EG Funds Management

Summer Hill Flour Mill Rezoning

Transport Assessment

REV A

ARUP

EG Funds Management

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Transport Assessment

August 2010

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1 Introduction

1.1 Project Background

Arup was commissioned by EG Funds Management to undertake a transport analysis for the Summer Hill Flour Mill precinct. The site, located in Summer Hill NSW, is proposed to be rezoned to enable mixed use development, including largely medium density residential use and ancillary retail and commercial uses.

The Master Plan for the adjacent McGill Street precinct to the east of the Greenway corridor was adopted by Marrickville Council in November 2009 and assessed a similar type and mix of development. These two precincts are focused on the Lewisham Station public transport hub and utilise the same road system for access.

This report assesses the transport and accessibility impacts resulting from the proposed development at Summer Hill Flour Mill combined with the potential future development on the McGill Street precinct.

1.2 Scope of Study

The scope of this transport assessment involves the following:

- Documents the current public transport availability for the site including the potential light rail and any future known changes or upgrades.
- AM and PM Peak traffic counts at 5 key intersections surrounding the site.
- Assessment of the travel characteristics for the future residents, employees and visitors to the site based on demographic and journey to work data from the census for the collector districts relevant to this site.
- Determines changes in the level of service and testing of any upgrade works required to accommodate the additional traffic as a result of site development.
- Determines an appropriate form of intersection control required for a number of intersections surrounding the site.
- Considers sustainable travel initiatives such as the provision of car share on the site, public transport accessibility and good bicycle parking provisions to improve the green credentials of the development.
- Provides a full transport assessment for the site including car parking provision and access, traffic generation, trip distribution.

2 **Existing Conditions**

2.1 Site Analysis

The Summer Hill Flour Mill precinct is located in the suburb of Summer Hill and is bounded by Edward Street to the west, Smith Street to the north, Hawthorne Canal and the Rozelle Goods Line to the east and Old Canterbury Road to the south. The location of the site is presented in Figure 1 below.





2.2 Road Network

The site is served by a number of key arterial roads, including:

- Old Canterbury Road
- Parramatta Road
- Railway Terrace / Longport Street / Carlton Crescent

Current daily traffic volumes on selected roads surrounding the Summer Hill Flour Mill precinct is presented in Table 1.

Table 1Daily Traffic Volumes

Location	Daily Traffic Volume		
Longport Street	19,330		
Carlton Crescent	7,950		
Railway Terrace	17,250		
Old Canterbury Road	19,980		
Toothill Street	9,490		
Smith Street	4,650		
Edward Street	2,100		

2.3 Traffic Volumes

2.3.1 Existing Site Traffic

The Allied Mills head office functions remain on site although the industrial activity has now ceased. Site observations indicate approximately 40 vehicles are parked in the existing Summer Hill Flour Mill precinct during the day. It is reasonable to assume that of these vehicles, 50% would arrive and depart the site in the AM and PM commuter peak hours.

If the site remained fully operational, it could be expected that a higher level of traffic generation would occur including heavy vehicle movements. For the consolidated site area of approximately 25,000m² and applying the site FSR of 1/1 for the industrial zoning, the site could generate 1,250 vehicles / day and 250 vehicles in the evening peak hour based on the rates outlined in the RTA Guide to Traffic Generating Developments for Industry. This level of traffic generation aligns closely with that anticipated from the planned levels of mixed use development as described later in Section 3.3 of this report.

For the McGill Street precinct, morning peak hour traffic counts were undertaken at existing access points to the precinct. This showed 36 vehicles inbound and 24 vehicles outbound generated by the existing residential and commercial uses.

The existing traffic generation for both of these sites is relatively low due to many of the buildings on the sites being underutilised. These sites would have contributed more traffic to the road system when industry was fully operational.

2.3.2 Traffic Surveys

Traffic counts were undertaken at a total of five key intersections surrounding the two sites on Wednesday 9 June 2010. Counts were conducted during the AM (7am – 9am) and PM (4pm – 6pm) commuter peak periods. These counts are representative of traffic conditions during busy times of the year when the local schools are operating. Surveyed intersections (shown in Figure 2) included:

- Old Canterbury Road & Edward Street
- Old Canterbury Road & Toothill Street
- Old Canterbury Road & Railway Terrace
- Longport Street & Grosvenor Crescent
- Smith Street / Edward Street / Chapman Street





Source: Google Maps

Full results of these traffic surveys are presented in Appendix A.

2.4 Road Network Operation

On-site observations of traffic conditions at key intersections surrounding the Summer Hill Flour Mill precinct has been undertaken for the purposes of this study. These are described in the sections below:

2.4.1 Old Canterbury Road / Railway Terrace / Longport Street

This intersection is controlled by traffic signals with pedestrian crossing facilities on all approaches. No right turns are permitted in the AM and PM peak hours from any of the four approaches. Significant levels of queuing occurs on Railway Terrace and Longport Street in both commuter peaks. This is largely a result of Railway Terrance being able to carry only one lane of traffic in either direction. On occasions traffic was observed queuing across the intersection. On-site observations indicated however that despite the significant queues, all vehicles were able to clear the intersection in a single signal cycle.



Photograph 1 Old Canterbury Rd / Railway Tce / Longport St Intersection



2.4.2 Old Canterbury Road / Toothill Street

Controlled by traffic signals, this T-intersection provides pedestrian crossing facilities on the southern and western legs. The signals operate on a three phase cycle, with a dedicated right turn phase from the western leg of Old Canterbury Road to Toothill Street provided. With two lanes provided on all approaches, the intersection operates efficiently during peak periods. No significant levels of queuing was observed during on-site observations.





2.4.3 Old Canterbury Road / Edward Street

This priority intersection was observed to be operating efficiently for vehicles travelling eastwest along Old Canterbury Road. Vehicles turning right out of Edward Street onto Canterbury Road experienced significant delays of up to three minutes due to the high traffic volumes on Old Canterbury Road. Additionally, sight lines for this movement are poor as the intersection is located at the base of the railway overpass.

2.4.4 Edward Street / Smith Street / Chapman Street

This priority intersection was observed to operate well during peak periods. Traffic volumes at this intersection were relatively low, with no significant queues or delays observed. The northern leg of the intersection (Chapman Street) is slightly offset, however due to the low traffic volumes no issues were observed.

2.4.5 Smith Street / Longport Street / Carlton Crescent

This intersection is roundabout controlled, with one central circulating lane. Some vehicles were observed to be queued back from the Longport St / Old Canterbury Rd intersection, however this did not affect the operation of the roundabout.

2.5 Public Transport Provision

2.5.1 Bus

The site is well connected to existing State Transit routes, with a number of public bus routes operating near the Summer Hill Flour Mill precinct. These are presented in Figure 3.

Route 413 runs directly adjacent to the site along Old Canterbury Road, from Campsie to the City via Ashbury. This bus route stops at the intersection of Edward Street and Old Canterbury Road. Five services are provided in the weekday morning peak hour (8am – 9am).

Additional bus services to local town centres are available within viable walking distance from the precinct. This includes routes servicing Marrickville, Ashfield and Dulwich Hill.



Figure 3 Bus Network Surrounding Summer Hill Flour Mill Precinct

Source: Sydney Buses (2010)

2.5.2 Rail

The precinct is well located for people wishing to use heavy rail as a mode of transport. Both Summer Hill and Lewisham stations are located approximately 500m from the Summer Hill Flour Mill precinct. These stations are located on the Inner West Line of the City Rail network some 8km from the Sydney CBD, with 4 trains travelling to the CBD in peak hours.

The Metropolitan Transport Plan discusses the following heavy rail projects: City Relief Line, Western Express Services, North West Rail Link, South West Rail Link.

Western Express Project

The City Relief Line and Western Express projects shown in Figure 4 will introduce express train services from Richmond, Penrith, Blacktown and Parramatta. A new five kilometre priority tunnel will be built to separate western services from inner city trains to provide shorter journey times. New platforms will be built at Redfern, Central, Town Hall and Wynyard to cater for these new services. There will be eight new platforms, each long enough to accommodate 12 car trains, between Redfern and Wynyard. Trains will initially be 10 cars long, with capacity for future growth. Ultimately there will be more than 5,000 extra seats from Parramatta in the peak hour.

This project will facilitate improved stopping patterns on the Inner West Line and encourage rail mode share at locations such as Summer Hill and Lewisham.



Figure 4 Western express project (City Relief Line and Western Express Services)

2.5.3 Light Rail

As a component of the NSW Metropolitan Transport Plan, a 5.6km extension of the light rail service is planned to be constructed between Lilyfield and Dulwich Hill (see Figure 5). This includes a station at Lewisham within walking distance of the existing Lewisham heavy rail station, which will act as an interchange between the two transport modes. The line is scheduled to operate from early 2012. Provision of this infrastructure upgrade will increase public transport availability for future residents in the Summer Hill Flour Mill precinct.

Both the McGill and Summer Hill Flour Mills precincts would be best served with the light rail stop located on the east-west through site pedestrian connection between Smith Street and Old Canterbury Road. This would place the station some 150m south of Longport Street with relatively level connections between the stop and the surrounding open space. This also establishes more pedestrian friendly routes between the light rail stop, Lewisham Station and the surrounding residential area. Locating the light rail stop at the heart of these two precincts will transform it into a destination as well as a place of origin.



Figure 5 Inner West Light Rail Extension

Source: NSW Metropolitan Transport Plan (2010)

2.6 Walking and Cycling

2.6.1 Walking Provision

Local footpaths provide walking access to key destinations surrounding the site. A pedestrian underpass exists at Lewisham Station (entrance via Victoria Street and Thomas Street) which provides through access across the railway line.

A current issue with the pedestrian network is that the northern footpath along Railway Terrace is currently of insufficient width to allow for pedestrian movements (Photograph 3).

Summer Hill Station is within easy walking distance of the Summer Hill Flour Mill site with footpaths along Smith Street and Lackey Street providing a suitable walking route.



2.6.2 Cycling Provision

The Summer Hill Flour Mill precinct is located nearby to a number of local cycling routes. An off-road regional route which links Canada Bay, Leichhardt, Ashfield and Marrickville also exists in close proximity to the precinct.

The local cycling network surrounding the site is shown in Figure 6.



Figure 6 Cycling Network Surrounding Site

Source: Ashfield Council (2010)

2.6.3 The Cooks River to Iron Cove GreenWay

The Cooks River to Iron Cove GreenWay is an urban green corridor in Sydney's Inner West that connects the Cooks River at Earlwood to Iron Cove Bay at Haberfield. The GreenWay is a community vision for a "recognisable environmental, cultural and non-polluting transport corridor connecting two of Sydney's most important waterways".

The GreenWay corridor passes through Canterbury, Marrickville, Ashfield and Leichhardt Council areas of Sydney's Inner West and incorporates Hawthorne Canal and the Rozelle freight rail corridor. Transport NSW are looking at incorporation of the GreenWay into the light rail project.



Figure 7 The Cooks River to Iron Cove Greenway

Source: Friends of the GreenWay

2.7 Travel Patterns

2.7.1 Mode Split

The existing 2006 ABS Journey to Work data for the travel zone 1543 surrounding the Summer Hill Flour Mill precinct (see Figure 8) has been analysed for this study.





Source: Transport Data Centre (2010)

The mode split of workers departing the precinct is indicated in Table 2.

Table 2 Journey to Work Existing Mode Split

Mode	Total Trips	Proportion of Total Trips
One method: Car driver	241	44.8%
One method: Train	179	33.3%
One method: Walked only	33	6.1%
One method: Car passenger	20	3.6%
Two methods: Train and Bus	19	3.5%
One method: Bus	17	3.2%
One method: Bicycle	6	1.1%
One method: Other	4	0.7%
Three methods: Train and two other modes	4	0.7%
One method: Motorbike	3	0.6%
Two methods: Train and Car driver	3	0.6%
Two methods: Train and Car passenger	3	0.6%
Two or Three methods: With Ferry or Tram	3	0.6%
Two or Three methods: Without Ferry or Tram	3	0.6%
TOTAL	538	100.00%

The analysis indicates that public transport currently accounts for over 40% of work related trips in the area surrounding the site. This is a result of the proximity of Lewisham and Summer Hill railway stations to the precinct. The proportion of people utilising public transport will increase following the planned light rail extension, which includes a station adjacent to the site.

2.7.2 Arrival Location

The final destination of all workers departing from the travel zones surrounding the site, based on 2006 Journey to Work data, is presented in Table 3. A high proportion of residents in this travel zone have Sydney as the work destination which is best served by rail for commuter access. There are also 16% of residents who work in Marrickville or Ashfield local government areas which allows walk, cycle and bus modes to be viable travel options.

Destination LGA	Total Trips	Proportion of Total Trips
Sydney	205	38.1%
Ashfield	54	10.0%
Marrickville	31	5.8%
Leichhardt	26	4.8%
North Sydney	25	4.6%
Ryde	19	3.4%
Auburn	19	3.4%
Bankstown	17	3.2%
Burwood	16	3.0%
Botany Bay	12	2.2%
Canada Bay	12	2.2%
Randwick	10	1.9%
Willoughby	9	1.7%
Canterbury	9	1.7%
Other	74	14.0%
Total	538	100.00%

 Table 3
 Final Destination of Workers

3 Transport Assessment

3.1 Proposed Summer Hill Flour Mill Development

The proposed development of the Summer Hill Flour Mill precinct involves medium density residential development, complemented with ancillary retail and commercial land uses. A total of five sub-precincts (see Figure 9) are proposed within the development. The proposed number of dwellings is between 280 -330 units with the average number for each precinct is indicated in Table 4. A total provision of $3,500 - 4,000 \text{ m}^2$ Commercial GFA and $2,500 - 2,800\text{m}^2$ Retail GFA are proposed.





Table 4 Proposed Dwelling Numbers

		_				
Precinct	Number of Units					
Number	1 bed	2 bed	3 bed	4 bed	TOTAL	
1	34	40	9	0	83	
2	0	4	0	0	4	
3	58	32	9	2	101	
4	12	8	8	8	36	
5	14	46	0	6	66	
Total	118	130	26	16	290	

3.2 Parking Provision

3.2.1 Required Parking

The current Ashfield Council DCP parking rates as outlined in Part C11 (parking) are shown in Table 5.

 Table 5
 Ashfield Council DCP Parking Rates

Land Use	Parking Rate			
Multi-Unit Housing in Residential Zones	 1 space per unit Additional space for every five 2-bedroom units Additional space for every two 3-bedroom units 1 visitor space for every five dwellings 			
Commercial Premises	1 space per 40m ² GFA			
Retail Shops	1 space per 40m ² GFA			

The DCP rates for residential and visitor parking are considered appropriate given the need for residents to garage a car which may not be used for journey to work and given the desire to allocate all on-street car parking to visitors and deliveries to the mixed uses in the precinct.

The commercial and retail rates are both considered high for a mixed use precinct such as this with good public transport access, however as a conservative measure the DCP rates have been adopted.

The proposed site uses result in a requirement for 553 parking spaces as shown in Table 6.

Precinct	Required Parking Spaces					
	Residential		Commercial	Retail	Total	
	Resident Visitor					
1	96	16	7	9	129	
2	5	1	71	29	108	
3	113	20	13	6	155	
4	46	7	0	10	67	
5	78 13		4	9	109	
Total	338	57	95	63	553	

 Table 6
 Required Parking Provision by Precinct

3.2.2 Proposed Parking Provision

The Summer Hill Flour Mill development proposes to provide a total of 450 - 550 underground parking spaces, which would be allocated to residents and other regular users of the site. An additional 50 to 70 on-street parking spaces are to be provided within the precinct. These would be allocated to visitors and other short-stay users. All on-street parking will need to be time restricted with an appropriate allocation of Loading Zones.

3.2.3 On-Street Parking in Surrounding Streets

Marrickville Council has introduced a resident parking scheme with time restricted parking within 250m of Lewisham Station to restrict commuter car parking from occurring on local streets. Ashfield Council has introduced time restricted parking on streets in the Summer Hill town centre adjacent to Summer Hill Station. The majority of other streets are unrestricted.

With the introduction of the light rail stop at Lewisham, it could be expected that additional time restricted parking and resident parking schemes will need to be introduced to manage commuter parking. Drop-off and pick-up zones would be facilitated by the local streets in both the Summer Hill Flour Mill site and the McGill Street site.

3.3 Forecast Traffic Generation

3.3.1 Methodology

For a mixed use site such as this which includes a substantial proportion of residential development supported by retail and commercial uses, it should be expected that some self containment will occur:

- A mix of small retail outlets will service the local residential community on this site and the surrounding area. Commercial uses on the site will also support these uses.
- There is the opportunity for some employees in the commercial uses to live on the site.

The provision of car parking in the Summer Hill Flour Mill precinct will respond to the high public transport accessibility and expected levels of self containment for the complementary land uses. The traffic generation for retail and commercial uses is therefore best calculated based on a turnover of available car spaces rather than typical RTA rates which are based on floor space.

3.3.2 Summer Hill Flour Mill Precinct

Residential traffic generation:

The RTA peak hour rate of 0.4 trips / unit for medium density residential flats has been applied which for 290 units with 338 car spaces is equivalent to 35% of car spaces generating a trip in the peak hour. This is considered appropriate.

Commercial traffic generation:

Applying the RTA rate of 2 trips / 100m² GFA for commercial uses would generate 75 vehicle trips in the peak hour. This is equivalent to 80% of car spaces generating a trip in the peak hour. This is considered excessive for a mixture of small commercial uses likely to include designers, service industry and boutique office uses. A more appropriate turnover of 50% of spaces in the peak hour has therefore been applied.

Retail traffic generation:

Applying the RTA rate of 10 trips / 100m² GFA for retail use would generate 265 vehicle trips in the peak hour. This is equivalent to each of the 63 retail cars spaces generating 4 vehicle movements in the peak hour. This is considered excessive for a mixture of small retail uses servicing the site and adjacent local precinct. A more appropriate turnover of 2 vehicle movements per space in the peak hour has therefore been applied.

A comparison between the RTA rates for traffic generation and the adopted rates for the precinct is provided in Table 7.

	AAaffic Gener		
Land Use	RTA	Adopted	Comment
Medium density residential flat			
Daily vehicle trip	4/ unit	4/ unit	
Weekday trip/ hour	0.4/ unit	0.4/ unit	RTA rate adopted
Commercial			
Daily vehicle trips	10/100m ² GFA)	5/ space	Adopted rate based on
Weekday trip / hour	2/100m ² GFA	0.5/ space	turnover of spaces
Retail			
	90/100m ² GFA		
Daily vehicle trips	(121/100m ² GLFA 20/ space		Adopted rate based on
	10/100m ² GFA		turnover of spaces
Weekday trip /hour	(12.5/100m ² GLFA	2/ space	

Table 7 Traffic Generation Rates

A summary of the forecast traffic generation is shown in Table 8.

Table 8	Forecast Traffic	Generation – Summer	Hill Flour Mill Precinct
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	Forecast Traffic Generation					
Precinct	Daily	Peak	Morning Peak		Evening Peak	
	Hour	In	Out	In	Out	
1	552	56	11	35	40	16
2	951	95	47	19	34	61
3	588	59	13	40	43	16
4	337	34	6	18	23	11
5	460	46	9	28	33	13
Sub Total	2887	289	85	141	172	117

3.3.3 McGill Street Precinct

Arup prepared a report in November 2009 assessing the transport impacts resulting from the proposed McGill Street mixed use development. Traffic generation rates as described in Table 7 have been used to formulate the forecast vehicle trips generated from this development. Located directly adjacent to the east of the Summer Hill Flour Mill precinct, the development was forecast to generate 229 vehicle trips in the AM peak hour and 287 in the PM peak hour (indicated in Table 9).

	-	Peak Hour affic		Peak Hour Iffic
	In	Out	In	Out
Commercial	48	5	5	48
Retail	0	0	29	29
Residential	18	158	123	53
TOTAL	66	163	157	130

 Table 9
 Forecast Traffic Generation – McGill Street Precinct

3.4 Traffic Distribution

The journey to work data as outlined in Section 2.6.3 has been used to determine the current travel distribution for car drivers and passengers. Just under 50% of all trips from this area were made by private vehicle (either car driver or car passenger).

Many of the people who choose to live in the Summer Hill Flour Mill precinct will do so because of the good public transport access, especially when the light rail extension to Dulwich Hill is considered. It could therefore be expected that journey to work by car would be focused more towards the south and west which are not as well serviced by public transport and so the traffic distribution has been adjusted as shown in Table 10.

Direction	Existing Distribution	Forecast Distribution
North	19%	20%
East	49%	30%
South	12%	20%
West	20%	30%

 Table 10
 Forecast Traffic Distribution from Summer Hill Flour Mill Precinct

Traffic generated from the Summer Hill Flour Mill precinct has been distributed across the road network based on this analysis. Existing traffic generated by the Summer Hill Flour Mill and McGill St precincts (as described in section 2.3.1) has been deducted from this total traffic generation.

The total number of additional vehicles generated at each leg of the five key intersections surrounding the site, following both the proposed Summer Hill Flour Mill and McGill Street developments, is presented in Figure 10 and Figure 11.

Full turning movements for vehicles entering and departing the site entrances are provided as Appendix B.



Figure 10 Traffic Distribution at Key Intersections during AM Peak (8am - 9am)





3.5 Intersection Performance

3.5.1 Methodology

An analysis of the local road network has been undertaken based on existing traffic volumes and the forecast site traffic generation. The analysis has considered the following scenarios:

- No future development (existing traffic conditions)
- Development of the adjacent McGill Street precinct
- Development of the Summer Hill Flour Mill precinct in addition to the McGill Street precinct

The model has considered traffic levels without the provision of the light rail extension to Dulwich Hill. It is likely however that this light rail extension will be in operation prior to opening of proposed development, and is therefore considered to be a conservative analysis. Provision of this infrastructure upgrade will increase the already significant use of public transport in the area, reducing the impact on the local road network.

3.5.2 SIDRA Analysis

For the purposes of this investigation, an individual intersection traffic control model, SIDRA, has been used to assess the performance of the local road network surrounding the Summer Hill Flour Mill precinct.

The existing intersection performance is assessed in this report in terms of the following four factors for each intersection.

- Degree of Saturation
- Average Delay (seconds per vehicle)
- Level of Service
- Length and direction of peak traffic queue (95th percentile traffic queue)

In urban areas, the performance of the major road network is generally a function of the performance of key intersections. This performance is quantified in terms of Level of Service (LOS), which is an index of the operational performance of traffic at an intersection and is based on the average delay per vehicle. LOS ranges from A = very good to F = highly congested travel conditions, as shown in Table 11.

Description	Level of Service (RTA Definition)	Average Delay per Vehicle (s)
Very Good	А	< 14.5
Good	В	14.5 ≤ 28.5
Satisfactory	С	28.5 ≤ 42.5
Near Capacity	D	42.5 ≤ 56.5
At Capacity	E	56.5 ≤ 70.5
Over Capacity	F	≥ 70.5

 Table 11
 Level of Service Definitions

Generally it is desirable to aim at achieving a Level of Service of C or better at all major road intersections. However, in practice, it is reasonable for some intersections to operate at Level of Service D at peak times. Another common measure of intersection performance is the degree of saturation (DOS), which provides an overall measure of the capability of the intersection to accommodate additional traffic. A DOS of 1.0 indicates that an intersection is operating at capacity. The desirable maximum degree of saturation for an intersection with traffic signals is 0.9.

3.5.3 Results

Results of the Sidra analysis for the analysed intersections are presented in Table 12. Full results are presented in Appendix C.

Table 12 SIDRA Intersection Results

Intersection	Scenario	Time Period	LOS	DOS	AVD (sec)
> e	Eviatian	AM Peak	D	0.97	53
Old Canterbury Road and Railway Terrace	Existing	PM Peak	С	0.87	36
iterbu l and Terra		AM Peak	E	1.03	65
d Cant Road Iway T	Existing + McGill St	PM Peak	С	0.92	42
DId R Railv	Existing + McGill St +	AM Peak	F	1.06	77
L L L L L L L L L L L L L L L L L L L	Summer Hill Flour Mill	PM Peak	D	0.98	53
ک از	Existing	AM Peak	В	0.65	26
bur ooth	Existing	PM Peak	В	0.71	23
Old Canterbury toad and Toothill Street	Existing + McGill St ¹	AM Peak	В	0.75	26
anc Str	Existing + McGill St	PM Peak	В	0.81	24
Old Road	Existing + McGill St +	AM Peak	В	0.78	26
R	Summer Hill Flour Mill ¹	PM Peak	В	0.84	26
rd	Eviating	AM Peak	n/a	0.50	5
bur dwa	Existing	PM Peak	n/a	0.42	6
Old Canterbury toad and Edward Street ²	Eviating L MaCill St	AM Peak	В	0.78	16
and Str	Existing + McGill St	PM Peak	В	0.80	15
Old Road	Existing + McGill St +	AM Peak	В	0.79	16
Ъ. В С В С В С В С В С В С В С В С В С В	Summer Hill Flour Mill	PM Peak	В	0.86	20
et ³	Existing	AM Peak	n/a	0.20	4
eet reet tree		PM Peak	n/a	0.13	5
Stre Sti n S	Existing + McGill St	AM Peak	А	0.22	4
Smith Street / Edward Street / Chapman Street ³		PM Peak	А	0.17	6
Sm Edw hap	Existing + McGill St +	AM Peak	А	0.23	5
шo	Summer Hill Flour Mill	PM Peak	А	0.21	7
et	Existing	AM Peak	А	0.54	13
itre nor 1t		PM Peak	А	0.74	11
sve sve scel	Existing + McGill St	AM Peak	А	0.56	13
gpo Groc		PM Peak	А	0.75	11
Longport Street & Grosvenor Crescent	Existing + McGill St +	AM Peak	А	0.61	14
	Summer Hill Flour Mill	PM Peak	А	0.80	13

¹ Four way intersection formed by new western approach ² Intersection modelled with **traffic signals** following the proposed development, see section 3.8

³ Intersection modelled with a **roundabout** following the proposed development, see section 3.8

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3.5.4 Assessment

Modelling of the local road network has found that four of the five key intersections surrounding the precinct are forecast to operate efficiently (Level of Service A or B) during both the AM and PM commuter peaks, following both the opening of the McGill Street and Summer Hill Flour Mill developments.

The Railway Tce/Old Canterbury Rd intersection currently experiences high levels of queuing, with signal phasing adjusted to allow vehicles to pass through the intersection in a single cycle. Construction of the proposed mixed use developments are forecast to increase delays at the intersection, however not to an unreasonable level where it will adversely impact on surrounding intersections.

With increasing delays to traffic on the sub arterial roads, it could be expected that some through traffic may redistribute to alternative main road routes. There are no opportunities for traffic to divert to local streets to undertake these through trips due to the physical restrictions in the area primarily caused by the railway corridor and discontinuous local road system.

The Summer Hill Flour Mill precinct is forecast to generate approximately 289 vehicle movements in the PM peak hour with the majority of these trips forecast to originate from the western end of the site where traffic volumes are relatively low. Traffic then disperses in a number of directions before reaching the more congested signalised intersections along Old Canterbury Road.

3.6 Future Mode Split

The traffic generation used in this analysis has not considered the introduction of the light rail extension to Dulwich Hill or the potential for improved train access at Lewisham and Summer Hill railway stations, and thus is considered a conservative analysis. Located in the heart of the Summer Hill Flour Mill precinct, the light rail will be an attractive option for people travelling to work, as well as people utilising the retail and commercial precincts within the development. It will increase the non-car mode share to and from the site, resulting in a reduced impact on the local road network.

Additionally to this, it can be expected that the type of residents living in a medium density development such as proposed on the site would have a greater focus on public transport usage and be less reliant on private vehicle use.

The existing mode split of residents departing the precinct to go to work was shown in Table 2 and is compared below in Table 13 with a possible future mode split when the light rail and additional heavy rail and bicycle use is considered.

Mode	Existing Mode Split	Potential Change	Future Mode Split
Car driver/passenger	48%	-9%	39%
Train	35%	+3%	38%
LRT	0%	+5%	5%
Walk	6%	-	6%
Bus	7%	-	7%
Bicycle	1%	+1%	2%
Motorbike	1%	-	1%
Other	2%	-	2%
TOTAL	100%	-	100%

Table 13 Possible Future Journey to Work Mode Split

The analysis indicates that public transport currently accounts for 42% of work related trips in the area surrounding the site but could be as high as 50% due to the transit oriented development nature of the two development precincts. This reduction in car mode share would decrease residential traffic generation by approximately 20% in the peak hours. This is equivalent to 60 vehicle movements being removed in each peak hour for both sites combined.

This further reduction in traffic has been modelled for the key intersection of Old Canterbury Road and Railway Terrace in the morning peak with the results shown in Table 14. The operation in this critical peak stays within Level of Service E for the predicted future traffic flows.

Intersection	Scenario	Time Period	LOS	DOS	AVD (sec)
bury d race	Existing	AM Peak	D	0.97	53
Old Canterbury Road and Railway Terrace	Existing + McGill St	AM Peak	E	1.02	63
Old (R Railw	Existing + McGill St + Summer Hill Flour Mill	AM Peak	E	1.04	70

 Table 14
 SIDRA Intersection Results

3.7 Road Classification and Capacity

The road network providing access to the precinct can be described in terms of the hierarchy of each road and the expected daily traffic volume. The key roads providing access to this precinct have a functional classification as Sub-arterial roads with an expected daily traffic volume of up to 20,000 vehicles.

Existing daily traffic volumes on selected roads surrounding the Summer Hill Flour Mill precinct is presented in Table 15.

Location	Administrative Road Classification	Functional Road Classification	Expected Daily Traffic Volume ⁴	Existing Daily Traffic Volume ⁵
Longport Street	Regional	Sub-arterial	10,000 – 20,000	19,330
Carlton Crescent	Regional	Sub-arterial	10,000 – 20,000	7,950
Railway Terrace	State	Sub-arterial	10,000 – 20,000	17,250
Old Canterbury Road	State	Sub-arterial	10,000 – 20,000	19,980
Toothill Street	Regional	Collector	5,000 – 10,000	9,490
Smith Street	Local	Collector	5,000 – 10,000	4,650
Edward Street	Local	Local	2,000 - 4,000	2,100

Table 15 Road Classification and Daily Traffic Volumes

⁴ RTA Road Design Guide – August 1991

Old Canterbury Road, Longport Street and Railway Terrace are all functioning at the upper end of the expected daily traffic volume range indicating that they are functioning as major roads for longer distance travel in the network. These roads are expected to provide access to development such as proposed in the McGill Street and Summer Hill Flour Mills precinct.

The predicted increase on each street providing access to the combined McGill Street and Summer Hill Flour Mills precinct is shown in Table 16. The key sub-arterial roads providing access are anticipated to experience an increase of between 3% and 9%. Slightly higher percentage increases are expected on the local access streets however these will continue to operate within their functional classification.

Location		AM Peak			PM Peak	
	Existing	Additional	% change	Existing	Additional	% change
Longport Street	1790	71	4%	1660	85	5%
Carlton Crescent	670	20	3%	915	23	3%
Railway Terrace	1800	57	3%	1645	130	8%
Old Canterbury Road	1770	128	7%	2045	177	9%
Toothill Street	945	62	7%	995	68	7%
Smith Street	475	63	13%	455	60	13%
Edward Street	185	50	27%	235	41	17%

Table 16 Predicted AM and PM Peak Traffic Increases

3.8 Recommended Vehicle Access Points and Traffic Management

The main access points to the precinct are proposed to be via Old Canterbury Road, Edward Street and Smith Street. These access points will need to be managed as follows:

- Given the significant levels of traffic along Old Canterbury Road, along with its location on a crest, it is recommended that access to the new street to precinct 3 (off Old Canterbury Road) be restricted to left-in/ left-out movements only.
- To alleviate the significant delays forecast for vehicles accessing the precinct via the Edward Street / Old Canterbury Road intersection, a new set of traffic signals is proposed. SIDRA modelling has forecast this intersection to operate satisfactorily following the introduction of traffic signals. This intersection will also assist pedestrians to cross Old Canterbury Road at this location. These traffic signals would be subject to RTA approval.
- All movements into and out of the minor access points on Edward Street (between Old Canterbury Road and Smith Street) would be permitted and controlled by give way signage.
- The two new access points along Smith Street would be restricted to left-in/left-out movements. A central raised median could be utilised to control this restriction, which would improve overall traffic circulation.
- Given the movement restrictions along Smith Street, a new roundabout could be constructed at the Edward Street / Smith Street / Chapman Street intersection. This would 'clean up' the intersection, which is currently offset slightly by the northern Chapman Street leg. Further, it would provide improved traffic circulation around the site, particularly given the proposed central medians preventing right turns off Smith Street into the precinct. This would be configured as a minor road roundabout in keeping with other traffic calming devices along Smith Street.

- Existing right turn bans during peak hours at the Railway Tce / Old Canterbury Rd intersection should be maintained.
- The Toothill Street / Old Canterbury Road intersection can remain in its current form as it currently functions well without causing delays to the flow of traffic.
- With traffic volumes on roads within the Summer Hill Flour Mill precinct expected to be low, there are opportunities to provide shared zones with a 10km/h speed limit.

These traffic management measures are illustrated in Figure 12.

Figure 12 Summer Hill Flour Mill Traffic Management



3.9 Sustainable Transport Initiatives

3.9.1 Cycling Facilities

To encourage cycling as a viable form of transport for residents, appropriate facilities are to be provided in the precinct. This will include a dedicated bicycle parking room or secure bicycle parking area in each building that would provide residents with secure and convenient access to the buildings. This area could offer direct access from the building foyer/lobby, and would provide an attractive option for residents who potentially may choose to cycle instead of using private vehicles.

The proposed Greenway will increase cycle access to the precinct linking both north and south and connecting into other east west routes.

3.9.2 Car Share

An opportunity to reduce the reliance on private vehicle would be to utilise the popular car sharing initiatives that are in place across Sydney. Independent studies by the University of Sydney have shown that each car share vehicle normally replaces about 7 private motor vehicles. Car share spaces could easily be provide on the sites internal streets.

Initial contact has been made with two of the larger car share companies. While no car share spaces or 'pods' currently exist within the Lewisham area, companies are expanding and it is likely the initiative will be introduced in the area in the near future. Current car share spaces/pods locations are shown in Figure 13 and Figure 14.





Figure 14 Current 'My Car Club' Car Sharing Pick Up/Drop Off Locations



4 Conclusions

This report has discussed the transport and accessibility impacts relating to the proposed rezoning and development of the Summer Hill Flour Mill precinct. The precinct is well located to operate as a transit oriented development with good access to heavy rail services, buses, future light rail and cycling facilities. The road system adjacent to the site comprises two sub-arterial routes which service access to the precinct with minimal additional traffic on local streets. A number of traffic management devices are proposed on the access road system to facilitate access to the site. The assessment has found no traffic constraint to the proposed rezoning and development. Key findings of the study include:

- The proposed Summer Hill Flour Mill precinct involves medium density residential development, complemented by ancillary retail and commercial land uses.
- On-site observations of traffic conditions at key intersections surrounding the precinct indicate traffic flows satisfactorily, with all vehicles clearing signalised intersections in a single signal cycle, despite long queues forming in peak periods on Railway Terrace.
- The site is well connected to existing State Transit bus routes, with a number of public bus routes operating near the Summer Hill Flour Mill precinct.
- The precinct is well located for heavy rail use, with both Summer Hill and Lewisham stations located approximately 500m from the precinct offering direct access to the Sydney CBD.
- A planned 5.6km extension of the light rail service includes a station at Lewisham adjacent to the sites with connections to the existing heavy rail station. Provision of this infrastructure upgrade will increase public transport availability for future residents in the Summer Hill Flour Mill precinct.
- Local footpaths and the Greenway provide walking access to key destinations surrounding the site, with the precinct well served by a number of local and regional cycling routes.
- The Summer Hill Flour Mill development proposes to provide a total of 450 550 underground parking spaces, which would be allocated to residents and other regular users of the site. An additional 50 to 70 on-street parking spaces are to be provided within the precinct. These would be allocated to visitors and other short-stay users. All on-street parking will need to be time restricted with an appropriate allocation of Loading Zones. This complies with the parking provision outlined in the Ashfield Council DCP ensuring adequate on-site provision to prevent overspill onto surrounding streets
- The Summer Hill Flour Mill development is forecast to generate approximately 289 vehicle movements in the peak hour. The majority of these trips are forecast to originate from the western end of the site where traffic volumes are relatively low.
- The site is currently underutilised. If the site remained fully operational for mixed industrial uses, it could be expected that traffic generation would be higher than the existing levels including heavy vehicle movements. For the consolidated site area of approximately 25,000m2 and applying the site FSR of 1/1 for the industrial zoning, the site could generate 1,250 vehicles / day and 250 vehicles in the evening peak hour based on the rates outlined in the RTA Guide to Traffic Generating Developments for Industry. This level of traffic generation aligns closely with that anticipated from the planned levels of mixed use development and would therefore have a similar level of traffic impact on the nearby intersections.
- Modelling of the local road network has found that four of the five key intersections surrounding the precinct are forecast to operate efficiently during the peak hour,

following both the opening of the Summer Hill Flour Mill and the adjacent McGill Street developments.

- The Railway Tce/Old Canterbury Rd intersection currently experiences high levels of queuing, with signal phasing adjusted to allow vehicles to pass through the intersection in a single cycle. Construction of the proposed mixed use developments are forecast to increase delays at the intersection, however not to an unreasonable level where it will adversely impact on surrounding intersections.
- With increasing delays to traffic on the sub arterial roads, it could be expected that some through traffic may redistribute to alternative main road routes. There are no opportunities for traffic to divert to local streets to undertake these through trips due to the physical restrictions in the area primarily caused by the railway corridor and discontinuous local road system.
- The traffic generation used in this analysis has not considered the introduction of the light rail extension to Dulwich Hill, and thus is considered a conservative analysis. Provision of the upgrade will increase the non-car mode share to and from the site, resulting in a reduced impact on the local road network.
- Implementation of sustainable travel initiatives such as the provision of car share on the site, public transport accessibility and good bicycle parking provisions will further reduce the reliance on private vehicle.

Appendix A

Traffic Survey Results

	Relia	ble, O	rigina	DATA Client : ARUP iginal & Authentic Results Job No/Name : 3141 LEWISH Fax 88196849, Mob. 0418 239019 Day/Date : Wednesday 9 WEST SOUTH EAST Hoavies NOPTH									-	-													
Lights		NORTI			WEST ngport	C †		SOUTH anterbu		Pe	EAST ilway T			Heavies		NORTH			WEST			SOUTI anterbi			EAST ilway T	<u></u>	
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0700 - 0715	17	102	0	26	215	0	21	234	0	2	120	0	737	0700 - 0715	2	<u>+</u>	0	0	2	0	0	<u> </u>	1	1	3	0	11
0715 - 0730	41	129	0	22	196	0	18	267	0	3	154	0	830	0715 - 0730	2	2	0	1	1	0	0	2	1	0	3	0	12
0730 - 0745	28	122	0	27	195	0	12	267	0	4	163	0	818	0730 - 0745	0	- 1	0	0	2	0	0	0	1	1	2	0	7
0745 - 0800	28	161	0	29	238	1	16	269	0	7	169	0	918	0745 - 0800	2	3	0	0	0	0	0	0	1	0	3	0	9
0800 - 0815	44	158	0	22	220	0	20	244	0	4	181	0	893	0800 - 0815	0	1	0	0	1	0	0	0	1	2	0	0	5
0815 - 0830	32	147	0	46	190	0	20	244	0	2	193	0	874	0815 - 0830	1	4	0	0	0	0	1	2	2	0	0	0	10
0830 - 0845	33	153	0	55	259	0	13	215	0	9	189	0	926	0830 - 0845	0	2	0	0	0	0	0	2	0	1	3	0	8
0845 - 0900	20	131	0	50	232	0	13	230	0	11	165	0	852	0845 - 0900	4	1	0	0	0	0	3	0	1	1	0	0	10
Period End	243	1103	0	277	1745	1	133	1970	0	42	1334	0	6848	Period End	11 15 0		0	1 6 0			4	7	8	6	14	0	72
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0700 - 0800	114	514	0	104	844	1	67	1037	0	16	606	0	3303	0700 - 0800	6	7	0	1	5	0	0	3	4	2	11	0	39
0715 - 0815	141	570	0	100	849	1	66	1047	0	18	667	0	3459	0715 - 0815	4	7	0	1	4	0	0	2	4	3	8	0	33
0730 - 0830	132	588	0	124	843	1	68	1024	0	17	706	0	3503	0730 - 0830	3	9	0	0	3	0	1	2	5	3	5	0	31
0745 - 0845	137	619	0	152	907	1	69	972	0	22	732	0	3611	0745 - 0845	3	10	0	0	1	0	1	4	4	3	6	0	32
0800 - 0900	129	589	0	173	901	0	66	933	0	26	728	0	3545	0800 - 0900	5	8	0	0	1	0	4	4	4	4	3	0	33
PEAK HOUR	129	589	0	173	901	0	66	933	0	26	728	0	3545	PEAK HOUR	5	8	0	0	1	0	4	4	4	4 3		0	33
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0700 - 0715	19	103	0	26	217	0	21	235	1	3	123	0	748	0700 - 0715		0			0			0			2		2
0715 - 0730	43	131	0	23	197	0	18	269	1	3	157	0	842	0715 - 0730		2			2			2			2		8
0730 - 0745	28	123	0	27	197	0	12	267	1	5	165	0	825	0730 - 0745		1			0			4			4		9
0745 - 0800	30	164	0	29	238	1	16	269	1	7	172	0	927	0745 - 0800		0			0			5			0		5
0800 - 0815	44	159	0	22	221	0	20	244	1	6	181	0	000	0800 - 0815	-				0			5			4		10
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0815 - 0830	33	151	0	46	190	0	21	246	2	2	193	0	884	0815 - 0830		0			1			6			2		
0830 - 0845	33 33	151 155	0	46 55	190 259	0	13	246 217	2 0	2 10	193 192	0	884 934	0815 - 0830 0830 - 0845		0			1 0			6 6			1		8
0830 - 0845 0845 - 0900	33 33 24	151 155 132	0 0 0	46 55 50	190 259 232	0 0 0	13 16	246 217 230	2 0 1	2 10 12	193 192 165	0 0 0	884 934 862	0815 - 0830 0830 - 0845 0845 - 0900		0 1 3			1 0 0			6 6 5			1 5		8 13
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0830 - 0845 0845 - 0900	33 33 24 254	151 155 132 1118	0 0 0 0	46 55 50 278	190 259 232 1751 WEST	0 0 0 1	13 16 137	246 217 230 1977 SOUTH	2 0 1 8	2 10 12 48	193 192 165 1348 EAST	0 0 0 0	884 934 862	0815 - 0830 0830 - 0845 0845 - 0900		0 1 3 8 NORTH			1 0 0 3 WEST			6 5 33 SOUT			1 5 20 EAST		8 13
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0830 - 0845 0845 - 0900 Period End <u>Combined</u> Peak Time 0700 - 0800 0715 - 0815 0730 - 0830	33 33 24 254 <i>Old C</i> <u>L</u> 120 145 135	151 155 132 1118 NORTH anterbu 521 577 597	0 0 0 0 1 <i>Iry Rd</i> 0 0 0	46 55 50 278 Lo 105 101 124	190 259 232 1751 WEST ngport <u>T</u> 849 853 846	0 0 1 5t <u>R</u> 1 1	13 16 137 0/d C 67 66 69	246 217 230 1977 SOUTH anterbut <u>T</u> 1040 1049 1026	2 0 1 8 <i>ry Rd</i> <u>R</u> 4	2 10 12 48 <i>Ra</i> 21 20	193 192 165 1348 EAST 617 675 711	0 0 0 0 0 0 0 0 0 0	884 934 862 6920 TOT 3342 3492 3534	0815 - 0830 0830 - 0845 0845 - 0900 Period End Peds Peak Per 0700 - 0800 0715 - 0815 0730 - 0830	Old C	0 1 3 8 NORTH anterbu CLASSII 3	ıry Rd		1 0 3 WEST ngport CLASSI 2 2	t St	Old C	6 6 33 SOUTI anterbu CLASSI 11	ıry Rd	Ra	1 5 20 EAST ilway T ELASSII 8		8 13 64 TOT 24 32 33
0830 - 0845 0845 - 0900 Period End <u>Combined</u> Peak Time 0700 - 0800 0715 - 0815	33 33 24 254 <i>Old C</i> <u>L</u> 120 145	151 155 132 1118 NORTH anterbu 521 577	0 0 0 1 1 1 7 7 8 0 0 0	46 55 50 278 Lo 105 101	190 259 232 1751 WEST ngport <u>T</u> 849 853	0 0 1 1 St <u>R</u> 1 1 1	13 16 137 <i>Old C</i> <u>L</u> 67 66	246 217 230 1977 SOUTH anterbut 1040 1049	2 0 1 8 <i>ry Rd</i> <u>R</u> 4 4 5	2 10 12 48 <i>Ra</i> 18 18 21	193 192 165 1348 EAST <i>iilway T</i> 617 675	0 0 0 0 0 ce <u>R</u> 0 0	884 934 862 6920 TOT 3342 3492	0815 - 0830 0830 - 0845 0845 - 0900 Period End <u>Peds</u> Peak Per 0700 - 0800 0715 - 0815	Old C	0 1 3 8 NORTH canterbu CLASSII 3 4 2	ıry Rd		1 0 3 WES1 ongport CLASSI 2 2 1	t St	Old C	6 6 5 33 SOUTI <i>anterbu</i> <u>CLASSI</u> 11 16 20	ıry Rd	Ra	1 5 20 EAST <i>ilway T</i> 5 LASSII 8 10 10		8 13 64 TOT 24 32



R.O.A.R DATA

Reliable, Original & Authentic Results Ph.88196847, Fax 88196849, Mob. 0418 239019 Job No/Name : 3141 LEWISHAM Traffic Counts



Client : ARUP

Day/Date : Wednesday 9th June 2010



	Relia		rigina	al & A	uthen		e sults 18 239	019					_	Client Job No/Na Day/Da	ame te	: Wed	LEW		M Tra June		ounts						_
Lights		NORTI anterbu			WEST	C+		SOUTH anterbu		Br	EAST ilway T			Heavies		NORTI anterbu			WEST			SOUTI anterbu		Ba	EAST	20	
Time Per	1	T	R	1	T	<u>R</u>	1	T	R	L	T	R	тот	Time Per	1	T	R	L	T	31 <u>R</u>	L	T	R	1	T	R	тот
1600 - 1615	19	296	0	 24	120	0	32	160	0	16	208	0	875	1600 - 1615	2	0	0	0	1	0	0	3	1	1	4	0	12
1615 - 1630	15	290	0	24	153	0	43	127	0	10	208	0	859	1615 - 1630	1	1	0	0	1	0	0	6	0	0	2	0	11
1630 - 1645	23	200	0	25	108	0	39	141	0	19	216	0	862	1630 - 1645	2	1	0	0	2	0	0	1	1	1	5	0	13
1645 - 1700	4	248	0	16	151	0	43	146	0	22	215	0	845	1645 - 1700	2	0	0	0	1	0	0	3	0	1	3	0	10
1700 - 1715	24	317	0	14	162	0	34	169	0	14	196	0	930	1700 - 1715	0	0	0	0	0	0	0	0	1	0	1	0	2
1715 - 1730	19	311	0	24	165	0	31	169	0	17	202	0	938	1715 - 1730	2	0	0	0	0	0	0	0	0	1	2	0	5
1730 - 1745	14	264	0	23	180	0	30	156	0	18	213	0	898	1730 - 1745	0	2	0	0	1	0	0	0	1	2	1	0	7
1745 - 1800	15	335	0	23	179	0	24	174	0	13	196	0	959	1745 - 1800	2	0	0	0	0	0	0	0	1	1	1	0	5
Period End	133	2322	0	173	1218	0	276	1242	0	130	1672	0	7166	Period End	11	4	0	0	6	0	0	13	5	7	19	0	65
Lights		NORTI	1		WEST		1	SOUTH	1		EAST		1	Heavies NORTH			WEST		SOUTH					1			
Lights		anterbu		Lo	ngport	St		anterbu		Ra	ilway T	ce		ricavies		anterbu		Lo	ngport	St		anterbu		EAST Rd Railway To			
Peak Time	L	Т	R	L	T	R	L	Т	R	L	Т	R	тот	Peak Time	L	Т	R	L	T	R	L	Т	R	L	т	R	тот
1600 - 1700	61	1095	0	89	532	0	157	574	0	68	865	0	3441	1600 - 1700	7	2	0	0	5	0	0	13	2	3	14	0	46
1615 - 1715	66	1116	0	79	574	0	159	583	0	66	853	0	3496	1615 - 1715	5	2	0	0	4	0	0	10	2	2	11	0	36
1630 - 1730	70	1167	0	79	586	0	147	625	0	72	829	0	3575	1630 - 1730	6	1	0	0	3	0	0	4	2	3	11	0	30
1645 - 1745	61	1140	0	77	658	0	138	640	0	71	826	0	3611	1645 - 1745	4	2	0	0	2	0	0	3	2	4	7	0	24
1700 - 1800	72	1227	-																								
		1227	0	84	686	0	119	668	0	62	807	0	3725	1700 - 1800	1700 - 1800 4 2 0		0	1	0	0	0	3	4	5	0	19	
PEAK HOUR	72	1227	0	84 84	686 686	0 0	119 119	668 668	0 0	62 62	807 807	0 0	3725 3725	1700 - 1800 PEAK HOUR	4	2 2	0 0	0 0	1 1	0 0	0 0	0 0	3 3	4	5 5	0 0	19 19
	72	1227	0	84	686		119	668	0		807			PEAK HOUR	4	2	0	0	1	0	0	0	3		5	-	
PEAK HOUR	72		0	84	686 WEST	0	119		0	62		0			4		0	0		0	0		3	4	5 EAST	0	
	72	1227 NORTI	0	84	686	0	119	668 SOUTH	0	62	807 EAST	0		PEAK HOUR	4 Old C	2 NORTH	0 I Iry Rd	0 Lo	1 WEST	0 St	0 Old C	0 SOUTH	3 H ury Rd	4 Ra	5	0 ice	
Combined	72	1227 NORTI anterbu	0 H Iry Rd	84	686 WEST	0 St	119	668 SOUTH anterbu	0 I ry Rd	62 Ra	807 EAST ailway T	0 ce	3725	PEAK HOUR <u>Peds</u>	4 Old C	2 NORTH anterbu	0 I Iry Rd	0 Lo	1 WEST	0 St	0 Old C	0 SOUTH anterbu	3 H ury Rd	4 Ra	5 EAST ilway Te	0 ice	19
Combined	72 Old C <u>L</u>	1227 NORTI anterbu	0 H ury Rd <u>R</u>	84 Lo	686 WEST ngport	0 St <u>R</u>	119 0 <i>id</i> C	668 SOUTH anterbu <u>T</u>	0 I ry Rd <u>R</u>	62 <i>Ra</i>	807 EAST nilway T	0 ce <u>R</u>	3725 TOT	PEAK HOUR <u>Peds</u> Time Per	4 Old C	2 NORTH anterbu CLASSII	0 I Iry Rd	0 Lo	1 WEST ngport	0 St	0 Old C	0 SOUTI anterbu	3 H ury Rd	4 Ra	5 EAST ilway To CLASSIF	0 ice	19 TOT
Combined Time Per 1600 - 1615	72 Old C <u>L</u> 21	1227 NORTH anterbu <u>T</u> 296	0 1 <i>ury Rd</i> <u>R</u> 0	84 <i>L</i> o <u>L</u> 24	686 WEST ngport <u>T</u> 121	0 St <u>R</u> 0	119 Old C <u>L</u> 32	668 SOUTH anterbu <u>T</u> 163	0 ry Rd <u>R</u> 1	62 <i>Ra</i> <u>L</u> 17	807 EAST iilway T <u>T</u> 212	0 ce <u>R</u> 0	3725 TOT 887	PEAK HOUR <u>Peds</u> <u>Time Per</u> 1600 - 1615	4 Old C	2 NORTH anterbu CLASSII	0 I Iry Rd	0 Lo	1 WEST ongport CLASSI	0 St	0 Old C	0 SOUTH anterbu SLASSI	3 H ury Rd	4 Ra	5 EAST ilway To CLASSIF 4	0 ice	19 TOT 5
Combined Time Per 1600 - 1615 1615 - 1630	72 Old C <u>L</u> 21 16	1227 NORTH anterbu 296 261	0 H Irry Rd R 0 0	84 <i>Lo</i> <u>L</u> 24 24	686 WEST ngport <u>T</u> 121 154	0 St <u>R</u> 0	119 Old C <u>L</u> 32 43	668 SOUTH anterbu <u>T</u> 163 133	0 ry Rd <u>R</u> 1 0	62 <i>Ra</i> <u>L</u> 17 11	807 EAST iilway T 212 228	0 ce <u>R</u> 0	3725 TOT 887 870	PEAK HOUR Peds Time Per 1600 - 1615 1615 - 1630	4 Old C	2 NORTH anterbu CLASSII 1 0	0 I Iry Rd	0 Lo	1 WEST ongport CLASSI 0 0	0 St	0 Old C	0 SOUTH anterbu LASSI 0 4	3 H ury Rd	4 Ra	5 EAST ilway Tr CLASSIF 4 2	0 ice	19 TOT 5 6
Combined Time Per 1600 - 1615 1615 - 1630 1630 - 1645 1645 - 1700 1700 - 1715	72 Old C <u>L</u> 16 25 6 24	1227 NORTH anterbu 296 261 292	0 Irry Rd R 0 0 0	84 Lo <u>L</u> 24 24 25 16 14	686 WEST ngport 121 154 110 152 162	0 St <u>R</u> 0 0 0	119 Old C <u>L</u> 32 43 39	668 SOUTH anterbu 163 133 142 149 169	0 <i>ry Rd</i> <u>R</u> 1 0 1	62 <i>Ra</i> <u>L</u> 17 11 20	807 EAST iilway T 212 228 221 218 197	0 ce <u>R</u> 0 0 0 0 0	3725 TOT 887 870 875 855 932	PEAK HOUR Peds 1600 - 1615 1615 - 1630 1630 - 1645 1645 - 1700 1700 - 1715	4 Old C	2 NORTH anterbu CLASSII 1 0 4 0 1	0 I Iry Rd	0 <i>L</i> o	1 WEST ngport CLASSI 0 0 1 2 1	0 St	0 Old C	0 SOUTH anterbu CLASSII 0 4 0 1 4	3 H ury Rd	4 Ra	5 EAST ilway To CLASSIF 4 2 1 0 3	0 ice	19 TOT 5 6 6 3 9
Combined Time Per 1600 - 1615 1615 - 1630 1630 - 1645 1645 - 1700 1700 - 1715 1715 - 1730	72 Old C <u>L</u> 21 16 25 6 24 21	1227 NORTH anterbu 296 261 292 248 317 311	0 Iry Rd 0 0 0 0 0 0 0 0 0	84 <i>Lo</i> 24 24 25 16 14 24	686 WEST ngport 121 154 110 152 162 165	0 St <u>R</u> 0 0 0 0 0 0 0 0	119 <i>Old C</i> 32 43 39 43 34 31	668 SOUTH anterbu 163 133 142 149 169 169	0 ry Rd <u>R</u> 1 0 1 0 1 0 1 0	62 <i>Ra</i> <u>L</u> 17 11 20 23 14 18	807 EAST illway T 212 228 221 218 197 204	0 ce <u>R</u> 0 0 0 0 0 0	3725 TOT 887 870 875 855 932 943	PEAK HOUR Peds Time Per 1600 - 1615 1615 - 1630 1630 - 1645 1645 - 1700 1700 - 1715 1715 - 1730	4 Old C	2 NORTH anterbu CLASSII 1 0 4 0 1 0	0 I Iry Rd	0 <i>L</i> o	1 WEST mgport CLASSI 0 0 1 2 1 0	0 St	0 Old C	0 SOUTH anterbu CLASSI 0 4 0 1 1 4 4	3 H ury Rd	4 Ra	5 EAST <i>ilway Tr</i> 2 4 2 1 0 3 0	0 ice	19 TOT 5 6 6 3 9 4
Combined Time Per 1600 - 1615 1615 - 1630 1630 - 1645 1645 - 1700 1700 - 1715 1715 - 1730 1730 - 1745	72 Old C 21 16 25 6 24 21 14	1227 NORTH anterbu 296 261 292 248 317 311 266	0 Iry Rd 0 0 0 0 0 0 0 0 0 0 0 0 0	84 Lo L 24 24 25 16 14 24 23	686 WEST ngport 121 154 110 152 162 165 181	S t <u>R</u> 0 0 0 0 0 0 0 0	119 Old C <u>L</u> 32 43 39 43 34 31 30	668 SOUTH anterbu 163 133 142 149 169 169 156	0 ry Rd <u>R</u> 1 0 1 0 1 0 1 0 1 0 1	62 <i>Ra</i> 17 11 20 23 14 18 20	807 EAST iilway T 212 228 221 218 197 204 214	0 ce <u>R</u> 0 0 0 0 0 0 0 0 0 0 0 0 0	3725 TOT 887 870 875 855 932 943 905	PEAK HOUR Peds Time Per 1600 - 1615 1615 - 1630 1630 - 1645 1645 - 1700 1700 - 1715 1715 - 1730 1730 - 1745	4 Old C	2 NORTH <i>anterbu</i> 1 0 4 0 1 0 0 0	0 I Iry Rd	0 <i>L</i> o	1 WEST ngport CLASSI 0 0 1 2 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 St	0 Old C	0 SOUTH anterbu CLASSI 0 4 0 1 1 4 4 5	3 H ury Rd	4 Ra	5 EAST ilway To CLASSIF 4 2 1 0 3	0 ice	19 TOT 5 6 6 3 9 4 6
Combined Time Per 1600 - 1615 1615 - 1630 1630 - 1645 1645 - 1700 1700 - 1715 1715 - 1730 1730 - 1745 1745 - 1800	72 Old C 21 16 25 6 24 21 14 17	1227 NORTH anterbu 296 261 292 248 317 311 266 335	0 Iry Rd R 0 0 0 0 0 0 0 0 0 0 0 0 0	84 Lo L 24 25 16 14 24 23 23	686 WEST ngport 121 154 110 152 162 165 181 179	0 St <u>R</u> 0 0 0 0 0 0 0 0 0 0 0 0 0	119 Old C 32 43 39 43 34 31 30 24	668 SOUTH anterbu 1 163 133 142 149 169 156 174	0 ry Rd <u>R</u> 1 0 1 0 1 0 1 0 1 1 1 1 1	62 <i>Ra</i> <u>L</u> 17 11 20 23 14 18 20 14	807 EAST iilway T 212 228 221 218 197 204 214 197	0 ce <u>R</u> 0 0 0 0 0 0 0 0 0 0 0 0 0	3725 TOT 887 870 875 855 932 943 905 964	PEAK HOUR Peds Time Per 1600 - 1615 1615 - 1630 1630 - 1645 1645 - 1700 1700 - 1715 1715 - 1730 1730 - 1745 1745 - 1800	4 Old C	2 NORTH anterbu CLASSII 1 0 4 0 1 0 0 0 0 0 0	0 I Iry Rd	0 Lo	1 mgport CLASSI 0 0 1 2 1 0 0 1	0 St	0 Old C	0 SOUTH anterbu CLASSI 0 4 0 1 4 4 5 2	3 H ury Rd	4 Ra	5 EAST <i>ilway To</i> 2 4 2 1 0 3 0 1 1	0 ice	19 TOT 5 6 6 3 9 4 6 4
Combined Time Per 1600 - 1615 1615 - 1630 1630 - 1645 1645 - 1700 1700 - 1715 1715 - 1730 1730 - 1745	72 Old C 21 16 25 6 24 21 14	1227 NORTH anterbu 296 261 292 248 317 311 266	0 Iry Rd 0 0 0 0 0 0 0 0 0 0 0 0 0	84 Lo L 24 24 25 16 14 24 23	686 WEST ngport 121 154 110 152 162 165 181	S t <u>R</u> 0 0 0 0 0 0 0 0	119 Old C <u>L</u> 32 43 39 43 34 31 30	668 SOUTH anterbu 163 133 142 149 169 169 156	0 ry Rd <u>R</u> 1 0 1 0 1 0 1 0 1 0 1	62 <i>Ra</i> 17 11 20 23 14 18 20	807 EAST iilway T 212 228 221 218 197 204 214	0 ce <u>R</u> 0 0 0 0 0 0 0 0 0 0 0 0 0	3725 TOT 887 870 875 855 932 943 905	PEAK HOUR Peds Time Per 1600 - 1615 1615 - 1630 1630 - 1645 1645 - 1700 1700 - 1715 1715 - 1730 1730 - 1745	4 Old C	2 NORTH <i>anterbu</i> 1 0 4 0 1 0 0 0	0 I Iry Rd	0 Lo	1 WEST ngport CLASSI 0 0 1 2 1 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	0 St	0 Old C	0 SOUTH anterbu CLASSI 0 4 0 1 1 4 4 5	3 H ury Rd	4 Ra	5 EAST <i>ilway Tr</i> 2 4 2 1 0 3 0	0 ice	19 TOT 5 6 6 3 9 4 6
Combined Time Per 1600 - 1615 1615 - 1630 1630 - 1645 1645 - 1700 1700 - 1715 1715 - 1730 1730 - 1745 1745 - 1800	72 Old C 21 16 25 6 24 21 14 17 144	1227 NORTH anterbu 296 261 292 248 317 311 266 335 2326 NORTH	0 1 1 1 1 1 1 1 1 1 1 1 1 1	84 Lo L 24 24 25 16 14 24 23 23 173	686 WEST ngport 121 154 110 152 162 165 181 179 1224 WEST	0 St <u>R</u> 0 0 0 0 0 0 0 0 0 0 0 0 0	119 Old C <u>L</u> 32 43 39 43 34 31 30 24 276	668 SOUTH anterbu 163 133 142 149 169 156 174 1255 SOUTH	0 ry Rd <u>R</u> 1 0 1 0 1 0 1 0 1 5	62 <i>Ra</i> <u>L</u> 17 11 20 23 14 18 20 14 137	807 EAST iilway T 212 228 221 218 197 204 214 197 1691 EAST	0 ce <u>R</u> 0 0 0 0 0 0 0 0 0 0 0 0 0	3725 TOT 887 870 875 855 932 943 905 964	PEAK HOUR Peds Time Per 1600 - 1615 1615 - 1630 1630 - 1645 1645 - 1700 1700 - 1715 1715 - 1730 1730 - 1745 1745 - 1800		2 NORTH anterbu CLASSII 1 0 4 0 1 0 0 0 0 6 NORTH	0 Irry Rd FIED		1 WEST mgport CLASSI 0 0 1 2 1 0 0 1 5 WEST	0 St FIED		0 SOUTH anterbu CLASSI 0 4 0 1 4 4 5 2 20 20 SOUTH	3 H Irry Rd FIED		5 EAST <i>ilway Tr</i> 2 A 2 1 0 3 0 1 1 1 12 EAST	CCE FIED	19 TOT 5 6 6 3 9 4 6 4
Combined Time Per 1600 - 1615 1615 - 1630 1645 - 1700 1700 - 1715 1715 - 1730 1730 - 1745 1745 - 1800 Period End Combined	72 Old C 21 16 25 6 24 21 14 17 144	1227 NORTH anterbu 296 261 292 248 317 311 266 335 2326 NORTH anterbu	0 1 1 1 1 1 1 1 1 1 1 1 1 1	84 Lo L 24 24 25 16 14 24 23 23 173	686 WEST ngport 121 154 110 152 162 165 181 179 1224 WEST ngport	0 St <u>R</u> 0 0 0 0 0 0 0 0 0 0 0 0 0	119 Old C <u>L</u> 32 43 39 43 34 31 30 24 276	668 SOUTH anterbu 1 163 133 142 149 169 156 174 1255 SOUTH	0 ry Rd 1 0 1 0 1 0 1 0 1 5 1 ry Rd	62 <i>Ra</i> <u>L</u> 17 11 20 23 14 18 20 14 137 <i>Ra</i>	807 EAST i//way T 212 228 221 218 197 204 214 197 1691 EAST i//way T	0 ce <u>R</u> 0 0 0 0 0 0 0 0 0 0 0 0 0	3725 TOT 887 870 875 855 932 943 905 964 7231	PEAK HOUR Peds Time Per 1600 - 1615 1615 - 1630 1630 - 1645 1645 - 1700 1700 - 1715 1715 - 1730 1730 - 1745 1745 - 1800 Perds	4 Old C UNC	2 NORTH anterbu CLASSII 1 0 4 0 1 0 0 0 0 6 NORTH anterbu	0 I I I I I I I I I I		1 WEST mgport CLASSI 0 0 1 2 1 0 0 1 5 WEST mgport	0 St FIED	0 Old C UNC	0 SOUTH anterbu 2 LASSI 0 4 0 1 4 0 1 4 5 2 20 20 SOUTH anterbu	3 H FIED H Iry Rd	4 Ra UNC	5 EAST illway Tr CLASSIF 4 2 1 0 3 0 1 1 1 1 2 EAST EAST	ce FIED	19 TOT 5 6 6 3 9 4 6 4 4 4 3
Combined Time Per 1600 - 1615 1615 - 1630 1630 - 1645 1645 - 1700 1700 - 1715 1715 - 1730 1730 - 1745 1800 Period End Combined Peak Time	72 Old C 21 16 25 6 24 21 14 17 144 Old C L 0ld C L 16 16 25 14 17 144	1227 NORTH anterbu 296 261 292 248 317 311 266 335 2326 NORTH anterbu I	0 H R 0 0 0 0 0 0 0 0 0 0 0 0 0	84 Lo L 24 25 16 14 23 23 173 Lo L	686 WEST ngport 121 154 110 152 162 165 181 179 1224 WEST ngport <u>I</u>	0 St <u>R</u> 0 0 0 0 0 0 0 0 0 0 0 0 0	119 Old C 32 43 39 43 34 31 30 24 276 Old C L	668 SOUTH anterbu 163 133 142 149 169 169 156 174 1255 SOUTH anterbu I	0 ry Rd <u>R</u> 1 0 1 0 1 0 1 1 5 1 ry Rd <u>R</u> 1 0 1 1 1 1 <u>5</u>	62 <i>Ra</i> <u>L</u> 17 11 20 23 14 18 20 14 137 <i>Ra</i> <u>L</u>	807 EAST ii/way T 212 228 221 218 197 204 214 197 1691 EAST ii/way T I	0 cce <u>R</u> 0 0 0 0 0 0 0 0 0 0 0 0 0	3725 TOT 887 870 875 855 932 943 905 964 7231 TOT	PEAK HOUR Peds Time Per 1600 - 1615 1615 - 1630 1630 - 1645 1645 - 1700 1700 - 1715 1715 - 1730 1730 - 1745 1745 - 1800 Period End Peds Peak Per	4 Old C UNC	2 NORTH anterbu CLASSII 1 0 4 0 1 0 0 0 0 6 NORTH anterbu CLASSII	0 I I I I I I I I I I		1 WEST ogport 2 1 0 1 2 1 0 0 1 5 WEST ongport	0 St FIED	0 Old C UNC	0 SOUTH anterbu 2 0 4 0 1 4 4 5 2 20 SOUTH anterbu 2 LASSI	3 H FIED H Iry Rd	4 Ra UNC	5 EAST <i>ilway Tr</i> 2 A 2 1 0 3 0 1 1 1 12 EAST	ce FIED	19 TOT 5 6 6 3 9 9 4 6 4 4 4 3 TOT
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R.O.A.R DATA

Reliable, Original & Authentic Results Ph.88196847, Fax 88196849, Mob. 0418 239019 Client : ARUP

Job No/Name : 3141 LEWISHAM Traffic Counts Day/Date : Wednesday 9th June 2010



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0715 - 0730	11	0	4	8	282	0	4	0	2	2	94	11	418	0715 - 0730	0	0	0	0	2	0	0	0	0	0	0	1	3
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0830 - 0845	16	1	1	10	230	1	1	1	0	0	125	20	408	0813 - 0830	0	0	0	0	2	0	0	0	0	0	2	0	4
0845 - 0900	21	0	1	13	230	0	1	0	1	0	120	13	408	0845 - 0900	0	0	0	0	3	0	0	0	0	0	2	0	4
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0700 - 0800	71	0	6	34	<u>.</u> 1162	0	11	2	3	3	412	35	1739	0700 - 0800	0	0	1	0	7	0	0	0	0	0	5	1	14
0715 - 0815	72	0	8	35	1185	2	10	2	5	3	463	39	1824	0715 - 0815	0	0	1	0	6	0	0	0	0	0	5	1	13
0730 - 0830	89	0	5	30	1213	3	6	2	3	1	508	48	1908	0730 - 0830	0	0	1	0	10	0	0	0	0	0	7	0	18
0745 - 0845	88	1	5	31	1154	4	5	3	2	1	527	67	1888	0745 - 0845	0	0	0	0	10	0	0	0	0	0	7	0	17
0800 - 0900	85	1	5	36	1068	4	3	1	3	1	525	69	1801	0800 - 0900	0	0	0	0	13	0	0	0	Ő	0	7	0	20
PEAK HOUR	85	1	5	36	1068	4	3	1	3	1	525	69	1801	PEAK HOUR	0	0	0	0	13	0	0	0	0	0	7	0	20
														FLAKHOOK	0	U	U	v	10	U	•	•	•	v			
Combined	· · ·		-		WEST						EAST									U							
Combined	-			Old C	WEST	ırv Rd		SOUTH	ł	Old C	EAST			Peds		NORTH	1		WEST			SOUTI	1		EAST	ırv Rd	
Combined	-	NORTI dward	St	Old C	WEST anterbu			SOUTH eston S	l St	Old C L	EAST anterbu	ıry Rd	тот		E	NORTH dward S	l St	Old C	WEST	iry Rd	И	SOUTI /eston	H St	Old C	EAST anterbu		тот
Time Per	E	dward <u>T</u>	St <u>R</u>	Ŀ	anterbu <u>T</u>	<u>R</u>	W	eston S	l St <u>R</u>	L	anterbu <u>T</u>	ıry Rd <u>R</u>	тот	Peds Time Per	E	NORTH	l St	Old C	WEST	iry Rd	И	SOUTI	H St	Old C	EAST		
	-	dward	St	Old C <u> L</u> 9 8	anterbu			eston S	l St		-	Iry Rd <u>R</u> 10		Peds	E	NORTH dward S	l St	Old C	WEST anterbu CLASSII	iry Rd	И	SOUTH /eston	H St	Old C	EAST anterbu CLASSI		тот 3 5
Time Per 0700 - 0715	Е <u>L</u> 19	dward <u>T</u> 0	St <u>R</u> 0	<u>L</u> 9	anterbu <u>T</u> 273	<u>R</u> 0	И <u>L</u> 2	reston S <u>T</u> 0	l St 0	<u>L</u> 1	anterbu <u>T</u> 82	ıry Rd <u>R</u>	ТОТ 396	Peds Time Per 0700 - 0715	E	NORTH dward S CLASSIE	l St	Old C	WEST anterbu CLASSII	iry Rd	И	SOUTI /eston CLASSI	H St	Old C	EAST anterbu CLASSI		3
Time Per 0700 - 0715 0715 - 0730	E <u>L</u> 19 11	dward 3 <u>T</u> 0 0	St <u>R</u> 0 4	<u>L</u> 9 8	anterbu <u>T</u> 273 284	<u>R</u> 0	2 4	Easton S <u>T</u> 0 0	R 0 2	<u>L</u> 1 2	anterbu <u>T</u> 82 94	R <u>R</u> 10 12	TOT 396 421	Peds Time Per 0700 - 0715 0715 - 0730	E	NORTH dward S CLASSII 0 2	l St	Old C	WEST anterbu CLASSII 1 1	iry Rd	И	SOUTI /eston CLASSI 2 2	H St	Old C	EAST anterbu CLASSI 0 0		3
Time Per 0700 - 0715 0715 - 0730 0730 - 0745	E <u>L</u> 19 11 17	dward : <u>T</u> 0 0 0	St <u>R</u> 0 4 2	<u>L</u> 9 8 9	anterbu <u>T</u> 273 284 291	<u>R</u> 0 0	U 2 4 2	<u>T</u> 0 0 0	R 0 2 1	<u>L</u> 1 2 0	anterbu <u>T</u> 82 94 108	R 10 12 3	TOT 396 421 433	Peds Time Per 0700 - 0715 0715 - 0730 0730 - 0745	E	NORTH dward S CLASSII 0 2 0	l St	Old C	WEST anterbu CLASSII 1 1 0	iry Rd	И	SOUTI /eston S CLASSI 2 2 2 2	H St	Old C	EAST anterbu CLASSI 0 0 0		3 5 2
Time Per 0700 - 0715 0715 - 0730 0730 - 0745 0745 - 0800	Ed <u>L</u> 19 11 17 24	dward <u>T</u> 0 0 0 0 0 0	R 0 4 2 1	<u>L</u> 9 8 9 8	Image: mail of the second se	<u>R</u> 0 0 0 0	2 2 4 2 3	reston S <u>T</u> 0 0 0 2	R 0 2 1 0	L 1 2 0 0	anterbu <u>T</u> 82 94 108 133	R R 10 12 3 11	TOT 396 421 433 503	Peds Time Per 0700 - 0715 0715 - 0730 0730 - 0745 0745 - 0800	E	NORTH dward S CLASSIE 0 2 0 0	l St	Old C	WEST anterbu CLASSII 1 1 0 0	iry Rd	И	SOUTI Veston S CLASSI 2 2 2 2 2 2 2	H St	Old C	EAST anterbu CLASSI 0 0 0		3 5 2 2
Time Per 0700 - 0715 0715 - 0730 0730 - 0745 0745 - 0800 0800 - 0815	<u>E</u> <u>19</u> 11 17 24 20	dward <u>T</u> 0 0 0 0 0 0 0 0	R 0 4 2 1 2	<u>L</u> 9 8 9 8 10	<u>T</u> 273 284 291 321 295	R 0 0 0 0 0 2	L 2 4 2 3 1	Example 2 0	R 0 2 1 0 2	L 1 2 0 0 1	anterbu <u>T</u> 82 94 108 133 133	<u>R</u> 10 12 3 11 14	TOT 396 421 433 503 480	Peds Time Per 0700 - 0715 0715 - 0730 0730 - 0745 0745 - 0800 0800 - 0815	E	NORTH dward S CLASSIE 0 2 0 0 0 0	l St	Old C	WEST anterbu CLASSII 1 1 0 0 1	iry Rd	И	SOUTH /eston S CLASSI 2 2 2 2 2 2 0	H St	Old C	EAST anterbu CLASSI 0 0 0 0 0		3 5 2 2 1
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Time Per 0700 - 0715 0715 - 0730 0730 - 0745 0745 - 0800 0800 - 0815 0845 - 0900 Period End Combined 0700 - 0800 0700 - 0801 0700 - 0805	L 19 11 17 24 20 28 16 21 156 L 71 72	dward : Image: Image of the second	R 0 4 2 1 2 1	L 9 8 9 8 10 3 10 13 70 Old C. 34 35	Image: mail of the second se	R 0 0 0 0 1 0 4 R 0 2	L 2 4 2 3 1 0 1 14 2 11 10	eston S Image: Image of the state of	R 0 2 1 0 2 1 0 2 0 1 0 0 1 0 6 1 5	L 1 2 0 0 1 0 0 0 4 0 <i>I</i> 0 0 0 4 0 <i>I</i> 0 0 0 2 4 3 3 3	Image: second	In the second se	TOT 396 421 433 503 480 510 412 419 3574 707 1753 1837	Peds Time Per 0700 - 0715 0715 - 0730 0730 - 0745 0745 - 0800 0800 - 0815 0815 - 0830 0800 - 0815 0845 - 0900 Period End Peds 0700 - 0800 0701 - 0805		NORTH dward S CLASSIE 0 2 0 0 0 0 1 3 0 0 1 3 0 6 NORTH dward S CLASSIE 2 2	I St FIED		WEST anterbu CLASSII 1 1 0 0 1 0 0 1 0 0 0 3 WEST anterbu CLASSII 2 2	rry Rd FIED		SOUTH /eston 3 2 2 2 2 0 2 0 2 1 0 11 SOUTH /eston 3 2 1 0 1 8 6	H St FIED H St		EAST anterbu CLASSI 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	FIED	3 5 2 2 1 3 4 0 20 707 12 10
Time Per 0700 - 0715 0715 - 0730 0730 - 0745 0745 - 0800 0800 - 0815 0830 - 0845 0845 - 0800 Period End Comblned 0700 - 0800 0700 - 0830	E 19 11 17 24 20 28 16 21 156 E E E 5 89	dward 3 Image: Image of the second	R 0 4 2 1 2 1	L 9 8 9 8 10 3 10 13 70 Old C L 34 35 30 30	Image: second	R 0 0 0 1 0 4 R 0 2 3	L 2 4 2 3 1 0 1 14 2 11 10 6	Eeston S Image: Image of the start of	I R 0 2 1 0 2 0 1 0 1 6 1 6 1 6 1 5 3	L 1 2 0 1 0 0 0 4 0 <i>I</i> 0 0 4 0 <i>I</i> 0 0 4 3 3 1	Image: mail of the second se	In the second se	TOT 396 421 433 503 480 510 412 419 3574 TOT 1753 1837 1926	Peds Time Per 0700 - 0715 0715 - 0730 0730 - 0745 0745 - 0800 0800 - 0815 0815 - 0830 0845 - 0845 0845 - 0845 0845 - 0845 0740 - 0800 Peak Per 0700 - 0800 0715 - 0815 0730 - 0830		NORTH dward S CLASSIE 0 2 0 0 0 0 1 3 0 0 1 3 0 6 NORTH dward S CLASSIE 2 2 1	I St FIED		WEST anterbu CLASSII 1 1 0 0 1 0 0 1 0 0 0 3 WEST anterbu CLASSII 2 2 1	rry Rd FIED		SOUTH /eston 3 CLASSI 2 2 2 2 0 2 1 0 11 SOUTH /eston 3 CLASSI 8 6 6	H St FIED H St		EAST anterbu CLASSI 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	FIED	3 5 2 2 1 3 4 0 20 707 12 10 8
Time Per 0700 - 0715 0745 - 0800 0730 - 0745 0745 - 0800 0800 - 0815 0845 - 0800 0830 - 0845 0845 - 0900 Period End Combined 9000 - 0815 0700 - 0800 0715 - 0815 0730 - 0830 0745 - 0845	E 19 11 17 24 20 28 16 21 156 E E 71 72 89 88	dward Image: Constraint of the second s	St R 0 4 2 1 2 1 1 1 1 1 12 H St 7 9 6 5	L 9 8 9 8 10 3 10 13 70 Old C 34 35 30 31	Image: system Image: system 273 284 291 321 295 316 232 238 2250 2250 Interpreter 1169 11223 1164	R 0 0 0 0 1 0 4 R 0 2 3 4	W L 2 4 2 3 1 1 1 1 1 1 1 1 1 1 1 5	Eeston S Image: Image of the start of	I St R 0 2 1 0 2 1 0 0 0 1 0	L 1 2 0 1 0 0 0 4 0 1 0 0 4 0 1 0 0 0 2 1 1 1 1	Image: style="text-align: center;">anterbu 82 94 108 133 141 127 131 949 EAST anterbu 1 417 468 515 534	ny Rd <u>R</u> 10 12 3 11 14 20 22 13 105 105 105 8 40 48 67	TOT 396 421 433 503 480 510 412 419 3574 TOT 1753 1837 1926 1905	Peds Time Per 0700 - 0715 0715 - 0730 0730 - 0745 0745 - 0800 0800 - 0815 0815 - 0800 Peds Peds Peds 0700 - 0800 0715 - 0810 0700 - 0800 0715 - 0815 0730 - 0830 0745 - 0845		NORTH dward S 2 2 0 0 0 1 3 0 0 1 3 0 6 NORTH dward S 2 2 2 1 2 2 1 4	I St FIED		WEST anterbu 2LASSII 1 0 0 1 0 1	rry Rd FIED		SOUTH /eston 3 2 2 2 2 2 2 2 2 2 2 2 2 2	H St FIED H St		EAST anterbu 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	FIED	3 5 2 1 3 4 0 20 7 0 7 0 7 0 7 0 7 0 7 0 7 0 7 12 10 8 10
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Reliable, Original & Authentic Results Ph.88196847, Fax 88196849, Mob. 0418 239019 Client : ARUP

Job No/Name : 3141 LEWISHAM Traffic Counts



	Relia Ph.88	ble, C 19684)rigina 7, Fax	ATA al & A 881968	uthen 849, M		18 239			-				Client Job No/Na Day/Da	ame te	: Wed	1 LEV		M Tra June	2010							
Lights		VORTI			WEST			SOUTH		0110	EAST			Heavies		NORTH		014.0	WEST			SOUT		014.0	EAST		
Time Dec		dward :		Old Ca	anterbu			eston S			anterbı	· ·	тот	Time Per		dward S		Old C	anterbu			Veston		Ola C	anterbu		тот
Time Per	<u>L</u>	<u> </u>	<u>R</u>	L o	<u>1</u>	<u>R</u>	<u>L</u>	<u> </u>	<u>R</u>	L	1	<u>R</u>	-		L 0	<u> </u>	<u>R</u>	L ^	<u> </u>	<u>R</u>	L	<u> </u>	<u>R</u>	<u> </u>	<u> </u>	<u>R</u>	-
1600 - 1615 1615 - 1630	14 8	0	1	3 5	154 121	1	0	1	0	5 1	279 258	22 17	480 412	1600 - 1615 1615 - 1630	0	0	0	0	3	0	0	0	0	0	0	0	4
1615 - 1630	8 12	0	2	5	121	1	0	0	0	2	258	21	412	1615 - 1630	0	0	0	0	4	0	0	0	0	0	1	0	4
1630 - 1645	12	0	4	4	140	2	2	0	0	2	271	21	453 518	1630 - 1645	0	0	0	0	2	0	0	0	0	0	1	0	2
1700 - 1715	17	1	4	5	148	1	2	0	0	3	309	24	518	1700 - 1715	0	0	0	0	4	0	0	0	0	0	0	0	4
1715 - 1730	22	0	2	9	169	0	1	0	0	6	300	33	542	1715 - 1730	0	0	0	0	0	0	0	0	0	0	1	0	1
1730 - 1745	21	0	2	11	159	1	2	0	1	3	283	33	516	1730 - 1745	0	0	0	0	2	0	0	0	0	0	2	0	4
1745 - 1800	24	0	5	8	157	4	3	0	1	1	294	25	522	1745 - 1800	0	0	0	0	0	0	0	0	0	0	3	0	3
Period End	139	1	22	48	1219	10	8	1	2	26	2280	199	3955	Period End	0	0	0	0	16	0	0	0	0	0	9	0	25
Lights	1	VORTI			WEST			SOUTH			EAST			Heavies		NORTI	-		WEST			SOUT	-	—	EAST		
Lights		dward			anterbu	ırv Rd		eston S		Old C	anterbu	ırv Rd		neurics		dward S		Old C	anterbu			Veston		Old C	anterbu	ırv Rd	
Peak Time	L	Τ	R	L	Τ	R	L	Τ	R	L	T	R	тот	Peak Time	L	T	R	L	Τ	R	L	T	R	L	Т	R	TOT
1600 - 1700	55	0	9	15	586	4	2	1	0	13	1094	84	1863	1600 - 1700	0	0	0	0	10	0	0	0	0	0	3	0	13
1615 - 1715	58	1	12	17	580	4	2	0	0	11	1124	86	1895	1615 - 1715	0	0	0	0	11	0	0	0	0	0	2	0	13
1630 - 1730	72	1	12	21	628	4	3	0	0	16	1166	102	2025	1630 - 1730	0	0	0	0	7	0	0	0	0	0	3	0	10
1645 - 1745	81	1	12	28	647	4	5	0	1	17	1178	114	2088	1645 - 1745	0	0	0	0	7	0	0	0	0	0	4	0	11
1700 - 1800	84	1	13	33	633	6	6	0	2	13	1186	115	2092	1700 - 1800	0	0	0	0	6	0	0	0	0	0	6	0	12
PEAK HOUR	84	1	13	33	633	6	6	0	2	13	1186	115	2092	PEAK HOUR	0	0	0	0	6	0	0	0	0	0	6	0	12
Combined	,	NORT	-	1	WEST			SOUTH			EAST			Peds		NORTH	-	1	WEST	-		SOUT	-	т —	EAST		1
<u></u>		dward			anterbu	ıry Rd		eston S	-	Old C	anterbu	ıry Rd		<u></u>		dward S		Old C	anterbu			Veston		Old C	anterbu	ıry Rd	
Time Per	L	T	R	L	I	R	L	Τ	R	L	T	R	TOT	Time Per	UNC	LASSI	FIED	UNC	CLASSI	FIED	UNC	CLASSI	FIED	UNC	LASSI	FIED	TOT
1600 - 1615	14	0	1	3	157	1	0	1	0	5	280	22	484	1600 - 1615		1			0			6		1	0		7
1615 - 1630	8	0	2	5	125	0	0	0	0	1	258	17	416	1615 - 1630		3			1			3			0		7
1630 - 1645	12	0	2	4	142	1	0	0	0	2	272	21	456	1630 - 1645		0			0			1			0		1
1645 - 1700	21	0	4	3	172	2	2	0	0	5	287	24	520	1645 - 1700		1			0			5			0		6
1700 - 1715	17	1	4	5	152	1	0	0	0	3	309	24	516	1700 - 1715		4			1			1			0		6
1715 - 1730	22	0	2	9	169	0	1	0	0	6	301	33	543	1715 - 1730		1			0			0			0		1
1730 - 1745	21	0	2	11	161	1	2	0	1	3	285	33	520	1730 - 1745		0			1			2			0		3
1745 - 1800 Period End	24 139	0	5 22	8 48	157 1235	4 10	3 8	0	1	1 26	297 2289	25 199	525 3980	1745 - 1800 Period End		1 11			0			2 20		┣──	0		3 34
				-		10	-			20		199	3900									-		╘	-		34
Combined		VORT			WEST			SOUTH	-	011 0	EAST			Peds		NORTH		044.0	WEST			SOUT		0110	EAST		
	E	dward :		Old Ca	anterbu		W	eston S			anterbi	<u>.</u>				dward S			anterbu			Veston			anterbu		
Peak Time	<u>L</u> 55	<u>T</u>	<u>R</u>		<u>T</u>	<u>R</u>	<u>L</u> 2	<u>T</u>	<u>R</u>	<u>L</u>	<u>T</u>	<u>R</u> 84	TOT 1876	Peak Per	UNC	LASSII 5	FIED		LASSI 1	FIED		CLASSI 15	<u>rieu</u>		CLASSII 0	FIED	тот 21
1600 - 1700 1615 - 1715	55 58	0	9 12	15 17	596 591	4	2	1	0	13 11	1097 1126	84 86	1876	1600 - 1700 1615 - 1715		5			2			15		╋───	0		21
1615 - 1715 1630 - 1730	58 72	1	12	17 21	591 635	4	2	0	0	11 16	1126	86 102	1908 2035	1615 - 1715 1630 - 1730		6			1			7		╋───	0		20
1645 - 1745	81	1	12	21	654	4	5	0	1	10	1182	102	2035	1645 - 1745		6			2			8		<u>├</u> ──	0		14
1700 - 1800	84	1	13	33	639	6	6	0	2	13	1192	114	2099	1700 - 1800		6		1	2			5		1	0		13



Reliable, Original & Authentic Results Ph.88196847, Fax 88196849, Mob. 0418 239019 Client : ARUP

Job No/Name : 3141 LEWISHAM Traffic Counts



			R. D		uthen	tic Re	sults							Client Job No/Na		: ARU : 3141		/ISHA	M Trat	ffic Co	unts						
N and	Ph.88	19684	7, Fax	88196	849, M	ob. 04 ⁻	18 239	019					_	Day/Da	te	: Wed	Inesda	ay 9th	June	2010							_
Lights		NORTI	Η		WEST			SOUTH	ł		EAST			Heavies		NORTH	-		WEST			SOUTH	1		EAST		
	Ch	napman	n St		Smith S	it	E	dward :	St	-,	Smith S	t			Ch	apman	St	ς,	Smith S	t	E	dward S	St	v ,	Smith S	t	
Time Per	L	I	<u>R</u>	L	Ţ	<u>R</u>	L	I	<u>R</u>	L	Ţ	<u>R</u>	TOT	Time Per	L	Ţ	<u>R</u>	L	I	<u>R</u>	L	I	<u>R</u>	L	I	<u>R</u>	TOT
0700 - 0715	0	1	0	1	83	13	7	0	14	2	12	0	133	0700 - 0715	0	0	0	0	0	0	0	0	0	0	0	0	0
0715 - 0730	0	0	0	0	94	9	9	0	8	6	17	0	143	0715 - 0730	0	0	0	0	0	1	1	0	0	0	0	0	2
0730 - 0745	0	1	0	0	86	10	8	1	6	5	12	0	129	0730 - 0745	0	0	0	0	0	0	0	0	0	0	0	0	0
0745 - 0800	0	0	0	0	89	17	11	0	9	3	18	0	147	0745 - 0800	0	0	0	0	0	0	0	0	0	0	0	0	0
0800 - 0815	0	0	0	1	95	8	15	0	6	8	10	0	143	0800 - 0815	0	0	0	0	0	0	0	0	0	0	0	0	0
0815 - 0830	1	0	0	1	95	23	12	0	4	3	23	0	162	0815 - 0830	0	0	0	0	0	0	0	0	0	0	0	0	0
0830 - 0845	1	0	0	0	68	13	20	2	16	2	25	0	147	0830 - 0845	0	0	0	0	0	0	0	0	0	0	0	0	0
0845 - 0900	0	0	1	0	74	22	7	1	17	7	17	0	146	0845 - 0900	0	0	0	0	0	0	0	0	0	0	1	0	1
Period End	2	2	1	3	684	115	89	4	80	36	134	0	1150	Period End	0	0	0	0	0	1	1	0	0	0	1	0	3
Lights		NORTI	Н	I	WEST			SOUTI	-	1	EAST		1	Heavies		NORTH	-		WEST			SOUTH	ł		EAST		
	Ch	apman	St		Smith S	it	E	dward	St	:	Smith S	t			Ch	apman	St	5	Smith S	t	Ε	dward S	St	5	Smith S	t	
Peak Time	L	I	<u>R</u>	L	I	R	L	I	<u>R</u>	L	I	R	TOT	Peak Time	L	T	<u>R</u>	L	I	R	L	I	R	L	I	<u>R</u>	TOT
0700 - 0800	0	2	0	1	352	49	35	1	37	16	59	0	552	0700 - 0800	0	0	0	0	0	1	1	0	0	0	0	0	2
0715 - 0815	0	1	0	1	364	44	43	1	29	22	57	0	562	0715 - 0815	0	0	0	0	0	1	1	0	0	0	0	0	2
0730 - 0830	1	1	0	2	365	58	46	1	25	19	63	0	581	0730 - 0830	0	0	0	0	0	0	0	0	0	0	0	0	0
0745 - 0845	2	0	0	2	347	61	58	2	35	16	76	0	599	0745 - 0845	0	0	0	0	0	0	0	0	0	0	0	0	0
0800 - 0900	2	0	1	2	332	66	54	3	43	20	75	0	598	0800 - 0900	0	0	0	0	0	0	0	0	0	0	1	0	1
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PEAK HOUR	2	0	1	2	332	66	54	3	43	20	75	0	598	PEAK HOUR	-	0	0	0	0	0	0	0	0	0	1	0	1
				2		66				20	75			PEAK HOUR	0	0	0		0	0	0	0	0				
PEAK HOUR		NORT	н]	WEST			SOUTI	-		75 EAST	0			0		0	0	0 WEST	0	0	0 SOUTH	0	0	EAST		
Combined	Ch		H St]		St			l St		75	0 t	598	PEAK HOUR	0 I Ch	0 NORTH apman	0 H St	0	0 WEST Smith S	0	0 	0 SOUTH dward S	0 H St	0	EAST Smith S	it .	1
Combined Time Per	Ch L	NORTI apman T	H St <u>R</u>		WEST Smith S		5 E	SOUTH dward : <u>T</u>	H St <u>R</u>	Ŀ	75 EAST Smith S	0 t <u>R</u>	598 TOT	PEAK HOUR <u>Peds</u> Time Per	0 I Ch	0 NORTH apman LASSI	0 H St	0	0 WEST Smith S	0	0 	0 SOUTH dward S	0 H St	0	EAST	it .	1 TOT
<u>Combined</u> Time Per 0700 - 0715	0	NORTI apman <u>T</u>	H St 0	<u>L</u>	WEST Smith S T 83	t <u>R</u> 13	E <u>L</u> 7	SOUTH dward 3 <u>T</u> 0	H St <u>R</u> 14	<u>L</u> 2	75 EAST Smith S <u>T</u> 12	0 t <u>R</u> 0	598 TOT 133	PEAK HOUR <u>Peds</u> <u>Time Per</u> 0700 - 0715	0 I Ch	0 NORTH apman	0 H St	0	0 WEST Smith S	0	0 	0 SOUTH dward S	0 H St	0	EAST Smith S	it .	1 TOT 3
Combined Time Per 0700 - 0715 0715 - 0730	0 0	NORTI apman T	H St <u>R</u>	<u>L</u> 1 0	WEST Smith S T 83 94	R 13 10	E <u>E</u> 7 10	SOUTH dward : <u>T</u>	H St 14 8	2 6	75 EAST Smith S <u>T</u> 12 17	0 t <u>R</u>	598 TOT 133 145	PEAK HOUR Peds Time Per 0700 - 0715 0715 - 0730	0 I Ch	0 NORTH apman SLASSII 2	0 H St	0	0 WEST Smith S CLASSII	0	0 	0 SOUTH dward S CLASSII	0 H St	0	EAST Smith S CLASSI	it .	1 TOT
Combined Time Per 0700 - 0715 0715 - 0730 0730 - 0745	0	NORTI apman <u>T</u> 1 0	H St 0 0	<u>L</u>	WEST Smith S T 83	R 13 10 10	E <u>L</u> 7	SOUTH dward S <u>T</u> 0 0	H St <u>R</u> 14	<u>L</u> 2	75 EAST Smith S 12 17 12	0 t <u>R</u> 0	598 TOT 133 145 129	PEAK HOUR <u>Peds</u> <u>Time Per</u> 0700 - 0715	0 I Ch	0 NORTH apman CLASSIE 2 0	0 H St	0	0 WEST Smith S CLASSII 0 1	0	0 	0 SOUTH dward S CLASSII 0 0	0 H St	0	EAST Smith S LASSI 1 1	it .	1 TOT 3 2
Combined Time Per 0700 - 0715 0715 - 0730	0 0 0	NORTI apman 1 0 1	H St 0 0 0	<u>L</u> 1 0	WEST Smith S <u>T</u> 83 94 86	R 13 10	E E 7 10 8	SOUTH dward 3 <u>T</u> 0 1	H St 14 8 6	2 6 5	75 EAST Smith S <u>T</u> 12 17	0 t <u>R</u> 0 0 0	598 TOT 133 145 129 147	PEAK HOUR Peds Time Per 0700 - 0715 0715 - 0730 0730 - 0745	0 I Ch	0 NORTH apman LASSII 2 0 2	0 H St	0	0 WEST Smith S LASSII 0 1	0	0 	0 SOUTH dward S CLASSII 0 0 3	0 H St	0	EAST Smith S LASSI 1 1 1	it .	1 TOT 3 2 7
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Reliable, Original & Authentic Results Ph.88196847, Fax 88196849, Mob. 0418 239019 Client : ARUP

Job No/Name : 3141 LEWISHAM Traffic Counts



	Relia Ph.88	ble, C 19684	7, Fax	al & A	uthen 849, M		18 239						-	Client Job No/Na Day/Da	ame te	: Weo	1 LEV dnesda	ay 9th	M Trat June 2	2010							
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1600 - 1615 1615 - 1630	0	0	0	0	33 42	11 7	22 17	0	9	2 10	50 39	1	129	1615 - 1615	0	0	0	0	0	0	0	0	0	0	0	0	0
1630 - 1645	0	0	1	1	39	7	17	1	9	9	39	0	125	1615 - 1630	0	0	0	0	0	0	0	0	0	0	1	0	1
1645 - 1700	0	0	0	2	25	9	21	1	4	9 15	32	0	109	1645 - 1700	0	0	0	0	0	0	0	0	0	0	0	0	0
1700 - 1715	0	0	0	2	41	10	16	2	8	14	35	0	128	1700 - 1715	0	0	0	0	0	0	0	0	0	0	0	0	0
1715 - 1730	0	0	0	2	44	11	28	0	7	12	53	1	158	1715 - 1730	0	0	0	0	0	0	0	0	0	0	0	0	0
1730 - 1745	0	0	0	1	52	11	20	1	17	13	43	0	158	1730 - 1745	0	0	0	0	0	0	0	0	0	0	0	0	0
1745 - 1800	0	0	0	0	41	13	21	0	17	13	43	0	148	1745 - 1800	0	0	0	0	0	0	0	0	0	0	0	0	0
Period End	0	0	1	9	317	79	162	5	78	88	332	2	1073	Period End	0	0	0	0	0	0	0	0	0	0	1	0	1
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	Cł	apman	St		Smith S	t	E	dward S	St	3	Smith S	it			Cł	apman	St		Smith S	t	E	dward	St		Smith S	t	
Peak Time	L	I	<u>R</u>	L	I	<u>R</u>	L	I	<u>R</u>	Ŀ	I	<u>R</u>	TOT	Peak Time	L	I	<u>R</u>	L	I	<u>R</u>	Ŀ	I	<u>R</u>	L	I	<u>R</u>	TOT
1600 - 1700	0	0	1	4	139	34	77	2	29	36	158	1	481	1600 - 1700	0	0	0	0	0	0	0	0	0	0	1	0	1
1615 - 1715	0	0	1	5	147	33	71	4	27	48	143	1	480	1615 - 1715	0	0	0	0	0	0	0	0	0	0	1	0	1
1630 - 1730	0	0	1	7	149	37	82	4	25	50	157	1	513	1630 - 1730	0	0	0	0	0	0	0	0	0	0	1	0	1
1645 - 1745	0	0	0	7	162	41	85	4	36	54	163	1	553	1645 - 1745	0	0	0	0	0	0	0	0	0	0	0	0	0
1700 - 1800	0	0	0	5	178	45	85	3	49	52	174	1	592	1700 - 1800	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HOUR	0	0	0	5	178	45	85	3	49	52	174	1	592	PEAK HOUR	0	0	0	0	0	0	0	0	0	0	0	0	0
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Time Per 1600 - 1615		-	St	<u>L</u>	Smith S	-			St	<u>L</u> 2		_	TOT 129		Ch	apman	St	:	Smith S	t	E	dward	St		Smith S	t	тот 3
	Ch L	apman <u>T</u>	St <u>R</u>	Ŀ	Smith S	<u>R</u>	E L	dward S <u>T</u>	St <u>R</u>	Ŀ	Smith S	R		Time Per	Ch	apman CLASSI	St	:	Smith S CLASSII 0 0	t	E	dward CLASSI 1 1	St		Smith S	t	3
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Reliable, Original & Authentic Results Ph.88196847, Fax 88196849, Mob. 0418 239019 Client : ARUP

Job No/Name : 3141 LEWISHAM Traffic Counts Day/Date : Wednesday 9th June 2010

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	Relia	ble, C		al & A	uthen 849, M			019						Client Job No/Na Day/Dai	ame					ffic Co 2010	ounts						
Lights	1	NORTI	Н		WEST			SOUTI	ł		EAST		1	Heavies		NORTI	1		WEST			SOUTH	ł		EAST		
	Gro	osveno	r Cr	C	arlton	Cr		Smith S	t	Lo	ongport	St			Gro	osveno	r Cr	С	arlton	Cr	-	Smith S	t	Lo	ngport	St	
Time Per	L	Ţ	<u>R</u>	L	Ī	R	Ľ	Ţ	<u>R</u>	L	Ī	<u>R</u>	TOT	Time Per	L	Ī	<u>R</u>	L	Ī	<u>R</u>	L	I	R	L	Ī	R	TOT
0700 - 0715	74	5	5	6	123	1	0	26	68	8	44	85	445	0700 - 0715	0	0	0	0	2	0	0	0	0	0	3	0	5
0715 - 0730	88	9	1	4	66	0	0	19	68	10	58	123	446	0715 - 0730	0	0	0	0	2	0	0	0	0	0	2	0	4
0730 - 0745	68	4	1	0	64	1	0	12	61	12	67	81	371	0730 - 0745	0	0	0	0	1	0	0	0	0	0	2	0	3
0745 - 0800	100	5	0	1	68	1	0	14	87	13	72	125	486	0745 - 0800	0	0	0	0	0	0	0	0	0	0	3	0	3
0800 - 0815	103	3	0	6	59	1	1	13	59	7	68	116	436	0800 - 0815	0	0	0	0	1	0	0	0	0	0	0	0	1
0815 - 0830	77	4	2	2	70	0	0	10	80	17	76	115	453	0815 - 0830	0	0	0	0	0	0	0	0	0	0	1	0	1
0830 - 0845	109	6	3	3	102	0	1	19	79	22	75	116	535	0830 - 0845	0	0	0	0	0	0	0	0	0	0	2	0	2
0845 - 0900	98	13	1	8	99	0	1	19	63	13	86	72 833	473 3645	0845 - 0900	0	0	0	0	0	0	0	0	0	0	3	0	3
Period End	717	49	13	30	651	4	3	132	565	102	546	833	3645	Period End	0	0	0	0	6	0	0	0	0	0	16	0	22
Lights	1	NORTI	H		WEST			SOUTI	ł		EAST			Heavies		NORTI	1		WEST			SOUTH	1		EAST		
	Gro	osveno	-	C	ariton	-		Smith S	t	Lo	ongport	t St			Gro	osveno	-	C	ariton	Cr	-	Smith S	it	Lo	ngport		
Peak Time	L	I	<u>R</u>	L	I	<u>R</u>	L	I	<u>R</u>	L	T	<u>R</u>	TOT	Peak Time	L	T	<u>R</u>	L	Ţ	<u>R</u>	L	<u>T</u>	<u>R</u>	L	I	<u>R</u>	TOT
0700 - 0800	330	23	7	11	321	3	0	71	284	43	241	414	1748	0700 - 0800	0	0	0	0	5	0	0	0	0	0	10	0	15
0715 - 0815	359	21	2	11	257	3	1	58	275	42	265	445	1739	0715 - 0815	0	0	0	0	4	0	0	0	0	0	7	0	11
0730 - 0830	348	16	3	9	261	3	1	49	287	49	283	437	1746	0730 - 0830	0	0	0	0	2	0	0	0	0	0	6	0	8
0745 - 0845	389	18	5	12	299	2	2	56	305	59	291	472	1910	0745 - 0845	0	0	0	0	1	0	0	0	0	0	6	0	7
0800 - 0900	387	26	6	19	330	1	3	61	281	59	305	419	1897	0800 - 0900	0	0	0	0	1	0	0	0	0	0	6	0	7
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PEAK HOUR	387	26	6	19	330	1	3	61	281	59	305	419	1897	PEAK HOUR	0	0	0	0	1	0	0	0	0	0	6	0	7
PEAK HOUR		26 NORTH		19	330 WEST			61 SOUTI		59	305 EAST		<u> </u>	PEAK HOUR			0			0		0 SOUTH		0	6 EAST		7
	1		H						-				<u> </u>			0	0	0	1	0			-				7
	1	NORTI	H		WEST			SOUTI	-		EAST		<u> </u>		Gro		0 H r Cr	0 C	1 WEST	0 Cr		SOUTI	H St	Lo	EAST	St	7 TOT
Combined	1	NORTI	H r Cr		WEST ariton	Cr		SOUTI Smith S	l it	Lo	EAST	St	1897	Peds	Gro	0 NORTH osvenoi	0 H r Cr	0 C	1 WEST ariton	0 Cr		SOUTI Smith S	H St	Lo	EAST	St	
Combined	Gro L	NORTI sveno <u>T</u>	H r Cr <u>R</u>	C L	WEST Carlton	Cr	Ŀ	SOUTI Smith S	H at <u>R</u>	Lo L	EAST ongport	St <u>R</u>	1897 TOT	Peds Time Per	Gro	0 NORTI Dsvenoi	0 H r Cr	0 C	1 WEST ariton	0 Cr		SOUTH Smith S	H St	Lo	EAST ngport	St	тот
Combined Time Per 0700 - 0715	Gro <u>L</u> 74	NORTI osveno <u>T</u> 5	H r Cr <u>R</u> 5	С <u>L</u> 6	WEST Carlton (T 125	Cr <u>R</u> 1	<u>L</u>	SOUTI Smith S	H at 68	Lo <u>L</u> 8	EAST Ingport	St <u>R</u> 85	1897 TOT 450	Peds Time Per 0700 - 0715	Gro	0 NORTH DSVEND	0 H r Cr	0 C	1 WEST carlton CLASSI 0 0 0	0 Cr		SOUTH Smith S CLASSI	H St	Lo	EAST Ingport LASSI	St	TOT 2 3 2
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Reliable, Original & Authentic Results Ph.88196847, Fax 88196849, Mob. 0418 239019 Client : ARUP

Job No/Name : 3141 LEWISHAM Traffic Counts



Time Per L 1600 - 1615 48 1615 - 1630 52 1630 - 1645 44 1645 - 1700 46 1700 - 1715 60 1715 - 1730 46 1730 - 1745 54 1745 - 1800 60 Period End 400 Lights 0 1600 - 1700 18 1615 - 1715 19 1630 - 1730 19 1645 - 1745 20 1700 - 1800 22 PEAK HOUR 22	Gross 48 52 41 46 60 48 54 60 409 Gross L	ORTH venor <u>I</u> 21 19 11 17 23 27 29 22 169 ORTH svenor	Cr <u>R</u> 9 10 5 12 8 9 4 2 59	Ca 14 14 23 13 14 15 22 16 6 123	WEST ar/ton C I 70 86 69 88 92 94 86 97 682 WEST	Cr <u>R</u> 3 3 7 2 7 7 5 37	L 2 6 2 3 1 0 3 1 1 8	South Smith S I 10 13 16 9 18 17 21 21 125	-	Lo <u>L</u> 24 27 28 23 24 30 22	EAST ngport 134 123 129 129 120	<u>R</u> 88 91 100 99	TOT 453 485 444	<u>Heavies</u> Time Per 1600 - 1615 1615 - 1630		NORTH svenor <u>T</u> 0			WEST arlton (T	Cr R		SOUTH Smith St	-	Lo	EAST ngport		1
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1645 - 1700 46 1700 - 1715 60 1715 - 1730 46 1730 - 1745 60 1745 - 1800 60 Period End 400 Lights 60 Peak Time 6 1600 - 1700 18 1615 - 1715 19 1630 - 1730 19 1645 - 1745 20 PEAK HOUR 22	46 60 48 54 60 409 60 60 60 60 54 54 60 54 60 54 60 54 60 54 54 60 54 54 60 54 54 54 54 54 54 54 54 54 54 54 54 54	17 23 27 29 22 169 ORTH	12 8 9 4 2 59	14 15 22 16 6 123	88 92 94 86 97 682	7 2 7 7 5	3 1 0 3 1 18	9 18 17 21 21	20 24 36 41 40	23 24 30	129 120	99		1630 - 1645	0	0	0	0	2	0	0	0	0	1	4	0	7
1715 - 1730 48 1730 - 1745 54 1745 - 1800 60 Period End 40 Lights 60 Peak Time L 1600 - 1700 18 1615 - 1715 19 1630 - 1730 19 1645 - 1745 20 1700 - 1800 22 PEAK HOUR 22	48 54 60 409 M Gros	27 29 22 169 ORTH	9 4 2 59	22 16 6 123	94 86 97 682	7 7 5	0 3 1 18	17 21 21	36 41 40	30		400	467	1645 - 1700	0	0	0	0	1	0	0	0	0	0	2	0	3
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Lights Peak Time L 1600 - 1700 18 1615 - 1715 19 1630 - 1730 19 1645 - 1745 20 1700 - 1800 22 PEAK HOUR 22	N Gros	ORTH				37		125	250	23	95	101	473	1745 - 1800	0	0	0	0	0	0	0	0	0	0	1	0	1
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1630 - 1730 19 1645 - 1745 20 1700 - 1800 22 PEAK HOUR 22		68	36	64	313	16	13	48	109	102	515	378	1849	1600 - 1700	0	0	0	0	4	0	1	0	0	1	12	0	18
1645 - 1745 200 1700 - 1800 220 PEAK HOUR 220	199	70	35	65	335	15	12	56	103	102	501	390	1883	1615 - 1715	0	0	0	0	4	0	1	0	0	1	10	0	16
1700 - 1800 22 PEAK HOUR 22	195	78	34	64	343	19	6	60	107	105	479	389	1879	1630 - 1730	0	0	0	0	3	0	0	0	0	1	9	0	13
PEAK HOUR 22		96 101	33 23	67 59	360 369	23 21	7	65 77	121 141	99 99	466 432	389 391	1934 1940	1645 - 1745 1700 - 1800	0	0	0	0	2	0	0	0	0	0	6 5	0	8
	222	101	23	59	369	21	5	11	141	99	432	281	1940		U	0	U	0	1	0	U	0	0	U	5	0	0
Combined	222	101	23	59	369	21	5	77	141	99	432	391	1940	PEAK HOUR	0	0	0	0	1	0	0	0	0	0	5	0	6
Combined	N	ORTH			WEST			SOUTI	-		EAST			Peds	1	ORTH			WEST			SOUTH	1		EAST		i i
	Gros	venor	Cr	Ci	ariton (Cr	5	Smith S	t	Lo	ongport	St			Gro	svenor	Cr	Ca	ariton (Cr	5	Smith St	t	Lo	ngport	St	
Time Per L	L	T	R	L	Ţ	<u>R</u>	L	Ţ	R	L	Ţ	R	TOT	Time Per	UNC	LASSIF	IED	UNC	LASSI	FIED	UNC	CLASSIF	FIED	UNC	LASSI	FIED	TOT
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	41	11	5	13	71	3	2	16	27	29	133	100	451	1630 - 1645		0			0			0			1		1
	46	17	12	14	89	7	3	9	20	23	131	99	470	1645 - 1700		0			1			1			0		2
	60	23	8	15	92	2	1	18	24	24	121	100	488	1700 - 1715					0			0			3		3
	48	27	9	22	94	7	0	17	36	30	103	90	483	1715 - 1730		0			1			4			0		5
	54 60	29 22	4	16 6	87 97	7 5	3	21 21	41 40	22 23	117 96	100 101	501 474	1730 - 1745 1745 - 1800		0			2			1			0		3 5
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Combined		ORTH svenor			WEST ariton (~~		SOUTH Smith S	-	10	EAST	51		Peds		NORTH			WEST arlton (~~		SOUTH Smith St	-	10	EAST ngport	64	
	1		-	1					-				TOT	Peak Per			-						-		0.		TOT
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	-							-								0			1			4			5		10
		78	34	64	346	19	6	60	107	106	488	389	1892	1630 - 1730		0			2			5			4		11
	195	96	33	67	362	23	7	65	121	99	472	389	1942	1645 - 1745		0			4			6			3		13
1700 - 1800 22			23	59	370	21	5	77	141	99	437	391	1946	1700 - 1800		0			4						3		16
PEAK HOUR 22	195	101																	4			9					01
1615 - 1715 19 1630 - 1730 19	<u>L</u> 187 199	-													UNC	0	IED	UNC	1	FIED	UNC	5	<u>FIED</u>	UNC	5 4	FIED	



Reliable, Original & Authentic Results Ph.88196847, Fax 88196849, Mob. 0418 239019 Client : ARUP

Job No/Name : 3141 LEWISHAM Traffic Counts Day/Date : Wednesday 9th June 2010



Appendix B

Forecast Vehicle Turning Movements into/out of Summer Hill Flour Mill







Allied Mills Traffic Generation - PM Peak (4pm - 5pm)

Appendix C SIDRA Intersection Results

Edward St - Smth St Giveway / Yield (Two-Way)

Movem	nent Pe	erformance - '	Vehicles								
Mov ID	Turn	Demand	ΗV	Deg.	Average	Level of	95% Back of		Prop.	Effective	Average
	TUIT	Flow veh/h	%	Satn v/c	Delay sec	Service	Vehicles veh	Distance m	Queued	Stop Rate per veh	Speed km/h
South: E	Edward		70	V/C	300		VCII				IXI1//11
1	L	57	0.0	0.064	8.6	LOS A	0.2	1.7	0.19	0.62	48.1
2	т	3	0.0	0.117	13.6	LOS A	0.5	3.8	0.59	0.78	43.2
3	R	45	0.0	0.118	15.0	LOS B	0.5	3.8	0.59	0.86	42.5
Approac	ch	105	0.0	0.118	11.5	LOS B	0.5	3.8	0.37	0.73	45.4
East: Sr	mith Str	eet (East)									
4	L	21	0.0	0.054	9.7	LOS A	0.5	3.5	0.50	0.47	48.7
5	т	80	1.3	0.054	1.5	LOS A	0.5	3.5	0.50	0.00	50.7
6	R	1	0.0	0.053	9.8	LOS A	0.5	3.5	0.50	0.84	48.8
Approad	ch	102	1.0	0.054	3.3	LOS A	0.5	3.5	0.50	0.11	50.3
North: C	Chapma	n Street									
7	L	2	0.0	0.003	9.9	LOS A	0.0	0.1	0.40	0.62	47.2
8	Т	1	0.0	0.005	12.9	LOS A	0.0	0.2	0.57	0.64	44.0
9	R	1	0.0	0.005	14.1	LOS A	0.0	0.2	0.57	0.72	43.3
Approad	ch	4	0.0	0.005	11.7	LOS A	0.0	0.2	0.48	0.65	45.4
West: S	mith St	reet (West)									
10	L	2	0.0	0.039	8.2	LOS A	0.0	0.0	0.00	1.07	49.0
11	т	349	0.0	0.194	0.4	LOS A	1.5	10.7	0.20	0.00	56.0
12	R	69	0.0	0.195	8.7	LOS A	1.5	10.7	0.25	0.84	48.9
Approad	ch	421	0.0	0.195	1.8	LOS A	1.5	10.7	0.21	0.14	54.6
All Vehi	cles	633	0.2	0.195	3.7	NA	1.5	10.7	0.28	0.24	52.1

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 (RTA NSW). Approach LOS values are based on the worst delay for any vehicle movement.

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Edward St - Smth St Giveway / Yield (Two-Way)

Moven	nent Pe	erformance -	Vehicles								
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back o Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: I	Edward		/0	V/C	360		Ven			perven	K11/11
1	L	89	0.0	0.104	9.3	LOS A	0.4	3.0	0.32	0.66	47.5
2	т	3	0.0	0.121	12.5	LOS A	0.6	4.0	0.56	0.75	44.1
3	R	52	0.0	0.120	13.9	LOS A	0.6	4.0	0.56	0.83	43.4
Approa	ch	144	0.0	0.120	11.0	LOS A	0.6	4.0	0.41	0.72	45.9
East: S	mith Str	eet (East)									
4	L	55	0.0	0.125	9.0	LOS A	1.1	7.5	0.39	0.57	48.7
5	т	184	0.6	0.125	0.8	LOS A	1.1	7.5	0.39	0.00	52.5
6	R	1	0.0	0.132	9.1	LOS A	1.1	7.5	0.39	0.83	48.7
Approa	ch	240	0.4	0.125	2.7	LOS A	1.1	7.5	0.39	0.13	51.6
North: 0	Chapma	in Street									
7	L	2	0.0	0.003	9.0	LOS A	0.0	0.1	0.28	0.60	47.7
8	т	1	0.0	0.005	12.2	LOS A	0.0	0.1	0.55	0.62	44.7
9	R	1	0.0	0.005	13.4	LOS A	0.0	0.1	0.55	0.70	44.0
Approa	ch	4	0.0	0.005	10.9	LOS A	0.0	0.1	0.42	0.63	46.0
West: S	Smith St	reet (West)									
10	L	5	0.0	0.023	8.2	LOS A	0.0	0.0	0.00	1.01	49.0
11	т	187	0.0	0.117	0.9	LOS A	0.9	6.3	0.30	0.00	54.1
12	R	47	0.0	0.117	9.3	LOS A	0.9	6.3	0.38	0.83	48.7
Approa	ch	240	0.0	0.117	2.7	LOS A	0.9	6.3	0.31	0.19	52.9
All Vehi	icles	628	0.2	0.125	4.7	NA	1.1	7.5	0.36	0.29	50.6

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

Level of Service (Worst Movement): LOS A. LOS Method for individual vehicle movements: Delay (RTA NSW). Approach LOS values are based on the worst delay for any vehicle movement.

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Edward St - Smth St-Chapman AM (Existing+Mills Traffic) August 2010 Roundabout

Movem	ent Pe	erformance -	Vehicles								
Maria	T	Demand		Deg.	Average	Level of	95% Back o		Prop.	Effective	Average
Mov ID	Turn	Flow	HV	Satn	Delay	Service	Vehicles	Distance	Queued	Stop Rate	Speed
South: E	dward	veh/h Street	%	v/c	sec		veh	m		per veh	km/h
1	L	64	0.0	0.065	4.1	LOS A	0.3	2.3	0.29	0.39	44.4
2	Т	3	0.0	0.003	2.7	LOS A	0.3	2.3	0.23	0.39	44.8
2	R	65	0.0	0.042	9.1	LOS A	0.3	2.1	0.27	0.20	44.0
-											
Approac	n	133	0.0	0.065	6.5	LOS A	0.3	2.3	0.28	0.48	42.6
East: Sr	nith Str	eet (East)									
4	L	42	0.0	0.113	3.7	LOS A	0.8	6.0	0.26	0.38	44.8
5	т	95	1.2	0.113	2.7	LOS A	0.8	6.0	0.26	0.29	45.4
6	R	23	0.0	0.113	11.1	LOS A	0.8	6.0	0.26	0.87	40.9
Approac	ch	160	0.7	0.113	4.2	LOS A	0.8	6.0	0.26	0.40	44.5
North: C	hapma	n Street									
7	L	2	0.0	0.003	5.4	LOS A	0.0	0.1	0.58	0.42	42.9
8	Т	1	0.0	0.002	4.8	LOS A	0.0	0.1	0.60	0.39	42.8
9	R	1	0.0	0.002	11.2	LOS A	0.0	0.1	0.60	0.63	40.6
Approac	ch	4	0.0	0.003	6.7	LOS A	0.0	0.1	0.59	0.46	42.2
West: S	mith Sti	eet (West)									
10	L	2	0.0	0.058	4.1	LOS A	0.2	1.7	0.27	0.42	44.8
11	Т	349	0.0	0.232	2.7	LOS A	1.9	13.5	0.27	0.29	45.4
12	R	83	0.0	0.232	9.1	LOS A	1.9	13.5	0.27	0.79	41.8
Approac	ch	435	0.0	0.232	3.9	LOS A	1.9	13.5	0.27	0.39	44.6
All Vehi	cles	732	0.2	0.232	4.5	LOS A	1.9	13.5	0.27	0.41	44.2

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

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Edward St - Smth St-Chapman PM (Existing+Mills Traffic) August 2010 Roundabout

Movem	nent Pe	erformance - V	Vehicles								
	T	Demand	1.15.7	Deg.	Average	Level of	95% Back o		Prop.	Effective	Average
Mov ID	Turn	Flow	HV	Satn	Delay	Service	Vehicles	Distance	Queued	Stop Rate	Speed
South: E	Edward	veh/h	%	v/c	Sec		veh	m		per veh	km/h
1	L	94	0.0	0.083	6.2	LOS A	0.5	3.2	0.38	0.49	49.5
	Т	-			-	LOS A					
2	-	3	0.0	0.056	5.4		0.4	2.8	0.41	0.41	49.3
3	R	66	0.0	0.056	12.2	LOS A	0.4	2.8	0.41	0.64	45.1
Approac	ch	163	0.0	0.083	8.7	LOS A	0.5	3.2	0.39	0.55	47.5
East: Sr	mith Str	eet (East)									
4	L	81	0.0	0.206	5.8	LOS A	1.7	11.7	0.30	0.48	50.4
5	т	191	0.5	0.206	4.9	LOS A	1.7	11.7	0.30	0.40	51.0
6	R	23	0.0	0.207	14.0	LOS A	1.7	11.7	0.30	0.87	45.3
Approac	ch	295	0.4	0.206	5.8	LOS A	1.7	11.7	0.30	0.46	50.3
North: C	Chapma	n Street									
7	L	2	0.0	0.002	6.7	LOS A	0.0	0.1	0.48	0.45	48.9
8	Т	1	0.0	0.002	6.0	LOS A	0.0	0.1	0.50	0.40	49.0
9	R	1	0.0	0.002	12.8	LOS A	0.0	0.1	0.50	0.64	45.8
Approac	ch	4	0.0	0.002	8.1	LOS A	0.0	0.1	0.49	0.49	48.0
West: S	mith Sti	reet (West)									
10	L	5	0.0	0.039	6.0	LOS A	0.2	1.1	0.27	0.49	50.5
11	т	187	0.0	0.155	4.7	LOS A	1.2	8.6	0.26	0.38	51.2
12	R	95	0.0	0.155	11.6	LOS A	1.2	8.6	0.26	0.76	46.4
Approad	ch	287	0.0	0.155	7.0	LOS A	1.2	8.6	0.26	0.51	49.4
All Vehi	cles	749	0.1	0.206	6.9	LOS A	1.7	11.7	0.31	0.50	49.3

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

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Edward St - Smth St-Chapman AM (ExistingRoundabout (No McGill Traffic) July 2010 Roundabout

Moven	nent Pe	erformance -	Vehicles								
	-	Demand	1.15.7	Deg.	Average	Level of	95% Back		Prop.	Effective	Average
Mov ID	Turn	Flow	HV	Satn	Delay	Service	Vehicles	Distance	Queued	Stop Rate	Speed
Ocurtha	E du card	veh/h	%	v/c	sec		veh	m		per veh	km/h
	Edward										
1	L	57	0.0	0.049	3.9	LOS A	0.2	1.7	0.25	0.38	44.6
2	Т	3	0.0	0.035	2.8	LOS A	0.2	1.7	0.27	0.26	44.8
3	R	45	0.0	0.035	9.2	LOS A	0.2	1.7	0.27	0.59	41.0
Approa	ch	105	0.0	0.049	6.1	LOS A	0.2	1.7	0.26	0.46	42.9
East: Si	mith Str	eet (East)									
4	L	21	0.0	0.089	3.6	LOS A	0.6	4.6	0.23	0.37	45.0
5	Т	80	1.2	0.089	2.7	LOS A	0.6	4.6	0.23	0.27	45.6
6	R	26	0.0	0.089	11.0	LOS A	0.6	4.6	0.23	0.87	40.8
Approa	ch	127	0.7	0.089	4.5	LOS A	0.6	4.6	0.23	0.41	44.3
North: C	Chapma	n Street									
7	L	2	0.0	0.002	5.3	LOS A	0.0	0.1	0.55	0.42	43.0
8	Т	1	0.0	0.002	4.6	LOS A	0.0	0.1	0.57	0.38	42.9
9	R	1	0.0	0.002	11.0	LOS A	0.0	0.1	0.57	0.63	40.7
Approa	ch	4	0.0	0.002	6.5	LOS A	0.0	0.1	0.56	0.46	42.3
West: S	Smith Sti	reet (West)									
10	L	2	0.0	0.055	4.0	LOS A	0.2	1.6	0.24	0.42	44.9
11	т	349	0.0	0.221	2.6	LOS A	1.8	12.6	0.24	0.28	45.6
12	R	69	0.0	0.221	9.0	LOS A	1.8	12.6	0.24	0.81	41.8
Approa		421	0.0	0.221	3.7	LOS A	1.8	12.6	0.24	0.37	44.9
All Vehi	icles	658	0.1	0.221	4.3	LOS A	1.8	12.6	0.24	0.39	44.4

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

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Edward St - Smth St-Chapman PM (ExistingRoundabout(No MiGill Traffic)) July 2010 Roundabout

Moven	nent Pe	erformance - V	Vehicles								
		Demand	1.15.7	Deg.	Average	Level of	95% Back o		Prop.	Effective	Average
Mov ID	Turn	Flow	HV	Satn	Delay	Service	Vehicles	Distance	Queued	Stop Rate	Speed
Coutbal		veh/h	%	v/c	sec		veh	m		per veh	km/h
	Edward		0.0	0.070	0.0		0.4	0.0	0.07	0.40	40.0
1	L	89	0.0	0.079	6.2	LOS A	0.4	3.0	0.37	0.49	49.6
2	Т	3	0.0	0.045	5.4	LOS A	0.3	2.2	0.39	0.41	49.4
3	R	52	0.0	0.045	12.2	LOS A	0.3	2.2	0.39	0.64	45.1
Approa	ch	144	0.0	0.079	8.4	LOS A	0.4	3.0	0.38	0.54	47.8
East: S	mith Str	eet (East)									
4	L	55	0.0	0.174	5.5	LOS A	1.4	9.6	0.20	0.46	51.1
5	Т	184	0.5	0.174	4.6	LOS A	1.4	9.6	0.20	0.37	51.9
6	R	27	0.0	0.174	13.7	LOS A	1.4	9.6	0.20	0.90	45.3
Approa	ch	266	0.4	0.174	5.7	LOS A	1.4	9.6	0.20	0.45	50.9
North: 0	Chapma	n Street									
7	L	2	0.0	0.002	6.5	LOS A	0.0	0.1	0.43	0.44	49.2
8	Т	1	0.0	0.002	5.7	LOS A	0.0	0.1	0.46	0.39	49.3
9	R	1	0.0	0.002	12.6	LOS A	0.0	0.1	0.46	0.65	45.8
Approa	ch	4	0.0	0.002	7.8	LOS A	0.0	0.1	0.45	0.48	48.3
West: S	Smith Sti	reet (West)									
10	L	5	0.0	0.032	6.0	LOS A	0.1	0.9	0.26	0.48	50.6
11	т	187	0.0	0.128	4.7	LOS A	1.0	6.9	0.24	0.38	51.5
12	R	47	0.0	0.128	11.5	LOS A	1.0	6.9	0.24	0.80	46.6
Approa		240	0.0	0.128	6.0	LOS A	1.0	6.9	0.24	0.47	50.4
All Vehi	icles	655	0.2	0.174	6.4	LOS A	1.4	9.6	0.25	0.48	50.0

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

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Old Canterbury Rd & Toothil Street

Signals - Fixed Time Cycle Time = 90 seconds

Movement Performance - Vehicles												
Mov ID	Turn	Demand	ΗV	Deg.	Average	Level of	95% Back		Prop.	Effective	Average	
	i ann	Flow veh/h	%	Satn v/c	Delay sec	Service	Vehicles veh	Distance m	Queued	Stop Rate per veh	Speed km/h	
South: 1	Toothil S		/0	V/0			Von				KI17/11	
1	L	174	1.2	0.386	37.5	LOS C	8.2	57.7	0.88	0.79	26.3	
3	R	285	0.7	0.632	40.0	LOS C	13.0	91.5	0.95	0.83	25.4	
Approac	ch	459	0.9	0.632	39.0	LOS C	13.0	91.5	0.92	0.82	25.8	
East: Ol	ld Cante	rbury Rd (east)									
4	L	214	3.0	0.635	37.7	LOS C	14.3	102.0	0.93	0.84	26.6	
5	Т	454	1.6	0.635	31.1	LOS C	14.7	104.4	0.93	0.80	27.3	
Approad	ch	667	2.1	0.635	33.2	LOS C	14.7	104.4	0.93	0.81	27.0	
West: O	Id Cant	erbury Rd (wes	st)									
11	Т	912	0.9	0.654	11.7	LOS A	22.6	159.5	0.69	0.64	37.3	
12	R	398	0.8	0.654	29.0	LOS C	16.5	116.3	0.87	0.99	29.7	
Approac	ch	1309	0.9	0.654	17.0	LOS B	22.6	159.5	0.74	0.75	34.6	
All Vehi	cles	2436	1.2	0.654	25.6	LOS B	22.6	159.5	0.83	0.78	30.3	

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

Movement Performance - Pedestrians												
	D	Demand	Average	Level of	Average Back	of Queue	Prop.	Effective				
Mov ID	Description	Flow	Delay	Service	Pedestrian	Distance	Queued	Stop Rate				
		ped/h	sec		ped	m		per ped				
P1	Across S approach	3	22.8	LOS C	0.0	0.0	0.71	0.71				
P7	Across W approach	15	24.9	LOS C	0.0	0.0	0.74	0.74				
All Pede	estrians	18	24.6				0.74	0.74				

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

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Old Canterbury Rd & Toothil Street

Signals - Fixed Time Cycle Time = 90 seconds

Movem	ent Pe	rformance - '	Vehicles								
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back (Vehicles	of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		, per veh	ˈkm/h
South: T	oothil S	Street									
1	L	297	1.1	0.690	41.8	LOS C	13.9	98.0	0.97	0.86	24.9
3	R	294	0.0	0.678	41.6	LOS C	13.6	95.5	0.97	0.85	24.9
Approac	ch	591	0.5	0.690	41.7	LOS C	13.9	98.0	0.97	0.85	24.9
East: Ol	d Cante	erbury Rd (east)								
4	L	255	0.0	0.707	24.5	LOS B	23.8	167.1	0.83	0.88	32.2
5	Т	1138	0.5	0.707	18.1	LOS B	24.2	169.9	0.83	0.75	33.2
Approac	ch	1393	0.4	0.707	19.2	LOS B	24.2	169.9	0.83	0.77	33.0
West: O	Id Cant	erbury Rd (wes	st)								
11	Т	552	0.8	0.434	7.9	LOS A	13.1	92.0	0.52	0.46	40.7
12	R	203	1.6	0.686	41.1	LOS C	10.5	74.8	1.00	0.98	25.1
Approac	ch	755	1.0	0.686	16.8	LOS B	13.1	92.0	0.65	0.60	34.9
All Vehi	cles	2738	0.6	0.707	23.4	LOS B	24.2	169.9	0.81	0.74	31.3

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

Movement Performance - Pedestrians												
	B 1.4	Demand	Average	Level of	Average Back	of Queue	Prop.	Effective				
Mov ID	Description	Flow	Delay	Service	Pedestrian	Distance	Queued	Stop Rate				
		ped/h	sec		ped	m		per ped				
P1	Across S approach	4	10.3	LOS B	0.0	0.0	0.48	0.48				
P7	Across W approach	7	25.7	LOS C	0.0	0.0	0.76	0.76				
All Ped	estrians	11	20.1				0.65	0.65				

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

Processed: Friday, 18 June 2010 11:34:21 AM SIDRA INTERSECTION 5.0.1.1427 Project: J:\220640 - Allied Mills\05 Arup Project Data\SIDRA\Toothil - Old Canterbury Rd.sip 8000045, ARUP PTY LTD, FLOATING



Old Canterbury Rd - Toothil St (Existing + McGill Traffic) Four Way Intersection August AM Peak (90 sec cycle time) Signals - Fixed Time Cycle Time = 90 seconds

Moven	nent Pei	rformance -	Vehicles								
	-	Demand	1.15.7	Deg.	Average	Level of	95% Back of		Prop.	Effective	Average
Mov ID	Turn	Flow	HV	Satn	Delay	Service	Vehicles	Distance	Queued	Stop Rate	Speed
South: T	Toothil St	veh/h	%	v/c	sec	_	veh	m	_	per veh	km/h
1		174	1.0	0.369	36.5	LOS C	8.0	56.8	0.87	0.79	26.6
3	R	285				LOS C					
			1.0	0.754	44.2		14.1	99.4	0.98	0.90	24.2
Approa	ch	459	1.0	0.754	41.3	LOS C	14.1	99.4	0.94	0.86	25.0
East: O	ld Canter	rbury Rd (east	.)								
4	L	228	3.0	0.672	37.2	LOS C	14.8	105.6	0.88	0.84	26.7
5	Т	476	2.0	0.672	31.4	LOS C	14.8	105.6	0.89	0.76	27.2
6	R	5	1.0	0.670	38.2	LOS C	14.5	103.3	0.89	0.87	27.0
Approa	ch	709	2.3	0.672	33.3	LOS C	14.8	105.6	0.89	0.79	27.1
North: A	Acces Rd	(north)									
		,	1.0	0.070	24.0		4.0	11.0	0.00	0.70	07.0
7	L	27	1.0	0.076	34.8	LOS C	1.6	11.6	0.80	0.72	27.2
9	R	4	1.0	0.076	34.9	LOS C	1.6	11.6	0.80	0.72	27.2
Approa	ch	32	1.0	0.076	34.8	LOS C	1.6	11.6	0.80	0.72	27.2
West: C	Old Cante	erbury Rd (wes	st)								
10	L	6	0.0	0.738	13.8	LOS A	19.5	137.6	0.52	0.92	38.7
11	т	918	1.0	0.751	8.1	LOS A	19.5	137.6	0.53	0.49	40.4
12	R	425	1.0	0.751	33.0	LOS C	15.9	112.3	0.86	1.03	27.9
Approa	ch	1349	1.0	0.751	16.0	LOS B	19.5	137.6	0.63	0.67	35.4
All Vehi	icles	2549	1.4	0.754	25.6	LOS B	19.5	137.6	0.76	0.74	30.4

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

Moven	Movement Performance - Pedestrians												
		Demand	Average	Level of	Average Back	of Queue	Prop.	Effective					
Mov ID	Description	Flow	Delay	Service	Pedestrian	Distance	Queued	Stop Rate					
		ped/h	sec		ped	m		per ped					
P1	Across S approach	3	28.0	LOS C	0.0	0.0	0.79	0.79					
P5	Across N approach	32	26.5	LOS C	0.1	0.1	0.77	0.77					
P7	Across W approach	16	32.9	LOS D	0.0	0.0	0.86	0.86					
All Ped	estrians	51	28.6				0.80	0.80					

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

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Old Canterbury Rd - Toothil St (Existing + McGill Traffic) Four Way Intersection Aug PM Peak (90 sec cycle time) Signals - Fixed Time Cycle Time = 90 seconds

Moven	nent Per	formance -	Vehicles								
	-	Demand	1.15.7	Deg.	Average	Level of	95% Back o		Prop.	Effective	Average
Mov ID	Turn	Flow	HV	Satn	Delay	Service	Vehicles	Distance	Queued	Stop Rate	Speed
South -	Toothil Ct	veh/h	%	v/c	sec		veh	m		per veh	km/h
	Toothil St	,	4.0	0.000	44.0	100.0	40.0	07.0	0.07	0.00	04.0
1	L	297	1.0	0.690	41.8	LOSC	13.9	97.9	0.97	0.86	24.9
3	R	294	0.0	0.803	47.9	LOS D	15.0	105.3	1.00	0.93	23.2
Approa	ch	591	0.5	0.803	44.9	LOS D	15.0	105.3	0.98	0.89	24.0
East: O	ld Canter	bury Rd (eas	t)								
4	L	283	0.0	0.798	24.1	LOS B	25.3	177.2	0.78	0.90	32.4
5	Т	1168	0.0	0.797	17.8	LOS B	25.3	177.2	0.78	0.73	33.4
6	R	16	1.0	0.796	24.5	LOS B	24.7	172.8	0.78	0.94	32.7
Approa	ch	1467	0.0	0.797	19.1	LOS B	25.3	177.2	0.78	0.77	33.2
North: A	Acces Rd	(north)									
7	L	25	1.0	0.087	39.3	LOS C	1.6	11.3	0.86	0.72	25.7
9	R	3	1.0	0.087	39.5	LOS C	1.6	11.3	0.86	0.72	25.6
Approa	ch	28	1.0	0.087	39.3	LOS C	1.6	11.3	0.86	0.72	25.7
West: C	Id Cante	rbury Rd (we	st)								
10	L	20	0.0	0.471	10.9	LOS A	8.2	57.9	0.28	0.90	40.3
11	Т	559	1.0	0.472	4.5	LOS A	8.2	57.9	0.28	0.25	44.3
12	R	217	2.0	0.810	48.5	LOS D	11.4	81.2	0.99	1.06	23.1
Approa	ch	796	1.2	0.809	16.6	LOS B	11.4	81.2	0.47	0.49	35.3
All Vehi	cles	2882	0.5	0.809	23.9	LOS B	25.3	177.2	0.74	0.71	31.2

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

Mover	Movement Performance - Pedestrians												
		Demand	Average	Level of	Average Back	of Queue	Prop.	Effective					
Mov ID	Description	Flow	Delay	Service	Pedestrian	Distance	Queued	Stop Rate					
		ped/h	sec		ped	m		per ped					
P1	Across S approach	4	15.6	LOS B	0.0	0.0	0.59	0.59					
P5	Across N approach	32	14.5	LOS B	0.0	0.0	0.57	0.57					
P7	Across W approach	7	34.7	LOS D	0.0	0.0	0.88	0.88					
All Ped	estrians	43	17.8				0.62	0.62					

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 D. LOS Method for individual pedestrian movements: Delay (HCM).

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Old Canterbury Rd - Toothil St (Existing + McGill+Mills Traffic) Four Way Intersection Aug AM Peak (90 sec cycle time) Signals - Fixed Time Cycle Time = 90 seconds

Mover	nent Per	formance -	Vehicles								
Marcin	т	Demand	1117	Deg.	Average	Level of	95% Back		Prop.	Effective	Average
Mov ID	Turn	Flow veh/h	HV	Satn	Delay	Service	Vehicles	Distance	Queued	Stop Rate	Speed
South: 7	Toothil St		%	v/c	Sec	_	veh	m	_	per veh	km/h
1	L	178	1.0	0.377	36.6	LOS C	8.2	58.0	0.87	0.79	26.6
3	R	285	1.0	0.754	44.2	LOS D	14.1	99.4	0.98	0.90	24.2
Approad	ch	463	1.0	0.754	41.3	LOS C	14.1	99.4	0.94	0.86	25.0
Fast: O	ld Canter	bury Rd (east	t)								
4	L	228	3.0	0.714	39.2	LOS C	15.6	111.9	0.91	0.86	26.1
5	Т	487	2.0	0.714	33.2	LOS C	15.6	111.9	0.92	0.81	26.5
6	R	5	1.0	0.713	40.0	LOS C	15.2	108.4	0.92	0.89	26.4
Approad	ch	721	2.3	0.714	35.2	LOS C	15.6	111.9	0.92	0.83	26.4
North: A	Acces Rd	(north)									
7	L	27	1.0	0.077	34.8	LOS C	1.6	11.6	0.80	0.72	27.2
9	R	4	1.0	0.077	34.9	LOS C	1.6	11.6	0.80	0.72	27.2
Approad	ch	32	1.0	0.077	34.8	LOS C	1.6	11.6	0.80	0.72	27.2
West: C)Id Cante	rbury Rd (we	st)								
10	L	8	0.0	0.766	14.0	LOS A	21.1	149.0	0.55	0.92	38.6
11	т	952	1.0	0.777	8.5	LOS A	21.1	149.0	0.56	0.52	40.0
12	R	444	1.0	0.777	34.7	LOS C	16.9	119.7	0.88	1.05	27.3
Approad	ch	1404	1.0	0.777	16.8	LOS B	21.1	149.0	0.66	0.69	34.9
All Vehi	cles	2620	1.4	0.777	26.4	LOS B	21.1	149.0	0.78	0.76	30.0

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

Movement Performance - Pedestrians												
		Demand	Average	Level of	Average Back	of Queue	Prop.	Effective				
Mov ID	Description	Flow	Delay	Service	Pedestrian	Distance	Queued	Stop Rate				
		ped/h	sec		ped	m		per ped				
P1	Across S approach	3	28.8	LOS C	0.0	0.0	0.80	0.80				
P5	Across N approach	32	27.2	LOS C	0.1	0.1	0.78	0.78				
P7	Across W approach	16	32.9	LOS D	0.0	0.0	0.86	0.86				
All Ped	estrians	51	29.1				0.80	0.80				

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

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Old Canterbury Rd - Toothil St (Existing + McGill+Mills Traffic) Four Way Intersection August PM Peak (90 sec cycle time) Signals - Fixed Time Cycle Time = 90 seconds

Mover	nent Per	formance -	Vehicles								
		Demand	111/	Deg.	Average	Level of	95% Back of		Prop.	Effective	Average
Mov ID	Turn	Flow	HV	Satn	Delay	Service	Vehicles	Distance	Queued	Stop Rate	Speed
South: 7	Toothil St	veh/h	%	v/c	sec		veh	m		per veh	km/h
		, ,	4.0	0.740	10.5			404 7	0.00	0.07	047
1	L	306	1.0	0.712	42.5	LOS C	14.4	101.7	0.98	0.87	24.7
3	R	294	0.0	0.803	47.9	LOS D	15.0	105.3	1.00	0.93	23.2
Approad	ch	600	0.5	0.803	45.1	LOS D	15.0	105.3	0.99	0.90	23.9
East: O	ld Canter	bury Rd (eas	t)								
4	L	312	0.0	0.832	27.3	LOS B	28.4	198.6	0.83	0.92	30.9
5	Т	1165	0.0	0.832	21.0	LOS B	28.4	198.6	0.83	0.80	31.6
6	R	16	1.0	0.840	27.7	LOS B	27.6	193.2	0.83	0.97	31.2
Approad	ch	1493	0.0	0.832	22.4	LOS B	28.4	198.6	0.83	0.83	31.5
North: A	Acces Rd	(north)									
7	L	25	1.0	0.087	39.3	LOS C	1.6	11.3	0.86	0.72	25.7
9	R	3	1.0	0.088	39.5	LOS C	1.6	11.3	0.86	0.72	25.6
Approad	ch	28	1.0	0.087	39.4	LOS C	1.6	11.3	0.86	0.72	25.7
West: C	Old Cante	rbury Rd (we	st)								
10	L	20	0.0	0.501	11.0	LOS A	8.9	62.8	0.29	0.90	40.2
11	т	594	1.0	0.501	4.6	LOS A	8.9	62.8	0.29	0.26	44.1
12	R	237	2.0	0.836	51.3	LOS D	12.4	88.3	1.00	1.09	22.4
Approad	ch	851	1.3	0.836	17.8	LOS B	12.4	88.3	0.49	0.51	34.6
All Vehi	cles	2972	0.5	0.836	25.8	LOS B	28.4	198.6	0.77	0.75	30.3

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

Moven	Movement Performance - Pedestrians												
		Demand	Average	Level of	Average Back	of Queue	Prop.	Effective					
Mov ID	Description	Flow	Delay	Service	Pedestrian	Distance	Queued	Stop Rate					
		ped/h	sec		ped	m		per ped					
P1	Across S approach	4	16.2	LOS B	0.0	0.0	0.60	0.60					
P5	Across N approach	32	15.0	LOS B	0.0	0.0	0.58	0.58					
P7	Across W approach	7	34.7	LOS D	0.0	0.0	0.88	0.88					
All Ped	estrians	43	18.3				0.63	0.63					

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 D. LOS Method for individual pedestrian movements: Delay (HCM).

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Old Canterbury Rd - Edward St Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	ΗV	Deg. Satn	Average Delay	Level of Service	95% Back o Vehicles	of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
	Turr	veh/h	%	Salii v/c	Sec	Service	venicies veh	Distance	Queuea	per veh	speed km/h
South: \	Weston										
1	L	6	0.0	0.088	40.8	LOS C	0.3	2.1	0.85	0.86	25.3
2	Т	2	0.0	0.088	39.5	LOS C	0.3	2.1	0.85	0.92	25.4
3	R	3	0.0	0.211	244.6	LOS F	0.7	4.6	0.99	1.00	7.2
Approa	ch	12	0.0	0.209	96.1	LOS F	0.7	4.6	0.89	0.91	15.1
East: O	ld Cante	erbury Rd (east	t)								
4	L	1	0.0	0.263	6.4	LOS A	0.0	0.0	0.00	0.92	43.3
5	т	542	1.4	0.237	2.7	LOS A	2.6	18.1	0.16	0.00	46.2
6	R	51	0.0	0.237	24.0	LOS B	2.6	18.1	1.00	1.04	32.7
Approa	ch	594	1.2	0.237	4.6	LOS B	2.6	18.1	0.23	0.09	44.6
North: E	dward	Street									
7	L	94	0.0	0.498	32.6	LOS C	2.3	16.3	0.91	1.06	28.0
8	Т	1	0.0	0.132	59.2	LOS E	0.4	3.1	0.94	0.97	20.4
9	R	6	16.7	0.132	60.9	LOS E	0.4	3.1	0.94	0.98	20.4
Approa	ch	101	1.0	0.497	34.6	LOS E	2.3	16.3	0.92	1.06	27.3
West: C	old Cant	erbury Rd (wes	st)								
10	L	32	0.0	0.343	6.4	LOS A	0.0	0.0	0.00	0.90	43.3
11	Т	1287	0.8	0.342	2.3	LOS A	5.8	40.5	0.39	0.00	45.4
12	R	3	0.0	0.351	10.8	LOS A	5.8	40.5	0.77	1.00	41.6
Approa	ch	1322	0.8	0.342	2.4	LOS A	5.8	40.5	0.38	0.02	45.3
All Vehi	cles	2028	0.9	0.497	5.2	NA	5.8	40.5	0.37	0.10	43.2

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 F. LOS Method for individual vehicle movements: Delay (RTA NSW). Approach LOS values are based on the worst delay for any vehicle movement.

Processed: Friday, 27 August 2010 12:03:10 PM SIDRA INTERSECTION 5.0.1.1427

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SIDRA ---

SIDRA INTERSECTION 5.0.1.1427 www.sidrasolutions.com Project: J:\220640 - Allied Mills\05 Arup Project Data\SIDRA\July-August 2010 Scenarios\1.Edward - Old Canterbury Rd.sip 8000045, ARUP PTY LTD, FLOATING

Old Canterbury Rd - Edward St Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
O a satilar A		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: \			0.0	0.004	40.0				0.00	0.07	
1	L	6	0.0	0.094	48.8	LOS D	0.3	2.2	0.93	0.97	23.0
2	Т	1	0.0	0.096	47.5	LOS D	0.3	2.2	0.93	0.96	23.1
3	R	2	0.0	0.234	407.2	LOS F	0.7	5.0	0.99	1.00	4.6
Approa	ch	9	0.0	0.232	128.3	LOS F	0.7	5.0	0.94	0.98	12.2
East: O	ld Cante	erbury Rd (east))								
4	L	14	0.0	0.415	6.4	LOS A	0.0	0.0	0.00	0.91	43.3
5	Т	1255	0.5	0.417	2.8	LOS A	7.4	52.0	0.33	0.00	45.5
6	R	121	0.0	0.417	14.2	LOS A	7.4	52.0	0.91	1.12	38.9
Approa	ch	1389	0.5	0.417	3.9	LOS A	7.4	52.0	0.38	0.11	44.8
North: E	dward	Street									
7	L	88	0.0	0.183	13.6	LOS A	0.8	5.5	0.62	0.85	37.6
8	Т	1	0.0	0.175	19.7	LOS B	0.8	5.5	0.68	0.83	33.6
9	R	14	0.0	0.182	49.2	LOS D	0.6	4.0	0.93	0.98	22.9
Approa	ch	103	0.0	0.183	18.4	LOS D	0.8	5.5	0.66	0.87	34.6
West: C	Id Cant	erbury Rd (wes	st)								
10	L	35	0.0	0.194	6.4	LOS A	0.0	0.0	0.00	0.88	43.3
11	т	673	0.9	0.194	7.8	LOS A	5.7	40.0	0.49	0.00	40.8
12	R	6	0.0	0.191	22.3	LOS B	5.7	40.0	1.00	1.01	34.2
Approa	ch	714	0.9	0.194	7.9	LOS B	5.7	40.0	0.47	0.05	40.8
All Vehi	cles	2216	0.6	0.417	6.4	NA	7.4	52.0	0.43	0.13	42.4

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 F. LOS Method for individual vehicle movements: Delay (RTA NSW). Approach LOS values are based on the worst delay for any vehicle movement.

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SIDRA ---

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Old Canterbury Rd - Edward St AM (Existing + McGill Traffic) August 2010 Signals - Fixed Time Cycle Time = 50 seconds

Mover	nent Pe	erformance -	Vehicles								
	-	Demand	1.15.7	Deg.	Average	Level of	95% Back		Prop.	Effective	Average
Mov ID	Turn	Flow	HV	Satn	Delay	Service	Vehicles	Distance	Queued	Stop Rate	Speed
Orathal		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: \						1000					
1	L	6	0.0	0.011	18.9	LOS B	0.2	1.2	0.70	0.65	34.3
2	Т	2	0.0	0.011	12.6	LOS A	0.2	1.2	0.70	0.45	36.0
3	R	3	0.0	0.011	19.0	LOS B	0.1	1.0	0.70	0.68	34.8
Approad	ch	12	0.0	0.011	17.8	LOS B	0.2	1.2	0.70	0.62	34.7
East: O	ld Cante	erbury Rd (east)								
4	L	1	0.0	0.478	17.4	LOS B	9.1	64.5	0.76	0.88	36.8
5	Т	561	1.4	0.489	12.8	LOS A	9.1	64.5	0.80	0.68	36.5
6	R	51	0.0	0.489	24.3	LOS B	5.8	40.9	0.89	0.82	32.6
Approac	ch	613	1.2	0.489	13.7	LOS A	9.1	64.5	0.80	0.69	36.1
North: E	Edward	Street									
7	L	94	0.0	0.158	19.8	LOS B	2.5	17.5	0.75	0.74	33.8
8	Т	1	0.0	0.014	12.6	LOS A	0.2	1.4	0.70	0.48	35.6
9	R	6	5.3	0.014	19.2	LOS B	0.2	1.4	0.70	0.67	34.4
Approad	ch	101	0.3	0.158	19.7	LOS B	2.5	17.5	0.75	0.73	33.9
West: C	old Cant	erbury Rd (wes	st)								
10	L	32	0.0	0.780	22.6	LOS B	17.1	120.6	0.92	0.99	33.9
11	т	1294	0.8	0.783	16.2	LOS B	17.1	120.6	0.92	0.91	34.3
12	R	3	0.0	0.774	22.6	LOS B	17.0	119.9	0.92	0.99	33.9
Approad	ch	1328	0.8	0.783	16.4	LOS B	17.1	120.6	0.92	0.91	34.2
All Vehi	cles	2054	0.9	0.783	15.7	LOS B	17.1	120.6	0.87	0.84	34.8

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

Movement Performance - Pedestrians												
		Demand	Average	Level of	Average Back	of Queue	Prop.	Effective				
Mov ID	Description	Flow	Delay	Service	Pedestrian	Distance	Queued	Stop Rate				
		ped/h	sec		ped	m		per ped				
P1	Across S approach	21	14.4	LOS B	0.0	0.0	0.76	0.76				
P3	Across E approach	21	19.4	LOS B	0.0	0.0	0.88	0.88				
P5	Across N approach	21	14.4	LOS B	0.0	0.0	0.76	0.76				
P7	Across W approach	21	19.4	LOS B	0.0	0.0	0.88	0.88				
All Pede	estrians	84	16.9				0.82	0.82				

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).

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Old Canterbury Rd - Edward St PM (Existing + McGill Traffic) August 2010 Signals - Fixed Time Cycle Time = 60 seconds

Movem	ent Pe	rformance -	Vehicles								
	_	Demand		Deg.	Average	Level of	95% Back		Prop.	Effective	Average
Mov ID	Turn	Flow	HV	Satn	Delay	Service	Vehicles	Distance	Queued	Stop Rate	Speed
Q a set la s M		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: V											
1	L	6	0.0	0.013	23.9	LOS B	0.2	1.5	0.76	0.65	31.7
2	т	1	0.0	0.008	18.3	LOS B	0.1	0.8	0.77	0.50	32.4
3	R	2	0.0	0.008	24.8	LOS B	0.1	0.8	0.77	0.65	31.7
Approac	h	9	0.0	0.013	23.5	LOS B	0.2	1.5	0.76	0.64	31.8
East: Ol	d Cante	erbury Rd (east)								
4	L	14	0.0	0.802	21.7	LOS B	22.6	158.9	0.87	0.97	34.4
5	Т	1269	0.6	0.795	16.4	LOS B	22.6	158.9	0.88	0.88	34.1
6	R	121	0.0	0.796	24.7	LOS B	17.8	125.1	0.89	1.00	32.4
Approac	h	1404	0.5	0.795	17.1	LOS B	22.6	158.9	0.88	0.89	34.0
North: E	dward \$	Street									
7	L	88	0.0	0.179	25.1	LOS B	3.0	20.9	0.81	0.75	31.2
8	Т	1	0.0	0.034	17.8	LOS B	0.5	3.7	0.76	0.54	32.4
9	R	14	3.4	0.034	24.3	LOS B	0.5	3.7	0.76	0.69	31.6
Approac	h	103	0.5	0.179	24.9	LOS B	3.0	20.9	0.80	0.74	31.2
West: O	ld Cant	erbury Rd (wes	st)								
10	L	35	0.0	0.376	15.3	LOS B	8.3	58.9	0.62	0.87	37.8
11	т	701	1.5	0.376	9.1	LOS A	8.3	58.9	0.63	0.55	39.4
12	R	6	0.0	0.376	15.9	LOS B	8.0	56.6	0.64	0.88	37.5
Approac	h	742	1.4	0.376	9.5	LOS A	8.3	58.9	0.63	0.56	39.3
All Vehic	cles	2259	0.8	0.795	15.0	LOS B	22.6	158.9	0.79	0.77	35.4

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

Movement Performance - Pedestrians												
		Demand	Average	Level of	Average Back	of Queue	Prop.	Effective				
Mov ID	Description	Flow	Delay	Service	Pedestrian	Distance	Queued	Stop Rate				
		ped/h	sec		ped	m		per ped				
P1	Across S approach	21	12.0	LOS B	0.0	0.0	0.63	0.63				
P3	Across E approach	21	24.3	LOS C	0.0	0.0	0.90	0.90				
P5	Across N approach	21	12.0	LOS B	0.0	0.0	0.63	0.63				
P7	Across W approach	21	24.3	LOS C	0.0	0.0	0.90	0.90				
All Pede	estrians	84	18.2				0.77	0.77				

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 C. LOS Method for individual pedestrian movements: Delay (HCM).

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Old Canterbury Rd - Edward St AM (Existing + McGill + Mills Traffic) August 2010 Signals - Fixed Time Cycle Time = 50 seconds

Mover	nent Pe	erformance - V	Vehicles								
	.	Demand		Deg.	Average	Level of	95% Back		Prop.	Effective	Average
Mov ID	i urn	Flow	HV	Satn	Delay	Service	Vehicles	Distance	Queued	Stop Rate	Speed
South:	Weston	veh/h Street	%	v/c	Sec	_	veh	m	_	per veh	km/h
1	L	6	0.0	0.011	18.9	LOS B	0.2	1.2	0.70	0.65	34.4
2	Т	2	0.0	0.011	13.3	LOS A	0.2	1.2	0.70	0.48	35.4
3	R	3	0.0	0.011	19.8	LOS B	0.1	1.0	0.72	0.67	34.3
Approa		12	0.0	0.011	18.1	LOS B	0.2	1.2	0.71	0.63	34.5
East: C	Id Cante	erbury Rd (east)								
4	L	1	0.0	0.598	17.8	LOS B	10.4	74.0	0.79	0.88	36.5
5	т	561	1.4	0.556	13.0	LOS A	10.4	74.0	0.82	0.70	36.3
6	R	66	0.0	0.557	27.5	LOS B	5.1	35.9	0.95	0.82	30.8
Approa	ich	628	1.2	0.556	14.5	LOS B	10.4	74.0	0.83	0.72	35.6
North:	Edward \$	Street									
7	L	113	0.0	0.190	20.0	LOS B	3.0	20.9	0.76	0.75	33.7
8	Т	1	0.0	0.066	13.0	LOS A	0.9	6.7	0.72	0.54	35.2
9	R	33	5.3	0.066	19.6	LOS B	0.9	6.7	0.72	0.71	34.1
Approa	ich	146	1.2	0.190	19.9	LOS B	3.0	20.9	0.75	0.74	33.8
West: 0	Old Cant	erbury Rd (wes	st)								
10	L	37	0.0	0.797	23.1	LOS B	17.6	124.2	0.92	1.00	33.6
11	Т	1306	0.8	0.794	16.7	LOS B	17.6	124.2	0.92	0.93	33.9
12	R	3	0.0	0.797	23.2	LOS B	17.5	123.5	0.92	1.00	33.6
Approa	ich	1346	0.8	0.794	16.9	LOS B	17.6	124.2	0.92	0.93	33.9
All Veh	icles	2133	0.9	0.794	16.4	LOS B	17.6	124.2	0.88	0.85	34.4

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

Moven	nent Performance -	Pedestrians	5					
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back Pedestrian ped	of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	21	14.4	LOS B	0.0	0.0	0.76	0.76
P3	Across E approach	21	19.4	LOS B	0.0	0.0	0.88	0.88
P5	Across N approach	21	14.4	LOS B	0.0	0.0	0.76	0.76
P7	Across W approach	21	19.4	LOS B	0.0	0.0	0.88	0.88
All Pede	estrians	84	16.9				0.82	0.82

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).

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SIDRA INTERSECTION

Old Canterbury Rd - Edward St PM (Existing + McGill + Mills Traffic) August 2010 Signals - Fixed Time Cycle Time = 60 seconds

Mov ID Tu South: Wes 1 I	veh/h ton Street - 6 T 1	HV %	Deg. Satn v/c 0.013	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate	Average Speed
South: Wes	veh/h ton Street - 6 T 1	%	v/c		Service			Queued	Stop Rate	Speed
	ton Street - 6 - 1	0.0		Sec		veh	m			
	- 6 1		0.013						per veh	km/h
	٦ 1			23.9	LOS B	0.2	1.5	0.76	0.65	31.7
2 -		0.0	0.013	18.4	LOS B	0.2	0.8	0.70	0.00	32.4
2 3 F	R 2	0.0	0.008	24.8	LOS B	0.1	0.8	0.77	0.65	31.7
	<u> </u>	0.0	0.008	24.8	LOS B			0.77	0.65	31.7
Approach	9	0.0	0.013	23.5	LU3 D	0.2	1.5	0.76	0.04	31.0
East: Old C	anterbury Rd (e	ast)								
4 l	14	0.0	0.855	27.6	LOS B	28.9	203.2	0.93	1.07	31.4
5	1269	0.6	0.863	22.9	LOS B	28.9	203.2	0.94	1.03	30.7
6 F	R 156	0.0	0.864	33.3	LOS C	20.0	140.9	0.96	1.12	28.5
Approach	1439	0.5	0.863	24.1	LOS B	28.9	203.2	0.94	1.04	30.4
North: Edwa	ard Street									
7 1		0.0	0.215	25.3	LOS B	3.6	25.0	0.82	0.76	31.1
8 -	Г 1	0.0	0.074	18.1	LOS B	1.1	7.9	0.78	0.57	32.2
9 F	R 31	3.4	0.074	24.6	LOS B	1.1	7.9	0.78	0.71	31.4
Approach	138	0.8	0.215	25.1	LOS B	3.6	25.0	0.81	0.75	31.1
West: Old C	anterbury Rd (v	vest)								
10 l		0.0	0.393	15.4	LOS B	8.7	61.5	0.63	0.87	37.7
11 -	720	1.5	0.392	9.5	LOS A	8.7	61.5	0.65	0.56	39.0
12 F	R 6	0.0	0.394	16.6	LOS B	8.5	60.0	0.66	0.88	37.1
Approach	771	1.4	0.392	9.9	LOS A	8.7	61.5	0.65	0.58	38.9
All Vehicles	2357	0.8	0.863	19.5	LOS B	28.9	203.2	0.84	0.87	32.8

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

Movement Performance - Pedestrians												
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back Pedestrian ped	of Queue Distance m	Prop. Queued	Effective Stop Rate per ped				
P1	Across S approach	21	12.0	LOS B	0.0	0.0	0.63	0.63				
P3	Across E approach	21	24.3	LOS C	0.0	0.0	0.90	0.90				
P5	Across N approach	21	12.0	LOS B	0.0	0.0	0.63	0.63				
P7	Across W approach	21	24.3	LOS C	0.0	0.0	0.90	0.90				
All Pede	estrians	84	18.2				0.77	0.77				

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 C. LOS Method for individual pedestrian movements: Delay (HCM).

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Railway Tce - Old Canterbury Rd Signals - Fixed Time Cycle Time = 120 seconds

Movem	nent Pe	rformance -	Vehicles								
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back o Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
South: (veh/h erbury Rd (Sc	%	v/c	sec		veh	m		per veh	km/h
1		70	1.4	0.196	26.9	LOS B	7.5	52.9	0.63	0.81	30.9
-	ь т						-				
2		976	0.4	0.982	68.2	LOS E	71.5	502.1	0.96	1.15	18.4
Approac	ch	1046	0.5	0.982	65.4	LOS E	71.5	502.1	0.94	1.12	18.9
East: Ra	ailway T	се									
4	L	25	12.0	0.866	43.6	LOS D	43.5	307.7	0.97	0.97	25.4
5	т	738	0.8	0.862	36.9	LOS C	43.5	307.7	0.97	0.94	25.4
Approad	ch	763	1.2	0.862	37.1	LOS C	43.5	307.7	0.97	0.94	25.4
North: C	Old Cant	erbury Rd (No	rth)								
7	L	140	2.1	0.439	29.9	LOS C	16.2	115.3	0.73	0.85	29.7
8	т	629	1.6	0.439	23.4	LOS B	16.5	117.0	0.73	0.64	30.7
Approad	ch	769	1.7	0.439	24.6	LOS B	16.5	117.0	0.73	0.67	30.5
West: Lo	ongport	Street									
10	L	152	0.0	0.199	26.9	LOS B	7.5	52.5	0.63	0.76	30.4
11	т	908	0.1	0.996	80.7	LOS F	76.4	535.4	0.99	1.25	16.5
Approac	ch	1060	0.1	0.996	73.0	LOS F	76.4	535.4	0.94	1.18	17.7
All Vehi	cles	3638	0.8	0.996	53.1	LOS D	76.4	535.4	0.90	1.01	21.3

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

Movement Performance - Pedestrians												
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back Pedestrian ped	of Queue Distance m	Prop. Queued	Effective Stop Rate per ped				
P1	Across S approach	23	23.4	LOS C	0.0	0.0	0.63	0.63				
P3	Across E approach	11	20.4	LOS C	0.0	0.0	0.58	0.58				
P5	Across N approach	2	21.6	LOS C	0.0	0.0	0.60	0.60				
P7	Across W approach	5	23.4	LOS C	0.0	0.0	0.63	0.63				
All Pede	estrians	41	22.5				0.61	0.61				

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

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Railway Tce - Old Canterbury Rd Signals - Fixed Time Cycle Time = 120 seconds

Mover	nent Pe	rformance -	Vehicle <u>s</u>								
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back o Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
South: (JId Cant	veh/h erbury Rd (So	% uth)	v/c	Sec	_	veh	m	_	per veh	km/ł
1		120	0.8	0.173	31.7	LOS C	6.3	44.3	0.69	0.76	28.4
2	Т	668	0.0	0.867	43.2	LOS D	39.7	277.6	0.00	0.98	23.6
Approad	•	788	0.1	0.867	41.4	LOS C	39.7	277.6	0.94	0.94	24.2
East: Ra	ailway T	се									
4	L	66	6.1	0.867	38.2	LOS C	48.3	341.2	0.95	0.97	27.0
5	Т	812	0.6	0.867	31.7	LOS C	48.3	341.2	0.95	0.92	27.2
Approad	ch	878	1.0	0.867	32.2	LOS C	48.3	341.2	0.95	0.92	27.1
North: C	Old Cant	erbury Rd (No	rth)								
7	L	76	5.3	0.859	49.0	LOS D	38.4	270.4	0.99	0.97	23.7
8	Т	1229	0.2	0.860	42.3	LOS C	38.7	271.3	0.99	0.96	23.8
Approad	ch	1305	0.5	0.860	42.7	LOS D	38.7	271.3	0.99	0.97	23.8
West: L	ongport	Street									
10	L	84	0.0	0.126	21.7	LOS B	5.0	35.2	0.54	0.76	33.1
11	Т	688	0.1	0.632	21.1	LOS B	27.1	189.6	0.75	0.68	31.9
Approad	ch	772	0.1	0.632	21.2	LOS B	27.1	189.6	0.73	0.69	32.0
All Vehi	cles	3743	0.5	0.867	35.5	LOS C	48.3	341.2	0.92	0.89	26.0

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

Movement Performance - Pedestrians												
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back Pedestrian ped	of Queue Distance m	Prop. Queued	Effective Stop Rate per ped				
P1	Across S approach	23	18.7	LOS B	0.0	0.0	0.56	0.56				
P3	Across E approach	11	25.4	LOS C	0.0	0.0	0.65	0.65				
P5	Across N approach	2	17.1	LOS B	0.0	0.0	0.53	0.53				
P7	Across W approach	5	28.7	LOS C	0.0	0.0	0.69	0.69				
All Pede	estrians	41	21.6				0.60	0.60				

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

Processed: Friday, 27 August 2010 12:19:33 PM SIDRA INTERSECTION 5.0.1.1427 Project: J:\220640 - Allied Mills\05 Arup Project Data\SIDRA\July-August 2010 Scenarios\2.Railway Tce - Old Canterbury Rd.sip



Railway Tce - Old Canterbury Rd AM (Existing + McGill Traffic) August 2010 Signals - Fixed Time Cycle Time = 120 seconds

Movem	ent Pe	rformance -	Vehicles								
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back o Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: C	old Cant	terbury Rd (Sc									
1	L	70	1.4	0.205	26.4	LOS B	7.9	55.4	0.63	0.81	31.1
2	Т	1044	0.4	1.027	92.2	LOS F	87.8	617.1	0.96	1.29	15.1
Approac	h	1114	0.5	1.027	88.1	LOS F	87.8	617.1	0.94	1.26	15.6
East: Ra	ilway T	се									
4	L	31	12.0	0.895	49.8	LOS D	48.1	340.3	1.00	1.01	23.6
5	Т	745	0.8	0.894	43.1	LOS D	48.1	340.3	1.00	1.01	23.6
Approac	h	776	1.3	0.894	43.3	LOS D	48.1	340.3	1.00	1.01	23.6
North: O	ld Cant	erbury Rd (No	rth)								
7	L	140	2.1	0.437	29.3	LOS C	16.2	115.5	0.72	0.85	29.9
8	Т	640	1.6	0.437	22.8	LOS B	16.5	117.2	0.72	0.63	31.0
Approac	h	780	1.7	0.437	23.9	LOS B	16.5	117.2	0.72	0.67	30.8
West: Lo	ongport	Street									
10	L	154	0.0	0.204	27.6	LOS B	7.6	53.5	0.64	0.76	30.1
11	Т	913	0.1	1.021	96.8	LOS F	83.0	581.8	0.99	1.35	14.6
Approac	h	1067	0.1	1.021	86.8	LOS F	83.0	581.8	0.94	1.26	15.8
All Vehic	les	3737	0.8	1.027	65.0	LOS E	87.8	617.1	0.91	1.08	19.0

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

Moven	Movement Performance - Pedestrians												
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back Pedestrian ped	of Queue Distance m	Prop. Queued	Effective Stop Rate per ped					
P1	Across S approach	23	24.1	LOS C	0.0	0.0	0.63	0.63					
P3	Across E approach	11	19.8	LOS B	0.0	0.0	0.58	0.58					
P5	Across N approach	2	22.2	LOS C	0.0	0.0	0.61	0.61					
P7	Across W approach	5	22.8	LOS C	0.0	0.0	0.62	0.62					
All Pede	estrians	41	22.7				0.61	0.61					

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

Processed: Friday, 27 August 2010 12:19:37 PM SIDRA INTERSECTION 5.0.1.1427 Project: J:\220640 - Allied Mills\05 Arup Project Data\SIDRA\July-August 2010 Scenarios\2.Railway Tce - Old Canterbury Rd.sip 8000045, ARUP PTY LTD, FLOATING



Railway Tce - Old Canterbury Rd PM (Existing + McGill Traffic) August 2010 Signals - Fixed Time Cycle Time = 120 seconds

Movem	ent Pe	rformance -	Vehicles								
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back o Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
South: C		veh/h terbury Rd (So	%	v/c	Sec	_	veh	m	_	per veh	km/h
1	L	120	0.8	0.184	31.9	LOS C	6.6	46.8	0.69	0.76	28.4
2	Т	715	0.0	0.918	53.0	LOS D	47.4	331.5	0.00	1.06	20.4
Approac	-	835	0.0	0.918	49.9	LOS D	47.4	331.5	0.95	1.02	21.2
East: Ra	ailway T	се									
4	L	91	6.1	0.922	50.9	LOS D	61.4	434.1	1.00	1.05	23.2
5	т	843	0.6	0.924	44.3	LOS D	61.4	434.1	1.00	1.05	23.2
Approac	h	934	1.1	0.924	45.0	LOS D	61.4	434.1	1.00	1.05	23.2
North: C	ld Cant	erbury Rd (No	orth)								
7	L	76	5.3	0.890	54.0	LOS D	42.5	299.6	1.00	1.02	22.4
8	Т	1277	0.2	0.891	47.4	LOS D	42.9	300.5	1.00	1.02	22.5
Approac	h	1353	0.4	0.891	47.8	LOS D	42.9	300.5	1.00	1.02	22.5
West: Lo	ongport	Street									
10	L	85	0.0	0.127	21.7	LOS B	5.1	35.4	0.54	0.76	33.1
11	т	692	0.1	0.636	21.2	LOS B	27.3	191.4	0.76	0.68	31.9
Approac	h	777	0.1	0.636	21.3	LOS B	27.3	191.4	0.73	0.69	32.0
All Vehic	cles	3899	0.5	0.924	42.3	LOS C	61.4	434.1	0.94	0.96	24.0

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

Moven	nent Performance -	Pedestrians	S					
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back Pedestrian ped	of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	23	18.7	LOS B	0.0	0.0	0.56	0.56
P3	Across E approach	11	25.4	LOS C	0.0	0.0	0.65	0.65
P5	Across N approach	2	17.1	LOS B	0.0	0.0	0.53	0.53
P7	Across W approach	5	28.7	LOS C	0.0	0.0	0.69	0.69
All Pede	estrians	41	21.6				0.60	0.60

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

Processed: Friday, 27 August 2010 12:19:37 PM SIDRA INTERSECTION 5.0.1.1427 Project: J:\220640 - Allied Mills\05 Arup Project Data\SIDRA\July-August 2010 Scenarios\2.Railway Tce - Old Canterbury Rd.sip 8000045, ARUP PTY LTD, FLOATING



Railway Tce - Old Canterbury Rd AM (Existing + McGill+MillsTraffic) August 2010 Signals - Fixed Time Cycle Time = 120 seconds

Mover	nent Pe	rformance -	Vehicles								
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back o Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: 0	Old Cant	erbury Rd (So	outh)								
1	L	70	1.4	0.211	26.5	LOS B	8.1	56.9	0.63	0.81	31.1
2	Т	1076	0.4	1.056	111.0	LOS F	98.3	690.3	0.96	1.39	13.3
Approad	ch	1146	0.5	1.056	105.8	LOS F	98.3	690.3	0.94	1.36	13.8
East: Ra	ailway To	ce									
4	L	35	12.0	0.915	55.4	LOS D	52.7	373.0	1.00	1.05	22.2
5	Т	761	0.8	0.917	48.7	LOS D	52.7	373.0	1.00	1.05	22.2
Approad	ch	796	1.3	0.917	49.0	LOS D	52.7	373.0	1.00	1.05	22.2
North: C	Old Cante	erbury Rd (No	orth)								
7	L	140	2.1	0.441	29.3	LOS C	16.4	116.6	0.72	0.85	29.9
8	Т	647	1.6	0.441	22.8	LOS B	16.7	118.3	0.72	0.63	31.0
Approad	ch	787	1.7	0.441	24.0	LOS B	16.7	118.3	0.72	0.67	30.8
West: L	ongport	Street									
10	L	165	0.0	0.210	27.7	LOS B	7.8	54.9	0.64	0.76	30.1
11	Т	932	0.1	1.050	117.6	LOS F	92.8	650.3	1.00	1.47	12.8
Approac	ch	1097	0.1	1.050	104.1	LOS F	92.8	650.3	0.94	1.36	14.0
All Vehi	cles	3826	0.8	1.056	76.6	LOS F	98.3	690.3	0.91	1.15	17.2

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

Moven	nent Performance -	Pedestrians	S					
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back Pedestrian ped	of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	23	24.1	LOS C	0.0	0.0	0.63	0.63
P3	Across E approach	11	19.8	LOS B	0.0	0.0	0.58	0.58
P5	Across N approach	2	22.2	LOS C	0.0	0.0	0.61	0.61
P7	Across W approach	5	22.8	LOS C	0.0	0.0	0.62	0.62
All Pede	estrians	41	22.7				0.61	0.61

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

Processed: Friday, 27 August 2010 12:19:37 PM SIDRA INTERSECTION 5.0.1.1427 Project: J:\220640 - Allied Mills\05 Arup Project Data\SIDRA\July-August 2010 Scenarios\2.Railway Tce - Old Canterbury Rd.sip 8000045, ARUP PTY LTD, FLOATING



Railway Tce - Old Canterbury Rd PM (Existing + McGill+Mills Traffic) August 2010 Signals - Fixed Time Cycle Time = 120 seconds

Mover	nent Pe	rformance -	Vehicles								
Mov ID	Turn	Demand Flow	ΗV	Deg. Satn	Average Delay	Level of Service	95% Back o Vehicles	of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
	1 4111	veh/h	%	V/C	Sec	Service	venicies veh	m	Queueu	per veh	speeu km/h
South: 0	Old Cant	erbury Rd (Sc		.,						por rom	
1	L	120	0.8	0.195	32.7	LOS C	7.0	49.1	0.70	0.77	28.1
2	Т	748	0.0	0.975	74.1	LOS F	58.4	408.7	0.99	1.20	17.4
Approac	ch	868	0.1	0.975	68.4	LOS E	58.4	408.7	0.95	1.14	18.4
East: Ra	ailway To	ce									
4	L	99	6.1	0.967	68.0	LOS E	76.8	542.9	1.00	1.15	19.5
5	Т	895	0.6	0.968	61.4	LOS E	76.8	542.9	1.00	1.15	19.5
Approad	ch	994	1.2	0.968	62.1	LOS E	76.8	542.9	1.00	1.15	19.5
North: C	Old Cante	erbury Rd (No	rth)								
7	L	76	5.3	0.922	61.7	LOS E	46.5	327.7	1.00	1.07	20.7
8	Т	1293	0.2	0.921	55.0	LOS D	46.9	328.7	1.00	1.07	20.8
Approad	ch	1369	0.4	0.921	55.4	LOS D	46.9	328.7	1.00	1.07	20.8
West: Lo	ongport	Street									
10	L	92	0.0	0.128	21.2	LOS B	5.1	35.5	0.53	0.75	33.3
11	Т	702	0.1	0.641	20.7	LOS B	27.7	194.1	0.75	0.68	32.1
Approac	ch	794	0.1	0.640	20.8	LOS B	27.7	194.1	0.73	0.69	32.2
All Vehi	cles	4025	0.5	0.975	53.0	LOS D	76.8	542.9	0.94	1.03	21.3

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

Moven	nent Performance -	- Pedestrians	;					
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back Pedestrian ped	of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	23	18.2	LOS B	0.0	0.0	0.55	0.55
P3	Across E approach	11	26.0	LOS C	0.0	0.0	0.66	0.66
P5	Across N approach	2	16.5	LOS B	0.0	0.0	0.53	0.53
P7	Across W approach	5	29.4	LOS C	0.0	0.0	0.70	0.70
All Pede	estrians	41	21.6				0.60	0.60

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

Processed: Friday, 27 August 2010 12:19:38 PM SIDRA INTERSECTION 5.0.1.1427 Project: J:\220640 - Allied Mills\05 Arup Project Data\SIDRA\July-August 2010 Scenarios\2.Railway Tce - Old Canterbury Rd.sip 8000045, ARUP PTY LTD, FLOATING



Smith St - Longport St Roundabout

Moven	nent Pe	rformance -	Vehicles								
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back o Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South:	Smith St		/0	V/0			Von				N11/11
1	L	2	0.0	0.526	15.2	LOS B	5.6	39.4	0.88	1.01	41.7
2	т	59	0.0	0.531	14.3	LOS A	5.6	39.4	0.88	1.00	41.9
3	R	321	0.0	0.529	20.1	LOS B	5.6	39.4	0.88	1.04	39.5
Approa	ch	382	0.0	0.529	19.2	LOS B	5.6	39.4	0.88	1.03	39.9
East: Lo	ongport	Street									
4	L	62	0.0	0.540	6.4	LOS A	6.7	47.4	0.22	0.48	49.8
5	Т	313	2.0	0.540	5.6	LOS A	6.7	47.4	0.22	0.40	50.5
6	R	497	0.0	0.540	11.3	LOS A	6.7	47.4	0.22	0.70	46.0
Approa	ch	872	0.7	0.540	8.9	LOS A	6.7	47.4	0.22	0.58	47.7
North: (Grosven	or Crescent									
7	L	409	0.0	0.542	12.6	LOS A	5.8	40.5	0.86	0.94	44.5
8	Т	19	0.0	0.541	11.7	LOS A	5.8	40.5	0.86	0.93	44.8
9	R	5	0.0	0.526	17.5	LOS B	5.8	40.5	0.86	0.98	41.9
Approa	ch	434	0.0	0.541	12.6	LOS B	5.8	40.5	0.86	0.94	44.5
West: C	Carlton C	rescent									
10	L	13	0.0	0.505	16.1	LOS B	5.5	38.5	0.93	1.04	42.2
11	т	316	0.3	0.515	15.2	LOS B	5.5	38.5	0.93	1.03	42.4
12	R	2	0.0	0.526	20.9	LOS B	5.5	38.5	0.93	1.07	40.0
Approa	ch	331	0.3	0.515	15.2	LOS B	5.5	38.5	0.93	1.03	42.3
All Vehi	icles	2018	0.4	0.541	12.7	LOS A	6.7	47.4	0.60	0.82	44.4

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

Processed: Friday, 27 August 2010 12:30:54 PM SIDRA INTERSECTION 5.0.1.1427 Project: J:\220640 - Allied Mills\05 Arup Project Data\SIDRA\July-August 2010 Scenarios\3.Smith St - Longport St.sip 8000045, ARUP PTY LTD, FLOATING SIDRA ---

Smith St - Longport St Roundabout

Moven	nent Pe	rformance -	Vehicles								
	τ	Demand		Deg.	Average	Level of	95% Back		Prop.	Effective	Average
Mov ID	Turn	Flow	HV	Satn	Delay	Service	Vehicles	Distance	Queued	Stop Rate	Speed
South	Smith St	veh/h	%	v/c	sec	_	veh	m		per veh	km/h
			0.0	0.400	14.0			20.0	0.05	0.00	40.0
1	L	5	0.0	0.439	14.2	LOS A	4.1	28.8	0.95	0.98	42.8
2	Т	81	0.0	0.422	13.3	LOS A	4.1	28.8	0.95	0.97	43.0
3	R	148	0.0	0.423	19.0	LOS B	4.1	28.8	0.95	0.99	40.5
Approa	ch	235	0.0	0.423	16.9	LOS B	4.1	28.8	0.95	0.98	41.4
East: Lo	ongport	Street									
4	L	104	0.0	0.739	7.9	LOS A	10.7	75.2	0.71	0.60	46.9
5	Т	460	1.1	0.740	7.0	LOS A	10.7	75.2	0.71	0.57	46.8
6	R	412	0.0	0.740	12.7	LOS A	10.7	75.2	0.71	0.69	45.1
Approa	ch	976	0.5	0.740	9.5	LOS A	10.7	75.2	0.71	0.62	46.1
North: 0	Grosven	or Crescent									
7	L	234	0.0	0.436	10.1	LOS A	3.9	27.5	0.79	0.82	46.7
8	Т	106	0.0	0.436	9.2	LOS A	3.9	27.5	0.79	0.80	46.5
9	R	24	0.0	0.432	15.0	LOS B	3.9	27.5	0.79	0.89	44.0
Approa	ch	364	0.0	0.436	10.2	LOS B	3.9	27.5	0.79	0.82	46.4
West: C	Carlton C	rescent									
10	L	62	0.0	0.591	13.6	LOS A	6.9	48.3	0.88	0.99	44.2
11	т	389	0.3	0.592	12.7	LOS A	6.9	48.3	0.88	0.98	44.3
12	R	22	0.0	0.597	18.4	LOS B	6.9	48.3	0.88	1.03	41.6
Approa	ch	474	0.2	0.592	13.1	LOS B	6.9	48.3	0.88	0.98	44.2
All Vehi	icles	2048	0.3	0.740	11.3	LOS A	10.7	75.2	0.79	0.78	45.1

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

Processed: Friday, 27 August 2010 12:30:55 PM SIDRA INTERSECTION 5.0.1.1427 Project: J:\220640 - Allied Mills\05 Arup Project Data\SIDRA\July-August 2010 Scenarios\3.Smith St - Longport St.sip 8000045, ARUP PTY LTD, FLOATING SIDRA ---

Site: PM Existing

Smith St - Longport St-Grosvenor Cr-Carlton AM (Existing+McGill Traffic) August 2010 Roundabout

Movem	nent Pe	rformance -	Vehicles								
	—	Demand	1.11.7	Deg.	Average	Level of	95% Back of		Prop.	Effective	Average
Mov ID	Turn	Flow	HV	Satn	Delay	Service	Vehicles	Distance	Queued	Stop Rate	Speed
South: S	Smith St	veh/h	%	v/c	Sec	_	veh	m		per veh	km/h
		2	0.0	0.526	16.0	LOS B	5.0	44 E	0.90	1.04	41.1
1	L		0.0		16.0		5.9	41.5		-	
2	Т	59	0.0	0.541	15.1	LOS B	5.9	41.5	0.90	1.03	41.2
3	R	321	0.0	0.542	20.9	LOS B	5.9	41.5	0.90	1.06	39.0
Approac	ch	382	0.0	0.543	20.0	LOS B	5.9	41.5	0.90	1.06	39.3
East: Lo	ongport \$	Street									
4	L	62	0.0	0.555	6.4	LOS A	7.1	50.0	0.22	0.48	49.7
5	Т	322	2.0	0.554	5.6	LOS A	7.1	50.0	0.22	0.40	50.4
6	R	513	0.0	0.555	11.3	LOS A	7.1	50.0	0.22	0.70	45.9
Approad	ch	897	0.7	0.555	8.9	LOS A	7.1	50.0	0.22	0.57	47.7
North: G	Grosven	or Crescent									
7	L	409	0.0	0.548	12.9	LOS A	5.9	41.5	0.87	0.95	44.3
8	Т	19	0.0	0.541	12.0	LOS A	5.9	41.5	0.87	0.94	44.5
9	R	5	0.0	0.526	17.8	LOS B	5.9	41.5	0.87	1.00	41.7
Approad	ch	434	0.0	0.548	12.9	LOS B	5.9	41.5	0.87	0.95	44.2
West: C	arlton C	rescent									
10	L	13	0.0	0.526	16.6	LOS B	5.7	39.8	0.93	1.06	41.8
11	т	316	0.3	0.525	15.7	LOS B	5.7	39.8	0.93	1.05	41.9
12	R	2	0.0	0.526	21.5	LOS B	5.7	39.8	0.93	1.08	39.6
Approad	ch	331	0.3	0.524	15.8	LOS B	5.7	39.8	0.93	1.05	41.9
All Vehi	cles	2043	0.4	0.555	13.0	LOS A	7.1	50.0	0.60	0.82	44.2

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

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Smith St - Longport St-Grosvenor Cr-Carlton PM (Existing+McGill Traffic) August 2010 Roundabout

Mover	nent Pe	rformance - '	Vehicles								
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back (Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: S	Smith St	reet									
1	L	5	0.0	0.439	14.6	LOS B	4.3	30.0	0.96	0.99	42.4
2	Т	81	0.0	0.433	13.7	LOS A	4.3	30.0	0.96	0.99	42.6
3	R	148	0.0	0.433	19.5	LOS B	4.3	30.0	0.96	1.00	40.2
Approa	ch	235	0.0	0.433	17.4	LOS B	4.3	30.0	0.96	1.00	41.0
East: Lo	ongport	Street									
4	L	104	0.0	0.750	7.9	LOS A	11.0	77.6	0.72	0.60	46.9
5	Т	468	1.1	0.749	7.0	LOS A	11.0	77.6	0.72	0.57	46.7
6	R	417	0.0	0.750	12.8	LOS A	11.0	77.6	0.72	0.68	45.1
Approa	ch	989	0.5	0.750	9.5	LOS A	11.0	77.6	0.72	0.62	46.0
North: 6	Grosven	or Crescent									
7	L	234	0.0	0.438	10.2	LOS A	4.0	27.7	0.80	0.83	46.7
8	Т	106	0.0	0.438	9.3	LOS A	4.0	27.7	0.80	0.80	46.4
9	R	24	0.0	0.440	15.0	LOS B	4.0	27.7	0.80	0.89	43.9
Approa	ch	364	0.0	0.438	10.2	LOS B	4.0	27.7	0.80	0.82	46.4
West: C	arlton C	rescent									
10	L	62	0.0	0.597	13.8	LOS A	7.0	49.1	0.89	1.00	44.0
11	т	389	0.3	0.596	12.9	LOS A	7.0	49.1	0.89	0.99	44.2
12	R	22	0.0	0.597	18.6	LOS B	7.0	49.1	0.89	1.04	41.5
Approa	ch	474	0.2	0.596	13.3	LOS B	7.0	49.1	0.89	0.99	44.0
All Vehi	cles	2062	0.3	0.750	11.4	LOS A	11.0	77.6	0.80	0.78	45.0

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

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Project: J:\220640 - Allied Mills\05 Arup Project Data\SIDRA\July-August 2010 Scenarios\3.Smith St - Longport St.sip

Smith St - Longport St-Grosvenor Cr-Carlton AM (Existing+McGill + Mills Traffic) August 2010 Roundabout

NIC V CITI	ent Pe	rformance - V	venicles								
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back o Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
South: S	mith St	veh/h	%	v/c	sec	_	veh	m	_	per veh	km/h
1	L	2	0.0	0.702	17.8	LOS B	7.4	51.8	0.93	1.11	39.8
2	Т	68	0.0	0.605	16.9	LOS B	7.4	51.8	0.93	1.10	39.9
3	R	353	0.0	0.608	22.6	LOS B	7.4	51.8	0.93	1.10	37.9
-		423	0.0	0.608	22.0	LOS B	7.4	51.8	0.93	1.12	38.2
Approac	11	423	0.0	0.000	21.7	LU3 B	7.4	51.0	0.93	1.12	30.2
East: Lo	ngport	Street									
4	L	79	0.0	0.576	6.5	LOS A	7.2	50.9	0.26	0.48	49.5
5	т	322	2.0	0.575	5.7	LOS A	7.2	50.9	0.26	0.41	50.1
6	R	513	0.0	0.575	11.4	LOS A	7.2	50.9	0.26	0.69	45.8
Approac	h	914	0.7	0.576	9.0	LOS A	7.2	50.9	0.26	0.57	47.5
North: G	rosven	or Crescent									
7	L	409	0.0	0.573	14.0	LOS A	6.5	45.5	0.90	1.00	43.3
8	т	19	0.0	0.574	13.1	LOS A	6.5	45.5	0.90	0.99	43.5
9	R	5	0.0	0.585	18.8	LOS B	6.5	45.5	0.90	1.03	40.9
Approac	h	434	0.0	0.573	14.0	LOS B	6.5	45.5	0.90	1.00	43.3
West: C	arlton C	rescent									
10	L	13	0.0	0.574	19.0	LOS B	6.7	46.8	0.97	1.12	39.9
11	т	316	0.3	0.572	18.1	LOS B	6.7	46.8	0.97	1.11	40.1
12	R	11	0.0	0.585	23.8	LOS B	6.7	46.8	0.97	1.13	38.1
Approac	h	339	0.3	0.572	18.3	LOS B	6.7	46.8	0.97	1.11	40.0
All Vehic	cles	2109	0.4	0.608	14.1	LOS A	7.4	51.8	0.64	0.86	43.2

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

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St.sip 8000045, ARUP PTY LTD, FLOATING

Smith St - Longport St-Grosvenor Cr-Carlton PM (Existing+McGill+Mills Traffic) August 2010 Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flow veh/h	HV	Deg. Satn v/c	Average Delay	Level of Service	95% Back o Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed	
South: S	Smith St		%	V/C	sec	_	veh	m	_	per veh	km/h	
1	L	5	0.0	0.478	16.0	LOS B	5.3	37.1	0.99	1.05	41.3	
2	Т	86	0.0	0.496	15.1	LOS B	5.3	37.1	0.99	1.05	41.4	
3	R	166	0.0	0.495	20.9	LOS B	5.3	37.1	0.99	1.05	39.2	
Approad		258	0.0	0.495	18.9	LOS B	5.3	37.1	0.99	1.05	40.0	
Appload		230	0.0	0.495	10.9	L03 D	5.5	57.1	0.99	1.05	40.0	
East: Lo	ongport	Street										
4	L	159	0.0	0.803	8.9	LOS A	13.8	96.8	0.82	0.65	46.3	
5	Т	467	1.1	0.803	8.1	LOS A	13.8	96.8	0.82	0.63	46.1	
6	R	416	0.0	0.803	13.8	LOS A	13.8	96.8	0.82	0.70	44.8	
Approad	ch	1042	0.5	0.803	10.5	LOS A	13.8	96.8	0.82	0.66	45.6	
North: G	Grosven	or Crescent										
7	L	234	0.0	0.455	10.8	LOS A	4.3	30.0	0.82	0.86	46.4	
8	Т	106	0.0	0.454	9.9	LOS A	4.3	30.0	0.82	0.84	46.3	
9	R	24	0.0	0.457	15.6	LOS B	4.3	30.0	0.82	0.91	43.4	
Approac	ch	364	0.0	0.455	10.8	LOS B	4.3	30.0	0.82	0.86	46.2	
West: C	arlton C	rescent										
10	L	62	0.0	0.640	15.0	LOS B	8.0	56.4	0.93	1.05	42.9	
11	т	389	0.3	0.637	14.2	LOS A	8.0	56.4	0.93	1.04	43.0	
12	R	39	0.0	0.638	19.9	LOS B	8.0	56.4	0.93	1.08	40.6	
Approad	ch	491	0.2	0.638	14.7	LOS B	8.0	56.4	0.93	1.05	42.8	
All Vehi	cles	2155	0.3	0.803	12.5	LOS A	13.8	96.8	0.87	0.83	44.3	

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

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