Traffic Solutions Pty Ltd

CLAYMORE RENEWAL PROJECT

TRANSPORT AND ACCESSIBILITY STUDY

REF NO. 10.11.110

5 AUGUST 2011

P.O. Box 9161 Bathurst NSW 2795 Phone/Fax: (02) 6331 0467 Email: trafficsolutions@ozemail.com.au

CLAYMORE RENEWAL PROJECT – TRANSPORT AND ACCESSIBILITY STUDY

Prepared By : Craig Hazell, Director Traffic Solutions P/l

For: LANDCOM

Report No.: 10.11.110

Date: 5 August 2011

Issue: FINAL

Contents

Figures

Tables

Appendicies

1 Executive Summary

Landcom as part of the Claymore Renewal Project is preparing a Concept Plan for submission to the Department of Planning to renew the suburb of Claymore in the Campbelltown Shire.

Claymore currently has 1151 residential dwellings and the proposal is to redesign the suburb road network and provide 1490 new dwellings including retention and refurbishment of 140 existing dwellings.

This report has addressed all of the Director Generals requirements, investigated the traffic and transport impacts and requirements of the proposal and found that the proposal will not have a detrimental impact upon the existing and proposed road network in the area, provided the recommendations made by this report regarding road link, bus routes, traffic calming, pedestrian/bicycle links and speed limit alterations are considered as part of the overall scheme.

The traffic modelling has been based on a number of key assumptions namely:

- Existing traffic generation rates per dwelling entering/exiting the suburb during the morning and afternoon peak hours remain similar.
- A proposed new retail area with 6100m^2 GFA.
- A new Service Station on Badgally Road.
- Forecast traffic flows provided in the Oran Park and Turner Road precinct Plan, Transport Assessment.

The results of this assessment reveal that there are no unacceptable traffic implications associated with the Claymore renewal project. However, as a result of the forecast traffic flows in 2026 from the Oran Park and Turner Road development area Badgally Road (and the roundabout at Dobell Road) will require upgrading to dual carriageway by 2026.

2 Introduction

2.1 Project Overview

Traffic Solutions Pty Ltd has been engaged by LANDCOM to undertake a review of the Traffic and Transport implications of the proposal to renew the suburb of Claymore

Claymore is a 125 Hectare public housing estate located north of Badgally Road and west of the M5 freeway in the Campbelltown Local Government Area.

Claymore currently has 1151 residential dwellings and the proposal is to redesign the suburb road network and provide 1490 new dwellings including retention and refurbishment of 140 retained dwellings.

Landcom's concept plan for Claymore over the 12 – 15 year life of the project is proposed to yield the following:

- A total of 1490 dwellings of which 30% will be retained for public housing. (447)
    - The 447 public housing dwellings will likely consist of:
        - 100 seniors living units
        - 140 upgraded existing dwellings
        - 207 new lots for new dwellings
- A new Retail Centre on Badgally Road opposite Blairmont Primary School which has the following components:
    - 3200m^2 supermarket
    - 2300m^2 of specialty retail
    - 600m^2 neighbourhood community centre
    - Service Station

The project is listed as having state significance and as such is to be dealt with under Part 3A of the Environmental Planning and Assessment act which requires the preparation of an Environmental Assessment. Consequently, The Department of Planning indicated that Traffic and Transport was a specific issue of this application.

2.2 Director Generals Requirements

The Director General of the Department of Planning has issued the Environmental Assessment Requirements for the Claymore Renewal Project by letter dated 10th March 2011. **Table 2.1** provides the Director General Requirements relating to transport and accessibility and the section within this report that addresses each issue. A copy of the Director Generals correspondence is attached as **Appendix A**.

Table 2.1 – Director General Requirements	Traffic Solutions Pty Ltd Reference
5. Transport and Accessibility Impacts (Construction and Operational)	
• Provide a Transport & Accessibility Study prepared with reference to the Metropolitan Transport Plan – Connecting the City of Cities, the NSW State Plan, the NSW Planning Guidelines for Walking and Cycling, NSW Bike Plan, NSW Health's Healthy Urban Development Checklist, the Integrated Land Use and Transport policy package and the RTA's Guide to Traffic Generating Development, considering the following:	• These documents have been reviewed in section 3 along with the Oran Park and Turner Road Precinct Plan Transport Assessment prepared by Maunsell Aecom for the growth Centre Commission.
- Demonstrate how users of the development will be able to make travel choices that support the achievement of relevant State Plan targets;	- Future transport options are discussed in section 6.
- Detail the existing pedestrian and cycle movements within the vicinity of the site and determine the adequacy of the proposal to meet the likely future demand for increased public transport and pedestrian and cycle access;	- Existing conditions area provided in section 5 and future circumstances are in section 6.
- Identify potential traffic impacts during the construction stage of the project, and measures to mitigate these impacts;	- Construction staging is discussed in section 4.4.
- Provide an analysis of public transport provision, expected transport mode shares based on planned future demographics, and car parking and address potential for improving accessibility to and from the town centre within the site and connections to the wider region via sustainable transport modes;	- Discussions have been held with Busways to determine preferred future routes through Claymore with new road configuration. Section 6.8
- Describe the measures to be implemented to promote sustainable means of transport including public transport usage and pedestrian and bicycle linkages in addition to addressing the potential for implementing a location specific sustainable travel plan;	- Future bus routes, bicycle routes and pedestrian facilities have been documented in section 6.9. Modifications to regional and local bicycle routes (on and off road) are proposed.
- Daily and peak traffic movements likely to be generated by the proposed development, including the impact on nearby intersections and the need / associated funding for upgrading or road improvement works (if required). The traffic impact assessment should consider base models with future traffic generated by the proposal;	- Traffic impact assessment provided in section 6.
- Details of the proposed access, parking provisions and service vehicle movements associated with the proposed development; and	- Parking and service provision is assessed in section 6.
- Demonstrate a minimal provision of onsite car parking for the proposed development having regard to the site's accessibility to public transport, opportunities for car sharing, local planning controls and RTA guidelines (note: The Department supports reduced parking provisions, if adequate public transport is available to access the site).	

2.3 Study Methodology

This study will review the documents requested by the Director General and this report has been prepared in accordance with the Roads and Traffic Authorities Guidelines for Traffic Generating Developments. The Claymore Renewal Project will be assessed using today's best practice, AUSTROADS Guide to Traffic Engineering Practice, RTA guidelines, relevant Australian Standards and will:

- Review and document the existing road conditions, (i.e. traffic flows, key intersections, intersection geometry etc.) and public transport.
- Review the Oran Park Town – Turner Road precinct Plan to obtain forecast traffic flows in the area.
- Estimate the traffic generation potential of the proposal and assess the effect of this additional traffic on the existing and new road system within Claymore and the existing road system in the vicinity of the site.
- Assess the local and regional traffic implications including traffic capacity at key intersections.
- Review the proposal with regard to cars, pedestrians, buses and bicycles.
- Review the proposal with regard to road geometry, roadway capacity, intersection control, speed limits and intersection capacity.
- Assess the site's connectivity with the regional road network
- Assess public transport connections to the site
- Assess transport and traffic planning within the site.
- Make recommendations for alterations (if required) based upon the above assessment.

3 Review of Related Transport Reports and Planning Guidelines

3.1 Oran Park and Turner Road Transport Assessment

As part of this assessment the Oran Park and Turner Road Transport Assessment prepared by Maunsell/Aecom has been reviewed and sections of this report will refer to data and extracts from this document. In particular this report will utilise the forecast traffic flows provided for Badgally Road in 2026 of:

Badgally Road	AM Peak	PM Peak
Northbound	542	868
Southbound	1165	528

3.2 Planning Guidelines

The following planning documents and guidelines have been reviewed for their relevance to this study.

Metropolitan Transport Plan – Connecting the City of Cities

This study undertaken by the NSW Government dated February 2010 provides a 25 year vision for land use planning in Sydney. This plan proposes 1,000 new buses to be provided over the whole Sydney network with Badgally Road forming part of a future strategic bus corridor to be introduced by 2020.

NSW State Plan – Better Transport and Liveable Cities

The State plan dated March 2010 proposes the following that has relevance to Claymore:

- An extra lane in each direction on the M5 motorways
- The continued rollout of projects that will give buses priority such as bus lanes and GPS technology to turn lights from red to green
- Upgrades to the F5 Freeway

NSW Planning Guidelines for Walking and Cycling

This guideline dated December 2004 provides the practitioner with information to plan/design Claymore for walking and cycling.

NSW Bikeplan

This plan dated May 2010 is a 10 year funded plan for bicycle infrastructure. The only relevance is a proposed regional bicycle route from Liverpool to Campbelltown.

NSW Health's Healthy Urban Development Checklist

This checklist dated February 2010, from a transport perspective highlights the availability of Public Transport services, a reduction in car dependency and encouragement of active transport with opportunities for walking, cycling and other forms of active transport, access to green space, natural areas and quality streetscapes.

Integrated Land Use and Transport policy Package

This document dated 2001 provides policies for the renewal of the Claymore area to improve the quality of the urban environment by creating conditions conducive to the establishment of a sustainable place to live.

RTA's Guide to Traffic Generating Developments

This document dated October 2002 is the key guideline used in the preparation of the Claymore Transport and Accessibility Study, particularly with regards to road and intersections operation and level of service.

4 Proposed Renewal Scheme

4.1 Project Site

Claymore is a suburb of Campbelltown Local Government Area located north of Badgally Road, west of the M5 freeway and south west of Eagle Vale. Claymore is approximately 56km from Sydney CBD and 2 km from Campbelltown CBD. The following **Figure 1** depicts the locality.

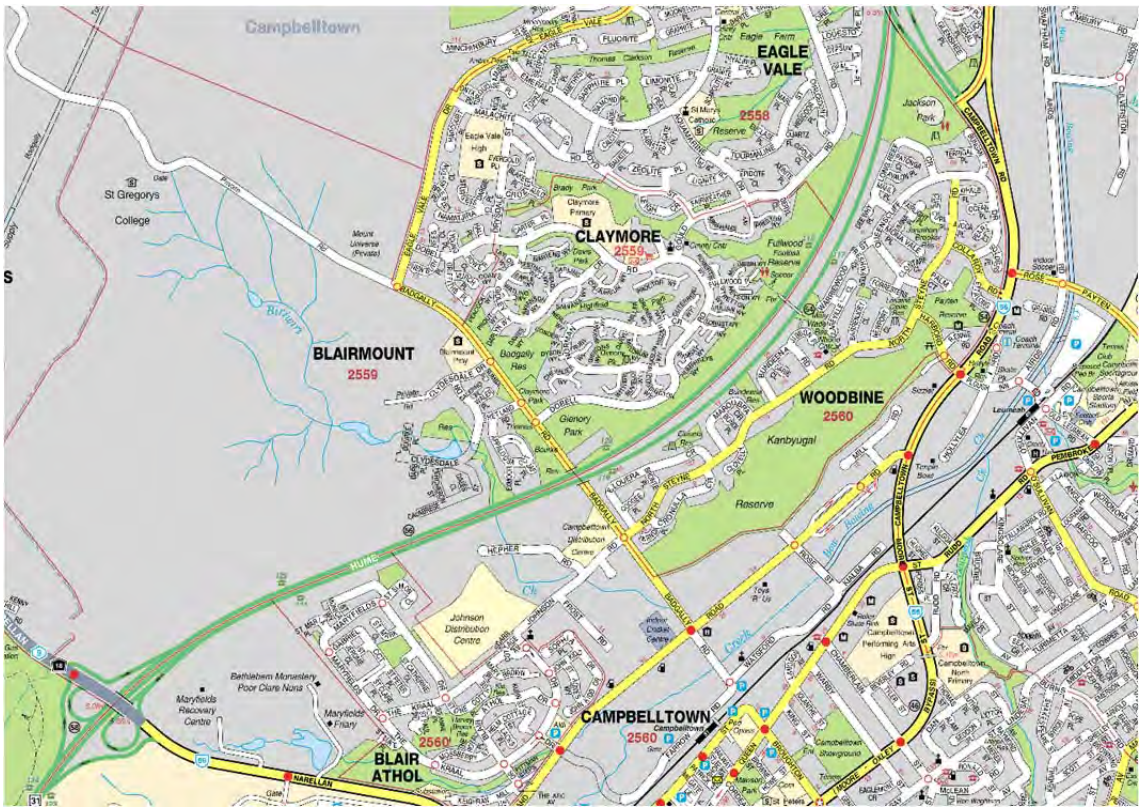


Figure 1 – Locality Plan

4.2 Study Area

The area that this assessment concentrates on is the whole suburb of Claymore which is depicted in the following **Figure 2**. However, the impacts upon roads external to the site have also been assessed.

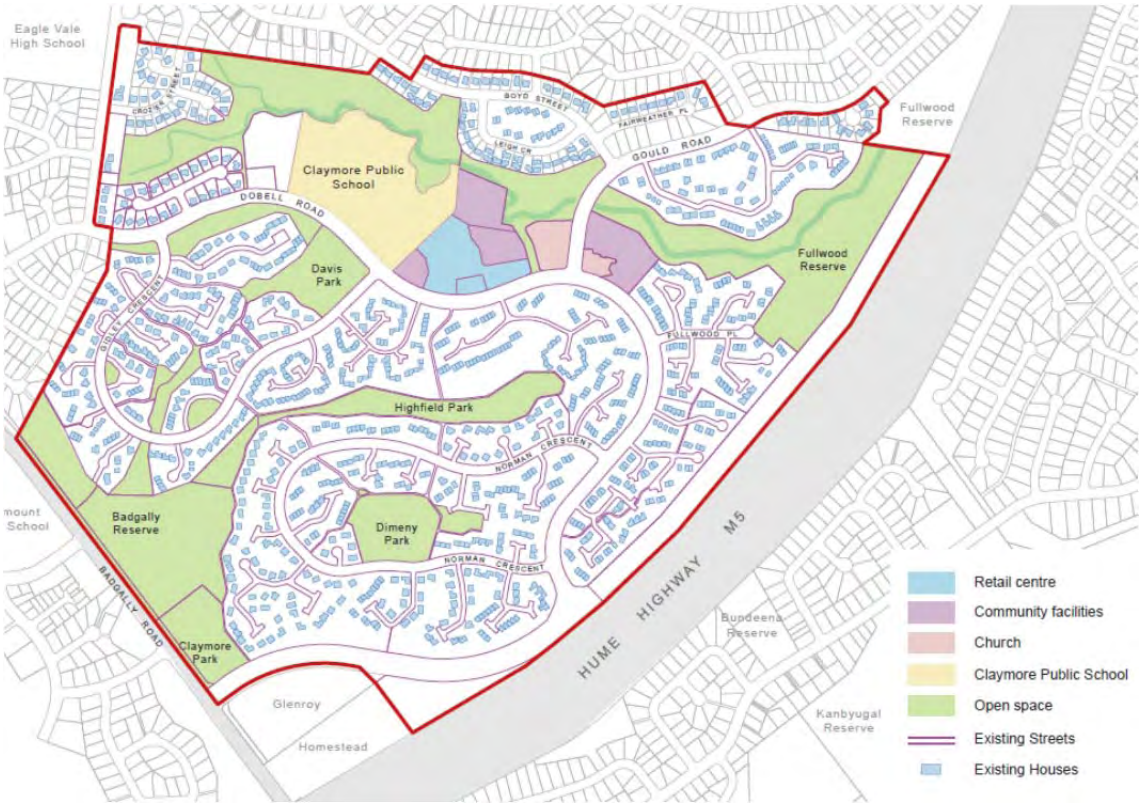


Figure 2 – Study Area

4.3 Renewal Scheme

Claymore currently has 1,151 residential dwellings and the proposal is to redesign the suburb road network and provide 1,490 new dwellings including retention and refurbishment of 140 existing dwellings.

Landcom's concept plan for Claymore over the 12 – 15 year life of the project is proposed to yield the following:

- A total of 1490 dwellings of which 30% will be retained for public housing. (470)
    - The 447 public housing dwellings will likely to consist of:
        - 100 seniors living units
        - 140 upgraded existing dwellings
        - 207 new lots for new dwellings

- A new Retail Centre on Badgally Road opposite Blairmont Primary School which has been assessed on the basis of the following components:

    - 3,200m^2 supermarket
    - 2,300m^2 of specialty retail
    - 600m^2 neighbourhood community centre
    - Service Station

The following **Figure 3** provides an indicative subdivision layout of the scheme.

Figure 3 – Indicative layout of the Claymore Renewal scheme

4.4 Construction Staging

Figure 5 provides the proposed construction stage. Appropriate traffic management should be undertaken for each stage to ensure constant access is maintained to houses and road users and pedestrian safety is maintained. Traffic Management Plans will be required prior to the construction commencement of each stage in accordance with RTA requirements.

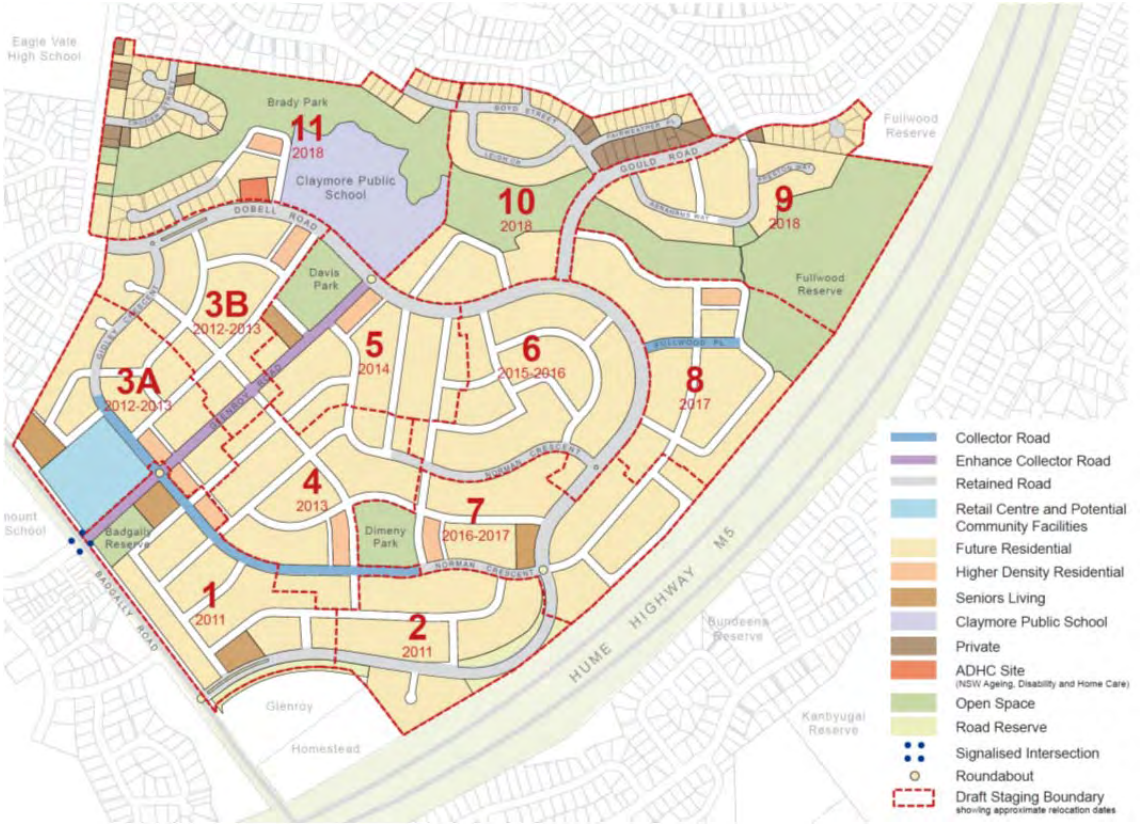


Figure 4 – Claymore Renewal Construction Staging

5 Existing Conditions

5.1 Road Network

The existing road network consists of Badgally Road and Eagle Vale Road performing sub-arterial road functions. This is recognised by the Roads and Traffic Authority as these roads are classified as regional roads in the Authorities Restricted Access Vehicle (RAV) maps. Regional Roads are under the care and control of Council's, however, the RTA contributes funding to maintenance and upgrades generally on a 50/50 basis.

Dobell Road and Gould Road perform a collector road function in Claymore and Eagle Vale. The remaining roads in Claymore serve a local road function.

5.2 Road Hierarchy

The M5 Freeway and Campbelltown Road are classified as State Roads under the Roads and Traffic Authority's Restricted Access Vehicle (RAV) maps. (These provide the current RTA road classifications). The RAV map also indicates that Badgally Road and Eagle Vale Road are classified as regional roads with all the remaining roads in Claymore and Eagle Vale areas classified as local roads. The following **Figure 5**

provides the current classification of roads in this area as indicated by the RAV maps

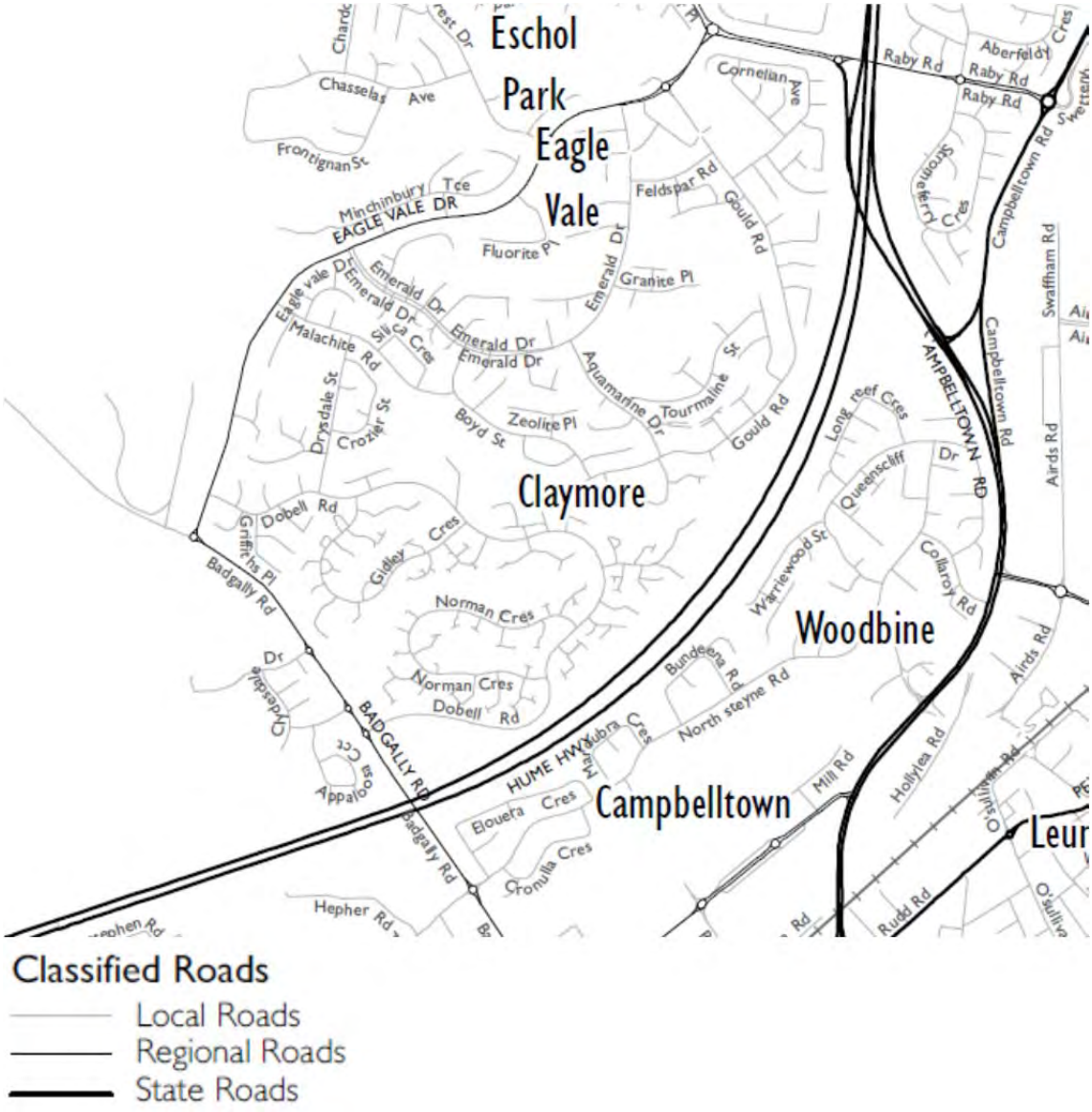


Figure 5 – RTA Road Hierarchy

The Roads and Traffic Authorities web site also provides the proposed road classification review proposal for Sydney Region which indicates the proposed road hierarchy for this area. **Figure 6** provides details of the future road hierarchy.

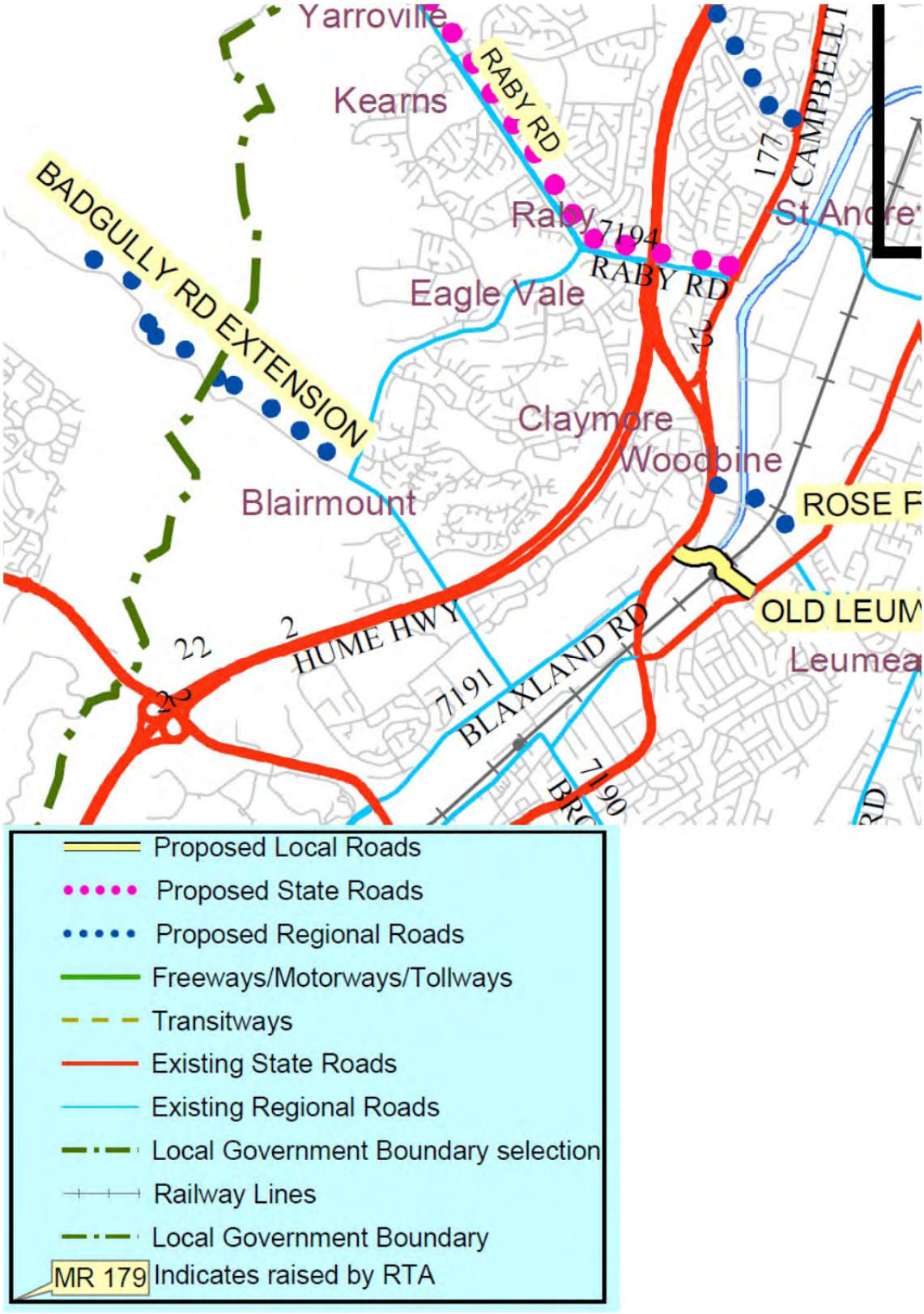


Figure 6 – RTA Future Road Hierarchy

One of the primary considerations when determining road hierarchy is the existing or potential traffic volumes using that road. Accordingly, indicative volume ranges that are suggested by the RTA have been nominated to assist throughout this report. It should be noted, however, that in some instances the function (as described below) rather than the volume range may be more relevant when determining the road hierarchy. The road types along with corresponding functions and volume ranges are described below.

- **Arterial Roads** – Arterial roads predominantly carry through traffic from one region to another, forming principal avenues of travel for traffic movements. Vehicular traffic from adjacent land is generally denied access to ensure both the efficiency of the road and safety of road users. The State Government, through the RTA, is responsible for the acquisition and construction of arterial roads.

- **Sub-arterial Roads** – Generally sub-arterial roads carry a balanced mixture of through and local traffic. These roads are usually used for bus routes and a direct access from private properties is frequently denied to these roads. When configured as a 4 lane divided road, typical daily traffic volume could be in the order of 10,000 to 20,000 vehicles per day.

- **Collector Roads** – Collector roads predominantly connect sub-arterial roads to the local road system and carry local traffic from residential and industrial precincts to the sub-arterial roads. These roads are likely to be used for bus routes. Daily traffic volume could be in the order of 3,000 to 10,000 vehicles per day.

- **Local Roads and Access Streets** – The function of these roads is to provide access to all allotments and is generally of a lower vehicle speed environment. Expected daily traffic volume of less than 3,000 vehicles.

5.3 Road Operation Performance Indicators

Road Capacities and Thresholds

This project assumes a range of road types and capacities based on published sources and traffic volumes experienced on the Sydney Metropolitan Area Road Network, in particular, in built up areas. From these volumes are derived the thresholds for road links. The thresholds are based on the particular road links or intersections to ensure a satisfactory Level of Service ‘D’ or better. These thresholds represent the ‘Theoretical Capacity’ of specific road types. Volumes higher than the prescribed thresholds will likely be perceived by the community and road users as being over saturated.

Levels of Service (LOS)

- Level of Service A is a condition of free flow in which individual drivers are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to manoeuvre within the traffic stream is extremely

high, and the general level of comfort and convenience provided is excellent. – Generally free flow conditions with operating speeds usually 90% of the free flow travel speeds.

- Level of Service B is in the zone of stable flow and drivers still have reasonable freedom to select their desired speed and to manoeuvre within the traffic stream, although the general level of comfort and convenience is a little less than with level of service A. – Relatively unimpeded operation with average travels speeds about 70% of the free flow speed.

- Level of Service C is also in the zone of stable flow, but most drivers are restricted to some extent in their freedom to select their desired speed and to manoeuvre within the traffic stream. The general level of comfort and convenience declines noticeably at this level. About 50% of the free flow speed.

- Level of Service D is close to the limit of stable flow and is approaching unstable flow. All drivers are severely restricted in their freedom to select their desired speed and to manoeuvre within the traffic stream. The general level of comfort and convenience is poor, and small increases in traffic flow will generally cause operational problems. About 40% of free flow speed.

- Level of Service E occurs when traffic volumes are at or close to capacity, and there is virtually no freedom to select desired speeds or to manoeuvre within the traffic stream. Flow is unstable and minor disturbances within the traffic stream will cause break-down. Approximately 33% of the free flow speed.

- Level of Service F is the zone of forced flow. With it, the amount of traffic approaching the point under consideration exceeds that which can pass it. Flow break-down occurs, and queuing and delays result. Traffic flow speed is very low at less than 33% of the free flow speed.

Urban roads

The Roads and Traffic Authority's *'Guide to Traffic Generating Developments, Section 3 - Landuse Traffic Generation'* of October 2002 provides the following details of the capacity of roads in urban and rural areas given certain conditions. The following table provides the suggested capacity limits of urban roads with interrupted flows:

Table 5.1 – Urban Road peak hour flows per direction.

Level of Service	One Lane (veh/hr)	Two Lanes (veh/hr)
A	200	900
B	380	1400
C	600	1800
D	900	2200
E	1400	2800

Rural roads

The following table provides the RTA's suggested capacity limits of rural roads:

Table 5.2 – Two way peak hour flow on two-way rural roads (veh/hr), 100km/h					
Terrain	**Level of Service**	**Percent of heavy vehicles**			
		0	**5**	**10**	**15**
Level	B	630	590	560	530
	C	1030	970	920	870
	D	1630	1550	1480	1410
	E	2630	2500	2390	2290
Rolling	B	500	420	360	310
	C	920	760	650	570
	D	1370	1140	970	700
	E	2420	2000	1720	1510
Mountainous	B	340	230	180	150
	C	600	410	320	260
	D	1050	680	500	400
	E	2160	1400	1040	820

The data for Table 5 assumes the following criteria:

- Terrain level with 20% no overtaking.
- Rolling with 40% no overtaking.
- Mountainous with 60% no overtaking.
- 3.7 m traffic lane width with side clearances of at least 2m.
- 60/40 directional split of traffic.

Intersections

It is accepted that the limits to road way capacity is limited to the capacity of intersections in the network. Intersection performance indicators are described using Level of Service, Degree of Saturation and Average delay.

Level of Service (LOS) - For traffic signals, roundabouts and sign control intersections is shown below, this is based on the average delay in seconds per vehicle:

Table 5.3 – Intersection level of service indicators			
average delay per vehicle	**level of service**	**traffic signals & roundabouts**	**sign control**
< 14	A	good	good
15 - 28	B	good with minimal delays and spare capacity	acceptable delays and spare capacity
29 - 42	C	satisfactory with spare capacity	satisfactory but accident study required
43 - 56	D	satisfactory but operating near capacity	near capacity and accident study required
57 - 70	E	**at capacity**: at signals incidents will cause excessive delays, roundabouts require another control mode	at capacity and requires another control mode
> 70	F	unsatisfactory	unsatisfactory

Degree of saturation (DS) - The Degree of Saturation is another measure of the operational performance of individual intersections. For traffic signal controlled intersections both queue length and delay increase rapidly as the Degree of Saturation approaches 1.0, and it is usually attempted to keep it below 0.9. For roundabouts or sign controlled intersections, over saturation is indicated by a value in excess of 0.8.

Average Vehicle Delay (AVD) - The average vehicle delay provides a measure of the operational performance of an intersection as indicated in the above table. The average vehicle delays in the table should be used as a guide only as longer delays could be tolerated in some locations.

5.4 Traffic Volumes

To determine the level of traffic activity in this area, data on the traffic movements into and out of Claymore have been collected by surveys undertaken by ROAR Data as part of this study from 6.30am – 9.30am and 3.00pm - 6.00pm on Tuesday 22nd March 2011 at the intersections of:

- Badgally Road and Dobell Road
- Badgally Road and Clydesdale Drive
- Dobell Road and Drysdale Street
- Gould Road at Aquamarine Drive and Abrahams Way
- Boyd Street and Bauxite Place

The detailed results of the surveys are attached as Appendix B. The peak hour flows at the survey locations are depicted in **Figures 7 and 8** on the following pages.

The traffic counts were undertaken at all of the intersections into/out of the area so that the existing traffic generation per dwelling in Claymore could be calculated. Claymore currently has 1151 dwellings and Housing NSW has advised that on the day of the traffic counts 12 properties were vacant.

The total entering and exiting traffic flows recorded are provided in Table 5.1:

Table 5.4 – Claymore peak hour traffic generation

	AM Peak Hour	PM peak hour
Approach	615 (48.2%)	571 (49.4%)
Departure	662 (51.2%)	584 (50.6%)
Total	1277	1155

Existing peak hour traffic generation per dwelling can be calculated as:

AM Peak – 1277 trips divided by 1151 – 12 dwellings = **1.12** vehicle trips per dwelling

PM Peak – 1155 trips divided by 1115 – 12 dwellings = **1.01** vehicle trips per dwelling

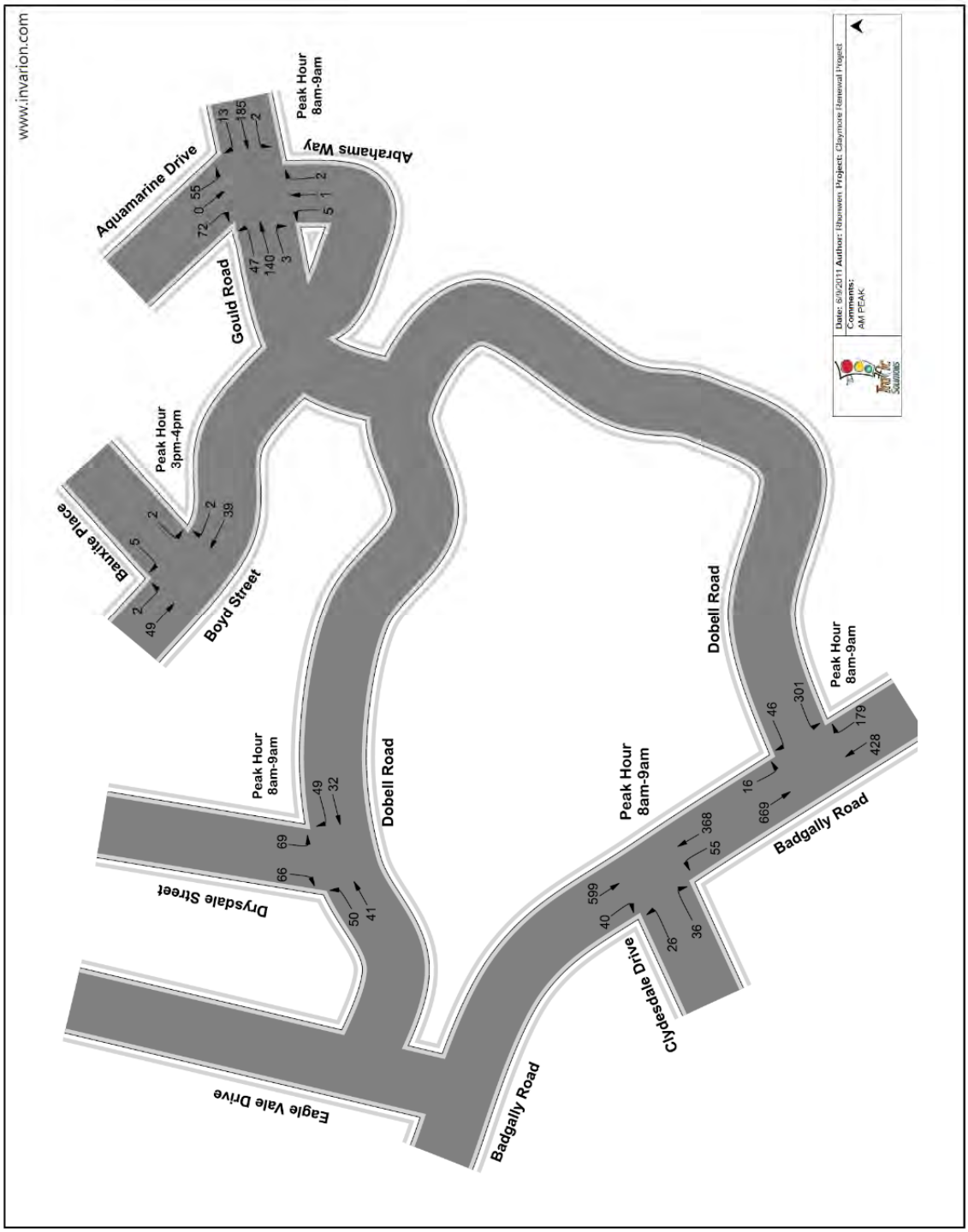


Figure 7 – AM peak hour traffic counts

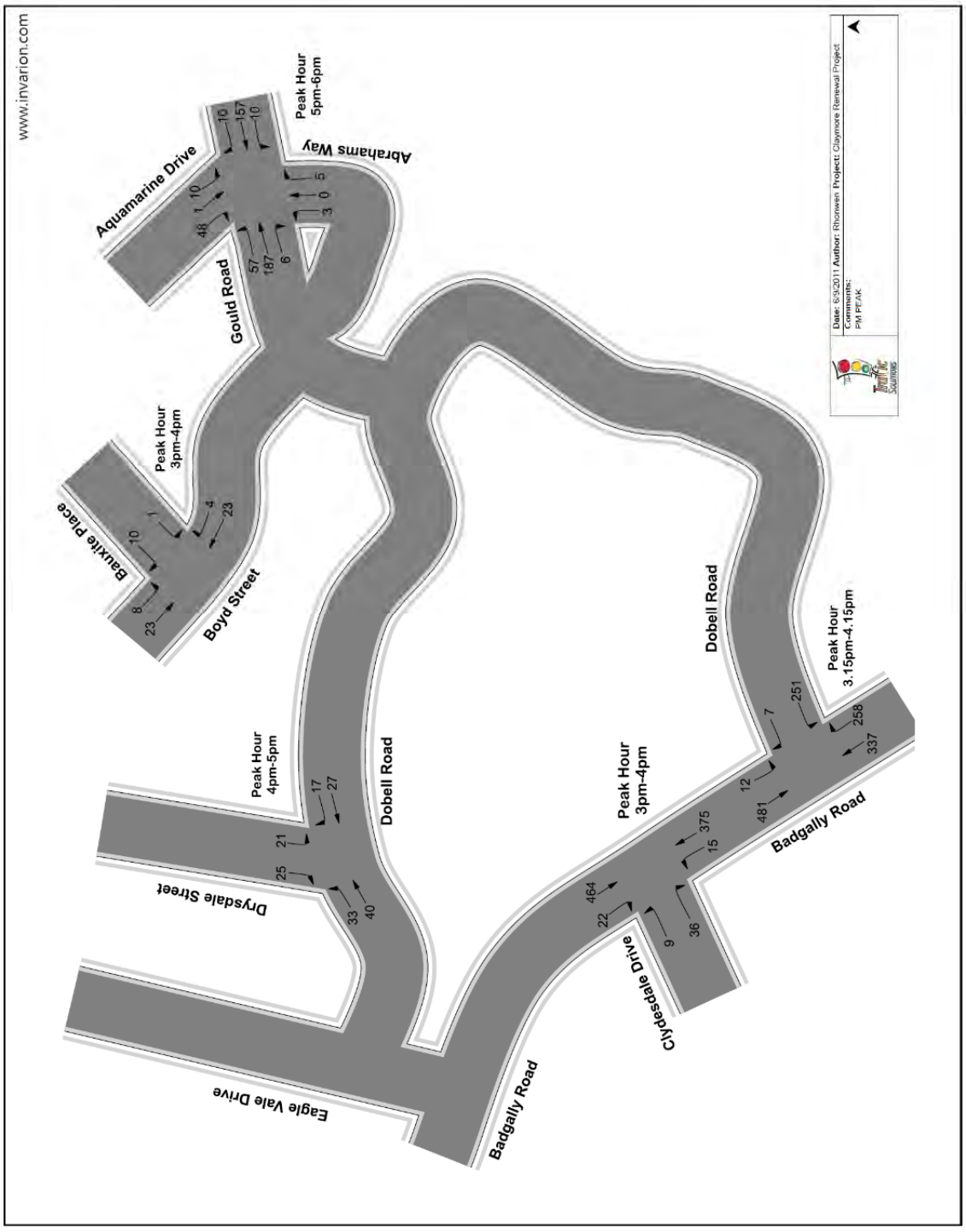


Figure 8 – PM peak hour traffic counts

It should be noted that the total flows in/out of Claymore would contain a percentage of through traffic.

In addition tube counters were placed at two (2) locations on Badgally Road, at Claymore from 13th to the 20th April 2011 inclusive. These tube surveys have recorded the following information:

- Every vehicle travelling along Badgally Road over 24hrs over a 7 day period.
- The number of vehicles in each direction.
- Speed of each vehicle in each direction
- Classification of each vehicle in each direction.

Further information is attached as **Appendix B**. The following **Table 5.2** provides a summary of the key data collected:

Table 5.5 – Badgally Daily Traffic Volume Data

Location on Badgally Rd	Road Class	AADT	Survey Date	% of heavy vehicles
Between Eagle Vale and Clydesdale Drives	Sub Arterial (Regional Rd)		April 2011	
Northbound		4777		2.3%
Southbound		4141		1.7%
Total		**8918**		**2%**
Between M5 and Dobell Road	Sub Arterial (Regional Rd)		April 2011	
Northbound		7041		2.2%
Southbound		7842		3.4%
Total		**14883**		**5.6%**

Copies of the complete count sheets are attached as **Appendix B**.

Utilising the performance criteria for mid-block urban roads described in section 5.2 and 5.3 Badgally Road is within the acceptable volume range for a sub-arterial road.

5.5 Midblock road operation

From the intersection counts undertaken the Midblock peak hour traffic flows can be determined and the Level of Service of each direction of each road route can be assessed.

Table 5.6 Provides the existing level of Service for critical roads in the Claymore area.

Table 5.6 – Claymore roads existing level of service					
Location	**Direction**	**AM Peak**	**LOS**	**PM Peak**	**LOS**
Badgally Road South of Dobell Road	Northbound	607	C	595	B
	Southbound	970	E	732	D
	Total	1577	E	1327	D
Badgally Road North of Dobell Road	Northbound	474	C	344	B
	Southbound	685	C	493	C
	Total	1159	C	837	B/C
Badgally Road North of Clydesdale Road	Northbound	394	C	384	C
	Southbound	639	C	486	C
	Total	1033	C	870	C
Dobell Road east of Badgally Road	Eastbound	195	A	270	B
	Westbound	347	B	258	B
	Total	542	A/B	528	B
Dobell Road east Drysdale Street	Eastbound	81	A	61	A
	Westbound	110	A	44	A
	Total	191	A	105	A
Gould Road east of Aquamarine Drive	Eastbound	197	A	202	A
	Westbound	200	A	177	A
	Total	397	A	379	A
Boyd Street east of Bauxite Place	Eastbound	51	A	24	A
	Westbound	41	A	27	A
	Total	92	A	51	A

The tabulated results reveal that all of the roads in and around Claymore are currently operating at a very good level of service.

5.6 Key Intersection Operation

Figures 8 and 9 depict the existing flows at the intersections of Badgally Road with Dobell and Drysdale Roads. Using SIDRA a software programme developed for the purpose of analysing signalised, roundabout and sign controlled intersections, the existing operation of these intersections has been assessed.

The following **Table 5.7** contain the results of the intersection modelling:

Table 5.7 – SIDRA ANALYSIS – Existing operation of key intersections			
Intersection		**Existing AM Peak**	**Existing PM Peak**
Badgally Road and Dobell Road (single lane roundabout)	LOS	A	A
	DS	0.607	0.483
	AVD	9.6	8.8
Badgally Road and Clydesdale Road (single lane roundabout)	LOS	A	A
	DS	0.451	0.349
	AVD	7.0	6.8

The results of the modelling reveal that the key intersections currently operate at a very good level of service with minimal delays and spare capacity.

5.7 Public Transport

Rail

There are no commuter rail services provided directly to Claymore. Busways route 880 provides a 30 minute service between Campbelltown and Minto railway stations.

Buses

Busways route number 880 provides a 30 minute service between Campbelltown to Minto which travels through Claymore (along Dobell Road) Eagle Vale and Kearns. An extract from Busways timetable for this route is provided in **Figure 9**.

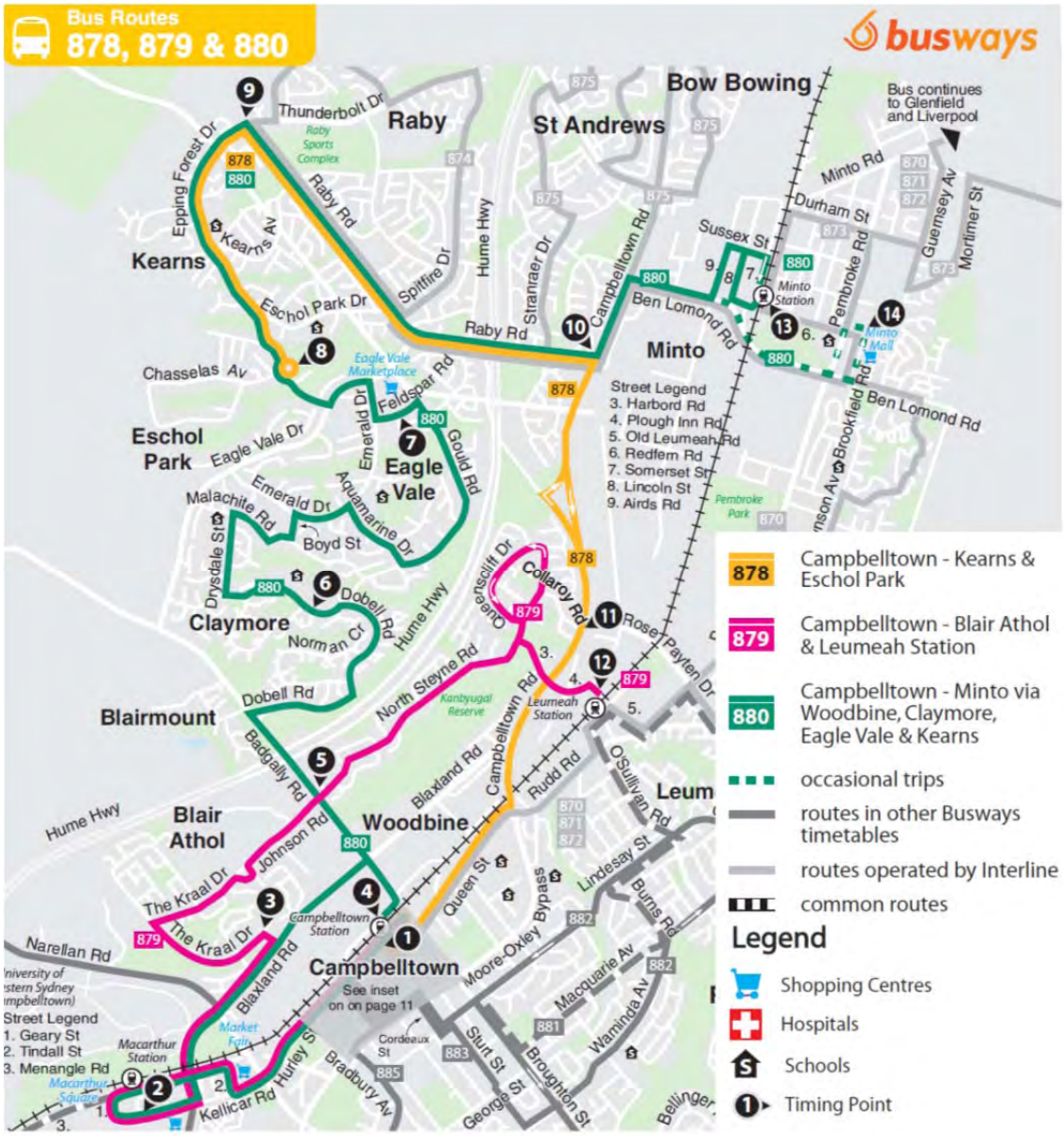


Figure 9 – Busways Route service map

5.8 Bicycle Network

Campbelltown Council has a Bicycle Plan of which is reproduced below in **Figure 11**. This plan indicates an existing on road cycleway along Dobell and Gould Roads and a proposed on road cycleway along Eagle Vale Drive.

The only proposed off road cycle route is proposed along the Claymore side of Badgally Road. The Claymore renewal project provides the opportunity to provide additional off road shared bicycle/pedestrian paths.

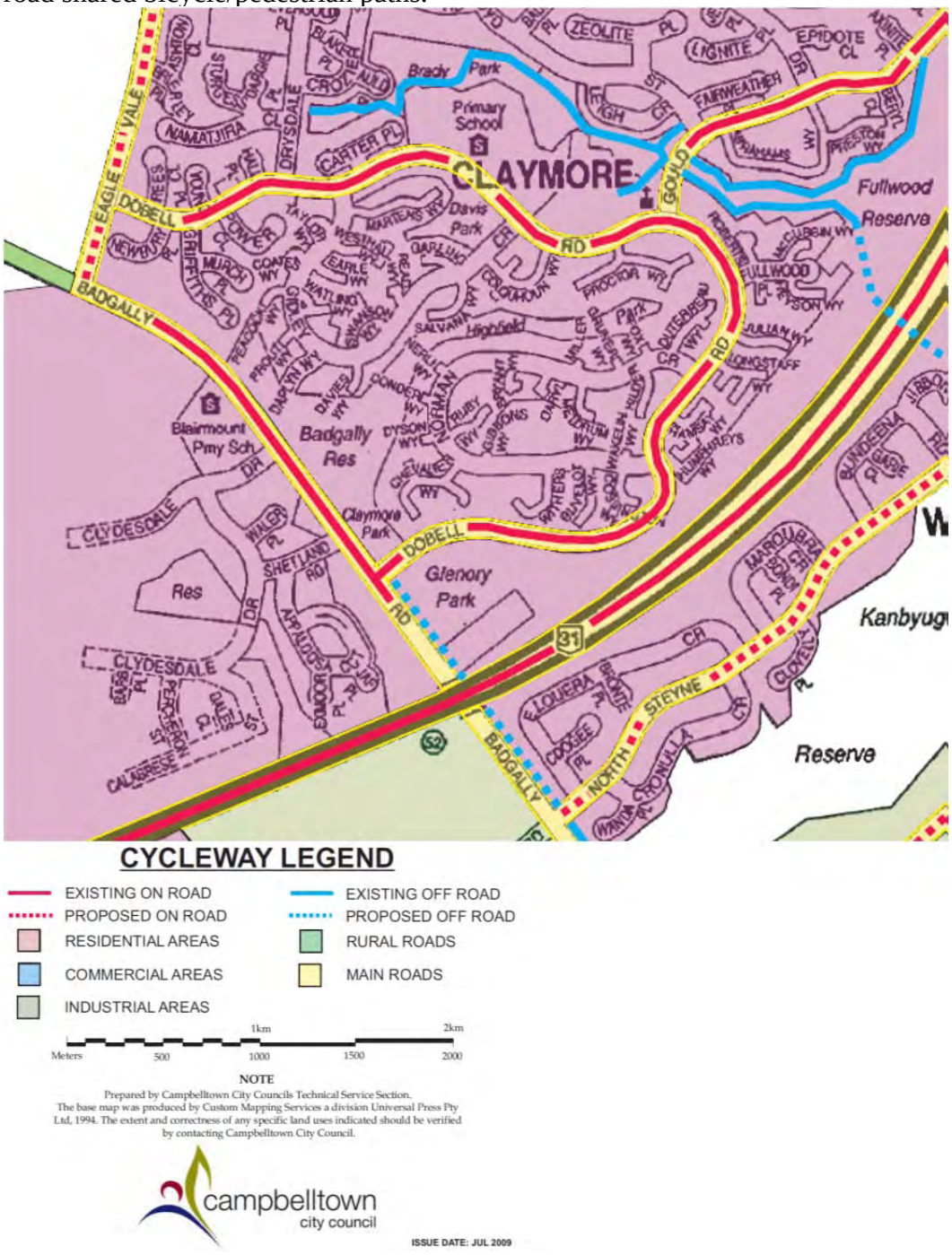


Figure 10 – Extract from Campbelltown Bike plan

The Roads and Traffic Authority provides details of the existing cycleways and stress rates for existing routes in Sydney Cycleways Map 11. An extract of which is depicted in **Figure 11.**

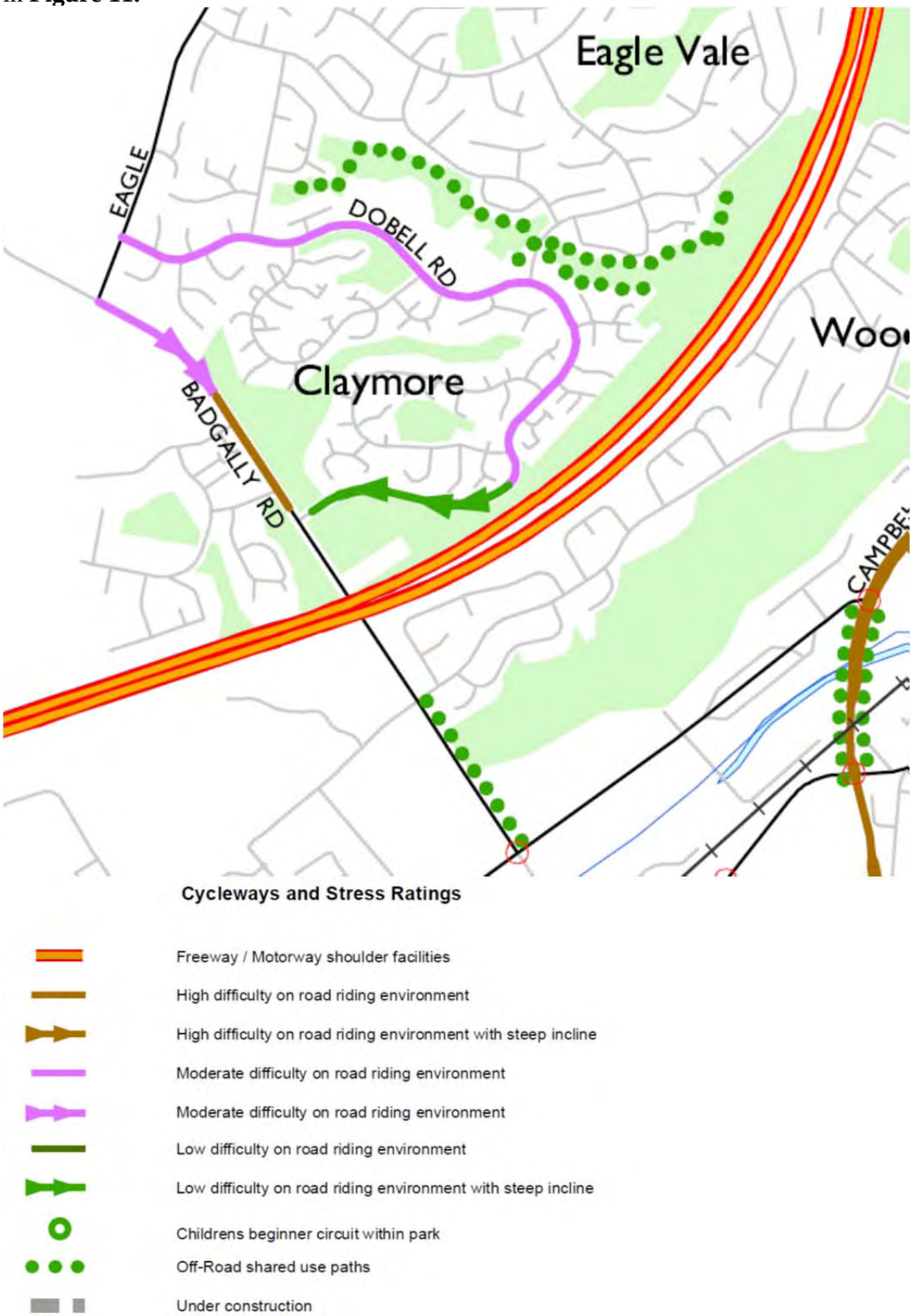


Figure 11 – Extract from RTA Bike plan

6 Assessment of Transport Implications of Project

6.1 Estimated Traffic Generation of Proposal

The following table provides a breakdown of the components of the proposal the traffic generation rates used during the peak hours and per day based upon reference to the Roads and Traffic Authority's *'Guide to Traffic Generating Developments, Section 3 - Landuse Traffic Generation'* of October 2002.

Table 6.1 – Forecast traffic generation

Component	RTA rate or suggested rate and comments	AM Peak hour flows	PM Peak hour flows
1. Dwelling houses public and private 1390 houses	1.12 trips/dwelling in AM peak hour. 1.01 trips/dwelling in PM peak hour. **As per surveys of claymore**	1557	1404
2. Seniors Living 100 dwellings	0.1 - 0.2 trips/dwelling in peak hour.	20	20
3. Retail Centre 3,200m^2 supermarket 2,300m^2 specialty retail 600m^2 neighbourhood community Centre	Thursday V(P) = 20 A(S) + 51 A(F) + 155 A(SM) + 46 A(SS) + 22 A(OM) (vehicle trips per 1000m) A(S):Slow Trade gross leasable floor area (Gross Leasable Floor Area in square metres) includes major department stores such as David Jones and Grace Bros., furniture, electrical and whitegoods stores. A(F):Faster Trade GLFA - includes discount department stores such as K-Mart and Target, together with larger specialist stores such as Fosseys. A(SM)=Supermarket GLFA - includes stores such as Franklins and large fruit markets. A(SS):Specialty shops, secondary retail GLFA - includes speciality shops and take away stores such as McDonalds. These stores are grouped as they tend to not be primary attractors to the centre. A(OM): Office, medical GLFA: includes medical centres and general business offices.	150 (see note)	451 (see note)
4. Service Station Site area approximately 2,000m^2 with 250m^2 convenience store	Service station with convenience store: Evening peak hour vehicle trips (pvt) = 0.04 A(S) + 0.3 A(F) or. Evening peak hour vehicle trips = 0.66 A(F) where A(S) = area of site (m²) A(F) = GFA of convenience store (m²)	44	44 (see note 2)
TOTAL		1771	1919

Note: RTA suggests up to 25% of the potential traffic generation of the site has been deducted from passing traffic volumes. 1/3 of traffic in morning (based on surveys) Understood that existing shopping centre is under trading.
Note 2: 75% of passing trade

Accordingly, the estimated traffic generation of this proposal is some 1771 morning and 1919 evening trips in the peak hours.

The following Figure 7 depicts the potential weekday peak hour traffic generation for Claymore when fully developed in 12 – 15 years including the forecast flows along Badgally Road from Oran Park Town and Turner Road Precinct Plan as discussed in section 3.1.

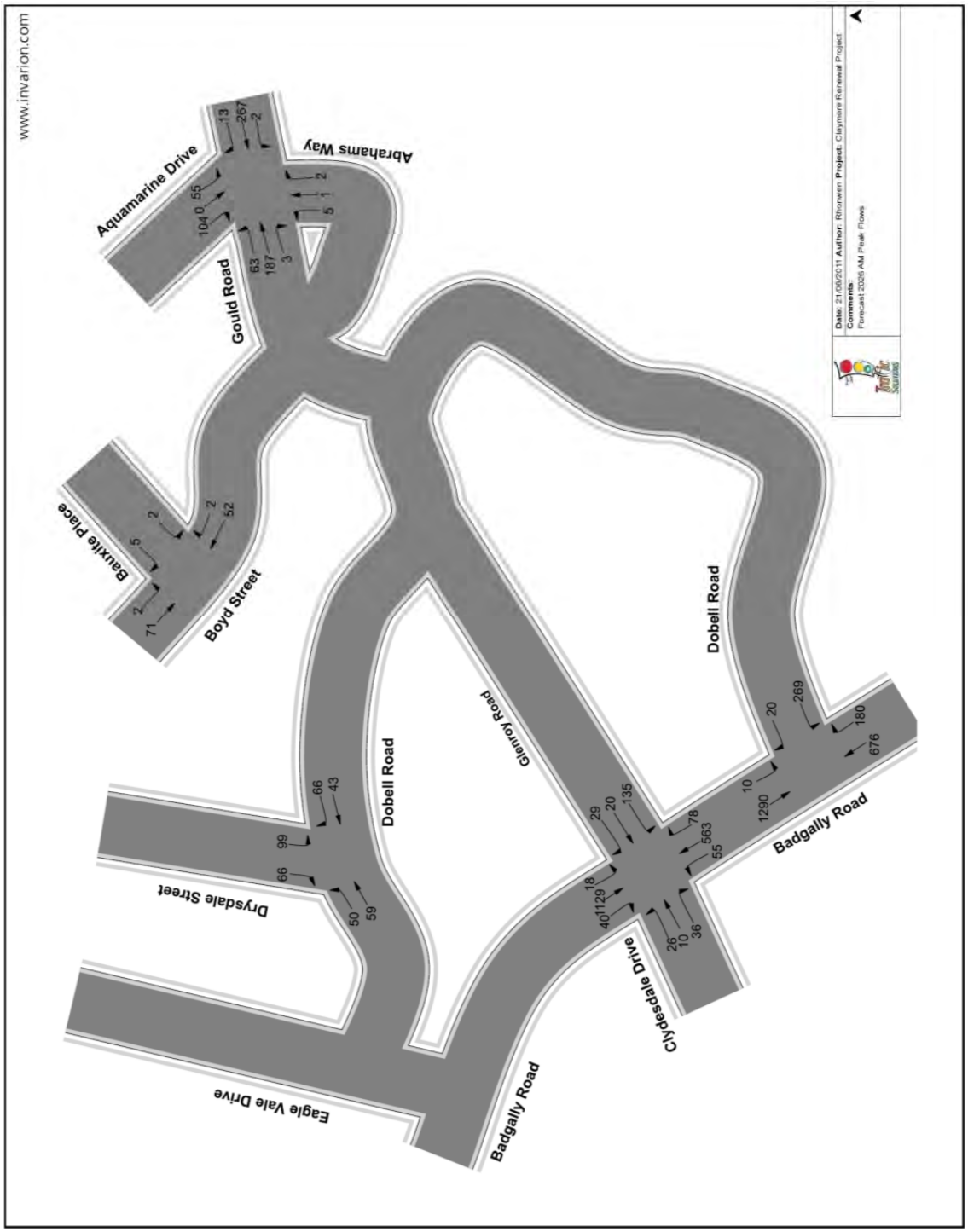


Figure 12 – Forecast AM peak hour flows

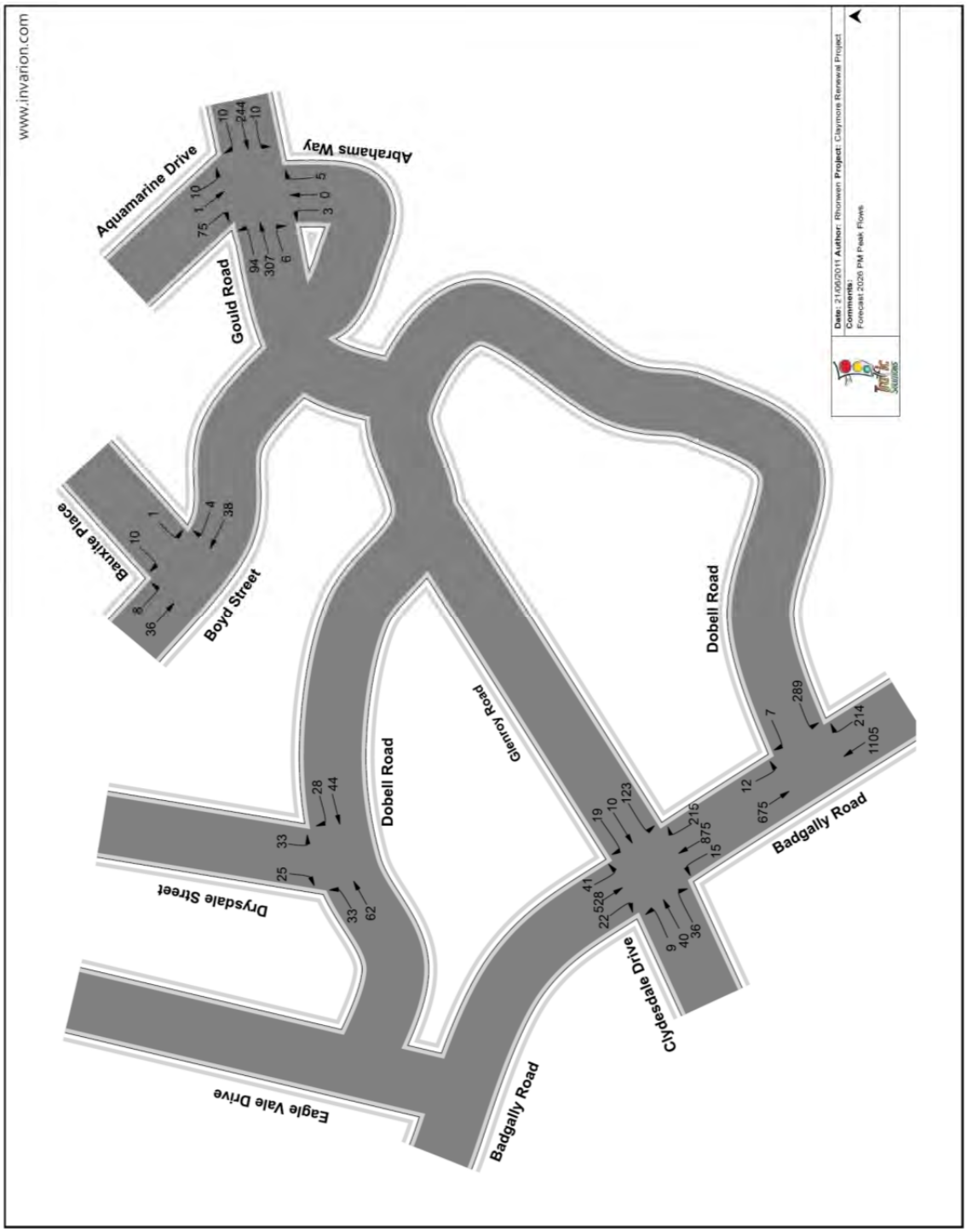


Figure 13 – Forecast PM peak hour flows

6.2 Proposed Road Network

Based upon the forecast daily traffic flows and function of each of the internal roads of the subject site the Road Hierarchy has been determined. This assessment reveals that

Glenroy, Gidley Street and Dobell Road will perform a collector road function and the remaining roads performing a local or residential road function.

Figure 14 – Proposed Road Network

6.3 Proposed Road Hierarchy

Under the concept plan concept significant elements of the existing road system in the area will be reconfigured to reflect contemporary subdivision layout in order to achieve the objectives of:

- commonality with the private housing street system.
- permeability, access and safety.

The proposed new road system (integrated with the existing) is presented in terms of road hierarchical function in Figure 15. This road hierarchy largely reflects that which exists at the present time in relation to the minor collector roads through the area.

The proposed road network displays the attributes of contemporary subdivision road planning where:

- there is continuity for collector routes.
- new roads better follow the contours of the land.
- permeability is achieved but not with a monotonous speed inducing grid pattern
- there is convenient access to/from the major roads without due travel through the area.

- service vehicles, particularly garbage trucks, are able to achieve ready access and circulation.

Figure 15 – Proposed Road Hierarchy Plan

6.4 Proposed Road Cross Sections

The proposed road types are indicated on the relevant cross sections contained in **Figure 16**. These cross sectional details draw upon a range of considerations including Council's 'Engineering Guide to Development 2004' and Landcom's experience in the design and operation of the various road types.

The design of the road cross sections and longitudinal arrangements for the access and minor collector roads take into account the following:

- Intended function.
- Projected traffic volumes.
- The desired speed outcome.
- Number of lots served along with the nature of the frontage use.
- Provision for pedestrians and cyclists.
- The provision for parking.
- The provision for buses and service vehicles.

An indication of appropriate road widths is provided by:

Austroads Part 13 'Pedestrians' indicates a desirable footway width for people using a wheel chair of 1.2 metres (note: passing is available at driveway crossings)

Austroads Part 14 'Bicycles' indicates a minimum width for shared pedestrian/cyclist pathways of 2.0 metres.

Figure 16 – Proposed Road Cross Sections

6.5 Traffic Controls and Traffic Calming

AUSTROADS 2007, Guide to traffic management part 6: Intersections, Interchanges and Crossings provides a table indicating the suitability of intersection control which is reproduced in **Table 6.2**:

Table 6.2 Suitability of types of traffic control to different road types

	Primary Arterial	**Secondary Arterial**	**Collector & Local Crossing Road**
Traffic Signals			
Primary arterial	A	A	O
Secondary arterial	A	A	O
Collector & local crossing road	O	O	X
Local street	X	X	X
Roundabouts			
Primary arterial	O	O	X
Secondary arterial	O	O	O
Collector & local crossing road	X	O	A
Local street	X	X	O
STOP or GIVE WAY signs			
Primary arterial urban/(rural)	X / (O)	X / (O)	A
Secondary arterial urban/(rural)	X / (O)	X / (O)	A
Collector & local crossing road	A	A	A
Local street	A	A	A

Legend:
A = Most likely to be an appropriate treatment
O = May be an appropriate treatment

The potential peak traffic flows are relatively low and all forms of intersection control along Dobell Road and Glenroy Road will be sufficient, however due to the potential through traffic and the potential for these vehicles to speed it will be a recommendation of this report that additional traffic management facilities be provided. This will provide a speed reduction device at consistent and regular intervals of approximately 400m along the Dobell Road.

The following **Figure 17** depicts the suggested traffic management for Claymore.

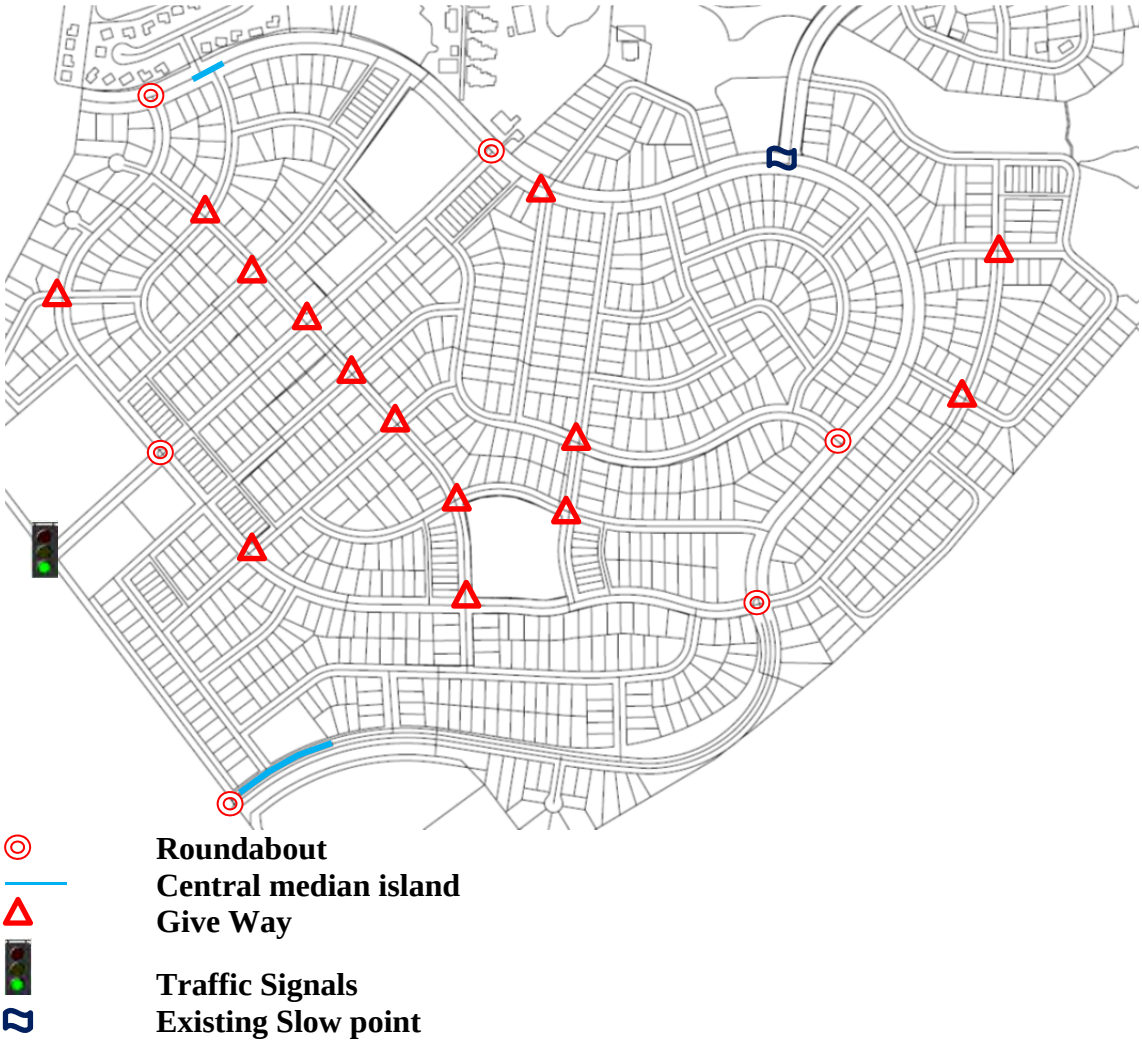


Figure 17 – Recommended Traffic Management

6.6 Forecast Flows Internal/External Road Routes

From the information gathered in section 6.1 of this report the following forecast traffic flows for key roads in Claymore and the estimated level of service is provided in **Table 6.3**. (With the forecast flows estimated in the Oran Park and Turner Road Precinct Plan).

Table 6.3 – Forecast flows and level of service.					
Location	**Direction**	**AM Peak**	**LOS**	**PM Peak**	**LOS**
Badgally Road South of Dobell Road	Northbound	858	D	1319	E
	Southbound	**1559**	**F**	964	E
	Total	2281	**F**	2283	E
Badgally Road North of Dobell Road	Northbound	696	D	1112	E
	Southbound	1300	E	687	D
	Total	1996	D/E	1799	D/E
Badgally Road North of Clydesdale Road	Northbound	618	D	903	D
	Southbound	1197	E	591	C
	Total	1815	D/E	1494	D/C
Dobell Road east of Badgally Road	Eastbound	190	A	226	B
	Westbound	289	B	296	B
	Total	479	A/B	522	B
Dobell Road east Drysdale Street	Eastbound	109	A	95	A
	Westbound	168	A	72	A
	Total	277	A	167	A
Gould Road east of Aquamarine Drive	Eastbound	244	B	322	B
	Westbound	282	B	264	B
	Total	526	B	586	A
Glenroy Road east of Badgally Road	Eastbound	106	A	296	B
	Westbound	184	A	152	A
	Total	290	A	448	A/B

The forecast midblock traffic volumes indicate that Badgally Road is likely to require upgrading to dual carriageway (2 lanes each direction) at or around 2026. This will occur as a direct result of the Oran Park Town and Turner Road developments.

6.7 Key Intersection Performances 2026

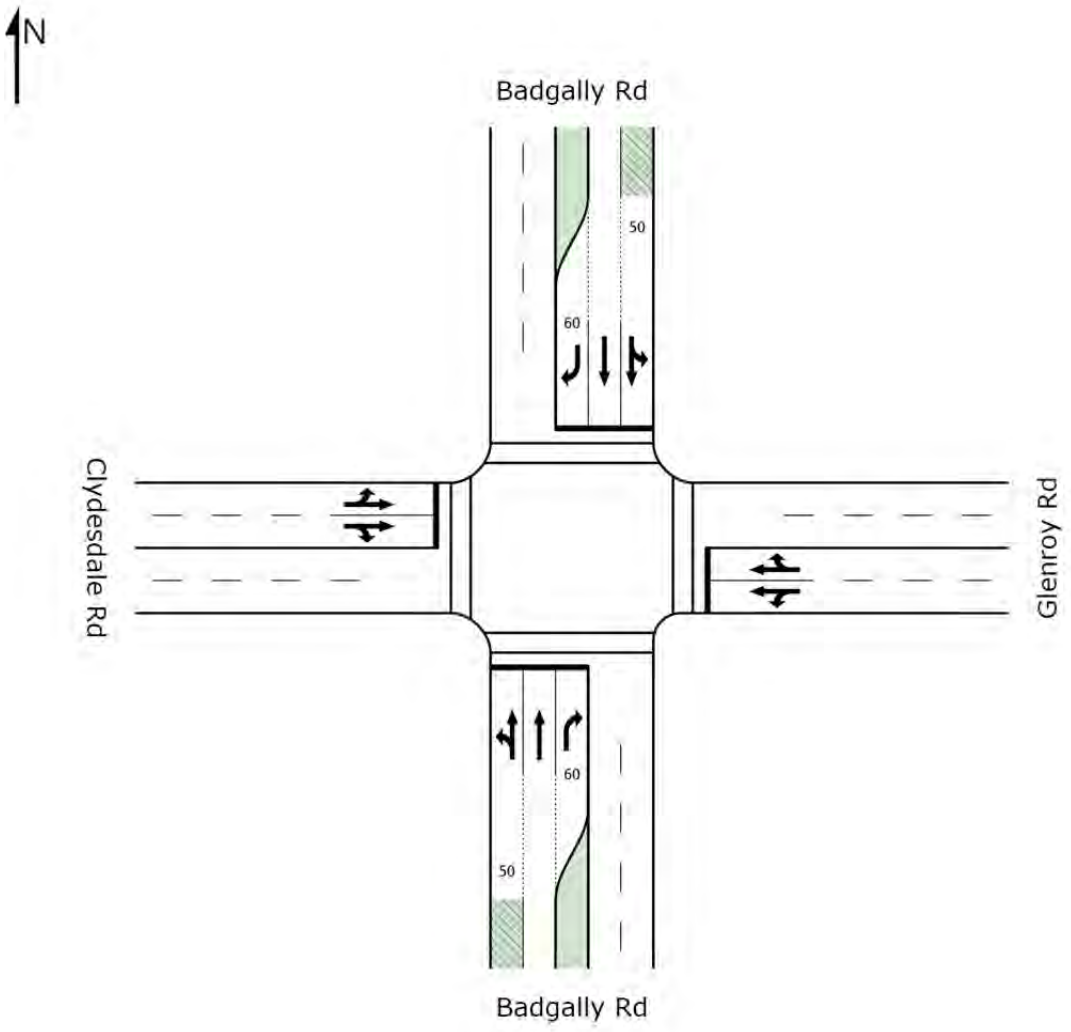
Figures 12 and 13 depict the forecast flows at the intersections of Badgally Road with Dobell and Drysdale Roads. Using SIDRAa software programme developed for the purpose of analysing signalised, roundabout and sign controlled intersections, the existing operation of these intersections has been assessed.

The following table are the results of the intersection modelling:

Table 6.4 – SIDRA ANALYSIS – 2026 Forecast operation of key intersections				
Intersection		**AM Peak**		**PM Peak**
		1 lane	**2 lane**	
Badgally Road and Dobell Road (roundabout)	LOS	**F**	A	A
	DS	**1.299**	0.582	0.828
	AVD	**101.5**	8.3	8.2
Badgally Road and Clydesdale Road (TCS) *	LOS	B		B
	DS	0.843		0.845
	AVD	23.9		27.7

* Assumes the following lane arrangements and conventional phasing.

The modelling of the forecast flows indicates that at some time prior to 2026 the single lane roundabout at Badgally and Dobell Roads will require upgrading to 2 lanes.



6.8 Suggested Bus Routes

Discussions have been held with Busways to determine the most appropriate routes for new services and criteria for new services.

Busways have indicated two possible bus routes (which they have provided in **Figure 18**) and are described as follows:

1. The first (shown in green) is simply the retention of the current route 880 which provides superior coverage of the suburb, but would omit the shopping centre and seniors living apartments.

2. The alternative (shown in red), takes in both the shopping centre and the seniors living apartments, but reduces the coverage of the suburb – in terms of walking

distance to bus routes. (It should be noted that this option covers Blairmount more thoroughly, which is positive)

At this point, depending on how the development proceeds, either could end up as the bus route. As such, consideration should be given to ensuring that the new central spine road is constructed in such a way that it does not prohibit the passage of buses, or the installation of bus stop infrastructure.

In addition the Metropolitan Transport Plan proposes that Badgally Road is to be a part of a future strategic bus corridor to be introduced by 2020.

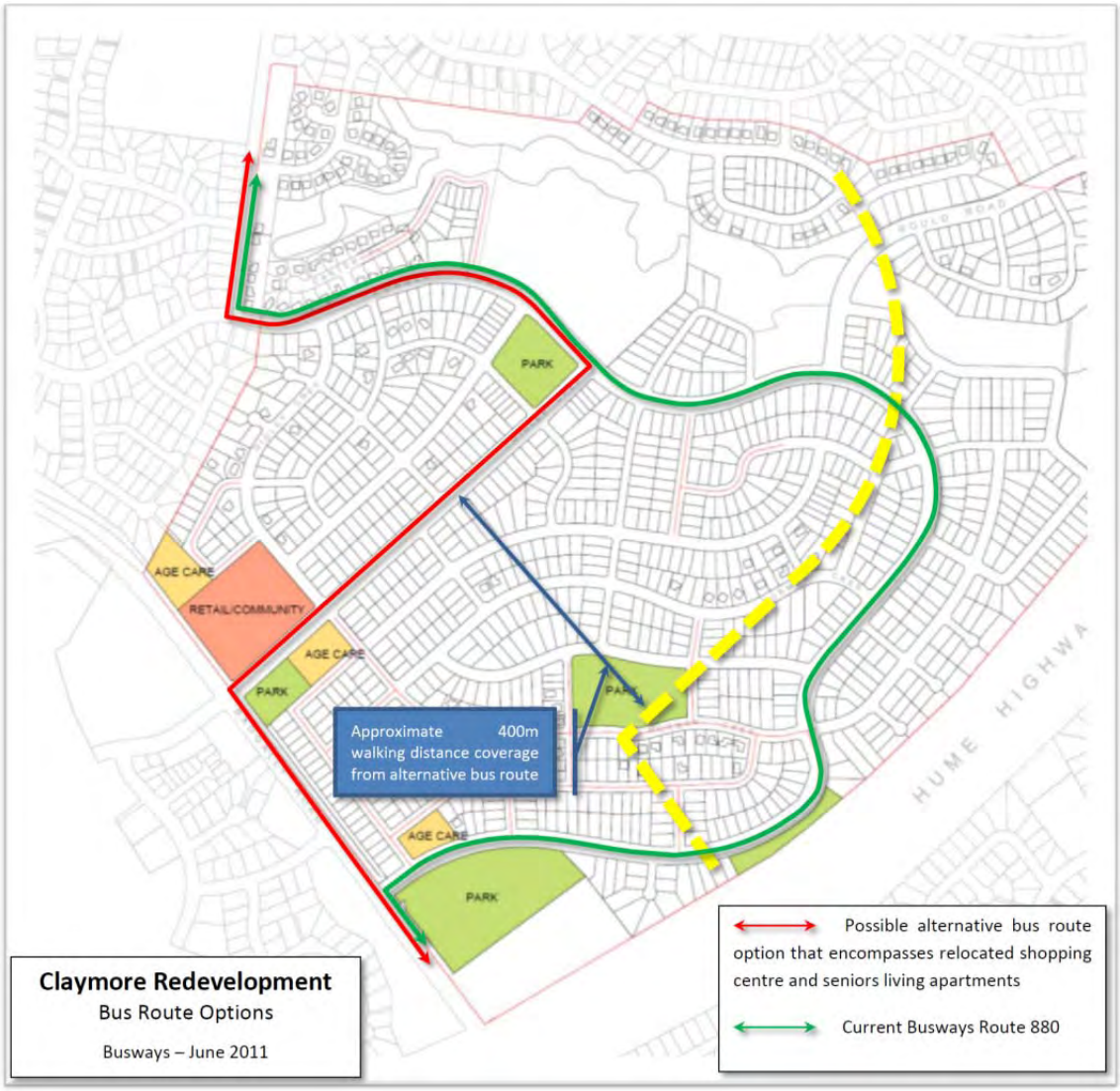


Figure 18 – Possible Future Bus Routes

6.9 Pedestrian and Cycling Facilities

A principal objective of the renewed scheme is to ensure the provision of a network of pedestrian and cycle routes throughout the area which connect open space areas and

community facilities. This provision will optimise safety and amenity of pedestrians and cyclists and encourage these modes of travel.

Pedestrians

The proposed system for pedestrians is very comprehensive with wider footpaths provided where the heavier demands will occur on the major desire lines. The existing pedestrian tunnel under Dobell Road at the existing shopping centre should be removed as there will be no desire line/attractor at this location, therefore, if retained this tunnel could be a gathering point which may induce unacceptable behaviour.

Detail intersection design will provide suitable kerb ramps and control provisions while traffic management measures will have regard for speed constraint at the principal crossing locations.

Cyclists

The proposed network makes provision for on-road and off-road routes. The on road provision (for commuters) will be along Badgally and Dobell Roads. The off-road provision will be on shared pathways along the collector road system.

The off-road routes in particular will link the community facilities (e.g. schools, retail and open spaces) and provide ready access to/from the local streets. The proposed cycle route provisions are shown on **Figure 19**.

Figure 19 – Shared Pedestrian/Cycleway Routes

6.10 Parking and service vehicle provision

Parking provision should be provided in accordance with Council requirements and/or the RTA's guidelines with the exception of the parking provision for the sporting fields. Council's Sustainable City DCP 2009 indicates 1 car space per 50m2 for outdoor sporting facilities which is considered to be unusual. Surveys undertaken by Traffic Solutions of multiple sporting fields operating simultaneously reveals a peak parking demand of 34 parking spaces per field which is recommended in Claymore.

The design of the all off street car parking and loading areas should comply with AS/NZS 2890.1:2004, AS 2890.2:2002 and AS/NZS 2890.6:2009.

Vehicle access to the commercial/retail area should be via the lower order roads with loading facilities separated from the general public parking areas if possible. The service station will require direct vehicle access off Badgally Road

7 Conclusions and Recommendations

7.1 Conclusions

The proposed Claymore Renewal Project will provide 1490 new and refurbished residential dwellings within a revised road system. The proposed subdivision road system essentially accords contemporary design criteria with the benefit of Landcom extensive experience with subdivision design. This assessment has involved a strategic analysis of the potential road, traffic and transport implications and it is concluded that:

- The proposed road system will be suitable, safe and appropriate.
- There will not be any unsatisfactory road capacity or traffic related environmental implications with the exception of Badgally Road which will require upgrading to dual carriageway which is a result of the through flows generated by the Oran Park and Turner Road precinct developments.
- The traffic flows are appropriate for the road system and hierarchy
- Traffic speeds can be constrained to appropriate levels with the proposed traffic management measures.
- There will be adequate and suitable arrangements for site access and servicing.
- There will be adequate and suitable arrangements made for pedestrians and cyclists.
- There will be adequate and suitable arrangements made for bus services and on-street parking.
- The estimated traffic generation of the proposal given the assumptions made in this report will not reduce the existing road capacity or levels of service to an unacceptable limit.
- The good Level of Service at the key intersections will continue even with the estimated additional traffic generated by the proposed development.
- The additional traffic demand on the key intersections, as a consequence of the proposed development, will not increase the Degree of Saturation and Total Average Delays to an unacceptable level.

7.2 Recommendations

In addition to the traffic management devices recommended in Figure 17 of this report the following is also suggested:

- The pedestrian tunnel under Dobell Road at the existing shopping centre should be decommissioned when the centre closes.

- Detailed design should carefully review the sight lines for cars exiting Norman Crescent onto Dobell Road (south intersection).

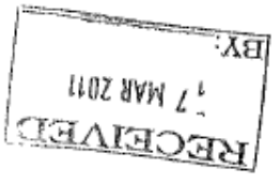
APPENDIX A – Director General Requirements

NSW GOVERNMENT | Planning

Contact: Peter McManus
Phone: (02) 9228 6316
Fax: (02) 9228 6455
Email: peter.mcmanus@planning.nsw.gov.au

Our ref.: MP11_0010

Mr Dan Brindle
Director
BBC Consulting Planners
PO Box 438
BROADWAY NSW 2007



Dear Mr Brindle

Subject: Director-General's Requirements for Claymore Urban Renewal Project Concept Plan (MP11_0010)

The Department has received your application for the above project.

I have attached a copy of the Director-General's Requirements (DGRs) for the preparation of an Environmental Assessment for the project. These requirements have been prepared in consultation with relevant government authorities. I have also attached a copy of the government authorities' comments for your information.

The DGRs have been prepared based on the information you have provided to date. Please note that under section 75F(3) of the *Environmental Planning and Assessment Act 1979*, the Director-General may alter these requirements at any time. If you do not submit an Environmental Assessment for the project within 2 years, the DGRs will expire.

Prior to exhibiting the Environmental Assessment that you submit for the project, the Department will review the document to determine if it adequately addresses the DGRs. The Department may consult with other relevant government authorities in making this decision. Please provide 1 hard copy and 1 electronic copy[1] of the Environmental Assessment to assist this review.

If the Director-General considers that the Environmental Assessment does not adequately address the DGRs, the Director-General may require you to revise the Environmental Assessment. Once the Director-General is satisfied that the DGRs have been adequately addressed, the Environmental Assessment will be made publicly available for at least 30 days.

If your project is likely to have a significant impact on matters of National Environmental Significance, it will require an approval under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). This approval would be in addition to any approvals required under NSW legislation and it is your responsibility to contact the Department of Sustainability, Environment, Water, Population and Communities to determine

[1] File parts must be no greater than 5Mb each. File parts should be logically named and divided.

Department of Planning 23-33 Bridge Street, Sydney NSW 2000 GPO Box 39, Sydney NSW 2001
Phone 02 9228 6111 Fax 02 9228 6455 Website planning.nsw.gov.au

if an approval under the EPBC Act is required for your project (http://www.environment.gov.au or 6274 1111).

Your contact officer for this proposal, Peter McManus, can be contacted on (02) 9228 6316 or via email at peter.mcmanus@planning.nsw.gov.au. Please mark all correspondence regarding the proposal to the attention of the contact officer.

Yours sincerely,

Daniel Cavallo 10/3/11
A/Director
Metropolitan and Regional Projects North

APPENDIX B – Traffic Count Data

R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196846.
Mobile.0418239019

Client : Craig Hazell Traffic Solutions
Job No/Name : 3516 CLAYMORE Traffic Counts
Day/Date : Tuesday 22nd March 2011

PEDS	WEST	NORTH	EAST	
Time Per	Boyd St	Bauxie Pl	Boyd St	TOT
1500 - 1515	0	0	3	3
1515 - 1530	0	0	0	0
1530 - 1545	0	0	2	2
1545 - 1600	0	0	0	0
1600 - 1615	0	0	0	0
1615 - 1630	0	2	0	2
1630 - 1645	0	0	0	0
1645 - 1700	0	0	0	0
1700 - 1715	0	0	0	0
1715 - 1730	3	2	0	5
1730 - 1745	0	0	0	0
1745 - 1800	0	0	0	0
Per End	3	4	5	12

PEDS	WEST	NORTH	EAST	
Peak Per	Boyd St	Bauxie Pl	Boyd St	TOT
1500 - 1600	0	0	5	5
1515 - 1615	0	0	2	2
1530 - 1630	0	2	2	4
1545 - 1645	0	2	0	2
1600 - 1700	0	2	0	2
1615 - 1715	0	2	0	2
1630 - 1730	3	2	0	5
1645 - 1745	3	2	0	5
1700 - 1800	3	2	0	5
PEAK HR	0	0	5	5

Lights	WEST		NORTH		EAST		
	Boyd St		Bauxie Pl		Boyd St		
Time Per	T	L	R	L	R	T	TOT
1500 - 1515	8	1	3	1	2	8	23
1515 - 1530	7	3	1	0	1	6	18
1530 - 1545	3	1	2	0	0	6	12
1545 - 1600	5	3	4	0	1	3	16
1600 - 1615	7	3	2	1	1	4	18
1615 - 1630	9	1	0	0	0	1	11
1630 - 1645	9	1	0	0	0	6	16
1645 - 1700	8	2	0	0	0	7	17
1700 - 1715	6	1	1	1	1	5	15
1715 - 1730	8	0	1	0	1	7	17
1730 - 1745	6	3	1	0	0	6	16
1745 - 1800	6	3	1	0	0	3	13
Per End	82	22	16	3	7	62	192

Heavies	WEST		NORTH		EAST		
	Boyd St		Bauxie Pl		Boyd St		
Time Per	T	L	R	L	R	T	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	0	0	0	0
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	0	0	0	0	0	0
Per End	0	0	0	0	0	0	0

Combined	WEST		NORTH		EAST		
	Boyd St		Bauxie Pl		Boyd St		
Time Per	T	L	R	L	R	T	TOT
1500 - 1515	8	1	3	1	2	8	23
1515 - 1530	7	3	1	0	1	6	18
1530 - 1545	3	1	2	0	0	6	12
1545 - 1600	5	3	4	0	1	3	16
1600 - 1615	7	3	2	1	1	4	18
1615 - 1630	9	1	0	0	0	1	11
1630 - 1645	9	1	0	0	0	6	16
1645 - 1700	8	2	0	0	0	7	17
1700 - 1715	6	1	1	1	1	5	15
1715 - 1730	8	0	1	0	1	7	17
1730 - 1745	6	3	1	0	0	6	16
1745 - 1800	6	3	1	0	0	3	13
Per End	82	22	16	3	7	62	192

Lights	WEST		NORTH		EAST		
	Boyd St		Bauxie Pl		Boyd St		
Peak Per	T	L	R	L	R	T	TOT
1500 - 1600	23	8	10	1	4	23	69
1515 - 1615	22	10	9	1	3	19	64
1530 - 1630	24	8	8	1	2	14	57
1545 - 1645	30	8	6	1	2	14	61
1600 - 1700	33	7	2	1	1	18	62
1615 - 1715	32	5	1	1	1	19	59
1630 - 1730	31	4	2	1	2	25	65
1645 - 1745	28	6	3	1	2	25	65
1700 - 1800	26	7	4	1	2	21	61
PEAK HR	23	8	10	1	4	23	69

Heavies	WEST		NORTH		EAST		
	Boyd St		Bauxie Pl		Boyd St		
Peak Per	T	L	R	L	R	T	TOT
1500 - 1600	0	0	0	0	0	0	0
1515 - 1615	0	0	0	0	0	0	0
1530 - 1630	0	0	0	0	0	0	0
1545 - 1645	0	0	0	0	0	0	0
1600 - 1700	0	0	0	0	0	0	0
1615 - 1715	0	0	0	0	0	0	0
1630 - 1730	0	0	0	0	0	0	0
1645 - 1745	0	0	0	0	0	0	0
1700 - 1800	0	0	0	0	0	0	0
PEAK HR	0	0	0	0	0	0	0

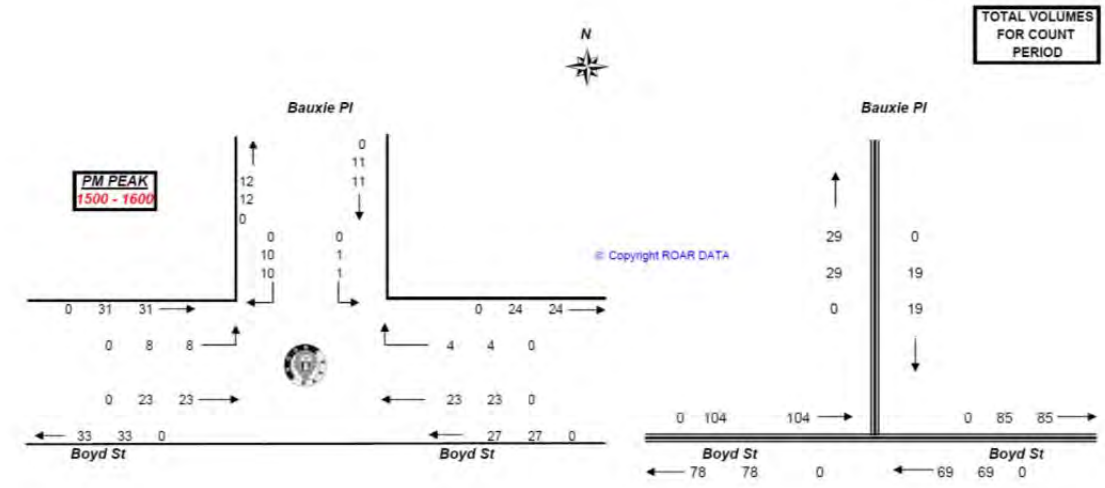
Combined	WEST		NORTH		EAST		
	Boyd St		Bauxie Pl		Boyd St		
Peak Per	T	L	R	L	R	T	TOT
1500 - 1600	23	8	10	1	4	23	69
1515 - 1615	22	10	9	1	3	19	64
1530 - 1630	24	8	8	1	2	14	57
1545 - 1645	30	8	6	1	2	14	61
1600 - 1700	33	7	2	1	1	18	62
1615 - 1715	32	5	1	1	1	19	59
1630 - 1730	31	4	2	1	2	25	65
1645 - 1745	28	6	3	1	2	25	65
1700 - 1800	26	7	4	1	2	21	61
PEAK HR	23	8	10	1	4	23	69

R.O.A.R. DATA

Reliable, Original & Authentic Results

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

Client : Craig Hazell Traffic Solutions
Job No/Name : 3516 CLAYMORE Traffic Counts
Day/Date : Tuesday 22nd March 2011



R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Fax 88196849,
Mobile.0418239019

Client : Craig Hazell Traffic Solutions
Job No/Name : 3516 CLAYMORE Traffic Counts
Day/Date : Tuesday 22nd March 2011

PEDS	WEST	NORTH	EAST	
Time Per	Boyd St	Bauxie Pl	Boyd St	TOT
0630 - 0645	0	0	0	0
0645 - 0700	0	0	0	0
0700 - 0715	0	0	0	0
0715 - 0730	0	0	0	0
0730 - 0745	0	0	0	0
0745 - 0800	0	0	0	0
0800 - 0815	0	0	0	0
0815 - 0830	0	2	0	2
0830 - 0845	0	0	0	0
0845 - 0900	0	0	0	0
0900 - 0915	0	0	0	0
0915 - 0930	0	0	0	0
Per End	0	2	0	2

PEDS	WEST	NORTH	EAST	
Peak Per	Boyd St	Bauxie Pl	Boyd St	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	2	0	2
0745 - 0845	0	2	0	2
0800 - 0900	0	2	0	2
0815 - 0915	0	2	0	2
0830 - 0930	0	0	0	0
PEAK HR	0	2	0	2

Lights	WEST		NORTH		EAST		
	Boyd St		Bauxie Pl		Boyd St		
Time Per	T	L	R	L	R	T	TOT
0630 - 0645	4	1	0	1	0	0	6
0645 - 0700	2	1	0	0	0	3	6
0700 - 0715	4	0	0	1	1	1	7
0715 - 0730	0	0	1	0	0	2	3
0730 - 0745	6	1	2	1	1	1	12
0745 - 0800	6	0	2	2	0	1	11
0800 - 0815	11	0	1	1	0	7	20
0815 - 0830	16	0	1	0	1	15	33
0830 - 0845	17	1	2	0	1	8	29
0845 - 0900	5	1	1	1	0	9	17
0900 - 0915	9	1	2	0	0	5	17
0915 - 0930	3	0	0	0	0	6	9
Per End	83	6	12	7	4	58	170

Heavies	WEST		NORTH		EAST		
	Boyd St		Bauxie Pl		Boyd St		
Time Per	T	L	R	L	R	T	TOT
0630 - 0645	0	0	0	0	0	0	0
0645 - 0700	0	0	0	0	0	0	0
0700 - 0715	0	0	0	0	0	0	0
0715 - 0730	0	0	0	0	0	0	0
0730 - 0745	0	0	0	0	0	0	0
0745 - 0800	0	0	0	0	0	0	0
0800 - 0815	0	0	0	0	0	0	0
0815 - 0830	0	0	0	0	0	0	0
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	0	0	0	0	0	0
Per End	0	0	0	0	0	0	0

Combined	WEST		NORTH		EAST		
	Boyd St		Bauxie Pl		Boyd St		
Time Per	T	L	R	L	R	T	TOT
0630 - 0645	4	1	0	1	0	0	6
0645 - 0700	2	1	0	0	0	3	6
0700 - 0715	4	0	0	1	1	1	7
0715 - 0730	0	0	1	0	0	2	3
0730 - 0745	6	1	2	1	1	1	12
0745 - 0800	6	0	2	2	0	1	11
0800 - 0815	11	0	1	1	0	7	20
0815 - 0830	16	0	1	0	1	15	33
0830 - 0845	17	1	2	0	1	8	29
0845 - 0900	5	1	1	1	0	9	17
0900 - 0915	9	1	2	0	0	5	17
0915 - 0930	3	0	0	0	0	6	9
Per End	83	6	12	7	4	58	170

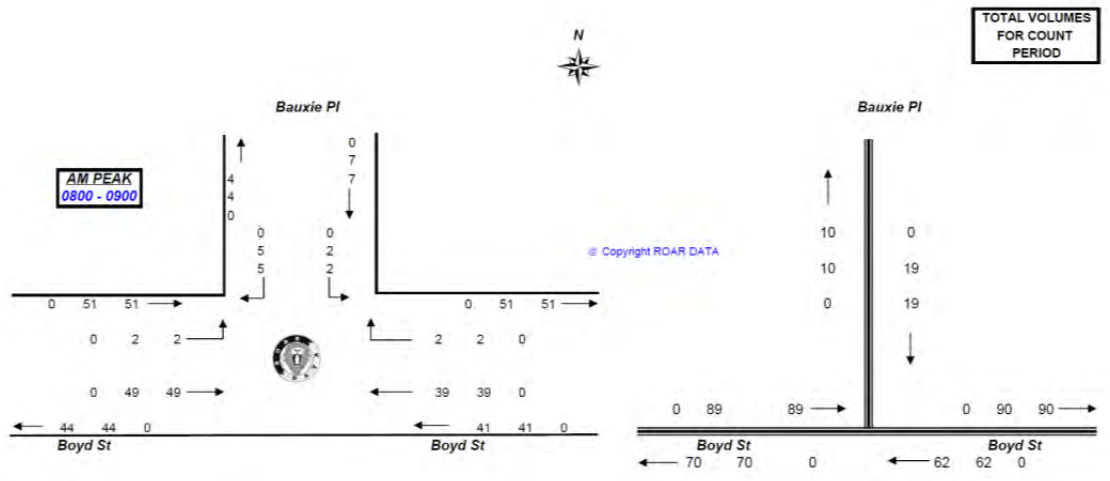
Lights	WEST		NORTH		EAST		
	Boyd St		Bauxie Pl		Boyd St		
Peak Per	T	L	R	L	R	T	TOT
0630 - 0730	10	2	1	2	1	6	22
0645 - 0745	12	2	3	2	2	7	28
0700 - 0800	16	1	5	4	2	5	33
0715 - 0815	23	1	6	4	1	11	46
0730 - 0830	39	1	6	4	2	24	76
0745 - 0845	50	1	6	3	2	31	93
0800 - 0900	49	2	5	2	2	39	99
0815 - 0915	47	3	5	1	2	37	96
0830 - 0930	34	3	5	1	1	28	72
PEAK HR	49	2	5	2	2	39	99

Heavies	WEST		NORTH		EAST		
	Boyd St		Bauxie Pl		Boyd St		
Peak Per	T	L	R	L	R	T	TOT
0630 - 0730	0	0	0	0	0	0	0
0645 - 0745	0	0	0	0	0	0	0
0700 - 0800	0	0	0	0	0	0	0
0715 - 0815	0	0	0	0	0	0	0
0730 - 0830	0	0	0	0	0	0	0
0745 - 0845	0	0	0	0	0	0	0
0800 - 0900	0	0	0	0	0	0	0
0815 - 0915	0	0	0	0	0	0	0
0830 - 0930	0	0	0	0	0	0	0
PEAK HR	0	0	0	0	0	0	0

Combined	WEST		NORTH		EAST		
	Boyd St		Bauxie Pl		Boyd St		
Peak Per	T	L	R	L	R	T	TOT
0630 - 0730	10	2	1	2	1	6	22
0645 - 0745	12	2	3	2	2	7	28
0700 - 0800	16	1	5	4	2	5	33
0715 - 0815	23	1	6	4	1	11	46
0730 - 0830	39	1	6	4	2	24	76
0745 - 0845	50	1	6	3	2	31	93
0800 - 0900	49	2	5	2	2	39	99
0815 - 0915	47	3	5	1	2	37	96
0830 - 0930	34	3	5	1	1	28	72
PEAK HR	49	2	5	2	2	39	99

R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Craig Hazell Traffic Solutions
Job No/Name : 3516 CLAYMORE Traffic Counts
Day/Date : Tuesday 22nd March 2011



R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Fax 88196849.
Mobile.0418239019

Client : Craig Hazell Traffic Solutions
Job No/Name : 3516 CLAYMORE Traffic Counts
Day/Date : Tuesday 22nd March 2011

PEDS	WEST	NORTH	EAST	
Time Per	Dobell Rd	Drysdale St	Dobell Rd	TOT
0630 - 0645	0	1	1	2
0645 - 0700	0	0	0	0
0700 - 0715	0	0	0	0
0715 - 0730	0	0	0	0
0730 - 0745	0	7	0	7
0745 - 0800	1	1	2	4
0800 - 0815	4	5	9	18
0815 - 0830	1	2	3	6
0830 - 0845	0	4	4	8
0845 - 0900	0	0	0	0
0900 - 0915	0	0	0	0
0915 - 0930	0	0	0	0
Per End	6	20	19	45

PEDS	WEST	NORTH	EAST	
Peak Per	Dobell Rd	Drysdale St	Dobell Rd	TOT
0630 - 0730	0	1	1	2
0645 - 0745	0	7	0	7
0700 - 0800	1	8	2	11
0715 - 0815	5	13	11	29
0730 - 0830	6	15	14	35
0745 - 0845	6	12	18	36
0800 - 0900	5	11	16	32
0815 - 0915	1	6	7	14
0830 - 0930	0	4	4	8
PEAK HR	5	11	16	32

Lights	WEST		NORTH		EAST		
	Dobell Rd		Drysdale St		Dobell Rd		
Time Per	T	L	R	L	R	T	TOT
0630 - 0645	1	3	4	1	1	2	12
0645 - 0700	2	2	7	3	0	5	19
0700 - 0715	4	3	3	0	0	4	14
0715 - 0730	4	3	3	3	1	5	19
0730 - 0745	4	6	3	1	2	3	19
0745 - 0800	5	11	4	2	6	3	31
0800 - 0815	3	12	12	13	15	3	58
0815 - 0830	8	21	32	25	21	8	115
0830 - 0845	17	9	16	14	7	13	76
0845 - 0900	12	8	5	12	4	7	48
0900 - 0915	11	1	2	3	5	9	31
0915 - 0930	5	1	9	2	2	3	22
Per End	76	80	100	79	64	65	464

Heavies	WEST		NORTH		EAST		
	Dobell Rd		Drysdale St		Dobell Rd		
Time Per	T	L	R	L	R	T	TOT
0630 - 0645	0	0	0	2	1	0	3
0645 - 0700	0	0	0	0	2	0	2
0700 - 0715	0	0	0	1	1	0	2
0715 - 0730	0	0	0	1	0	0	1
0730 - 0745	1	0	0	1	1	0	3
0745 - 0800	0	1	0	1	2	0	4
0800 - 0815	0	0	1	1	0	0	2
0815 - 0830	1	0	0	2	1	0	4
0830 - 0845	0	0	0	1	1	0	2
0845 - 0900	0	0	0	1	0	1	2
0900 - 0915	0	0	0	1	1	0	2
0915 - 0930	0	0	0	1	1	0	2
Per End	2	1	1	13	11	1	29

Combined	WEST		NORTH		EAST		
	Dobell Rd		Drysdale St		Dobell Rd		
Time Per	T	L	R	L	R	T	TOT
0630 - 0645	1	3	4	3	2	2	15
0645 - 0700	2	2	7	3	2	5	21
0700 - 0715	4	3	3	1	1	4	16
0715 - 0730	4	3	3	4	1	5	20
0730 - 0745	5	6	3	2	3	3	22
0745 - 0800	5	12	4	3	8	3	35
0800 - 0815	3	12	13	14	15	3	60
0815 - 0830	9	21	32	27	22	8	119
0830 - 0845	17	9	16	15	8	13	78
0845 - 0900	12	8	5	13	4	8	50
0900 - 0915	11	1	2	4	6	9	33
0915 - 0930	5	1	9	3	3	3	24
Per End	78	81	101	92	75	66	493

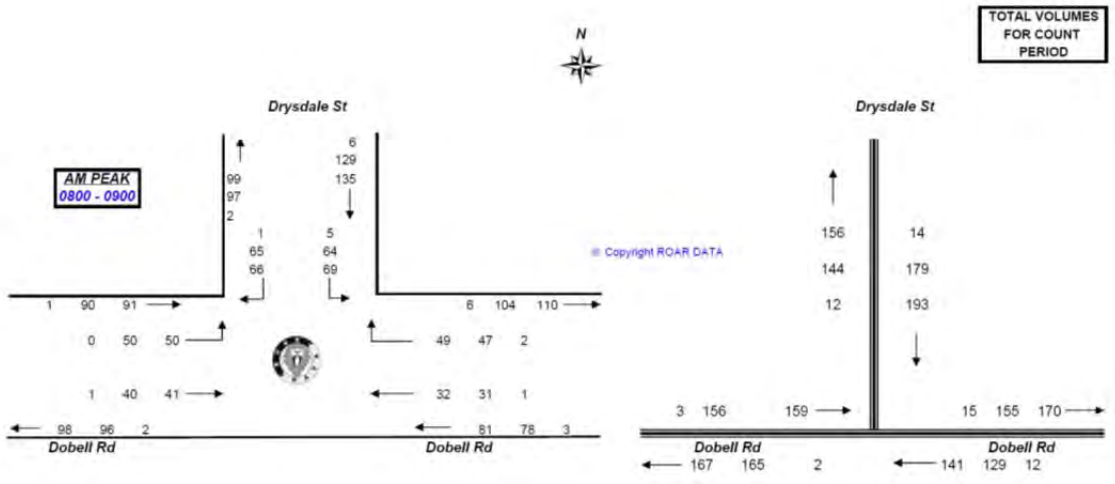
Lights	WEST		NORTH		EAST		
	Dobell Rd		Drysdale St		Dobell Rd		
Peak Per	T	L	R	L	R	T	TOT
0630 - 0730	11	11	17	7	2	16	64
0645 - 0745	14	14	16	7	3	17	71
0700 - 0800	17	23	13	6	9	15	83
0715 - 0815	16	32	22	19	24	14	127
0730 - 0830	20	50	51	41	44	17	223
0745 - 0845	33	53	64	54	49	27	280
0800 - 0900	40	50	65	64	47	31	297
0815 - 0915	48	39	55	54	37	37	270
0830 - 0930	45	19	32	31	18	32	177
PEAK HR	40	50	65	64	47	31	297

Heavies	WEST		NORTH		EAST		
	Dobell Rd		Drysdale St		Dobell Rd		
Peak Per	T	L	R	L	R	T	TOT
0630 - 0730	0	0	0	4	4	0	8
0645 - 0745	1	0	0	3	4	0	8
0700 - 0800	1	1	0	4	4	0	10
0715 - 0815	1	1	1	4	3	0	10
0730 - 0830	2	1	1	5	4	0	13
0745 - 0845	1	1	1	5	4	0	12
0800 - 0900	1	0	1	5	2	1	10
0815 - 0915	1	0	0	5	3	1	10
0830 - 0930	0	0	0	4	3	1	8
PEAK HR	1	0	1	5	2	1	10

Combined	WEST		NORTH		EAST		
	Dobell Rd		Drysdale St		Dobell Rd		
Peak Per	T	L	R	L	R	T	TOT
0630 - 0730	11	11	17	11	5	16	72
0645 - 0745	15	14	16	10	7	17	79
0700 - 0800	18	24	13	10	13	15	93
0715 - 0815	17	33	23	23	27	14	137
0730 - 0830	22	51	52	46	48	17	236
0745 - 0845	34	54	65	59	53	27	292
0800 - 0900	41	50	66	69	49	32	307
0815 - 0915	49	39	55	59	40	38	280
0830 - 0930	45	19	32	35	21	33	185
PEAK HR	41	50	66	69	49	32	307

R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Craig Hazell Traffic Solutions
Job No/Name : 3516 CLAYMORE Traffic Counts
Day/Date : Tuesday 22nd March 2011



R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Fax 88196849.
Mobile.0418239019

Client : Craig Hazell Traffic Solutions
Job No/Name : 3516 CLAYMORE Traffic Counts
Day/Date : Tuesday 22nd March 2011

PEDS	WEST	NORTH	EAST	
Time Per	Bagdally Rd	Dobell Rd	Bagdally Rd	TOT
0630 - 0645	0	0	0	0
0645 - 0700	0	1	4	5
0700 - 0715	1	4	5	10
0715 - 0730	6	4	3	13
0730 - 0745	2	3	0	5
0745 - 0800	3	3	1	7
0800 - 0815	2	6	3	11
0815 - 0830	2	4	1	7
0830 - 0845	3	2	4	9
0845 - 0900	3	6	1	10
0900 - 0915	6	5	3	14
0915 - 0930	6	0	0	6
Per End	34	38	25	97

PEDS	WEST	NORTH	EAST	
Peak Per	Bagdally Rd	Dobell Rd	Bagdally Rd	TOT
0630 - 0730	7	9	12	28
0645 - 0745	9	12	12	33
0700 - 0800	12	14	9	35
0715 - 0815	13	16	7	36
0730 - 0830	9	16	5	30
0745 - 0845	10	15	9	34
0800 - 0900	10	18	9	37
0815 - 0915	14	17	9	40
0830 - 0930	18	13	8	39
PEAK HR	10	18	9	37

Lights	WEST		NORTH		EAST		
	Bagdally Rd		Dobell Rd		Bagdally Rd		
Time Per	T	L	R	L	R	T	TOT
0630 - 0645	38	0	0	20	9	34	101
0645 - 0700	55	0	2	38	11	31	137
0700 - 0715	64	0	3	37	27	36	167
0715 - 0730	48	1	0	40	26	28	143
0730 - 0745	89	0	0	27	28	52	196
0745 - 0800	114	1	1	42	32	87	277
0800 - 0815	135	1	1	56	43	138	374
0815 - 0830	171	5	8	86	58	129	457
0830 - 0845	191	1	12	76	39	87	406
0845 - 0900	164	8	25	74	36	65	372
0900 - 0915	123	19	11	69	37	46	305
0915 - 0930	80	2	2	67	32	30	213
Per End	1272	38	65	632	378	763	3148

Heavies	WEST		NORTH		EAST		
	Bagdally Rd		Dobell Rd		Bagdally Rd		
Time Per	T	L	R	L	R	T	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	2	0	2
0715 - 0730	1	0	0	1	0	0	2
0730 - 0745	0	0	0	3	1	1	5
0745 - 0800	0	0	0	1	2	4	7
0800 - 0815	4	0	0	1	0	4	9
0815 - 0830	1	1	0	2	0	4	8
0830 - 0845	2	0	0	5	2	1	10
0845 - 0900	1	0	0	1	1	0	3
0900 - 0915	2	0	0	1	1	0	4
0915 - 0930	0	0	0	1	1	0	2
Per End	11	1	0	18	10	14	54

Combined	WEST		NORTH		EAST		
	Bagdally Rd		Dobell Rd		Bagdally Rd		
Time Per	T	L	R	L	R	T	TOT
0630 - 0645	38	0	0	21	9	34	102
0645 - 0700	55	0	2	39	11	31	138
0700 - 0715	64	0	3	37	29	36	169
0715 - 0730	49	1	0	41	26	28	145
0730 - 0745	89	0	0	30	29	53	201
0745 - 0800	114	1	1	43	34	91	284
0800 - 0815	139	1	1	57	43	142	383
0815 - 0830	172	6	8	88	58	133	465
0830 - 0845	193	1	12	81	41	68	416
0845 - 0900	165	8	25	75	37	65	375
0900 - 0915	125	19	11	70	38	46	309
0915 - 0930	80	2	2	68	33	30	215
Per End	1283	39	65	650	388	777	3202

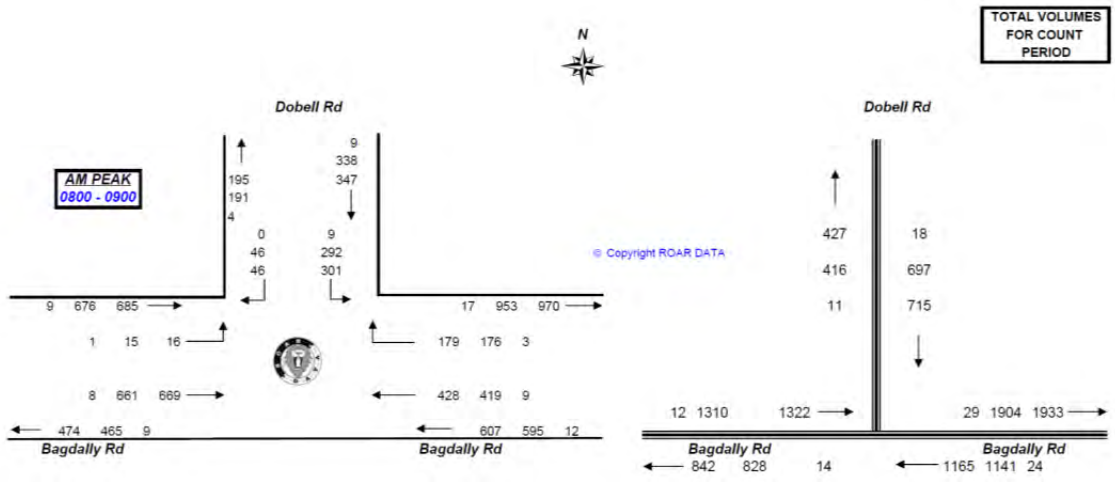
Lights	WEST		NORTH		EAST		
	Bagdally Rd		Dobell Rd		Bagdally Rd		
Peak Per	T	L	R	L	R	T	TOT
0630 - 0730	205	1	5	135	73	129	548
0645 - 0745	256	1	5	142	92	147	643
0700 - 0800	315	2	4	146	113	203	783
0715 - 0815	386	3	2	165	129	305	990
0730 - 0830	509	7	10	211	161	406	1304
0745 - 0845	611	8	22	260	172	441	1514
0800 - 0900	661	15	46	292	176	419	1609
0815 - 0915	649	33	56	305	170	327	1540
0830 - 0930	558	30	50	286	144	228	1296
PEAK HR	661	15	46	292	176	419	1609

Heavies	WEST		NORTH		EAST		
	Bagdally Rd		Dobell Rd		Bagdally Rd		
Peak Per	T	L	R	L	R	T	TOT
0630 - 0730	1	0	0	3	2	0	6
0645 - 0745	1	0	0	5	3	1	10
0700 - 0800	1	0	0	5	5	5	16
0715 - 0815	5	0	0	6	3	9	23
0730 - 0830	5	1	0	7	3	13	29
0745 - 0845	7	1	0	9	4	13	34
0800 - 0900	8	1	0	9	3	9	30
0815 - 0915	6	1	0	9	4	5	25
0830 - 0930	5	0	0	8	5	1	19
PEAK HR	8	1	0	9	3	9	30

Combined	WEST		NORTH		EAST		
	Bagdally Rd		Dobell Rd		Bagdally Rd		
Peak Per	T	L	R	L	R	T	TOT
0630 - 0730	206	1	5	138	75	129	554
0645 - 0745	257	1	5	147	95	148	653
0700 - 0800	316	2	4	151	118	208	799
0715 - 0815	391	3	2	171	132	314	1013
0730 - 0830	514	8	10	218	164	419	1333
0745 - 0845	618	9	22	269	176	454	1548
0800 - 0900	669	16	46	301	179	428	1639
0815 - 0915	655	34	56	314	174	332	1565
0830 - 0930	563	30	50	294	149	229	1315
PEAK HR	669	16	46	301	179	428	1639

R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Craig Hazell Traffic Solutions
Job No/Name : 3516 CLAYMORE Traffic Counts
Day/Date : Tuesday 22nd March 2011



R.O.A.R. DATA

Reliable, Original & Authentic Results

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

Client : Craig Hazell Traffic Solutions
Job No/Name : 3516 CLAYMORE Traffic Counts
Day/Date : Tuesday 22nd March 2011

Lights

Time Per	NORTH Aquamarine Dr L	T	R	WEST Gould Rd L	T	R	SOUTH Abrahams Way L	T	R	EAST Gould Rd L	T	R	TOT
1500 - 1515	3	0	6	6	57	0	1	0	2	1	48	3	127
1515 - 1530	2	0	8	6	29	0	0	0	2	0	42	2	91
1530 - 1545	1	1	12	14	36	1	2	0	0	2	49	4	122
1545 - 1600	2	0	7	10	34	1	0	0	1	2	39	2	98
1600 - 1615	3	1	8	16	42	0	0	1	0	1	40	0	112
1615 - 1630	1	0	9	11	40	2	0	0	3	0	34	2	102
1630 - 1645	2	0	9	11	42	4	3	0	2	1	33	2	109
1645 - 1700	2	0	10	10	34	0	2	1	0	2	41	1	103
1700 - 1715	3	1	10	12	49	0	2	0	2	2	32	1	114
1715 - 1730	3	0	8	14	47	2	0	0	1	2	35	3	115
1730 - 1745	1	0	14	16	44	1	1	0	0	4	48	2	131
1745 - 1800	1	0	16	15	47	3	0	0	2	2	42	1	129
Period End	24	3	117	141	501	14	11	2	15	19	483	23	1353

Lights

Peak Time	NORTH Aquamarine Dr L	T	R	WEST Gould Rd L	T	R	SOUTH Abrahams Way L	T	R	EAST Gould Rd L	T	R	TOT
1500 - 1600	8	1	33	36	156	2	3	0	5	5	178	11	438
1515 - 1615	8	2	35	46	141	2	2	1	3	5	170	8	423
1530 - 1630	7	2	36	51	152	4	2	1	4	5	162	8	434
1545 - 1645	8	1	33	48	158	7	3	1	6	4	146	6	421
1600 - 1700	8	1	36	48	158	6	5	2	5	4	148	5	426
1615 - 1715	8	1	38	44	165	6	7	1	7	5	140	6	428
1630 - 1730	10	1	37	47	172	6	7	1	5	7	141	7	441
1645 - 1745	9	1	42	52	174	3	5	1	3	10	156	7	463
1700 - 1800	8	1	48	57	187	6	3	0	5	10	157	7	489
PEAK HOUR	8	1	48	57	187	6	3	0	5	10	157	7	489

Heavies

Time Per	NORTH Aquamarine Dr L	T	R	WEST Gould Rd L	T	R	SOUTH Abrahams Way L	T	R	EAST Gould Rd L	T	R	TOT
1500 - 1515	1	0	0	0	0	0	0	0	0	0	0	0	1
1515 - 1530	0	0	0	0	0	0	0	0	0	0	0	0	0
1530 - 1545	2	0	0	0	0	0	0	0	0	0	0	1	3
1545 - 1600	2	0	0	0	0	0	0	0	0	0	1	1	4
1600 - 1615	1	0	0	0	0	0	0	0	0	0	0	0	1
1615 - 1630	1	0	0	0	0	0	0	0	0	0	1	1	3
1630 - 1645	1	0	0	0	0	0	0	0	0	0	0	0	1
1645 - 1700	1	0	0	0	0	0	0	0	0	0	0	1	2
1700 - 1715	1	0	0	0	0	0	0	0	0	0	0	1	2
1715 - 1730	0	0	0	0	0	0	0	0	0	0	0	1	1
1730 - 1745	1	0	0	0	0	0	0	0	0	0	0	0	1
1745 - 1800	0	0	0	0	0	0	0	0	0	0	0	1	1
Period End	11	0	0	0	0	0	0	0	0	0	2	7	20

Heavies

Peak Per	NORTH Aquamarine Dr L	T	R	WEST Gould Rd L	T	R	SOUTH Abrahams Way L	T	R	EAST Gould Rd L	T	R	TOT
1500 - 1600	5	0	0	0	0	0	0	0	0	0	1	2	8
1515 - 1615	5	0	0	0	0	0	0	0	0	0	1	2	8
1530 - 1630	6	0	0	0	0	0	0	0	0	0	2	3	11
1545 - 1645	5	0	0	0	0	0	0	0	0	0	2	2	9
1600 - 1700	4	0	0	0	0	0	0	0	0	0	1	2	7
1615 - 1715	4	0	0	0	0	0	0	0	0	0	1	3	8
1630 - 1730	3	0	0	0	0	0	0	0	0	0	0	3	6
1645 - 1745	3	0	0	0	0	0	0	0	0	0	0	3	6
1700 - 1800	2	0	0	0	0	0	0	0	0	0	0	3	5
PEAK HOUR	2	0	0	0	0	0	0	0	0	0	0	3	5

Combined

Time Per	NORTH Aquamarine Dr L	T	R	WEST Gould Rd L	T	R	SOUTH Abrahams Way L	T	R	EAST Gould Rd L	T	R	TOT
1500 - 1515	4	0	6	6	57	0	1	0	2	1	48	3	128
1515 - 1530	2	0	8	6	29	0	0	0	2	0	42	2	91
1530 - 1545	3	1	12	14	36	1	2	0	0	2	49	5	125
1545 - 1600	4	0	7	10	34	1	0	0	1	2	40	3	102
1600 - 1615	4	1	8	16	42	0	0	1	0	1	40	0	113
1615 - 1630	2	0	9	11	40	2	0	0	3	0	35	3	105
1630 - 1645	3	0	9	11	42	4	3	0	2	1	33	2	110
1645 - 1700	3	0	10	10	34	0	2	1	0	2	41	2	105
1700 - 1715	4	1	10	12	49	0	2	0	2	2	32	2	116
1715 - 1730	3	0	8	14	47	2	0	0	1	2	35	4	116
1730 - 1745	2	0	14	16	44	1	1	0	0	4	48	2	132
1745 - 1800	1	0	16	15	47	3	0	0	2	2	42	2	130
Period End	35	3	117	141	501	14	11	2	15	19	485	30	1373

Combined

Peak Per	NORTH Aquamarine Dr L	T	R	WEST Gould Rd L	T	R	SOUTH Abrahams Way L	T	R	EAST Gould Rd L	T	R	TOT
1500 - 1600	13	1	33	36	156	2	3	0	5	5	179	13	446
1515 - 1615	13	2	35	46	141	2	2	1	3	5	171	10	431
1530 - 1630	13	2	36	51	152	4	2	1	4	5	164	11	445
1545 - 1645	13	1	33	48	158	7	3	1	6	4	148	8	430
1600 - 1700	12	1	36	48	158	6	5	2	5	4	149	7	433
1615 - 1715	12	1	38	44	165	6	7	1	7	5	141	9	436
1630 - 1730	13	1	37	47	172	6	7	1	5	7	141	10	447
1645 - 1745	12	1	42	52	174	3	5	1	3	10	156	10	469
1700 - 1800	10	1	48	57	187	6	3	0	5	10	157	10	494
PEAK HOUR	10	1	48	57	187	6	3	0	5	10	157	10	494

R.O.A.R DATA

Reliable, Original & Authentic Results

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

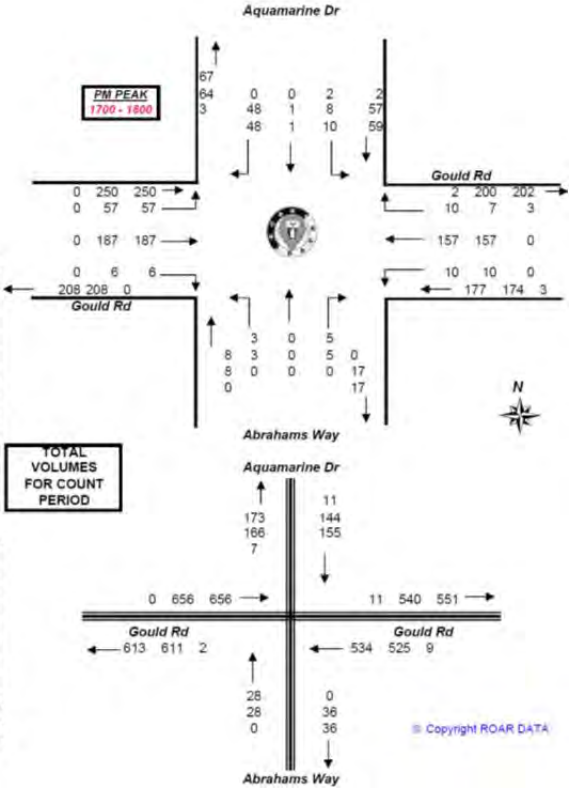
Client : Craig Hazell Traffic Solutions
Job No/Name : 3516 CLAYMORE Traffic Counts
Day/Date : Tuesday 22nd March 2011

Peds

Time Per	NORTH Aquamarine Dr UNCLASSIFIED	WEST Gould Rd UNCLASSIFIED	SOUTH Abrahams Way UNCLASSIFIED	EAST Gould Rd UNCLASSIFIED	TOT
1500 - 1515	0	0	2	0	2
1515 - 1530	1	1	2	0	4
1530 - 1545	2	0	0	0	2
1545 - 1600	0	1	2	0	3
1600 - 1615	0	0	0	0	0
1615 - 1630	0	0	2	0	2
1630 - 1645	0	0	0	1	1
1645 - 1700	0	3	1	0	4
1700 - 1715	0	0	4	0	4
1715 - 1730	0	0	0	0	0
1730 - 1745	3	0	0	0	3
1745 - 1800	0	2	0	0	2
Period End	6	7	13	1	27

Peds

Peak Per	NORTH Aquamarine Dr UNCLASSIFIED	WEST Gould Rd UNCLASSIFIED	SOUTH Abrahams Way UNCLASSIFIED	EAST Gould Rd UNCLASSIFIED	TOT
1500 - 1600	3	2	6	0	11
1515 - 1615	3	2	4	0	9
1530 - 1630	2	1	4	0	7
1545 - 1645	0	1	4	1	6
1600 - 1700	0	3	3	1	7
1615 - 1715	0	3	7	1	11
1630 - 1730	0	3	5	1	9
1645 - 1745	3	3	5	0	11
1700 - 1800	3	2	4	0	9
PEAK HR	3	2	4	0	9



R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Fax 88196849
Mobile.0418239019

Client : Craig Hazell Traffic Solutions
Job No/Name : 3516 CLAYMORE Traffic Counts
Day/Date : Tuesday 22nd March 2011

PEDS	WEST	NORTH	EAST	
Time Per	Dobell Rd	Drysdale St	Dobell Rd	TOT
1500 - 1515	3	0	0	3
1515 - 1530	0	1	0	1
1530 - 1545	0	0	0	0
1545 - 1600	0	0	1	1
1600 - 1615	0	0	2	2
1615 - 1630	0	0	3	3
1630 - 1645	0	0	0	0
1645 - 1700	0	0	1	1
1700 - 1715	1	0	0	1
1715 - 1730	0	0	0	0
1730 - 1745	0	0	0	0
1745 - 1800	0	3	0	3
Per End	4	4	7	15

PEDS	WEST	NORTH	EAST	
Peak Per	Dobell Rd	Drysdale St	Dobell Rd	TOT
1500 - 1600	3	1	1	5
1515 - 1615	0	1	3	4
1530 - 1630	0	0	6	6
1545 - 1645	0	0	6	6
1600 - 1700	0	0	6	6
1615 - 1715	1	0	4	5
1630 - 1730	1	0	1	2
1645 - 1745	1	0	1	2
1700 - 1800	1	3	0	4
PEAK HR	0	0	6	6

Lights	WEST		NORTH		EAST		
	Dobell Rd		Drysdale St		Dobell Rd		
Time Per	T	L	R	L	R	T	TOT
1500 - 1515	21	7	9	11	1	12	61
1515 - 1530	7	9	7	7	4	4	38
1530 - 1545	4	2	3	4	3	6	22
1545 - 1600	8	6	2	2	1	7	26
1600 - 1615	7	7	7	4	3	9	37
1615 - 1630	15	6	5	3	2	8	39
1630 - 1645	10	9	4	6	8	7	44
1645 - 1700	7	11	8	6	4	3	39
1700 - 1715	9	5	4	9	3	3	33
1715 - 1730	14	6	3	3	4	7	37
1730 - 1745	8	6	4	4	3	12	37
1745 - 1800	9	8	4	2	1	5	29
Per End	119	82	60	61	37	83	442

Heavies	WEST		NORTH		EAST		
	Dobell Rd		Drysdale St		Dobell Rd		
Time Per	T	L	R	L	R	T	TOT
1500 - 1515	0	1	0	1	1	0	3
1515 - 1530	0	0	0	0	3	1	4
1530 - 1545	0	0	1	0	1	0	2
1545 - 1600	0	0	0	1	2	0	3
1600 - 1615	1	0	1	0	2	0	4
1615 - 1630	0	0	0	1	1	0	2
1630 - 1645	0	0	0	0	1	0	1
1645 - 1700	0	0	0	1	0	1	2
1700 - 1715	0	0	0	1	1	0	2
1715 - 1730	0	0	0	1	0	0	1
1730 - 1745	0	0	0	0	1	0	1
1745 - 1800	0	0	0	1	0	0	1
Per End	1	1	2	7	13	2	26

Combined	WEST		NORTH		EAST		
	Dobell Rd		Drysdale St		Dobell Rd		
Time Per	T	L	R	L	R	T	TOT
1500 - 1515	21	8	9	12	2	12	64
1515 - 1530	7	9	7	7	7	5	42
1530 - 1545	4	2	4	4	4	6	24
1545 - 1600	8	6	2	3	3	7	29
1600 - 1615	8	7	8	4	5	9	41
1615 - 1630	15	6	5	4	3	8	41
1630 - 1645	10	9	4	6	9	7	45
1645 - 1700	7	11	8	7	4	4	41
1700 - 1715	9	5	4	10	4	3	35
1715 - 1730	14	6	3	4	4	7	38
1730 - 1745	8	6	4	4	4	12	38
1745 - 1800	9	8	4	3	1	5	30
Per End	120	83	62	68	50	85	468

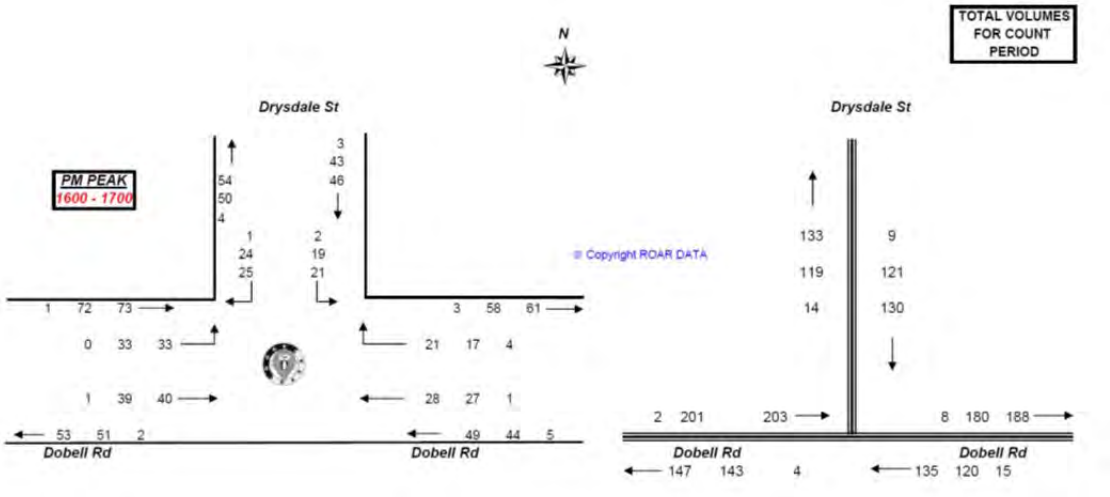
Lights	WEST		NORTH		EAST		
	Dobell Rd		Drysdale St		Dobell Rd		
Peak Per	T	L	R	L	R	T	TOT
1500 - 1600	40	24	21	24	9	29	147
1515 - 1615	26	24	19	17	11	26	123
1530 - 1630	34	21	17	13	9	30	124
1545 - 1645	40	28	18	15	14	31	146
1600 - 1700	39	33	24	19	17	27	159
1615 - 1715	41	31	21	24	17	21	155
1630 - 1730	40	31	19	24	19	20	153
1645 - 1745	38	28	19	22	14	25	146
1700 - 1800	40	25	15	18	11	27	136
PEAK HR	39	33	24	19	17	27	159

Heavies	WEST		NORTH		EAST		
	Dobell Rd		Drysdale St		Dobell Rd		
Peak Per	T	L	R	L	R	T	TOT
1500 - 1600	0	1	1	2	7	1	12
1515 - 1615	1	0	2	1	8	1	13
1530 - 1630	1	0	2	2	6	0	11
1545 - 1645	1	0	1	2	6	0	10
1600 - 1700	1	0	1	2	4	1	9
1615 - 1715	0	0	0	3	3	1	7
1630 - 1730	0	0	0	3	2	1	6
1645 - 1745	0	0	0	3	2	1	6
1700 - 1800	0	0	0	3	2	0	5
PEAK HR	1	0	1	2	4	1	9

Combined	WEST		NORTH		EAST		
	Dobell Rd		Drysdale St		Dobell Rd		
Peak Per	T	L	R	L	R	T	TOT
1500 - 1600	40	25	22	26	16	30	159
1515 - 1615	27	24	21	18	19	27	136
1530 - 1630	35	21	19	15	15	30	135
1545 - 1645	41	28	19	17	20	31	156
1600 - 1700	40	33	25	21	21	28	168
1615 - 1715	41	31	21	27	20	22	162
1630 - 1730	40	31	19	27	21	21	159
1645 - 1745	38	28	19	25	16	26	152
1700 - 1800	40	25	15	21	13	27	141
PEAK HR	40	33	25	21	21	28	168

R.O.A.R. DATA
Reliable, Original & Authentic Results
Ph.88196847, Fax 88196849, Mob.0418-239019

Client : Craig Hazell Traffic Solutions
Job No/Name : 3516 CLAYMORE Traffic Counts
Day/Date : Tuesday 22nd March 2011



R.O.A.R. DATA

Reliable, Original & Authentic Results

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

Client : Craig Hazell Traffic Solutions
Job No/Name : 3516 CLAYMORE Traffic Counts
Day/Date : Tuesday 22nd March 2011

Lights

Time Per	NORTH Aquamarine Dr L	T	R	WEST Gould Rd L	T	R	SOUTH Abrahams Way L	T	R	EAST Gould Rd L	T	R	TOT
0630 - 0645	2	0	8	1	17	0	0	0	1	0	12	0	41
0645 - 0700	1	0	8	7	22	0	0	0	0	1	16	0	55
0700 - 0715	3	0	10	5	28	0	0	0	1	0	16	0	65
0715 - 0730	3	0	5	3	23	0	1	0	0	0	24	1	60
0730 - 0745	3	0	6	4	24	1	0	0	1	0	18	3	60
0745 - 0800	5	0	9	8	26	2	1	0	0	1	33	0	85
0800 - 0815	14	0	20	13	40	0	1	1	1	0	42	2	134
0815 - 0830	23	0	28	22	32	0	2	0	0	0	46	4	159
0830 - 0845	12	0	17	7	40	3	2	0	1	2	39	1	124
0845 - 0900	2	0	7	5	27	0	0	0	0	0	55	1	97
0900 - 0915	5	0	8	6	34	0	1	0	0	2	49	0	105
0915 - 0930	0	0	11	3	29	0	1	0	1	0	25	1	71
Period End	73	0	137	84	342	6	9	1	6	6	379	13	1056

Lights

Peak Time	NORTH Aquamarine Dr L	T	R	WEST Gould Rd L	T	R	SOUTH Abrahams Way L	T	R	EAST Gould Rd L	T	R	TOT
0630 - 0730	9	0	31	16	90	0	1	0	2	1	70	1	221
0645 - 0745	10	0	29	19	97	1	1	0	2	1	76	4	240
0700 - 0800	14	0	30	20	101	3	2	0	2	1	93	4	270
0715 - 0815	25	0	40	28	113	3	3	1	2	1	117	6	339
0730 - 0830	45	0	63	47	122	3	4	1	2	1	141	9	438
0745 - 0845	54	0	74	50	138	5	6	1	2	3	162	7	502
0800 - 0900	51	0	72	47	139	3	5	1	2	2	184	8	514
0815 - 0915	42	0	60	40	133	3	5	0	1	4	191	6	485
0830 - 0930	19	0	43	21	130	2	4	0	2	4	168	3	397
PEAK HOUR	51	0	72	47	139	3	5	1	2	2	184	8	514

Heavies

Time Per	NORTH Aquamarine Dr L	T	R	WEST Gould Rd L	T	R	SOUTH Abrahams Way L	T	R	EAST Gould Rd L	T	R	TOT
0630 - 0645	0	0	0	0	0	0	0	0	0	0	0	1	1
0645 - 0700	1	0	0	0	0	0	0	0	0	0	0	0	1
0700 - 0715	1	0	0	0	0	0	0	0	0	0	0	1	2
0715 - 0730	2	0	1	0	0	0	0	0	0	0	0	1	4
0730 - 0745	1	0	0	0	0	0	0	0	0	0	0	1	2
0745 - 0800	1	0	0	0	0	0	0	0	0	0	0	1	2
0800 - 0815	1	0	0	0	0	0	0	0	0	0	0	1	2
0815 - 0830	1	0	0	0	0	0	0	0	0	0	1	1	3
0830 - 0845	0	0	0	0	1	0	0	0	0	0	0	2	3
0845 - 0900	2	0	0	0	0	0	0	0	0	0	0	1	3
0900 - 0915	0	0	0	0	0	0	0	0	0	0	0	1	1
0915 - 0930	2	0	0	0	0	0	0	0	0	0	1	1	4
Period End	12	0	1	0	1	0	0	0	0	0	2	12	28

Heavies

Peak Per	NORTH Aquamarine Dr L	T	R	WEST Gould Rd L	T	R	SOUTH Abrahams Way L	T	R	EAST Gould Rd L	T	R	TOT
0630 - 0730	4	0	1	0	0	0	0	0	0	0	0	3	8
0645 - 0745	5	0	1	0	0	0	0	0	0	0	0	3	9
0700 - 0800	5	0	1	0	0	0	0	0	0	0	0	4	10
0715 - 0815	5	0	1	0	0	0	0	0	0	0	0	4	10
0730 - 0830	4	0	0	0	0	0	0	0	0	0	1	4	9
0745 - 0845	3	0	0	0	1	0	0	0	0	0	1	5	10
0800 - 0900	4	0	0	0	1	0	0	0	0	0	1	5	11
0815 - 0915	3	0	0	0	1	0	0	0	0	0	1	5	10
0830 - 0930	4	0	0	0	1	0	0	0	0	0	1	5	11
PEAK HOUR	4	0	0	0	1	0	0	0	0	0	1	5	11

Combined

Time Per	NORTH Aquamarine Dr L	T	R	WEST Gould Rd L	T	R	SOUTH Abrahams Way L	T	R	EAST Gould Rd L	T	R	TOT
0630 - 0645	2	0	8	1	17	0	0	0	1	0	12	1	42
0645 - 0700	2	0	8	7	22	0	0	0	0	1	16	0	56
0700 - 0715	4	0	10	5	28	0	0	0	1	0	18	1	67
0715 - 0730	5	0	6	3	23	0	1	0	0	0	24	2	64
0730 - 0745	4	0	6	4	24	1	0	0	1	0	18	4	62
0745 - 0800	6	0	9	8	26	2	1	0	0	1	33	1	87
0800 - 0815	15	0	20	13	40	0	1	1	1	0	42	3	136
0815 - 0830	24	0	28	22	32	0	2	0	0	0	49	5	162
0830 - 0845	12	0	17	7	41	3	2	0	1	2	39	3	127
0845 - 0900	4	0	7	5	27	0	0	0	0	0	55	2	100
0900 - 0915	5	0	8	6	34	0	1	0	0	2	49	1	106
0915 - 0930	2	0	11	3	29	0	1	0	1	0	26	2	75
Period End	85	0	138	84	343	6	9	1	6	6	381	25	1084

Combined

Peak Per	NORTH Aquamarine Dr L	T	R	WEST Gould Rd L	T	R	SOUTH Abrahams Way L	T	R	EAST Gould Rd L	T	R	TOT
0630 - 0730	13	0	32	16	90	0	1	0	2	1	70	4	229
0645 - 0745	15	0	30	19	97	1	1	0	2	1	76	7	249
0700 - 0800	19	0	31	20	101	3	2	0	2	1	93	8	280
0715 - 0815	30	0	41	28	113	3	3	1	2	1	117	10	349
0730 - 0830	49	0	63	47	122	3	4	1	2	1	142	13	447
0745 - 0845	57	0	74	50	139	5	6	1	2	3	163	12	512
0800 - 0900	55	0	72	47	140	3	5	1	2	2	185	13	525
0815 - 0915	45	0	60	40	134	3	5	0	1	4	192	11	495
0830 - 0930	23	0	43	21	131	3	4	0	2	4	188	8	408
PEAK HOUR	55	0	72	47	140	3	5	1	2	2	185	13	525

R.O.A.R DATA

Reliable, Original & Authentic Results

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

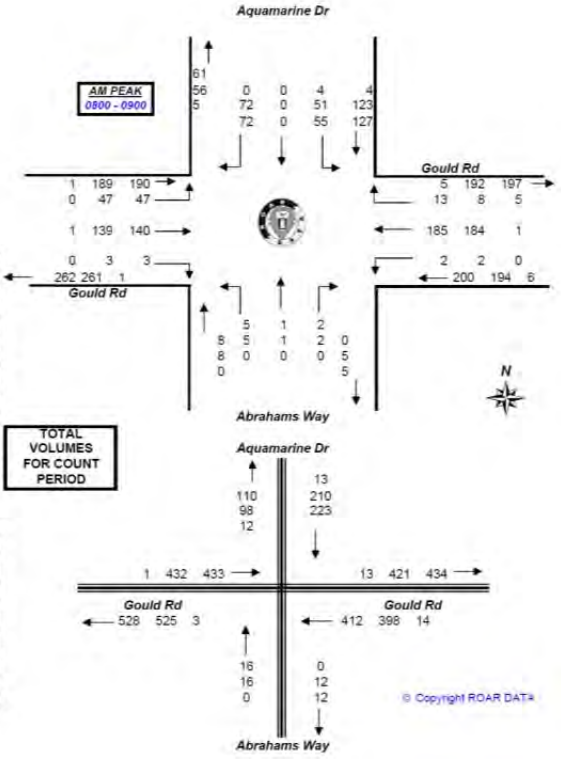
Client : Craig Hazell Traffic Solutions
Job No/Name : 3516 CLAYMORE Traffic Counts
Day/Date : Tuesday 22nd March 2011

Peds

Time Per	NORTH Aquamarine Dr UNCLASSIFIED	WEST Gould Rd UNCLASSIFIED	SOUTH Abrahams Way UNCLASSIFIED	EAST Gould Rd UNCLASSIFIED	TOT
0630 - 0645	1	0	0	0	1
0645 - 0700	0	0	0	0	0
0700 - 0715	0	0	0	0	0
0715 - 0730	0	0	2	1	3
0730 - 0745	1	0	1	1	3
0745 - 0800	2	0	0	0	2
0800 - 0815	0	0	0	2	2
0815 - 0830	0	0	0	0	0
0830 - 0845	0	3	0	0	3
0845 - 0900	0	0	3	0	3
0900 - 0915	0	0	2	0	2
0915 - 0930	0	0	0	1	1
Period End	4	3	8	5	20

Peds

Peak Per	NORTH Aquamarine Dr UNCLASSIFIED	WEST Gould Rd UNCLASSIFIED	SOUTH Abrahams Way UNCLASSIFIED	EAST Gould Rd UNCLASSIFIED	TOT
0630 - 0730	1	0	2	1	4
0645 - 0745	1	0	3	2	6
0700 - 0800	3	0	3	2	8
0715 - 0815	3	0	3	4	10
0730 - 0830	3	0	1	3	7
0745 - 0845	2	3	0	2	7
0800 - 0900	0	3	3	2	8
0815 - 0915	0	3	5	0	8
0830 - 0930	0	3	5	1	9
PEAK HR	0	3	3	2	8



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849.
Mobile.0418239019

Client : Craig Hazell Traffic Solutions
Job No/Name : 3516 CLAYMORE Traffic Counts
Day/Date : Tuesday 22nd March 2011

PEDS	WEST	NORTH	EAST	
Time Per	Bagdally Rd	Dobell Rd	Bagdally Rd	TOT
1500 - 1515	4	4	0	8
1515 - 1530	8	2	0	10
1530 - 1545	0	0	2	2
1545 - 1600	0	1	2	3
1600 - 1615	3	0	2	5
1615 - 1630	3	1	2	6
1630 - 1645	0	4	2	6
1645 - 1700	0	1	1	2
1700 - 1715	5	0	1	6
1715 - 1730	0	1	1	2
1730 - 1745	0	0	0	0
1745 - 1800	0	0	0	0
Per End	23	14	13	50

PEDS	WEST	NORTH	EAST	
Peak Per	Bagdally Rd	Dobell Rd	Bagdally Rd	TOT
1500 - 1600	12	7	4	23
1515 - 1615	11	3	6	20
1530 - 1630	6	2	8	16
1545 - 1645	6	6	8	20
1600 - 1700	6	6	7	19
1615 - 1715	8	6	6	20
1630 - 1730	5	6	5	16
1645 - 1745	5	2	3	10
1700 - 1800	5	1	2	8
PEAK HR	11	3	6	20

Lights	WEST		NORTH		EAST		
	Bagdally Rd		Dobell Rd		Bagdally Rd		
Time Per	T	L	R	L	R	T	TOT
1500 - 1515	136	32	13	57	50	119	407
1515 - 1530	175	9	2	70	52	93	401
1530 - 1545	108	1	1	61	60	78	309
1545 - 1600	95	0	1	63	77	79	315
1600 - 1615	89	2	3	54	62	83	293
1615 - 1630	116	4	3	51	76	108	358
1630 - 1645	74	6	3	44	65	118	310
1645 - 1700	102	2	0	55	58	103	320
1700 - 1715	82	2	1	54	66	121	325
1715 - 1730	79	1	3	51	71	110	315
1730 - 1745	87	3	0	54	64	118	326
1745 - 1800	96	0	1	56	63	131	347
Per End	1239	62	31	670	763	1261	4026

Heavies	WEST		NORTH		EAST		
	Bagdally Rd		Dobell Rd		Bagdally Rd		
Time Per	T	L	R	L	R	T	TOT
1500 - 1515	0	1	0	1	0	4	6
1515 - 1530	9	0	0	0	3	2	14
1530 - 1545	3	0	0	0	0	2	5
1545 - 1600	1	0	0	2	2	0	5
1600 - 1615	1	0	0	1	2	0	4
1615 - 1630	0	0	0	0	1	2	3
1630 - 1645	0	0	0	0	0	0	0
1645 - 1700	1	0	0	2	1	1	5
1700 - 1715	0	0	0	0	1	2	3
1715 - 1730	0	0	0	0	1	0	1
1730 - 1745	1	0	0	1	1	0	3
1745 - 1800	0	0	0	0	0	0	0
Per End	16	1	0	7	12	13	49

Combined	WEST		NORTH		EAST		
	Bagdally Rd		Dobell Rd		Bagdally Rd		
Time Per	T	L	R	L	R	T	TOT
1500 - 1515	136	33	13	58	50	123	413
1515 - 1530	184	9	2	70	55	95	415
1530 - 1545	111	1	1	61	60	80	314
1545 - 1600	96	0	1	65	79	79	320
1600 - 1615	90	2	3	55	64	83	297
1615 - 1630	116	4	3	51	77	110	361
1630 - 1645	74	6	3	44	65	118	310
1645 - 1700	103	2	0	57	59	104	325
1700 - 1715	82	2	1	54	66	123	328
1715 - 1730	79	1	3	51	72	110	316
1730 - 1745	88	3	0	55	65	118	329
1745 - 1800	96	0	1	56	63	131	347
Per End	1255	63	31	677	775	1274	4075

Lights	WEST		NORTH		EAST		
	Bagdally Rd		Dobell Rd		Bagdally Rd		
Peak Per	T	L	R	L	R	T	TOT
1500 - 1600	514	42	17	251	239	369	1432
1515 - 1615	467	12	7	248	251	333	1318
1530 - 1630	408	7	8	229	275	348	1275
1545 - 1645	374	12	10	212	280	388	1276
1600 - 1700	381	14	9	204	261	412	1281
1615 - 1715	374	14	7	204	264	450	1313
1630 - 1730	337	11	7	204	259	452	1270
1645 - 1745	350	8	4	214	258	452	1286
1700 - 1800	344	6	5	215	263	480	1313
PEAK HR	467	12	7	248	251	333	1318

Heavies	WEST		NORTH		EAST		
	Bagdally Rd		Dobell Rd		Bagdally Rd		
Peak Per	T	L	R	L	R	T	TOT
1500 - 1600	13	1	0	3	5	8	30
1515 - 1615	14	0	0	3	7	4	28
1530 - 1630	5	0	0	3	5	4	17
1545 - 1645	2	0	0	3	5	2	12
1600 - 1700	2	0	0	3	4	3	12
1615 - 1715	1	0	0	2	3	5	11
1630 - 1730	1	0	0	2	3	3	9
1645 - 1745	2	0	0	3	4	3	12
1700 - 1800	1	0	0	1	3	2	7
PEAK HR	14	0	0	3	7	4	28

Combined	WEST		NORTH		EAST		
	Bagdally Rd		Dobell Rd		Bagdally Rd		
Peak Per	T	L	R	L	R	T	TOT
1500 - 1600	527	43	17	254	244	377	1462
1515 - 1615	481	12	7	251	258	337	1346
1530 - 1630	413	7	8	232	280	352	1292
1545 - 1645	376	12	10	215	285	390	1288
1600 - 1700	383	14	9	207	265	415	1293
1615 - 1715	375	14	7	206	267	455	1324
1630 - 1730	338	11	7	206	262	455	1279
1645 - 1745	352	8	4	217	262	455	1298
1700 - 1800	345	6	5	216	266	482	1320
PEAK HR	481	12	7	251	258	337	1346

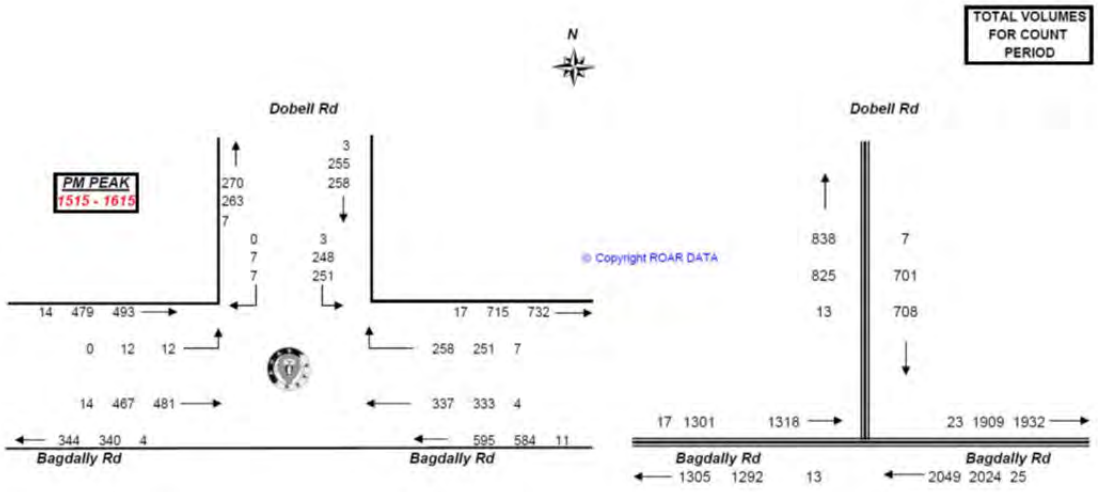
R.O.A.R. DATA

Reliable, Original & Authentic Results

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

Client : Craig Hazell Traffic Solutions
Job No/Name : 3516 CLAYMORE Traffic Counts
Day/Date : Tuesday 22nd March 2011

TOTAL VOLUMES FOR COUNT PERIOD



Hourly Classification Report - Light Vehicles

Traffic Counting Site: Claymore
Detailed Location: Badgally Road, Btn Eagle Vale Dr & Clydesdale Dr
Direction: Southbound

Date	Time	Total	1	2
12/04/2011 Total		2,091	2,071	20
13/04/2011 Total		3,949	3,919	30
14/04/2011 Total		4,340	4,313	27
15/04/2011 Total		4,328	4,283	45
16/04/2011 Total		4,341	4,305	36
17/04/2011 Total		3,766	3,735	31
18/04/2011 Total		3,728	3,709	19
19/04/2011 Total		4,069	4,027	42
20/04/2011 Total		4,129	4,089	40
21/04/2011 Total		1,291	1,275	16
Grand Total		36,032	35,726	306

In profile: Vehicles = 36032 / 69026 (52.20%)

Hourly Classification Report - Heavy Vehicles

Traffic Counting Site: Claymore
Detailed Location: Badgally Road, Btn Eagle Vale Dr & Clydesdale Dr
Direction: Southbound

Date	Time	Total	3	4	5	6	7	8	9	10	11	12
12/04/2011 Total		52	47	2	0	1	1	0	1	0	0	0
13/04/2011 Total		101	81	7	4	1	7	0	1	0	0	0
14/04/2011 Total		103	85	10	1	1	5	0	1	0	0	0
15/04/2011 Total		103	91	3	2	1	2	3	1	0	0	0
16/04/2011 Total		81	67	5	3	1	0	1	4	0	0	0
17/04/2011 Total		52	47	0	3	2	0	0	0	0	0	0
18/04/2011 Total		120	106	7	2	0	2	0	2	0	1	0
19/04/2011 Total		134	84	24	3	1	2	6	14	0	0	0
20/04/2011 Total		97	79	7	2	1	5	0	3	0	0	0
21/04/2011 Total		46	31	9	0	0	2	0	3	1	0	0
Grand Total		889	718	74	20	9	26	10	30	1	1	0

In profile: Vehicles = 889 / 69026 (1.29%)

Hourly Classification Report - Light Vehicles

Traffic Counting Site: Claymore
Detailed Location: Badgally Road, Btn Eagle Vale Dr & Clydesdale Dr
Direction: Northbound

Date	Time	Total	1	2
12/04/2011 Total		2,463	2,449	14
13/04/2011 Total		3,516	3,487	29
14/04/2011 Total		3,853	3,831	22
15/04/2011 Total		3,786	3,752	34
16/04/2011 Total		3,706	3,686	20
17/04/2011 Total		3,236	3,215	21
18/04/2011 Total		3,258	3,237	21
19/04/2011 Total		3,557	3,519	38
20/04/2011 Total		3,589	3,556	33
21/04/2011 Total		569	561	8
Grand Total		31,533	31,293	240

In profile: Vehicles = 31533 / 69026 (45.68%)

Hourly Classification Report - Heavy Vehicles

Traffic Counting Site: Claymore
Detailed Location: Badgally Road, Btn Eagle Vale Dr & Clydesdale Dr
Direction: Northbound

Date	Time	Total	3	4	5	6	7	8	9	10	11	12
12/04/2011 Total		38	33	2	0	2	1	0	0	0	0	0
13/04/2011 Total		61	50	8	3	0	0	0	0	0	0	0
14/04/2011 Total		58	47	7	1	0	0	0	3	0	0	0
15/04/2011 Total		61	50	4	0	1	4	1	1	0	0	0
16/04/2011 Total		31	28	3	0	0	0	0	0	0	0	0
17/04/2011 Total		32	28	0	2	0	1	0	1	0	0	0
18/04/2011 Total		75	68	3	0	0	0	0	4	0	0	0
19/04/2011 Total		117	60	27	3	3	0	1	20	2	1	0
20/04/2011 Total		54	37	12	1	1	2	0	1	0	0	0
21/04/2011 Total		30	19	4	0	0	2	0	4	1	0	0
Grand Total		557	420	70	10	7	10	2	34	3	1	0

In profile: Vehicles = 557 / 69026 (0.81%)

Hourly Classification Report - Light Vehicles

Traffic Counting Site: Claymore
Detailed Location: Badgally Road, Btn Highway and Dobell Road
Direction: Southbound

Date	Time	Total	1	2
12/04/2011 Total		3,730	3,709	21
13/04/2011 Total		6,340	6,285	55
14/04/2011 Total		7,040	6,990	50
15/04/2011 Total		7,079	7,010	69
16/04/2011 Total		6,989	6,938	51
17/04/2011 Total		6,067	6,022	45
18/04/2011 Total		6,116	6,081	35
19/04/2011 Total		6,597	6,526	71
20/04/2011 Total		6,797	6,737	60
21/04/2011 Total		2,085	2,065	20
Grand Total		58,840	58,363	477

In profile: Vehicles = 58840 / 115767 (50.83%)

Hourly Classification Report - Heavy Vehicles

Traffic Counting Site: Claymore
Badgally Road, Btn Highway and Dobell
Detailed Location: Road
Direction: Southbound

Date	Time	Total	3	4	5	6	7	8	9	10	11	12
12/04/2011 Total		142	113	19	5	1	2	0	2	0	0	0
13/04/2011 Total		262	204	37	8	1	7	1	4	0	0	0
14/04/2011 Total		250	198	33	4	1	6	1	5	1	0	1
15/04/2011 Total		257	207	30	3	4	3	7	3	0	0	0
16/04/2011 Total		168	138	22	2	1	1	0	3	0	0	1
17/04/2011 Total		121	93	20	2	4	1	0	1	0	0	0
18/04/2011 Total		271	223	37	2	1	2	0	5	0	1	0
19/04/2011 Total		298	202	57	7	2	4	8	17	0	1	0
20/04/2011 Total		242	190	34	4	1	7	1	5	0	0	0
21/04/2011 Total		97	78	10	2	0	0	1	5	1	0	0
Grand Total		2,108	1,646	299	39	16	33	19	50	2	2	2

In profile: Vehicles = 2108 / 115767 (1.82%)

Hourly Classification Report - Light Vehicles

Traffic Counting Site: Claymore
Detailed Location: Badgally Road, Btn Highway and Dobell Road
Direction: Northbound

Date	Time	Total	1	2
12/04/2011 Total		4,376	4,346	30
13/04/2011 Total		5,868	5,815	53
14/04/2011 Total		6,514	6,482	32
15/04/2011 Total		6,376	6,324	52
16/04/2011 Total		6,219	6,175	44
17/04/2011 Total		5,483	5,442	41
18/04/2011 Total		5,558	5,508	50
19/04/2011 Total		6,012	5,950	62
20/04/2011 Total		6,149	6,099	50
21/04/2011 Total		962	950	12
Grand Total		53,517	53,091	426

In profile: Vehicles = 53517 / 115767 (46.23%)

Hourly Classification Report - Heavy Vehicles

Traffic Counting Site: Claymore
Detailed Location: Badgally Road, Btn Highway and Dobell Road
Direction: Northbound

Date	Time	Total	3	4	5	6	7	8	9	10	11	12
12/04/2011 Total		95	88	2	1	1	1	0	1	0	1	0
13/04/2011 Total		156	139	9	7	0	1	0	0	0	0	0
14/04/2011 Total		138	125	6	1	1	0	0	5	0	0	0
15/04/2011 Total		151	135	3	1	3	3	1	3	0	1	1
16/04/2011 Total		91	84	3	1	1	0	0	2	0	0	0
17/04/2011 Total		65	59	2	2	0	1	0	1	0	0	0
18/04/2011 Total		156	143	2	0	1	1	0	7	1	1	0
19/04/2011 Total		195	151	29	0	1	1	1	10	1	1	0
20/04/2011 Total		152	130	12	1	1	3	1	3	0	1	0
21/04/2011 Total		48	38	6	1	0	1	0	1	1	0	0
Grand Total		1,247	1,092	74	15	9	12	3	33	3	5	1

In profile: Vehicles = 1247 / 115767 (1.08%)

APPENDIX C – Intersection 'SIDRA' Summary Output Files

MOVEMENT SUMMARY

Site: Badgally and Cydesdale AM Future TCS

Badgally, Clydesdale and Glenroy
Signals - Fixed Time Cycle Time = 80 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Badgally Rd											
4	L	58	0.0	0.454	20.2	LOS B	6.0	42.3	0.59	0.86	39.8
5	T	593	0.0	0.454	13.4	LOS A	12.7	89.1	0.67	0.58	41.7
6	R	82	0.0	0.590	50.3	LOS D	4.7	32.9	1.00	0.79	25.1
Approach		733	0.0	0.589	18.1	LOS B	12.7	89.1	0.70	0.62	38.7
East: Glenroy Rd											
7	L	142	0.0	0.322	35.9	LOS C	6.2	43.5	0.87	0.79	30.2
8	T	21	0.0	0.137	26.4	LOS B	2.4	16.9	0.82	0.63	32.2
9	R	31	0.0	0.137	34.5	LOS C	2.4	16.9	0.82	0.77	31.4
Approach		194	0.0	0.322	34.6	LOS C	6.2	43.5	0.86	0.77	30.6
North: Badgally Rd											
10	L	19	0.0	0.842	32.3	LOS C	13.2	92.4	0.80	1.00	33.4
11	T	1188	0.0	0.843	24.1	LOS B	31.8	222.5	0.89	0.89	34.3
12	R	42	0.0	0.302	48.7	LOS D	2.5	17.4	0.98	0.73	25.6
Approach		1249	0.0	0.843	25.0	LOS B	31.8	222.5	0.89	0.89	33.9
West: Clydesdale Rd											
1	L	27	0.0	0.085	34.0	LOS C	1.8	12.4	0.81	0.75	31.4
2	T	11	0.0	0.085	25.8	LOS B	1.8	12.4	0.81	0.60	32.2
3	R	38	0.0	0.145	39.2	LOS C	2.0	13.7	0.88	0.74	28.9
Approach		76	0.0	0.145	35.4	LOS C	2.0	13.7	0.84	0.72	30.2
All Vehicles		2252	0.0	0.843	23.9	LOS B	31.8	222.5	0.83	0.79	34.8

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

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	Across S approach	53	34.2	LOS D	0.1	0.1	0.93	0.93
P5	Across E approach	53	15.6	LOS B	0.1	0.1	0.63	0.63
P7	Across N approach	53	34.2	LOS D	0.1	0.1	0.93	0.93
P1	Across W approach	53	15.6	LOS B	0.1	0.1	0.63	0.63
All Pedestrians		212	24.9				0.78	0.78

Level of Service (Aver. Int. Delay): LOS C. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS D. LOS Method for individual pedestrian movements: Delay (HCM).

SIDRA INTERSECTION

MOVEMENT SUMMARY

Site: Badgally and Cydesdale PM Future TCS

Badgally, Clydesdale and Glenroy
Signals - Fixed Time Cycle Time = 70 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Badgally Rd											
4	L	16	0.0	0.850	36.2	LOS C	13.2	92.4	0.83	1.04	31.5
5	T	921	0.0	0.845	28.7	LOS C	22.5	157.8	0.93	0.96	31.9
6	R	226	0.0	0.776	43.2	LOS D	10.0	70.1	1.00	0.91	27.4
Approach		1163	0.0	0.845	31.6	LOS C	22.5	157.8	0.94	0.95	30.9
East: Glenroy Rd											
7	L	129	0.0	0.257	30.1	LOS C	4.9	34.2	0.82	0.78	32.8
8	T	11	0.0	0.073	20.7	LOS B	1.2	8.5	0.77	0.57	35.2
9	R	20	0.0	0.073	28.8	LOS C	1.2	8.5	0.77	0.74	34.0
Approach		160	0.0	0.257	29.3	LOS C	4.9	34.2	0.81	0.76	33.1
North: Badgally Rd											
10	L	43	0.0	0.539	26.0	LOS B	7.2	50.6	0.77	0.86	36.5
11	T	556	0.0	0.540	19.0	LOS B	12.0	84.0	0.82	0.70	37.3
12	R	23	0.0	0.079	36.1	LOS C	1.1	7.6	0.88	0.71	30.1
Approach		622	0.0	0.540	20.1	LOS B	12.0	84.0	0.82	0.71	36.9
West: Clydesdale Rd											
1	L	9	0.0	0.098	28.9	LOS C	2.0	14.1	0.78	0.81	34.8
2	T	42	0.0	0.098	20.8	LOS B	2.0	14.1	0.78	0.59	36.0
3	R	38	0.0	0.117	31.8	LOS C	1.6	11.3	0.82	0.73	32.0
Approach		89	0.0	0.117	26.3	LOS B	2.0	14.1	0.80	0.67	34.1
All Vehicles		2035	0.0	0.845	27.7	LOS B	22.5	157.8	0.89	0.85	32.8

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

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	Across S approach	53	29.3	LOS C	0.1	0.1	0.91	0.91
P5	Across E approach	53	21.6	LOS C	0.1	0.1	0.79	0.79
P7	Across N approach	53	29.3	LOS C	0.1	0.1	0.91	0.91
P1	Across W approach	53	21.6	LOS C	0.1	0.1	0.79	0.79
All Pedestrians		212	25.4				0.85	0.85

Level of Service (Aver. Int. Delay): LOS C. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS C. LOS Method for individual pedestrian movements: Delay (HCM).

SIDRA INTERSECTION

MOVEMENT SUMMARY

Site: Badgally and Clydesdale Ex AM

Badgally and Clydesdale
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Badgally rd											
1	L	58	0.0	0.308	7.3	LOS A	2.4	16.9	0.19	0.59	49.3
2	T	387	0.0	0.308	6.5	LOS A	2.4	16.9	0.19	0.50	50.0
Approach		445	0.0	0.308	6.6	LOS A	2.4	16.9	0.19	0.51	49.9
North: Badgally rd											
8	T	631	0.0	0.451	6.5	LOS A	4.5	31.8	0.22	0.49	49.8
9	R	42	0.0	0.453	11.2	LOS A	4.5	31.8	0.22	0.79	46.2
Approach		673	0.0	0.451	6.8	LOS A	4.5	31.8	0.22	0.51	49.5
West: Clydesdale rd											
10	L	27	0.0	0.069	9.1	LOS A	0.4	3.1	0.50	0.64	47.4
12	R	38	0.0	0.069	12.9	LOS A	0.4	3.1	0.50	0.73	44.7
Approach		65	0.0	0.069	11.3	LOS A	0.4	3.1	0.50	0.69	45.8
All Vehicles		1183	0.0	0.451	7.0	LOS A	4.5	31.8	0.22	0.52	49.4

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.

SIDRA INTERSECTION

MOVEMENT SUMMARY

Site: Badgally and Clydesdale Ex PM

Badgally and Clydesdale
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Badgally rd											
1	L	16	0.0	0.272	7.2	LOS A	2.0	14.3	0.12	0.60	49.6
2	T	395	0.0	0.271	6.4	LOS A	2.0	14.3	0.12	0.51	50.4
Approach		411	0.0	0.271	6.4	LOS A	2.0	14.3	0.12	0.51	50.4
North: Badgally rd											
8	T	488	0.0	0.349	6.5	LOS A	3.1	21.6	0.20	0.50	49.9
9	R	23	0.0	0.351	11.1	LOS A	3.1	21.6	0.20	0.80	46.3
Approach		512	0.0	0.349	6.7	LOS A	3.1	21.6	0.20	0.51	49.8
West: Clydesdale rd											
10	L	9	0.0	0.050	9.1	LOS A	0.3	2.2	0.49	0.62	47.3
12	R	38	0.0	0.050	12.9	LOS A	0.3	2.2	0.49	0.71	44.6
Approach		47	0.0	0.050	12.2	LOS A	0.3	2.2	0.49	0.70	45.1
All Vehicles		969	0.0	0.349	6.8	LOS A	3.1	21.6	0.18	0.52	49.8

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 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.

SIDRA INTERSECTION

MOVEMENT SUMMARY

Site: Badgally and Dobell Ex AM

Badgallt and Dobell
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Badgally Rd											
2	T	451	0.0	0.443	6.6	LOS A	4.8	33.6	0.28	0.48	49.3
3	R	188	0.0	0.443	11.2	LOS A	4.8	33.6	0.28	0.73	46.0
Approach		639	0.0	0.443	7.9	LOS A	4.8	33.6	0.28	0.56	48.3
East: Dobell Rd											
4	L	317	0.0	0.555	15.4	LOS B	6.0	41.9	0.91	1.02	42.0
6	R	48	0.0	0.557	19.2	LOS B	6.0	41.9	0.91	1.04	40.1
Approach		365	0.0	0.555	15.9	LOS B	6.0	41.9	0.91	1.03	41.7
North: Badgally rd											
7	L	17	0.0	0.602	8.8	LOS A	6.4	44.9	0.60	0.66	47.6
8	T	704	0.0	0.607	8.0	LOS A	6.4	44.9	0.60	0.62	47.6
Approach		721	0.0	0.607	8.0	LOS A	6.4	44.9	0.60	0.62	47.6
All Vehicles		1725	0.0	0.607	9.6	LOS A	6.4	44.9	0.54	0.68	46.5

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 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.

SIDRA INTERSECTION

MOVEMENT SUMMARY

Site: Badgally and Dobell Ex PM

Badgally and Dobell
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Badgally Rd											
2	T	355	0.0	0.379	6.3	LOS A	3.8	26.5	0.08	0.48	50.6
3	R	272	0.0	0.379	11.0	LOS A	3.8	26.5	0.08	0.79	46.3
Approach		626	0.0	0.380	8.3	LOS A	3.8	26.5	0.08	0.61	48.6
East: Dobell Rd											
4	L	264	0.0	0.334	10.6	LOS A	2.7	18.8	0.71	0.79	46.4
6	R	7	0.0	0.335	14.4	LOS A	2.7	18.8	0.71	0.85	43.8
Approach		272	0.0	0.334	10.7	LOS A	2.7	18.8	0.71	0.79	46.3
North: Badgally rd											
7	L	13	0.0	0.486	9.2	LOS A	4.1	28.8	0.58	0.71	47.7
8	T	506	0.0	0.483	8.4	LOS A	4.1	28.8	0.58	0.66	47.7
Approach		519	0.0	0.483	8.4	LOS A	4.1	28.8	0.58	0.66	47.7
All Vehicles		1417	0.0	0.483	8.8	LOS A	4.1	28.8	0.38	0.67	47.8

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 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.

SIDRA INTERSECTION

MOVEMENT SUMMARY

Site: Badgally and Dobell Future AM

Badgallt and Dobell
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Badgally Rd											
2	T	712	0.0	0.560	6.4	LOS A	7.7	53.8	0.18	0.47	50.0
3	R	189	0.0	0.561	11.0	LOS A	7.7	53.8	0.18	0.77	46.2
Approach		901	0.0	0.560	7.3	LOS A	7.7	53.8	0.18	0.54	49.1
East: Dobell Rd											
4	L	283	0.0	1.299	342.5	LOS F	60.2	421.7	1.00	2.96	5.7
6	R	21	0.0	1.316	346.4	LOS F	60.2	421.7	1.00	2.96	5.9
Approach		304	0.0	1.299	342.8	LOS F	60.2	421.7	1.00	2.96	5.7
North: Badgally rd											
7	L	11	0.0	1.053	110.7	LOS F	116.8	817.5	1.00	2.56	14.9
8	T	1358	0.0	1.102	109.8	LOS F	116.8	817.5	1.00	2.56	14.9
Approach		1368	0.0	1.103	109.8	LOS F	116.8	817.5	1.00	2.56	14.9
All Vehicles		2574	0.0	1.299	101.5	LOS F	116.8	817.5	0.71	1.90	15.8

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

SIDRA INTERSECTION

MOVEMENT SUMMARY

Site: Badgally and Dobell Future AM 2 lane

Badgallt and Dobell
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Badgally Rd											
2	T	712	0.0	0.444	6.3	LOS A	4.2	29.3	0.14	0.50	50.4
3	R	189	0.0	0.185	11.1	LOS A	1.2	8.3	0.13	0.68	46.0
Approach		901	0.0	0.444	7.3	LOS A	4.2	29.3	0.14	0.53	49.3
East: Dobell Rd											
4	L	283	0.0	0.581	15.0	LOS B	4.1	28.4	0.81	1.01	42.3
6	R	21	0.0	0.585	19.0	LOS B	4.1	28.4	0.81	1.05	40.2
Approach		304	0.0	0.582	15.3	LOS B	4.1	28.4	0.81	1.01	42.2
North: Badgally rd											
7	L	11	0.0	0.554	8.5	LOS A	4.6	32.2	0.46	0.68	48.2
8	T	1358	0.0	0.552	7.4	LOS A	4.6	32.2	0.46	0.60	48.4
Approach		1368	0.0	0.553	7.4	LOS A	4.6	32.2	0.46	0.60	48.4
All Vehicles		2574	0.0	0.582	8.3	LOS A	4.6	32.2	0.39	0.62	47.9

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.

SIDRA INTERSECTION

MOVEMENT SUMMARY

Site: Badgally and Dobell Future PM

Badgally and Dobell
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Badgally Rd											
2	T	1163	0.0	0.828	6.4	LOS A	23.9	167.5	0.22	0.45	49.8
3	R	225	0.0	0.828	11.0	LOS A	23.9	167.5	0.22	0.74	46.2
Approach		1388	0.0	0.828	7.1	LOS A	23.9	167.5	0.22	0.50	49.1
East: Dobell Rd											
4	L	304	0.0	0.445	12.6	LOS A	4.1	28.5	0.84	0.91	44.4
6	R	7	0.0	0.433	16.5	LOS B	4.1	28.5	0.84	0.95	42.2
Approach		312	0.0	0.446	12.7	LOS B	4.1	28.5	0.84	0.91	44.4
North: Badgally rd											
7	L	13	0.0	0.574	9.1	LOS A	5.7	40.2	0.61	0.69	47.5
8	T	647	0.0	0.581	8.2	LOS A	5.7	40.2	0.61	0.65	47.5
Approach		660	0.0	0.581	8.2	LOS A	5.7	40.2	0.61	0.65	47.5
All Vehicles		2360	0.0	0.828	8.2	LOS A	23.9	167.5	0.41	0.60	48.0

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.

SIDRA INTERSECTION