

Appendix 4: Traffic Impact and Parking Assessment

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**BRUMBIES RUGBY
UNION**

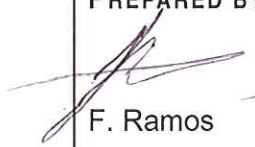
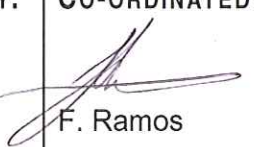
**BLOCK 15
SECTION 42
GRIFFITH**

**TRAFFIC IMPACT AND
PARKING ASSESSMENT**

DECEMBER 2010

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AMENDMENTS

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1.0 INTRODUCTION

1.1 BACKGROUND

This report forms part of the supporting documentation for the draft variation to the Territory Plan. The proposal is to vary the Territory Plan to permit the rezoning of Block 15 Section 42 Griffith from CZ6: Leisure and Accommodation to RZ4- Medium Density Residential. This report addresses traffic impacts as set out in the Territory Plan Variation scoping outline prepared by ACTPLA 22 September 2009. The location of the subject site is shown below in Figure 1.1 and Figure 1.2.

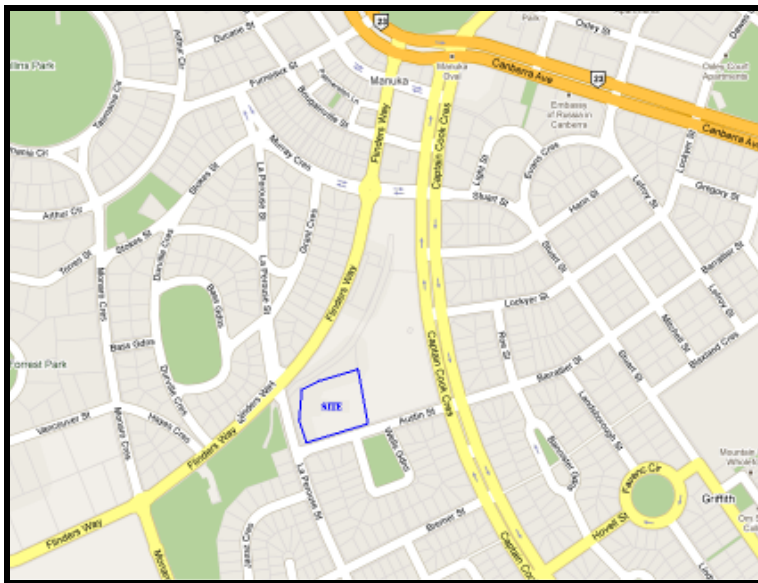


Figure 1.1 Site Location

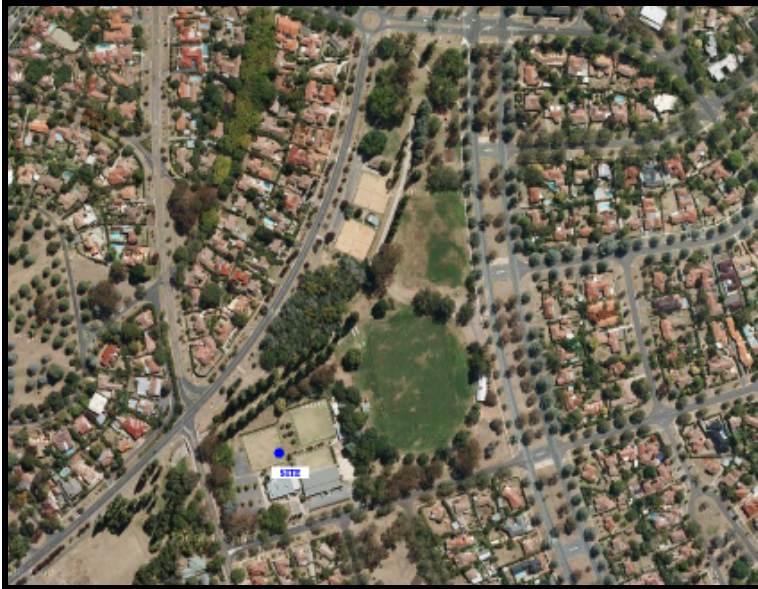


Figure 1.2 Site Location (Image)

1.2 AIM

The purpose of this report is to:

- Describe the existing road network and traffic conditions;
- Describe the development proposal;
- Assess the required onsite parking demand; and
- Assess the traffic impact due to proposed development.

1.3 SCOPE OF REPORT

This report begins with a summary of the existing development and adjacent road network conditions. The scale of the proposed development, its access arrangements, and expected traffic operating characteristics are then described. The section which follows discusses the assessment of parking and likely traffic impacts. The report concludes with a summary of key conclusions and recommendations.

The methodology for this Traffic Impact and Parking Assessment has been submitted to Territory and Municipal Services (TAMS). The methodology has been attached in *Appendix D*.

2.0 EXISTING CONDITIONS

2.1 SUBJECT SITE

The site for the proposed development is situated on Block 15 of Section 42, Griffith, ACT. The site is bounded by La Perouse Street to the west, Austin Street to the south, Griffith playing fields to the east and existing floodway to the north. The other nearby roads that are anticipated to be used by the proposed development are Flinders Way and Captain Cook Crescent.

Block 15 lies within the Commercial-CZ6-Leisure and Accommodation zone as per the current ACT Territory Plan. The site is currently occupied by ACT Brumbies Headquarters. The existing access arrangement includes three access driveways off Austin Street. Land uses in close proximity of the site predominantly include residential and commercial land uses as well as recreation parks.

2.2 ADJACENT ROAD NETWORK

Captain Cook Crescent is a divided sub-arterial road with two lanes in the northbound direction (one lane being used for on-street parking) and two lanes in the southbound direction. Flinders Way is an undivided major collector road with one lane in the northbound direction and two lanes in the southbound direction (one lane being used for on-street parking). La Perouse Street is an undivided major collector road with one lane in each direction. Murray Crescent and Austin Street are considered minor collector roads with two lanes in each direction and one lane in each direction respectively. The indicative road classification for the adjacent road network is summarised in Table 2.1 below.

Table 2.1 Adjacent Road Network and Classification

Road	Classification
Captain Cook Crescent**	Sub Arterial Road
Flinders Way*	Major Collector Road
La Perouse Street*	Major Collector Road
Murray Crescent/Stuart Street	Minor Collector Road
Austin Street	Minor Collector Road

* *Flinders Way and La Perouse Street are classified as Major Collector Roads in accordance with the TAMS' Design Standards for Urban Infrastructure, Part 8: Guide Signs (Appendix A: Guide Signs Road Hierarchy)*

** *See following explanation on Captain Cook Crescent*

Captain Cook Crescent – Road Classification

TAMS' Design Standards for Urban Infrastructure, Part 8: Guide Signs lists Captain Cook Crescent as a Major Collector Road. However, it also provides the following definitions for road classifications:

Major Collector Road: *“Major Collector Roads provide the link between the arterial road network and lower order roads within the suburbs. They are generally either the main access roads into the suburb, connecting the suburb shops with the adjacent Arterial Roads or are located between suburbs and serve a maximum of four suburbs”.*

Arterial Roads: *“Arterial Roads perform the main traffic-carrying function between and within towns”.*

More detailed definitions are provided on TAMS' website as follows:

Major Collector Roads: *“Major Collector Roads collect and distribute traffic within residential, industrial and commercial areas. They form the link between the primary network and the roads within local areas and should carry only traffic originating or terminating in the area. The volume of traffic carried is constrained by environmental objectives – safety and traffic noise – rather than road geometry and reflects that limited area that they serve. Direct property access is still permissible but the level of traffic may dictate that access and egress arrangements should be such that vehicles can exit properties in a forward direction”.*

Arterial Roads: *“Arterial Roads predominantly serve longer distance travel within a district and through traffic from one district to another, and form the principal avenues of communication for metropolitan scale traffic movements. They include limited access roads and parkways (or freeways) having full access control and grade separated inter-sections. A small number have higher levels of property access for urban design reasons, for example Northbourne Avenue, or reflect the planning and design parameters of the time of their construction, for example, Limestone Avenue. Traffic capacity is a function of the design of the road rather than being constrained by environmental objectives”.*

Based on the definitions provided by TAMS, Captain Cook Crescent consists of characteristics of both classifications. However, it more closely resembles an Arterial Road, particularly because its main use is to facilitate longer distance travel through

the area. As such, Captain Cook Crescent is considered to be an Arterial Road. It should also be noted that TAMS' road classification definitions are in accordance with ACTPLA's definitions.

Mott MacDonald Hughes Trueman are of the opinion that the role of Captain Cook Crescent could be classified as a sub-arterial road where (similar to roads such as Limestone Avenue, Belconnen Way and Mouat Street) traffic volumes in excess of 6000vpd will not lead to any operational or safety compromises.

2.3 EXISTING TRAFFIC VOLUMES

Signalised intersection traffic volumes data (SCATS data) were provided by Roads ACT. The data was obtained for the period between 19/10/2009 and 25/10/2009 for the Captain Cook Crescent / Murray Crescent / Stuart Street intersection. The data revealed that the peak traffic periods occurred on Wednesday at the following times:

- morning peak hour: 8.00am to 9.00am
- evening peak hour: 5.00pm to 6.00pm

Mott MacDonald Hughes Trueman has performed manual traffic counts on Wednesday 28/10/2009 during peak periods for the following intersections:

- Captain Cook Crescent / Austin Street / Barrallier Street; and
- Captain Cook Crescent / Murray Crescent / Stuart Street.

Mott MacDonald Hughes Trueman have also performed manual traffic counts for Flinders Way/La Perouse Street intersection on Wednesday 02/12/2009 and Thursday 03/12/2009 during evening and morning peak period respectively.

The SCATS traffic volumes have been received from Roads ACT for Captain Cook Crescent/ Murray Crescent/ Stuart Street for Wednesday 28/10/2009.

It should be noted that the detectors on some lanes do not distinguish between turning and through movements. Mott MacDonald Hughes Trueman performed subsequent manual traffic counts at these locations to determine the average percentage splits; this was then applied to the SCATS data in the relevant lanes to distinguish between through and turning movements.

The traffic volumes for each intersection have been calibrated in such a way that the leaving traffic at one intersection is equal to the arriving traffic at the next adjacent intersection. The consolidated traffic volumes have been used in the traffic analysis for the proposed development.

The 2009 traffic volumes for the morning peak period (AM Peak) and evening peak period (PM peak) for the adjacent road network are attached in *Appendix B* and summarised in Table 2.2 and Table 2.3.

Table 2.2: Existing Traffic Volumes AM Peak (vph)

Road & Section	Travel Direction				Total
	North	South	East	West	
Captain Cook Cr					
North of Murray Cr/Stuart St	827	266			1,093
North of Austin St/Barrallier St	681	227			908
South of Austin St/Barrallier St	591	199			790
La Perouse St					
North of Flinders Way	119	14			133
South of Flinders Way	319	145			464
Flinders Way					
East of La Perouse St			595	234	829
West of La Perouse St			556	264	820
Austin St					
East of La Perouse St			188	119	307
East of Captain Cook Cr			85	78	163

Table 2.3: Existing Traffic Volumes PM Peak (vph)

Road & Section	Travel Direction				Total
	North	South	East	West	
Captain Cook Cr					
North of Murray Cr/Stuart St	433	441			874
North of Austin St/Barrallier St	261	391			652
South of Austin St/Barrallier St	235	354			589
La Perouse St					
North of Flinders Way	35	67			102
South of Flinders Way	174	319			493
Flinders Way					
East of La Perouse St			347	424	771
West of La Perouse St			370	334	704
Austin St					
East of La Perouse St			110	140	250
East of Captain Cook Cr			74	93	167

The above tables show that Captain Cook Crescent carries 1,093vph during the morning peak period (827vph in the northbound direction) and Flinders Way carries 829vph during the morning peak period (595vph in the eastbound direction). The peak hour traffic volumes on Flinders Way exceed the indicative two-way roadway capacity of 600vph for major collector road as per ACTPLA's Residential Subdivision Development Code (whereby the peak hour roadway capacity is considered as 10% of daily traffic volume i.e. 600vph for 6000vpd). Captain Cook Crescent (which is a divided road with 2 lanes available in each direction), appears to be operating well within its operating capacity. Similarly, based on the road conditions (e.g. road widths, alignments etc.), Flinders Way currently appears to be operating within its operating capacity. It is assumed that the traffic volume on Captain Cook Crescent to the north of Stuart Street/Murray Crescent is relatively higher due to core commercial facilities located to the north of Stuart Street/Murray Crescent.

The traffic volume on La Perouse Street is in the order of 500vph during morning peak period and is within the indicative two-way roadway capacity of 600vph for major collector road as per ACTPLA's Residential Subdivision Development Code (whereby the peak hour roadway capacity is considered as 10% of daily traffic volume i.e. 600vph for 6000vpd). It is noted that previous studies of Dalrymple Street and La Perouse Street have identified significant traffic flows from Hindmarsh Drive along these streets.

On Austin Street, the peak hour traffic volume is relatively higher during morning peak period (i.e. 307vph) than the evening peak period (i.e. 250vph). The two-way Traffic volume on Austin Street (307 vph) is just above the indicative two-way roadway capacity of 300vph for a minor collector road as per ACTPLA's Residential Subdivision Development Code.

The traffic patterns observed indicate that rat-running of commuters travelling towards the City via La Perouse Street and Austin Street contribute high traffic volumes on the adjacent road network during peak periods. The observed traffic patterns are discussed below.

2.4 TRAFFIC PATTERNS

Traffic volumes observed during the morning and evening peak period do not follow the traditional traffic patterns whereby traffic volumes are higher in one direction and lower in the other direction during one peak period and are close to the exact opposite in the other peak period. Such a pattern is typically associated with motorists travelling to work in the morning and returning home in the afternoon period. However, unusual traffic patterns are sometimes observed due to motorists preferring “rat-runs” which are perceived as being quicker routes.

Due to the unusual traffic patterns observed in the vicinity of the site, implementing an ameliorative treatment may result in an undesirable outcome (such as attracting more traffic along a certain route that is demonstrating improved traffic efficiency). As such, it is necessary to gain a thorough appreciation of the current traffic patterns in the local road network prior to implementing a treatment. The observed traffic patterns are discussed below.

2.4.1 LOCAL TRAFFIC

Traffic travelling through the Flinders Way / La Perouse Street intersection includes motorists from the surrounding local area (i.e. the Red Hill suburban area). The majority of the local traffic tends to approach the intersection from the south along La Perouse Street, followed by a relatively even split in terms of the direction taken on arriving at the intersection (i.e. only a slightly higher proportion of motorists turn right along Flinders Way towards Murray Crescent). As such, this traffic tends to follow the traditional traffic patterns associated with suburban areas.

The proportion of traffic associated with the local residential area is less obvious at the Captain Cook Crescent / Murray Crescent / Stuart Street intersection. It is understood that Captain Cook Crescent is performing the function of a sub-arterial road, with a significant proportion of traffic with origins and destinations beyond this local area.

2.4.2 NON-LOCAL TRAFFIC

The other traffic patterns observed consists of a significantly higher traffic volume which appears to be associated with motorists travelling to and from the south and south-west of Canberra. The pattern suggests that Flinders Way and Captain Cook

Crescent act as preferred routes in / out of south Canberra during the morning peak period for motorists travelling from outside the local residential area. However, it appears that motorists use a different route during the evening peak period.

Observations at the Flinders Way / La Perouse Street intersection as well as the Captain Cook Crescent / Murray Crescent / Stuart Street intersection over three hours surrounding the peak periods also confirms that the traffic volume is significantly higher in the morning and that the traffic in the evening is not dispersed over a long period. This further suggests that motorists are travelling along different routes during different peak periods.

It is envisaged that the majority of the non-local traffic originates from the Woden Valley area or further west or south travelling along Hindmarsh Drive. Recognising where the traffic volumes originates allows a thorough understanding of why alternative routes are preferred in different periods. The two roads of most concern to consider for the proposed development include the following roads:

- Flinders Way; and
- Captain Cook Crescent.

Traffic on Flinders Way

While non-local traffic makes up a significant proportion of traffic travelling through the intersection along Flinders Way during the morning peak period, there is a clear disparity between traffic in the morning and traffic in the evening such that there is a significantly higher traffic volume approaching the city in the morning (471vph eastbound) than there is returning in the evening (259vph westbound).

The most logical explanation for this pattern is that the quickest route to Barton / Parkes in the morning peak period is via Hindmarsh Drive, Mugga Way and Flinders Way. However, there are two routes that are quicker in the evening. These routes are as follows:

- Adelaide Avenue and Yarra Glen; and
- Canberra Avenue, Sturt Avenue, Jerrabomberra Avenue and Hindmarsh Drive.

Traffic on Captain Cook Crescent

The same phenomenon has been observed at the Captain Cook Crescent / Murray Crescent / Stuart Street intersection. There is a significantly higher traffic volume approaching the city along Captain Cook Crescent in the morning (578vph northbound) than there is returning in the evening (318vph southbound).

The most logical explanation for this pattern is that it is perceived to be quicker to travel from Hindmarsh Drive to Barton along Captain Cook Crescent in the morning peak period and quicker to return along Canberra Avenue.

Traffic on La Perouse Street

The traffic patterns observed in the local area (as discussed above) suggest that the total non-local traffic volume travelling along La Perouse Street depends solely on the traffic conditions on La Perouse Street being more attractive than alternative routes. Furthermore, given the possibility of alternative routes and that the worst performing movement in or out of La Perouse Street during any peak period is the right turn movement from La Perouse Street to Flinders Way, it is deduced that the ultimate limiting factor determining traffic volumes on La Perouse Street is the performance of the right turn movement from La Perouse Street into Flinders Way. Traffic volumes undertaking this movement will increase until motorists find that this route is saturated, resulting in a relatively long delay time and queuing, to the point that an alternative route (such as the routes discussed above) are preferable. Essentially the performance of each route as well as the performance of each intersection along each route is in equilibrium with each other. Modifying the performance of any movement (particularly at key intersections) could be expected to result in a shift in equilibrium and consequently result in traffic volumes readjusting themselves as though the performance of each route and intersection is trying to return to the initial state of equilibrium.

In light of the above, altering the performance of the movement will have a direct impact on the volume of traffic travelling along La Perouse Street such that improving the performance of the movement will increase traffic along La Perouse Street and worsening the performance of the movement will decrease traffic along La Perouse Street. This is important to note when deciding whether or not a treatment is warranted at the La Perouse Street / Flinders Way intersection, as providing an ameliorative treatment may in fact result in traffic volumes being readjusted to reach a point of equilibrium (i.e. the maximum capacity of the right turn movement).

2.4.3 FLINDERS WAY / LA PEROUSE STREET INTERSECTION

In order to test the theory described above, a SIDRA analysis measuring the performance of the Flinders Way / La Perouse Street intersection was undertaken such that if the results should illustrate that the right turn movement from La Perouse Street into Flinders Way is currently at capacity during the morning peak period if the theory is correct. The results of the analysis confirm that the movement is currently performing at capacity.

The intersection operates as two distinct T-intersections within relatively close proximity to each other which cannot be directly modelled using SIDRA. As such, the intersection was analysed using the following two intersection configurations:

- One 4-way intersection; and
- Two 3-way T-intersection.

The northern T-intersection consists of significantly low traffic volumes turning in and out of La Perouse Street. As such, it was considered necessary to model the southern T-intersection. The results of the analysis are shown below in Table 2.4.

Table 4.10: Flinders Way / La Perouse St 2009 Morning Peak Intersection Performance

Scenario	DOS (%)	Queue (m)	Avg. Delay (sec)	LOS
4-Way Intersection	88	93	46	D
3-Way T-Intersection	96	133	70	E

The results of the analysis indicate that the intersection is currently approaching capacity (assuming the capacity of a 4-way uncontrolled intersection or 3-way T-intersection is a Degree of Saturation (DOS) 90%). In each scenario, the worst performing movement in terms of DOS, queuing and delay time was observed to be the right turn movement from the southern leg of La Perouse Street into Flinders Way and that all other movements are operating within their operational capacity.

While the configuration of the intersection does not match each of the analyses, it is anticipated that the actual performance of the intersection would be somewhere between each scenario modelled (i.e. approximately 90%). For the purpose of this analysis it is not essential to ascertain the intersection's current performance precisely, suffice to note that the intersection is currently at capacity or approaching capacity. Furthermore, the theoretical capacity of DOS 90% may not be an exact representation of the point of saturation at which motorists consider that there will be a better alternative route.

2.4.4 SUPPORTING DOCUMENTATION

A traffic study report dated April 2001, prepared by Maunsell McIntyre Pty Ltd on behalf of the Department of Urban Services to develop a master plan for traffic management along Goyder Street and associated areas in Narrabundah recommended a series of Local Area Traffic Management (LATM) measures that may be implemented to discourage "rat-running" through the area. The report therefore confirms that a significant proportion of traffic along La Perouse Street is "rat-running" traffic.

2.5 SITE COLLISION HISTORY

The site's collision history for the most recent 5 year period has been received from Roads ACT for the following locations:

- Austin Street/ La Perouse Street intersection;
- Flinders Way/La Perouse Street intersection;
- Flinders Way/Murray Crescent intersection;
- Austin Street/Captain Cook Crescent/Barrallier Street intersection;
- Austin Street between La Perouse Street and Wells Road;
- La Perouse Street between Flinders Way and Austin Street and
- Flinders Way between La Perouse Street and Murray Crescent.

The collision history has been attached at *Appendix C*.

The collision history for the following locations shows less than two collisions in the most recent 5 year period and it does not identify any systematic vehicle collision pattern:

- Austin Street between La Perouse Street and Wells Road and
- La Perouse Street between Flinders Way and Austin Street;

The collision history for the Austin Street/ La Perouse Street intersection indicates 5 collisions in the most recent 5 year period involving property damage only and these collisions do not identify any systematic vehicle collision pattern.

The collision history for the Flinders Way / La Perouse Street intersection and Flinders Way/ Murray Crescent intersection indicates 15 collisions and 13 collisions respectively in the most recent 5 year period. It is noted that for both intersections, approximately 13 collisions (altogether) involved vehicles travelling in the same direction (rear end collisions). It is noted that this type of collisions are usual for roundabouts and priority controlled intersections.

The collision history for Austin Street /Captain Cook Crescent/ Barrallier Street intersection shows 22 collisions including 19 collisions involving property damage and 3 collisions involving medical treatment. It appears that the majority of the collisions are cross traffic collisions occurring at the intersection or on the approaching lanes of the intersection.

The following indicative treatments have been suggested in order to reduce cross traffic collisions for the Austin Street/Captain Cook Crescent/Barrallier Street intersection:

- Replacement of "GIVE WAY" signs with "STOP" signs on Austin Street;
- Modifications to concrete traffic islands on approach from both Austin Street and Barrallier Street; and
- Additional pavement markings/arrows to separate through/turning traffic from Austin Street.

The collision history for Flinders Way between La Perouse Street and Murray Crescent indicates 4 collisions in the most recent 5 year period involving property damage only and the collisions do not identify any systematic vehicle collision pattern.

It should be noted that this report only identifies possible treatments (irrespective of the proposed development) that might reduce vehicle collisions to the existing road network in the vicinity. It is anticipated that the separate traffic analysis and study would be required to provide exact details of ameliorative treatments for the above locations as part of an area-wide LATM scheme. Nevertheless, it should be noted that the proposed development is not anticipated to have any significant adverse impact on the surrounding road network in terms of road safety.

2.6 PUBLIC TRANSPORT

ACTION bus stops are located on Captain Cook Crescent and Stuart Street within walking distance from the site. ACTION Bus route number 4 is operating via La Perouse Street and Captain Cook Crescent connecting southeast suburbs to the city. ACTION Bus route number 5 is operating from the Woden interchange to the northern suburbs via city. ACTION bus routes 4 and 5 operate at 15 minute intervals during peak periods and 30 minute intervals during other times of the day. Bus route 6, connecting Woden interchange with Dickson via the City, operates at 30 minute intervals during peak periods and 60 minute intervals during other times of the day. The ACTION bus route map is shown in Figure 2.1 below.

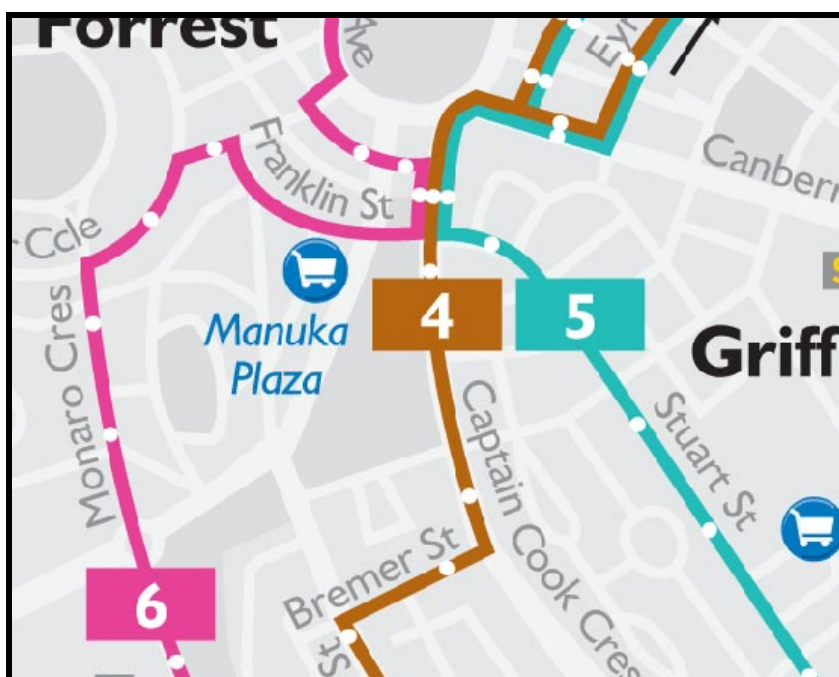


Figure 2.1: ACTION Bus Routes

3.0 PROPOSED DEVELOPMENT

3.1 LAND USE

The proposed development will include a residential development on Block 15, Section 42, Griffith. Block 15 lies within Commercial-CZ6-Leisure and Accommodation zone as per the current Territory Plan. The proposed development is currently under the planning stage and the exact scale of proposed development is unknown to Mott MacDonald Hughes Trueman. The approximate scale of the proposed residential development (provided by the architect) is shown in Table 3.1 below:

Table 3.1: Proposed Development

Residential Development	Number of Units
1 bedroom units	75
2 bedroom units	75
Total	150

3.2 SITE ACCESS

It is proposed that the site access be provided on Austin Street where the existing driveway is located. It is anticipated that the access arrangement (including delivery, waste and emergency vehicles), carpark and driveway design will be carried out in accordance with AS/NZS 2890.1 and AS/NZS 2890.2.

3.3 CAR PARKING PROVISION AND SUPPLY

The site lies within the Urban Commercial-CZ6-Leisure and Accommodation zone under the current ACT Territory Plan. It is noted that the proposal is in progress to change the territory plan for the proposed site from Urban Commercial-CZ6-Leisure and Accommodation zone to Residential-RZ4- Medium Density Residential zone.

The parking provision for the proposed residential development has been estimated in accordance with the Parking and Vehicular Access General Code (General Code) and shown below in table 3.2.

Table 3.2: Parking Provision

Land Use	Number of Units	Parking Provision Rates	Parking Provision
1 bed room unit	75	1 space per unit	75
2 or more bedroom unit	75	2 space per unit	150
Residential Visitors	150	0.25 space per unit	38
Total			263

It is anticipated that the proposed development will provide 263 car-parking spaces in accordance with the minimum requirements of the General Code.

3.4 ANTICIPATED TRAFFIC GENERATION

The peak hour traffic generation for the proposed residential development has been estimated based on the ACTPLA's Residential Subdivision Development Code (10 July 2009). For the proposed residential development, a conservative in/out split of 10%/90% is assumed for the morning peak period and 90% in and 10% out split is assumed for the evening peak period. The trip generation estimation is summarised below in Table 3.3:

Table 3.3: Trip Generation for the Proposed Residential Development

Units	Peak Hour	Trips per Unit *	Total Trips	in / out Split	%	Trip Gen. (vph)
150	AM	0.6	90	in	10	9
				out	90	81
	PM	0.6	90	in	90	81
				out	10	9

* The peak hour traffic generation rate is assumed to be 10% of the daily traffic generation rate (i.e. 0.6vph for 6vpd)

It should be noted that the estimation of trip generation has not considered any reduction due to other means of transport (e.g. public transport), which is considered as a conservative approach. The anticipated trip generation for the adjoining developments have been shown in Appendix B.

Mott MacDonald Hughes Trueman has also conducted traffic survey for the existing Brumbies Headquarters near the access off Austin Street on 11 November 2009 between 5.30pm and 6.00pm (half an hour counts). To estimate trip generation for an evening peak period (1 hour counts) the recorded traffic volumes have been doubled up.

3.5 TRIP DISTRIBUTION

Mott MacDonald Hughes Trueman has determined the anticipated traffic distribution as shown in *Attachment A*. The trip distribution is based on the existing traffic pattern on the surrounding road network and an anticipated bias to and from the major roads within close proximity to the site.

4.0 TRAFFIC IMPACT

The likely traffic impact of the proposed development has been assessed. A 10-year design horizon has been adopted from the year of full occupation of the development proposal. Therefore the following development staging has been adopted:

- Traffic Surveys: 2009
- Development Application: 2009
- occupation: 2010
- occupation plus 10 years: 2020

It should be noted that the design horizon was based on the traffic surveys undertaken in 2009 and the methodology that was approved in 2009. Furthermore, the Intersection analyses were also undertaken in 2009. Traffic conditions have not been modified since 2009 until now. As such, it is deemed unnecessary to modify the design horizon or the traffic impact assessment. The traffic impact is discussed below in detail.

4.1 BACKGROUND TRAFFIC GROWTH

It is not anticipated that traffic volumes will increase dramatically on the surrounding road network. Nevertheless, a conservative approach has been adopted by applying a 1% growth rate per annum to access the future traffic operations and impacts of the proposed development.

4.2 ROAD NETWORK ATTRIBUTES AND INTERSECTION PERFORMANCE

The anticipated traffic volumes during the future year weekday peak hours are presented in *Appendix B* and summarised below in Tables 4.1 to 4.5. The cells highlighted in Table 4.5 indicate the sections of road in which the proposed development will increase traffic volumes by 5% or more.

Table 4.1: 2020 AM Peak Traffic Volumes (Without Development)

Road & Section	Travel Direction				Total
	North	South	East	West	
Captain Cook Cr					
<i>North of Murray Cr/Stuart St</i>	924	300			1,224
<i>North of Austin St/Barrallier St</i>	762	257			1,019
<i>South of Austin St/Barrallier St</i>	663	223			886
La Perouse St					
<i>North of Flinders Way</i>	133	16			148
<i>South of Flinders Way</i>	358	167			518
Flinders Way					
<i>East of La Perouse St</i>			665	264	925
<i>West of La Perouse St</i>			623	296	915
Austin St					
<i>East of La Perouse St</i>			224	139	343
<i>East of Captain Cook Cr</i>			98	93	191

Table 4.2 2020 PM Peak Traffic Volumes (Without Development)

Road & Section	Travel Direction				Total
	North	South	East	West	
Captain Cook Cr					
<i>North of Murray Cr/Stuart St</i>	486	493			980
<i>North of Austin St/Barrallier St</i>	295	438			733
<i>South of Austin St/Barrallier St</i>	264	398			662
La Perouse St					
<i>North of Flinders Way</i>	39	75			114
<i>South of Flinders Way</i>	200	358			550
Flinders Way					
<i>East of La Perouse St</i>			390	474	860
<i>West of La Perouse St</i>			414	375	785
Austin St					
<i>East of La Perouse St</i>			129	170	279
<i>East of Captain Cook Cr</i>			89	107	196

Table 4.3: 2020 AM Peak Traffic Volumes (With Development)

Road & Section	Travel Direction				Total
	North	South	East	West	
Captain Cook Cr					
<i>North of Murray Cr/Stuart St</i>	936	302			1,238
<i>North of Austin St/Barrallier St</i>	777	259			1,036
<i>South of Austin St/Barrallier St</i>	663	224			887
La Perouse St					
<i>North of Flinders Way</i>	147	17			163
<i>South of Flinders Way</i>	404	172			576
Flinders Way					
<i>East of La Perouse St</i>			683	266	949
<i>West of La Perouse St</i>			625	310	934
Austin St					
<i>East of La Perouse St</i>			226	152	377
<i>East of Captain Cook Cr</i>			102	93	195

Table 4.4: 2020 PM Peak Traffic Volumes (With Development)

Road & Section	Travel Direction				Total
	North	South	East	West	
Captain Cook Cr					
<i>North of Murray Cr/Stuart St</i>	488	506			994
<i>North of Austin St/Barrallier St</i>	297	453			751
<i>South of Austin St/Barrallier St</i>	264	398			663
La Perouse St					
<i>North of Flinders Way</i>	41	84			124
<i>South of Flinders Way</i>	205	404			608
Flinders Way					
<i>East of La Perouse St</i>			392	497	889
<i>West of La Perouse St</i>			428	377	805
Austin St					
<i>East of La Perouse St</i>			146	172	317
<i>East of Captain Cook Cr</i>			89	111	200

Table 4.5: Traffic Increase as a Result of the Proposed Development

Road & Section	Northbound		Southbound	
	Volume	%	Volume	%
Captain Cook Cr				
<i>North of Murray Cr/Stuart St</i>	12	1%	12	2%
<i>North of Austin St/Barrallier St</i>	15	2%	15	4%
<i>South of Austin St/Barrallier St</i>	1	0%	1	0%
La Perouse St				
<i>North of Flinders Way</i>	14	10%	9	12%
<i>South of Flinders Way</i>	45	13%	45	13%
Road & Section	Eastbound		Westbound	
	Volume	%	Volume	%
Flinders Way				
<i>East of La Perouse St</i>	18	3%	23	5%
<i>West of La Perouse St</i>	14	3%	14	5%
Austin St				
<i>East of La Perouse St</i>	17	13%	13	9%
<i>East of Captain Cook Cr</i>	4	4%	4	4%

Table 4.1 to 4.5 reveal that the proposed development on Block 15 will result in an insignificant increase to the 2021 traffic volumes on Flinders Way and Captain Cook Crescent in one direction (i.e. 3% (18vph) and 4% (15vph) respectively).

Traffic volumes on Flinders Way, Austin Street and La Perouse Street will increase by more than 5%. However, it is anticipated that traffic volumes will remain within their practical environmental capacity.

4.3 INTERSECTION PERFORMANCE

A series of intersection analyses has been undertaken using SIDRA in order to determine the proposed development's impact on the surrounding road network. The results of the SIDRA analyses are shown below.

4.3.1 CAPTAIN COOK CR / MURRAY CR / STUART ST INTERSECTION

The future performance of the signalised intersection has been analysed in order to measure the impact of the proposed development. The analysis was undertaken using SIDRA. It should be noted that SIDRA does not directly allow an intersection of this configuration to be modelled (i.e. an intersection consisting of signalised stop lines

within the centre of the intersection. In order to do so, it is necessary to analyse the intersection as if it were two separate intersections and then take into consideration the additional queuing space available in the centre of the intersection. Furthermore, the analysis must include phase times that would allow the two intersections to operate as one.

The abovementioned analysis has previously been undertaken and it was found that the method of splitting the intersection indicates a better performance than the method of considering the intersection as only one with no stop lines in the centre of the intersection. It is understood that the difference between the two methods (which is mostly insignificant) is that by splitting the intersection into two provides additional queuing space.

In light of the above, the intersection has been analysed as one in order to take a conservative approach to the analysis. The results of the analysis are shown below in Table 4.6.

Table 4.6: 2020 Captain Cook Cr / Murray St / Stuart St Intersection

Peak Period	DOS (%)	Queue (m)	Avg. Delay (sec)	LOS
Morning Peak Period				
<i>Without Development</i>	57	115	43	D
<i>With Development</i>	58	117	43	D
Evening Peak Period				
<i>Without Development</i>	37	71	33	C
<i>With Development</i>	38	73	33	C

The results of the analysis indicate that the proposed development will not have any significant impact on the intersection's performance and that the intersection will perform well within its operational capacity regardless of whether the proposed development proceeds or not. It should also be noted that the analysis was undertaken using a cycle time of only 90 seconds which suggests that the intersection's performance can be further improved.

4.3.2 CAPTAIN COOK CR / AUSTIN ST / BARRALLIER ST INTERSECTION

The performance of this intersection has been undertaken using SIDRA. It should be noted that this intersection cannot be analysed in the same manner as the signalised intersection (i.e. as one intersection). As such, the intersection has been split into two halves (west and east) which also allows for an analysis of the queuing at the centre of the intersection. The results of the Sidra analysis are shown in Tables 4.7 and Table 4.8.

Table 4.7: 2020 Captain Cook Cr / Austin St / Barrallier St Intersection (WEST)

Peak Period	DOS (%)	Queue (m)	Avg. Delay (sec)	LOS
Morning Peak Period				
<i>Without Development</i>	56	21 27 (worst)	27	D
<i>With Development</i>	63	23 32.5 (worst)	29	D
Evening Peak Period				
<i>Without Development</i>	24	9	12	B
<i>With Development</i>	27	11	12	B

The results of the analysis of the western half of the intersection suggest that the intersection will continue operating within its operational capacity regardless of whether the proposed development proceeds or not. It should be noted that the queuing space available for traffic approaching from the east (i.e. in the centre of the intersection) is anticipated to cater for the 95th percentile queuing for the eastern leg (23m).

Table 4.8: 2020 Captain Cook Cr / Austin St / Barrallier St Intersection (EAST)

Peak Period	DOS (%)	Queue (m)	Avg. Delay (sec)	LOS
Morning Peak Period				
<i>Without Development</i>	17	7	10	A
<i>With Development</i>	18	7	11	B
Evening Peak Period				
<i>Without Development</i>	29	12	11	B
<i>With Development</i>	33	14	12	B

The results of the analysis of the eastern half of the intersection suggest that the intersection will continue operating within its operational capacity. Furthermore, the highest 95th percentile queuing at the centre median of the intersection (2.5m or a maximum of 1 vehicle) is not anticipated to raise any significant concern during any peak period.

4.3.3 LA PEROUSE ST / AUSTIN ST INTERSECTION

The results of the Sidra analysis using the current intersection configuration are shown below in Table 4.9.

Table 4.9: 2020 La Perouse St / Austin St Intersection Performance

Peak Period	DOS (%)	Queue (m)	Avg. Delay (sec)	LOS
<i>Morning Peak Period</i>	26	14	10	B
<i>Evening Peak Period</i>	21	7	10	B

The results of the analysis suggest that the intersection will perform well within its operational capacity regardless of whether the proposed development proceeds or not.

4.3.4 FLINDERS WAY / LA PEROUSE ST INTERSECTION

The analysis of the Flinders Way / La Perouse Street intersection has been undertaken as though the intersection is a 4-way intersection. However, the intersection actually operates as two distinct T-intersections within relatively close proximity to each other. As such, the analysis undertaken is considered to be conservative, showing a slightly worse performance than what is actually anticipated. The growth rate over the next 10 years is not expected to result in any scenario as the intersection is already operating at a high level of saturation.

Table 4.10: Flinders Way / La Perouse St Morning Peak Period Intersection Performance

Scenario	DOS (%)	Queue (m)	Avg. Delay (sec)	LOS
2021 4-Way Intersection Without Development	119	350	220	F
2021 4-Way Intersection With Development	134	542	353	F
2021 3-Way T-Intersection Without Development	148	533	410	F
2021 3-Way T-Intersection With Development	159	737	574	F

Based on the current traffic patterns (as discussed in Section 2.4) it is considered that the results obtained in Table 4.10 are misleading. The results suggest that the increase in traffic volumes (particularly for the right turn movement from the southern leg of La Perouse Street into Flinders Way) will perform well over its notional capacity. It is anticipated, however, that as the movement's performance deteriorates, motorists (particularly motorists associated with non-local traffic) will choose an alternative route until the operating performance of the right turn movement returns to its current operating performance.

It should be noted that while it may be more convenient for non-local traffic to choose an alternative route, there will be little choice for motorists associated with local traffic including those generated by the proposed development. Essentially, it is anticipated that the net effect of the proposed development will be that the total anticipated traffic to be generated by the development of 90vph will replace 90vph of the non-local traffic within the local road network.

In light of the above, it is considered that no ameliorative treatment need be implemented at this intersection as part of the proposed development.

4.4 AMELIORATIVE TREATMENT

A traffic study report dated April 2001, prepared by Maunsell McIntyre Pty Ltd on behalf of the Department of Urban Services to develop a master plan for traffic management along Goyder Street and associated areas in Narrabundah recommended a series of Local Area Traffic Management (LATM) measures that may be implemented to discourage "rat-running" through the area. The report confirms that any adverse traffic conditions along La Perouse Street are a result of "rat-running" traffic through the area rather than the proposed development and that the LATM measures recommended to be implemented along La Perouse Street are anticipated

to discourage non-local traffic travelling on La Perouse Street during the morning peak period.

In light of the proposed development on Block 15, it is recommended that one of the traffic calming measures implemented be a roundabout at the La Perouse Street / Austin Street intersection. The intersection is currently operating well and is anticipated to operate well in 2021 regardless of whether the proposed development proceeds or not. However, a roundabout at this location will give priority to motorists approaching the intersection from Austin Street over motorists approaching the intersection from the southern leg of La Perouse Street, thereby further discouraging non-local traffic from travelling through the area. More specifically, it will also discourage non-local traffic travelling along La Perouse Street in order to turn right into Austin Street as they no longer enjoy priority over the local traffic from Austin Street.

In conclusion, the traffic calming measures recommended in the Maunsell report are anticipated to be beneficial to traffic conditions along La Perouse Street. However, the treatments are not considered to be necessary as part of the proposed residential development on Block 15, Section 42 Griffith.

4.5 CONCLUSION

It is anticipated that the proposed development will not have any significant adverse impact on the surrounding road network in terms of traffic efficiency or road safety and that no ameliorative treatment be implemented as part of the proposed development. It is recommended that the proposed development be approved.

5.0 SUMMARY AND RECOMMENDATIONS

The likely traffic impact of the proposed development has been assessed. The main points to note from this assessment are as follows:

Summary

- It is proposed to redevelop Block 15 Section 42 Griffith to replace the existing Brumbies Headquarters with 150 residential units;
- It is proposed to provide 263 car-parking spaces in accordance with the Parking and Vehicular Access General Code;
- It is proposed to provide vehicular access to the site via Austin Street;
- All vehicles (including service vehicles) are anticipated to enter and exit the site in a forward direction;
- It is anticipated that the proposed development will generate 90 trips during morning and evening peak periods;
- The proposed development is anticipated to have no significant impact on any road in terms of road capacity;
- The proposed development is not anticipated to have any significant adverse impact in terms of intersection performance at the following intersections:
 - Captain Cook Drive / Murray Street / Stuart Street intersection;
 - Captain Cook Drive / Austin Street / Barrallier Street intersection; or
 - Austin Street / La Perouse Street intersection;
- The Flinders Way / La Perouse Street intersection is currently operating at capacity;
- Any deterioration of the Flinders Way / La Perouse Street intersection performance is likely to result in non-local traffic approaching the intersection from the southern leg of La Perouse Street during the morning peak period, choosing an alternative route, such that the intersection's performance will remain the same;
- The net effect of the proposed development in terms of traffic impact is that the anticipated trip generation of 90vph will replace 90vph from the local road network (i.e. 90vph of non-local traffic is likely to choose an alternative route; and
- Any LATM treatment that may minimise "rat-running" traffic along La Perouse Street (as suggested by the traffic study report dated April 2001 prepared by Maunsell McIntyre) is not required to be implemented as part of this proposed development. However, it is recommended that one of the many possible LATM

treatments that may be included is a roundabout at the Austin Street / Flinders Way intersection which will discourage non-local northbound traffic through the intersection by giving priority to traffic approaching the intersection from Austin Street.

Recommendation

The proposed development is not anticipated to have any significant adverse traffic impact in terms of traffic efficiency or road safety and will not require any ameliorative treatment to be implemented as part of this development. It is therefore recommended that the proposed development be approved on traffic grounds.



Mott MacDonald
Hughes Trueman

FEDERICO RAMOS
TRAFFIC ENGINEER

per G.S.

Mott MacDonald
Hughes Trueman

GRAEME SHOOBRIDGE
DIVISIONAL DIRECTOR (CIVIL)

APPENDIX A

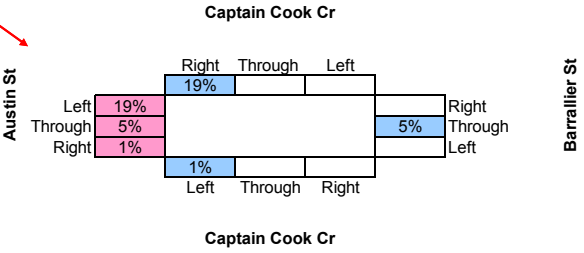
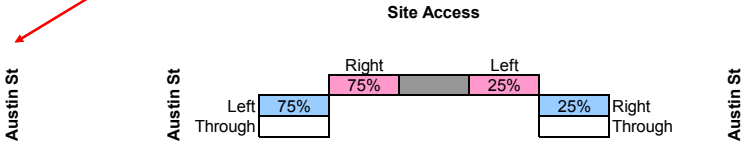
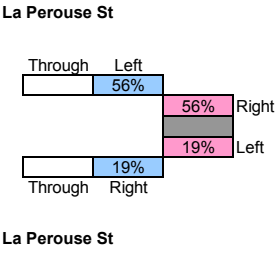
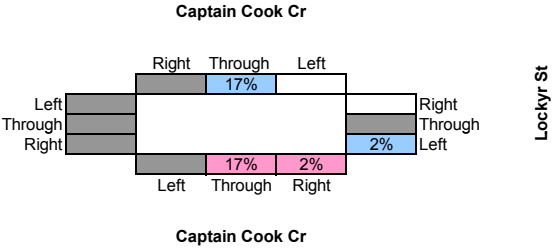
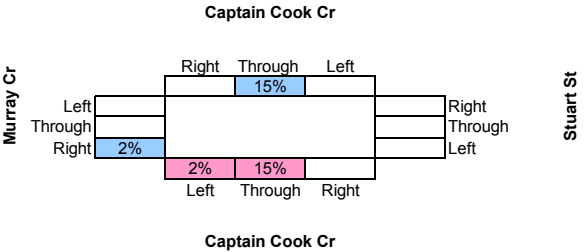
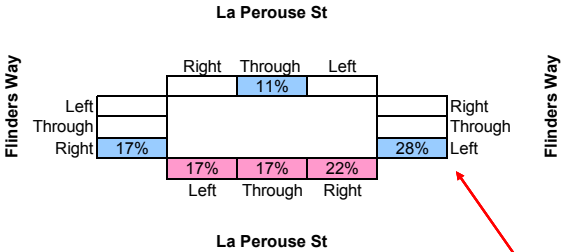
TRIP DISTRIBUTION (%)

Morning & Evening Peak Period Trip Distribution (%)

Growth Rate: 1%

Notes:-

- The replacement of existing priority controlled Flinders Way/La Perouse Street intersection with a roundabout is anticipated to facilitate commuters of the proposed development to turn right on Flinders Way from La Perouse Street south on their way to the City. As such, a conservative trip distribution model has been prepared which shows higher percentage of trips towards La Perouse Street.
- The trip distribution for other intersections have been carried out based on the exiting trip distribution pattern on the surrounding roads.



APPENDIX B

TRAFFIC MOVEMENTS SUMMARY

2009 Traffic Volumes (Morning Peak Period)

Notes

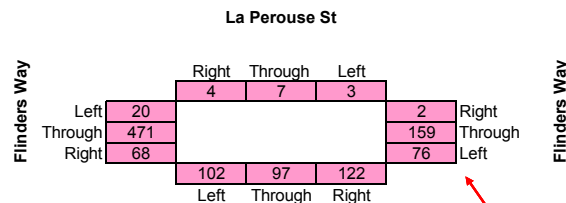
 Scats Data for Wednesday 28 October 2009 (the proportion for each movement was estimated based on Manual Counts)

 Manual Counts for Wednesday 28 October 2009

 All other volumes were estimated based on the available data listed above

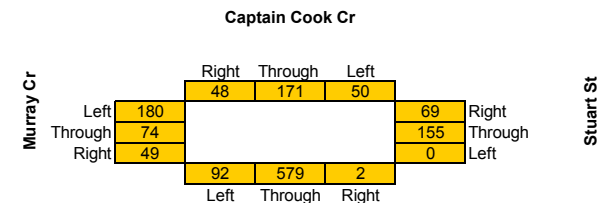
 Manual Counts for Thursday, 03 December 2009

Traffic volumes have been calibrated at each intersection to have a consolidated traffic flow on the road network.



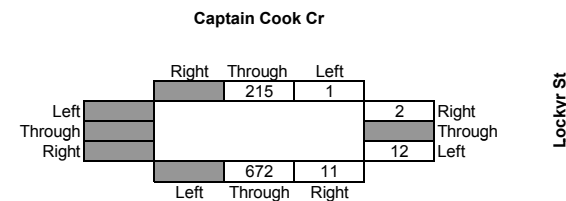
La Perouse St

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
La Perouse St					
North of Flinders Way	119	14			133
South of Flinders Way	321	150			471
Flinders Way					
East of La Perouse St			596	237	833
West of La Perouse St			559	265	824



Captain Cook Cr

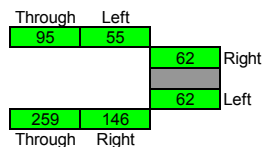
Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Captain Cook Cr					
North of Murray Cr/Stuart St	828	269			1,097
South of Murray Cr/Stuart St	673	220			893
Murray Cr/Stuart St					
East of Captain Cook Cr			126	224	350
West of Captain Cook Cr			303	295	598



Captain Cook Cr

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Captain Cook Cr					
North of Lockyr St	674	216			890
South of Lockyr St	683	227			910
Lockyr St					
East of Captain Cook Cr			12	14	26
West of Captain Cook Cr			0	0	0

La Perouse St



La Perouse St

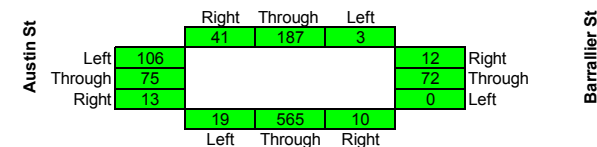
Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
La Perouse St					
North of Austin St	321	150			471
South of Austin St	405	157			562
Austin St					
East of La Perouse St			201	125	325

Site Access



Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Site Access					
North of Austin St	25	11			36
Austin St					
East of Site Access			194	125	318
West of Site Access			201	118	318

Captain Cook Cr



Captain Cook Cr

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Captain Cook Cr					
North of Austin St/Barrallier St	683	231			913
South of Austin St/Barrallier St	594	200			794
Austin St/Barrallier St					
East of Captain Cook Cr			88	84	171
West of Captain Cook Cr			194	132	325

2009 Traffic Volumes (Evening Peak Period)

Notes

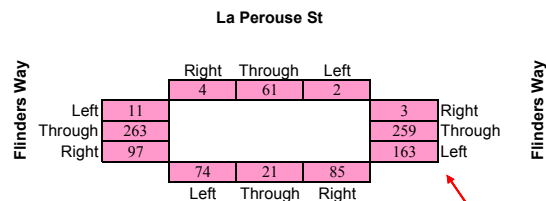
 Scats Data for Wednesday 28 October 2009 (the proportion for each movement was estimated based on Manual Counts)

 Manual Counts for Wednesday 28 October 2009

 All other volumes were estimated based on the available data listed above

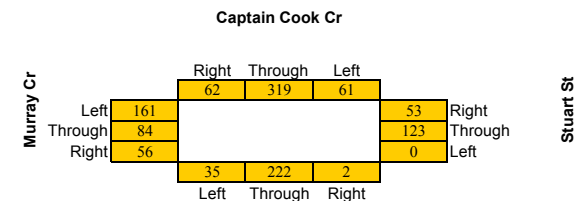
 Manual Counts for Thursday, 03 December 2009

Traffic volumes have been calibrated at each intersection to have a consolidated traffic flow on the road network.



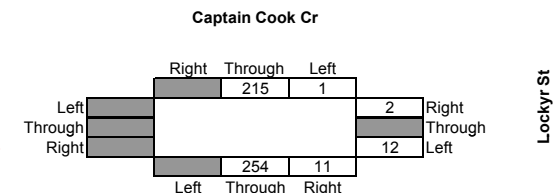
La Perouse St

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
La Perouse St					
North of Flinders Way	35	67			102
South of Flinders Way	179	321			500
Flinders Way					
East of La Perouse St			350	425	775
West of La Perouse St			371	337	708



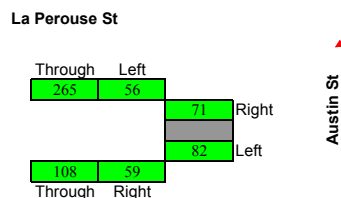
Captain Cook Cr

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Captain Cook Cr					
North of Murray Cr/Stuart St	436	442			878
South of Murray Cr/Stuart St	259	375			634
Murray Cr/Stuart St					
East of Captain Cook Cr			147	176	323
West of Captain Cook Cr			301	220	521



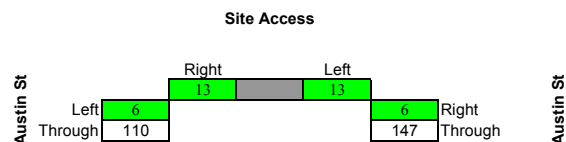
Captain Cook Cr

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Captain Cook Cr					
North of Lockyr St	256	216			472
South of Lockyr St	265	227			492
Lockyr St					
East of Captain Cook Cr			12	14	26
West of Captain Cook Cr			0	0	0



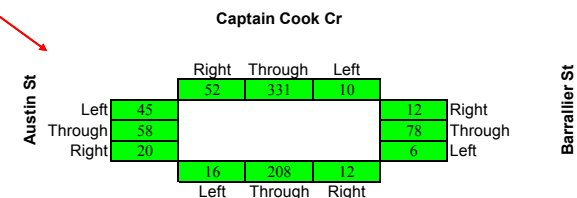
La Perouse St

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
La Perouse St					
North of Austin St	179	321			500
South of Austin St	167	347			514
Austin St					
East of La Perouse St			116	153	268



Site Access

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Site Access					
North of Austin St	11	25			36
Austin St					
East of Site Access			123	153	275
West of Site Access			116	160	275



Captain Cook Cr

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Captain Cook Cr					
North of Austin St/Barrallier St	265	393			657
South of Austin St/Barrallier St	236	357			593
Austin St/Barrallier St					
East of Captain Cook Cr			80	96	175
West of Captain Cook Cr			123	146	268

2020 Traffic Volumes (Morning Peak Period Without Development)

Growth Rate: 1%

La Perouse St

Flinders Way	Left	22	Right	4	Through	8	Left	3	Flinders Way
		525						2	
	Through	75						177	
	Right							84	
Flinders Way	Left	114	Right	108	Through	136	Left	3	Flinders Way
								2	
	Through							177	
	Right							84	

La Perouse St

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
La Perouse St					
North of Flinders Way	133	16			148
South of Flinders Way	358	167			526
Flinders Way					
East of La Perouse St			665	264	929
West of La Perouse St			623	296	919

Captain Cook Cr

Murray Cr	Left	201	Right	54	Through	191	Left	56	Stuart St
		83						77	
	Through	55						173	
	Right							0	
Murray Cr	Left	103	Right	646	Through	2	Left	2	Stuart St
								77	
	Through							173	
	Right							0	

Captain Cook Cr

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Captain Cook Cr					
North of Murray Cr/Stuart St	924	300			1,224
South of Murray Cr/Stuart St	751	245			996
Murray Cr/Stuart St					
East of Captain Cook Cr			141	250	390
West of Captain Cook Cr			338	329	667



Captain Cook Cr

Lockyr St	Left		Right	215	Through	1	Left	2	Lockyr St
								12	
	Through								
	Right								
Lockyr St	Left	751	Right	11	Through		Left		Lockyr St
	Through								
	Right								

Captain Cook Cr

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Captain Cook Cr					
North of Lockyr St	753	216			969
South of Lockyr St	762	227			989
Lockyr St					
East of Captain Cook Cr			12	14	26
West of Captain Cook Cr			0	0	0

La Perouse St

Austin St	Through	106	Right	61	Left	69	Austin St
						70	
	Through	289		162			
	Right						

La Perouse St

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
La Perouse St					
North of Austin St	358	167			526
South of Austin St	451	175			627
Austin St					
East of La Perouse St			224	139	363

Site Access

Austin St	Left		Right		Left		Austin St
	Through	224				139	
	Right						
Austin St	Left		Right		Left		Austin St
	Through						
	Right						

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Site Access					
North of Austin St	0	0			0
Austin St					
East of Site Access			224	139	363
West of Site Access			224	139	363

Captain Cook Cr

Austin St	Left	118	Right	45	Through	209	Left	3	Barrallier St
		83						13	
	Through	15						80	
	Right							0	
Austin St	Left	21	Right	630	Through	11	Left		Barrallier St
	Through								
	Right								

Captain Cook Cr

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Captain Cook Cr					
North of Austin St/Barrallier St	762	257			1,019
South of Austin St/Barrallier St	663	223			886
Austin St/Barrallier St					
East of Captain Cook Cr			98	93	191
West of Captain Cook Cr			216	147	363

2020 Traffic Volumes (Evening Peak Period Without Development)

Growth Rate: 1%

La Perouse St

		Right	Through	Left		
		4	68	2		
Left	12				3	Right
Through	293				289	Through
Right	108				182	Left
		82	23	94		
		Left	Through	Right		

Flinders Way

La Perouse St

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
La Perouse St					
North of Flinders Way	39	75			114
South of Flinders Way	200	358			558
Flinders Way					
East of La Perouse St			390	474	864
West of La Perouse St			414	375	789

Captain Cook Cr

		Right	Through	Left		
		69	356	68		
Left	180				59	Right
Through	94				137	Through
Right	62				0	Left
		39	247	2		
		Left	Through	Right		

Murray Cr

Captain Cook Cr

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Captain Cook Cr					
North of Murray Cr/Stuart St	486	493			980
South of Murray Cr/Stuart St	289	419			707
Murray Cr/Stuart St					
East of Captain Cook Cr			164	196	360
West of Captain Cook Cr			336	245	581



Captain Cook Cr

		Right	Through	Left		
			215	1		
Left					2	Right
Through					12	Through
Right						Left
			284	11		
		Left	Through	Right		

Lockyr St

Captain Cook Cr

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Captain Cook Cr					
North of Lockyr St	286	216			502
South of Lockyr St	295	227			522
Lockyr St					
East of Captain Cook Cr			12	14	26
West of Captain Cook Cr			0	0	0

La Perouse St

	Through	Left			
	296	63			
			79	Right	
			91	Left	
	120	66			
	Through	Right			

Austin St

Site Access

		Right		Left		
Left						Right
Through	129				170	Through

Austin St

Captain Cook Cr

		Right	Through	Left		
		58	369	11		
Left	50				13	Right
Through	64				86	Through
Right	22				7	Left
		18	232	13		
		Left	Through	Right		

Barrallier St

La Perouse St

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
La Perouse St					
North of Austin St	200	358			558
South of Austin St	187	387			573
Austin St					
East of La Perouse St			129	170	299

Site Access

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Site Access					
North of Austin St	0	0			0
Austin St					
East of Site Access			129	170	299
West of Site Access			129	170	299

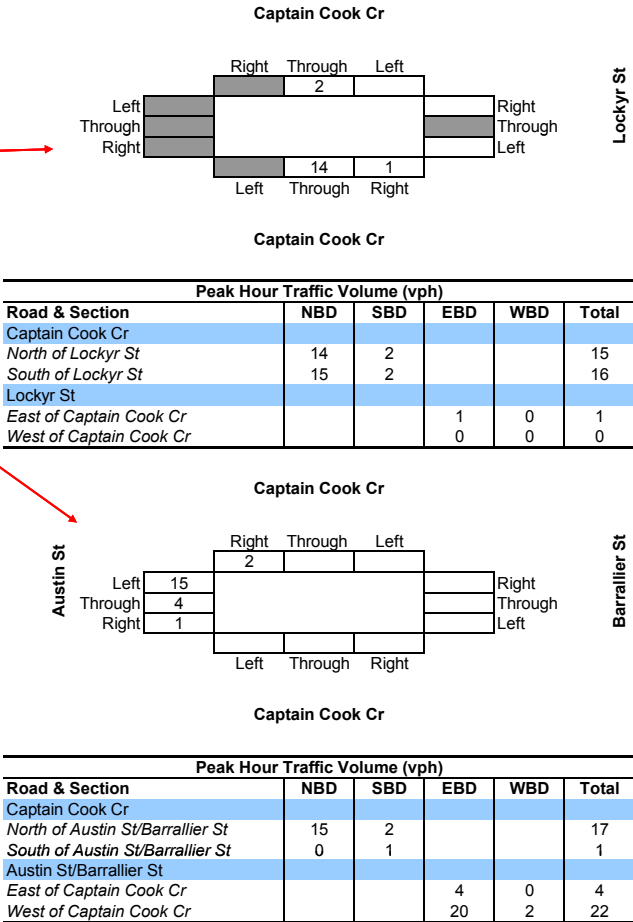
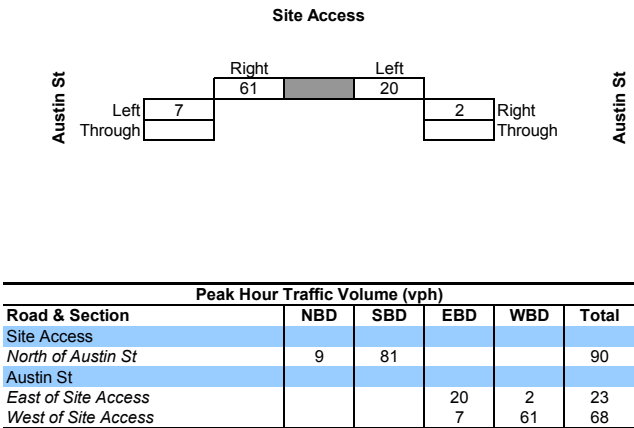
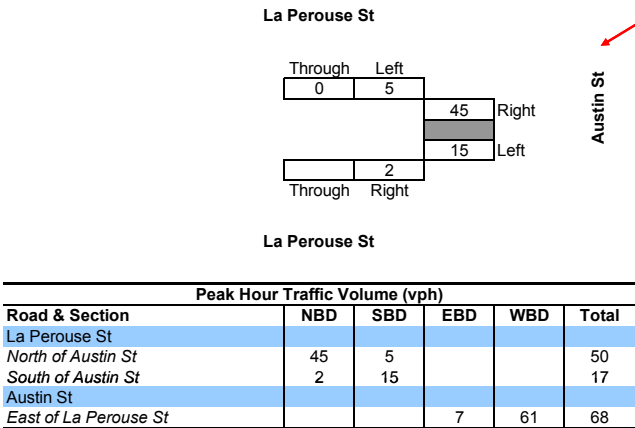
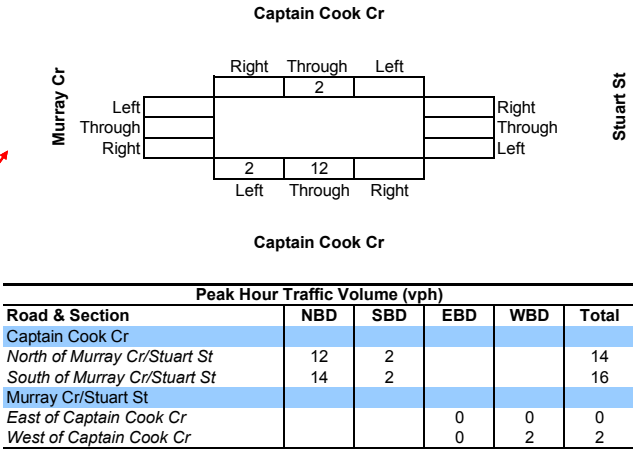
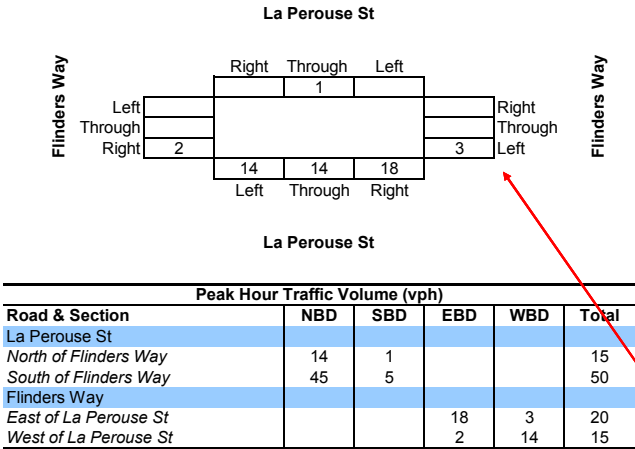
Captain Cook Cr

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Captain Cook Cr					
North of Austin St/Barrallier St	295	438			733
South of Austin St/Barrallier St	264	398			662
Austin St/Barrallier St					
East of Captain Cook Cr			89	107	196
West of Captain Cook Cr			137	162	299

Morning Peak Period Traffic Generation

Units	Peak Hour	Trip Generation Rate#	Total Trips (vph)	in / out Split	%	Trip Gen. (vph)
150	AM	0.6	90	in out	10 90	9 81

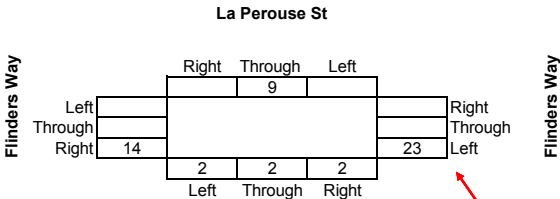
Trip Generation Rate as per Residential Subdivision Development Code



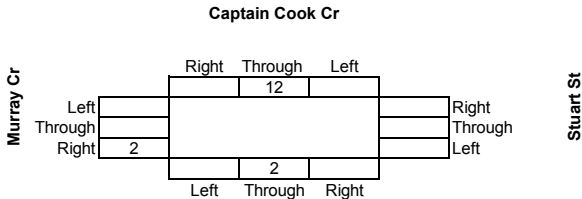
Evening Peak Period Traffic Generation

Units	Peak Hour	Trip Generation Rate#	Total Trips (vph)	in / out Split	%	Trip Gen. (vph)
150	AM	0.6	90	in out	90 10	81 9

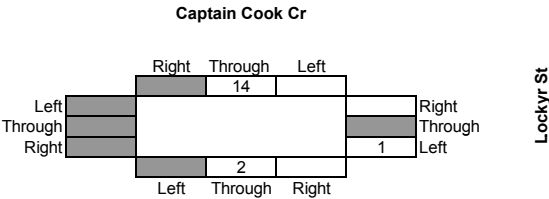
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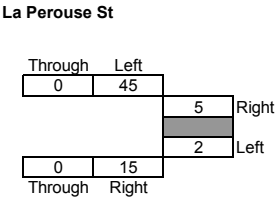
Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
La Perouse St					
North of Flinders Way	2	9			10
South of Flinders Way	5	45			50
Flinders Way					
East of La Perouse St			2	23	25
West of La Perouse St			14	2	15



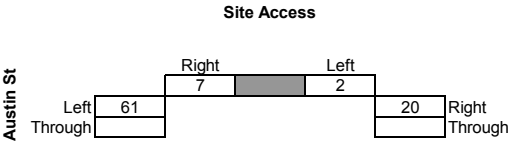
Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Captain Cook Cr					
North of Murray Cr/Stuart St	2	12			14
South of Murray Cr/Stuart St	2	14			16
Murray Cr/Stuart St					
East of Captain Cook Cr			0	0	0
West of Captain Cook Cr			2	0	2



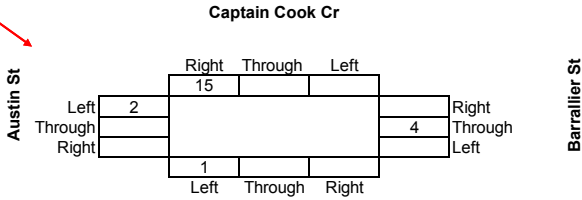
Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Captain Cook Cr					
North of Lockyr St	2	14			15
South of Lockyr St	2	15			16
Lockyr St					
East of Captain Cook Cr			0	1	1
West of Captain Cook Cr			0	0	0



Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
La Perouse St					
North of Austin St	5	45			50
South of Austin St	15	2			17
Austin St					
East of La Perouse St			61	7	68



Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Site Access					
North of Austin St	81	9			90
Austin St					
East of Site Access			2	20	23
West of Site Access			61	7	68



Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Captain Cook Cr					
North of Austin St/Barrallier St	2	15			17
South of Austin St/Barrallier St	1	0			1
Austin St/Barrallier St					
East of Captain Cook Cr			0	4	4
West of Captain Cook Cr			2	20	22

Growth Rate: 1%

Captain Cook Cr							
Murray Cr			Right	Through	Left		
			54	193	56		
	Left	201				77	Right
	Through	83				173	Through
	Right	55				0	Left
			104	658	2		
		Left	Through	Right			

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Captain Cook Cr					
North of Murray Cr/Stuart St	936	302			1,238
South of Murray Cr/Stuart St	765	247			1,012
Murray Cr/Stuart St					
East of Captain Cook Cr			141	250	390
West of Captain Cook Cr			338	331	669



La Perouse St

Through	Left		
106	66		
		115	Right
		85	Left
289	164		
Through	Right		

The diagram illustrates the intersection of Austin St and Barrallier St. Austin St runs vertically on the left, and Barrallier St runs vertically on the right. Captain Cook Cr runs horizontally across the middle. The intersection is divided into four quadrants by Captain Cook Cr. The traffic flow is as follows:

- Austin St (Left Side):**
 - Left: 133
 - Through: 87
 - Right: 16
- Barrallier St (Right Side):**
 - Right: 13
 - Through: 80
 - Left: 0
- Captain Cook Cr (Horizontal Road):**
 - Right: 47
 - Through: 209
 - Left: 3

The table below shows the Peak Hour Traffic Volume (vph) for the intersection.

Road & Section	NBD	SBD	EBD	WBD	Total
Captain Cook Cr					
North of Austin St/Barrallier St	777	259			1,036
South of Austin St/Barrallier St	663	224			887
Austin St/Barrallier St					
East of Captain Cook Cr			102	93	195
West of Captain Cook Cr			236	148	385

2021 Traffic Volumes (Evening Peak Period With Development)

Growth Rate: 1%

La Perouse St

Flinders Way	Right	Through	Left	Flinders Way
	4	77	2	
	Left	12	Right	
Through	293	289	Through	
Right	122	205	Left	
	84	25	96	
	Left	Through	Right	

La Perouse St

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
La Perouse St					
North of Flinders Way	41	84			124
South of Flinders Way	205	404			608
Flinders Way					
East of La Perouse St			392	497	889
West of La Perouse St			428	377	805

Captain Cook Cr

Murray Cr	Right	Through	Left	Stuart St
	69	368	68	
	Left	180	Right	
Through	94	137	Through	
Right	64	0	Left	
	39	249	2	
	Left	Through	Right	

Captain Cook Cr

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Captain Cook Cr					
North of Murray Cr/Stuart St	488	506			994
South of Murray Cr/Stuart St	291	432			723
Murray Cr/Stuart St					
East of Captain Cook Cr			164	196	360
West of Captain Cook Cr			337	245	583



Captain Cook Cr

Lockyr St	Right	Through	Left	Lockyr St
	217	1	2	
	Left	Through	Right	
Through	764	12	12	
Right				
	Left	Through	Right	

Captain Cook Cr

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Captain Cook Cr					
North of Lockyr St	766	218			984
South of Lockyr St	776	229			1,005
Lockyr St					
East of Captain Cook Cr			13	14	27
West of Captain Cook Cr			0	0	0

La Perouse St

Through	Left		
296	108		
		84	Right
		93	Left
120	82		
Through	Right		

La Perouse St

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
La Perouse St					
North of Austin St	205	404			608
South of Austin St	202	388			590
Austin St					
East of La Perouse St			190	177	366

Site Access

Austin St	Right	Left	Austin St
	7	2	
	Left	Through	
Through	61	20	Right
Right	129	170	Through

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Site Access					
North of Austin St	81	9			90
Austin St					
East of Site Access			131	190	321
West of Site Access			190	177	366

Captain Cook Cr

Austin St	Right	Through	Left	Barrallier St
	73	369	11	
	Left	Through	Right	
Through	52	13	91	Right
Right	64	7	7	Through
	19	232	13	
	Left	Through	Right	

Captain Cook Cr

Peak Hour Traffic Volume (vph)					
Road & Section	NBD	SBD	EBD	WBD	Total
Captain Cook Cr					
North of Austin St/Barrallier St	297	453			751
South of Austin St/Barrallier St	264	398			663
Austin St/Barrallier St					
East of Captain Cook Cr			89	111	200
West of Captain Cook Cr			138	183	321

APPENDIX C

COLLISION HISTORY

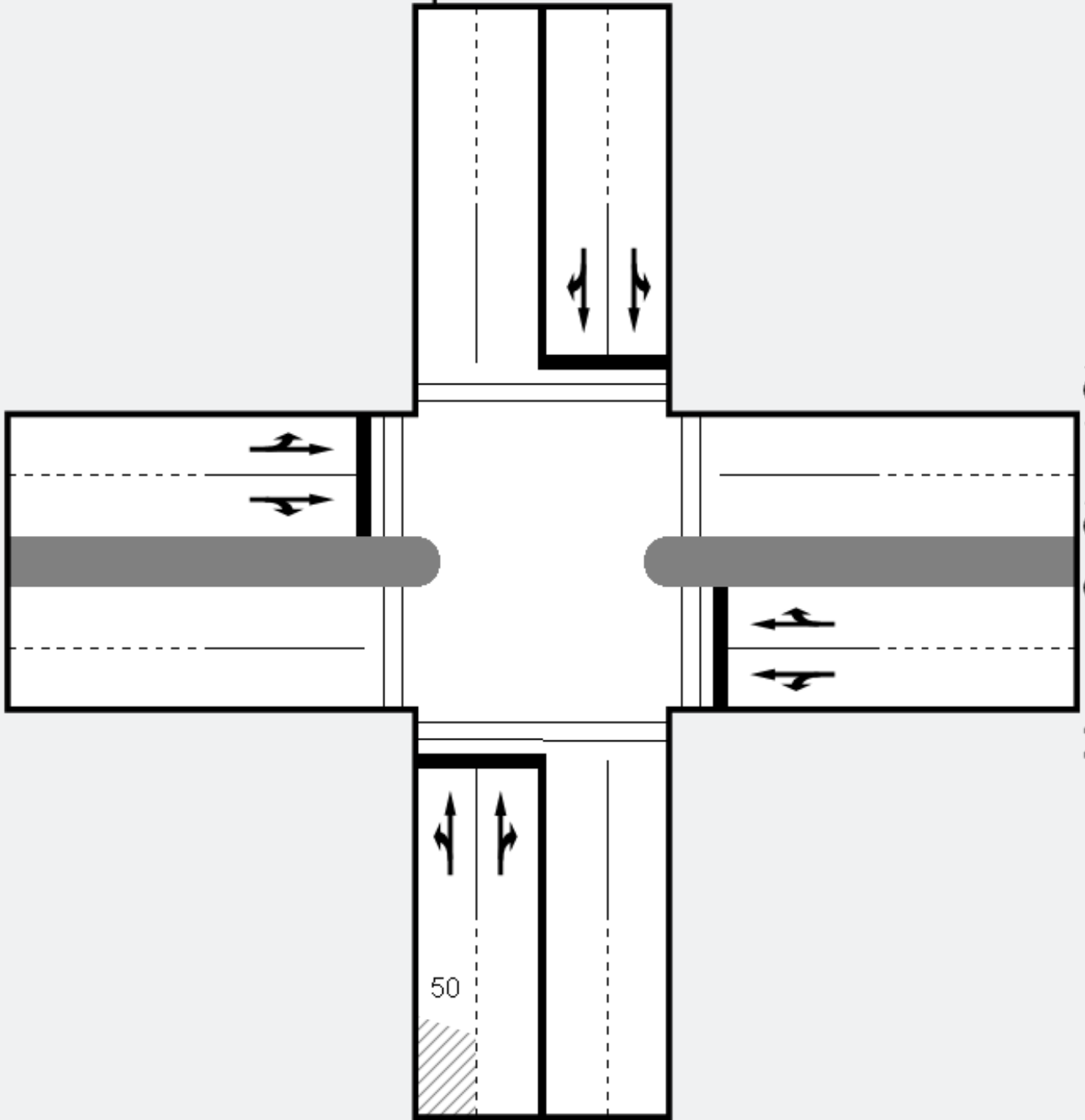
Captain Cook Cr

Murray Cr-Stuart St

Murray Cr-Stuart St

Captain Cook Cr

50



PHASING SUMMARY

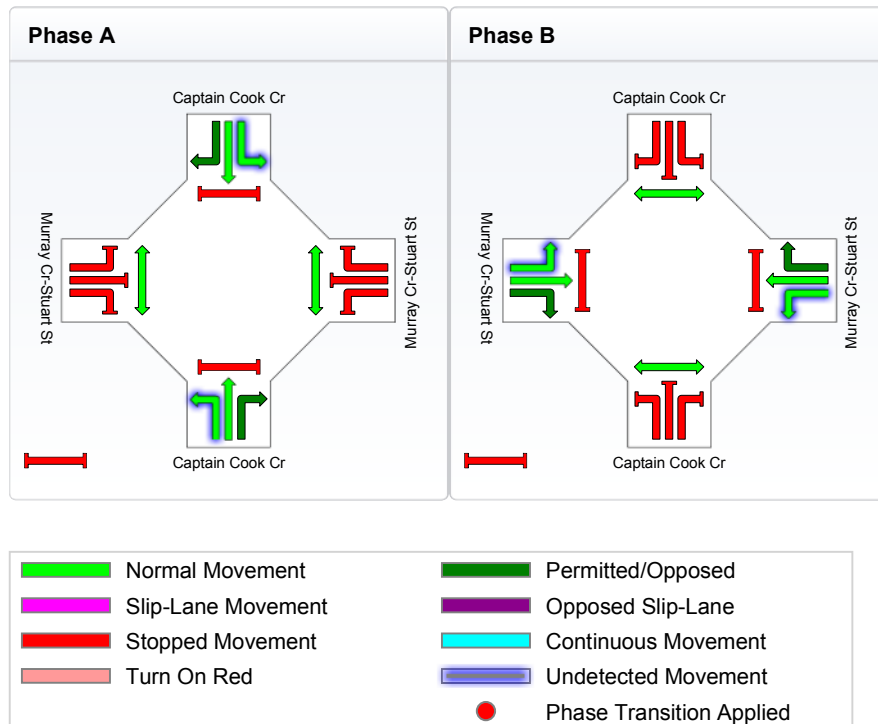
Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 AM (Without Dev)

Captain Cook Cr/Murray Cr-Stuart St - 2021 AM (Without Development)
Signals - Fixed Time Cycle Time = 85 seconds

Cycle Time Option: **User-specified Cycle Time**
Phase times specified by the user
Sequence: **Two-phase**
Input Sequence: **A, B**
Output Sequence: **A, B**

Phase Timing Results

Phase	A	B
Green Time (sec)	43	28
Yellow Time (sec)	4	4
All-Red Time (sec)	3	3
Phase Time (sec)	50	35
Phase Split	59 %	41 %



MOVEMENT SUMMARY

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 AM (Without Dev)

Captain Cook Cr/Murray Cr-Stuart St - 2021 AM (Without Development)
Signals - Fixed Time Cycle Time = 85 seconds

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	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Captain Cook Cr											
1	L	104	0.0	0.572	22.9	LOS C	7.6	52.9	0.65	0.84	37.7
2	T	653	0.0	0.571	15.5	LOS B	16.4	114.8	0.73	0.64	39.9
3	R	2	0.0	0.574	23.9	LOS C	16.4	114.8	0.75	0.94	38.3
Approach		759	0.0	0.571	16.5	LOS B	16.4	114.8	0.72	0.67	39.6
East Murray Cr-Stuart St											
4	L	1	0.0	0.304	31.1	LOS C	7.1	49.6	0.78	0.88	34.0
5	T	175	0.0	0.293	22.9	LOS C	7.1	49.6	0.78	0.65	35.1
6	R	78	0.0	0.326	42.6	LOS D	4.2	29.2	0.91	0.77	27.6
Approach		254	0.0	0.326	29.0	LOS C	7.1	49.6	0.82	0.69	32.4
North Captain Cook Cr											
7	L	56	0.0	0.247	20.9	LOS C	6.8	47.9	0.60	0.88	39.4
8	T	192	0.0	0.247	13.9	LOS B	6.8	47.9	0.62	0.52	40.8
9	R	54	0.0	0.247	31.3	LOS C	3.5	24.4	0.77	0.79	32.7
Approach		302	0.0	0.247	18.3	LOS B	6.8	47.9	0.64	0.64	38.8
West Murray Cr-Stuart St											
10	L	203	0.0	0.432	36.3	LOS D	8.8	61.5	0.87	0.81	30.0
11	T	83	0.0	0.307	25.5	LOS C	8.8	61.5	0.82	0.67	32.9
12	R	55	0.0	0.307	33.6	LOS C	6.0	42.3	0.82	0.82	32.1
Approach		341	0.0	0.432	33.2	LOS C	8.8	61.5	0.85	0.78	31.0
All Vehicles		1656	0.0	0.574	22.2	LOS C	16.4	114.8	0.75	0.69	36.2

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

Level of Service (Worst Movement): LOS D. LOS Method for individual vehicle movements: Delay (HCM).

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	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	18.4	LOS B	0.1	0.1	0.66	0.66
P3	Across E approach	53	9.9	LOS A	0.1	0.1	0.48	0.48
P5	Across N approach	53	18.4	LOS B	0.1	0.1	0.66	0.66
P7	Across W approach	53	9.9	LOS A	0.1	0.1	0.48	0.48
All Pedestrians		212	14.2				0.57	0.57

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

Level of Service (Worst Movement): LOS B. LOS Method for individual pedestrian movements: Delay (HCM).

DETAILED OUTPUT

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 AM (Without Dev)

Captain Cook Cr/Murray Cr-Stuart St - 2021 AM (Without Development)
Signals - Fixed Time Cycle Time = 85 seconds

Traffic Signals

Progression and Actuated Signal Parameters

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 AM (Without Dev)

Intersection ID: 1

Fixed-Time Signals, Cycle Time = 85 sec (Sum of User-given Phase Times)

Mov ID	Control	Coord.	Arrival Type	% Arriving Green	Delay During Prog.	Queue Prog. Factor	Disp. 1st Grn Gmin	Grn. 2nd Grn Gmax	Settings
South: Captain Cook Cr									
1 L	FT	No	3	44.7	1.000	1.000	8	NA	
2 T	FT	No	3	50.6	1.000	1.000	6	NA	
3 R	FT	No	3	43.5	1.000	1.000	8	NA	
East: Murray Cr-Stuart St									
4 L	FT	No	3	32.9	1.000	1.000	6	NA	
5 T	FT	No	3	32.9	1.000	1.000	6	NA	
6 R	FT	No	3	17.6	1.000	1.000	8	NA	
North: Captain Cook Cr									
7 L	FT	No	3	50.6	1.000	1.000	6	NA	
8 T	FT	No	3	50.6	1.000	1.000	6	NA	
9 R	FT	No	3	31.8	1.000	1.000	6	NA	
West: Murray Cr-Stuart St									
10 L	FT	No	3	27.1	1.000	1.000	8	NA	
11 T	FT	No	3	32.9	1.000	1.000	6	NA	
12 R	FT	No	3	25.9	1.000	1.000	6	NA	

Lanes

Lane Flow and Capacity Information

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 AM (Without Dev)

Intersection ID: 1

Fixed-Time Signals, Cycle Time = 85 sec (Sum of User-given Phase Times)

Lane No.	Dem Flow (veh/h)				Lane Width m	Saturation Flow			End Cap veh/h	Tot Cap veh/h	Deg. Satn x	Lane Util %
	Lef	Thru	Rig	Tot		Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)				
South: Captain Cook Cr												
1 LT	104	130	0	234	3.00	1821	871<	0	0	410	0.571	100
2 TR	0	523	2	525	3.00	1821	1815	0	43	918	0.571	100
East: Murray Cr-Stuart St												
1 LT	1	175	0	176	3.00	1821	1821	0	0	600	0.293	90P
2 R	0	0	78	78	3.00	1821	1355	0	93	239	0.326	100
North: Captain Cook Cr												
1 LT	56	169	0	225	3.00	1821	1799	0	0	910	0.247	100
2 TR	0	23	54	77	3.00	1821	944	0	78	311	0.247	100
West: Murray Cr-Stuart St												
1 L	203	0	0	203	3.00	1821	1735	0	0	469	0.432	100
2 TR	0	83	55	138	3.00	1821	1527	0	63	449	0.307	71P

< Reduced saturation flow due to a short lane effect

P Lane under-utilisation found by the "Program". This includes cases where the value of lane under-utilisation due to downstream effects has been modified by the program during lane flow calculations (e.g. a de facto

exclusive lane has been found).

Basic Saturation Flow in this table is adjusted for lane width, approach grade, parking manoeuvres and number of buses stopping. Saturation flow scale applies if specified.

Flow Rates and Demand Analysis

Movement Definitions and Flow Rates (O-D)

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 AM (Without Dev)

Intersection ID: 1

Fixed-Time Signals, Cycle Time = 85 sec (Sum of User-given Phase Times)

From Approach	To Approach	Mov ID	Turn	Flow LV	Rate HV	Flow Fixed	Scale Var	Peak Flow Factor
South: Captain Cook Cr								
	East	3	Right	2	0	1.00	1.00	1.00
	North	2	Thru	653	0	1.00	1.00	1.00
	West	1	Left	104	0	1.00	1.00	1.00
East: Murray Cr-Stuart St								
	South	4	Left	1	0	1.00	1.00	1.00
	North	6	Right	78	0	1.00	1.00	1.00
	West	5	Thru	175	0	1.00	1.00	1.00
North: Captain Cook Cr								
	South	8	Thru	192	0	1.00	1.00	1.00
	East	7	Left	56	0	1.00	1.00	1.00
	West	9	Right	54	0	1.00	1.00	1.00
West: Murray Cr-Stuart St								
	South	12	Right	55	0	1.00	1.00	1.00
	East	11	Thru	83	0	1.00	1.00	1.00
	North	10	Left	203	0	1.00	1.00	1.00

Unit Time for Volumes = 60 minutes

Peak Flow Period = 30 minutes

Flow Rates include effects of Flow Scale and Peak Flow Factor

Pedestrian Flow Rates

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 AM (Without Dev)

Intersection ID: 1

Fixed-Time Signals, Cycle Time = 85 sec (Sum of User-given Phase Times)

Mov ID	Stage	Flow Rate ped/h	Flow Scale Fixed	Flow Scale Var	Peak Flow Factor
Across P1	South	Approach 53	1.00	1.00	0.95
Across P3	East	Approach 53	1.00	1.00	0.95
Across P5	North	Approach 53	1.00	1.00	0.95
Across P7	West	Approach 53	1.00	1.00	0.95

Unit Time for Volumes = 60 minutes

Peak Flow Period = 30 minutes

Flow Rates include effects of Flow Scale and Peak Flow Factor

PHASING SUMMARY

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 AM (With Dev)

Captain Cook Cr/Murray Cr-Stuart St - 2021 AM (With Development)
Signals - Fixed Time Cycle Time = 85 seconds

Cycle Time Option: **User-specified Cycle Time**

Phase times specified by the user

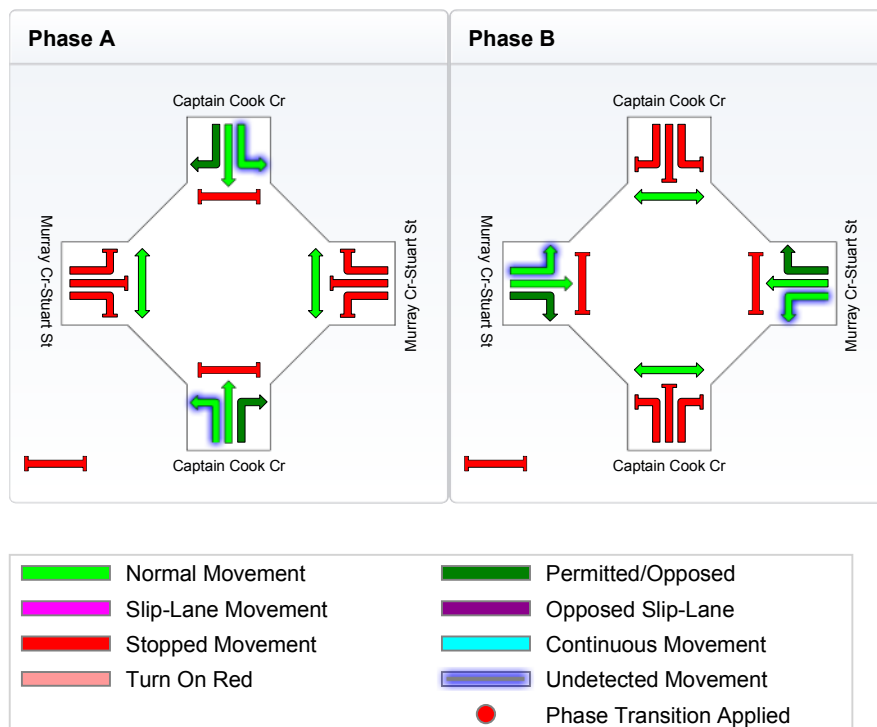
Sequence: **Two-phase**

Input Sequence: **A, B**

Output Sequence: **A, B**

Phase Timing Results

Phase	A	B
Green Time (sec)	43	28
Yellow Time (sec)	4	4
All-Red Time (sec)	3	3
Phase Time (sec)	50	35
Phase Split	59 %	41 %



MOVEMENT SUMMARY

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 AM (With Dev)

Captain Cook Cr/Murray Cr-Stuart St - 2021 AM (With Development)
Signals - Fixed Time Cycle Time = 85 seconds

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	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Captain Cook Cr											
1	L	105	0.0	0.581	22.9	LOS C	7.7	53.8	0.65	0.84	37.7
2	T	665	0.0	0.581	15.6	LOS B	16.7	117.1	0.73	0.64	39.8
3	R	2	0.0	0.574	23.3	LOS C	16.7	117.1	0.75	0.88	38.4
Approach		772	0.0	0.581	16.6	LOS B	16.7	117.1	0.72	0.67	39.5
East Murray Cr-Stuart St											
4	L	1	0.0	0.304	31.1	LOS C	7.1	49.6	0.78	0.88	34.0
5	T	175	0.0	0.293	22.9	LOS C	7.1	49.6	0.78	0.65	35.1
6	R	78	0.0	0.326	41.9	LOS D	4.2	29.2	0.91	0.77	28.1
Approach		254	0.0	0.326	28.8	LOS C	7.1	49.6	0.82	0.69	32.6
North Captain Cook Cr											
7	L	56	0.0	0.251	20.9	LOS C	6.9	48.6	0.60	0.88	39.4
8	T	194	0.0	0.251	14.0	LOS B	6.9	48.6	0.62	0.52	40.9
9	R	54	0.0	0.251	31.4	LOS C	3.5	24.3	0.78	0.77	32.8
Approach		304	0.0	0.251	18.4	LOS B	6.9	48.6	0.65	0.63	38.9
West Murray Cr-Stuart St											
10	L	203	0.0	0.432	36.3	LOS D	8.8	61.5	0.87	0.81	30.0
11	T	83	0.0	0.307	25.5	LOS C	8.8	61.5	0.82	0.67	33.1
12	R	55	0.0	0.307	33.0	LOS C	6.0	42.3	0.82	0.80	32.5
Approach		341	0.0	0.432	33.1	LOS C	8.8	61.5	0.85	0.77	31.1
All Vehicles		1671	0.0	0.581	22.2	LOS C	16.7	117.1	0.75	0.69	36.2

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

Level of Service (Worst Movement): LOS D. LOS Method for individual vehicle movements: Delay (HCM).

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	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	18.4	LOS B	0.1	0.1	0.66	0.66
P3	Across E approach	53	9.9	LOS A	0.1	0.1	0.48	0.48
P5	Across N approach	53	18.4	LOS B	0.1	0.1	0.66	0.66
P7	Across W approach	53	9.9	LOS A	0.1	0.1	0.48	0.48
All Pedestrians		212	14.2				0.57	0.57

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

Level of Service (Worst Movement): LOS B. LOS Method for individual pedestrian movements: Delay (HCM).

DETAILED OUTPUT

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 AM (With Dev)

Captain Cook Cr/Murray Cr-Stuart St - 2021 AM (With Development)
 Signals - Fixed Time Cycle Time = 85 seconds

Traffic Signals

Progression and Actuated Signal Parameters

Site:Captain Cook Cr/Murray Cr-Stuart St - 2021 AM (With Dev)

Intersection ID: 1

Fixed-Time Signals, Cycle Time = 85 sec (Sum of User-given Phase Times)

Mov ID	Control	Coord.	Arrival Type	% Arriving During Green	Delay Prog. Factor	Queue Prog. Factor	Disp. 1st Grn Gmin	Grn. 2nd Grn Gmax	Settings
South: Captain Cook Cr									
1 L	FT	No	3	44.7	1.000	1.000	8	NA	
2 T	FT	No	3	50.6	1.000	1.000	6	NA	
3 R	FT	No	3	43.5	1.000	1.000	8	NA	
East: Murray Cr-Stuart St									
4 L	FT	No	3	32.9	1.000	1.000	6	NA	
5 T	FT	No	3	32.9	1.000	1.000	6	NA	
6 R	FT	No	3	17.6	1.000	1.000	8	NA	
North: Captain Cook Cr									
7 L	FT	No	3	50.6	1.000	1.000	6	NA	
8 T	FT	No	3	50.6	1.000	1.000	6	NA	
9 R	FT	No	3	30.6	1.000	1.000	6	NA	
West: Murray Cr-Stuart St									
10 L	FT	No	3	27.1	1.000	1.000	8	NA	
11 T	FT	No	3	32.9	1.000	1.000	6	NA	
12 R	FT	No	3	25.9	1.000	1.000	6	NA	

Lanes

Lane Flow and Capacity Information

Site:Captain Cook Cr/Murray Cr-Stuart St - 2021 AM (With Dev)

Intersection ID: 1

Fixed-Time Signals, Cycle Time = 85 sec (Sum of User-given Phase Times)

Lane No.	Dem Flow (veh/h)				Lane Width m	Saturation Flow			End Cap veh/h	Tot Cap veh/h	Deg. Satn x	Lane Util %
	Lef	Thru	Rig	Tot		Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)				
South: Captain Cook Cr												
1 LT	105	133	0	238	3.00	1821	871	0	0	410	0.581	100
2 TR	0	532	2	534	3.00	1821	1815	0	43	918	0.581	100
East: Murray Cr-Stuart St												
1 LT	1	175	0	176	3.00	1821	1821	0	0	600	0.293	90P
2 R	0	0	78	78	3.00	1821	1355	0	93	239	0.326	100
North: Captain Cook Cr												
1 LT	56	173	0	229	3.00	1821	1799	0	0	910	0.251	100
2 TR	0	21	54	75	3.00	1821	946	0	79	300	0.251	100
West: Murray Cr-Stuart St												
1 L	203	0	0	203	3.00	1821	1735	0	0	469	0.432	100
2 TR	0	83	55	138	3.00	1821	1527	0	63	449	0.307	71P

< Reduced saturation flow due to a short lane effect

P Lane under-utilisation found by the "Program". This includes cases where the value of lane under-utilisation due to downstream effects has been modified by the program during lane flow calculations (e.g. a de facto

exclusive lane has been found).

Basic Saturation Flow in this table is adjusted for lane width, approach grade, parking manoeuvres and number of buses stopping. Saturation flow scale applies if specified.

Flow Rates and Demand Analysis

Movement Definitions and Flow Rates (O-D)

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 AM (With Dev)

Intersection ID: 1

Fixed-Time Signals, Cycle Time = 85 sec (Sum of User-given Phase Times)

From Approach	To Approach	Mov ID	Turn	Flow Rate LV	Flow Rate HV	Flow Scale Fixed	Flow Scale Var	Peak Flow Factor
South: Captain Cook Cr								
	East	3	Right	2	0	1.00	1.00	1.00
	North	2	Thru	665	0	1.00	1.00	1.00
	West	1	Left	105	0	1.00	1.00	1.00
East: Murray Cr-Stuart St								
	South	4	Left	1	0	1.00	1.00	1.00
	North	6	Right	78	0	1.00	1.00	1.00
	West	5	Thru	175	0	1.00	1.00	1.00
North: Captain Cook Cr								
	South	8	Thru	194	0	1.00	1.00	1.00
	East	7	Left	56	0	1.00	1.00	1.00
	West	9	Right	54	0	1.00	1.00	1.00
West: Murray Cr-Stuart St								
	South	12	Right	55	0	1.00	1.00	1.00
	East	11	Thru	83	0	1.00	1.00	1.00
	North	10	Left	203	0	1.00	1.00	1.00

Unit Time for Volumes = 60 minutes

Peak Flow Period = 30 minutes

Flow Rates include effects of Flow Scale and Peak Flow Factor

Pedestrian Flow Rates

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 AM (With Dev)

Intersection ID: 1

Fixed-Time Signals, Cycle Time = 85 sec (Sum of User-given Phase Times)

Mov ID	Flow Rate Stage	Flow Rate ped/h	Flow Scale Fixed	Flow Scale Var	Peak Flow Factor
Across South Approach					
P1	53		1.00	1.00	0.95
Across East Approach					
P3	53		1.00	1.00	0.95
Across North Approach					
P5	53		1.00	1.00	0.95
Across West Approach					
P7	53		1.00	1.00	0.95

Unit Time for Volumes = 60 minutes

Peak Flow Period = 30 minutes

Flow Rates include effects of Flow Scale and Peak Flow Factor

PHASING SUMMARY

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 PM (Without Dev)

(Without Development) Captain Cook Cr/Murray Cr-Stuart St - 2021 PM
Signals - Fixed Time Cycle Time = 90 seconds

Cycle Time Option: **User-specified Cycle Time**

Phase times specified by the user

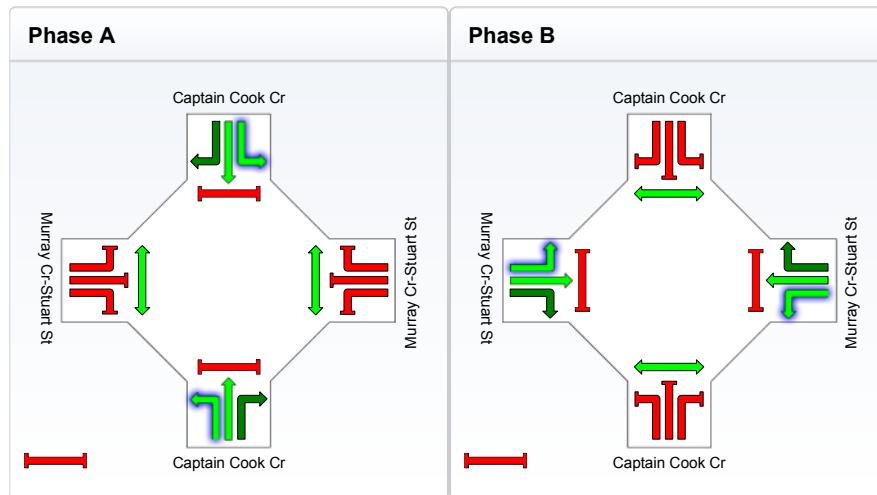
Sequence: **Two-phase**

Input Sequence: **A, B**

Output Sequence: **A, B**

Phase Timing Results

Phase	A	B
Green Time (sec)	38	38
Yellow Time (sec)	4	4
All-Red Time (sec)	3	3
Phase Time (sec)	45	45
Phase Split	50 %	50 %



	Normal Movement		Permitted/Opposed
	Slip-Lane Movement		Opposed Slip-Lane
	Stopped Movement		Continuous Movement
	Turn On Red		Undetected Movement
			Phase Transition Applied

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SIDRA INTERSECTION 4.0.16.1074

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8000857, HUGHES TRUEMAN, SINGLE

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SIDRA
INTERSECTION

MOVEMENT SUMMARY

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 PM (Without Dev)

(Without Development) Captain Cook Cr/Murray Cr-Stuart St - 2021 PM
Signals - Fixed Time Cycle Time = 90 seconds

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	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Captain Cook Cr											
1	L	39	0.0	0.262	26.5	LOS C	3.7	25.7	0.67	0.81	35.6
2	T	250	0.0	0.262	18.2	LOS B	7.3	51.0	0.68	0.57	38.1
3	R	2	0.0	0.259	26.3	LOS C	7.3	51.0	0.69	0.91	36.5
Approach		291	0.0	0.262	19.4	LOS B	7.3	51.0	0.68	0.60	37.7
East Murray Cr-Stuart St											
4	L	1	0.0	0.169	25.5	LOS C	5.0	35.2	0.66	0.91	36.9
5	T	139	0.0	0.175	17.7	LOS B	5.0	35.2	0.66	0.54	38.6
6	R	60	0.0	0.175	33.0	LOS C	3.1	21.8	0.76	0.77	31.5
Approach		200	0.0	0.175	22.3	LOS C	5.0	35.2	0.69	0.61	36.2
North Captain Cook Cr											
7	L	69	0.0	0.369	27.3	LOS C	10.1	70.8	0.73	0.88	35.5
8	T	360	0.0	0.369	20.0	LOS C	10.1	70.8	0.74	0.63	36.4
9	R	70	0.0	0.369	29.4	LOS C	8.6	60.3	0.76	0.85	34.3
Approach		499	0.0	0.369	22.4	LOS C	10.1	70.8	0.74	0.70	35.9
West Murray Cr-Stuart St											
10	L	181	0.0	0.285	29.9	LOS C	7.3	50.9	0.75	0.79	32.9
11	T	95	0.0	0.254	19.5	LOS B	7.3	50.9	0.71	0.59	36.6
12	R	63	0.0	0.254	27.6	LOS C	6.2	43.3	0.71	0.83	35.1
Approach		339	0.0	0.285	26.6	LOS C	7.3	50.9	0.73	0.74	34.2
All Vehicles		1329	0.0	0.369	22.8	LOS C	10.1	70.8	0.72	0.67	35.9

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

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

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	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	14.5	LOS B	0.1	0.1	0.57	0.57
P3	Across E approach	53	14.5	LOS B	0.1	0.1	0.57	0.57
P5	Across N approach	53	14.5	LOS B	0.1	0.1	0.57	0.57
P7	Across W approach	53	14.5	LOS B	0.1	0.1	0.57	0.57
All Pedestrians		212	14.5				0.57	0.57

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

Level of Service (Worst Movement): LOS B. LOS Method for individual pedestrian movements: Delay (HCM).

DETAILED OUTPUT

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 PM (Without Dev)

(Without Development) Captain Cook Cr/Murray Cr-Stuart St - 2021 PM
Signals - Fixed Time Cycle Time = 90 seconds

Traffic Signals

Progression and Actuated Signal Parameters

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 PM (Without Dev)

Intersection ID: 1

Fixed-Time Signals, Cycle Time = 90 sec (Sum of User-given Phase Times)

Mov ID	Control	Coord.	Arrival Type	% Arriving During Green	Delay Prog. Factor	Queue Prog. Factor	Disp. 1st Grn Gmin	Grn. 1st Grn Gmax	Settings 2nd Grn Gmin	Gmax
South: Captain Cook Cr										
1 L	FT	No	3	36.7	1.000	1.000	8	NA		
2 T	FT	No	3	42.2	1.000	1.000	6	NA		
3 R	FT	No	3	32.2	1.000	1.000	8	NA		
East: Murray Cr-Stuart St										
4 L	FT	No	3	42.2	1.000	1.000	6	NA		
5 T	FT	No	3	42.2	1.000	1.000	6	NA		
6 R	FT	No	3	30.0	1.000	1.000	8	NA		
North: Captain Cook Cr										
7 L	FT	No	3	42.2	1.000	1.000	6	NA		
8 T	FT	No	3	42.2	1.000	1.000	6	NA		
9 R	FT	No	3	35.6	1.000	1.000	6	NA		
West: Murray Cr-Stuart St										
10 L	FT	No	3	36.7	1.000	1.000	8	NA		
11 T	FT	No	3	42.2	1.000	1.000	6	NA		
12 R	FT	No	3	37.8	1.000	1.000	6	NA		

Lanes

Lane Flow and Capacity Information

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 PM (Without Dev)

Intersection ID: 1

Fixed-Time Signals, Cycle Time = 90 sec (Sum of User-given Phase Times)

Lane No.	Dem Flow (veh/h)				Lane Width m	Saturation Flow			End Cap veh/h	Tot Cap veh/h	Deg. Satn x	Lane Util %
	Lef	Thru	Rig	Tot		Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)				
South: Captain Cook Cr												
1 LT	39	54	0	93	3.00	1821	885<	0	0	354	0.262	100
2 TR	0	196	2	198	3.00	1821	1796	0	40	758	0.262	100
East: Murray Cr-Stuart St												
1 LT	1	133	0	134	3.00	1821	1821	0	0	769	0.175	100
2 TR	0	6	60	66	3.00	1821	1206	0	84	375	0.175	100
North: Captain Cook Cr												
1 LT	69	211	0	280	3.00	1821	1799	0	0	760	0.369	100
2 TR	0	149	70	219	3.00	1821	1526	0	55	593	0.369	100
West: Murray Cr-Stuart St												
1 L	181	0	0	181	3.00	1821	1735	0	0	636	0.285	100
2 TR	0	95	63	158	3.00	1821	1556	0	59	622	0.254	89P

< Reduced saturation flow due to a short lane effect

P Lane under-utilisation found by the "Program". This includes cases where the value of lane under-utilisation due to downstream effects has been modified by the program during lane flow calculations (e.g. a de facto

exclusive lane has been found).

Basic Saturation Flow in this table is adjusted for lane width, approach grade, parking manoeuvres and number of buses stopping. Saturation flow scale applies if specified.

Flow Rates and Demand Analysis

Movement Definitions and Flow Rates (O-D)

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 PM (Without Dev)

Intersection ID: 1

Fixed-Time Signals, Cycle Time = 90 sec (Sum of User-given Phase Times)

From Approach	To Approach	Mov ID	Turn	Flow Rate LV	Flow Rate HV	Flow Scale Fixed	Flow Scale Var	Peak Flow Factor
South: Captain Cook Cr								
	East	3	Right	2	0	1.00	1.00	1.00
	North	2	Thru	250	0	1.00	1.00	1.00
	West	1	Left	39	0	1.00	1.00	1.00
East: Murray Cr-Stuart St								
	South	4	Left	1	0	1.00	1.00	1.00
	North	6	Right	60	0	1.00	1.00	1.00
	West	5	Thru	139	0	1.00	1.00	1.00
North: Captain Cook Cr								
	South	8	Thru	360	0	1.00	1.00	1.00
	East	7	Left	69	0	1.00	1.00	1.00
	West	9	Right	70	0	1.00	1.00	1.00
West: Murray Cr-Stuart St								
	South	12	Right	63	0	1.00	1.00	1.00
	East	11	Thru	95	0	1.00	1.00	1.00
	North	10	Left	181	0	1.00	1.00	1.00

Unit Time for Volumes = 60 minutes

Peak Flow Period = 30 minutes

Flow Rates include effects of Flow Scale and Peak Flow Factor

Pedestrian Flow Rates

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 PM (Without Dev)

Intersection ID: 1

Fixed-Time Signals, Cycle Time = 90 sec (Sum of User-given Phase Times)

Mov ID	Stage	Flow Rate ped/h	Flow Scale Fixed	Flow Scale Var	Peak Flow Factor
Across South Approach					
P1		53	1.00	1.00	0.95
Across East Approach					
P3		53	1.00	1.00	0.95
Across North Approach					
P5		53	1.00	1.00	0.95
Across West Approach					
P7		53	1.00	1.00	0.95

Unit Time for Volumes = 60 minutes

Peak Flow Period = 30 minutes

Flow Rates include effects of Flow Scale and Peak Flow Factor

PHASING SUMMARY

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 PM (With Dev)

(With Development) Captain Cook Cr/Murray Cr-Stuart St - 2021 PM
Signals - Fixed Time Cycle Time = 90 seconds

Cycle Time Option: **User-specified Cycle Time**

Phase times specified by the user

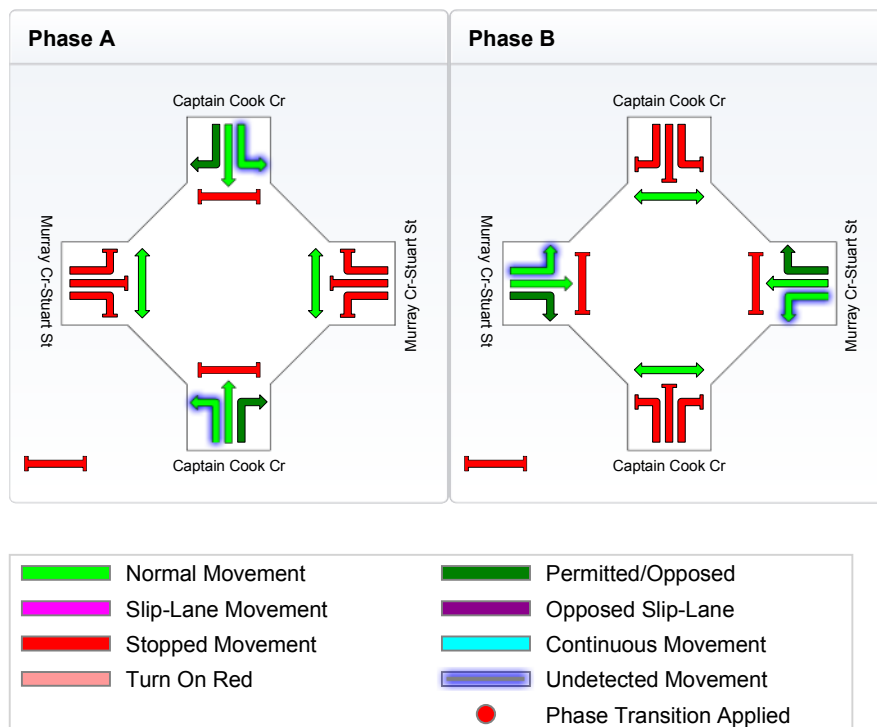
Sequence: **Two-phase**

Input Sequence: **A, B**

Output Sequence: **A, B**

Phase Timing Results

Phase	A	B
Green Time (sec)	38	38
Yellow Time (sec)	4	4
All-Red Time (sec)	3	3
Phase Time (sec)	45	45
Phase Split	50 %	50 %



Processed: Tuesday, 12 October 2010 3:56:41 PM
SIDRA INTERSECTION 4.0.16.1074

Project: P:\Parramatta\2009\09P737\Docs\Civ\SIDRA\BrumbiesHQ.sip
8000857, HUGHES TRUEMAN, SINGLE

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SIDRA
INTERSECTION

MOVEMENT SUMMARY

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 PM (With Dev)

(With Development) Captain Cook Cr/Murray Cr-Stuart St - 2021 PM
Signals - Fixed Time Cycle Time = 90 seconds

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	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Captain Cook Cr											
1	L	39	0.0	0.263	26.5	LOS C	3.7	25.9	0.67	0.81	35.6
2	T	252	0.0	0.264	18.2	LOS B	7.3	51.3	0.68	0.57	38.1
3	R	2	0.0	0.259	25.6	LOS C	7.3	51.3	0.69	0.84	36.8
Approach		293	0.0	0.263	19.4	LOS B	7.3	51.3	0.68	0.60	37.7
East Murray Cr-Stuart St											
4	L	1	0.0	0.169	25.5	LOS C	5.0	35.2	0.66	0.91	36.9
5	T	139	0.0	0.175	17.7	LOS B	5.0	35.2	0.66	0.54	38.6
6	R	60	0.0	0.175	32.3	LOS C	3.1	21.8	0.76	0.75	32.2
Approach		200	0.0	0.175	22.1	LOS C	5.0	35.2	0.69	0.60	36.4
North Captain Cook Cr											
7	L	69	0.0	0.377	27.4	LOS C	10.3	72.4	0.73	0.88	35.5
8	T	372	0.0	0.377	20.1	LOS C	10.3	72.4	0.74	0.63	36.4
9	R	70	0.0	0.377	28.8	LOS C	8.8	61.8	0.76	0.82	34.6
Approach		511	0.0	0.377	22.3	LOS C	10.3	72.4	0.74	0.69	36.0
West Murray Cr-Stuart St											
10	L	181	0.0	0.285	29.9	LOS C	7.3	50.9	0.75	0.79	32.9
11	T	95	0.0	0.258	19.5	LOS B	7.3	50.9	0.71	0.59	36.7
12	R	65	0.0	0.258	27.0	LOS C	6.3	43.9	0.71	0.80	35.5
Approach		341	0.0	0.285	26.5	LOS C	7.3	50.9	0.73	0.73	34.4
All Vehicles		1345	0.0	0.377	22.7	LOS C	10.3	72.4	0.72	0.67	36.0

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

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

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	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	14.5	LOS B	0.1	0.1	0.57	0.57
P3	Across E approach	53	14.5	LOS B	0.1	0.1	0.57	0.57
P5	Across N approach	53	14.5	LOS B	0.1	0.1	0.57	0.57
P7	Across W approach	53	14.5	LOS B	0.1	0.1	0.57	0.57
All Pedestrians		212	14.5				0.57	0.57

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

Level of Service (Worst Movement): LOS B. LOS Method for individual pedestrian movements: Delay (HCM).

DETAILED OUTPUT

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 PM (With Dev)

(With Development) Captain Cook Cr/Murray Cr-Stuart St - 2021 PM
Signals - Fixed Time Cycle Time = 90 seconds

Traffic Signals

Progression and Actuated Signal Parameters

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 PM (With Dev)

Intersection ID: 1

Fixed-Time Signals, Cycle Time = 90 sec (Sum of User-given Phase Times)

Mov ID	Control	Coord.	Arrival Type	% Arriving During Green	Delay Prog. Factor	Queue Prog. Factor	Disp. 1st Grn Gmin	Grn. 2nd Grn Gmax	Settings
South: Captain Cook Cr									
1 L	FT	No	3	36.7	1.000	1.000	8	NA	
2 T	FT	No	3	42.2	1.000	1.000	6	NA	
3 R	FT	No	3	32.2	1.000	1.000	8	NA	
East: Murray Cr-Stuart St									
4 L	FT	No	3	42.2	1.000	1.000	6	NA	
5 T	FT	No	3	42.2	1.000	1.000	6	NA	
6 R	FT	No	3	30.0	1.000	1.000	8	NA	
North: Captain Cook Cr									
7 L	FT	No	3	42.2	1.000	1.000	6	NA	
8 T	FT	No	3	42.2	1.000	1.000	6	NA	
9 R	FT	No	3	35.6	1.000	1.000	6	NA	
West: Murray Cr-Stuart St									
10 L	FT	No	3	36.7	1.000	1.000	8	NA	
11 T	FT	No	3	42.2	1.000	1.000	6	NA	
12 R	FT	No	3	37.8	1.000	1.000	6	NA	

Lanes

Lane Flow and Capacity Information

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 PM (With Dev)

Intersection ID: 1

Fixed-Time Signals, Cycle Time = 90 sec (Sum of User-given Phase Times)

Lane No.	Dem Flow (veh/h)				Lane Width m	Saturation Flow			End Cap veh/h	Tot Cap veh/h	Deg. Satn x	Lane Util %
	Lef	Thru	Rig	Tot		Adj. Basic (tcu)	Aver 1st (veh)	Aver 2nd (veh)				
South: Captain Cook Cr												
1 LT	39	54	0	93	3.00	1821	885<	0	0	354	0.263	100
2 TR	0	198	2	200	3.00	1821	1795	0	40	758	0.263	100
East: Murray Cr-Stuart St												
1 LT	1	133	0	134	3.00	1821	1821	0	0	769	0.175	100
2 TR	0	6	60	66	3.00	1821	1206	0	84	375	0.175	100
North: Captain Cook Cr												
1 LT	69	217	0	286	3.00	1821	1800	0	0	760	0.377	100
2 TR	0	155	70	225	3.00	1821	1533	0	55	596	0.377	100
West: Murray Cr-Stuart St												
1 L	181	0	0	181	3.00	1821	1735	0	0	636	0.285	100
2 TR	0	95	65	160	3.00	1821	1551	0	60	620	0.258	91P

< Reduced saturation flow due to a short lane effect

P Lane under-utilisation found by the "Program". This includes cases where the value of lane under-utilisation due to downstream effects has been modified by the program during lane flow calculations (e.g. a de facto

exclusive lane has been found).

Basic Saturation Flow in this table is adjusted for lane width, approach grade, parking manoeuvres and number of buses stopping. Saturation flow scale applies if specified.

Flow Rates and Demand Analysis

Movement Definitions and Flow Rates (O-D)

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 PM (With Dev)

Intersection ID: 1

Fixed-Time Signals, Cycle Time = 90 sec (Sum of User-given Phase Times)

From Approach	To Approach	Mov ID	Turn	Flow Rate LV	Flow Rate HV	Flow Scale Fixed	Flow Scale Var	Peak Flow Factor
South: Captain Cook Cr								
	East	3	Right	2	0	1.00	1.00	1.00
	North	2	Thru	252	0	1.00	1.00	1.00
	West	1	Left	39	0	1.00	1.00	1.00
East: Murray Cr-Stuart St								
	South	4	Left	1	0	1.00	1.00	1.00
	North	6	Right	60	0	1.00	1.00	1.00
	West	5	Thru	139	0	1.00	1.00	1.00
North: Captain Cook Cr								
	South	8	Thru	372	0	1.00	1.00	1.00
	East	7	Left	69	0	1.00	1.00	1.00
	West	9	Right	70	0	1.00	1.00	1.00
West: Murray Cr-Stuart St								
	South	12	Right	65	0	1.00	1.00	1.00
	East	11	Thru	95	0	1.00	1.00	1.00
	North	10	Left	181	0	1.00	1.00	1.00

Unit Time for Volumes = 60 minutes

Peak Flow Period = 30 minutes

Flow Rates include effects of Flow Scale and Peak Flow Factor

Pedestrian Flow Rates

Site: Captain Cook Cr/Murray Cr-Stuart St - 2021 PM (With Dev)

Intersection ID: 1

Fixed-Time Signals, Cycle Time = 90 sec (Sum of User-given Phase Times)

Mov ID	Stage	Flow Rate ped/h	Flow Scale Fixed	Flow Scale Var	Peak Flow Factor
Across South Approach					
P1		53	1.00	1.00	0.95
Across East Approach					
P3		53	1.00	1.00	0.95
Across North Approach					
P5		53	1.00	1.00	0.95
Across West Approach					
P7		53	1.00	1.00	0.95

Unit Time for Volumes = 60 minutes

Peak Flow Period = 30 minutes

Flow Rates include effects of Flow Scale and Peak Flow Factor

La Perouse st



La Perouse st



Austin st



MOVEMENT SUMMARY

Site: 101223 La Perouse st/ Austin st - 2021 AM (With Dev)

La Perouse st/ Austin st - 2021 AM (With Development)
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South La Perouse st											
11	T	289	0.0	0.254	0.7	LOS A	2.0	14.1	0.34	0.00	53.1
12	R	164	0.0	0.254	8.9	LOS A	2.0	14.1	0.34	0.78	48.5
Approach		453	0.0	0.254	3.7	LOS A	2.0	14.1	0.34	0.28	51.4
East Austin st											
1	L	85	0.0	0.217	10.4	LOS B	1.1	7.6	0.34	0.62	46.6
3	R	115	0.0	0.217	10.4	LOS B	1.1	7.6	0.34	0.77	46.7
Approach		200	0.0	0.217	10.4	LOS B	1.1	7.6	0.34	0.71	46.7
North La Perouse st											
4	L	66	0.0	0.090	8.2	LOS A	0.0	0.0	0.00	0.87	49.0
5	T	106	0.0	0.090	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		172	0.0	0.090	3.1	LOS A	0.0	0.0	0.00	0.33	55.2
All Vehicles		825	0.0	0.254	5.2	NA	2.0	14.1	0.27	0.40	50.9

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

Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).

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

DETAILED OUTPUT

Site: 101223 La Perouse st/ Austin st - 2021 AM (With Dev)

La Perouse st/ Austin st - 2021 AM (With Development)
Giveaway / Yield (Two-Way)

Lanes

Lane Flow and Capacity Information

Site:101223 La Perouse st/ Austin st - 2021 AM (With Dev)

Intersection ID: 1

Give-Way Sign Controlled Intersection

Lane No.	Dem Flow (veh/h)				Min Cap	Tot Cap	Deg. Satn	Lane Util
	Lef	Thru	Rig	Tot	veh/h	veh/h	x	%
South: La Perouse st								
1 TR	0	289	164	453	60	1781	0.254	100
East: Austin st								
1 LR	85	0	115	200	60	923	0.217	100
North: La Perouse st								
1 LT	66	106	0	172	172	1913	0.090	100

The capacity value for priority and continuous movements is obtained by adjusting the basic saturation flow for heavy vehicle and turning vehicle effects. Saturation flow scale applies if specified.

Flow Rates and Demand Analysis

Movement Definitions and Flow Rates (O-D)

Site:101223 La Perouse st/ Austin st - 2021 AM (With Dev)

Intersection ID: 1

Give-Way Sign Controlled Intersection

From Approach	To Approach	Mov ID	Turn	Flow Rate		Flow Scale		Peak Flow Factor
				LV	HV	Fixed	Var	
South: La Perouse st								
	East	12	Right	164	0	1.00	1.00	1.00
	North	11	Thru	289	0	1.00	1.00	1.00
East: Austin st								
	South	1	Left	85	0	1.00	1.00	1.00
	North	3	Right	115	0	1.00	1.00	1.00
North: La Perouse st								
	South	5	Thru	106	0	1.00	1.00	1.00
	East	4	Left	66	0	1.00	1.00	1.00

Unit Time for Volumes = 60 minutes

Peak Flow Period = 30 minutes

Flow Rates include effects of Flow Scale and Peak Flow Factor

MOVEMENT SUMMARY

Site: 101223 La Perouse st/ Austin st - 2021 PM (With Dev)

La Perouse st/ Austin st - 2021 PM (With Development)
 Giveway / Yield (Two-Way)

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	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South La Perouse st											
11	T	120	0.0	0.129	1.6	LOS A	1.0	6.7	0.47	0.00	50.8
12	R	82	0.0	0.129	9.9	LOS A	1.0	6.7	0.47	0.81	48.3
Approach		202	0.0	0.129	5.0	LOS A	1.0	6.7	0.47	0.33	49.7
East Austin st											
1	L	93	0.0	0.189	10.4	LOS B	0.9	6.5	0.47	0.71	46.7
3	R	84	0.0	0.189	10.3	LOS B	0.9	6.5	0.47	0.80	46.7
Approach		177	0.0	0.189	10.3	LOS B	0.9	6.5	0.47	0.75	46.7
North La Perouse st											
4	L	108	0.0	0.210	8.2	LOS A	0.0	0.0	0.00	0.93	49.0
5	T	296	0.0	0.210	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		404	0.0	0.210	2.2	LOS A	0.0	0.0	0.00	0.25	56.6
All Vehicles		783	0.0	0.210	4.8	NA	1.0	6.7	0.23	0.38	52.2

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

Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).

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

DETAILED OUTPUT

Site: 101223 La Perouse st/ Austin st - 2021 PM (With Dev)

La Perouse st/ Austin st - 2021 PM (With Development)
Giveaway / Yield (Two-Way)

Lanes

Lane Flow and Capacity Information Site:101223 La Perouse st/ Austin st - 2021 PM (With Dev)

Intersection ID: 1
Give-Way Sign Controlled Intersection

Lane No.	Dem Flow (veh/h)			Min Cap	Tot Cap	Deg. Satn	Lane Util
	Lef	Thru	Rig	veh/h	veh/h	x	%
South: La Perouse st							
1 TR	0	120	82	202	60	1564	0.129 100
East: Austin st							
1 LR	93	0	84	177	60	937	0.189 100
North: La Perouse st							
1 LT	108	296	0	404	404	1924	0.210 100

The capacity value for priority and continuous movements is obtained by adjusting the basic saturation flow for heavy vehicle and turning vehicle effects. Saturation flow scale applies if specified.

Flow Rates and Demand Analysis

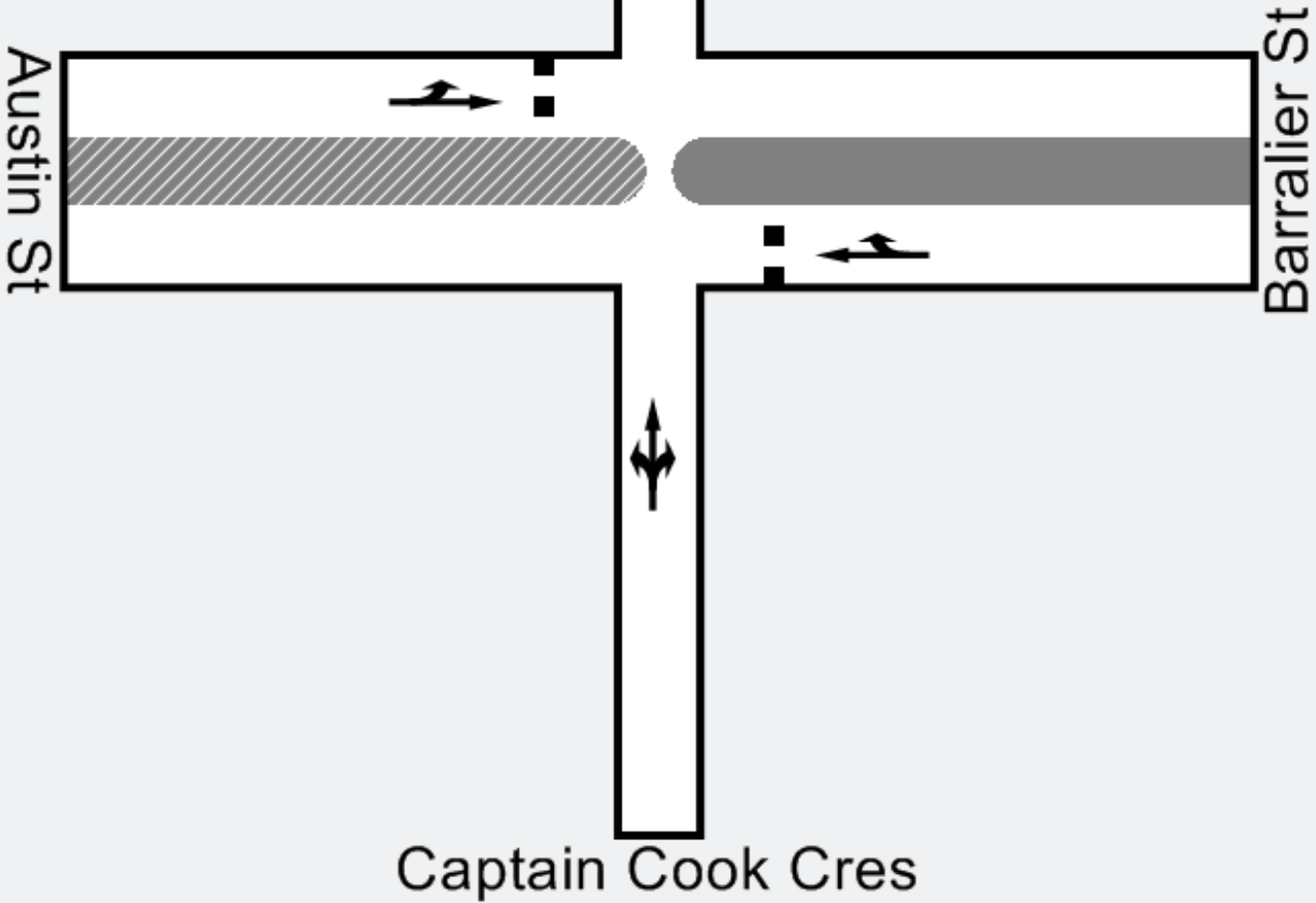
Movement Definitions and Flow Rates (O-D) Site:101223 La Perouse st/ Austin st - 2021 PM (With Dev)

Intersection ID: 1
Give-Way Sign Controlled Intersection

From Approach	To Approach	Mov ID	Turn	Flow Rate		Flow Scale		Peak Flow Factor
				LV	HV	Fixed	Var	
South: La Perouse st								
	East	12	Right	82	0	1.00	1.00	1.00
	North	11	Thru	120	0	1.00	1.00	1.00
East: Austin st								
	South	1	Left	93	0	1.00	1.00	1.00
	North	3	Right	84	0	1.00	1.00	1.00
North: La Perouse st								
	South	5	Thru	296	0	1.00	1.00	1.00
	East	4	Left	108	0	1.00	1.00	1.00

Unit Time for Volumes = 60 minutes
Peak Flow Period = 30 minutes
Flow Rates include effects of Flow Scale and Peak Flow Factor

Captain Cook Cres



MOVEMENT SUMMARY

Site: Captain Cook Cres/ Austin-Barralier St WEST - 2021 AM

Captain Cook Cres/ Austin- Barralier St (WEST) - 2021 AM (Without Development)
 Giveway / Yield (Two-Way)

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	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Captain Cook Cres											
1	L	21	0.0	0.344	8.2	LOS A	0.0	0.0	0.00	1.06	49.0
2	T	637	0.0	0.344	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	11	0.0	0.344	8.3	LOS A	0.0	0.0	0.00	1.09	48.8
Approach		669	0.0	0.344	0.4	LOS A	0.0	0.0	0.00	0.05	59.4
East Barralier St											
5	T	127	0.0	0.498	25.1	LOS D	3.1	21.4	0.83	1.05	35.4
6	R	14	0.0	0.500	26.6	LOS D	3.1	21.4	0.83	1.07	35.0
Approach		141	0.0	0.497	25.2	LOS D	3.1	21.4	0.83	1.05	35.3
West Austin St											
10	L	119	0.0	0.556	21.5	LOS C	3.8	26.7	0.80	1.09	37.8
11	T	99	0.0	0.556	20.3	LOS C	3.8	26.7	0.80	1.06	38.2
Approach		218	0.0	0.555	21.0	LOS C	3.8	26.7	0.80	1.08	38.0
All Vehicles		1028	0.0	0.556	8.2	NA	3.8	26.7	0.28	0.41	49.0

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

Level of Service (Worst Movement): LOS D. LOS Method for individual vehicle movements: Delay (HCM).

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

DETAILED OUTPUT

Site: Captain Cook Cres/ Austin-
Barralier St WEST - 2021 AM

Captain Cook Cres/ Austin- Barralier St (WEST) - 2021 AM (Without Development)
Giveway / Yield (Two-Way)

Lanes

Lane Flow and Capacity Information

Site: Captain Cook Cres/ Austin- Barralier St WEST - 2021 AM

Intersection ID: 1

Give-Way Sign Controlled Intersection

Lane No.	Dem Flow (veh/h)				Min Cap	Tot Cap	Deg. Satn	Lane Util
	Lef	Thru	Rig	Tot	veh/h	veh/h	x	%
South: Captain Cook Cres								
1 LTR	21	637	11	669	669	1945	0.344	100
East: Barralier St								
1 TR	0	127	14	141	60	283	0.497	100
West: Austin St								
1 LT	119	99	0	218	60	393	0.555	100

The capacity value for priority and continuous movements is obtained by adjusting the basic saturation flow for heavy vehicle and turning vehicle effects. Saturation flow scale applies if specified.

Flow Rates and Demand Analysis

Movement Definitions and Flow Rates (O-D)

Site: Captain Cook Cres/ Austin- Barralier St WEST - 2021 AM

Intersection ID: 1

Give-Way Sign Controlled Intersection

From Approach	To Approach	Mov ID	Turn	Flow Rate		Flow Scale		Peak Flow Factor
				LV	HV	Fixed	Var	
South: Captain Cook Cres								
	East	3	Right	11	0	1.00	1.00	1.00
	North	2	Thru	637	0	1.00	1.00	1.00
	West	1	Left	21	0	1.00	1.00	1.00
East: Barralier St								
	North	6	Right	14	0	1.00	1.00	1.00
	West	5	Thru	127	0	1.00	1.00	1.00
West: Austin St								
	East	11	Thru	99	0	1.00	1.00	1.00
	North	10	Left	119	0	1.00	1.00	1.00

Unit Time for Volumes = 60 minutes

Peak Flow Period = 30 minutes

Flow Rates include effects of Flow Scale and Peak Flow Factor

MOVEMENT SUMMARY

Site: Captain Cook Cres/ Austin-Barralier St WEST - 2021 AM (With Dev)

Captain Cook Cres/ Austin/ Barralier St WEST - 2021 AM With Development
Giveaway / Yield (Two-Way)

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	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Captain Cook Cres											
1	L	21	0.0	0.356	8.2	LOS A	0.0	0.0	0.00	1.06	49.0
2	T	656	0.0	0.354	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	11	0.0	0.355	8.3	LOS A	0.0	0.0	0.00	1.09	48.8
Approach		688	0.0	0.354	0.4	LOS A	0.0	0.0	0.00	0.05	59.4
East Barralier St											
5	T	129	0.0	0.533	27.1	LOS D	3.3	23.2	0.85	1.07	34.2
6	R	14	0.0	0.538	28.6	LOS D	3.3	23.2	0.85	1.09	33.9
Approach		143	0.0	0.533	27.3	LOS D	3.3	23.2	0.85	1.07	34.2
West Austin St											
10	L	134	0.0	0.626	23.7	LOS C	4.6	32.5	0.83	1.15	36.5
11	T	104	0.0	0.627	22.5	LOS C	4.6	32.5	0.83	1.12	36.8
Approach		238	0.0	0.627	23.2	LOS C	4.6	32.5	0.83	1.14	36.6
All Vehicles		1069	0.0	0.627	9.0	NA	4.6	32.5	0.30	0.43	48.0

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

Level of Service (Worst Movement): LOS D. LOS Method for individual vehicle movements: Delay (HCM).

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

DETAILED OUTPUT

Site: Captain Cook Cres/ Austin-
Barralier St WEST - 2021 AM (With
Dev)

Captain Cook Cres/ Austin/ Barralier St WEST - 2021 AM With Development
Giveway / Yield (Two-Way)

Lanes

Lane Flow and Capacity Information

Site: Captain Cook Cres/ Austin- Barralier St WEST - 2021 AM (With Dev)

Intersection ID: 1

Give-Way Sign Controlled Intersection

Lane No.	Dem Flow (veh/h)				Min Cap	Tot Cap	Deg. Satn	Lane Util
	Lef	Thru	Rig	Tot	veh/h	veh/h	x	%
South: Captain Cook Cres								
1 LTR	21	656	11	688	688	1945	0.354	100
East: Barralier St								
1 TR	0	129	14	143	60	268	0.533	100
West: Austin St								
1 LT	134	104	0	238	60	380	0.627	100

The capacity value for priority and continuous movements is obtained by adjusting the basic saturation flow for heavy vehicle and turning vehicle effects. Saturation flow scale applies if specified.

Flow Rates and Demand Analysis

Movement Definitions and Flow Rates (O-D)

Site: Captain Cook Cres/ Austin- Barralier St WEST - 2021 AM (With Dev)

Intersection ID: 1

Give-Way Sign Controlled Intersection

From Approach	To Approach	Mov ID	Turn	Flow Rate LV	Flow Rate HV	Flow Scale Fixed	Flow Scale Var	Peak Flow Factor
South: Captain Cook Cres								
	East	3	Right	11	0	1.00	1.00	1.00
	North	2	Thru	656	0	1.00	1.00	1.00
	West	1	Left	21	0	1.00	1.00	1.00
East: Barralier St								
	North	6	Right	14	0	1.00	1.00	1.00
	West	5	Thru	129	0	1.00	1.00	1.00
West: Austin St								
	East	11	Thru	104	0	1.00	1.00	1.00
	North	10	Left	134	0	1.00	1.00	1.00

Unit Time for Volumes = 60 minutes

Peak Flow Period = 30 minutes

Flow Rates include effects of Flow Scale and Peak Flow Factor

MOVEMENT SUMMARY

Site: Captain Cook Cres/ Austin-Barralier St WEST - 2021 PM

Captain Cook Cres/ Austin/ Barralier St (WEST) - 2021 PM (Without Development)
Giveaway / Yield (Two-Way)

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	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Captain Cook Cres											
1	L	18	0.0	0.137	8.2	LOS A	0.0	0.0	0.00	1.01	49.0
2	T	234	0.0	0.137	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	14	0.0	0.137	8.3	LOS A	0.0	0.0	0.00	1.04	48.8
Approach		266	0.0	0.137	1.0	LOS A	0.0	0.0	0.00	0.12	58.4
East Barralier St											
5	T	145	0.0	0.238	10.1	LOS B	1.3	9.3	0.50	0.71	46.9
6	R	14	0.0	0.237	11.6	LOS B	1.3	9.3	0.50	0.88	45.9
Approach		159	0.0	0.238	10.2	LOS B	1.3	9.3	0.50	0.72	46.8
West Austin St											
10	L	50	0.0	0.179	10.4	LOS B	0.9	6.6	0.44	0.71	46.8
11	T	88	0.0	0.180	9.2	LOS A	0.9	6.6	0.44	0.67	47.7
Approach		138	0.0	0.179	9.6	LOS B	0.9	6.6	0.44	0.69	47.4
All Vehicles		563	0.0	0.238	5.7	NA	1.3	9.3	0.25	0.43	51.8

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

Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).

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

DETAILED OUTPUT

Site: Captain Cook Cres/ Austin-Barralier St WEST - 2021 PM

Captain Cook Cres/ Austin/ Barralier St (WEST) - 2021 PM (Without Development)
Giveaway / Yield (Two-Way)

Lanes

Lane Flow and Capacity Information

Site:Captain Cook Cres/ Austin- Barralier St WEST - 2021 PM

Intersection ID: 1

Give-Way Sign Controlled Intersection

Lane No.	Dem Flow (veh/h)				Min Cap	Tot Cap	Deg. Satn	Lane Util
	Lef	Thru	Rig	Tot	veh/h	veh/h	x	%
South: Captain Cook Cres								
1 LTR	18	234	14	266	266	1938	0.137	100
East: Barralier St								
1 TR	0	145	14	159	60	668	0.238	100
West: Austin St								
1 LT	50	88	0	138	60	769	0.179	100

The capacity value for priority and continuous movements is obtained by adjusting the basic saturation flow for heavy vehicle and turning vehicle effects. Saturation flow scale applies if specified.

Flow Rates and Demand Analysis

Movement Definitions and Flow Rates (O-D)

Site:Captain Cook Cres/ Austin- Barralier St WEST - 2021 PM

Intersection ID: 1

Give-Way Sign Controlled Intersection

From Approach	To Approach	Mov ID	Turn	Flow Rate		Flow Scale		Peak Flow Factor
				LV	HV	Fixed	Var	
South: Captain Cook Cres								
	East	3	Right	14	0	1.00	1.00	1.00
	North	2	Thru	234	0	1.00	1.00	1.00
	West	1	Left	18	0	1.00	1.00	1.00
East: Barralier St								
	North	6	Right	14	0	1.00	1.00	1.00
	West	5	Thru	145	0	1.00	1.00	1.00
West: Austin St								
	East	11	Thru	88	0	1.00	1.00	1.00
	North	10	Left	50	0	1.00	1.00	1.00

Unit Time for Volumes = 60 minutes

Peak Flow Period = 30 minutes

Flow Rates include effects of Flow Scale and Peak Flow Factor

MOVEMENT SUMMARY

Site: Captain Cook Cres/ Austin-Barralier St WEST - 2021 PM (With Dev)

Captain Cook Cres/ Austin/ Barralier St WEST - 2021 PM With Development
Giveaway / Yield (Two-Way)

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	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Captain Cook Cres											
1	L	19	0.0	0.138	8.2	LOS A	0.0	0.0	0.00	1.01	49.0
2	T	234	0.0	0.138	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
3	R	14	0.0	0.137	8.3	LOS A	0.0	0.0	0.00	1.04	48.8
Approach		267	0.0	0.138	1.0	LOS A	0.0	0.0	0.00	0.13	58.4
East Barralier St											
5	T	165	0.0	0.267	10.2	LOS B	1.5	10.7	0.51	0.71	46.8
6	R	14	0.0	0.269	11.7	LOS B	1.5	10.7	0.51	0.88	45.9
Approach		179	0.0	0.267	10.3	LOS B	1.5	10.7	0.51	0.73	46.7
West Austin St											
10	L	52	0.0	0.182	10.4	LOS B	1.0	6.7	0.44	0.71	46.8
11	T	88	0.0	0.182	9.2	LOS A	1.0	6.7	0.44	0.67	47.7
Approach		140	0.0	0.182	9.6	LOS B	1.0	6.7	0.44	0.69	47.4
All Vehicles		586	0.0	0.269	5.9	NA	1.5	10.7	0.26	0.44	51.6

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

Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).

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

DETAILED OUTPUT

Site: Captain Cook Cres/ Austin-
Barralier St WEST - 2021 PM (With
Dev)

Captain Cook Cres/ Austin/ Barralier St WEST - 2021 PM With Development
Giveway / Yield (Two-Way)

Lanes

Lane Flow and Capacity Information

Site: Captain Cook Cres/ Austin- Barralier St WEST - 2021 PM (With Dev)

Intersection ID: 1

Give-Way Sign Controlled Intersection

Lane No.	Dem Flow (veh/h)			Min Cap	Tot Cap	Deg. Satn	Lane Util
	Lef	Thru	Rig	veh/h	veh/h	x	%
South: Captain Cook Cres							
1 LTR	19	234	14	267	1938	0.138	100
East: Barralier St							
1 TR	0	165	14	179	60	0.267	100
West: Austin St							
1 LT	52	88	0	140	60	0.182	100

The capacity value for priority and continuous movements is obtained by adjusting the basic saturation flow for heavy vehicle and turning vehicle effects. Saturation flow scale applies if specified.

Flow Rates and Demand Analysis

Movement Definitions and Flow Rates (O-D)

Site: Captain Cook Cres/ Austin- Barralier St WEST - 2021 PM (With Dev)

Intersection ID: 1

Give-Way Sign Controlled Intersection

From Approach	To Approach	Mov ID	Turn	Flow Rate LV	Flow Rate HV	Flow Scale Fixed	Flow Scale Var	Peak Flow Factor
South: Captain Cook Cres								
	East	3	Right	14	0	1.00	1.00	1.00
	North	2	Thru	234	0	1.00	1.00	1.00
	West	1	Left	19	0	1.00	1.00	1.00
East: Barralier St								
	North	6	Right	14	0	1.00	1.00	1.00
	West	5	Thru	165	0	1.00	1.00	1.00
West: Austin St								
	East	11	Thru	88	0	1.00	1.00	1.00
	North	10	Left	52	0	1.00	1.00	1.00

Unit Time for Volumes = 60 minutes

Peak Flow Period = 30 minutes

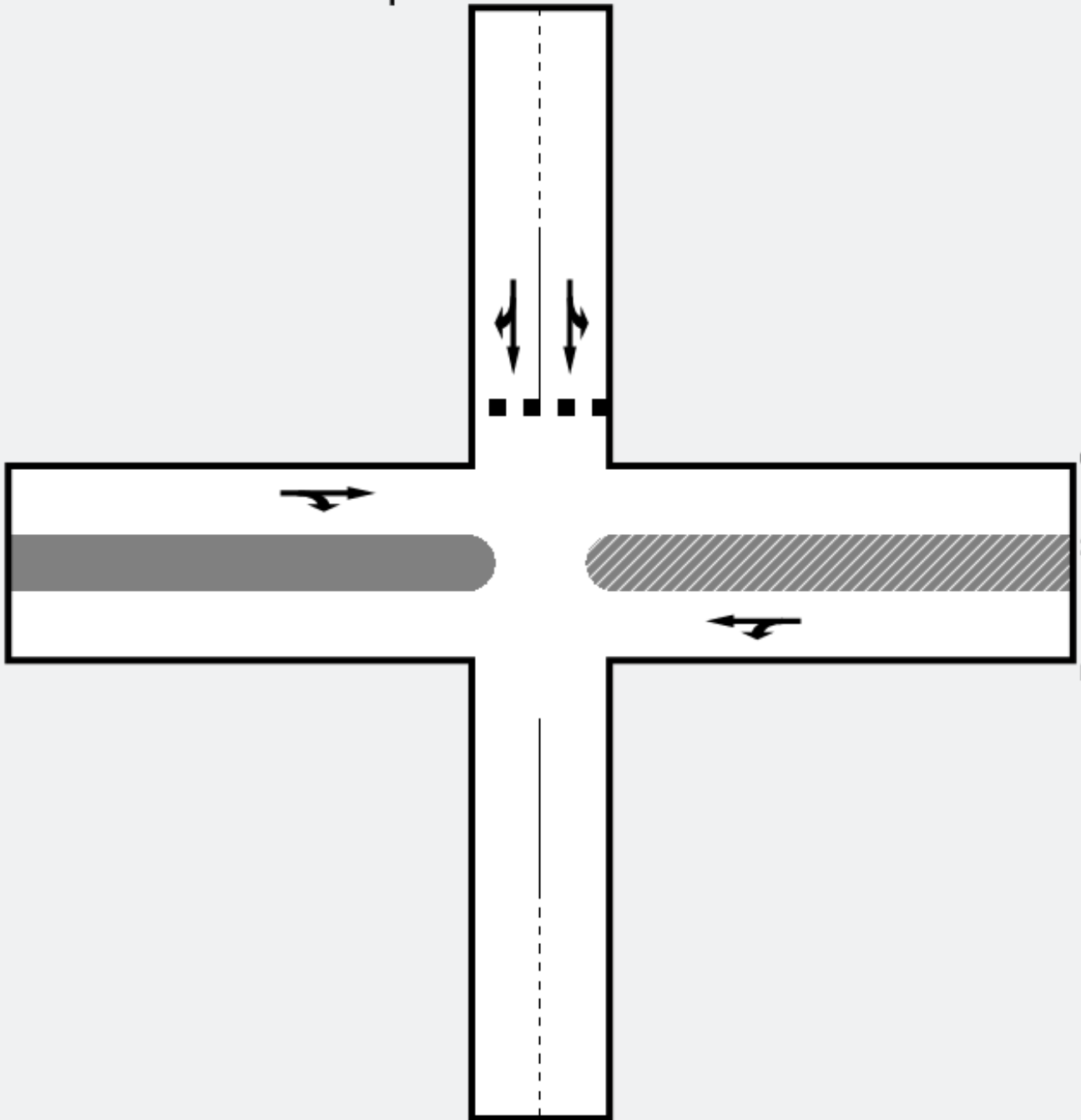
Flow Rates include effects of Flow Scale and Peak Flow Factor

Captain Cook Cres

Barralier St

Barralier St

Captain Cook Cres



MOVEMENT SUMMARY

Site: Captain Cook Cres/ Austin/
Barralier St EAST - 2021 AM

Captain Cook Cres/ Austin/ Barralier St EAST - 2021 AM (Without Development)
Giveaway / Yield (Two-Way)

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	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East Barralier St											
4	L	1	0.0	0.050	8.2	LOS A	0.0	0.0	0.00	1.08	49.0
5	T	95	0.0	0.049	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		96	0.0	0.049	0.1	LOS A	0.0	0.0	0.00	0.01	59.9
North Captain Cook Cres											
7	L	3	0.0	0.167	10.0	LOS B	1.0	6.7	0.39	0.62	47.3
8	T	211	0.0	0.170	8.8	LOS A	1.0	6.7	0.40	0.63	48.1
9	R	46	0.0	0.170	10.4	LOS B	0.9	6.5	0.40	0.75	46.9
Approach		260	0.0	0.170	9.1	LOS B	1.0	6.7	0.40	0.65	47.9
West Barralier St											
11	T	84	0.0	0.054	0.4	LOS A	0.4	2.7	0.22	0.00	55.7
12	R	15	0.0	0.055	8.8	LOS A	0.4	2.7	0.22	0.93	48.8
Approach		99	0.0	0.054	1.6	LOS A	0.4	2.7	0.22	0.14	54.6
All Vehicles		455	0.0	0.170	5.6	NA	1.0	6.7	0.27	0.40	51.4

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

Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).

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

DETAILED OUTPUT

Site: Captain Cook Cres/ Austin/
Barralier St EAST - 2021 AM

Captain Cook Cres/ Austin/ Barralier St EAST - 2021 AM (Without Development)
Giveway / Yield (Two-Way)

Lanes

Lane Flow and Capacity Information

Site: Captain Cook Cres/ Austin/ Barralier St EAST - 2021 AM

Intersection ID: 1

Give-Way Sign Controlled Intersection

Lane No.	Dem Flow (veh/h)			Min	Tot	Deg. Lane	
	Lef	Thru	Rig	Cap	Cap	Satn	Util

East: Barralier St							
1 LT	1	95	0	96	96	1949	0.049 100

North: Captain Cook Cres							
1 LT	3	131	0	134	60	789	0.170 100
2 TR	0	80	46	126	60	741	0.170 100

West: Barralier St							
1 TR	0	84	15	99	60	1817	0.054 100

The capacity value for priority and continuous movements is obtained by adjusting the basic saturation flow for heavy vehicle and turning vehicle effects. Saturation flow scale applies if specified.

Flow Rates and Demand Analysis

Movement Definitions and Flow Rates (O-D)

Site: Captain Cook Cres/ Austin/ Barralier St EAST - 2021 AM

Intersection ID: 1

Give-Way Sign Controlled Intersection

From Approach	To Approach	Mov ID	Turn	Flow LV	Rate HV	Flow Scale Fixed	Flow Scale Var	Peak Flow Factor

East: Barralier St								
	South	4	Left	1	0	1.00	1.00	1.00
	West	5	Thru	95	0	1.00	1.00	1.00

North: Captain Cook Cres								
	South	8	Thru	211	0	1.00	1.00	1.00
	East	7	Left	3	0	1.00	1.00	1.00
	West	9	Right	46	0	1.00	1.00	1.00

West: Barralier St								
	South	12	Right	15	0	1.00	1.00	1.00
	East	11	Thru	84	0	1.00	1.00	1.00

Unit Time for Volumes = 60 minutes

Peak Flow Period = 30 minutes

Flow Rates include effects of Flow Scale and Peak Flow Factor

MOVEMENT SUMMARY

Site: Captain Cook Cres/ Austin/
Barralier St EAST - 2021 AM (With
Dev)

Captain Cook Cres/ Austin/ Barralier St EAST - 2021 AM (With Development)
Giveaway / Yield (Two-Way)

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	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East Barralier St											
4	L	1	0.0	0.067	8.2	LOS A	0.0	0.0	0.00	1.09	49.0
5	T	129	0.0	0.067	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		130	0.0	0.067	0.1	LOS A	0.0	0.0	0.00	0.01	59.9
North Captain Cook Cres											
7	L	3	0.0	0.176	10.4	LOS B	1.0	7.1	0.43	0.62	46.9
8	T	211	0.0	0.182	9.3	LOS A	1.0	7.1	0.44	0.65	47.7
9	R	48	0.0	0.182	10.9	LOS B	1.0	6.9	0.44	0.77	46.4
Approach		262	0.0	0.182	9.6	LOS B	1.0	7.1	0.44	0.68	47.4
West Barralier St											
11	T	88	0.0	0.058	0.5	LOS A	0.4	2.9	0.26	0.00	55.0
12	R	16	0.0	0.058	8.9	LOS A	0.4	2.9	0.26	0.92	48.8
Approach		104	0.0	0.058	1.8	LOS A	0.4	2.9	0.26	0.14	53.9
All Vehicles		496	0.0	0.182	5.5	NA	1.0	7.1	0.29	0.39	51.6

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

Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).

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

DETAILED OUTPUT

Site: Captain Cook Cres/ Austin/
Barralier St EAST - 2021 AM (With
Dev)

Captain Cook Cres/ Austin/ Barralier St EAST - 2021 AM (With Development)
Giveway / Yield (Two-Way)

Lanes

Lane Flow and Capacity Information

Site:Captain Cook Cres/ Austin/ Barralier St EAST - 2021 AM (With Dev)

Intersection ID: 1

Give-Way Sign Controlled Intersection

Lane No.	Dem Flow (veh/h)			Min Cap	Tot Cap	Deg. Satn	Lane Util
	Lef	Thru	Rig	Tot	veh/h	veh/h	x %
East: Barralier St							
1 LT	1	129	0	130	130	1949	0.067 100
North: Captain Cook Cres							
1 LT	3	132	0	135	60	745	0.182 100
2 TR	0	79	48	127	60	697	0.182 100
West: Barralier St							
1 TR	0	88	16	104	60	1802	0.058 100

The capacity value for priority and continuous movements is obtained by adjusting the basic saturation flow for heavy vehicle and turning vehicle effects. Saturation flow scale applies if specified.

Flow Rates and Demand Analysis

Movement Definitions and Flow Rates (O-D)

Site:Captain Cook Cres/ Austin/ Barralier St EAST - 2021 AM (With Dev)

Intersection ID: 1

Give-Way Sign Controlled Intersection

From Approach	To Approach	Mov ID	Turn	Flow Rate LV	Flow Rate HV	Flow Scale Fixed	Flow Scale Var	Peak Flow Factor
East: Barralier St								
	South	4	Left	1	0	1.00	1.00	1.00
	West	5	Thru	129	0	1.00	1.00	1.00
North: Captain Cook Cres								
	South	8	Thru	211	0	1.00	1.00	1.00
	East	7	Left	3	0	1.00	1.00	1.00
	West	9	Right	48	0	1.00	1.00	1.00
West: Barralier St								
	South	12	Right	16	0	1.00	1.00	1.00
	East	11	Thru	88	0	1.00	1.00	1.00

Unit Time for Volumes = 60 minutes

Peak Flow Period = 30 minutes

Flow Rates include effects of Flow Scale and Peak Flow Factor

MOVEMENT SUMMARY

Site: Captain Cook Cres/ Austin/
Barralier St EAST - 2021 PM

Captain Cook Cres/ Austin/ Barralier St EAST - 2021 PM (Without Development)
Giveaway / Yield (Two-Way)

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	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East Barralier St											
4	L	7	0.0	0.056	8.2	LOS A	0.0	0.0	0.00	1.05	49.0
5	T	101	0.0	0.056	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		108	0.0	0.056	0.5	LOS A	0.0	0.0	0.00	0.07	59.1
North Captain Cook Cres											
7	L	11	0.0	0.282	10.2	LOS B	1.8	12.3	0.41	0.61	47.1
8	T	373	0.0	0.286	9.0	LOS A	1.8	12.3	0.43	0.65	47.9
9	R	58	0.0	0.286	10.6	LOS B	1.7	12.1	0.44	0.76	46.7
Approach		442	0.0	0.286	9.3	LOS B	1.8	12.3	0.43	0.66	47.8
West Barralier St											
11	T	65	0.0	0.051	0.4	LOS A	0.3	2.4	0.22	0.00	55.4
12	R	23	0.0	0.051	8.8	LOS A	0.3	2.4	0.22	0.87	48.6
Approach		88	0.0	0.051	2.6	LOS A	0.3	2.4	0.22	0.23	53.4
All Vehicles		638	0.0	0.286	6.9	NA	1.8	12.3	0.33	0.50	50.1

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

Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).

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

DETAILED OUTPUT

Site: Captain Cook Cres/ Austin/
Barralier St EAST - 2021 PM

Captain Cook Cres/ Austin/ Barralier St EAST - 2021 PM (Without Development)
Giveway / Yield (Two-Way)

Lanes

Lane Flow and Capacity Information

Site: Captain Cook Cres/ Austin/ Barralier St EAST - 2021 PM

Intersection ID: 1

Give-Way Sign Controlled Intersection

Lane No.	Dem Flow (veh/h)			Min Cap	Tot Cap	Deg. Satn	Lane Util
	Lef	Thru	Rig	veh/h	veh/h	x	%
East: Barralier St							
1 LT	7	101	0	108	1944	0.056	100
North: Captain Cook Cres							
1 LT	11	216	0	227	60	0.286	100
2 TR	0	157	58	215	60	0.286	100
West: Barralier St							
1 TR	0	65	23	88	60	0.051	100

The capacity value for priority and continuous movements is obtained by adjusting the basic saturation flow for heavy vehicle and turning vehicle effects. Saturation flow scale applies if specified.

Flow Rates and Demand Analysis

Movement Definitions and Flow Rates (O-D)

Site: Captain Cook Cres/ Austin/ Barralier St EAST - 2021 PM

Intersection ID: 1

Give-Way Sign Controlled Intersection

From Approach	To Approach	Mov ID	Turn	Flow Rate LV	Flow Rate HV	Flow Scale Fixed	Flow Scale Var	Peak Flow Factor
East: Barralier St								
	South	4	Left	7	0	1.00	1.00	1.00
	West	5	Thru	101	0	1.00	1.00	1.00
North: Captain Cook Cres								
	South	8	Thru	373	0	1.00	1.00	1.00
	East	7	Left	11	0	1.00	1.00	1.00
	West	9	Right	58	0	1.00	1.00	1.00
West: Barralier St								
	South	12	Right	23	0	1.00	1.00	1.00
	East	11	Thru	65	0	1.00	1.00	1.00

Unit Time for Volumes = 60 minutes

Peak Flow Period = 30 minutes

Flow Rates include effects of Flow Scale and Peak Flow Factor

MOVEMENT SUMMARY

Site: Captain Cook Cres/ Austin/
Barralier St EAST - 2021 PM (With
Dev)

Captain Cook Cres/ Austin/ Barralier St EAST - 2021 PM (With Development)
Giveaway / Yield (Two-Way)

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	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East Barralier St											
4	L	7	0.0	0.089	8.2	LOS A	0.0	0.0	0.00	1.06	49.0
5	T	165	0.0	0.088	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		172	0.0	0.088	0.3	LOS A	0.0	0.0	0.00	0.04	59.5
North Captain Cook Cres											
7	L	11	0.0	0.324	11.1	LOS B	2.1	14.4	0.48	0.60	46.2
8	T	373	0.0	0.327	10.0	LOS B	2.1	14.4	0.49	0.71	46.9
9	R	74	0.0	0.327	11.7	LOS B	2.1	14.4	0.52	0.82	45.7
Approach		458	0.0	0.327	10.3	LOS B	2.1	14.4	0.50	0.72	46.7
West Barralier St											
11	T	65	0.0	0.052	0.7	LOS A	0.4	2.5	0.29	0.00	54.1
12	R	23	0.0	0.052	9.1	LOS A	0.4	2.5	0.29	0.86	48.6
Approach		88	0.0	0.052	2.9	LOS A	0.4	2.5	0.29	0.23	52.6
All Vehicles		718	0.0	0.327	7.0	NA	2.1	14.4	0.35	0.50	49.9

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

Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).

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

DETAILED OUTPUT

Site: Captain Cook Cres/ Austin/
Barralier St EAST - 2021 PM (With
Dev)

Captain Cook Cres/ Austin/ Barralier St EAST - 2021 PM (With Development)
Giveway / Yield (Two-Way)

Lanes

Lane Flow and Capacity Information

Site:Captain Cook Cres/ Austin/ Barralier St EAST - 2021 PM (With Dev)

Intersection ID: 1

Give-Way Sign Controlled Intersection

Lane No.	Dem Flow (veh/h)			Min	Tot	Deg. Lane	
	Lef	Thru	Rig	Cap	Cap	Satn	Util
				veh/h	veh/h	x	%
East: Barralier St							
1 LT	7	165	0	172	1946	0.088	100
North: Captain Cook Cres							
1 LT	11	226	0	237	60	724	0.327
2 TR	0	147	74	221	60	676	0.327
West: Barralier St							
1 TR	0	65	23	88	60	1686	0.052

The capacity value for priority and continuous movements is obtained by adjusting the basic saturation flow for heavy vehicle and turning vehicle effects. Saturation flow scale applies if specified.

Flow Rates and Demand Analysis

Movement Definitions and Flow Rates (O-D)

Site:Captain Cook Cres/ Austin/ Barralier St EAST - 2021 PM (With Dev)

Intersection ID: 1

Give-Way Sign Controlled Intersection

From Approach	To Approach	Mov ID	Turn	Flow LV	Rate HV	Flow Scale Fixed	Flow Scale Var	Peak Flow Factor
East: Barralier St								
	South	4	Left	7	0	1.00	1.00	1.00
	West	5	Thru	165	0	1.00	1.00	1.00
North: Captain Cook Cres								
	South	8	Thru	373	0	1.00	1.00	1.00
	East	7	Left	11	0	1.00	1.00	1.00
	West	9	Right	74	0	1.00	1.00	1.00
West: Barralier St								
	South	12	Right	23	0	1.00	1.00	1.00
	East	11	Thru	65	0	1.00	1.00	1.00

Unit Time for Volumes = 60 minutes

Peak Flow Period = 30 minutes

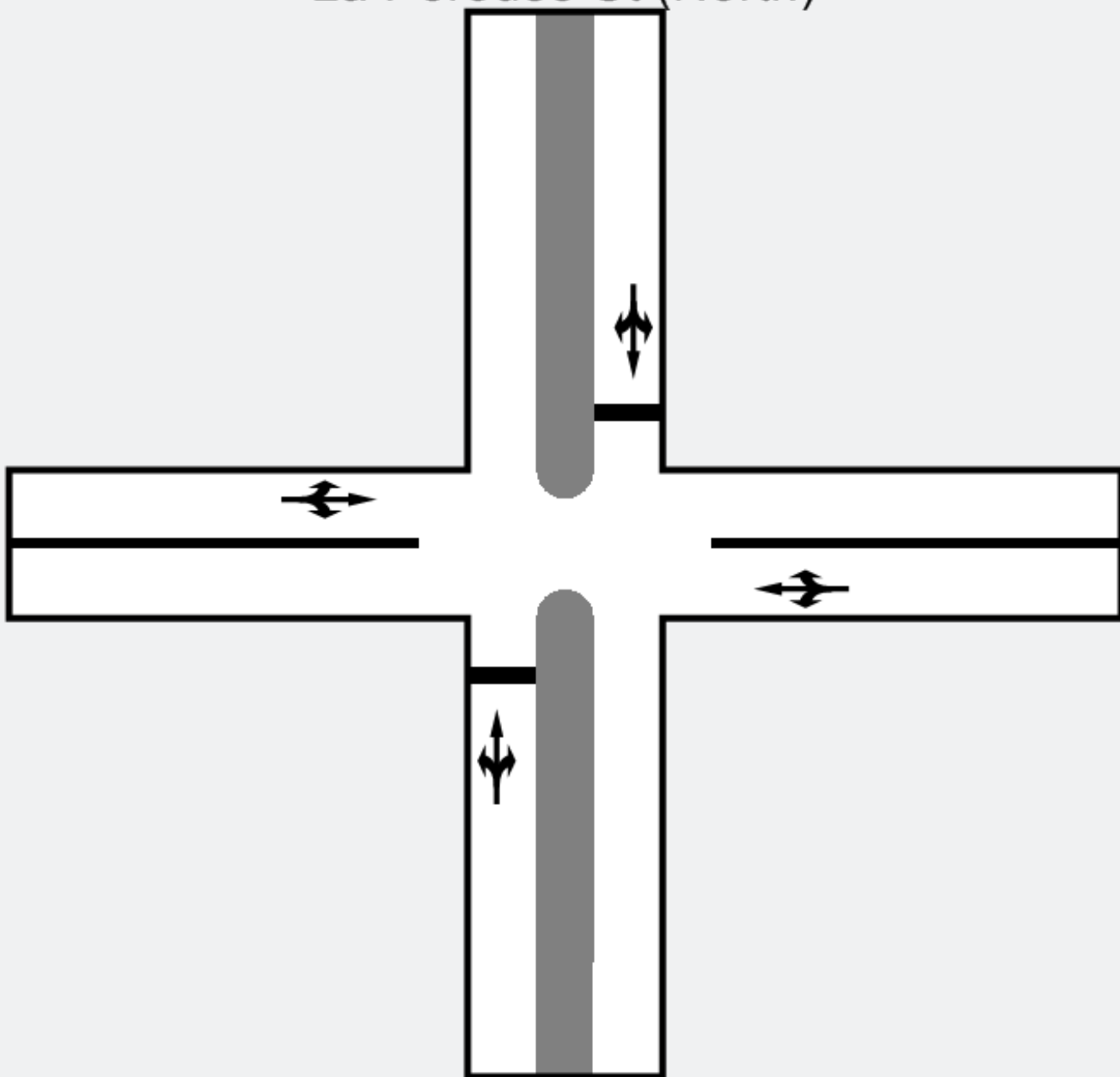
Flow Rates include effects of Flow Scale and Peak Flow Factor

La Perouse St (North)

Flinders Way (West)

Flinders Way (East)

La Perouse St (South)



MOVEMENT SUMMARY

Site: 4-way Flinders Way / LaPerouse St 2009 AM

Flinders Way / La Perouse Street 2009 AM Without Development
Stop (Two-Way)

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	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South La Perouse St (South)											
4	L	101	0.0	0.878	46.0	LOS D	13.2	92.7	0.77	1.62	26.9
5	T	97	0.0	0.874	45.6	LOS D	13.2	92.7	0.77	1.57	27.0
6	R	121	0.0	0.877	45.9	LOS D	13.2	92.7	0.77	1.56	27.0
Approach		319	0.0	0.875	45.8	LOS D	13.2	92.7	0.77	1.58	27.0
East Flinders Way (East)											
7	L	73	0.0	0.130	14.0	LOS A	1.4	9.9	0.68	0.34	45.5
8	T	159	0.0	0.130	2.9	LOS A	1.4	9.9	0.68	0.00	46.3
9	R	2	0.0	0.133	15.1	LOS B	1.4	9.9	0.68	0.98	44.7
Approach		234	0.0	0.130	6.4	LOS B	1.4	9.9	0.68	0.11	46.0
North La Perouse St (North)											
10	L	3	0.0	0.049	21.9	LOS B	0.2	1.5	0.71	0.89	38.4
11	T	7	0.0	0.049	21.4	LOS B	0.2	1.5	0.71	1.00	38.6
12	R	4	0.0	0.049	21.7	LOS B	0.2	1.5	0.71	0.93	38.5
Approach		14	0.0	0.049	21.6	LOS B	0.2	1.5	0.71	0.95	38.5
West Flinders Way (West)											
1	L	20	0.0	0.323	13.6	LOS A	3.2	22.2	0.48	0.66	45.8
2	T	471	0.0	0.323	1.4	LOS A	3.2	22.2	0.48	0.00	50.3
3	R	65	0.0	0.323	14.9	LOS B	3.2	22.2	0.48	1.07	44.8
Approach		556	0.0	0.323	3.4	LOS B	3.2	22.2	0.48	0.15	49.3
All Vehicles		1123	0.0	0.878	16.3	NA	13.2	92.7	0.61	0.56	39.0

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

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

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

DETAILED OUTPUT

**Site: 4-way Flinders Way / LaPe-
rouse St 2009 AM**

Flinders Way / La Perouse Street 2009 AM Without Development
Stop (Two-Way)

Lanes

Lane Flow and Capacity Information

Site:4-way Flinders Way / LaPerouse St 2009 AM

Intersection ID: 1

Stop Sign Controlled Intersection

Lane No.	Dem Flow (veh/h)				Min Cap	Tot Cap	Deg. Satn	Lane Util
	Lef	Thru	Rig	Tot	veh/h	veh/h	x	%
South: La Perouse St (South)								
1 LTR	101	97	121	319	60	364	0.875	100
East: Flinders Way (East)								
1 LTR	73	159	2	234	60	1803	0.130	100
North: La Perouse St (North)								
1 LTR	3	7	4	14	14	284	0.049	100
West: Flinders Way (West)								
1 LTR	20	471	65	556	60	1723	0.323	100

The capacity value for priority and continuous movements is obtained by adjusting the basic saturation flow for heavy vehicle and turning vehicle effects. Saturation flow scale applies if specified.

Flow Rates and Demand Analysis

Movement Definitions and Flow Rates (O-D)

Site:4-way Flinders Way / LaPerouse St 2009 AM

Intersection ID: 1

Stop Sign Controlled Intersection

From Approach	To Approach	Mov ID	Turn	Flow LV	Rate HV	Flow Fixed	Scale Var	Peak Flow Factor
South: La Perouse St (South)								
	East	6	Right	121	0	1.00	1.00	1.00
	North	5	Thru	97	0	1.00	1.00	1.00
	West	4	Left	101	0	1.00	1.00	1.00
East: Flinders Way (East)								
	South	7	Left	73	0	1.00	1.00	1.00
	North	9	Right	2	0	1.00	1.00	1.00
	West	8	Thru	159	0	1.00	1.00	1.00
North: La Perouse St (North)								
	South	11	Thru	7	0	1.00	1.00	1.00
	East	10	Left	3	0	1.00	1.00	1.00
	West	12	Right	4	0	1.00	1.00	1.00
West: Flinders Way (West)								
	South	3	Right	65	0	1.00	1.00	1.00
	East	2	Thru	471	0	1.00	1.00	1.00
	North	1	Left	20	0	1.00	1.00	1.00

Unit Time for Volumes = 60 minutes

Peak Flow Period = 30 minutes

Flow Rates include effects of Flow Scale and Peak Flow Factor

MOVEMENT SUMMARY

Site: T-intersection Flinders Way /
LaPerouse St 2009 AM

Flinders Way / La Perouse Street (T-intersection) 2009 AM Without Development
Stop (Two-Way)

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	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South La Perouse St (South)											
4	L	101	0.0	0.962	69.7	LOS E	19.0	133.3	0.81	2.04	20.8
6	R	218	0.0	0.960	69.5	LOS E	19.0	133.3	0.81	1.87	20.8
Approach		319	0.0	0.961	69.6	LOS E	19.0	133.3	0.81	1.92	20.8
East Flinders Way (East)											
7	L	73	0.0	0.127	11.1	LOS A	0.0	0.0	0.00	1.09	46.3
8	T	159	0.0	0.127	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		232	0.0	0.127	3.5	LOS A	0.0	0.0	0.00	0.34	54.4
West Flinders Way (West)											
2	T	471	0.0	0.312	1.4	LOS A	3.0	21.1	0.46	0.00	50.6
3	R	65	0.0	0.311	15.1	LOS B	3.0	21.1	0.46	1.11	44.6
Approach		536	0.0	0.311	3.1	LOS B	3.0	21.1	0.46	0.13	49.7
All Vehicles		1087	0.0	0.962	22.7	NA	19.0	133.3	0.47	0.70	35.3

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

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

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

DETAILED OUTPUT

Site: T-intersection Flinders Way /
LaPerouse St 2009 AM

Flinders Way / La Perouse Street (T-intersection) 2009 AM Without Development
Stop (Two-Way)

Lanes

Lane Flow and Capacity Information

Site:T-intersection Flinders Way / LaPerouse St 2009 AM

Intersection ID: 1

Stop Sign Controlled Intersection

Lane No.	Dem Flow (veh/h)			Min Cap	Tot Cap	Deg. Satn	Lane Util
	Lef	Thru	Rig	veh/h	veh/h	x	%
South: La Perouse St (South)							
1 LR	101	0	218	319	60	332	0.961 100
East: Flinders Way (East)							
1 LT	73	159	0	232	232	1821	0.127 100
West: Flinders Way (West)							
1 TR	0	471	65	536	60	1721	0.311 100

The capacity value for priority and continuous movements is obtained by adjusting the basic saturation flow for heavy vehicle and turning vehicle effects. Saturation flow scale applies if specified.

Flow Rates and Demand Analysis

Movement Definitions and Flow Rates (O-D)

Site:T-intersection Flinders Way / LaPerouse St 2009 AM

Intersection ID: 1

Stop Sign Controlled Intersection

From Approach	To Approach	Mov ID	Turn	Flow Rate		Flow Scale		Peak Flow Factor
				LV	HV	Fixed	Var	
South: La Perouse St (South)								
	East	6	Right	218	0	1.00	1.00	1.00
	West	4	Left	101	0	1.00	1.00	1.00
East: Flinders Way (East)								
	South	7	Left	73	0	1.00	1.00	1.00
	West	8	Thru	159	0	1.00	1.00	1.00
West: Flinders Way (West)								
	South	3	Right	65	0	1.00	1.00	1.00
	East	2	Thru	471	0	1.00	1.00	1.00

Unit Time for Volumes = 60 minutes

Peak Flow Period = 30 minutes

Flow Rates include effects of Flow Scale and Peak Flow Factor

APPENDIX D

METHODOLOGY

METHODOLOGY

The following outlines the proposed methodology for the Traffic Impact and Parking Assessment (TIPA) for consideration of a residential development option on Block 15, Section 42 Griffith, ACT.

It should be noted that this project would be undertaken subsequent to the relocation of the Brumbies Rugby Union Headquarters to Block 17, Section 42 Griffith (within close proximity of the existing site). However, this is considered to be a separate development for which a separate TIPA and methodology will be undertaken.

1.0 Existing Conditions

- Describe existing land-use, service vehicle use and access arrangement;
- Review and discuss existing traffic conditions on adjacent road network;
- Accident history along Austin Street and La Perouse Street (between Austin Street and Flinders Way); and
- Existing Public Transport within close proximity.

2.0 Proposed Development

- Describe the proposed development including:
 - Location of site;
 - Land use and scale of the development;
 - Access arrangements;
 - Internal car park compliance; and
 - Assessment of the proposed service vehicle access (including delivery, waste and emergency vehicles).



3.0 Parking Provision

- The car parking and bicycle parking provisions for residents and visitors will be determined by applying the parking rates for the proposed development as stipulated in the Parking and Vehicular Access General Code (General Code) and the Bicycle Parking Code.

4.0 Trip Generation

- The trip generation for the proposed development will be estimated in accordance with ACTPLA's Residential Subdivision Development Code. The trip generation will also be compared with the on-site parking provision;
- The trip distribution will be based on existing traffic flows observed in the survey data and will lean towards the worst case scenario.

5.0 Access & Internal Arrangements

- The onsite car-park will be designed and tested in accordance with Australian Standards AS/NZS 2890.1 and AS/NZS 2890.2 and will include the use of Auto-Turn software where appropriate (includes analysis of service, waste collection and emergency vehicles); and
- The access arrangements will consider the above parameters as well as pedestrian safety, bicycle safety, number and location of driveway access.

6.0 Traffic Impact

- The following design horizon will be adopted:
 - Development application / approval: 2009;
 - Occupation: 2010; and
 - Occupation plus 10 years: 2020;
- Apply a conservative traffic growth rate for roads within close proximity to the site of 1% per annum (excluding the proposed development);
- Pedestrian/cyclists and Public transport user access;



-
- Assess the traffic impact of the proposed development based on the following two scenarios:
 - 2020 without the proposed development; and
 - 2020 with the proposed development.
 - Analyses of the key intersections within relatively close proximity to the site:
 - La Perouse Street/Austin Street;
 - La Perouse Street/Flinders Way; and
 - Austin Street / Site Access.
 - Should a SIDRA Analyses be deemed necessary, TAMS guidelines for using SIDRA will be adapted. Analyses will consider degree of saturation (DOS), average delay, 95th percentile queues length and Level of Service (LOS).

7.0 Roadway Capacity

- Determine the roadway capacity of the frontage roadway to the site. If considered necessary, outline any ameliorative works required to service the expected traffic volumes as part of the traffic impact assessment. It is anticipated that the following two roads will be assessed:
 - La Perouse Street; and
 - Austin Street.

8.0 Parking Impact

- Assess the on-site parking provision and supply in accordance with the General Code and Bicycle Parking General Code.



HUGHES TRUEMAN

Proposed Residential
Options, Block 15,
Section 42,
Griffith ACT

Conclusion

- Summarise key findings and / or recommendations; and
- Identify ameliorative measures to minimise adverse traffic impacts.

Regards



Federico Ramos
Traffic Engineer
HUGHES TRUEMAN



Graeme Shooobridge
Director
HUGHES TRUEMAN

APPENDIX D

METHODOLOGY



Site Accident History by Injury type

Printed for: Jancewicz, Marian

5-Nov-2009

Site History for site : Intersection : AUSTIN ST / CAPTAIN COOK CR / BARRALLIER ST / CAPTAIN COOK CR

Accident date between 01/01/2004 and 31/12/2008

Police Reference	Date/time	Severity	Injury Type	Acc. Type	Num Cas	Num Veh	Primary Street	Road Surface	Weather	Rum Code
				Veh Num	Direction	Lane	Position	Movement	Visibility Restrictions	
2004197780	01/10/04 17:42	Property Damage Only		2	0	2	AUSTIN ST	Good dry surface	Fine	101
				1	East bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
				2	North bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
2005201679	20/01/05 13:09	Property Damage Only		2	0	2	AUSTIN ST	Wet surface	Light rain	101
				1	South bound	2nd lane	Within intersection	Straight ahead	Not obstructed	
				2	East bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed	
2005201877	28/01/05 14:35	Property Damage Only		2	0	2	AUSTIN ST	Good dry surface	Fine	101
				1	East bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed	
				2	South bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
2005206165	09/06/05 19:30	Property Damage Only		2	0	2	AUSTIN ST	Good dry surface	Fine	101
				1	West bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed	
				2	North bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed	
2005210043	14/10/05 13:05	Property Damage Only		19	0	1	AUSTIN ST	Good dry surface	Fine	703
				1	North bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
20058211621	10/12/05 11:40	Property Damage Only		2	0	2	AUSTIN ST	Good dry surface	Fine	101
				1	West bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed	
				2	North bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
2006-212354	23/01/06 15:39	Injury	Received medical tr	2	2	3	AUSTIN ST	Good dry surface	Fine	101
				1	North bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed	
				2	West bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
2006-347458	23/01/06 15:39	Injury	Received medical tr	2	1	3	CAPTAIN COOK CR	Good dry surface	Fine	101
				1	North bound	2nd lane	Within intersection	Straight ahead	Not known	
				2	East bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not known	
					3	West bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not known



Site Accident History by Injury type

Printed for: Jancewicz, Marian

5-Nov-2009

Site History for site : Intersection : AUSTIN ST / CAPTAIN COOK CR / BARRALLIER ST / CAPTAIN COOK CR

Accident date between 01/01/2004 and 31/12/2008

Police Reference	Date/Time	Severity	Injury Type	Acc. Type	Num Cas	Num Veh	Primary Street	Road Surface	Weather	Rum Code
				Veh Num	Direction	Lane	Position	Movement	Visibility Restrictions	
2006-213477	18/02/06 16:00	Property Damage Only		6	0	2	AUSTIN ST	Good dry surface	Fine	301
				1	Unknown	Unknown	Unknown	Left turn	Not obstructed	
				2	Unknown	1st (kerb or left) lane	Within intersection	Left turn	Not obstructed	
2006-218834	03/09/06 11:45	Property Damage Only		2	0	2	AUSTIN ST	Wet surface	Light rain	101
				1	East bound	1st (kerb or left) lane	Within intersection	Straight ahead	Glare or dazzle	
				2	South bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
2007-484393	12/04/07 07:30	Property Damage Only		2	0	2	CAPTAIN COOK CR	Good dry surface	Fine	101
				1	East bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
				2	South bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
2007-495327	14/08/07 08:40	Property Damage Only		2	0	2	CAPTAIN COOK CR	Good dry surface	Fine	101
				1	North bound	2nd lane	Approaching intersection	Straight ahead	Not obstructed	
				2	East bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed	
2007-495546	16/08/07 14:30	Property Damage Only		2	0	2	CAPTAIN COOK CR	Good dry surface	Fine	102
				1	South bound	2nd lane	Approaching intersection	Straight ahead	Not obstructed	
				2	East bound	1st (kerb or left) lane	Within intersection	Right turn	Not obstructed	
2007-499241	13/09/07 14:50	Property Damage Only		2	0	2	CAPTAIN COOK CR	Wet surface	Light rain	101
				1	North bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not known	
				2	West bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed	
2007-509131	22/10/07 09:45	Property Damage Only		2	0	2	CAPTAIN COOK CR	Good dry surface	Fine	101
				1	North bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed	
				2	West bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed	
2007-9271-47	28/12/07 16:30	Property Damage Only		2	0	2	CAPTAIN COOK CR	Good dry surface	Fine	101
				1	South bound	2nd lane	Approaching intersection	Straight ahead	Not obstructed	
				2	West bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	



Site Accident History by Injury type

Printed for: Janczewicz, Marian

5-Nov-2009

Site History for site : Intersection : AUSTIN ST / CAPTAIN COOK CR / BARRALLIER ST / CAPTAIN COOK CR

Accident date between 01/01/2004 and 31/12/2008

Police Reference	Date/Time	Severity	Injury Type	Acc. Type	Num Cas	Num Veh	Primary Street	Road Surface	Weather	Rum Code
				Veh Num	Direction	Lane	Position	Movement	Visibility Restrictions	
2008-919134	24/01/08 07:25	Property Damage Only		2	0	2	CAPTAIN COOK CR	Good dry surface	Fine	101
				1	South bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
				2	East bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed	
2008-376045	28/03/08 18:25	Injury	Received medical tr	2	1	2	CAPTAIN COOK CR	Good dry surface	Fine	102
				1	South bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed	
				2	East bound	Right turn lane	Within intersection	Right turn	Not obstructed	
2008-937085	13/05/08 16:30	Property Damage Only		1	0	3	CAPTAIN COOK CR	Good dry surface	Fine	101*
				1	North bound	Unknown	Within intersection	Straight ahead	Not known	
				2	West bound	Unknown	Within intersection	Straight ahead	Not known	
				3	East bound	2nd lane	Within intersection	Straight ahead	Not obstructed	
2008-095893	17/05/08 15:20	Property Damage Only		2	0	2	BARRALLIER ST	Wet surface	Light rain	101*
				1	East bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed	
				2	South bound	2nd lane	Within intersection	Straight ahead	Not obstructed	
2008-926210	12/09/08 09:30	Property Damage Only		2	0	2	BARRALLIER ST	Good dry surface	Fine	101
				1	West bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed	
				2	North bound	2nd lane	Within intersection	Straight ahead	Not obstructed	
2008-387657	15/12/08 19:00	Property Damage Only		2	0	2	AUSTIN ST	Good dry surface	Fine	101
				1	North bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	



Site Accident History by Injury type

Printed for: Jancewicz, Marian

5-Nov-2009

Site History for site : Intersection : AUSTIN ST / CAPTAIN COOK CR / BARRALLIER ST / CAPTAIN COOK CR

Accident date between 01/01/2004 and 31/12/2008

Police Reference	Date/Time	Severity	Injury Type	Acc. Type	Num Cas	Num Veh	Primary Street	Road Surface	Weather	Rum Code
				Veh Num	Direction	Lane	Position	Movement	Visibility Restrictions	
2008-387657!	15/12/08 19:00	Property Damage Only		2	0	2	AUSTIN ST	Good dry surface	Fine	101
				2	East bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed	

Total Accidents: 22



Site Accident History by Injury type

Printed for: Janciewicz, Marian

5-Nov-2009

Site History for site : Intersection : FLINDERS WAY / MURRAY CR / FLINDERS WAY / MURRAY CR

Accident date between 01/01/2004 and 31/12/2006

Police Reference	Date/time	Severity	Injury Type	Acc. Type	Num Cas	Num Veh	Primary Street	Road Surface	Weather	Rum Code
				Veh Num	Direction	Lane	Position	Movement	Visibility Restrictions	
2004198486	08/10/04 13:20	Property Damage Only		9	0	2	FLINDERS WAY	Good dry surface	Fine	401
				1	East bound	1st (kerb or left) lane	Approaching intersection	Backing	Not obstructed	
				2	North bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
2004198590	12/10/04 14:30	Property Damage Only		9	0	2	FLINDERS WAY	Good dry surface	Fine	401
				1	East bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
				2	East bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
2005206568	21/06/05 19:36	Property Damage Only		19	0	1	FLINDERS WAY	Wet surface	Heavy rain	704
				1	North bound	1st (kerb or left) lane	Not related to intersection	Straight ahead	Not obstructed	
2005206145	21/06/05 20:30	Property Damage Only		19	0	1	FLINDERS WAY	Wet surface	Light rain	704
				1	North bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed	
2005207802	01/08/05 16:00	Property Damage Only		6	0	2	FLINDERS WAY	Good dry surface	Fine	301
				1	North bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
				2	North bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed	
06-212884	31/01/06 16:00	Property Damage Only		7	0	2	FLINDERS WAY	Good dry surface	Fine	502
				1	East bound	1st (kerb or left) lane	Not related to intersection	Other	Parked vehicle	
				2	East bound	1st (kerb or left) lane	Within intersection	Straight ahead	Trees, shrubs, etc	
06-213137	07/02/06 17:20	Property Damage Only		6	0	2	FLINDERS WAY	Good dry surface	Fine	301
				1	South bound	1st (kerb or left) lane	Not related to intersection	Other	Not obstructed	
				2	South bound	1st (kerb or left) lane	Not related to intersection	Straight ahead	Not obstructed	
2006-P42850	15/03/06 12:30	Property Damage Only		7	0	3	FLINDERS WAY	Good dry surface	Fine	601
				1	North bound	1st (kerb or left) lane	Approaching intersection	Parked	Not obstructed	
				2	East bound	1st (kerb or left) lane	Approaching intersection	Parked	Not obstructed	
				3	East bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
06-214176	17/03/06 17:00	Property Damage Only		6	0	2	FLINDERS WAY	Good dry surface	Fine	301
				1	South bound	1st (kerb or left) lane	Approaching intersection	Other	Not obstructed	

This report includes all "on road" accidents or injuries, "onroad" is defined as being from property boundary to property boundary

Page 1 of 2

05-NOV-2009 13:52 From:ROADS ACT

+61 2 62076872

+61 2 62076872

To:0298915386

P.11/16



Site Accident History by Injury type

Printed for: Wanciewicz, Marian

5-Nov-2009

Site History for site : Intersection : FLINDERS WAY / MURRAY CR / FLINDERS WAY / MURRAY CR

Accident date between 01/01/2004 and 31/12/2008

Police Reference	Date/Time	Severity	Injury Type	Acc. Type	Num Cas	Num Veh	Primary Street	Road Surface	Weather	Rum Code
				Veh Num	Direction	Lane	Position	Movement	Visibility Restrictions	
06-214176	17/03/06 17:00	Property Damage Only		6	0	2	FLINDERS WAY	Good dry surface	Fine	301
				2	South bound	1st (kerb or left) lane	Approaching intersection	Other	Not obstructed	
2006-214441	28/03/06 17:40	Property Damage Only		3	0	2	FLINDERS WAY	Good dry surface	Fine	305
				1	West bound	2nd lane	Approaching intersection	Straight ahead	Not obstructed	
				2	West bound	Unknown	Approaching intersection	Straight ahead	Not obstructed	
2007-3617851	21/05/07 22:35	Property Damage Only		19	0	1	FLINDERS WAY	Wet surface	Light rain	663
				1	East bound	1st (kerb or left) lane	Not related to intersection	Left turn	Not obstructed	
2007-5004531	22/09/07 13:15	Property Damage Only		2	0	2	MURRAY CR	Good dry surface	Fine	104
				1	East bound	1st (kerb or left) lane	Within intersection	Right turn	Not obstructed	
				2	North bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
2009-9020921	19/08/08 13:40	Property Damage Only		3	0	2	MURRAY CR	Good dry surface	Fine	304
				1	South bound	1st (kerb or left) lane	Not related to intersection	U turn	Not obstructed	
				2	South bound	1st (kerb or left) lane	Not related to intersection	Straight ahead	Not obstructed	
Total Accidents: 13										



Site Accident History by Injury type

Printed for: Jancewicz, Marian

5-Nov-2009

Site History for site : Intersection : FLINDERS WAY / LA PEROUSE ST / FLINDERS WAY / LA PEROUSE ST

Accident date between 01/01/2004 and 31/12/2008

Police Reference	Date/time	Severity	Injury Type	Acc. Type	Num Cas	Num Veh	Primary Street	Road Surface	Weather	Rum Code
				Veh Num	Direction	Lane	Position	Movement	Visibility Restrictions	
2004-0193571	30/04/04 15:40	Property Damage Only		6	0	2	FLINDERS WAY	Good dry surface	Fine	303
				1	East bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Unknown	
				2	East bound	1st (kerb or left) lane	Within intersection	Right turn	Unknown	
2005201760	25/01/05 09:30	Property Damage Only		6	0	2	FLINDERS WAY	Good dry surface	Fine	302
				1	North bound	1st (kerb or left) lane	Approaching intersection	Left turn	Not obstructed	
				2	North bound	1st (kerb or left) lane	Within intersection	Left turn	Not obstructed	
2005205487	25/05/05 15:15	Property Damage Only		2	0	2	FLINDERS WAY	Good dry surface	Fine	102
				1	North bound	1st (kerb or left) lane	Within intersection	Right turn	Not obstructed	
				2	East bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed	
2005211012	14/11/05 18:10	Property Damage Only		2	0	2	FLINDERS WAY	Good dry surface	Fog	105
				1	North bound	Right turn lane	Within intersection	Right turn	Not obstructed	
				2	West bound	Right turn lane	Within intersection	Right turn	Not obstructed	
2005211821	14/12/05 09:55	Property Damage Only		6	0	2	FLINDERS WAY	Good dry surface	Fine	303
				1	North bound	1st (kerb or left) lane	Within intersection	Right turn	Not obstructed	
				2	North bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed	
2006-218907	06/09/06 17:50	Property Damage Only		6	0	2	FLINDERS WAY	Wet surface	Light rain	301
				1	North bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
				2	North bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
2006-4692054	13/11/06 15:30	Property Damage Only		19	0	1	FLINDERS WAY	Wet surface	Light rain	705
				1	South bound	1st (kerb or left) lane	Within intersection	Left turn	Not obstructed	
2007-4551354	28/04/07 14:50	Property Damage Only		8	0	2	LA PEROUSE ST	Good dry surface	Fine	404
				1	North bound	Right turn lane	Approaching intersection	Right turn	Not obstructed	
				2	North bound	Right turn lane	Within intersection	Straight ahead	Not obstructed	
2007-3561221	10/09/07 15:30	Property Damage Only		1	0	2	FLINDERS WAY	Wet surface	Light rain	202
				1	East bound	1st (kerb or left) lane	Approaching intersection	Right turn	Not obstructed	



Site Accident History by Injury type

Printed for: Jancewicz, Marian

5-Nov-2009

Site History for site : Intersection : FLINDERS WAY / LA PEROUSE ST / FLINDERS WAY / LA PEROUSE ST

Accident date between 01/01/2004 and 31/12/2008

Police Reference	Date/time	Severity	Injury Type	Acc. Type	Num Cas	Num Veh	Primary Street	Road Surface	Weather	Rum Code
				Veh Num	Direction	Lane	Position	Movement	Visibility Restrictions	
2007-366122	10/09/07 15:30	Property Damage Only		1	0	2	FLINDERS WAY	Wet surface	Light rain	202
				2	West bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
2007-139564	23/10/07 17:30	Property Damage Only		6	0	2	LA PEROUSE ST	Good dry surface	Fine	302
				1	North bound	Left turn lane	Within intersection	Left turn	Not obstructed	
				2	North bound	Left turn lane	Within intersection	Left turn	Not obstructed	
2007-917102	25/10/07 08:30	Property Damage Only		4	0	2	LA PEROUSE ST	Good dry surface	Fine	201
				1	North bound	1st (kerb or left) lane	Not related to intersection	Straight ahead	Not obstructed	
				2	South bound	On wrong side of road	Approaching intersection	Left turn	Not obstructed	
2007-917083	01/12/07 15:40	Property Damage Only		6	0	2	FLINDERS WAY	Good dry surface	Fine	301
				1	North bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
				2	North bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
2008-914083	25/03/08 15:45	Property Damage Only		6	0	3	FLINDERS WAY	Good dry surface	Fine	301
				1	East bound	1st (kerb or left) lane	Approaching intersection	Straight ahead	Not obstructed	
				2	East bound	1st (kerb or left) lane	Approaching intersection	Right turn	Not obstructed	
				3	East bound	1st (kerb or left) lane	Not related to intersection	Straight ahead	Not obstructed	
2008-927151	12/05/08 08:30	Property Damage Only		6	0	2	LA PEROUSE ST	Good dry surface	Fine	301
				1	North bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed	
				2	North bound	1st (kerb or left) lane	Within intersection	Straight ahead	Not obstructed	
2008-924235	04/09/08 12:15	Property Damage Only		6	0	2	LA PEROUSE ST	Good dry surface	Fine	303
				1	North bound	Right turn lane	Within intersection	Right turn	Not obstructed	



Site Accident History by Injury type

Printed for: Jancewicz, Marian

5-Nov-2009

Site History for site : Intersection : FLINDERS WAY / LA PEROUSE ST / FLINDERS WAY / LA PEROUSE ST

Accident date between 01/01/2004 and 31/12/2008

Police Reference	Date/time	Severity	Injury Type	Acc. Type	Num Cas	Num Veh	Primary Street	Road Surface	Weather	Rum Code
				Veh Num	Direction	Lane	Position	Movement	Visibility Restrictions	
2008-924235	04/09/08 12:15	Property Damage Only		6	0	2	LA PEROUSE ST	Good dry surface	Fine	303
				2	North bound	Right turn lane	Within intersection	Right turn	Not obstructed	
Total Accidents: 15										



Site Accident History by Injury type

Printed for: Jancewicz, Marian

5-Nov-2009

Site History for site : Intersection : AUSTIN ST / LA PEROUSE ST / LA PEROUSE ST

Accident date between 01/01/2004 and 31/12/2008

Police Reference	Date/Time	Severity	Injury Type	Acc. Type	Num Cas	Num Veh	Primary Street	Road Surface	Weather	Rum Code	
				Veh Num	Direction		Lane	Position	Movement	Visibility Restrictions	
2004199501	03/11/04 10:15	Property Damage Only		6	0	2	AUSTIN ST	Good dry surface	Fine	303	
			1	West bound	1st (kerb or left) lane	Within intersection	Right turn		Not obstructed		
			2	West bound	1st (kerb or left) lane	Approaching intersection	Straight ahead		Not obstructed		
2006-214980	17/04/05 10:40	Property Damage Only		1	0	2	AUSTIN ST	Good dry surface	Fine	104	
			1	South bound	Right turn lane	Approaching intersection	Right turn		Not obstructed		
			2	West bound	1st (kerb or left) lane	Approaching intersection	Straight ahead		Not obstructed		
2006-215380	03/05/05 08:50	Property Damage Only		6	0	2	AUSTIN ST	Wet surface	Light rain	301	
			1	North bound	1st (kerb or left) lane	Approaching intersection	Straight ahead		Not obstructed		
			2	North bound	1st (kerb or left) lane	Approaching intersection	Straight ahead		Not obstructed		
2007-495866	20/08/07 16:45	Property Damage Only		2	0	2	LA PEROUSE ST	Good dry surface	Fine	104	
			1	South bound	1st (kerb or left) lane	Within intersection	Straight ahead		Not obstructed		
			2	West bound	1st (kerb or left) lane	Within intersection	Right turn		Not obstructed		
2008-9211011	01/07/08 12:50	Property Damage Only		2	0	2	AUSTIN ST	Good dry surface	Fine	102	
			1	North bound	1st (kerb or left) lane	Approaching intersection	Straight ahead		Not obstructed		
			2	West bound	1st (kerb or left) lane	Within intersection	Right turn		Not obstructed		
Total Accidents: 5											



Site Accident History by Injury type

Printed for: Jancewicz, Marian

5-Nov-2009

Site History for site : Midblock : FLINDERS WAY / LA PEROUSE ST / MURRAY CR

Accident date between 01/01/2004 and 31/12/2008

Police Reference	Date/time	Severity	Injury Type	Acc. Type	Num Cas	Num Veh	Primary Street	Road Surface	Weather	Rum Code	
				Veh Num	Direction	Lane	Position	Movement	Visibility Restrictions		
2004-0193434	17/04/04 11:00	Property Damage Only		9	0	2	FLINDERS WAY	Good dry surface	Fine	401*	
				1	South bound	1st (kerb or left) lane	Not related to intersection	Straight ahead	Unknown		
				2	East bound	1st (kerb or left) lane	Not related to intersection	Backing	Unknown		
2004-0193424	22/04/04 12:35	Property Damage Only		9	0	2	FLINDERS WAY	Good dry surface	Fine	401*	
				1	South bound	1st (kerb or left) lane	Not related to intersection	Straight ahead	Unknown		
				2	East bound	1st (kerb or left) lane	Not related to intersection	Backing	Unknown		
2005206350	15/06/05 12:00	Property Damage Only		7	0	2	FLINDERS WAY	Good dry surface	Fine	601	
				1	West bound	1st (kerb or left) lane	Not related to intersection	Parked	Not obstructed		
				2	West bound	1st (kerb or left) lane	Not related to intersection	Straight ahead	Not obstructed		
2008-923121	03/07/08 16:15	Property Damage Only		9	0	2	FLINDERS WAY	Good dry surface	Fine	406	
				1	South bound	1st (kerb or left) lane	Not related to intersection	Straight ahead	Not obstructed		
				2	East bound	Other	Out of driveway	Right turn	Not obstructed		
Total Accidents: 4											



Site Accident History by Injury type

Printed for: Jancewicz, Marian

5-Nov-2009

Site History for site : Midblock : AUSTIN ST / LA PEROUSE ST / WELLS RD

Accident date between 01/01/2004 and 31/12/2008

Police Reference	Date/Time	Severity	Injury Type	Acc. Type	Num Cas	Num Veh	Primary Street	Road Surface	Weather	Rum Code
				Veh Num	Direction	Lane	Position	Movement	Visibility Restrictions	
2005205641	26/05/05 17:15	Property Damage Only		2	0	2	AUSTIN ST	Good dry surface	Fine	406
				1	South bound	Other	Out of driveway	Left turn	Not obstructed	
				2	East bound	1st (kerb or left) lane	Not related to intersection	Straight ahead	Not obstructed	
Total Accidents: 1										



Site Accident History by Injury type

Printed for: Jancewicz, Marian

5-Nov-2009

Site History for site : Midblock : LA PEROUSE ST / AUSTIN ST / FLINDERS WAY

Accident date between 01/01/2004 and 31/12/2008

Police Reference	Date/time	Severity	Injury Type	Acc. Type	Num Cas	Num Veh	Primary Street	Road Surface	Weather	Rum Code
				Veh Num	Direction	Lane	Position	Movement	Visibility Restrictions	
2007-500645	30/09/07 12:00	Property Damage Only		9	0	2	LA PEROUSE ST	Good dry surface	Fine	401
				1	South bound	1st (kerb or left) lane	Not related to intersection	Straight ahead	Not obstructed	
				2	South bound	1st (kerb or left) lane	Not related to intersection	Straight ahead	Not obstructed	
Total Accidents: 1										