

Table 4.2 Future traffic volumes

Traffic generation route	Existing daily traffic volume (May 2013)	Proposed additional daily traffic	Future total daily traffic	Percentage traffic increase
Inyadda Drive north of the site	1030	458	1488	44%
To and from the Princes Highway, via Bendalong Road (west)	930	350	1280	38%
Local traffic to and from Bendalong via Inyadda Drive and Bendalong Road (east)	520	108	628	21%
Inyadda Drive south of the site	1040	178	1218	17%
Local traffic to and from Manyana (east) via Inyadda Drive and Curvers Drive	690	89	779	13%
Local traffic to and from Manyana (west) via Inyadda Drive and Curvers Drive	580	89	669	15%

During peak holiday periods, the traffic volumes on most local roads will be significantly greater than the volumes given in Table 4.2. However, any reduction in service levels would not normally extend for longer than about three weeks each year and it is not economic in areas like Manyana to provide road infrastructure to meet peak holiday demand.

4.3 Traffic impacts at Intersections

The existing intersections at Curvers Drive, Inyadda Drive and Bendalong Road have a good level of visibility and safety for turning traffic. The need for additional turning lanes at these intersections has been assessed using the Austroads warrant guide. This guide considers the relative volumes of through, left and right turning traffic on the roads at each intersection during the morning and afternoon peak traffic periods.

The Austroads warrant guide and the road design standards for rural turn lanes are given in Appendix B. Using these standards, the need for turning lanes for the existing and future traffic volumes at each intersection is summarised in Table 4.3 and Table 4.4.

Table 4.3 Existing need for intersection turn lanes

Intersection and turn movement	Morning peak approach traffic volume	Morning peak turning traffic volume	Morning Peak Turning Lane requirement	Afternoon peak approach traffic volume	Afternoon peak turning traffic volume	Afternoon peak Turning Lane requirement
Princes Highway left turn at Bendalong Road	183	10	Type BA (Note Type AU is already provided)	301	16	Type AU (Note Type AU is already provided)
Princes Highway right turn at Bendalong Road	226	13	Type AU (Note Type CH already provided with seagull acceleration lane)	236	18	Type AU (Note Type CH already provided with seagull acceleration lane)

Table 4.3 Existing need for intersection turn lanes

Intersection and turn movement	Morning peak approach traffic volume	Morning peak turning traffic volume	Morning Peak Turning Lane requirement	Afternoon peak approach traffic volume	Afternoon peak turning traffic volume	Afternoon peak Turning Lane requirement
Bendalong Road left turn at Inyadda Drive	19	8	Type BA (No widening is required)	25	19	Type BA (No widening is required)
Bendalong Road right turn at Inyadda Drive	20	12	Type BA (Note sealed shoulder widening is required to meet the Austroads Type BA Standard)	60	47	Type BA (Note sealed shoulder widening is required to meet the Austroads Type BA Standard)
Curvers Drive left turn at Inyadda Drive	37	34	Type BA (No widening is required)	27	19	Type BA (No widening is required)
Curvers Drive right turn at Inyadda Drive	38	37	Type BA (No widening is required)	27	18	Type BA (No widening is required)

As shown in Table 4.3, for the existing traffic situation, a higher standard of intersection is already provided at the Princes Highway intersection than is required (a type CH Channelised intersection with an additional seagull acceleration lane for the right turn traffic departing from Bendalong Road). However, at the Bendalong Road and Inyadda Drive intersection, the existing intersection is deficient according to the current Austroads 2010 intersection design standard and requires additional sealed shoulder widening through the intersection, as shown in Figure 7.5 of the Austroads 2010 Road Design Guide (refer Appendix B).

Table 4.4 Future need for rural intersection turn lanes

Intersection and turn movement	Morning peak approach traffic volume	Morning peak turning traffic volume	Morning peak turning lane requirement	Afternoon peak approach traffic volume	Afternoon peak turning traffic volume	Afternoon peak turning lane requirement
Princes Highway left turn at Bendalong Road	185	12	Type BA (Note Type AU is already provided)	310	25	Type AU (Note Type AU is already provided)
Princes Highway right turn at Bendalong Road	230	17	Type AU (Note Type CH already provided with seagull acceleration lane)	245	27	Type AU (Note Type CH already provided with seagull acceleration lane)
Bendalong Road left turn at Inyadda	21	10	Type BA (No widening is required)	30	24	Type BA (No widening is required)

Table 4.4 Future need for rural intersection turn lanes

Intersection and turn movement	Morning peak approach traffic volume	Morning peak turning traffic volume	Morning peak turning lane requirement	Afternoon peak approach traffic volume	Afternoon peak turning traffic volume	Afternoon peak turning lane requirement
Bendalong Road right turn at Inyadda	26	18	Type BA (Note sealed shoulder widening is required to meet the Austroads Type BA Standard)	78	65	Type BA (Note sealed shoulder widening is required to meet the Austroads Type BA Standard)
Curvers Drive left turn at Inyadda	39	36	Type BA (No widening is required)	31	23	Type BA (No widening is required)
Curvers Drive right turn at Inyadda	40	39	Type BA (No widening is required)	31	22	Type BA (No widening is required)

In future, as summarised in Table 4.4, there will be increases in the left and right turning and approach traffic volumes at all three intersections, most noticeably at the Bendalong Road/Inyadda Drive intersection. However, there will be no resulting change in any of the intersection turning lane requirements as a result of these traffic increases.

The existing deficiency at the Bendalong Road and Inyadda Drive intersection, where a sealed road shoulder is required in the eastbound direction, will become more noticeable as traffic volumes increase and should be addressed.

4.4 Cross sectional and overtaking requirements on Bendalong Road

The existing road cross sectional width has been measured at approximately one kilometre intervals, along the full 11.3 km length of Bendalong Road, between the Princes Highway and Inyadda Drive. The measured road widths are sufficient to meet the Council's road design requirements for all of the following road classifications:

- Local Street, 500 to 2000 vpd;
- Collector Street, up to 3000 vpd; and
- Local Distributor Road, between 3000 to 6000 vpd.

Outside the peak holiday periods, the current daily traffic volume using Bendalong Road is approximately 930 vehicle movements. With the additional "external" vehicular traffic generated by the Proposal, this will increase by 38% to about 1280 vehicle movements but will not necessitate any general widening of Bendalong Road between the Princes Highway and Inyadda Drive.

The existing overtaking opportunity (the percentage length of the road where overtaking is permitted in the direction of travel i.e. where the sight distance is a minimum of 500 metres ahead) has been estimated from inspections at approximately one kilometre intervals along the full 11.3 km length of Bendalong Road. The proportion of road where overtaking is permitted currently is approximately 33%.

The Austroads daily traffic volume standards for the provision of overtaking lanes along two lane rural roads are given in Appendix B. This shows that, where the proportion of heavy vehicles is 5% or less and the length of the road where overtaking is possible is 33%, then the traffic volume can be up to 4330 vehicles per day before overtaking lanes are required. Using this standard, neither the existing daily traffic volume (930 movements) or the predicted future volume (1234 movements) will create a need for overtaking lanes on Bendalong Road.

4.5 Road pavement requirements for Bendalong Road and Inyadda Drive

From the intersection traffic counts in Appendix A, the existing proportions of heavy vehicle traffic on the major roads in the locality are approximately 2-4% on Bendalong Road and Inyadda Drive and 3-6% on the Princes Highway.

Traffic generated by the Proposal will be primarily residential and similar in composition to the existing daily traffic using these roads. The only exception will be during the subdivision infrastructure and major housing construction phases when the anticipated levels of truck traffic will be greater than for the normal situation. There is some possibility of localised road pavement damage occurring on Bendalong Road or Inyadda Drive from construction traffic. The condition of these two roads should be monitored by regular inspections and any identified pavement damage quickly repaired.

At other times, traffic generated by the Proposal should not warrant any road pavement upgrades on either Bendalong Road or Inyadda Drive. However, when these roads are next due for reconstruction and repair, the Council should ensure adequate pavement depth is provided for these roads to accommodate the future predicted traffic loading for heavy vehicle traffic, for a minimum 20 year future design life, from the time at which the road pavement is reconstructed.

4.6 Access for pedestrians and cyclists

Access for pedestrians and cyclists from the site to the surrounding areas has been determined using the guidance standards given in Council's Subdivision Code (DCP 100).

The code recommends that paved footpaths, to a minimum width of 1.2 metres, be provided along all local or collector streets where the traffic volumes are likely to exceed 500 vehicle movements daily. For the proposed residential subdivision road layout, the two perimeter roads (around the northern boundary of the subdivision and along the northern edge of the southern precinct) and the local road connection between the two subdivision precincts are all likely to require paved footpaths.

5 Recommendations and conclusions

The traffic impacts from the Proposal have been assessed and the key findings are as follows:

- Public transport services are not currently available at Manyana, but they are available at the nearest position on the Princes Highway. The Proposal will improve the viability of providing regular public transport services in the future and it is likely that a daily return bus service to Milton and Ulladulla will become viable towards the latter stages of its development.
- Traffic generated by the Proposal will not affect the capacity or safety of either Bendalong Road or Inyadda Drive. Daily traffic volumes, both within Manyana and along Bendalong Road, are relatively light at present and the forecast increases with the Proposal will not raise these volumes sufficiently to warrant higher design standards, including road widening.
- An existing traffic deficiency has been identified at the intersection of Bendalong Road and Inyadda Drive, where a sealed road shoulder through the intersection in the eastbound direction is required to meet the current Austroads design standard (a type BA intersection). This deficiency should be addressed. All other potentially affected intersections have sufficient spare capacity to safely and efficiently accommodate the forecast increased traffic.
- The Proposal will not increase the proportion of heavy vehicles using the road network and will not generally cause damage to road pavements. However, during the infrastructure and major housing construction stages, there is some potential for pavement damage and the condition of the access roads should be monitored by inspections at regular intervals. If damage occurs it should be quickly rectified to maintain safe and efficient travel conditions.
- Council's Subdivision Code indicates that paved footpaths will be required for all roads which are classified as local or collector streets within the proposed subdivision.

Appendix A

Traffic survey results



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849.

Mobile.0418239019

Client : EMGA
Job No/Name : 4642 MANYANA Intersection Counts
Day/Date : Tuesday 28th May 2013

PEDS	WEST	SOUTH	EAST	
Time Per	Bendalong Rd	Inyadda Dr	Bendalong Rd	TOT
0630 - 0645				0
0645 - 0700				0
0700 - 0715		NOT		0
0715 - 0730		REQUIRED		0
0730 - 0745				0
0745 - 0800				0
0800 - 0815				0
0815 - 0830				0
0830 - 0845				0
0845 - 0900				0
0900 - 0915				0
0915 - 0930				0
Per End	0	0	0	0

PEDS	WEST	SOUTH	EAST	
Peak Per	Bendalong Rd	Inyadda Dr	Bendalong Rd	TOT
0630 - 0730	0	0	0	0
0645 - 0745	0	0	0	0
0700 - 0800	0	0	0	0
0715 - 0815	0	0	0	0
0730 - 0830	0	0	0	0
0745 - 0845	0	0	0	0
0800 - 0900	0	0	0	0
0815 - 0915	0	0	0	0
0830 - 0930	0	0	0	0

PEAK HR	0	0	0	0
---------	---	---	---	---

Lights	WEST		SOUTH		EAST		
Time Per	Bendalong Rd		Inyadda Dr		Bendalong Rd		TOT
0630 - 0645	0	0	7	0	0	0	7
0645 - 0700	1	2	8	3	0	0	14
0700 - 0715	1	3	13	2	5	0	24
0715 - 0730	2	0	12	4	2	0	20
0730 - 0745	3	1	6	1	1	0	12
0745 - 0800	2	2	6	2	0	1	13
0800 - 0815	0	6	21	5	1	1	34
0815 - 0830	1	3	12	1	1	1	19
0830 - 0845	6	2	11	4	1	1	25
0845 - 0900	1	0	15	3	5	5	29
0900 - 0915	1	4	8	4	3	4	24
0915 - 0930	2	2	6	6	3	4	23
Per End	20	25	125	35	22	17	244

Heavies	WEST		SOUTH		EAST		
Time Per	Bendalong Rd		Inyadda Dr		Bendalong Rd		TOT
0630 - 0645	0	1	0	0	0	0	1
0645 - 0700	0	1	0	0	0	0	1
0700 - 0715	0	0	0	0	0	0	0
0715 - 0730	0	0	0	0	0	0	0
0730 - 0745	0	2	0	0	0	0	2
0745 - 0800	0	0	0	0	0	0	0
0800 - 0815	0	0	0	1	0	1	2
0815 - 0830	0	0	0	1	0	0	1
0830 - 0845	0	0	0	0	0	2	2
0845 - 0900	0	0	0	0	0	0	0
0900 - 0915	0	0	0	0	0	0	0
0915 - 0930	0	0	0	2	0	0	2
Per End	0	4	0	4	0	3	11

Combined	WEST		SOUTH		EAST		
Time Per	Bendalong Rd		Inyadda Dr		Bendalong Rd		TOT
0630 - 0645	0	1	7	0	0	0	8
0645 - 0700	1	3	8	3	0	0	15
0700 - 0715	1	3	13	2	5	0	24
0715 - 0730	2	0	12	4	2	0	20
0730 - 0745	3	3	6	1	1	0	14
0745 - 0800	2	2	6	2	0	1	13
0800 - 0815	0	6	21	6	1	2	36
0815 - 0830	1	3	12	2	1	1	20
0830 - 0845	6	2	11	4	1	3	27
0845 - 0900	1	0	15	3	5	5	29
0900 - 0915	1	4	8	4	3	4	24
0915 - 0930	2	2	6	8	3	4	25
Per End	20	29	125	39	22	20	255

Lights	WEST		SOUTH		EAST		
Peak Per	Bendalong Rd		Inyadda Dr		Bendalong Rd		TOT
0630 - 0730	4	5	40	9	7	0	65
0645 - 0745	7	6	39	10	8	0	70
0700 - 0800	8	6	37	9	8	1	69
0715 - 0815	7	9	45	12	4	2	79
0730 - 0830	6	12	45	9	3	3	78
0745 - 0845	9	13	50	12	3	4	91
0800 - 0900	8	11	59	13	8	8	107
0815 - 0915	9	9	46	12	10	11	97
0830 - 0930	10	8	40	17	12	14	101
PEAK HR	8	11	59	13	8	8	107

Heavies	WEST		SOUTH		EAST		
Peak Per	Bendalong Rd		Inyadda Dr		Bendalong Rd		TOT
0630 - 0730	0	2	0	0	0	0	2
0645 - 0745	0	3	0	0	0	0	3
0700 - 0800	0	2	0	0	0	0	2
0715 - 0815	0	2	0	1	0	1	4
0730 - 0830	0	2	0	2	0	1	5
0745 - 0845	0	0	0	2	0	3	5
0800 - 0900	0	0	0	2	0	3	5
0815 - 0915	0	0	0	1	0	2	3
0830 - 0930	0	0	0	2	0	2	4
PEAK HR	0	0	0	2	0	3	5

Combined	WEST		SOUTH		EAST		
Peak Per	Bendalong Rd		Inyadda Dr		Bendalong Rd		TOT
0630 - 0730	4	7	40	9	7	0	67
0645 - 0745	7	9	39	10	8	0	73
0700 - 0800	8	8	37	9	8	1	71
0715 - 0815	7	11	45	13	4	3	83
0730 - 0830	6	14	45	11	3	4	83
0745 - 0845	9	13	50	14	3	7	96
0800 - 0900	8	11	59	15	8	11	112
0815 - 0915	9	9	46	13	10	13	100
0830 - 0930	10	8	40	19	12	16	105
PEAK HR	8	11	59	15	8	11	112



R.O.A.R. DATA

Client : EMGA



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849.

Mobile.0418239019

Client : EMGA
 Job No/Name : 4642 MANYANA Intersection Counts
 Day/Date : Tuesday 28th May 2013

PEDS	WEST	SOUTH	EAST	
Time Per	Bendalong	Inyadda Dr	Bendalong	TOT
1500 - 1515				0
1515 - 1530				0
1530 - 1545		NOT		0
1545 - 1600		REQUIRED		0
1600 - 1615				0
1615 - 1630				0
1630 - 1645				0
1645 - 1700				0
1700 - 1715				0
1715 - 1730				0
1730 - 1745				0
1745 - 1800				0
Per End	0	0	0	0

PEDS	WEST	SOUTH	EAST	
Peak Per	Bendalong	Inyadda Dr	Bendalong	TOT
1500 - 1600	0	0	0	0
1515 - 1615	0	0	0	0
1530 - 1630	0	0	0	0
1545 - 1645	0	0	0	0
1600 - 1700	0	0	0	0
1615 - 1715	0	0	0	0
1630 - 1730	0	0	0	0
1645 - 1745	0	0	0	0
1700 - 1800	0	0	0	0

PEAK HR	0	0	0	0
---------	---	---	---	---

Lights	WEST		SOUTH		EAST		
	Bendalong		Inyadda Dr		Bendalong		
Time Per	I	R	L	R	L	I	TOT
1500 - 1515	2	3	6	8	8	2	29
1515 - 1530	1	5	1	2	4	6	19
1530 - 1545	1	7	3	2	3	2	18
1545 - 1600	0	5	5	2	4	2	18
1600 - 1615	6	11	4	1	4	3	29
1615 - 1630	3	10	4	4	5	1	27
1630 - 1645	3	12	4	3	2	1	25
1645 - 1700	1	10	5	7	7	1	31
1700 - 1715	1	12	3	2	4	3	25
1715 - 1730	1	8	3	0	4	1	17
1730 - 1745	4	16	4	2	2	0	28
1745 - 1800	1	8	2	1	1	1	14
Per End	24	107	44	34	48	23	280

Heavies	WEST		SOUTH		EAST		
	Bendalong		Inyadda Dr		Bendalong		
Time Per	I	R	L	R	L	I	TOT
1500 - 1515	0	0	0	0	0	0	0
1515 - 1530	0	0	0	0	0	0	0
1530 - 1545	0	0	2	0	0	0	2
1545 - 1600	0	0	0	0	0	0	0
1600 - 1615	0	0	0	0	0	0	0
1615 - 1630	0	2	0	0	0	0	2
1630 - 1645	0	0	0	0	0	0	0
1645 - 1700	0	0	0	0	0	0	0
1700 - 1715	0	0	0	0	0	0	0
1715 - 1730	0	0	0	0	0	0	0
1730 - 1745	0	0	0	0	0	0	0
1745 - 1800	0	1	0	0	0	0	1
Per End	0	3	2	0	0	0	5

Combined	WEST		SOUTH		EAST		
	Bendalong		Inyadda Dr		Bendalong		
Time Per	I	R	L	R	L	I	TOT
1500 - 1515	2	3	6	8	8	2	29
1515 - 1530	1	5	1	2	4	6	19
1530 - 1545	1	7	5	2	3	2	20
1545 - 1600	0	5	5	2	4	2	18
1600 - 1615	6	11	4	1	4	3	29
1615 - 1630	3	12	4	4	5	1	29
1630 - 1645	3	12	4	3	2	1	25
1645 - 1700	1	10	5	7	7	1	31
1700 - 1715	1	12	3	2	4	3	25
1715 - 1730	1	8	3	0	4	1	17
1730 - 1745	4	16	4	2	2	0	28
1745 - 1800	1	9	2	1	1	1	15
Per End	24	110	46	34	48	23	285

Lights	WEST		SOUTH		EAST		
	Bendalong		Inyadda Dr		Bendalong		
Peak Per	I	R	L	R	L	I	TOT
1500 - 1600	4	20	15	14	19	12	84
1515 - 1615	8	28	13	7	15	13	84
1530 - 1630	10	33	16	9	16	8	92
1545 - 1645	12	38	17	10	15	7	99
1600 - 1700	13	43	17	15	18	6	112
1615 - 1715	8	44	16	16	18	6	108
1630 - 1730	6	42	15	12	17	6	98
1645 - 1745	7	46	15	11	17	5	101
1700 - 1800	7	44	12	5	11	5	84

Heavies	WEST		SOUTH		EAST		
	Bendalong		Inyadda Dr		Bendalong		
Peak Per	I	R	L	R	L	I	TOT
1500 - 1600	0	0	2	0	0	0	2
1515 - 1615	0	0	2	0	0	0	2
1530 - 1630	0	2	2	0	0	0	4
1545 - 1645	0	2	0	0	0	0	2
1600 - 1700	0	2	0	0	0	0	2
1615 - 1715	0	2	0	0	0	0	2
1630 - 1730	0	0	0	0	0	0	0
1645 - 1745	0	0	0	0	0	0	0
1700 - 1800	0	1	0	0	0	0	1

Combined	WEST		SOUTH		EAST		
	Bendalong		Inyadda Dr		Bendalong		
Peak Per	I	R	L	R	L	I	TOT
1500 - 1600	4	20	17	14	19	12	86
1515 - 1615	8	28	15	7	15	13	86
1530 - 1630	10	35	18	9	16	8	96
1545 - 1645	12	40	17	10	15	7	101
1600 - 1700	13	45	17	15	18	6	114
1615 - 1715	8	46	16	16	18	6	110
1630 - 1730	6	42	15	12	17	6	98
1645 - 1745	7	46	15	11	17	5	101
1700 - 1800	7	45	12	5	11	5	85

PEAK HR	13	43	17	15	18	6	112
---------	----	----	----	----	----	---	-----

PEAK HR	0	2	0	0	0	0	2
---------	---	---	---	---	---	---	---

PEAK HR	13	45	17	15	18	6	114
---------	----	----	----	----	----	---	-----



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : EMGA
Job No/Name : 4642 MANYANA Intersection Counts
Day/Date : Tuesday 28th May 2013

Intersection Layout

Obtained via satellite

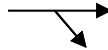
May be incorrect

AM PEAK HOUR
0800 - 0900

Combined figures only



Bendalong Rd



8	13	T
AM	PM	
11	45	R

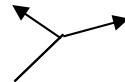
T	6	11
	PM	AM
L	18	8



Bendalong Rd



PM	17	15
AM	59	15
	L	R



Inyadda Dr

PM PEAK HOUR
1600 - 1700

Weather >>>





R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849.

Mobile.0418239019

Client : EMGA
Job No/Name : 4642 MANYANA Intersection Counts
Day/Date : Tuesday 28th May 2013

PEDS	WEST	NORTH	EAST	
Time Per	Curvers Dr	Inyadda Dr	Curvers Dr	TOT
0630 - 0645				0
0645 - 0700				0
0700 - 0715		NOT		0
0715 - 0730		REQUIRED		0
0730 - 0745				0
0745 - 0800				0
0800 - 0815				0
0815 - 0830				0
0830 - 0845				0
0845 - 0900				0
0900 - 0915				0
0915 - 0930				0
Per End	0	0	0	0

PEDS	WEST	NORTH	EAST	
Peak Per	Curvers Dr	Inyadda Dr	Curvers Dr	TOT
0630 - 0730	0	0	0	0
0645 - 0745	0	0	0	0
0700 - 0800	0	0	0	0
0715 - 0815	0	0	0	0
0730 - 0830	0	0	0	0
0745 - 0845	0	0	0	0
0800 - 0900	0	0	0	0
0815 - 0915	0	0	0	0
0830 - 0930	0	0	0	0

PEAK HR	0	0	0	0
---------	---	---	---	---

Lights	WEST		NORTH		EAST		
	Curvers Dr		Inyadda Dr		Curvers Dr		
Time Per	I	L	R	L	R	I	TOT
0630 - 0645	0	2	0	0	5	0	7
0645 - 0700	0	4	1	1	7	0	13
0700 - 0715	0	8	6	1	7	1	23
0715 - 0730	0	8	1	2	7	0	18
0730 - 0745	0	5	0	1	4	1	11
0745 - 0800	0	3	2	1	5	1	12
0800 - 0815	1	9	5	2	16	0	33
0815 - 0830	0	4	0	4	6	0	14
0830 - 0845	0	8	2	2	9	0	21
0845 - 0900	2	12	2	3	5	0	24
0900 - 0915	1	5	3	2	7	2	20
0915 - 0930	1	6	4	2	6	1	20
Per End	5	74	26	21	84	6	216

Heavies	WEST		NORTH		EAST		
	Curvers Dr		Inyadda Dr		Curvers Dr		
Time Per	I	L	R	L	R	I	TOT
0630 - 0645	0	0	0	1	0	0	1
0645 - 0700	0	0	0	1	0	0	1
0700 - 0715	0	0	0	0	0	0	0
0715 - 0730	0	0	0	0	0	0	0
0730 - 0745	0	0	2	0	0	0	2
0745 - 0800	0	0	0	0	0	1	1
0800 - 0815	0	0	0	0	1	1	2
0815 - 0830	0	1	0	0	0	0	1
0830 - 0845	0	0	0	0	0	0	0
0845 - 0900	0	0	0	0	0	0	0
0900 - 0915	0	0	0	0	0	0	0
0915 - 0930	0	2	0	0	0	0	2
Per End	0	3	2	2	1	2	10

Combined	WEST		NORTH		EAST		
	Curvers Dr		Inyadda Dr		Curvers Dr		
Time Per	I	L	R	L	R	I	TOT
0630 - 0645	0	2	0	1	5	0	8
0645 - 0700	0	4	1	2	7	0	14
0700 - 0715	0	8	6	1	7	1	23
0715 - 0730	0	8	1	2	7	0	18
0730 - 0745	0	5	2	1	4	1	13
0745 - 0800	0	3	2	1	5	2	13
0800 - 0815	1	9	5	2	17	1	35
0815 - 0830	0	5	0	4	6	0	15
0830 - 0845	0	8	2	2	9	0	21
0845 - 0900	2	12	2	3	5	0	24
0900 - 0915	1	5	3	2	7	2	20
0915 - 0930	1	8	4	2	6	1	22
Per End	5	77	28	23	85	8	226

Lights	WEST		NORTH		EAST		
	Curvers Dr		Inyadda Dr		Curvers Dr		
Peak Per	I	L	R	L	R	I	TOT
0630 - 0730	0	22	8	4	26	1	61
0645 - 0745	0	25	8	5	25	2	65
0700 - 0800	0	24	9	5	23	3	64
0715 - 0815	1	25	8	6	32	2	74
0730 - 0830	1	21	7	8	31	2	70
0745 - 0845	1	24	9	9	36	1	80
0800 - 0900	3	33	9	11	36	0	92
0815 - 0915	3	29	7	11	27	2	79
0830 - 0930	4	31	11	9	27	3	85
PEAK HR	3	33	9	11	36	0	92

Heavies	WEST		NORTH		EAST		
	Curvers Dr		Inyadda Dr		Curvers Dr		
Peak Per	I	L	R	L	R	I	TOT
0630 - 0730	0	0	0	2	0	0	2
0645 - 0745	0	0	2	1	0	0	3
0700 - 0800	0	0	2	0	0	1	3
0715 - 0815	0	0	2	0	1	2	5
0730 - 0830	0	1	2	0	1	2	6
0745 - 0845	0	1	0	0	1	2	4
0800 - 0900	0	1	0	0	1	1	3
0815 - 0915	0	1	0	0	0	0	1
0830 - 0930	0	2	0	0	0	0	2
PEAK HR	0	1	0	0	1	1	3

Combined	WEST		NORTH		EAST		
	Curvers Dr		Inyadda Dr		Curvers Dr		
Peak Per	I	L	R	L	R	I	TOT
0630 - 0730	0	22	8	6	26	1	63
0645 - 0745	0	25	10	6	25	2	68
0700 - 0800	0	24	11	5	23	4	67
0715 - 0815	1	25	10	6	33	4	79
0730 - 0830	1	22	9	8	32	4	76
0745 - 0845	1	25	9	9	37	3	84
0800 - 0900	3	34	9	11	37	1	95
0815 - 0915	3	30	7	11	27	2	80
0830 - 0930	4	33	11	9	27	3	87
PEAK HR	3	34	9	11	37	1	95



R.O.A.R. DATA

Client : EMGA



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849.

Mobile.0418239019

Client : EMGA
Job No/Name : 4642 MANYANA Intersection Counts
Day/Date : Tuesday 28th May 2013

PEDS	WEST	NORTH	EAST	
Time Per	Curvers Dr	Inyadda Dr	Curvers Dr	TOT
1500 - 1515				0
1515 - 1530				0
1530 - 1545		NOT		0
1545 - 1600		REQUIRED		0
1600 - 1615				0
1615 - 1630				0
1630 - 1645				0
1645 - 1700				0
1700 - 1715				0
1715 - 1730				0
1730 - 1745				0
1745 - 1800				0
Per End	0	0	0	0

PEDS	WEST	NORTH	EAST	
Peak Per	Curvers Dr	Inyadda Dr	Curvers Dr	TOT
1500 - 1600	0	0	0	0
1515 - 1615	0	0	0	0
1530 - 1630	0	0	0	0
1545 - 1645	0	0	0	0
1600 - 1700	0	0	0	0
1615 - 1715	0	0	0	0
1630 - 1730	0	0	0	0
1645 - 1745	0	0	0	0
1700 - 1800	0	0	0	0

PEAK HR	0	0	0	0
---------	---	---	---	---

Lights	WEST		NORTH		EAST		
	Curvers Dr		Inyadda Dr		Curvers Dr		
Time Per	I	L	R	L	R	I	TOT
1500 - 1515	2	7	3	8	8	1	29
1515 - 1530	2	1	3	7	3	3	19
1530 - 1545	1	4	4	5	2	0	16
1545 - 1600	0	3	6	5	2	0	16
1600 - 1615	2	3	9	7	4	3	28
1615 - 1630	2	6	5	10	3	2	28
1630 - 1645	2	2	4	9	2	4	23
1645 - 1700	2	5	6	11	8	0	32
1700 - 1715	3	2	7	8	2	1	23
1715 - 1730	1	4	1	11	1	2	20
1730 - 1745	0	2	7	11	3	5	28
1745 - 1800	0	1	4	5	2	1	13
Per End	17	40	59	97	40	22	275

Heavies	WEST		NORTH		EAST		
	Curvers Dr		Inyadda Dr		Curvers Dr		
Time Per	I	L	R	L	R	I	TOT
1500 - 1515	0	0	0	0	0	0	0
1515 - 1530	0	0	0	0	0	0	0
1530 - 1545	0	0	0	0	0	0	0
1545 - 1600	0	0	0	0	0	0	0
1600 - 1615	0	0	0	0	0	0	0
1615 - 1630	0	0	0	2	0	0	2
1630 - 1645	0	2	0	0	0	0	2
1645 - 1700	0	0	0	0	0	0	0
1700 - 1715	0	0	0	0	0	0	0
1715 - 1730	0	0	0	0	0	0	0
1730 - 1745	0	0	0	0	0	0	0
1745 - 1800	0	0	1	0	0	0	1
Per End	0	2	1	2	0	0	5

Combined	WEST		NORTH		EAST		
	Curvers Dr		Inyadda Dr		Curvers Dr		
Time Per	I	L	R	L	R	I	TOT
1500 - 1515	2	7	3	8	8	1	29
1515 - 1530	2	1	3	7	3	3	19
1530 - 1545	1	4	4	5	2	0	16
1545 - 1600	0	3	6	5	2	0	16
1600 - 1615	2	3	9	7	4	3	28
1615 - 1630	2	6	5	12	3	2	30
1630 - 1645	2	4	4	9	2	4	25
1645 - 1700	2	5	6	11	8	0	32
1700 - 1715	3	2	7	8	2	1	23
1715 - 1730	1	4	1	11	1	2	20
1730 - 1745	0	2	7	11	3	5	28
1745 - 1800	0	1	5	5	2	1	14
Per End	17	42	60	99	40	22	280

Lights	WEST		NORTH		EAST		
	Curvers Dr		Inyadda Dr		Curvers Dr		
Peak Per	I	L	R	L	R	I	TOT
1500 - 1600	5	15	16	25	15	4	80
1515 - 1615	5	11	22	24	11	6	79
1530 - 1630	5	16	24	27	11	5	88
1545 - 1645	6	14	24	31	11	9	95
1600 - 1700	8	16	24	37	17	9	111
1615 - 1715	9	15	22	38	15	7	106
1630 - 1730	8	13	18	39	13	7	98
1645 - 1745	6	13	21	41	14	8	103
1700 - 1800	4	9	19	35	8	9	84
PEAK HR	8	16	24	37	17	9	111

Heavies	WEST		NORTH		EAST		
	Curvers Dr		Inyadda Dr		Curvers Dr		
Peak Per	I	L	R	L	R	I	TOT
1500 - 1600	0	0	0	0	0	0	0
1515 - 1615	0	0	0	0	0	0	0
1530 - 1630	0	0	0	2	0	0	2
1545 - 1645	0	2	0	2	0	0	4
1600 - 1700	0	2	0	2	0	0	4
1615 - 1715	0	2	0	2	0	0	4
1630 - 1730	0	2	0	0	0	0	2
1645 - 1745	0	0	0	0	0	0	0
1700 - 1800	0	0	1	0	0	0	1
PEAK HR	0	2	0	2	0	0	4

Combined	WEST		NORTH		EAST		
	Curvers Dr		Inyadda Dr		Curvers Dr		
Peak Per	I	L	R	L	R	I	TOT
1500 - 1600	5	15	16	25	15	4	80
1515 - 1615	5	11	22	24	11	6	79
1530 - 1630	5	16	24	29	11	5	90
1545 - 1645	6	16	24	33	11	9	99
1600 - 1700	8	18	24	39	17	9	115
1615 - 1715	9	17	22	40	15	7	110
1630 - 1730	8	15	18	39	13	7	100
1645 - 1745	6	13	21	41	14	8	103
1700 - 1800	4	9	20	35	8	9	85
PEAK HR	8	18	24	39	17	9	115



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : EMGA
Job No/Name : 4642 MANYANA Intersection Counts
Day/Date : Tuesday 28th May 2013

Intersection Layout

Obtained via satellite

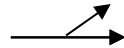
May be incorrect

AM PEAK HOUR
0800 - 0900



Inyadda Dr

Curvers Dr



AM		PM	
34	18	L	

3	8	T
---	---	---

R		L	
9	11	AM	
24	39	PM	

R		L	
17	37	PM	
9	1	AM	



Curvers Dr

Combined figures only

PM PEAK HOUR
1600 - 1700

Weather >>>





R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849.

Mobile.0418239019

Client : EMGA
Job No/Name : 4642 MANYANA Intersection Counts
Day/Date : Tuesday 28th May 2013

PEDS	NORTH	EAST	SOUTH	
Time Per	Princess Hwy	Bendalong Rd	Princess Hwy	TOT
0630 - 0645				0
0645 - 0700				0
0700 - 0715		NOT		0
0715 - 0730		REQUIRED		0
0730 - 0745				0
0745 - 0800				0
0800 - 0815				0
0815 - 0830				0
0830 - 0845				0
0845 - 0900				0
0900 - 0915				0
0915 - 0930				0
Per End	0	0	0	0

PEDS	NORTH	EAST	SOUTH	
Peak Per	Princess Hwy	Bendalong Rd	Princess Hwy	TOT
0630 - 0730	0	0	0	0
0645 - 0745	0	0	0	0
0700 - 0800	0	0	0	0
0715 - 0815	0	0	0	0
0730 - 0830	0	0	0	0
0745 - 0845	0	0	0	0
0800 - 0900	0	0	0	0
0815 - 0915	0	0	0	0
0830 - 0930	0	0	0	0
PEAK HR	0	0	0	0

Lights	NORTH		EAST		SOUTH		
Time Per	Princess Hwy		Bendalong Rd		Princess Hwy		TOT
0630 - 0645	30	0	7	6	1	40	84
0645 - 0700	17	1	1	1	2	45	67
0700 - 0715	20	1	8	6	2	56	93
0715 - 0730	25	2	8	3	2	59	99
0730 - 0745	35	2	6	2	4	57	106
0745 - 0800	50	1	7	2	1	47	108
0800 - 0815	34	3	2	13	2	51	105
0815 - 0830	48	1	3	11	4	35	102
0830 - 0845	47	4	4	12	3	44	114
0845 - 0900	33	0	7	10	4	50	104
0900 - 0915	34	2	12	11	1	46	106
0915 - 0930	52	2	5	2	3	62	126
Per End	425	19	70	79	29	592	1214

Heavies	NORTH		EAST		SOUTH		
Time Per	Princess Hwy		Bendalong Rd		Princess Hwy		TOT
0630 - 0645	0	1	0	0	0	2	3
0645 - 0700	7	0	0	0	0	1	8
0700 - 0715	3	0	0	0	0	1	4
0715 - 0730	3	0	0	0	2	2	7
0730 - 0745	7	0	0	0	2	2	11
0745 - 0800	2	0	0	0	0	5	7
0800 - 0815	7	0	0	0	0	0	7
0815 - 0830	4	0	0	1	0	2	7
0830 - 0845	1	1	0	1	0	2	5
0845 - 0900	1	0	0	1	0	2	4
0900 - 0915	3	0	0	0	0	5	8
0915 - 0930	2	0	0	0	2	2	6
Per End	40	2	0	3	6	26	77

Combined	NORTH		EAST		SOUTH		
Time Per	Princess Hwy		Bendalong Rd		Princess Hwy		TOT
0630 - 0645	30	1	7	6	1	42	87
0645 - 0700	24	1	1	1	2	46	75
0700 - 0715	23	1	8	6	2	57	97
0715 - 0730	28	2	8	3	4	61	106
0730 - 0745	42	2	6	2	6	59	117
0745 - 0800	52	1	7	2	1	52	115
0800 - 0815	41	3	2	13	2	51	112
0815 - 0830	52	1	3	12	4	37	109
0830 - 0845	48	5	4	13	3	46	119
0845 - 0900	34	0	7	11	4	52	108
0900 - 0915	37	2	12	11	1	51	114
0915 - 0930	54	2	5	2	5	64	132
Per End	465	21	70	82	35	618	1291

Lights	NORTH		EAST		SOUTH		
Peak Per	Princess Hwy		Bendalong Rd		Princess Hwy		TOT
0630 - 0730	92	4	24	16	7	200	343
0645 - 0745	97	6	23	12	10	217	365
0700 - 0800	130	6	29	13	9	219	406
0715 - 0815	144	8	23	20	9	214	418
0730 - 0830	167	7	18	28	11	190	421
0745 - 0845	179	9	16	38	10	177	429
0800 - 0900	162	8	16	46	13	180	425
0815 - 0915	162	7	26	44	12	175	426
0830 - 0930	166	8	28	35	11	202	450

Heavies	NORTH		EAST		SOUTH		
Peak Per	Princess Hwy		Bendalong Rd		Princess Hwy		TOT
0630 - 0730	13	1	0	0	2	6	22
0645 - 0745	20	0	0	0	4	6	30
0700 - 0800	15	0	0	0	4	10	29
0715 - 0815	19	0	0	0	4	9	32
0730 - 0830	20	0	0	1	2	9	32
0745 - 0845	14	1	0	2	0	9	26
0800 - 0900	13	1	0	3	0	6	23
0815 - 0915	9	1	0	3	0	11	24
0830 - 0930	7	1	0	2	2	11	23

Combined	NORTH		EAST		SOUTH		
Peak Per	Princess Hwy		Bendalong Rd		Princess Hwy		TOT
0630 - 0730	105	5	24	16	9	206	365
0645 - 0745	117	6	23	12	14	223	395
0700 - 0800	145	6	29	13	13	229	435
0715 - 0815	163	8	23	20	13	223	450
0730 - 0830	187	7	18	29	13	199	453
0745 - 0845	193	10	16	40	10	186	455
0800 - 0900	175	9	16	49	13	186	448
0815 - 0915	171	8	26	47	12	186	450
0830 - 0930	173	9	28	37	13	213	473

PEAK HR	166	8	28	35	11	202	450
---------	-----	---	----	----	----	-----	-----

PEAK HR	7	1	0	2	2	11	23
---------	---	---	---	---	---	----	----

PEAK HR	173	9	28	37	13	213	473
---------	-----	---	----	----	----	-----	-----