 G	5.52 6.02	0.24	0.40 BV	7.06	7.24	7.40 BV	7.56	0.24			X10.50 X11.00	
ŏ	Central Coast Hwy & Pacific St	5.00	5.30	u	0.02	6.30	DV	7.00	7.30		0.00	8.30	5.25	10.10	A11.00	A12.00
ŏ	The Entrance (Torrens Av)	5.13	5.35		6.09	6.35		7.13	7.35		8.13	8.35			X11.06	X12.11
			and the second													11

For Weekend & Public Holiday timetables from The Entrance to Wyong go to page 9. For Route Map see pages 2 and 3.

The Weekend timetable operates on all Public Holidays except Christmas Day. For Christmas Day timetables go to pages 28 and 29.

For Route 19 journeys to Gosford please see page 21.



# **Gosford to Wyong** via Erina Fair, Berkeley Vale & Tuggerah

**Monday to Friday** 

<sup>ap</sup> Route	19	19	19	19	19	19	19	19	19	19	19	19
	am	am	am	am	am	am	pm	pm	pm	pm	pm	pm
Gosford Station	7.09	8.09	8.49	9.49	10.49	11.49	1 <mark>2.49</mark>	1.49	2.09	3.09	<mark>4.09</mark>	<b>5.0</b>
8 Erina Fair	7.29	8.29	9.09	10.09	11.09	12.09	1.09	2.09	2.29	3.29	4.29	5.2
Pitt Rd	7.42	8.42	9.22	10.22	11.22	12.22	1.22	2.22	2.42	3.42	4.42	5.4
Coleridge Rd	7.47	8.47	9.27	10.27	11.27	12.27	1.27	2.27	2.47	3.47	4.47	5.4
Eastern Rd & Sherry St	7.54	8.54	9.34	10.34	11.34	12.34	1.34	2.34	2.54	3.54	4.54	5.5
Bay Village	8.00	9.00	9.40	10.40	11.40	12.40	1.40	2.40	3.00	4.00	5.00	6.0
Wyong Rd & South St	8.05	9.05	9.45	10.45	11.45	12.45	1.45	2.45	3.05	4.05	5.05	6.0
Berkeley Vale Retirement Village	8.16	9.16	9.56	10.56	11.56	12.56	1.56	2.56	3.16	4.16	5.16	6.1
Wyong Rd & Chittaway Rd	8.23	9.23	10.03	11.03	12.03	1.03	2.03	<b>C</b> 3.06	3.23	4.23	5.23	6.2
Tuggerah Station East	8.28	9.28	10.08	11.08	12.08	1.08	2.08	3.19	3.28	4.28	5.28	6.2
Westfield Tuggerah	8.33	9.33	10.13	11.13	12.13	1.13	2.13	3.24	3.33	4.33	5.33	6.3
Woodbury Park Dr & Brickendon Av	8.38	9.38	10.18	11.18	12.18	1.18	2.18	3.29	3.38	4.38	5.38	6.3
Wyong Station	8.42	<b>T</b> 9.42	10.24	11.24	12.24	1.24	2.24	<b>T</b> 3.35	3.44	<b>T</b> 4.44	5.42	6.4
Wyong Hospital												

#### **Weekends & Public Holidays**

	Including a spirit from the spirit of the	CONTRACT OF	Married Vote						10000	Non Real	1	(1)		(SEE)	(HI COL)
1		الح ا	6	(G)	(G)	(L)	6	(G)	6	6	(Ch)	E.	6	E.	5
map ref	Route	19	19	19	19	19	19	19	19	19	19	19	19	19	19
		am	am	am	am	am	am	am	pm	pm	pm	pm	pm	pm	pm
3	Gosford Station		<b>6.59</b>	7.59	8.59	9.59	10.59	11.59	12.59	1.59	<mark>2.59</mark>	<mark>3.59</mark>	4.59	5.59	<b>6.59</b>
23	Erina Fair		7.19	8.19	9.19	10.19	11.19	12.19	1.19	2.19	3.19	4.19	5.19	6.19	7.19
2	Pitt Rd		7.32	8.32	9.32	10.32	11.32	12.32	1.32	2.32	3.32	4.32	5.32	6.32	7.32
3	Coleridge Rd		7.37	8.37	9.37	10.37	11.37	12.37	1.37	2.37	3.37	4.37	5.37	6.37	7.37
Ø	Eastern Rd & Sherry St		7.44	8.44	9.44	10.44	11.44	12.44	1.44	2.44	3.44	4.44	5.44	6.44	7.44
Ō	Bay Village	6.50	7.50	8.50	9.50	10.50	11.50	12.50	1.50	2.50	3.50	4.50	5.50	6.50	7.50
Ø	Wyong Rd & South St	6.55	7.55	8.55	9.55	10.55	11.55	12.55	1.55	2.55	3.55	4.55	5.55		0000
Õ	Berkeley Vale Retirement Village	7.06	8.06	9.06	10.06	11.06	12.06	1.06	2.06	3.06	4.06	5.06	6.06		
0	Wyong Rd & Chittaway Rd	7.13	8.13	9.13	10.13	11.13	12.13	1.13	2.13	3.13	4.13	5.13	6.13		
Θ	Tuggerah Station East	7.18	8.18	9.18	10.18	11.18	12.18	1.18	2.18	3.18	4.18	5.18	6.18		
O	Westfield Tuggerah	7.23	8.23	9.23	10.23	11.23	12.23	1.23	2.23	3.23	4.23	5.23	6.23	1112	
Ō	Woodbury Park Dr & Brickendon Av	7.28	8.28	9.28	10.28	11.28	12.28	1.28	2.28	3.28	4.28	5.28	6.28		
0	Wyong Station	7.34	8.34	9.34	10.34	11.34	12.34	1.34	2.34	3.34	4.34	5.34	6.34		
Ø	Wyong Hospital														

6

#### **Explanations**

- Bus operates via Chittaway Point (Geoffrey Rd & Henry St).
   Bus operates via Wyong TAFE. С
- т
- .... Bus does not operate past this timing point.

K - Wheelchair accessible service.

For Route Map see pages 2 and 3,

The Weekend timetable operates on all Public Holidays except Christmas Day. Route 19 does not operate on Christmas Day.

ed Bus Services



#### Wyong to Gosford via Tuggerah, Berkeley Vale & Erina Fair



#### **Monday to Friday**

map ref	Route	19	19	19	19	19	19	19	19	19	19	19	19	19	19
1.2		am	am	am	am	am	am	am	am	pm	pm	pm	pm	pm	pm
Ø	Wyong Hospital			3333			1943	(1993)						22223	
Ø	Wyong Station	5.59	6.19	7.16	8.16	9.16	10.16	10.56	11.56	12.56	1.56	2.16	3.16	4.16	5.16
O	Woodbury Park Dr & Brickendon Av	6.04	6.24	7.21	8.21	9.21	10.21	11.01	12.01	1.01	2.01	2.21	3.21	4.21	5.21
Õ	Westfield Tuggerah	6.09	6.29	7.27	8.27	9.27	10.27	11.07	12.07	1.07	2.07	2.27	3.27	4.27	5.27
Ø	Tuggerah Station East	6.13	6.33	7.32	8.32	9.32	10.32	11.12	12.12	1.12	2.12	2.32	3.32	4.32	5.32
Õ	Wyong Rd & Chittaway Rd	6.17	6.37	7.37	8.37	9.37	10.37	11.17	12.17	1.17	2.17	2.37	3.37	4.37	5.37
O	Berkeley Vale Retirement Village	6.24	6.44	7.44	8.44	9.44	10.44	11.24	12.24	1.24	2.24	2.44	3.44	4.44	5.44
ē	Wyong Rd & South St	6.35	6.55	7.55	8.55	9.55	10.55	11.35	12.35	1.35	2.35	2.55	3.55	4.55	5.55
Ō	Bay Village	6.40	7.00	8.00	9.00	10.00	11.00	11.40	12.40	1.40	2.40	3.00	4.00	5.00	6.00
Ō	Eastern Rd & Sherry St	6.46	7.06	8.06	9.06	10.06	11.06	11.46	12.46	1.46	2.46	3.06	4.06	5.06	6.06
23	Coleridge Rd	6.53	7.13	8.13	9.13	10.13	11.13	11.53	12.53	1.53	2.53	3.13	4.13	5.13	6.13
Đ	Pitt Rd	6.58	7.18	8.18	9.18	10.18	11.18	11.58	12.58	1.58	2.58	3.18	4.18	5.18	6.18
23	Erina Fair	7.11	7.31	8.31	9.31	10.31	11.31	12.11	1.11	2.11	3.11	3.31	4.31	5.31	6.31
٨	Gosford Station	7.31	7.51	8.51	9.51	10.51	11.51	12.31	1.31	2.31	3.31	3.51	4.51	5.51	6.51

#### Weekends & Public Holidays

		لطى ا	<u>ل</u> م	F	Ŀ	F	Ł	(La	(F)	5	Ŀ	6	E.	6	E.
map ref	Route	19	19	19	19	19	19	19	19	19	19	19	19	19	19
		am	am	am	am	am	am	pm	pm	pm	pm	pm	pm	pm	pm
O	Wyong Hospital		10000		<b>T</b> 8.47		<b>T</b> 10.47	••••			<b>T</b> 2.47		<b>T</b> 4.47		
Ø	Wyong Station		7.03	8.02	9.02	10.02	11.02	12.02	1.02	2.02	3.02	4.02	5.02	6.02	7.02
0	Woodbury Park Dr & Brickendon Av		7.08	8.07	9.07	10.07	11.07	12.07	1.07	2.07	3.07	4.07	5.07	6.07	7.07
O	Westfield Tuggerah		7.14	8.13	9.13	10.13	11.13	12.13	1.13	2.13	3.13	4.13	5.13	6.13	7.13
0	Tuggerah Station East		7.19	8.18	9.18	10.18	11.18	12.18	1.18	2.18	3.18	4.18	5.18	6.18	7.18
0	Wyong Rd & Chittaway Rd		7.23	8.23	9.23	10.23	11.23	12.23	1.23	2.23	3.23	4.23	5.23	6.23	7.23
0	Berkeley Vale Retirement Village		7.30	8.30	9.30	10.30	11.30	12.30	1.30	2.30	3.30	4.30	5.30	6.30	7.30
Θ	Wyong Rd & South St		7.41	8.41	9.41	10.41	11.41	12.41	1.41	2.41	3.41	4.41	5.41	6.41	7.41
0	Bay Village	6.46	7.46	8.46	9.46	10.46	11.46	12.46	1.46	2.46	3.46	4.46	5.46	6.46	7.46
G	Eastern Rd & Sherry St	6.51	7.51	8.51	9.51	10.51	11.51	12.51	1.51	2.51	3.51	4.51	5.51		
23	Coleridge Rd	6.58	7.58	8.58	9.58	10.58	11.58	12.58	1.58	2.58	3.58	4.58	5.58		
9	Pitt Rd	7.03	8.03	9.03	10.03	11.03	12.03	1.03	2.03	3.03	4.03	5.03	6.03		
23	Erina Fair	7.16	8.16	9.16	10.16	11.16	12.16	1.16	2.16	3.16	4.16	5.16	6.16	****	****
0	Gosford Station	7.36	8.36	9.36	10.36	11.36	12.36	1.36	2.36	3.36	4.36	5.36	6.36		

#### Explanations

- T Bus operates via Wyong TAFE.
- ... Bus does not operate past this timing point.
- 🛃 Wheelchair accessible service.

For Route Map see pages 2 and 3.

The Weekend timetable operates on all Public Holidays except Christmas Day. Route 19 does not operate on Christmas Day.

## Wheelchair accessible buses

Over 50% of our fleet are low floor wheelchair accessible air conditioned buses. We operate



these buses on the majority of our services. To ensure an accessible bus is operating on the service you wish to catch please call our office on 4332 8655 on the day of travel.

In Tersect

# **APPENDIX 4** SIDRA MOVEMENT SUMMARY SHEETS

**APPENDIX 4** 

#### Site: PM peak post development

Beckingham Road / Hillside Drive intersection PM peak post development Giveway / Yield (Two-Way)

Movem	ient Per	formance - V	ehicles								
Mov ID	Turn	Demand Flow veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back o Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/r
South: B	Beckingh	am Road south	the second s								
1	L	45	5.0	0.103	6.5	LOS A	0.0	0.0	0.00	0.82	43.3
2	Τ	146	5.0	0.102	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
Approac	;h	191	5.0	0.102	1.5	LOSA	0.0	0.0	0.00	0.19	48.2
North: B	eckingha	m Road north									
8	т	231	5.0	0.220	1.0	LOS A	1.7	12.5	0.36	0.00	34.6
9	R	116	5.0	0.220	7.8	LOS A	1.7	12.5	0.36	0,78	29.1
Approac	:h	347	5.0	0.220	3.3	LOSA	1.7	12.5	0.36	0.26	32.5
West: Hi	illside Dr	ive									
10	L	77	5.0	0.129	8.8	LOS A	0.6	4.4	0.35	0.61	41.3
12	R	20	5.0	0.128	9.1	LOSA	0.6	4.4	0.35	0.78	41.2
Approac	:h	97	5.0	0.129	8.9	LOS A	0.6	4.4	0.35	0.64	41.3
All Vehic	des	635	5.0	0.220	3.6	NA	1.7	12.5	0.25	0.30	41.9

LOS (Aver. Int. Delay): NA. The average intersection delay is not a good LOS measure for two-way sign control due to zero delays associated with major road movements.

Level of Service (Worst Movement): LOS A. LOS Method for individual vehicle movements: Delay (RTA NSW).

Approach LOS values are based on the worst delay for any vehicle movement.

Processed: 12 December, 2010 8:12:51 PM SIDRA INTERSECTION 5.0.2.1437 Project: C:\Work Documents\ANUDG - Glendenning Valley\Beckingham\_Hillside.sip 8000734, INTERSECT TRAFFIC PTY LTD, SINGLE SIDRA ---

Beckingham Road / Hillside Drive intersection PM peak Giveway / Yield (Two-Way)

Mov ID	Turn	Demand	HV	Deg	Average	Level of	95% Back		Prop.	Effective	Average
	Turn	Flow veh/h	%	Satn v/c	Delay sec	Service	Vehicles veh	Distance m	Queued	Stop Rate per veh	Speed km/h
South: B	Beckingh	am Road south	the second se		000						
1	L	43	5.0	0.101	6.5	LOSA	0.0	0.0	0.00	0.83	43.3
2	Ť	146	5.0	0.101	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
Approac	:h	189	5.0	0.101	1.5	LOS A	0,0	0.0	0.00	0.19	48.3
North: B	eckingha	am Road north									
8	Т	231	5.0	0.211	1.0	LOS A	1.6	12.0	0.36	0.00	34.8
9	R	106	5.0	0.211	7.8	LOS A	1.6	12.0	0.36	0.78	29.2
Approac	h	337	5.0	0.211	3.1	LOSA	1.6	12.0	0.36	0.25	32.8
West: Hi	illside Dr	ive									
10	L	70	5.0	0.118	8.8	LOS A	0.6	4.0	0.34	0.60	41.3
12	R	19	5.0	0.118	9.1	LOS A	0.6	4.0	0.34	0.78	41.2
Approac	h	89	5.0	0.118	8.8	LOS A	0.6	4.0	0.34	0.64	41.3
All Vehic	les	615	5.0	0.211	3.4	NA	1.6	12.0	0.25	0.29	42.1

LOS (Aver. Int. Delay): NA. The average intersection delay is not a good LOS measure for two-way sign control due to zero delays associated with major road movements.

Level of Service (Worst Movement): LOS A. LOS Method for individual vehicle movements: Delay (RTA NSW).

Approach LOS values are based on the worst delay for any vehicle movement.

Processed: 12 December, 2010 8:12:51 PM SIDRA INTERSECTION 5.0.2.1437 Copyright @ 2000-2010 Ak www.sidrasolutions.com Project: C:\Work Documents\ANUDG - Glendenning Valley\Beckingham\_Hillside.sip 8000734, INTERSECT TRAFFIC PTY LTD, SINGLE

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.---SIDRA ---

Beckingham Road / Hillside Drive intersection AM peak 2020 Giveway / Yield (Two-Way)

Movem	ient Per	formance - V	ehicles							-	a letter
Mov ID	Turn	Demand Flow veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back ( Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: E	Beckingh	am Road south									
1	L	11	5.0	0.076	6.5	LOSA	0.0	0.0	0.00	0.89	43.3
2	Т	132	5.0	0.076	0.0	LOSA	0.0	0.0	0.00	0.00	50.0
Approac	:h	143	5.0	0.076	0.5	LOSA	0.0	0.0	0.00	0.07	49.4
North: B	eckingha	am Road north									
8	Т	64	5.0	0.080	0.6	LOS A	0.5	3.6	0.26	0.00	37.4
9	R	57	5.0	0.080	7.4	LOS A	0.5	3.6	0.26	0.72	29.1
Approac	:h	121	5.0	0.080	3.8	LOSA	0.5	3.6	0.26	0.34	32.9
West: Hi	illside Dr	ive									
10	L	58	5.0	0.076	7.6	LOSA	0.4	2.6	0.28	0.59	42.3
12	R	12	5.0	0.076	7.9	LOSA	0.4	2.6	0.28	0.69	42.2
Арргоас	h	70	5.0	0.076	7.6	LOSA	0.4	2.6	0.28	0.60	42.3
All Vehic	les	334	5.0	0.080	3.2	NA	0.5	3.6	0.15	0.28	44.6

LOS (Aver. Int. Delay): NA. The average intersection delay is not a good LOS measure for two-way sign control due to zero delays associated with major road movements.

Level of Service (Worst Movement): LOS A. LOS Method for individual vehicle movements: Delay (RTA NSW).

Approach LOS values are based on the worst delay for any vehicle movement.

Design Life Analysis Objective: Final Year. (Results for 10 years)

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#### Site: AM peak post development

Beckingham Road / Hillside Drive intersection AM peak post development Giveway / Yield (Two-Way)

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back ( Vehicles	of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
inter ite		veh/h	%	v/c	sec	OCIVICE	venicies	m	QUCUCU	per veh	km/h
South: E	Beckingh	am Road south								NCHINI MAL	
1	L	10	5.0	0.069	6.5	LOS A	0.0	0.0	0.00	0.89	43.3
2	Т	120	5.0	0.069	0.0	LOSA	0.0	0.0	0.00	0.00	50.0
Approac	ch	130	5.0	0.069	0.5	LOSA	0.0	0.0	0.00	0.07	49.4
North: B	Beckingha	am Road north									
8	т	58	5.0	0.072	0.5	LOS A	0.4	3.2	0.25	0.00	38.0
9	R	52	5.0	0.072	7.4	LOS A	0.4	3.2	0.25	0.72	29.1
Approac	ch	110	5.0	0.072	3.7	LOS A	0.4	3.2	0.25	0.34	33.2
West: H	illside Dr	ive									
10	L	53	5.0	0.068	7.4	LOS A	0.3	2.3	0.26	0.58	42.4
12	R	11	5.0	0.068	7.8	LOSA	0.3	2.3	0.26	0.68	42.3
Approac	ch	64	5.0	0.068	7.5	LOS A	0.3	2.3	0.26	0.60	42.3
All Vehic	cles	304	5.0	0.072	3.1	NA	0.4	3.2	0.14	0.28	44.6

LOS (Aver. Int. Delay): NA. The average intersection delay is not a good LOS measure for two-way sign control due to zero delays associated with major road movements.

Level of Service (Worst Movement): LOS A. LOS Method for individual vehicle movements: Delay (RTA NSW).

Approach LOS values are based on the worst delay for any vehicle movement.

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Beckingham Road / Hillside Drive intersection AM peak Giveway / Yield (Two-Way)

Movem	ent Pe	rformance - V	/ehicles								
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back o Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate <b>per</b> veh	Average Speed km/t
South: B	Beckingh	am Road south	i								1.0
1	L	8	5.0	0.068	6.5	LOSA	0.0	0.0	0.00	0.90	43.3
2	Т	120	5.0	0.068	0.0	LOSA	0.0	0.0	0.00	0.00	50.0
Approac	h	128	5.0	0.068	0.4	LOS A	0.0	0.0	0.00	0.06	49.5
North: B	eckingh	am Road north									
8	Т	58	5.0	0.065	0.5	LOS A	0.4	3.0	0,24	0.00	38.2
9	R	44	5.0	0.065	7.3	LOS A	0.4	3.0	0.24	0.73	29.2
Approac	h	102	5.0	0.065	3.5	LOS A	0.4	3.0	0.24	0.32	33.7
West: Hi	llside Di	rive									
10	L	45	5.0	0.057	7.4	LOS A	0.3	1.9	0.25	0.58	42.4
12	R	9	5.0	0.057	7.7	LOS A	0.3	1.9	0.25	0.68	42.3
Approac	h	54	5.0	0.057	7.4	LOS A	0.3	1.9	0.25	0.59	42.4
All Vehic	les	284	5.0	0.068	2.8	NA	0.4	3.0	0.14	0.25	45.0

LOS (Aver. Int. Delay): NA. The average intersection delay is not a good LOS measure for two-way sign control due to zero delays associated with major road movements.

Level of Service (Worst Movement): LOS A. LOS Method for individual vehicle movements: Delay (RTA NSW).

Approach LOS values are based on the worst delay for any vehicle movement.

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Movem	nent Per	rformance - '	Vehicles								
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back ( Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: E	Beckingh	am Road			-	1					
1	L	106	5.0	0.194	8.5	LOS A	1.3	9.5	0.84	0.88	41.3
3	R	52	5.0	0.136	14.5	LOS A	0.8	5.7	0.80	0.93	37.8
Approac	ch	157	5.0	0.194	10.5	LOSA	1.3	9.5	0.82	0.90	40.0
East: W	yong Ro	ad east									
4	L	152	5.0	0.774	10.0	LOSA	11.7	88.1	0.79	0.74	51.2
5	Т	1650	10.0	0.773	10.6	LOS A	11.7	88.7	0.80	0.75	51.6
Approac	ch	1802	9.6	0.773	10.6	LOS A	11.7	88.7	0.80	0.75	51.5
West: W	lyong Ro	ad west							·		
11	т	2331	10.0	0.883	7.9	LOSA	23.8	180.6	0.69	0.45	52.3
12	R	243	5.0	0.884	12.4	LOSA	22.6	170.7	0.74	0.56	49.2
Approac	h	2574	9.5	0.883	8.3	LOS A	23.8	180.6	0.70	0.46	52.0
All Vehic	cles	4533	9.4	0.883	9.3	LOSA	23.8	180.6	0.74	0.59	51.3

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (RTA NSW). Level of Service (Worst Movement): LOS A. LOS Method for individual vehicle movements: Delay (RTA NSW).

Approach LOS values are based on the worst delay for any vehicle movement.

Approach LOS values are based on the worst delay for any vehic

Roundabout Capacity Model: SIDRA Standard.

Design Life Analysis Objective: Final Year. (Results for 10 years)

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Site: PM peak 2020

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#### Site: PM peak post development

Wyong Road / Beckingham Road roundabout PM peak post development Roundabout

woven	iem re	rformance - '	venicies			- 194 Al-		and the second second		The second	
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop Queued	Effective Stop Rate <b>per</b> veh	Average Speed km/t
South: E	Beckingh	am Road	70	V/C	366		VCIT		1.00	per von	INTER OF
1	L	96	5.0	0.126	7.0	LOSA	0.7	5.4	0.70	0.72	42.0
3	R	47	5.0	0.085	12.8	LOSA	0.4	3.3	0.69	0.88	38.9
Approac	ch	143	5.0	0.126	8.9	LOSA	0.7	5.4	0.69	0.77	40.9
East: W	yong Ro	ad east									
4	L	138	5.0	0.582	8.1	LOS A	5.3	40.0	0.53	0.64	52.7
5	Т	1269	10.0	0.583	8.5	LOSA	5.3	40.0	0.54	0.62	53.5
Арргоас	ch	1407	9.5	0.583	8.4	LOSA	5.3	40.0	0.54	0.62	53.4
West: W	Vyong Ro	ad west									
11	т	1793	10.0	0.689	7.4	LOS A	9.2	70.0	0.34	0.47	55.1
12	R	221	5.0	0.688	11.8	LOSA	9.2	69.3	0.36	0.73	49.5
Approac	ch	2014	9.5	0.689	7.9	LOS A	9.2	70.0	0.34	0.50	54.4
All Vehic	cles	3564	9.3	0.689	8.1	LOSA	9.2	70.0	0.44	0.56	53.4

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (RTA NSW). Level of Service (Worst Movement): LOS A. LOS Method for individual vehicle movements: Delay (RTA NSW). Approach LOS values are based on the worst delay for any vehicle movement. Roundabout Capacity Model: SIDRA Standard.

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Wyong Road / Beckingham Road roundabout PM peak Roundabout

Movem	nent Pe	formance -	Vehicles								
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back o Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: E	Beckingh	am Road									
1	L	92	5.0	0.120	7.0	LOSA	0.7	5.1	0.69	0.72	42.0
3	R	44	5.0	0.080	12.8	LOS A	0.4	3.0	0.68	0.88	38.9
Approach		136	5.0	0.120	8.9	LOSA	0.7	5.1	0.69	0.77	40.9
East: W	yong Ro	ad east									
4	L	134	5.0	0.578	8.0	LOSA	5.2	39.3	0.52	0.64	52.7
5	Т	1269	10.0	0.578	8.4	LOS A	5.2	39.3	0.53	0.61	53.6
Approac	ch	1403	9.5	0.578	8.4	LOS A	5.2	39.3	0.53	0.61	53.5
West: W	Wong Ro	ad west									
11	Т	1793	10.0	0.684	7.4	LOS A	9.1	69.0	0.33	0.47	55.2
12	R	215	5.0	0.685	11.7	LOS A	9.1	68.3	0.34	0.74	49.5
Approac	ch	2008	9.5	0.684	7.8	LOSA	9.1	69.0	0.33	0.50	54.6
All Vehic	cles	3547	9.3	0.684	8.1	LOS A	9.1	69.0	0.42	0.55	53.5

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (RTA NSW). Level of Service (Worst Movement): LOS A. LOS Method for individual vehicle movements: Delay (RTA NSW). Approach LOS values are based on the worst delay for any vehicle movement. Roundabout Capacity Model: SIDRA Standard.

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- 7-SIDRA INTERSECTION

Wyong Road / Beckingham Road roundabout AM peak 2020 Roundabout

nn	mand Flow veh/h Road	HV %	Deg. Satn	Average Delay	Level of	95% Back o	of Queue	Prop.	Effective	Average
ingham F	Road		v/c	sec	Service	Vehicles veh	Distance m	Queued	Stop Rate	Speed km/ł
									1.00	
_	151	5.0	0.586	31.3	LOS C	5.3	38.5	1.00	1.15	28.5
२	75	5.0	0.448	34.3	LOS C	3.1	22.6	0.95	1.06	28.3
	226	5.0	0.587	32.3	LOSC	5.3	38.5	0.98	1.12	28.5
g Road e	ast									
4	62	5.0	0.919	8.2	LOSA	26.6	201.7	0.85	0.49	51.0
Г	2569	10.0	0.924	8.6	LOSA	26.6	201.7	0.90	0.50	50.9
	2630	9.9	0.924	8.6	LOSA	26.6	201.7	0.90	0.50	50.9
g Road w	vest									
Г	1537	10.0	0.582	7.5	LOSA	6.6	50.1	0.38	0.50	54.9
र	73	5.0	0.581	11.9	LOSA	6.5	49.0	0.39	0.77	49.7
	1609	9.8	0.582	7.7	LOSA	6.6	50.1	0.38	0.51	54.6
	4465	9.6	0.924	9.5	LOSA	26.6	201.7	0.71	0.53	50.3
	g Road e	R 75 226 Road east 569 2630 g Road west 1537 R 73 1609	R         75         5.0           226         5.0           Proad east         5.0           2569         10.0           2630         9.9           g Road west         1537           1537         10.0           2         73           1609         9.8	R         75         5.0         0.448           226         5.0         0.587           r         62         5.0         0.919           2569         10.0         0.924           2630         9.9         0.924           g Road west	R         75         5.0         0.448         34.3           226         5.0         0.587         32.3           Road east	R         75         5.0         0.448         34.3         LOS C           226         5.0         0.587         32.3         LOS C           Road east	R         75         5.0         0.448         34.3         LOS C         3.1           226         5.0         0.587         32.3         LOS C         5.3           Road east         -         62         5.0         0.919         8.2         LOS A         26.6           2569         10.0         0.924         8.6         LOS A         26.6           2630         9.9         0.924         8.6         LOS A         26.6           3         5.0         0.582         7.5         LOS A         6.6           3         7.3         5.0         0.581         11.9         LOS A         6.5           1609         9.8         0.582         7.7         LOS A         6.6	R         75         5.0         0.448         34.3         LOS C         3.1         22.6           226         5.0         0.587         32.3         LOS C         5.3         38.5           Road east         -         62         5.0         0.919         8.2         LOS A         26.6         201.7           2569         10.0         0.924         8.6         LOS A         26.6         201.7           2630         9.9         0.924         8.6         LOS A         26.6         201.7           g Road west         -	R         75         5.0         0.448         34.3         LOS C         3.1         22.6         0.95           226         5.0         0.587         32.3         LOS C         5.3         38.5         0.98           a Road east         -         62         5.0         0.919         8.2         LOS A         26.6         201.7         0.85           2569         10.0         0.924         8.6         LOS A         26.6         201.7         0.90           2630         9.9         0.924         8.6         LOS A         26.6         201.7         0.90           g Road west         -         -         -         -         0.924         8.6         LOS A         6.6         50.1         0.38           1537         10.0         0.582         7.5         LOS A         6.5         49.0         0.39           1609         9.8         0.582         7.7         LOS A         6.6         50.1         0.38	R         75         5.0         0.448         34.3         LOS C         3.1         22.6         0.95         1.06           226         5.0         0.587         32.3         LOS C         5.3         38.5         0.98         1.12           Road east         -         62         5.0         0.919         8.2         LOS A         26.6         201.7         0.85         0.49           2569         10.0         0.924         8.6         LOS A         26.6         201.7         0.90         0.50           2630         9.9         0.924         8.6         LOS A         26.6         201.7         0.90         0.50           2630         9.9         0.924         8.6         LOS A         26.6         201.7         0.90         0.50           2630         9.9         0.924         8.6         LOS A         26.6         201.7         0.90         0.50           g Road west

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (RTA NSW).

Level of Service (Worst Movement): LOS C. LOS Method for individual vehicle movements: Delay (RTA NSW).

Approach LOS values are based on the worst delay for any vehicle movement.

Roundabout Capacity Model: SIDRA Standard.

Design Life Analysis Objective: Final Year. (Results for 10 years)

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#### Site: AM peak post development

Wyong Road / Beckingham Road roundabout AM peak post development Roundabout

Movem	nent Per	formance - '	Vehicles								
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop Queued	Effective Stop Rate per veh	Average Speed km/h
South: E	Beckingh	am Road									
1	L	137	5.0	0.224	9.9	LOS A	1.4	10.5	0.82	0.90	40.4
3	R	68	5.0	0.163	16.6	LOS B	0.9	6.6	0.79	0.93	36.5
Арргоас	ch	205	5.0	0.224	12.1	LOS B	1.4	10.5	0.81	0.91	39.0
East: W	yong Ro	ad east									
4	L	56	5.0	0,709	7.3	LOS A	8.8	66.6	0.37	0.55	53.7
5	Т	1976	10.0	0.712	7.6	LOS A	8.8	67.2	0.39	0.49	54.8
Approac	ch	2032	9.9	0.712	7.6	LOS A	8.8	67.2	0.39	0.49	54.8
West: W	lyong Ro	ad west									
11	т	1182	10.0	0.449	7.4	LOS A	4.1	30.9	0.28	0.49	55.6
12	R	66	5.0	0.449	11.7	LOSA	4.0	30.2	0.29	0.81	49.7
Approac	h	1248	9.7	0.449	7.6	LOS A	4.1	30.9	0.29	0.51	55.3
All Vehic	cles	3485	9.5	0.712	7.9	LOS A	8.8	67.2	0.38	0.52	53.8

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (RTA NSW). Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (RTA NSW). Approach LOS values are based on the worst delay for any vehicle movement. Roundabout Capacity Model: SIDRA Standard.

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Movem	nent Per	formance - '	Vehicles								
Mov ID	Turn	Demand Flow <b>veh/h</b>	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: E	Beckingh	am Road									
1	L	132	5.0	0.214	9.9	LOSA	1.4	10.0	0.82	0.89	40.4
3	R	65	5.0	0.154	16.6	LOS B	0.9	6.2	0.79	0.92	36.5
Approac	ch	197	5.0	0.214	12.1	LOS B	1.4	10.0	0.81	0.90	39.0
East: W	yong Roa	ad east									
4	L	52	5.0	0.703	7.2	LOS A	8.6	65.5	0.35	0.54	53.9
5	Т	1976	10.0	0.707	7.6	LOS A	8.7	66.2	0.37	0.49	54.9
Approac	ch	2028	9.9	0.707	7.6	LOSA	8.7	66.2	0.37	0.49	54.9
West: W	vyong Ro	ad west									
11	т	1182	10.0	0.446	7.3	LOSA	4.0	30.6	0.28	0.49	55.7
12	R	62	5.0	0.446	11.7	LOSA	4.0	29.9	0.28	0.81	49.7
Approac	ch	1244	9.8	0.446	7.6	LOS A	4.0	30.6	0.28	0.51	55.4
All Vehic	cles	3469	9.6	0.707	7.8	LOSA	8.7	66.2	0.36	0.52	53.9

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (RTA NSW). Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (RTA NSW).

Approach LOS values are based on the worst delay for any vehicle movement.

Roundabout Capacity Model: SIDRA Standard.

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Beckingham Road / Hillside Drive intersection PM peak 2020 Giveway / Yield (Two-Way)

Moven	nent Per	formance - V	/ehicles								
Mov ID	Turn	Demand Flow veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back o Vehicles veh	of Queue Distance m	Prop Queued	Effective Stop Rate per veh	Average Speed km/h
South: I	Beckingh	am Road south	1	1.0							-
1	L	50	5.0	0.113	6.5	LOS A	0.0	0.0	0.00	0.82	43.3
2	Т	161	5.0	0.113	0.0	LOS A	0.0	0.0	0.00	0.00	50.0
Approach		210	5.0	0.113	1.5	LOSA	0.0	0.0	0.00	0.19	48.2
North: E	Beckingha	m Road north									
8	т	254	5.0	0.244	1.1	LOS A	2.0	14.4	0.39	0.00	33.7
9	R	128	5.0	0.244	8.0	LOS A	2.0	14.4	0.39	0.78	29.1
Approa	ch	382	5.0	0.244	3.4	LOS A	2.0	14.4	0.39	0.26	32.0
West: H	lillside Dri	ive									
10	L	85	5.0	0.149	9.2	LOSA	0.7	5.1	0.37	0.62	41.0
12	R	22	5.0	0.149	9.5	LOSA	0.7	5.1	0.37	0.79	40.9
Approad	ch	107	5.0	0.149	9.2	LOSA	0.7	5.1	0.37	0.66	41.0
All Vehi	cles	699	5.0	0.244	3.7	NA	2.0	14.4	0.27	0.30	41.6

LOS (Aver. Int. Delay): NA. The average intersection delay is not a good LOS measure for two-way sign control due to zero delays associated with major road movements.

Level of Service (Worst Movement): LOS A. LOS Method for individual vehicle movements: Delay (RTA NSW).

Approach LOS values are based on the worst delay for any vehicle movement.

Design Life Analysis Objective: Final Year. (Results for 10 years)

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