Cardno Eppell Olsen
Shaping the Future

North Wyong Rezoning
Traffic Impact Assessment

Final Report

transportation | traffic | engineering | planning

prepared for: Van Stappen Pty Ltd

November 2008

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DOCUMENT CONTROL

Document Control **North Wyong** **Traffic Impact Assessment Report**					**Job Number** **CE001083**
Version	**Date**	**Author**		**Reviewer**	
		Name	**Initials**	**Name**	**Initials**
Draft	4th November 2008	Jason Scoufis/Wilkie Ngan	JS/WN	Wilkie Ngan	WN
Final	19th November 2008	Jason Scoufis/Wilkie Ngan	JS/WN	Benny Chen	BC

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Appendices

1.0 INTRODUCTION

Cardno Eppell Olsen has been engaged by Van Stappen Pty Ltd to undertake a Traffic Impact Assessment to accompany a Rezoning Application for a proposed service station at 494 Pacific Highway, North Wyong.

This Traffic Impact Assessment investigates the traffic and parking implications of rezoning a portion of the industrial zoned land on the corner of Pacific Highway and London Drive for a service station.

A projection of the potential traffic generated by this rezoning is made and its impact on the adjacent road network assessed using SIDRA intersection analysis software. Assessment of the car parking demand and car park layout is also included.

1.1 SCOPE OF WORKS

The objective of this report is to evaluate the impact of traffic generated by this development and its associated impact on the surrounding road network. Cardno Eppell Olsen's scope of works for this study includes:

- Traffic Generation and Distribution; and
- Intersection Analyses.

It should be noted that a more detailed assessment of the internal site layout would occur at development application stage as at this early stage only a concept plan has been developed.

1.2 REFERENCE DOCUMENTS

The following documents have been referenced as part of this study:

- Australian Standard 2890.1:2004 Off Street Car Parking;
- Australian Standard 2890.2:2002 Off Street Commercial Vehicle Facilities;
- Austroads Part 5 Intersections at Grade (2005);
- Wyong Shire Council Development Control Plan No.61 Carparking;
- Wyong Shire Council Development Control Plan No.75 Industrial Development;
- RTA Guide to Traffic Generating Developments; and
- Site Plan Concept Plan & Swept Path No's SK03a and SK03b prepared by Scott Carver Pty Ltd.

2.0 EXISTING SITUATION

It is important to understand the traffic conditions at and surrounding the proposed rezoning site. This forms a good basis for assessment of the traffic impacts and any recommendations for potential changes in the future.

2.1 LOCATION OF DEVELOPMENT

North Wyong is strategically located halfway between Sydney and Newcastle some 5 kilometres from the F3 Freeway.

The North Wyong Industrial Estate is a precinct of over 4.5 ha with a total of 17 fully serviced industrial lots. The area is zoned 4a general industrial zone.

The subject land forms part of the 1.063 hectare Lot 1 DP 1100416 site at 494 Pacific Highway, Wyong with the proposed service station comprising of a site area of 3,000m2 located on the north western corner of the London Drive/Pacific Highway intersection.

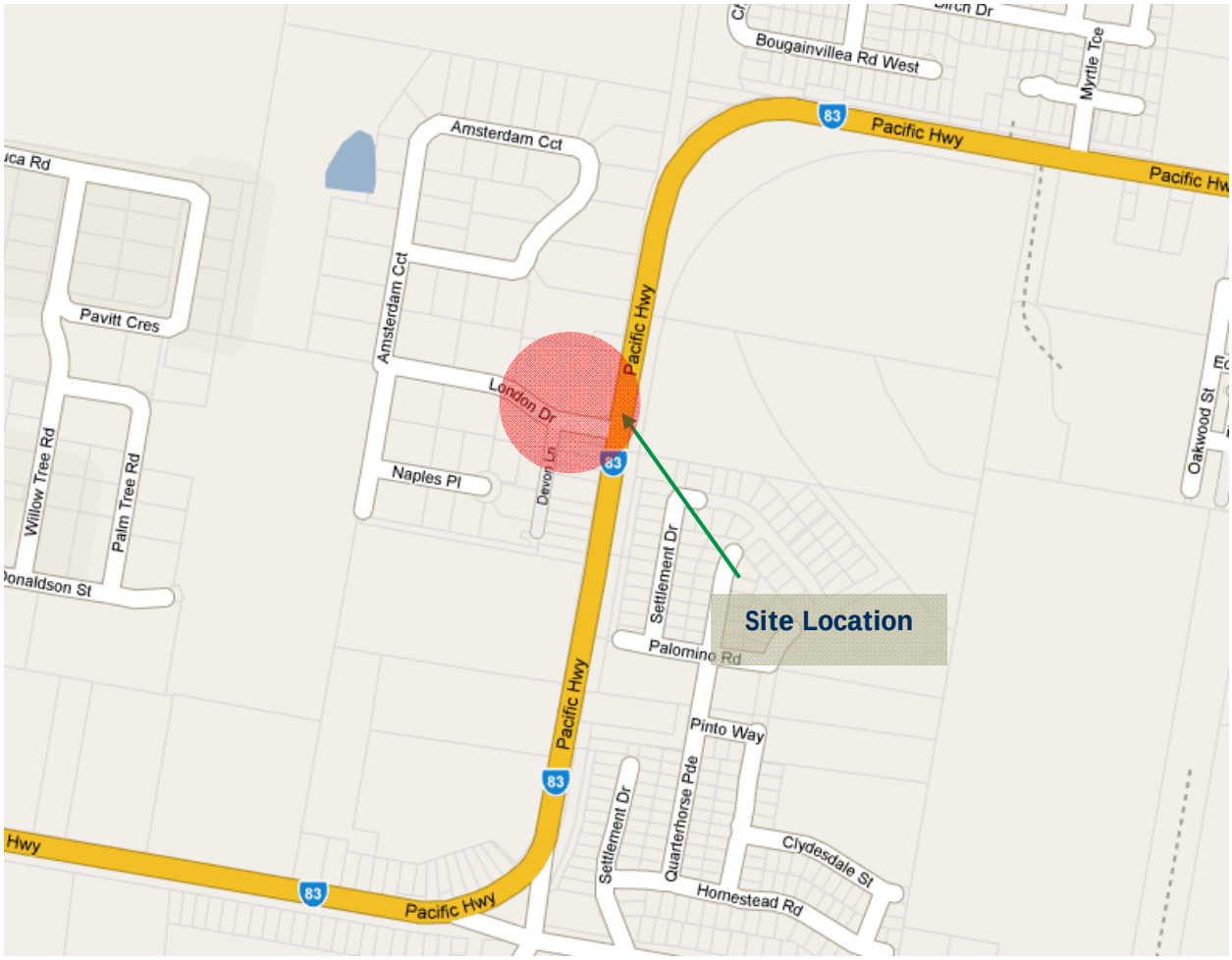

Figure 2.1 Site Location

2.2 DEVELOPMENT DETAILS

The development as detailed in the concept plans in **Appendix A** proposes the following land use types to the existing site as detailed in Table 2.1.

Table 2.1 Development Details

Land Use Type	GLFA (m^2)
Service Station	3,000
Convenience Store	85

2.3 CAR PARKING

Os site car parking is provided in the form of 90 degree angled parking spaces located on the northern boundary of the site, either side of the convenience store. **Table 2.2** shows the number of spaces proposed for this development.

Table 2.2 Proposed Car Park Spaces

Parking Type	No. of Spaces
General	6
Disabled	1
Total	**7**

3.0 EXISTING SITUATION

3.1 SURROUNDING ROAD NETWORK

3.1.1 Road Sections

Pacific Highway consists of typically two travel lanes in each direction in a 4 lane undivided-carriageway. The current speed limit is 70km/h in the vicinity of the site. No on-street parking is provided along the road.

London Drive runs east to west along the south of the proposed development site. A signalised intersection is located at its junction with Pacific Highway. It consist of one travel lane in each direction on a wide single carriageway and on approaching the Pacific Highway/London Drive intersection the road widens to a 4 lane undivided carriageway. No signposted speed limit is provided hence the 50km/h speed limit applies.

3.2 TRAFFIC MOVEMENTS

Traffic counts were undertaken on Friday 3rd October 2008 between the hours of 7:30 am-9:30 am and 4:00pm - 6:00pm at the Pacific Highway/London Drive signalised t-intersection. The AM peak period observed occurred between 7:30am and 8:30am whilst the PM peak period was 4:00pm - 5:00pm. The traffic counts are detailed in **Appendix B**.

4.0 DEVELOPMENT ASSESSMENT

4.1 CAR PARKING

4.1.1 Vehicle Parking

The concept layout provides a total of 7 on site parking spaces, including 1 disabled parking space.

Wyong Shire Council's DCP No.61 states the following vehicle parking minimum dimension requirements:

- Bay width – 2.5 metres;
- Bay length – 5.5 metres; and
- Aisle width (2-way) – 6.6 metres.

All parking modules should comply with Council's DCP and be designed accordingly at detailed design stage.

4.1.2 Vehicle Access

The concept plan details a single two-way access to the site proposed via London Drive, located some 70 metres from Pacific Highway. No access is proposed via the Pacific Highway. The RTA Guide to Traffic Generating Developments recommends separate driveways with widths as follows:

- Entry driveway width 8-10 metres
- Exit driveway width 8-10 metres
- Minimum spacing between driveways 8-10 metres

The concept plan indicates a driveway width of approximately 17 metres which provides sufficient entry and exit width, however does not have adequate separation between the driveways. The separation between driveways needs to be provided to reduce conflicts between vehicles. This is to be addressed at detailed design stage. The total width of the driveway needs to be a minimum of 24 metres.

To reduce impacts to existing background traffic in London Drive, a short right turn bay is proposed on London Drive for vehicles to access the service station. The turn bay will be approximately 40 metres in length. The intersection has been assessed using SIDRA with detailed analysis later in this report. It is noted that vehicles are not permitted to make a right turn out the site to reduce vehicular conflict points at the access and to not obstruct the right turn bay into the site.

The RTA guide also advises that:

- Petrol pumps must not be closer than 4 metres to the property alignment of any public street; and

- Inlets to bulk storage tanks must be situated so that when tankers are discharging fuel, they wills stand completely on the site and not obstruct the safe and convenient entry to the site by other vehicles.

The concept plan indicates that the petrol pumps will be located some 20 metres from the road reserve in London Drive, more than satisfying the RTA requirements. The swept path analysis provided in the appendices also indicates that the tanker when discharging fuel can stand wholly within the site without obstructing other vehicles accessing the site also complying with RTA requirements.

4.1.3 Development Parking Requirements

The concept plan indicates a total of 85m^2 convenience store Gross Floor Area (GFA) and 3,000 m^2 total service station site area. Wyong Shire Council's DCP 61 states that car parking provisions should be provided at the rate of 1 space per work bay plus 1 space per 20 m^2 convenience store GFA.

Under **Council's DCP** a minimum of **4 parking spaces** is required.

In comparison the RTA Guide to Traffic Generating Developments requires 6 spaces per work bay plus 5 spaces per 100m^2 convenience store GFA. Based on the **RTA Guide**, **5 parking spaces** are required for the development.

The **development proposes** a total number of **7 parking spaces** which is a surplus of 3 spaces based on Council's DCP requirement and a surplus of 2 spaces based on the RTA requirement. The proposed parking is therefore considered adequate to cater for the proposed demand.

4.2 SIGHT DISTANCE

In calculating driver sight distance requirements, the following values of driver eye heights have been used in design as detailed in Austroads Part 5 Intersections at Grade (2005):

- Cars – a height of 1.05m;and
- Trucks – a height of 2.40m.

Approach Sight Distance (ASD) – ASD is the minimum level of sight distance which should be available at all intersections to allow drivers to identify the changing road conditions and react appropriately.

Entering Sight Distance (ESD) – Entering sight distance is the sight distance required for minor road drivers to enter a major road via a left or right turn, such that traffic on the major road is unimpeded. Because of the large distances required ESD is rarely achieved, but should be provided where possible.

Australian Standard 2890.1:2004 Off Street Car Parking states that unsignalised access driveways shall be located so that the intersection sight distance along the frontage road available to drivers leaving the car park or domestic driveway with a frontage road speed of 50 km/hr is a minimum of 45 metres and desirable distance of 69 metres.

Austroads Part 5 Intersections at Grade (2005) states that the ASD for a design road speed of 50km/h is 47 metres (for an absolute minimum 2s reaction time) and 54 metres (for a desirable 2.5s reaction time).

Both the ASD and ESD were analysed during site inspections undertaken by Cardno Eppell Olsen staff to determine the adequacy of sight distance, for vehicles both exiting the proposed access and approaching the site on London Drive.

The ASD and ESD as measured on site comply with the minimum requirements stated above.

4.3 SWEPT PATH ANALYSIS

Swept path analyses were undertaken to assess semi trailer (petrol tanker) ingress, egress and manoeuvring within the site and onto Pacific Highway and London Drive. The analyses are detailed in **Appendix A.** It is clear from the swept paths, that the semi trailer is able to negotiate the right turn into the site, release the fuel and exit the site in safe manner. It is important to note that the entry and exit will need to be modified to allow sufficient separation between entry and exit driveways at detailed design stage as detailed in this report.

5.0 TRAFFIC IMPACTS

5.1 DEVELOPMENT TRAFFIC GENERATION

The RTA's Guide to Traffic Generating Developments (RTA Guide) was used as the basis for traffic generation assumptions. The RTA Guide indicates that for service stations and convenience stores the following land use traffic generation rates apply:

> *Rates*
>
> *Evening peak hour vehicle trips = 0.04 A(S) + 0.3 A(F)*
>
> *Or*
>
> *Evening peak hour vehicle trips = 0.66 A (F)*
> *Average vehicle trips (9pm-12pm midnight) = 0.6 A(F).*
>
> *Where*
>
> *A(S) = area of site (m2)*
> *A(F) = gross floor area of convenience store (m2)*

The proposed development traffic generation is summarised in **Table 5.1**. Based on the two various ways of determining the traffic generation of the development, the development will generate 56 trips/hour or 146 trips/hour. As a conservative approach we have adopted the higher traffic generation of 146 vehicles per hour for both the AM and PM weekday peak which takes into account the site area and the gross floor area of the convenience store.

Table 5.1: Development Traffic Generation

Land Use	Floor Space (GLFA)	Peak Hour Traffic Generation (veh/hr)		
		Evening peak hour	Evening peak hour	Average Vehicle Trips
Convenience Store– A(F)	85m^2	26	56	51
Site area	3,000m^2	120	-	-
Total		**146**	**56**	**51**

5.2 DEVELOPMENT TRAFFIC DISTRIBUTION AND ASSIGNMENT

The trips generated by the proposed development must be distributed to the surrounding road network in a manner appropriate to the type of development, in accordance with existing traffic behaviour and subject to surrounding road network conditions.

Firstly, assumptions are made for the trip generation in terms of what proportion of traffic is entering and exiting the development during the peak periods. This is based on typical rates for

the types of development proposed. **Table 5.2** details the proposed splits of peak hour traffic and the resulting trip distribution.

Table 5.2: Development Traffic Distribution

Peak Period	Assumed Splits		Traffic Distribution	
	IN	OUT	IN	OUT
Weekday AM Peak Hour	50%	50%	73	73
Weekday PM Peak Hour	50%	50%	73	73

5.3 BACKGROUND TRAFFIC

In order to consider the impact of the development it is important to have a base case to compare the assessment with. Two base cases for background traffic have been considered, year 2008 and year 2018. The year 2008 background traffic has been determined by traffic counts undertaken in October 2008 whilst future background traffic in 2018 has been determined by assuming a linear growth factor of 1.5% per annum for through traffic movements on the Pacific Highway and turning volumes in and out of London Drive as provided by Council based on previous modelling for The North Wyong Industrial area.

5.4 ANTICIPATED TURNING VOLUMES

The future 2018 turning volumes on Pacific Highway/London Drive intersection are based on figures supplied by Wyong Council. The turning volumes are summarised in **Table 5.3**.

Table 5.3: Anticipated Turning Volume on London Drive

Out	Splits	Volume
Northbound	80%	445
Southbound	20%	111
In	**Splits**	**Volume**
Northbound	80%	111
Southbound	20%	28

5.5 INTERSECTION OPERATION

The existing intersection operating performance was assessed using the SIDRA software package to determine the Degree of Saturation (DS), Average Delay (AVD in seconds) and Level of Service (LoS) at each intersection. The SIDRA program provides Level of Service Criteria Tables for various intersection types. The key indicator of intersection performance is Level of Service, where results are placed on a continuum from 'A' to 'F', as shown in **Table 5.4**.

Table 5.4: Intersection Level of Service

LoS	Traffic Signal / Roundabout	Give Way / Stop Sign / T-Junction control
A	Good operation	Good operation
B	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	Satisfactory	Satisfactory, but accident study required
D	Operating near capacity	Near capacity & accident study required
E	At capacity, at signals incidents will cause excessive delays.	At capacity, requires other control mode
F	Unsatisfactory and requires additional capacity, Roundabouts require other control mode	At capacity, requires other control mode

The Average Vehicle Delay (AVD) provides a measure of the operational performance of an intersection as indicated below, which relates AVD to LOS. The AVD's should be taken as a guide only as longer delays could be tolerated in some locations (i.e. inner city conditions) and on some roads (i.e. minor side street intersecting with a major arterial route). For traffic signals, the average delay over all movements should be taken. For roundabouts and priority control intersections (sign control) the critical movement for level of service assessment should be that movement with the highest average delay.

Table 5.5: Intersection Average Delay (AVD)

LoS	Average Delay per Vehicles (seconds/vehicle)
A	Less than 14
B	15 to 28
C	29 to 42
D	43 to 56
E	57 to 70
F	>70

The degree of saturation (DS) is another measure of the operational performance of individual intersections. For intersections controlled by traffic signals both queue length and delay increase rapidly as DS approaches 1. It is usual to attempt to keep DS to less than 0.9. Degrees of Saturation in the order of 0.7 generally represent satisfactory intersection operation. When DS exceed 0.9 queues can be anticipated.

A summary of the operating performance of critical intersections within the study area is presented in **Appendix C**.

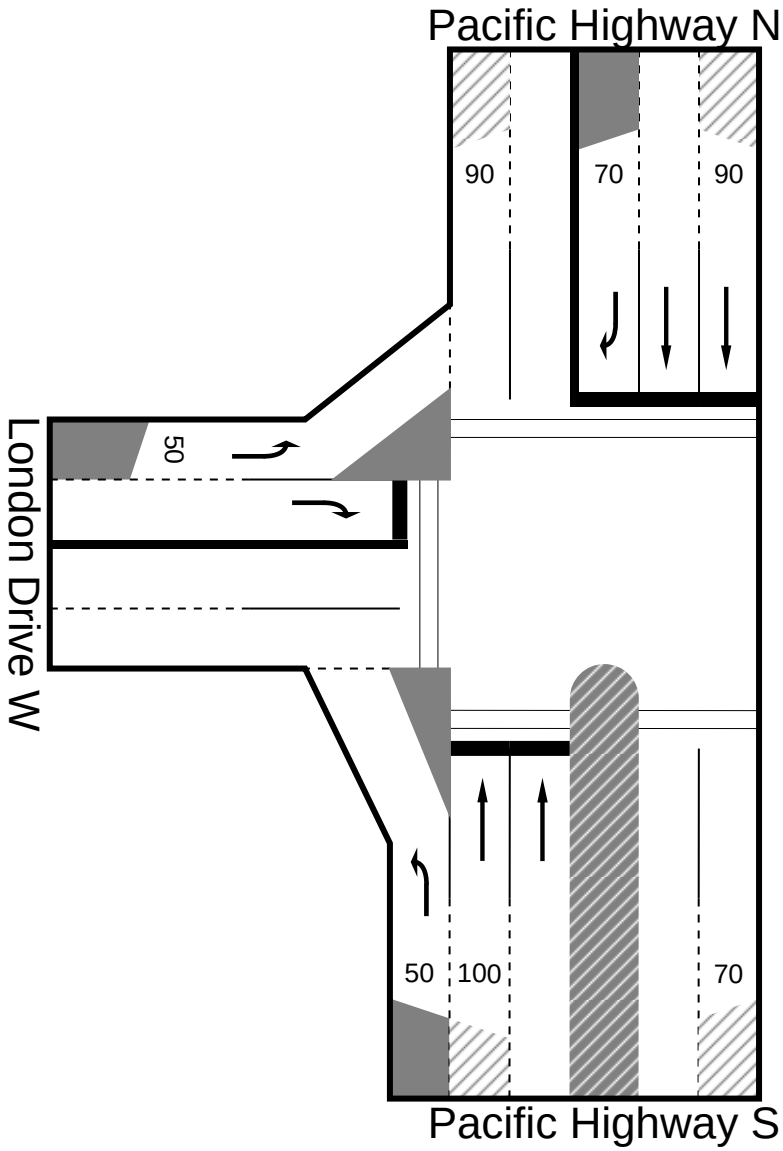

Figure 5.1 Pacific Highway/London Drive Intersection Layout

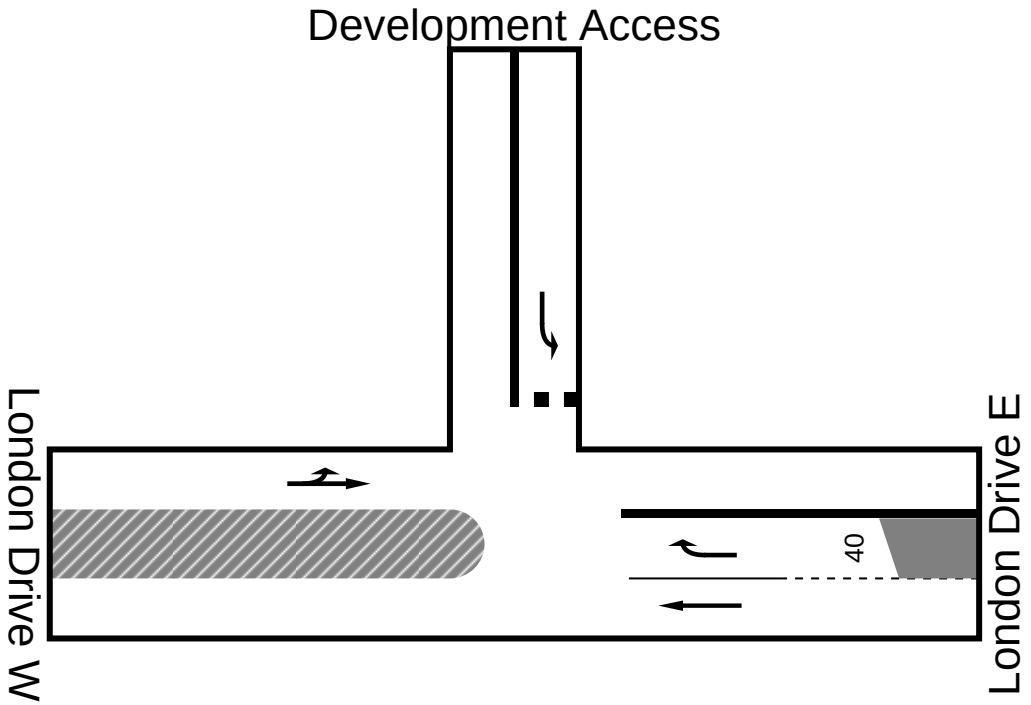

Figure 5.2 London Drive/Access Intersection Layout

Table 5.6: Intersection Analyses – 2008 Background Traffic

Intersection	Intersection Control	AM Peak			PM Peak		
		Degree of Saturation	Delay (s)	Level of Service	Degree of Saturation	Delay (s)	Level of Service
Pacific Highway/London Drive	Signalised	0.423	5.9	A	0.686	7.5	A

* average delay is calculated for the worst movement for priority controlled intersections

Table 5.7: Intersection Analyses – 2018 Background Traffic

Intersection	Intersection Control	AM Peak			PM Peak		
		Degree of Saturation	Delay (s)	Level of Service	Degree of Saturation	Delay (s)	Level of Service
Pacific Highway/London Drive	Signalised	0.684	11.6	A	0.928	16.5	B

* average delay is calculated for the worst movement for priority controlled intersections

Table 5.8: Intersection Analyses – 2008 Background with Development Traffic

Intersection	Intersection Control	AM Peak			PM Peak		
		Degree of Saturation	Delay (s)	Level of Service	Degree of Saturation	Delay (s)	Level of Service
Pacific Highway/London Drive	Signalised	0.499	9.8	A	0.686	8.4	A
London Drive/Development Access	Priority Controlled	0.052	8.6	A	0.052	8.6	A

Table 5.9: Intersection Analyses – 2018 Background with Development Traffic

Intersection	Intersection Control	AM Peak			PM Peak		
		Degree of Saturation	Delay (s)	Level of Service	Degree of Saturation	Delay (s)	Level of Service
Pacific Highway/London Drive	Signalised	0.855	14.1	A	0.911	17.9	B
London Drive/Development Access	Priority Controlled	0.124	12.4	A	0.124	12.4	A

* average delay is calculated for the worst movement for priority controlled intersections

The signalised Pacific Highway/London Drive intersection with 2008 background traffic has the following results for intersection operation:

- Operates at a Level of Service A;
- Average delays of 7.5s; and
- Maximum queue lengths of 88 metres on Pacific Highway southern approach.

The signalised Pacific Highway/London Drive intersection with 2018 forecast background traffic has the following results:

- Operates at a Level of Service B;
- Average delays of 16.5s; and
- Maximum queue lengths of 176 metres on Pacific Highway southern approach.

The signalised Pacific Highway/London Drive intersection with 2008 background and development traffic has the following results:

- Operates at a Level of Service A;
- Average delays of 9.8s; and
- Maximum queue lengths of 88 metres on Pacific Highway southern approach.

London Drive/Access intersection with 2008 background and development traffic has the following results:

- Operates at a Level of Service A;

- Average delays of 8.6s; and
- Maximum queue lengths of 2 metres on the Access.

The signalised Pacific Highway/London Drive intersection with 2018 background and development traffic has the following results:

- Operates at a Level of Service B;
- Average delays of 17.9s; and
- Maximum queue lengths of 196 metres on Pacific Highway southern approach.

London Drive/Access intersection with 2018 background and development traffic has the following results:

- Operates at a Level of Service A;
- Average delays of 12.4s; and
- Maximum queue lengths of 4 metres on the Access.

6.0 PEDESTRIANS & CYCLISTS

6.1 Pedestrian Facilities

A Pedestrian footpath is currently provided along the western side of the Pacific Highway, south of London Drive. All three legs of the intersection are provided with signalised crossings resulting in very good pedestrian access to the site. Both slip lanes in London Drive have marked footcrossings. Pedestrian footpaths should be provided along the frontage of the site in London Drive and Pacific Highway in order to provide direct access to the site for pedestrians.

6.2 Cycling Facilities

On road shoulder cycle paths are provided on both northbound and southbound in Pacific Highway.

7.0 CONCLUSION

This Traffic Impact Assessment investigates the traffic and parking implications of rezoning a portion of the industrial zoned land on the corner of Pacific Highway and London Drive for a service station.

The concept plan indicates a total of 85m^2 convenience store Gross Floor Area (GFA) and 3,000 m^2 total service station site area. Wyong Shire Council's DCP 61 states that car parking provisions should be provided at the rate of 1 space per work bay plus 1 space per 20 m^2 convenience store GFA.

Under Council's DCP a minimum of 4 parking spaces is required. The development proposes a total number of 7 parking spaces which is a surplus of 3 spaces based on Council's DCP requirement and a surplus of 2 spaces based on the RTA requirement. The proposed parking is therefore considered adequate to cater for the expected demand.

The proposed development will generate a maximum of 146 trips/hour in the AM and PM peak weekday hour based on RTA traffic generation rates.

In order to consider the impact of the development it is important to have a base to compare the assessment against. Two base cases for background traffic have been considered, year 2008 and year 2018. The year 2008 background traffic has been determined by undertaking intersection counts in October 2008 whilst the future background traffic in 2018 has been determined by assuming a linear growth factor of 1.5% per annum for through traffic movements on the Pacific Highway and turning volumes in and out of London Drive as provided by Council based on previous modelling for The North Wyong Industrial area.

The intersection analysis using SIDRA indicates that the signalised intersection on Pacific Highway/London Drive operates at a good Level of Service in both 2008 and 2018 with and without the proposed development. Similarly with the additional traffic loading of the service station, the intersection will continue to operate at a good Level of Service both in 2008 and 2018.

The proposed access to the service station has also been assessed in both year 2008 and 2018. The analysis suggests that the intersection will operate at a good level of service and that the right turn bay in London Drive is of sufficient length to cater for the queue expected during peak hours.

In regards to access design, the ingress and aggress needs to be designed in accordance with the RTA Guide to Traffic Generating Developments recommends separate driveways with widths as follows:

- Entry driveway width 8-10 metres
- Exit driveway width 8-10 metres
- Minimum spacing between driveways 8-10 metres

The current site plan does not provide adequate spacing and this should be addressed at design stage.

Pedestrian footpaths should be provided along the frontage of the site in London Drive and Pacific Highway in order to provide direct access to the site for pedestrians.

APPENDICES

Appendix A
SITE PLANS & SWEPT PATH ANALYSIS

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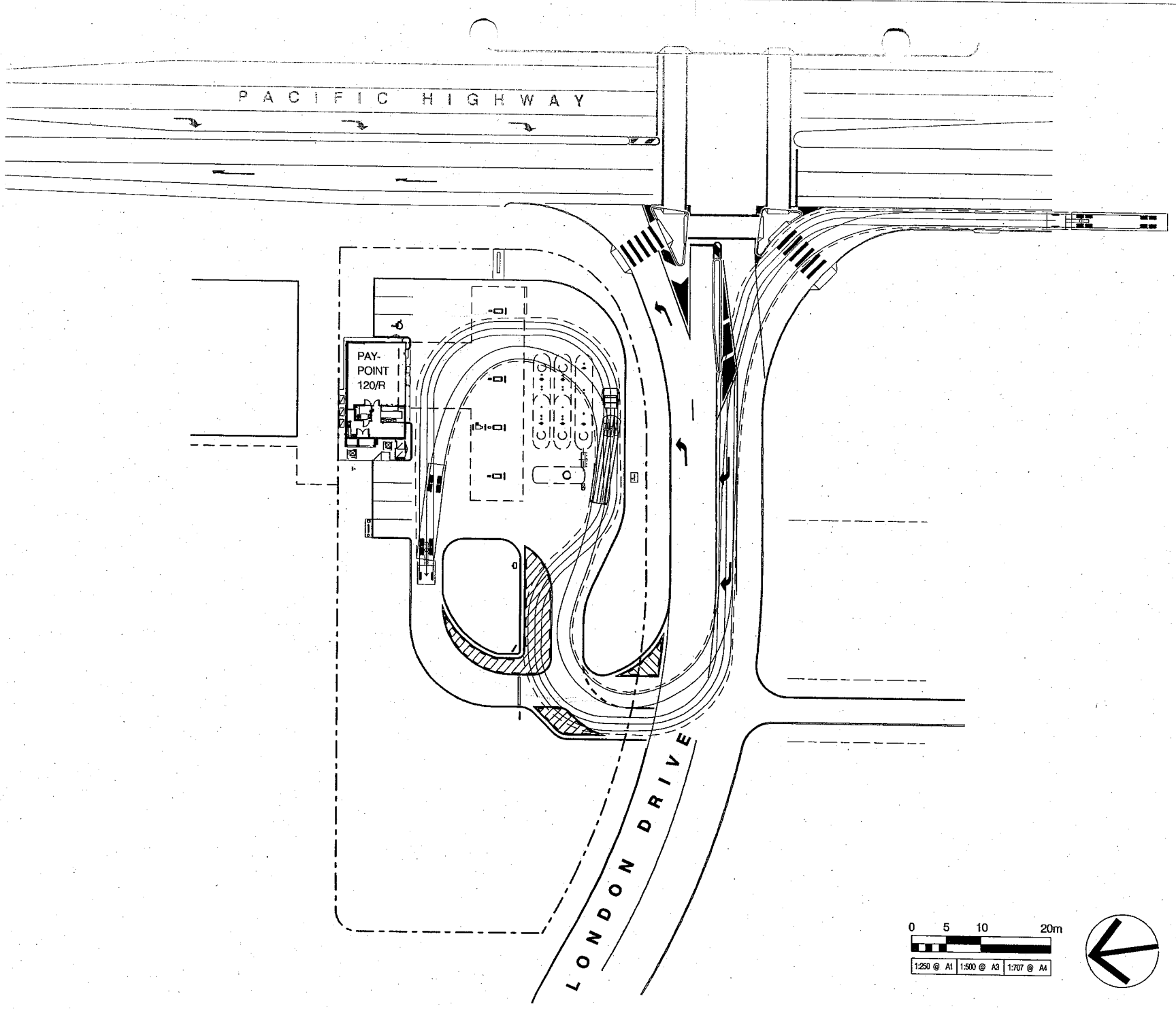

No.	AMENDMENT	DATE	DRN
P	PRELIMINARY	25.05.06	SB

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CONSULTANTS PROJECT No. **05136**

PROJECT
PROPOSED PETROLEUM FILLING STATION CNR LONDON DRIVE & PACIFIC HIGHWAY WYONG, NSW

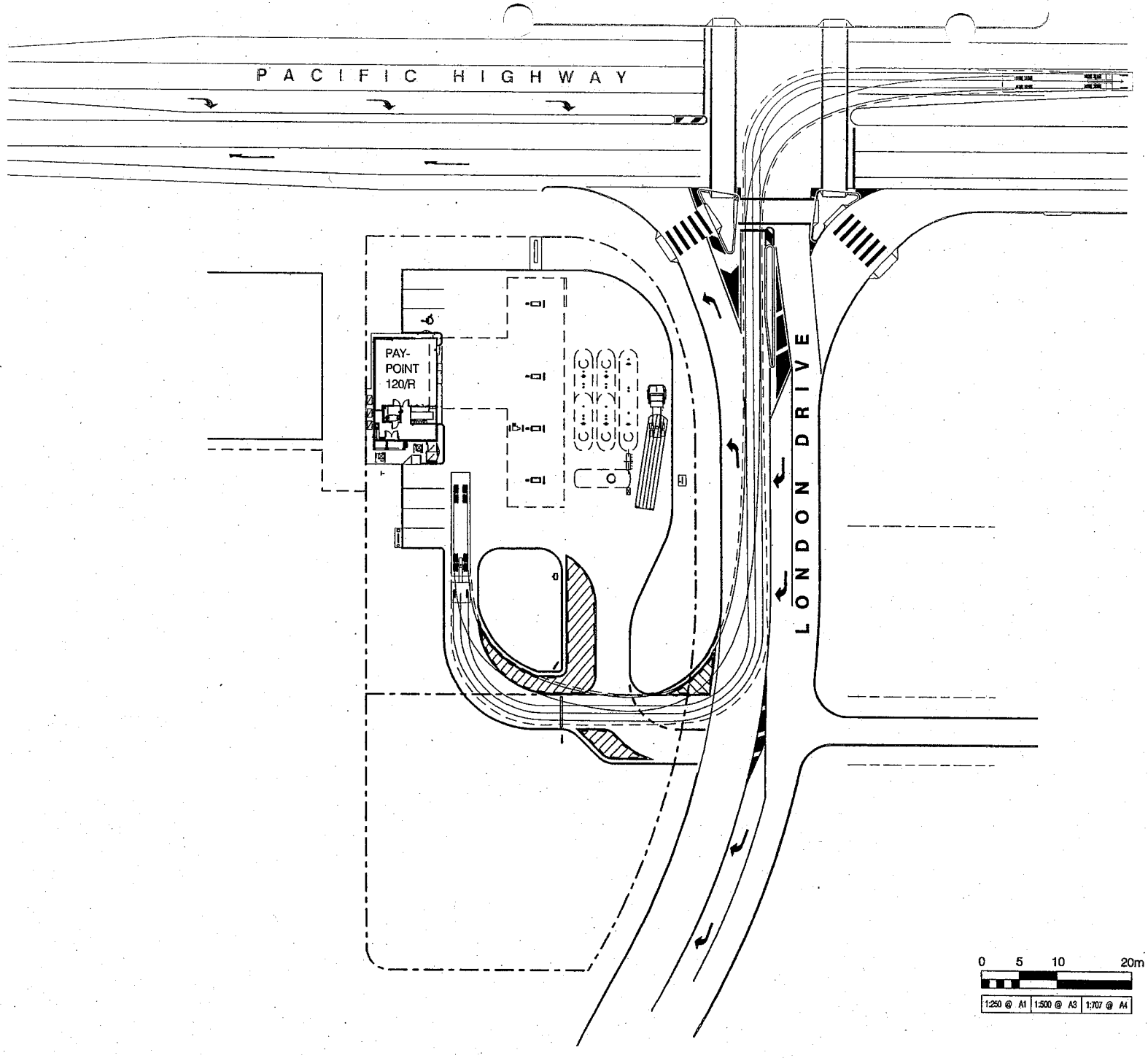
DRAWING
SITE PLAN WITH TANKER ACCESS

DRAWN	SB	CHECKED	
DATE	MAY 06	PLOT DATE	20/04/2007
SCALE	REFER TO SCALE BAR	SHEET SIZE	A3

STATUS
SKETCH OPT.3

DRAWING No. **SK03a** ISSUE No.

rcvd 18/01/08
93008



0 5 10 20m

1:250 @ A1 | 1:500 @ A3 | 1:707 @ A4

No.	AMENDMENT	DATE	DRN
P	PRELIMINARY	25.05.06	SB

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CONSULTANTS PROJECT No. **05136**

PROJECT
PROPOSED PETROLEUM FILLING STATION
CNR LONDON DRIVE & PACIFIC HIGHWAY
WYONG, NSW

DRAWING
SITE PLAN WITH TANKER EGRESS

DRAWN SB	CHECKED
DATE MAY 06	PLOT DATE 20/04/2007
SCALE REFER TO SCALE BAR	SHEET SIZE A3

STATUS
SKETCH OPT.3

DRAWING No. **SK03b** ISSUE No.

Appendix B
TRAFFIC COUNTS

Traffic Count Field Sheet

Intersection
Location: Pacific Hwy and London Drive
Date: 3/10/2008
Observer: WN
Duration: 7:30-9:30AM

	Light	HV	Light	HV	Light	HV	Light	HV	Light	HV	Light	HV				
7:30 - 7:45	186	8			9	1			119	8			9	1			5				7			
7:45 - 8:00	204	11			8				121	9			4				1				10	1		
8:00 - 8:15	179	10			1				110	9			7				1				4			
8:15 - 8:30	175	10	744	39	7		25	1	124	11	474	37	4	1	24	2	3		10	0	4		25	1
8:30 - 8:45	172	8	730	39	9		25	0	105	10	460	39	2		17	1	6		11	0	4	1	22	2
8:45 - 9:00	197	0	723	28	5		22	0	139	14	478	44	3	2	16	3	6	1	16	1	0		12	1
9:00 - 9:15	157	6	701	24	3		24	0	106	10	474	45	4		13	3	3		18	1	3		11	1
9:15 - 9:30	204	12	730	26	5	1	22	1	114	11	464	45	7		16	2	8		23	1	5		12	1

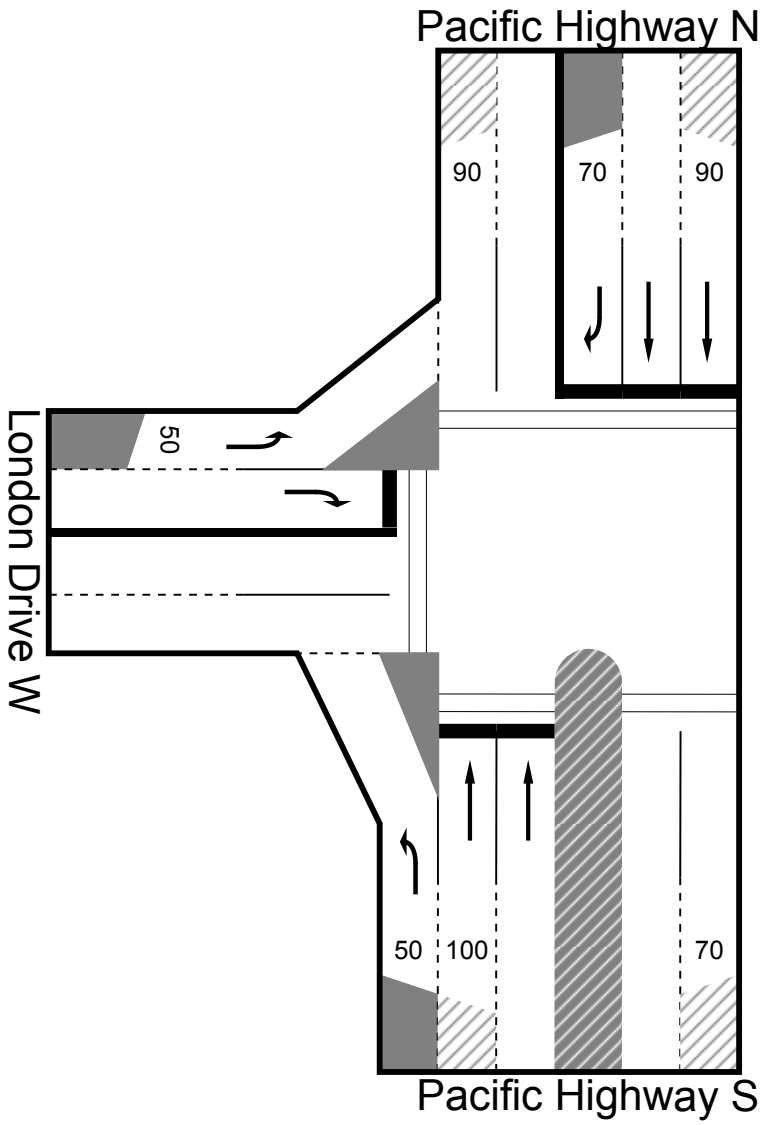
Traffic Count Field Sheet

Intersection
Location: Pacific Hwy and London Drive
Date: 3/10/2008
Observer: WN
Duration: 3:30-5:30PM

	Light	HV		Light	HV		Light	HV		Light	HV		Light	HV		Light	HV	
15:30 - 15:45	112	8		5			153	9		4			1			1		
15:45 - 16:00	122	6		2			132	6		2			3	1		4		
16:00 - 16:15	175	5		5			213	5		7			1	1		2		
16:15 - 16:30	159	8	568 / 27	3		15 / 0	225	10	723 / 30	7		20 / 0	2		7 / 2	2		9 / 0
16:30 - 16:45	147	4	603 / 23	2		12 / 0	201	6	771 / 27	2		18 / 0	3		9 / 2	2		10 / 0
16:45 - 17:00	129	5	610 / 22	3		13 / 0	220	4	859 / 25	3		19 / 0	5		11 / 1	6		12 / 0
17:00 - 17:15	134	3	569 / 20	1		9 / 0	241	4	887 / 24	1		13 / 0	4		14 / 0	3		13 / 0
17:15 - 17:30	140	5	550 / 17	0		6 / 0	209	7	871 / 21	2		8 / 0	1		13 / 0	2		13 / 0

Appendix C

SIDRA MOVEMENT SUMMARIES


Pacific Highway N
90
70
90
50
London Drive W
50
100
70
Pacific Highway S

SIDRA INTERSECTION

Movement Summary

Pacific Highway/London Drive

2008 AM Base

Signalised - Actuated coordinated **Cycle Time = 53 seconds**

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Pacific Highway S										
1	L	24	8.3	0.020	9.0	LOS A	1	0.24	0.64	52.3
2	T	474	7.8	0.391	9.3	LOS A	45	0.55	0.46	54.7
Approach		**498**	**7.8**	**0.391**	**9.3**	**LOS A**	**45**	**0.54**	**0.47**	**54.6**
Pacific Highway N										
8	T	744	5.2	0.423	1.8	LOS A	27	0.19	0.16	66.4
9	R	25	4.0	0.122	33.8	LOS C	6	0.91	0.71	32.4
Approach		**769**	**5.2**	**0.423**	**2.8**	**LOS A**	**27**	**0.21**	**0.18**	**64.5**
London Drive W										
10	L	10	0.0	0.009	7.8	LOS A	0	0.23	0.61	44.4
12	R	25	4.0	0.122	32.6	LOS C	6	0.91	0.70	30.2
Approach		**35**	**2.9**	**0.122**	**25.5**	**LOS B**	**6**	**0.72**	**0.68**	**33.2**
All Vehicles		**1302**	**6.1**	**0.423**	**5.9**	**LOS A**	**45**	**0.35**	**0.31**	**58.9**

Pedestrian Movements

Mov ID	Dem Flow (ped/h)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate
P1	5	24.8	LOS C	0	0.90	0.90
P5	5	26.3	LOS C	0	0.91	0.91
P7	5	20.8	LOS C	0	0.89	0.89
All Peds	**15**	**24.0**	**LOS B**	**0**	**0.90**	**0.90**

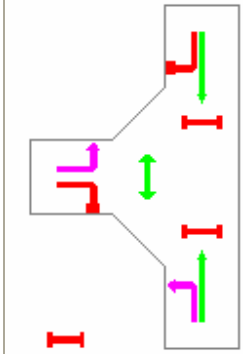
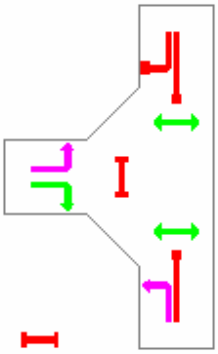
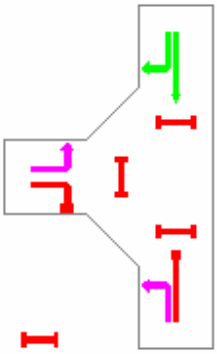
SIDRA INTERSECTION

Phasing Summary

Pacific Highway/London Drive

2008 AM Base

C = **53** seconds
Cycle Time Option: **Program calculated cycle time**
Phase times determined by the program.

Phase A	Phase B	Phase C
		
Green Time = **23** seconds Phase Time = **29** seconds Phase Split = **55** %	Green Time = **6** seconds Phase Time = **12** seconds Phase Split = **23** %	Green Time = **6** seconds Phase Time = **12** seconds Phase Split = **23** %

Normal Movement
Slip-Lane
Stopped Movement
Turn On Red
Permitted/Opposed
Opposed Slip-Lane
Continuous

SIDRA INTERSECTION

Movement Summary

Pacific Highway/London Drive

2008 AM Base + Development

Signalised - Actuated coordinated **Cycle Time = 53 seconds**

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Pacific Highway S										
1	L	47	4.3	0.039	8.9	LOS A	2	0.24	0.65	52.3
2	T	474	7.8	0.499	14.2	LOS A	57	0.72	0.60	49.0
Approach		**521**	**7.5**	**0.499**	**13.8**	**LOS A**	**57**	**0.67**	**0.60**	**49.3**
Pacific Highway N										
8	T	744	5.2	0.462	3.4	LOS A	42	0.31	0.27	63.6
9	R	61	1.6	0.220	32.0	LOS C	13	0.89	0.75	33.3
Approach		**805**	**5.0**	**0.462**	**5.5**	**LOS A**	**42**	**0.35**	**0.30**	**59.9**
London Drive W										
10	L	38	0.0	0.032	7.9	LOS A	1	0.24	0.62	44.4
12	R	70	1.4	0.224	29.8	LOS C	15	0.88	0.75	31.3
Approach		**108**	**0.9**	**0.224**	**22.1**	**LOS B**	**15**	**0.65**	**0.70**	**34.9**
All Vehicles		**1434**	**5.6**	**0.499**	**9.8**	**LOS A**	**57**	**0.49**	**0.44**	**52.9**

Pedestrian Movements

Mov ID	Dem Flow (ped/h)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate
P1	5	23.3	LOS C	0	0.90	0.90
P5	5	24.8	LOS C	0	0.90	0.90
P7	5	20.8	LOS C	0	0.89	0.89
All Peds	**15**	**23.0**	**LOS B**	**0**	**0.89**	**0.89**

SIDRA INTERSECTION

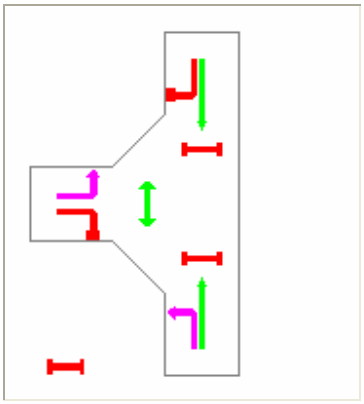
Phasing Summary

Pacific Highway/London Drive

2008 AM Base + Development

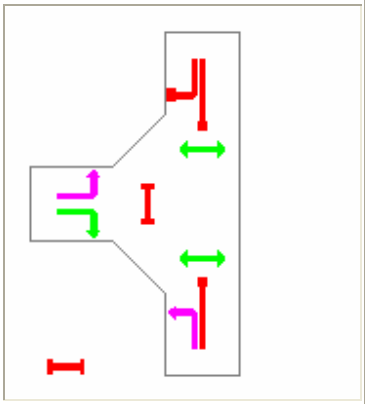
C = **53** seconds
Cycle Time Option: **Program calculated cycle time**
Phase times determined by the program.

Phase A



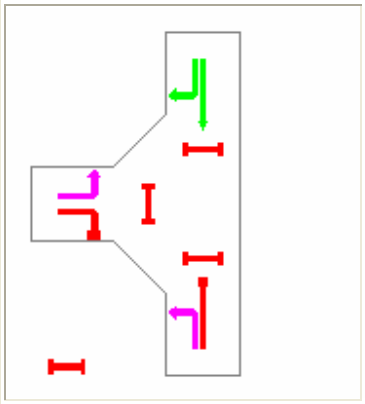
Green Time = **18** seconds
Phase Time = **24** seconds
Phase Split = **45** %

Phase B



Green Time = **9** seconds
Phase Time = **15** seconds
Phase Split = **28** %

Phase C



Green Time = **8** seconds
Phase Time = **14** seconds
Phase Split = **26** %

Normal Movement
Slip-Lane
Stopped Movement
Turn On Red
Permitted/Opposed
Opposed Slip-Lane
Continuous

SIDRA INTERSECTION

Movement Summary

Pacific Highway/London Drive

2018 AM Base

Signalised - Actuated coordinated **Cycle Time = 53 seconds**

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Pacific Highway S										
1	L	28	7.1	0.023	9.0	LOS A	1	0.24	0.64	52.3
2	T	545	6.8	0.684	18.6	LOS B	75	0.85	0.73	44.8
Approach		**573**	**6.8**	**0.684**	**18.2**	**LOS B**	**75**	**0.82**	**0.72**	**45.1**
Pacific Highway N										
8	T	856	4.6	0.547	4.2	LOS A	56	0.37	0.33	62.2
9	R	111	0.0	0.317	30.4	LOS C	23	0.88	0.77	34.1
Approach		**967**	**4.0**	**0.547**	**7.2**	**LOS A**	**56**	**0.43**	**0.38**	**57.3**
London Drive W										
10	L	445	0.0	0.366	8.1	LOS A	19	0.32	0.67	44.1
12	R	111	0.9	0.319	29.3	LOS C	23	0.88	0.77	31.5
Approach		**556**	**0.2**	**0.366**	**12.3**	**LOS A**	**23**	**0.43**	**0.69**	**40.8**
All Vehicles		**2096**	**3.8**	**0.684**	**11.6**	**LOS A**	**75**	**0.54**	**0.56**	**48.5**

Pedestrian Movements

Mov ID	Dem Flow (ped/h)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate
P1	5	22.8	LOS C	0	0.89	0.89
P5	5	24.3	LOS C	0	0.90	0.90
P7	5	20.8	LOS C	0	0.89	0.89
All Peds	**15**	**22.7**	**LOS B**	**0**	**0.89**	**0.89**

SIDRA INTERSECTION

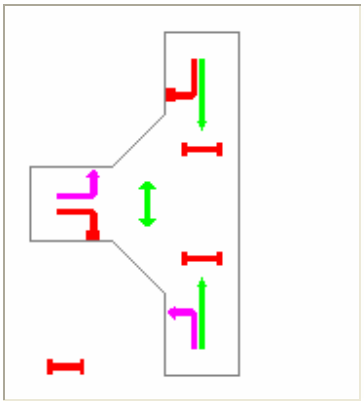
Phasing Summary

Pacific Highway/London Drive

2018 AM Base

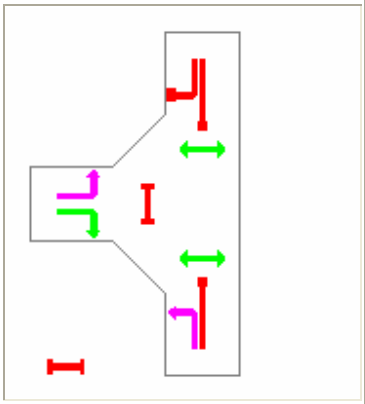
C = **53** seconds
Cycle Time Option: **Program calculated cycle time**
Phase times determined by the program.

Phase A



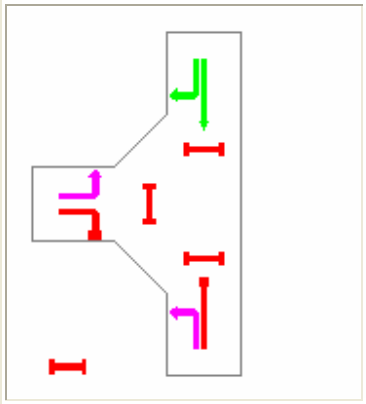
Green Time = **15** seconds
Phase Time = **21** seconds
Phase Split = **40** %

Phase B



Green Time = **10** seconds
Phase Time = **16** seconds
Phase Split = **30** %

Phase C



Green Time = **10** seconds
Phase Time = **16** seconds
Phase Split = **30** %

Normal Movement
Slip-Lane
Stopped Movement
Turn On Red
Permitted/Opposed
Opposed Slip-Lane
Continuous

SIDRA INTERSECTION

Movement Summary

Pacific Highway/London Drive

2018 AM Base + Development

Signalised - Actuated coordinated **Cycle Time = 53 seconds**

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Pacific Highway S										
1	L	51	3.9	0.042	8.9	LOS A	2	0.24	0.65	52.3
2	T	545	6.8	0.855	24.9	LOS B	90	0.95	0.89	40.0
Approach		**596**	**6.5**	**0.855**	**23.5**	**LOS B**	**90**	**0.89**	**0.87**	**40.8**
Pacific Highway N										
8	T	856	4.6	0.584	5.6	LOS A	67	0.46	0.40	59.9
9	R	147	0.7	0.383	29.9	LOS C	30	0.88	0.79	34.4
Approach		**1003**	**4.0**	**0.584**	**9.2**	**LOS A**	**67**	**0.52**	**0.46**	**54.5**
London Drive W										
10	L	473	0.0	0.378	8.1	LOS A	20	0.32	0.67	44.0
12	R	156	0.6	0.373	27.7	LOS B	31	0.87	0.78	32.1
Approach		**629**	**0.2**	**0.378**	**13.0**	**LOS A**	**31**	**0.46**	**0.70**	**40.4**
All Vehicles		**2228**	**3.6**	**0.855**	**14.1**	**LOS A**	**90**	**0.60**	**0.64**	**45.8**

Pedestrian Movements

Mov ID	Dem Flow (ped/h)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate
P1	5	21.8	LOS C	0	0.89	0.89
P5	5	23.3	LOS C	0	0.90	0.90
P7	5	20.8	LOS C	0	0.89	0.89
All Peds	**15**	**22.0**	**LOS B**	**0**	**0.89**	**0.89**

SIDRA INTERSECTION

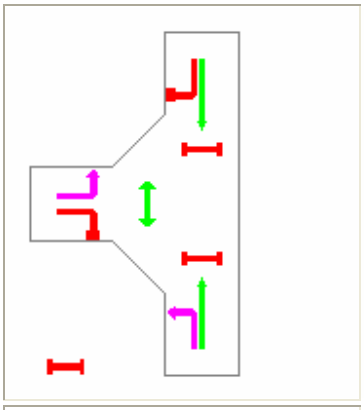
Phasing Summary

Pacific Highway/London Drive

2018 AM Base + Development

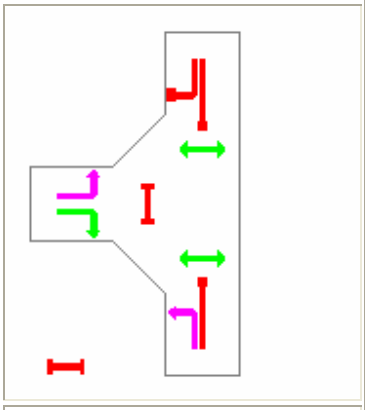
C = **53** seconds
Cycle Time Option: **Program calculated cycle time**
Phase times determined by the program.

Phase A



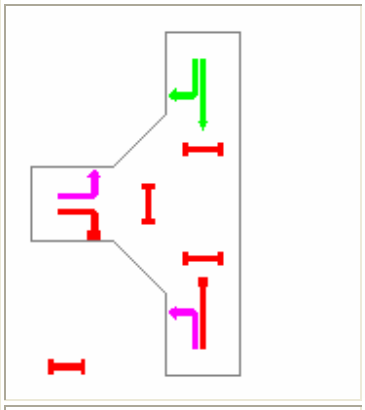
Green Time = **12** seconds
Phase Time = **18** seconds
Phase Split = **34** %

Phase B



Green Time = **12** seconds
Phase Time = **18** seconds
Phase Split = **34** %

Phase C



Green Time = **11** seconds
Phase Time = **17** seconds
Phase Split = **32** %

Normal Movement
Slip-Lane
Stopped Movement
Turn On Red
Permitted/Opposed
Opposed Slip-Lane
Continuous

SIDRA INTERSECTION

Movement Summary

Pacific Highway/London Drive

2008 PM Base

Signalised - Actuated coordinated **Cycle Time = 53 seconds**

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Pacific Highway S										
1	L	19	0.0	0.015	8.8	LOS A	1	0.24	0.64	52.3
2	T	859	2.9	0.686	10.9	LOS A	88	0.69	0.60	52.7
Approach		**878**	**2.8**	**0.686**	**10.9**	**LOS A**	**88**	**0.68**	**0.60**	**52.7**
Pacific Highway N										
8	T	610	3.6	0.343	1.7	LOS A	20	0.17	0.15	66.7
9	R	13	0.0	0.062	33.2	LOS C	3	0.90	0.68	32.7
Approach		**623**	**3.5**	**0.343**	**2.3**	**LOS A**	**20**	**0.19**	**0.16**	**65.4**
London Drive W										
10	L	11	9.1	0.010	8.1	LOS A	0	0.23	0.61	44.4
12	R	12	0.0	0.057	31.9	LOS C	3	0.90	0.68	30.4
Approach		**23**	**4.3**	**0.057**	**20.5**	**LOS B**	**3**	**0.58**	**0.64**	**35.8**
All Vehicles		**1524**	**3.1**	**0.686**	**7.5**	**LOS A**	**88**	**0.47**	**0.42**	**56.8**

Pedestrian Movements

Mov ID	Dem Flow (ped/h)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate
P1	5	24.8	LOS C	0	0.90	0.90
P5	5	26.3	LOS C	0	0.91	0.91
P7	5	20.8	LOS C	0	0.89	0.89
All Peds	**15**	**24.0**	**LOS B**	**0**	**0.90**	**0.90**

SIDRA INTERSECTION

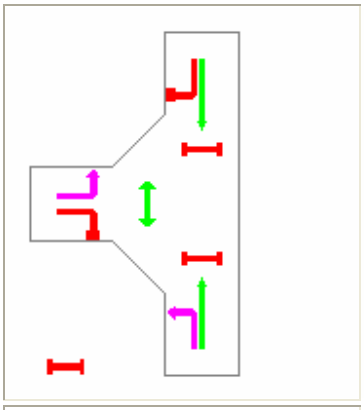
Phasing Summary

Pacific Highway/London Drive

2008 PM Base

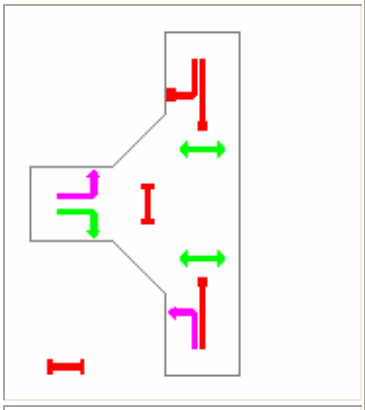
C = **53** seconds
Cycle Time Option: **Program calculated cycle time**
Phase times determined by the program.

Phase A



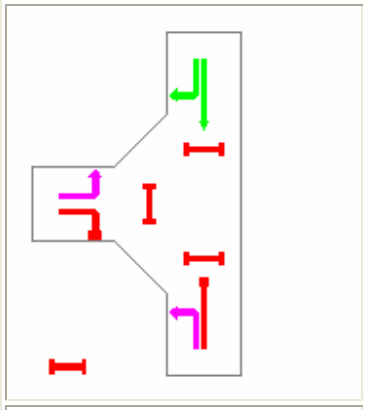
Green Time = **23** seconds
Phase Time = **29** seconds
Phase Split = **55** %

Phase B



Green Time = **6** seconds
Phase Time = **12** seconds
Phase Split = **23** %

Phase C



Green Time = **6** seconds
Phase Time = **12** seconds
Phase Split = **23** %

- Normal Movement
- Slip-Lane
- Stopped Movement
- Turn On Red
- Permitted/Opposed
- Opposed Slip-Lane
- Continuous

SIDRA INTERSECTION

Movement Summary

Pacific Highway/London Drive

2008 PM Base + Development

Signalised - Actuated coordinated **Cycle Time = 53 seconds**

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Pacific Highway S										
1	L	54	0.0	0.043	8.8	LOS A	2	0.24	0.65	52.3
2	T	859	2.9	0.686	10.9	LOS A	88	0.69	0.60	52.7
Approach		**913**	**2.7**	**0.686**	**10.8**	**LOS A**	**88**	**0.66**	**0.61**	**52.7**
Pacific Highway N										
8	T	610	3.6	0.343	1.7	LOS A	20	0.17	0.15	66.7
9	R	36	0.0	0.171	33.8	LOS C	8	0.91	0.72	32.3
Approach		**646**	**3.4**	**0.343**	**3.4**	**LOS A**	**20**	**0.21**	**0.18**	**63.3**
London Drive W										
10	L	53	1.9	0.047	7.9	LOS A	2	0.24	0.63	44.4
12	R	43	0.0	0.205	32.8	LOS C	10	0.92	0.73	30.0
Approach		**96**	**1.0**	**0.205**	**19.1**	**LOS B**	**10**	**0.55**	**0.67**	**36.6**
All Vehicles		**1655**	**2.9**	**0.686**	**8.4**	**LOS A**	**88**	**0.48**	**0.44**	**54.9**

Pedestrian Movements

Mov ID	Dem Flow (ped/h)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate
P1	5	24.8	LOS C	0	0.90	0.90
P5	5	26.3	LOS C	0	0.91	0.91
P7	5	20.8	LOS C	0	0.89	0.89
All Peds	**15**	**24.0**	**LOS B**	**0**	**0.90**	**0.90**

SIDRA INTERSECTION

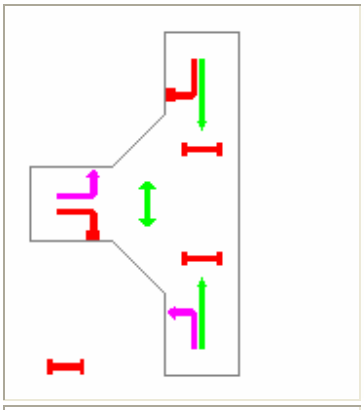
Phasing Summary

Pacific Highway/London Drive

2008 PM Base + Development

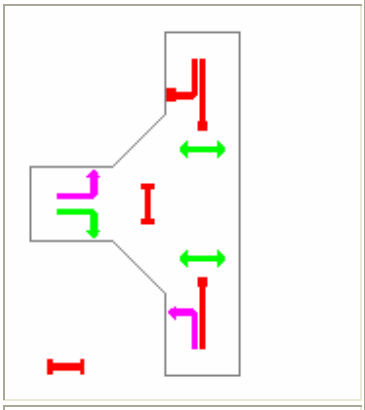
C = **53** seconds
Cycle Time Option: **Program calculated cycle time**
Phase times determined by the program.

Phase A



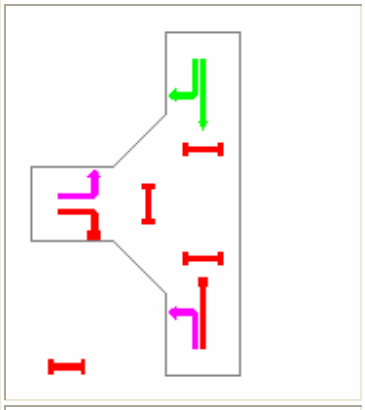
Green Time = **23** seconds
Phase Time = **29** seconds
Phase Split = **55** %

Phase B



Green Time = **6** seconds
Phase Time = **12** seconds
Phase Split = **23** %

Phase C



Green Time = **6** seconds
Phase Time = **12** seconds
Phase Split = **23** %

- Normal Movement
- Slip-Lane
- Stopped Movement
- Turn On Red
- Permitted/Opposed
- Opposed Slip-Lane
- Continuous

SIDRA INTERSECTION

Movement Summary

Pacific Highway/London Drive

2018 PM Base

Signalised - Actuated coordinated **Cycle Time = 57 seconds**

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Pacific Highway S										
1	L	28	0.0	0.022	8.8	LOS A	1	0.22	0.64	52.4
2	T	988	2.5	0.928	26.6	LOS B	176	0.90	0.97	38.9
Approach		**1016**	**2.5**	**0.928**	**26.1**	**LOS B**	**176**	**0.88**	**0.96**	**39.2**
Pacific Highway N										
8	T	702	3.1	0.412	2.6	LOS A	33	0.24	0.21	64.8
9	R	111	0.0	0.379	34.0	LOS C	26	0.91	0.77	32.2
Approach		**813**	**2.7**	**0.412**	**6.9**	**LOS A**	**33**	**0.33**	**0.29**	**57.6**
London Drive W										
10	L	445	0.2	0.372	8.0	LOS A	19	0.30	0.66	44.1
12	R	111	0.0	0.379	32.8	LOS C	26	0.91	0.77	30.0
Approach		**556**	**0.2**	**0.379**	**13.0**	**LOS A**	**26**	**0.42**	**0.68**	**40.4**
All Vehicles		**2385**	**2.0**	**0.928**	**16.5**	**LOS B**	**176**	**0.59**	**0.67**	**44.3**

Pedestrian Movements

Mov ID	Dem Flow (ped/h)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate
P1	5	25.3	LOS C	0	0.90	0.90
P5	5	26.8	LOS C	0	0.91	0.91
P7	5	22.8	LOS C	0	0.89	0.89
All Peds	**15**	**25.0**	**LOS B**	**0**	**0.90**	**0.90**

SIDRA INTERSECTION

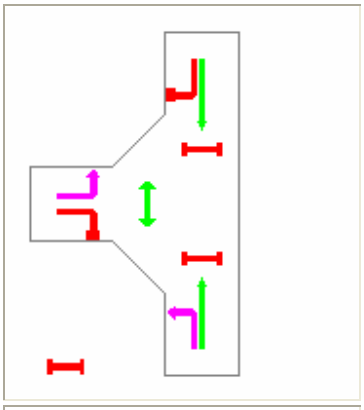
Phasing Summary

Pacific Highway/London Drive

2018 PM Base

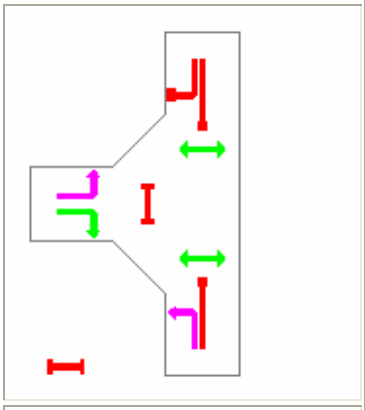
C = **57** seconds
Cycle Time Option: **Program calculated cycle time**
Phase times determined by the program.

Phase A



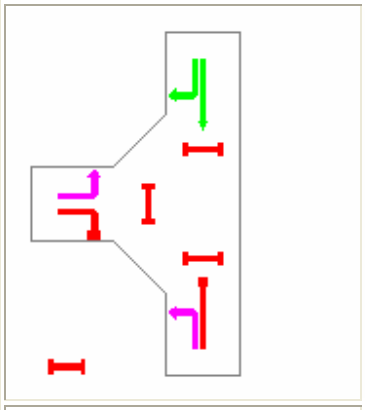
Green Time = **21** seconds
Phase Time = **27** seconds
Phase Split = **47** %

Phase B



Green Time = **9** seconds
Phase Time = **15** seconds
Phase Split = **26** %

Phase C



Green Time = **9** seconds
Phase Time = **15** seconds
Phase Split = **26** %

- Normal Movement
- Slip-Lane
- Stopped Movement
- Turn On Red
- Permitted/Opposed
- Opposed Slip-Lane
- Continuous

SIDRA INTERSECTION

Movement Summary

Pacific Highway/London Drive

2018 PM Base + Development

Signalised - Actuated coordinated **Cycle Time = 72 seconds**

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Pacific Highway S										
1	L	63	0.0	0.050	8.6	LOS A	2	0.18	0.65	52.7
2	T	988	2.5	0.911	28.3	LOS B	196	0.89	0.91	37.8
Approach		**1051**	**2.4**	**0.911**	**27.1**	**LOS B**	**196**	**0.85**	**0.90**	**38.4**
Pacific Highway N										
8	T	702	3.1	0.407	3.0	LOS A	38	0.23	0.20	64.1
9	R	134	0.0	0.400	38.9	LOS C	37	0.90	0.79	29.9
Approach		**836**	**2.6**	**0.407**	**8.8**	**LOS A**	**38**	**0.33**	**0.29**	**55.0**
London Drive W										
10	L	487	0.2	0.391	7.8	LOS A	21	0.24	0.65	44.4
12	R	142	0.0	0.393	36.8	LOS C	39	0.89	0.78	28.5
Approach		**629**	**0.2**	**0.393**	**14.4**	**LOS A**	**39**	**0.39**	**0.68**	**39.5**
All Vehicles		**2516**	**1.9**	**0.911**	**17.9**	**LOS B**	**196**	**0.56**	**0.64**	**43.0**

Pedestrian Movements

Mov ID	Dem Flow (ped/h)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate
P1	5	30.2	LOS D	0	0.92	0.92
P5	5	31.7	LOS D	0	0.92	0.92
P7	5	30.2	LOS D	0	0.92	0.92
All Peds	**15**	**30.7**	**LOS C**	**0**	**0.92**	**0.92**

SIDRA INTERSECTION

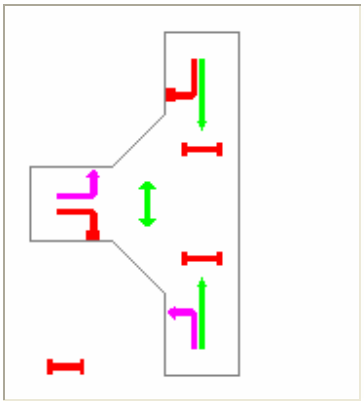
Phasing Summary

Pacific Highway/London Drive

2018 PM Base + Development

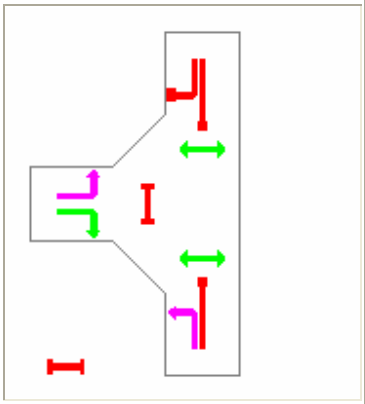
C = **72** seconds
Cycle Time Option: **Program calculated cycle time**
Phase times determined by the program.

Phase A



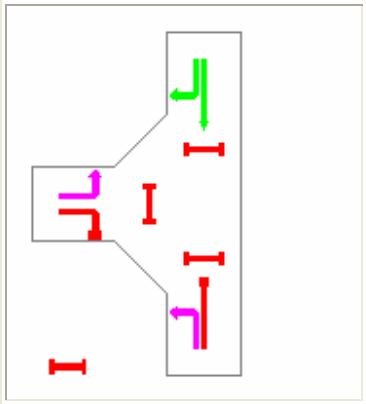
Green Time = **27** seconds
Phase Time = **33** seconds
Phase Split = **46** %

Phase B



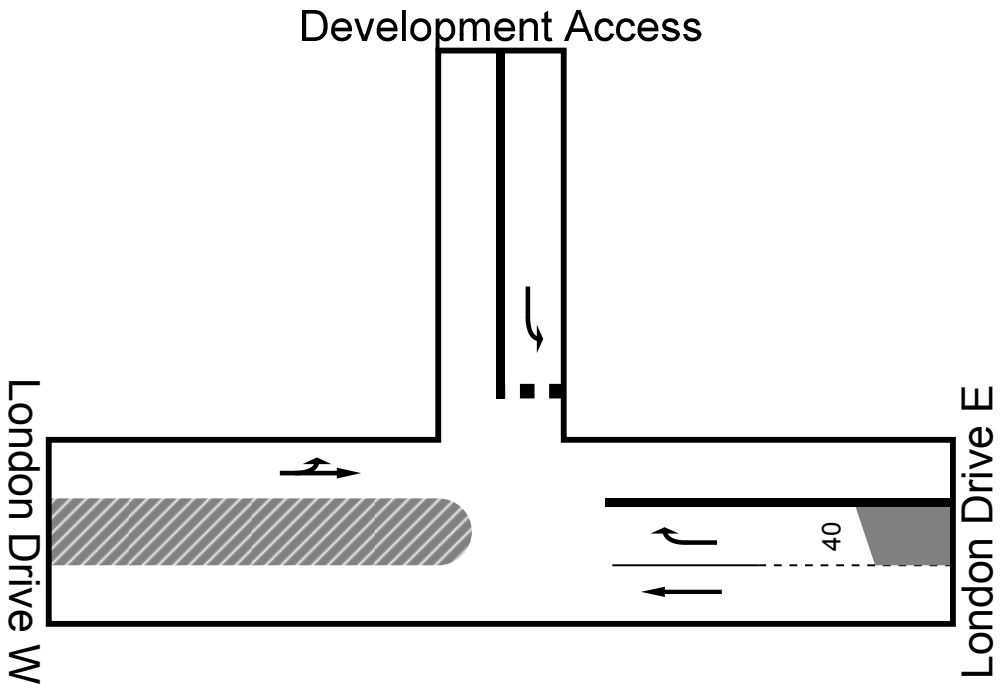
Green Time = **14** seconds
Phase Time = **20** seconds
Phase Split = **28** %

Phase C



Green Time = **13** seconds
Phase Time = **19** seconds
Phase Split = **26** %

Normal Movement
Slip-Lane
Stopped Movement
Turn On Red
Permitted/Opposed
Opposed Slip-Lane
Continuous


Development Access
London Drive W
London Drive E
40

SIDRA INTERSECTION

Movement Summary

London Drive/Access

2008 AM Base + Dev

Give-way

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
London Drive E										
5	T	49	0.0	0.025	0.0	LOS A	0	0.00	0.00	60.0
6	R	58	0.0	0.052	8.6	LOS A	2	0.13	0.65	48.1
Approach		**107**	**0.0**	**0.052**	**4.7**	**LOS A**	**2**	**0.07**	**0.35**	**52.9**
Development Access										
7	L	73	0.0	0.063	8.4	LOS A	2	0.12	0.63	48.4
Approach		**73**	**0.0**	**0.063**	**8.4**	**LOS A**	**2**	**0.12**	**0.63**	**48.4**
London Drive W										
10	L	15	0.0	0.026	8.2	LOS A	0	0.00	0.67	49.0
11	T	35	0.0	0.026	0.0	LOS A	0	0.00	0.00	60.0
Approach		**50**	**0.0**	**0.026**	**2.5**	**LOS A**		**0.00**	**0.20**	**56.2**
All Vehicles		**230**	**0.0**	**0.063**	**5.4**	**Not Applicable**	**2**	**0.07**	**0.41**	**52.0**

SIDRA INTERSECTION

Movement Summary

London Drive/Access

2018 AM Base + Dev

Give-way

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
London Drive E										
5	T	139	0.0	0.071	0.0	LOS A	0	0.00	0.00	60.0
6	R	58	0.0	0.078	11.6	LOS A	3	0.54	0.80	45.3
Approach		**197**	**0.0**	**0.078**	**3.4**	**LOS A**	**3**	**0.16**	**0.24**	**54.8**
Development Access										
7	L	73	0.0	0.124	12.4	LOS A	4	0.55	0.84	44.7
Approach		**73**	**0.0**	**0.124**	**12.4**	**LOS A**	**4**	**0.55**	**0.84**	**44.7**
London Drive W										
10	L	15	0.0	0.294	8.2	LOS A	0	0.00	0.67	49.0
11	T	556	0.0	0.293	0.0	LOS A	0	0.00	0.00	60.0
Approach		**571**	**0.0**	**0.293**	**0.2**	**LOS A**		**0.00**	**0.02**	**59.6**
All Vehicles		**841**	**0.0**	**0.294**	**2.0**	**Not Applicable**	**4**	**0.08**	**0.14**	**56.8**

SIDRA INTERSECTION

Movement Summary

London Drive/Access

2008 PM Base + Dev

Give-way

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
London Drive E										
5	T	32	0.0	0.016	0.0	LOS A	0	0.00	0.00	60.0
6	R	58	0.0	0.052	8.6	LOS A	2	0.11	0.65	48.2
Approach		**90**	**0.0**	**0.052**	**5.5**	**LOS A**	**2**	**0.07**	**0.42**	**51.8**
Development Access										
7	L	73	0.0	0.063	8.3	LOS A	2	0.10	0.63	48.5
Approach		**73**	**0.0**	**0.063**	**8.3**	**LOS A**	**2**	**0.10**	**0.63**	**48.5**
London Drive W										
10	L	15	0.0	0.020	8.2	LOS A	0	0.00	0.67	49.0
11	T	23	0.0	0.020	0.0	LOS A	0	0.00	0.00	60.0
Approach		**38**	**0.0**	**0.020**	**3.2**	**LOS A**		**0.00**	**0.26**	**55.1**
All Vehicles		**201**	**0.0**	**0.063**	**6.1**	**Not Applicable**	**2**	**0.07**	**0.47**	**51.1**

SIDRA INTERSECTION

Movement Summary

London Drive/Access

2018 PM Base + Dev

Give-way

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95% Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
London Drive E										
5	T	139	0.0	0.071	0.0	LOS A	0	0.00	0.00	60.0
6	R	58	0.0	0.078	11.6	LOS A	3	0.54	0.80	45.3
Approach		**197**	**0.0**	**0.078**	**3.4**	**LOS A**	**3**	**0.16**	**0.24**	**54.8**
Development Access										
7	L	73	0.0	0.124	12.4	LOS A	4	0.55	0.84	44.7
Approach		**73**	**0.0**	**0.124**	**12.4**	**LOS A**	**4**	**0.55**	**0.84**	**44.7**
London Drive W										
10	L	15	0.0	0.294	8.2	LOS A	0	0.00	0.67	49.0
11	T	556	0.0	0.293	0.0	LOS A	0	0.00	0.00	60.0
Approach		**571**	**0.0**	**0.293**	**0.2**	**LOS A**		**0.00**	**0.02**	**59.6**
All Vehicles		**841**	**0.0**	**0.294**	**2.0**	**Not Applicable**	**4**	**0.08**	**0.14**	**56.8**