
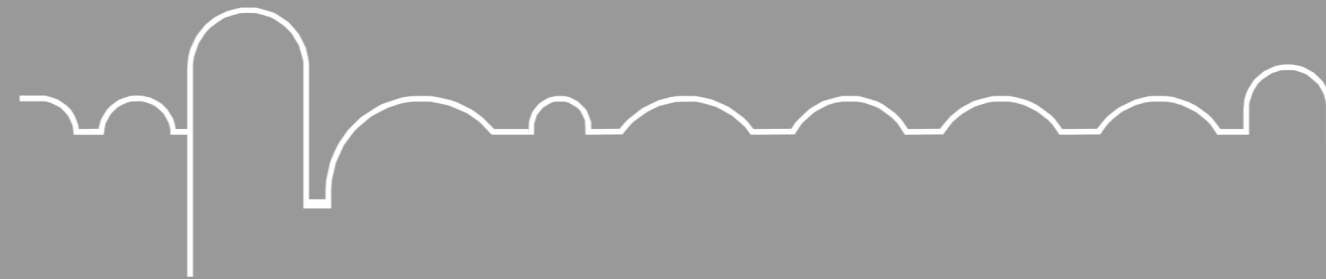


<div><div><div>CAMBRAYconsulting</div><div>Traffic Engineering and Transport Planning</div><div>Suite 2601, 21 Mary Street Brisbane Q 4000</div><div>t : 07 3221 3503 e : contact@cambray.com.au</div></div></div>	DRAWING TITLE		LOCATION		REV		DWN		CHK		PRELIMINARY		JOB No. // DRAWING No.					
	Proposed Mixed Use Development		612 Lutwyche Rd		A						NOT FOR CONSTRUCTION		CON0214-02					
	Swept Path Assessment		Lutwyche, QLD 4030										SK11					
	Ground Level																	
	10.235m Refuse Collection Vehicle (RCV)																	
					LODGED						DISCLAIMER		DATE		~Scale (A3)		PREPARED FOR	
					23/12/2019						This concept takes into account the instructions and requirements of our client. Cambray has taken care in preparing this concept, however it neither accepts liability nor responsibility whatsoever in respect of any use of this document by any third party, any third party whose interests may be affected by any decision made regarding the contents of this document and/or any conclusion drawn resulting from omission or lack of full disclosure by the client or the client's consultants.		19.12.19		1:250		Discussion	
					BCC DS													

APPENDIX C

Architect DA Report Extract



LAMINGTON MARKETS

612 LUTWYCHE ROAD AND 53 & 57 LAMINGTON AVENUE
LUTWYCHE QLD 4030

ARCHITECTURAL DESIGN REPORT

MARKETPLACE
DEVELOPMENTS

Conrad
Gargett

1.1 ARCHITECT'S STATEMENT

This architectural design report is prepared as part of the Development Application to Brisbane City Council for the proposed mixed use development located at 612 Lutwyche Road and 53 & 57 Lamington Avenue, Lutwyche.

Location

The site is bounded by both Lutwyche Road and Lamington Avenue and sits to the north of the Lutwyche Inner Northern Busway Station. The site has a 90 metre frontage to Lutwyche Road and a 110 metre frontage to Lamington Avenue. The site area is 7332 m2.

Uses

Existing land uses vary, fronting Lutwyche Road the site is vacant after the construction of the Inner Northern Busway tunnel below the site. The tunnel is approximately 2 metres below the surface level. This has a significant impact on opportunity for basement car parking.

The western area of the site fronting Lamington Avenue has mixed older multi-level community housing that is being relocated and a detached residence.

Proposed uses on the site include residential apartments and retail and commercial uses.

Built Form

The Lamington Market development aims to create a dynamic and vibrant community that caters to residents, workers and visitors' daily needs. This project is a catalyst project for the revitalisation of Lutwyche.

The project delivers a mix of apartment types, sizes and price points to ensure a diverse community is created on the site. The integration of retail and commercial spaces within the development helped create an essential form of social sustainability to this part of the city.

The sculptural family of towers also creates an impression of a cohesive neighbourhood within the skyline and emphasise the importance of this part of the city.

The integration of retail space including a market hall and cinemas within the development adds to the diversity of community and activity.

The built form also creates a powerful cultural presence expressed in dynamic volumes sculpted to project a fluid and transparent public dialogue with the surroundings.

The podium public domain consist of a two level below ground cinema, above ground mixed retail use, and a day centre with health care services and short term accommodation on level 2 and 3.

The south building is 12 levels measured from the lowest corner of the site fronting Lamington Avenue and the busway plaza. The north building is 12 levels located towards northern boundary and the new laneway linking Lutwyche Road and Lamington Avenue.

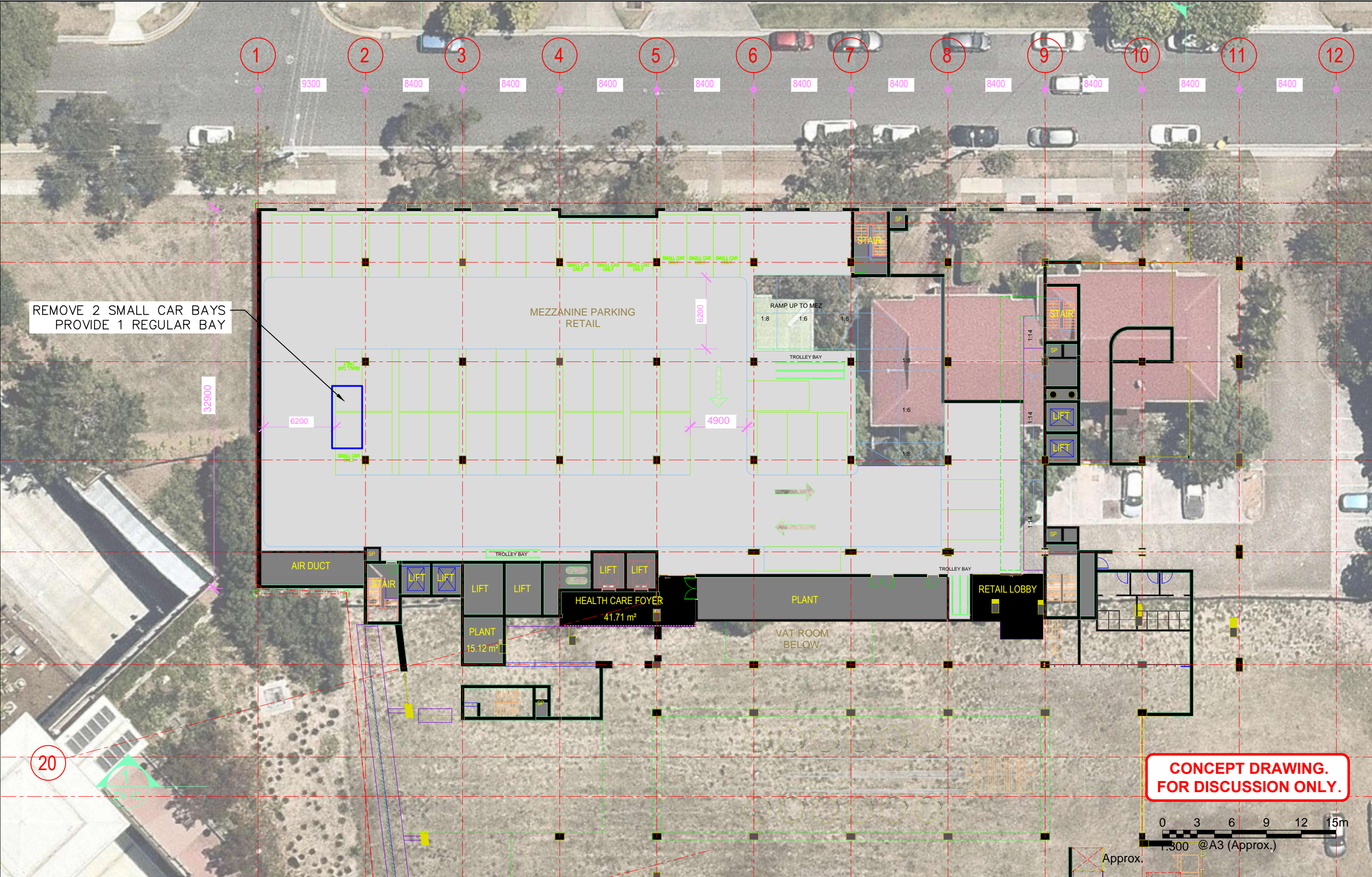
1.2 DEVELOPMENT SNAPSHOT

Site Area	7332 sqm
Total Building Levels	12
Basement Levels	6 Levels
Gross Floor Area	28,952
Total Apartments	134
Car Parking	571
Bicycle Parking	254
Loading Bays	4
Service Bay	2

*Percentages refer to Site Area
*BCC Definition of storey, roof terrace

APPENDIX D

Layout Refinements



CAMBAYconsulting
Traffic Engineering and Transport Planning
Suite 2601, 21 Mary Street Brisbane Q 4000
t : 07 3221 3503 | e : contact@cambray.com.au

DRAWING TITLE
Proposed Mixed Use Development
Commentary
Mezzanine Level

LOCATION
612 Lutwyche Rd
Lutwyche, QLD 4030

REV	DATE	AMENDMENT / ISSUE	DWN	CHK
A				
DISCLAIMER				
This concept takes into account the instructions and requirements of our client. Cambay has taken care in preparing this concept, however it neither accepts liability nor responsibility whatsoever in respect of any use of this document by any third party, any third party whose interests may be affected by any decision made regarding the contents of this document and/or any conclusion drawn resulting from omission or lack of full disclosure by the client or the client's consultants.				

PRELIMINARY NOT FOR CONSTRUCTION		JOB No. // DRAWING No. CON0214-02 SK12	
DATE 19.12.19	~Scale (A3) 1:300	PREPARED FOR Discussion	



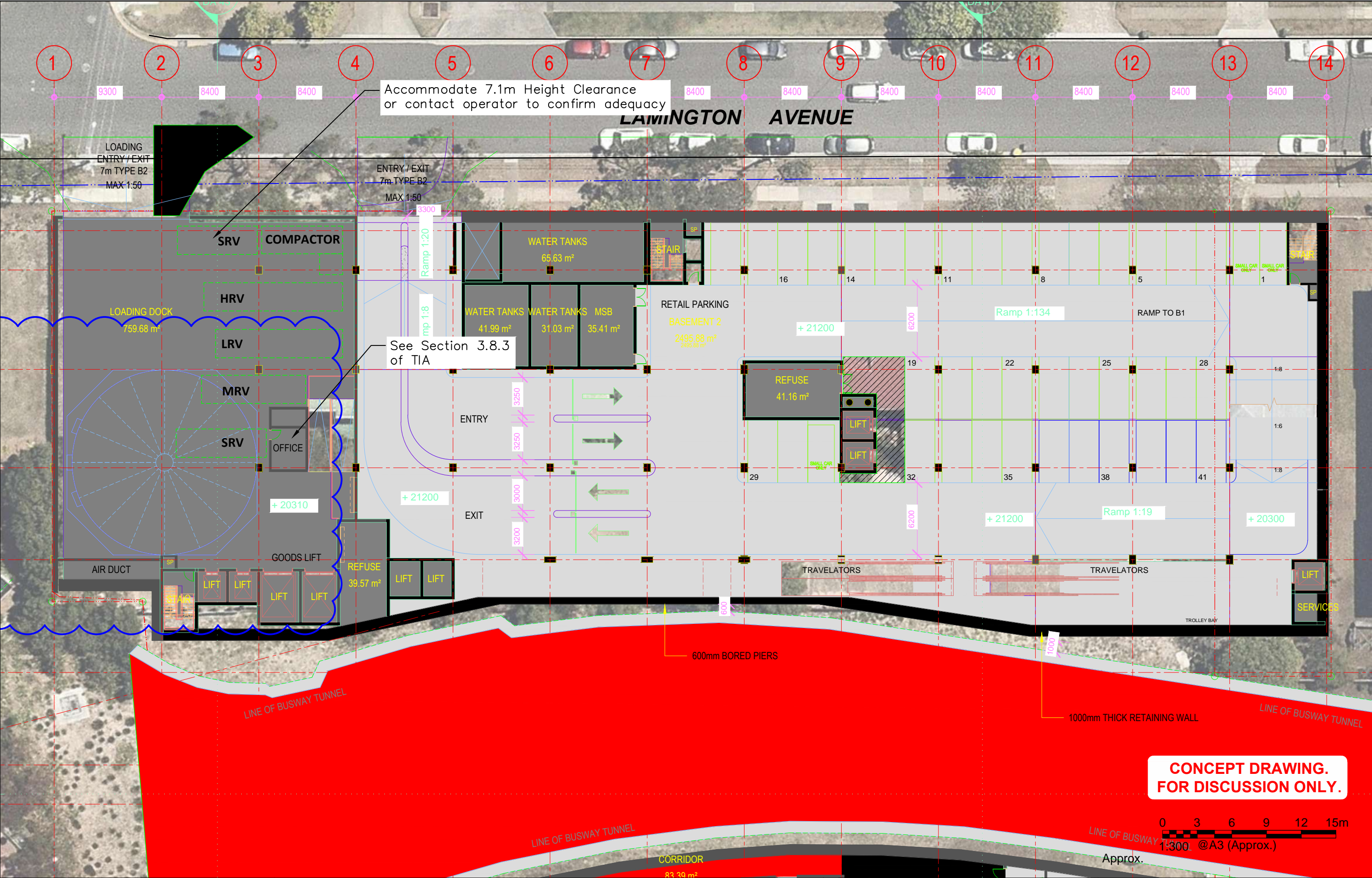
CAMBRAYconsulting
Traffic Engineering and Transport Planning
Suite 2601, 21 Mary Street Brisbane Q 4000
t : 07 3221 3503 | e : contact@cambray.com.au

DRAWING TITLE
Proposed Mixed Use Development
Commentary
Level B1

LOCATION
612 Lutwyche Rd
Lutwyche, QLD 4030

REV	DATE	AMENDMENT / ISSUE	DWN	CHK
A				
DISCLAIMER				
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PRELIMINARY NOT FOR CONSTRUCTION		JOB No. // DRAWING No. CON0214-02 SK14	
DATE 19.12.19	~Scale (A3) 1:300	PREPARED FOR Discussion	



CAMBRAYconsulting
Traffic Engineering and Transport Planning
Suite 2601, 21 Mary Street Brisbane Q 4000
t : 07 3221 3503 | e : contact@cambray.com.au

DRAWING TITLE
Proposed Mixed Use Development
Commentary
Level B2

LOCATION
612 Lutwyche Rd
Lutwyche, QLD 4030

REV	DATE	AMENDMENT / ISSUE	DWN	CHK
A				
DISCLAIMER				
This concept takes into account the instructions and requirements of our client. Cambray has taken care in preparing this concept, however it neither accepts liability nor responsibility whatsoever in respect of; any use of this document by any third party, any third party whose interests may be affected by any decision made regarding the contents of this document and/or any conclusion drawn resulting from omission or lack of full disclosure by the client or the client's consultants.				

PRELIMINARY
NOT FOR CONSTRUCTION

DATE
19.12.19

0 3 6 9 12 15m
1:300 @A3 (Approx.)
Approx.

JOB No. // DRAWING No.
CON0214-02
SK15

PREPARED FOR
Discussion

APPENDIX E

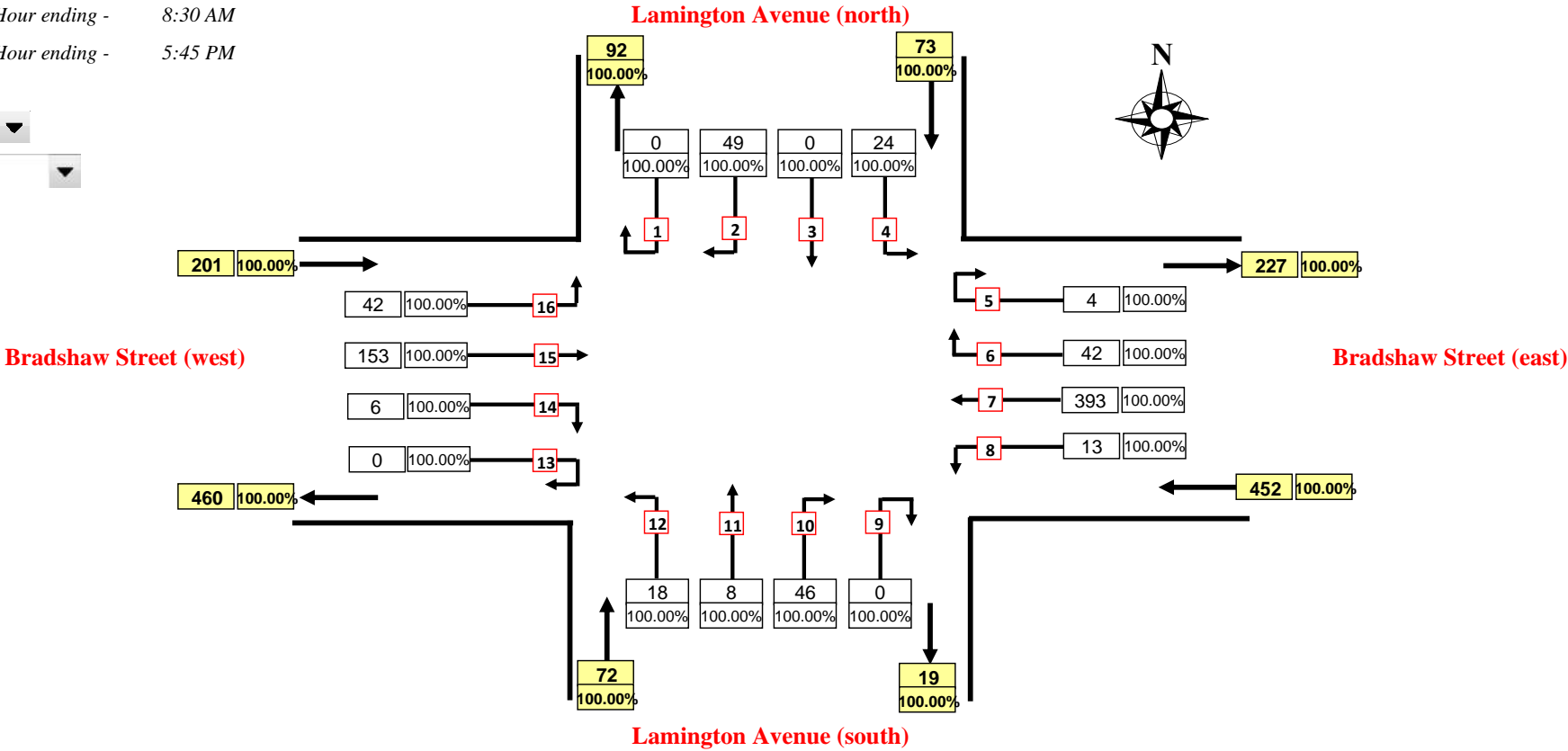
Traffic Data

AUSTRAFFIC VIDEO INTERSECTION COUNT



Site No.: 1 Weather: Fine
Location: Bradshaw Street/Lamington Avenue, Lutwyche
Day/Date: Thursday, 19 November 2015
Summary: AM Peak : Hour ending - 8:30 AM
PM Peak : Hour ending - 5:45 PM

Hour Ending: 5:45 PM
Classification: Total Vehicles

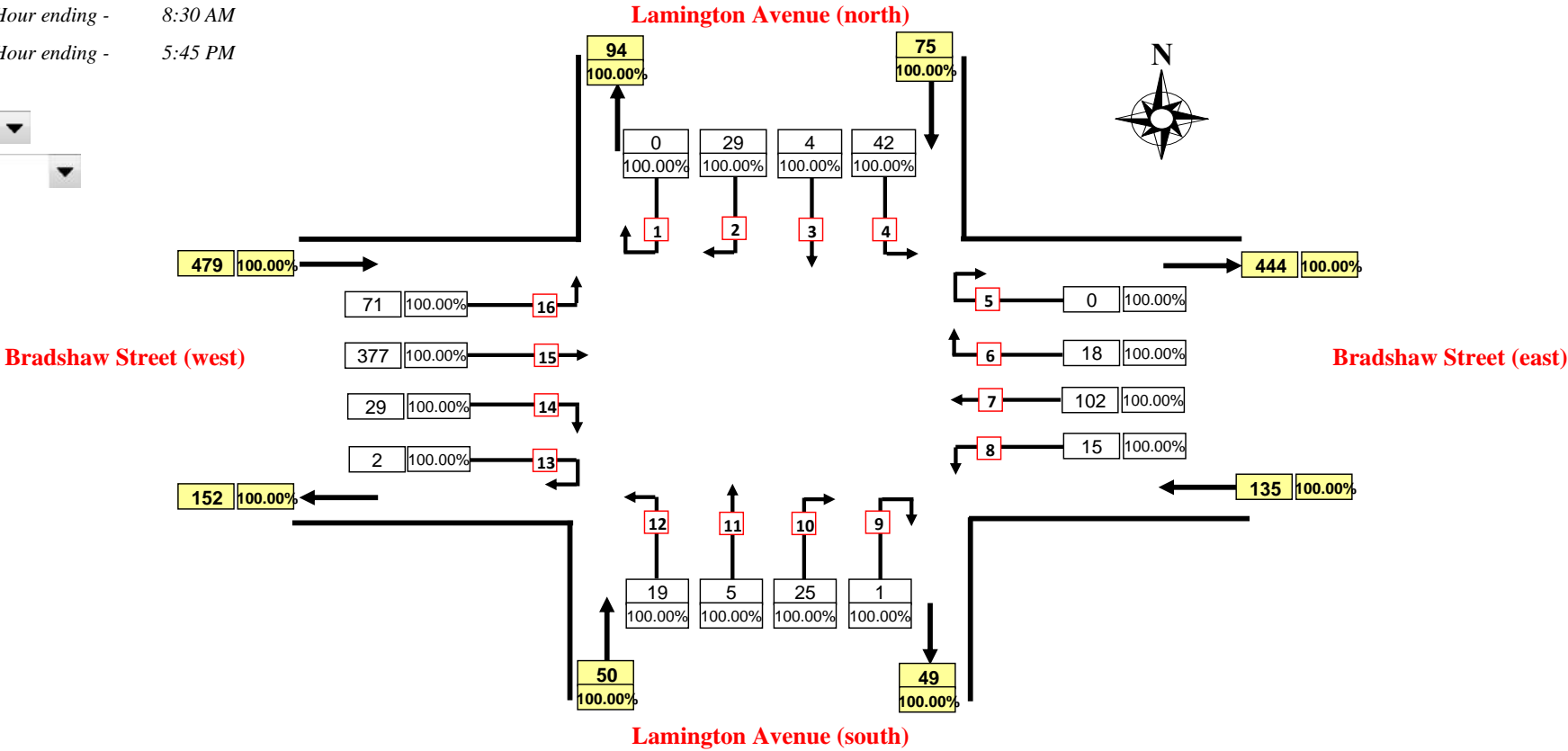


AUSTRAFFIC VIDEO INTERSECTION COUNT



Site No.: 1 Weather: Fine
Location: Bradshaw Street/Lamington Avenue, Lutwyche
Day/Date: Thursday, 19 November 2015
Summary: AM Peak : Hour ending - 8:30 AM
PM Peak : Hour ending - 5:45 PM

Hour Ending: 8:30 AM
Classification: Total Vehicles



B0184 Bradshaw Street Intersection

		AM		PM	
		Volume	Time	Volume	Time
19-10-15	Monday	4082	7:15-8:15	4075	16:40-17:40
20-10-15	Tuesday	4126	7:00-8:00	4114	16:35-17:35
21-10-15	Wednesday	4006	7:05-8:05	3970	15:00-16:00
22-10-15	Thursday	3756	7:50-8:50	3940	14:40-15:40
23-10-15	Friday	3934	7:15-8:15	3969	17:05-18:05
24-10-15	Saturday	3674	10:55-11:55	3733	12:10-13:10
25-10-15	Sunday	3303	10:45-11:45	3447	13:25-14:25
26-10-15	Monday	4055	7:05-8:05	4140	16:40-17:40
27-10-15	Tuesday	4040	7:15-8:15	4067	16:25-17:25
28-10-15	Wednesday	4075	7:10-8:10	4069	17:00-18:00
29-10-15	Thursday	3870	7:35-8:35	4060	16:40-17:40
30-10-15	Friday	4120	6:45-7:45	4007	16:45-17:45
31-10-15	Saturday	3351	9:10-10:10	3779	12:00-13:00
01-11-15	Sunday	3342	10:55-11:55	3367	16:05-17:05
02-11-15	Monday	4181	7:05-8:05	4128	17:00-18:00
03-11-15	Tuesday	4180	7:05-8:05	4123	16:40-17:40
04-11-15	Wednesday	4073	6:50-7:50	4158	16:15-17:15

Tuesday

03-Nov																	
Sensor		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

AM	7:15 Approach	1	34	132	153	94	260	244	1	57	38	0	0	0	0	0	0	1013
	7:30 Approach	1	24	166	174	74	250	243	1	69	41	0	0	0	0	0	0	1042
	7:45 Approach	1	39	157	178	95	247	232	6	69	48	0	0	0	0	0	0	1071
	8:00 Approach	1	28	154	166	93	237	230	2	69	48	0	0	0	0	0	0	1027
	Total		125	609	671	356	994	949	10	264	175	0	0	0	0	0	0	4153
PM	16:45 Approach	1	95	229	284	38	167	126	9	28	16	0	0	0	0	0	0	992
	17:00 Approach	1	119	235	283	32	169	141	4	30	13	0	0	0	0	0	0	1026
	17:15 Approach	1	99	248	266	27	148	121	6	33	15	0	0	0	0	0	0	963
	17:30 Approach	1	128	246	297	31	178	150	4	27	16	0	0	0	0	0	0	1077
	Total		441	958	1130	128	662	538	23	118	60	0	0	0	0	0	0	4058

Percentage Turning		AM	PM								IN/OUT % (Assume Residential)			
Into Bradshaw Street			100%								AM	25%	75%	100%
North onto Lutwyche Rd			10%	10%							PM	67%	33%	100%

Tuesday		03-Nov																
Approach 1		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
AM																		
	7:15 Approach	1	140	239	243	30	113	135	6	7	8	1	5	11	0	0	0	938
	7:30 Approach	1	133	197	215	38	140	148	4	17	6	5	4	15	0	0	0	922
	7:45 Approach	1	139	217	225	35	145	151	8	17	4	5	11	14	0	0	0	971
	8:00 Approach	1	126	205	208	37	138	148	2	14	7	8	8	16	0	0	0	917
	Total		538	858	891	140	536	582	20	55	25	19	28	56	0	0	0	3748
PM																		
	16:45 Approach	1	65	151	129	87	199	217	5	18	8	11	5	9	0	0	0	904
	17:00 Approach	1	47	157	139	76	213	224	5	14	7	7	4	5	0	0	0	898
	17:15 Approach	1	50	123	124	87	204	195	12	20	3	10	11	9	0	0	0	848
	17:30 Approach	1	44	162	152	90	211	223	9	29	11	9	8	11	0	0	0	959
	Total		206	593	544	340	827	859	31	81	29	37	28	34	0	0	0	3609

Into Norman Avenue	10%
Into Norman Street	10%
Norman Ave to Norman St	10%
Norman St to Norman Ave	10%


IN/OUT % (Assume Residential)		
IN	OUT	TOTAL
25%	75%	100%
67%	33%	100%

						(28)	28	L									
						(3)	6	T									
						(31)	50	R									
Norman Avenue									(31)	(1,322)	(21)						
						L	T	R	20	2,233	54	Norman Street					
						14	1,244	55	R	17	(33)						
						(34)	(1,992)	(81)	T	2	(4)						
									L	25	(29)						
In	AM	36	30%	(69)	53%							In	AM	114	72%	(105)	61%
Out		84	70%	(62)	47%							Out		44	28%	(66)	39%
Total		120		(131)								Total		158		(171)	
						Lutwyche Road											
	AM	SUM	TARGET														
	PM	3,748	3748														
		(3,609)	3609														

APPENDIX F

Turning Volumes

Legend					
00	AM Peak (7:00 - 8:00)	L	Left Turn Movement	R	Right Turn Movement
(00)	PM Peak (16:30 - 17:30)	T	Through Movement	U	U-Turn Movement



CAMBRAY consulting

Traffic Engineering and Transport Planning

Figure No	Figure Name:	Anticipated Year of Completion	Job Name:	Lamington Markets
3	Job Number:	CON0214-02	Date:	19/12/2019
	Prepared by:	Simon Nitkiewicz	Reviewed By:	Simon Nitkiewicz

Legend

00

AM Peak (7:00 - 8:00)

L

Left Turn Movement

R

Right Turn Movement

00


PM Peak (16:30 - 17:30)

T

Through Movement

U


U-Turn Movement



<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Norman Avenue</p> <p>(40) 40 T (15) 15 R</p> <p>L R 15 30 (15) (30)</p> </div> <div style="width: 45%;"> <p>Norman Avenue</p> <p>(28) 28 L (3) 6 T (31) 50 R</p> <p>L T R 14 1,321 55 (34) (2,115) (81)</p> </div> </div>									
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Lutwyche Road</p> <p>(31) (1,404) (21) 20 2,371 54</p> <p>R T L</p> <p>R 17 (33) T 2 (4) L 25 (29)</p> </div> <div style="width: 45%;"> <p>Norman Street</p> </div> </div>									
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Lutwyche Road</p> <p>(73) (0) 75 0 T L</p> <p>(0) 0 T R</p> <p>T R 94 0 (92) (0)</p> </div> <div style="width: 45%;"> <p>Proposed Laneway</p> <p>L T 0 1,387 (0) (2,230)</p> </div> </div>									
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Lamington Avenue</p> <p>(73) (0) 75 0 T L</p> <p>R 0 (0) L 0 (0)</p> <p>T R 94 0 (92) (0)</p> </div> <div style="width: 45%;"> <p>Car Park</p> </div> </div>									
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Lamington Avenue</p> <p>(42) 71 L (153) 377 T (6) 29 R</p> <p>L T R 19 5 25 (18) (8) (46)</p> </div> <div style="width: 45%;"> <p>Bradshaw Street</p> <p>(49) (0) (24) 29 4 42 R T L</p> <p>R 18 (42) T 102 (393) L 15 (13)</p> </div> </div>									
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Lucas Street</p> </div> <div style="width: 45%;"> <p>Bradshaw Street</p> <p>(12) 26 L (166) 416 R</p> <p>L T 125 1,359 (441) (2,217)</p> </div> </div>									
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>Lutwyche Road</p> <p>(0) (23) (1,410) 0 10 2,441 U R T</p> </div> <div style="width: 45%;"> <p>Lutwyche Road</p> </div> </div>									

Figure No	Figure Name:	2031 Anticipated Design Horizon	Job Name:	Lamington Markets
4	Job Number:	CON0214-02	Date:	19/12/2019
	Prepared by:	Simon Nitkiewicz	Reviewed By:	Simon Nitkiewicz

Legend					
00	AM Peak (7:00 - 8:00)	L	Left Turn Movement	R	Right Turn Movement
00	PM Peak (16:30 - 17:30)	T	Through Movement	U	U-Turn Movement



CAMBRAY consulting
Traffic Engineering and Transport Planning

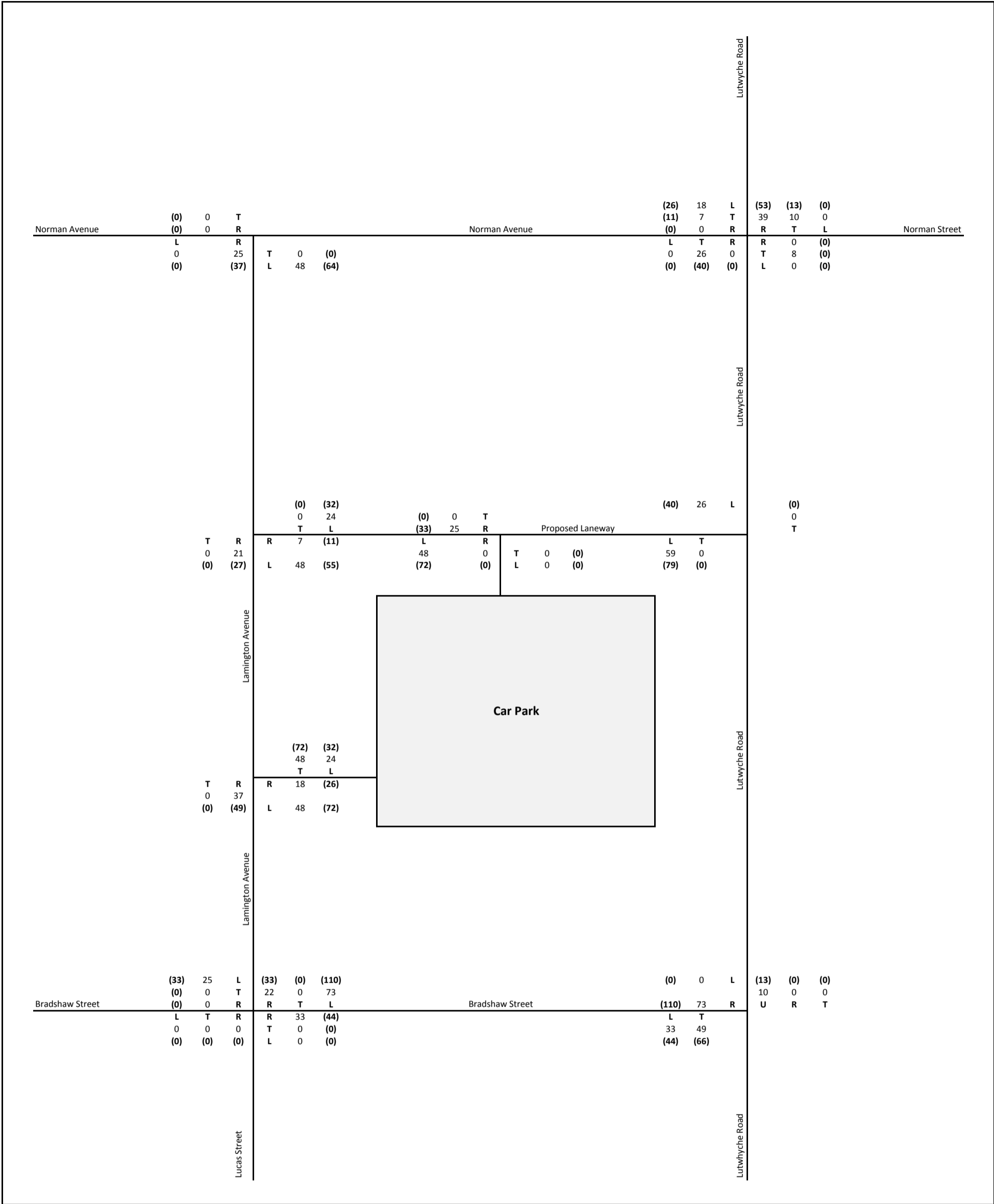



Figure No	Figure Name:	New Development Trips	Job Name:	Lamington Markets
5	Job Number:	CON0214-02	Date:	19/12/2019
	Prepared by:	Simon Nitkiewicz	Reviewed By:	Simon Nitkiewicz

Legend						
00	AM Peak (7:00 - 8:00)	L	Left Turn Movement	R	Right Turn Movement	
(00)	PM Peak (16:30 - 17:30)	T	Through Movement	U	U-Turn Movement	

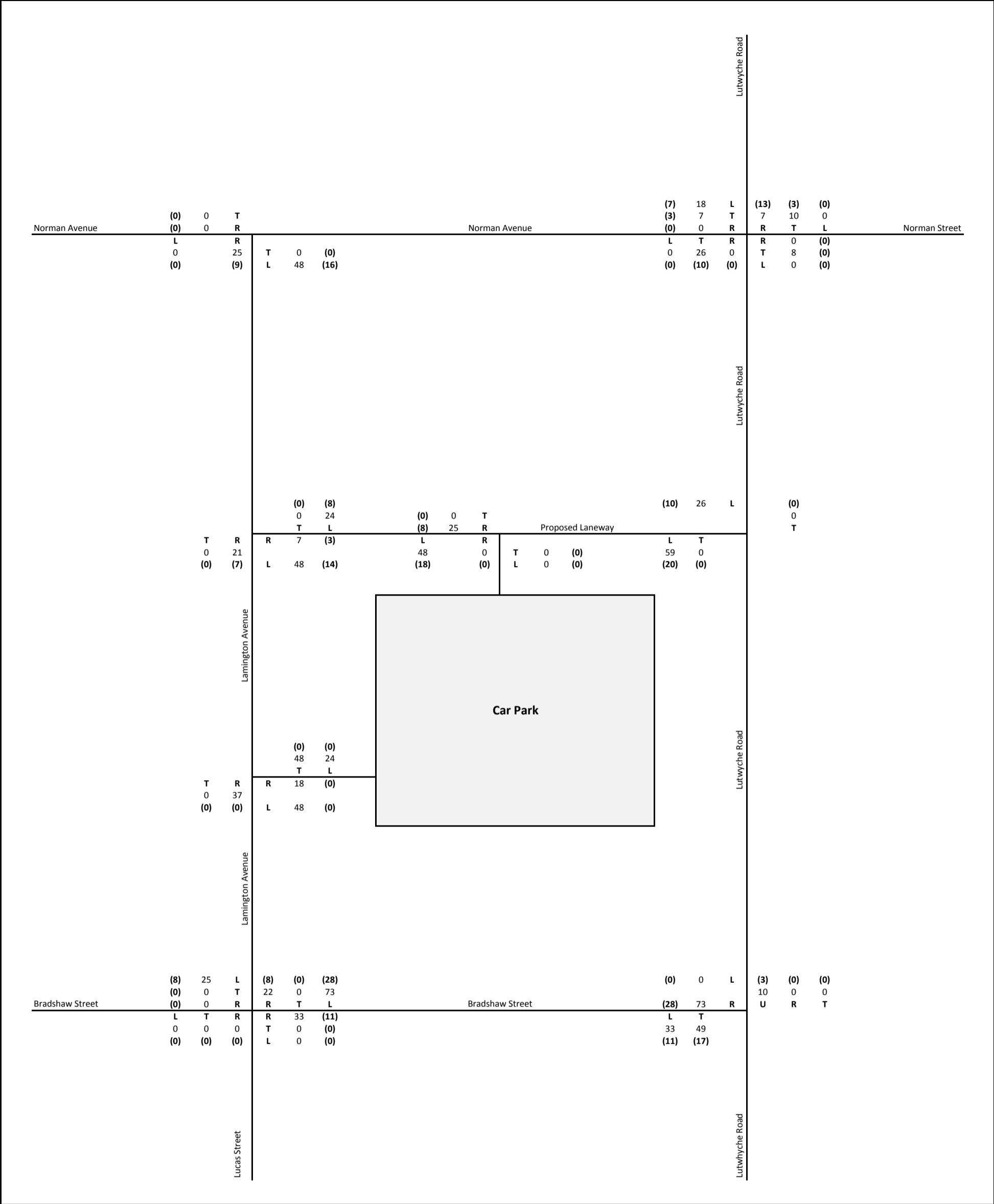


Figure No	Figure Name:	Diverted Development Trips	Job Name:	Lamington Markets
6	Job Number:	CON0214-02	Date:	19/12/2019
	Prepared by:	Simon Nitkiewicz	Reviewed By:	Simon Nitkiewicz

Legend					
00	AM Peak (7:00 - 8:00)	L	Left Turn Movement	R	Right Turn Movement
(00)	PM Peak (16:30 - 17:30)	T	Through Movement	U	U-Turn Movement



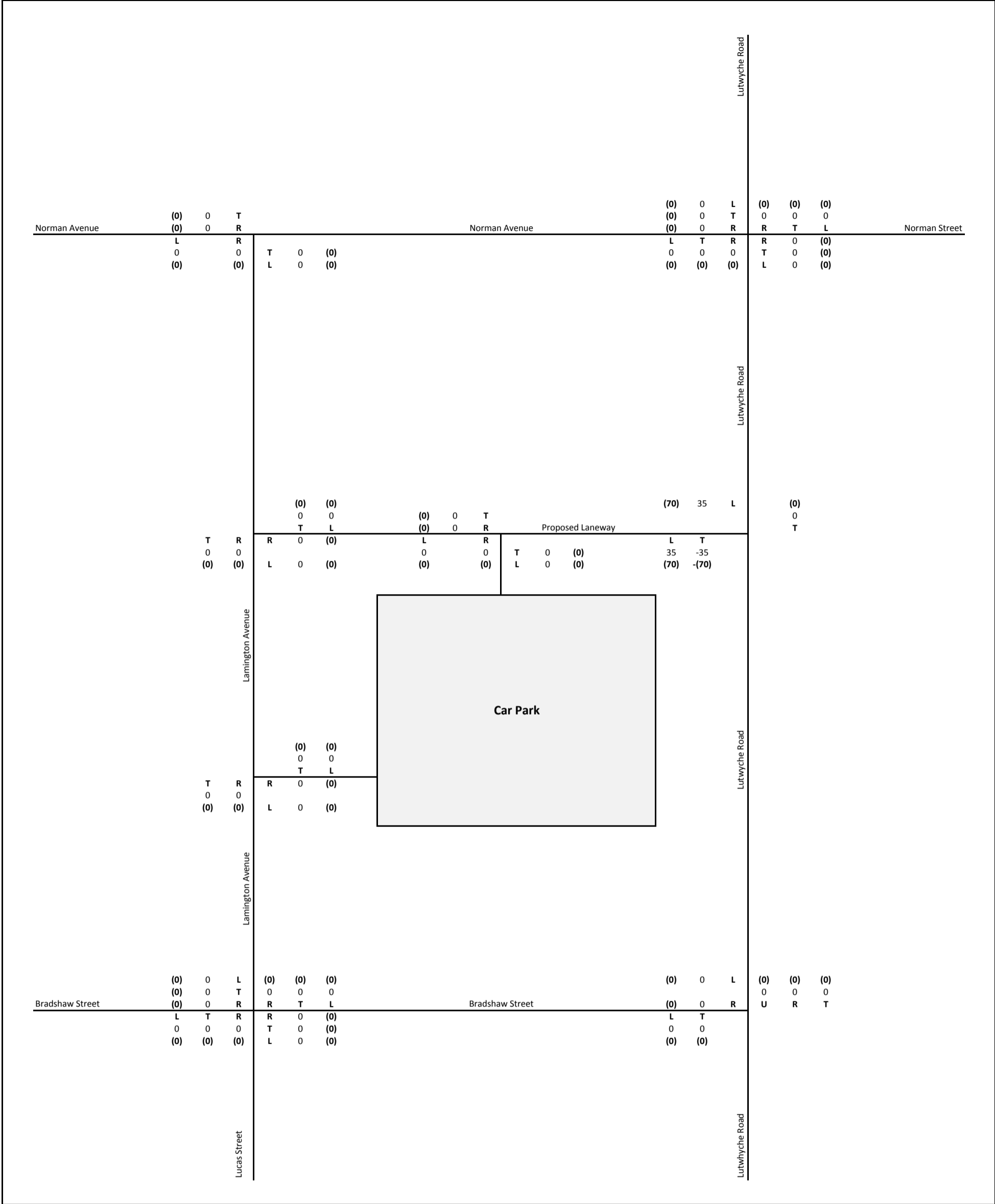



Figure No	Figure Name:	Undiverted Development Trips				Job Name:		Lamington Markets				
7	Job Number:	CON0214-02				Date:		19/12/2019				
	Prepared by:	Simon Nitkiewicz				Reviewed By:		Simon Nitkiewicz				
Legend												
00	AM Peak (7:00 - 8:00)		L	Left Turn Movement						R	Right Turn Movement	
(00)	PM Peak (16:30 - 17:30)		T	Through Movement						U	U-Turn Movement	

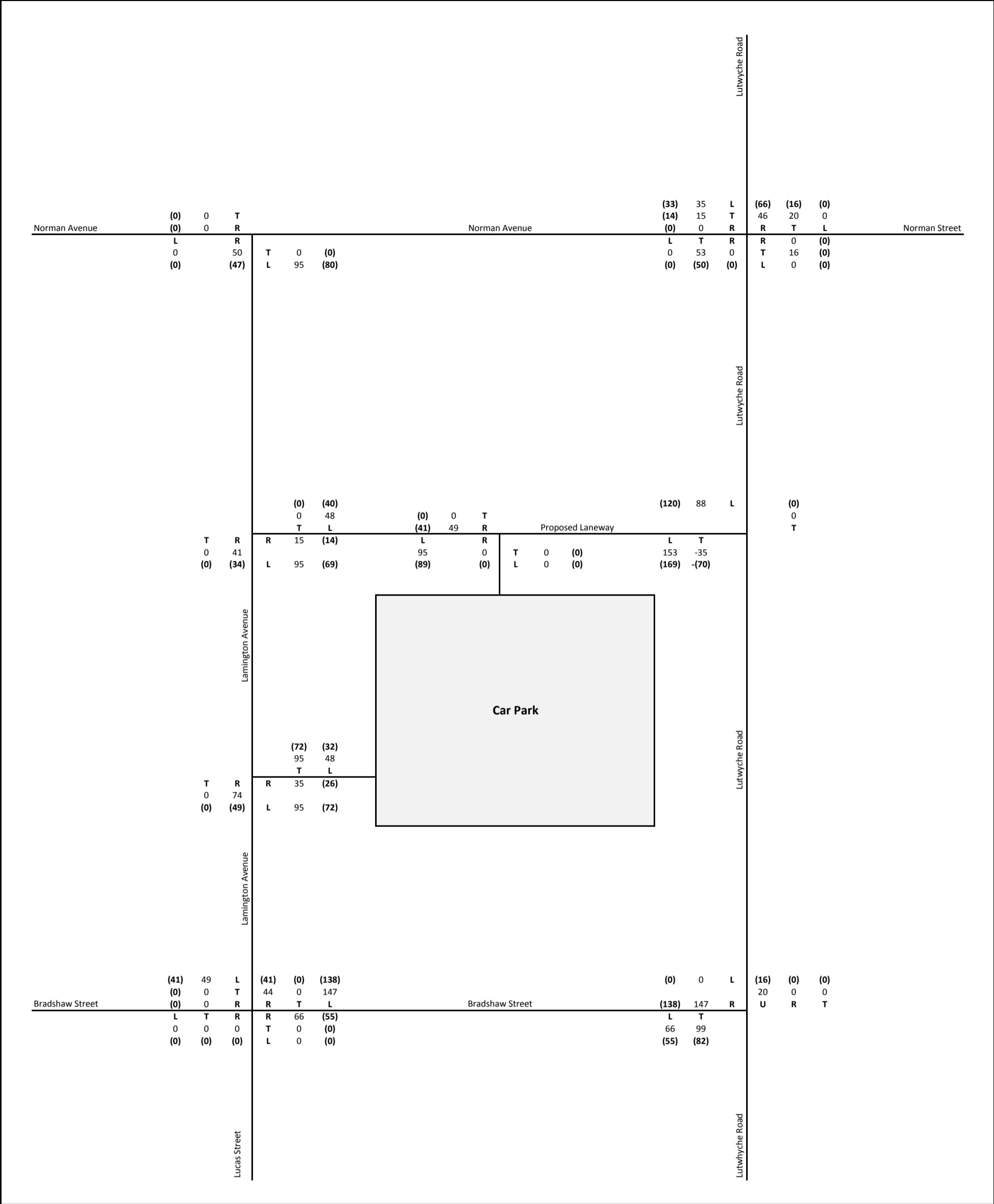


Figure No	Figure Name:	Total Development Trips	Job Name:	Lamington Markets
8	Job Number:	CON0214-02	Date:	19/12/2019
	Prepared by:	Simon Nitkiewicz	Reviewed By:	Simon Nitkiewicz

Legend					
00	AM Peak (7:00 - 8:00)	L	Left Turn Movement	R	Right Turn Movement
(00)	PM Peak (16:30 - 17:30)	T	Through Movement	U	U-Turn Movement



APPENDIX G

SIDRA Output Data

SITE LAYOUT

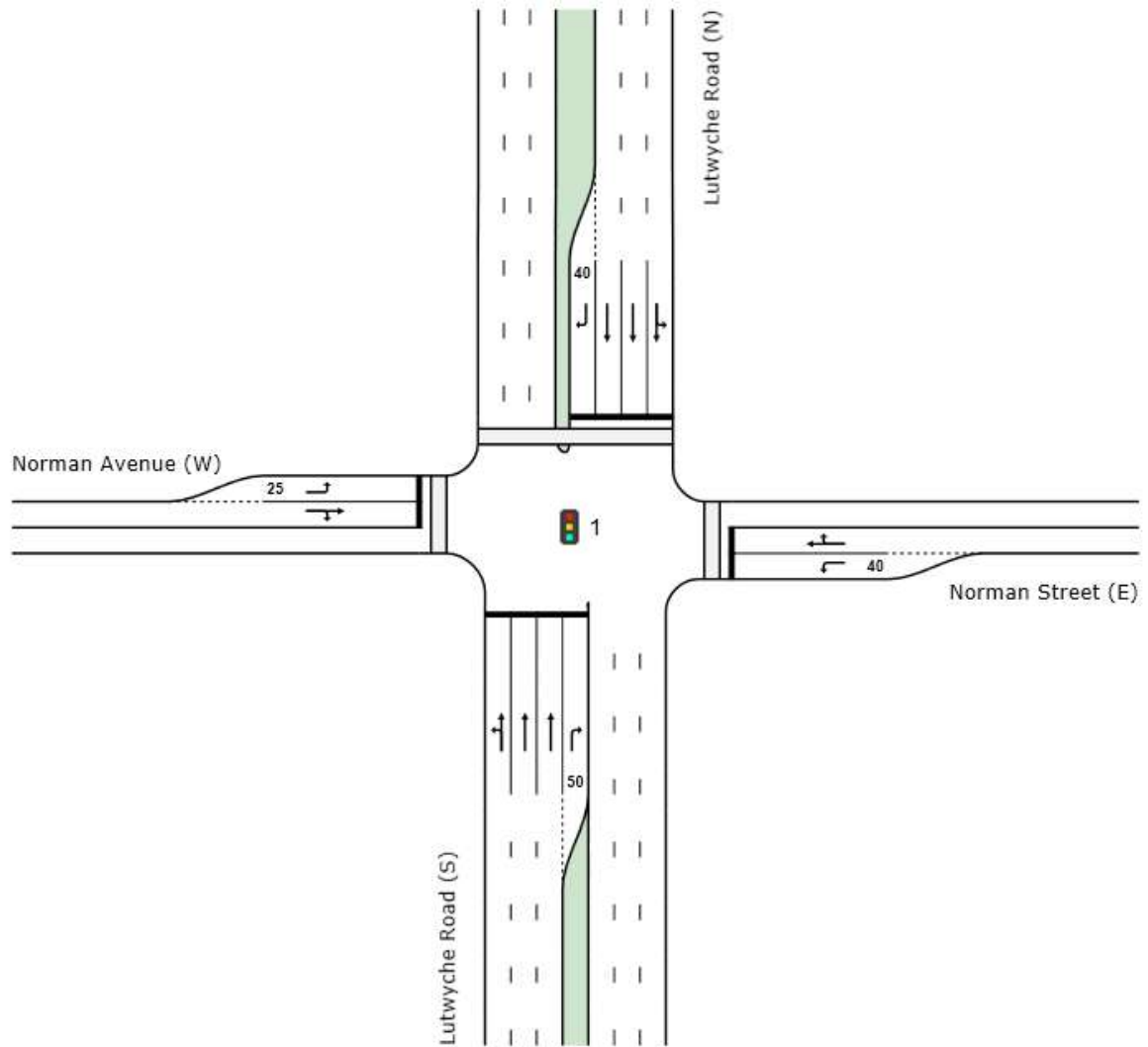


Site: 1 [2021 AM BG]

Intersection 1 - Lutwyche Road/Norman Ave

Site Category: (None)

Signals - Fixed Time Isolated



PHASING SUMMARY

 **Site: 1 [2021 AM BG]**

Intersection 1 - Lutwyche Road/Norman Ave
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Site User-Given Cycle Time)

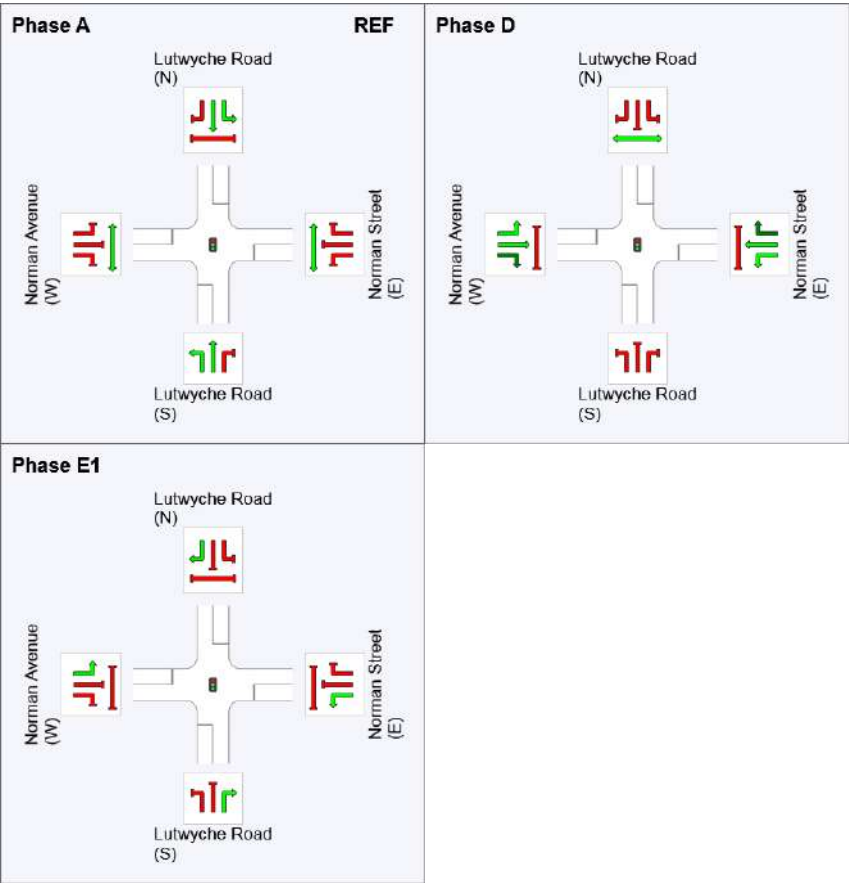
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, D, E1
Output Phase Sequence: A, D, E1

Phase Timing Summary

Phase	A	D	E1
Phase Change Time (sec)	0	110	136
Green Time (sec)	104	20	8
Phase Time (sec)	110	26	14
Phase Split	73 %	17 %	9 %

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



LANE SUMMARY



Site: 1 [2021 AM BG]

Intersection 1 - Lutwyche Road/Norman Ave

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 150 seconds (Site User-Given Cycle Time)

Lane Use and Performance

	Demand Flows		Cap.	Deg. Satn	Lane Util.	Average Delay	Level of Service	95% Back of Queue Veh	Queue Dist	Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	Total veh/h	HV %	veh/h	v/c	%	sec			m		m	%	%
South: Lutwyche Road (S)													
Lane 1	457	5.0	1307	0.350	100	9.9	LOS A	13.2	96.2	Full	290	0.0	0.0
Lane 2	458	5.0	1309	0.350	100	9.7	LOS A	13.2	96.4	Full	290	0.0	0.0
Lane 3	421	5.0	1205 ¹	0.350	100	9.5	LOS A	11.8	86.4	Full	290	0.0	0.0
Lane 4	58	5.0	96	0.605	100	85.3	LOS F	4.4	32.3	Short	50	0.0	NA
Approach	1395	5.0		0.605		12.9	LOS B	13.2	96.4				
East: Norman Street (E)													
Lane 1	26	5.0	406	0.065	100	54.0	LOS D	1.5	10.9	Short	40	0.0	NA
Lane 2	20	5.0	187	0.107	100	67.6	LOS E	1.3	9.5	Full	370	0.0	0.0
Approach	46	5.0		0.107		59.9	LOS E	1.5	10.9				
North: Lutwyche Road (N)													
Lane 1	815	5.0	1305	0.625	100	13.5	LOS B	31.5	229.7	Full	270	0.0	0.0
Lane 2	818	5.0	1309	0.625	100	13.1	LOS B	31.6	230.5	Full	270	0.0	0.0
Lane 3	798	5.0	1278 ¹	0.625	100	12.8	LOS B	30.2	220.8	Full	270	0.0	0.0
Lane 4	21	5.0	96	0.220	100	82.4	LOS F	1.5	11.3	Short	40	0.0	NA
Approach	2452	5.0		0.625		13.7	LOS B	31.6	230.5				
West: Norman Avenue (W)													
Lane 1	29	5.0	406	0.073	100	54.1	LOS D	1.7	12.2	Short	25	0.0	NA
Lane 2	59	5.0	190	0.311	100	69.9	LOS E	4.0	29.2	Full	340	0.0	0.0
Approach	88	5.0		0.311		64.6	LOS E	4.0	29.2				
Intersection	3981	5.0		0.625		15.1	LOS B	31.6	230.5				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

PHASING SUMMARY

 **Site: 1 [2021 AM BG + Dev]**

Intersection 1 - Lutwyche Road/Norman Ave
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Site User-Given Cycle Time)

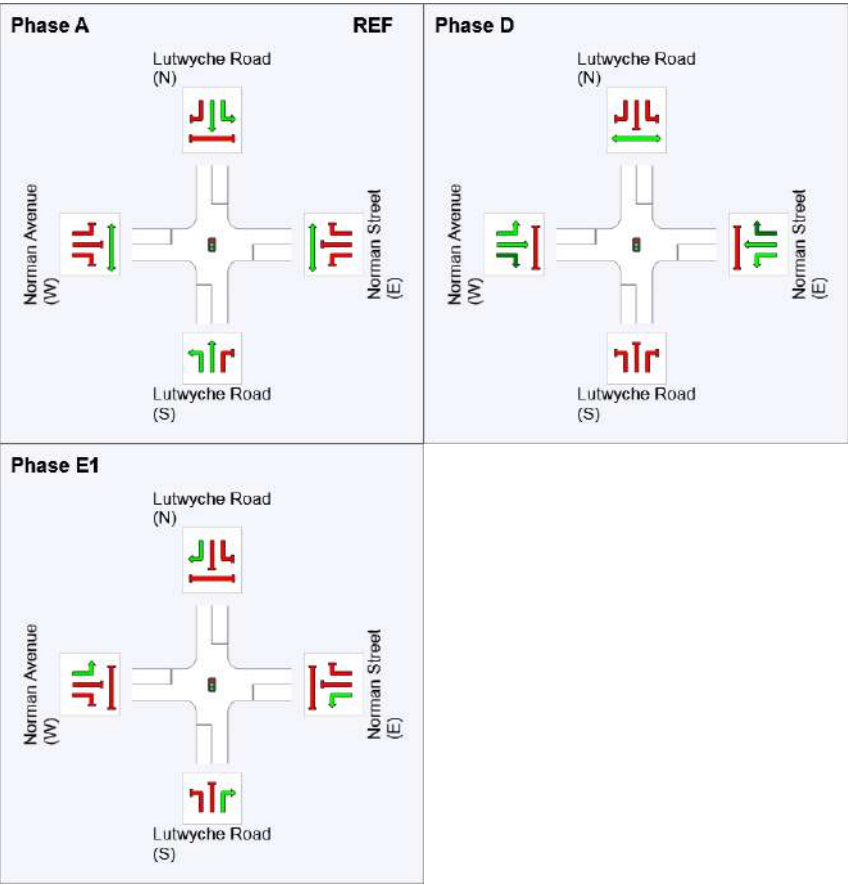
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, D, E1
Output Phase Sequence: A, D, E1

Phase Timing Summary

Phase	A	D	E1
Phase Change Time (sec)	0	109	135
Green Time (sec)	103	20	9
Phase Time (sec)	109	26	15
Phase Split	73 %	17 %	10 %

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



LANE SUMMARY



Site: 1 [2021 AM BG + Dev]

Intersection 1 - Lutwyche Road/Norman Ave

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 150 seconds (Site User-Given Cycle Time)

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back Veh	Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Lutwyche Road (S)													
Lane 1	481	5.0	1295	0.372	100	10.5	LOS B	14.4	105.2	Full	290	0.0	0.0
Lane 2	482	5.0	1297	0.372	100	10.4	LOS B	14.4	105.4	Full	290	0.0	0.0
Lane 3	430	5.0	1156 ¹	0.372	100	10.0	LOS A	12.4	90.6	Full	290	0.0	0.0
Lane 4	58	5.0	108	0.538	100	83.3	LOS F	4.3	31.7	Short	50	0.0	NA
Approach	1451	5.0		0.538		13.2	LOS B	14.4	105.4				
East: Norman Street (E)													
Lane 1	26	5.0	418	0.063	100	53.1	LOS D	1.5	10.8	Short	40	0.0	NA
Lane 2	37	5.0	186	0.198	100	68.1	LOS E	2.5	18.1	Full	370	0.0	0.0
Approach	63	5.0		0.198		61.9	LOS E	2.5	18.1				
North: Lutwyche Road (N)													
Lane 1	837	5.0	1292	0.648	100	14.3	LOS B	33.7	246.2	Full	270	0.0	0.0
Lane 2	840	5.0	1297	0.648	100	13.9	LOS B	33.8	247.1	Full	270	0.0	0.0
Lane 3	775	5.0	1196 ¹	0.648	100	13.1	LOS B	29.4	214.5	Full	270	0.0	0.0
Lane 4	69	5.0	108	0.646	100	84.6	LOS F	5.3	38.6	Short	40	0.0	NA
Approach	2521	5.0		0.648		15.7	LOS B	33.8	247.1				
West: Norman Avenue (W)													
Lane 1	66	5.0	418	0.158	100	54.5	LOS D	3.8	28.0	Short	25	0.0	NA
Lane 2	75	5.0	183	0.409	100	71.6	LOS E	5.2	38.0	Full	340	0.0	0.0
Approach	141	5.0		0.409		63.6	LOS E	5.2	38.0				
Intersection	4176	5.0		0.648		17.2	LOS B	33.8	247.1				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

PHASING SUMMARY

 **Site: 1 [2031 AM BG]**

Intersection 1 - Lutwyche Road/Norman Ave
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Site User-Given Cycle Time)

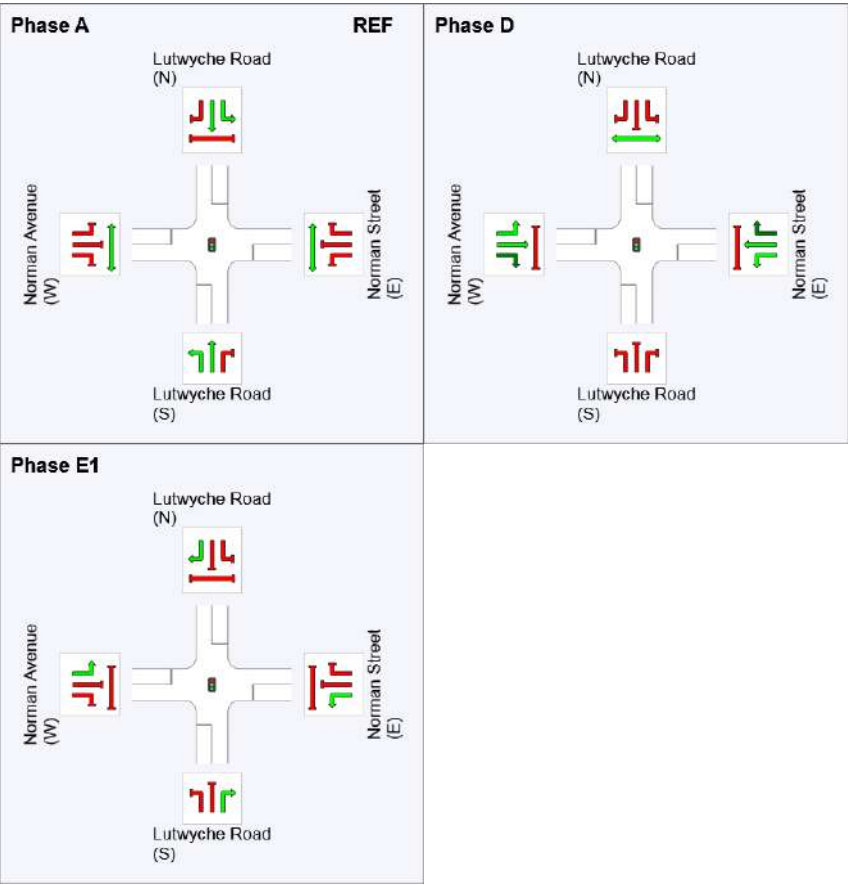
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, D, E1
Output Phase Sequence: A, D, E1

Phase Timing Summary

Phase	A	D	E1
Phase Change Time (sec)	0	110	136
Green Time (sec)	104	20	8
Phase Time (sec)	110	26	14
Phase Split	73 %	17 %	9 %

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



LANE SUMMARY



Site: 1 [2031 AM BG]

Intersection 1 - Lutwyche Road/Norman Ave

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 150 seconds (Site User-Given Cycle Time)

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Lutwyche Road (S)													
Lane 1	485	5.0	1307	0.371	100	10.1	LOS B	14.3	104.2	Full	290	0.0	0.0
Lane 2	486	5.0	1309	0.371	100	9.9	LOS A	14.3	104.4	Full	290	0.0	0.0
Lane 3	434	5.0	1168 ¹	0.371	100	9.6	LOS A	12.3	89.7	Full	290	0.0	0.0
Lane 4	58	5.0	96	0.605	100	85.3	LOS F	4.4	32.3	Short	50	0.0	NA
Approach	1463	5.0		0.605		12.9	LOS B	14.3	104.4				
East: Norman Street (E)													
Lane 1	26	5.0	406	0.065	100	54.0	LOS D	1.5	10.9	Short	40	0.0	NA
Lane 2	20	5.0	187	0.107	100	67.6	LOS E	1.3	9.5	Full	370	0.0	0.0
Approach	46	5.0		0.107		59.9	LOS E	1.5	10.9				
North: Lutwyche Road (N)													
Lane 1	855	5.0	1305	0.656	100	14.0	LOS B	34.3	250.7	Full	270	0.0	0.0
Lane 2	859	5.0	1309	0.656	100	13.6	LOS B	34.5	251.6	Full	270	0.0	0.0
Lane 3	839	5.0	1279 ¹	0.656	100	13.3	LOS B	33.0	241.1	Full	270	0.0	0.0
Lane 4	21	5.0	96	0.220	100	82.4	LOS F	1.5	11.3	Short	40	0.0	NA
Approach	2574	5.0		0.656		14.2	LOS B	34.5	251.6				
West: Norman Avenue (W)													
Lane 1	29	5.0	406	0.073	100	54.1	LOS D	1.7	12.2	Short	25	0.0	NA
Lane 2	59	5.0	190	0.311	100	69.9	LOS E	4.0	29.2	Full	340	0.0	0.0
Approach	88	5.0		0.311		64.6	LOS E	4.0	29.2				
Intersection	4172	5.0		0.656		15.3	LOS B	34.5	251.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

PHASING SUMMARY

 **Site: 1 [2031 AM BG + Dev]**

Intersection 1 - Lutwyche Road/Norman Ave
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Site User-Given Cycle Time)

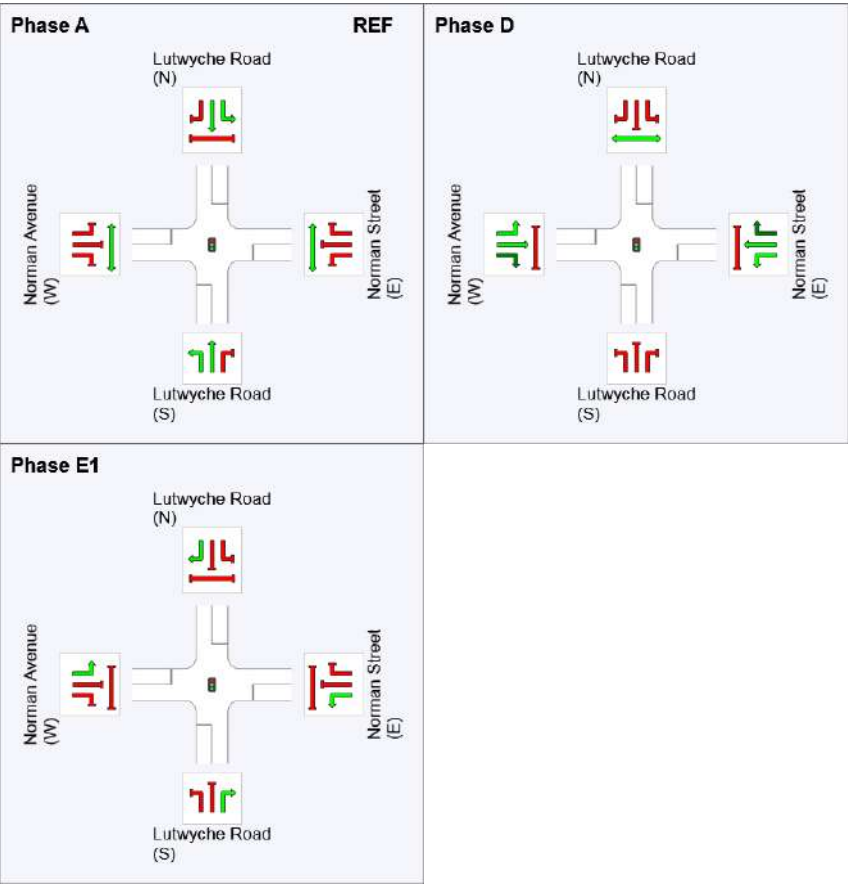
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, D, E1
Output Phase Sequence: A, D, E1

Phase Timing Summary

Phase	A	D	E1
Phase Change Time (sec)	0	109	135
Green Time (sec)	103	20	9
Phase Time (sec)	109	26	15
Phase Split	73 %	17 %	10 %

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



LANE SUMMARY



Site: 1 [2031 AM BG + Dev]

Intersection 1 - Lutwyche Road/Norman Ave

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 150 seconds (Site User-Given Cycle Time)

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Lutwyche Road (S)													
Lane 1	504	5.0	1295	0.389	100	10.7	LOS B	15.4	112.1	Full	290	0.0	0.0
Lane 2	505	5.0	1297	0.389	100	10.5	LOS B	15.4	112.2	Full	290	0.0	0.0
Lane 3	452	5.0	1162 ¹	0.389	100	10.1	LOS B	13.3	96.9	Full	290	0.0	0.0
Lane 4	58	5.0	108	0.538	100	83.3	LOS F	4.3	31.7	Short	50	0.0	NA
Approach	1519	5.0		0.538		13.2	LOS B	15.4	112.2				
East: Norman Street (E)													
Lane 1	26	5.0	418	0.063	100	53.1	LOS D	1.5	10.8	Short	40	0.0	NA
Lane 2	37	5.0	186	0.198	100	68.1	LOS E	2.5	18.1	Full	370	0.0	0.0
Approach	63	5.0		0.198		61.9	LOS E	2.5	18.1				
North: Lutwyche Road (N)													
Lane 1	877	5.0	1292	0.679	100	14.9	LOS B	36.8	268.5	Full	270	0.0	4.5
Lane 2	880	5.0	1297	0.679	100	14.5	LOS B	36.9	269.4	Full	270	0.0	4.8
Lane 3	815	5.0	1201 ¹	0.679	100	13.6	LOS B	32.1	234.2	Full	270	0.0	0.0
Lane 4	69	5.0	108	0.646	100	84.6	LOS F	5.3	38.6	Short	40	0.0	NA
Approach	2642	5.0		0.679		16.2	LOS B	36.9	269.4				
West: Norman Avenue (W)													
Lane 1	66	5.0	418	0.158	100	54.5	LOS D	3.8	28.0	Short	25	0.0	NA
Lane 2	75	5.0	183	0.409	100	71.6	LOS E	5.2	38.0	Full	340	0.0	0.0
Approach	141	5.0		0.409		63.6	LOS E	5.2	38.0				
Intersection	4365	5.0		0.679		17.3	LOS B	36.9	269.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

PHASING SUMMARY

 **Site: 1 [2021 PM BG]**

Intersection 1 - Lutwyche Road/Norman Ave
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Site User-Given Cycle Time)

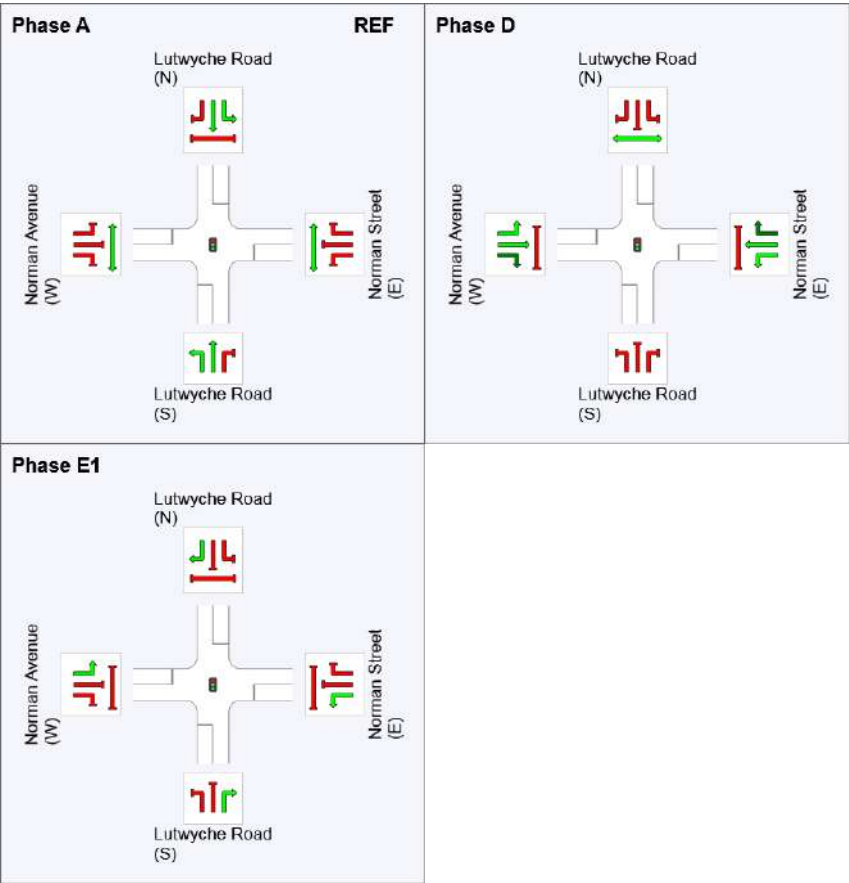
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, D, E1
Output Phase Sequence: A, D, E1

Phase Timing Summary

Phase	A	D	E1
Phase Change Time (sec)	0	106	132
Green Time (sec)	100	20	12
Phase Time (sec)	106	26	18
Phase Split	71 %	17 %	12 %

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



LANE SUMMARY



Site: 1 [2021 PM BG]

Intersection 1 - Lutwyche Road/Norman Ave

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 150 seconds (Site User-Given Cycle Time)

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back Veh	Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Lutwyche Road (S)													
Lane 1	742	5.0	1256	0.591	100	14.7	LOS B	29.2	212.9	Full	290	0.0	0.0
Lane 2	744	5.0	1259	0.591	100	14.4	LOS B	29.2	213.4	Full	290	0.0	0.0
Lane 3	667	5.0	1129 ¹	0.591	100	13.5	LOS B	24.6	179.3	Full	290	0.0	0.0
Lane 4	85	5.0	143	0.594	100	80.5	LOS F	6.3	45.9	Short	50	0.0	NA
Approach	2239	5.0		0.594		16.8	LOS B	29.2	213.4				
East: Norman Street (E)													
Lane 1	31	5.0	454	0.067	100	50.7	LOS D	1.7	12.2	Short	40	0.0	NA
Lane 2	39	5.0	188	0.207	100	68.7	LOS E	2.6	19.0	Full	370	0.0	0.0
Approach	69	5.0		0.207		60.8	LOS E	2.6	19.0				
North: Lutwyche Road (N)													
Lane 1	485	5.0	1256	0.386	100	12.0	LOS B	15.5	113.3	Full	270	0.0	0.0
Lane 2	486	5.0	1259	0.386	100	11.8	LOS B	15.6	113.6	Full	270	0.0	0.0
Lane 3	456	5.0	1180 ¹	0.386	100	11.5	LOS B	14.3	104.2	Full	270	0.0	0.0
Lane 4	33	5.0	143	0.227	100	77.4	LOS E	2.3	16.8	Short	40	0.0	NA
Approach	1460	5.0		0.386		13.2	LOS B	15.6	113.6				
West: Norman Avenue (W)													
Lane 1	29	5.0	454	0.065	100	50.7	LOS D	1.6	11.8	Short	25	0.0	NA
Lane 2	36	5.0	186	0.192	100	68.7	LOS E	2.4	17.4	Full	340	0.0	0.0
Approach	65	5.0		0.192		60.6	LOS E	2.4	17.4				
Intersection	3834	5.0		0.594		17.0	LOS B	29.2	213.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

PHASING SUMMARY

 **Site: 1 [2021 PM BG + Dev]**

Intersection 1 - Lutwyche Road/Norman Ave
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Site User-Given Cycle Time)

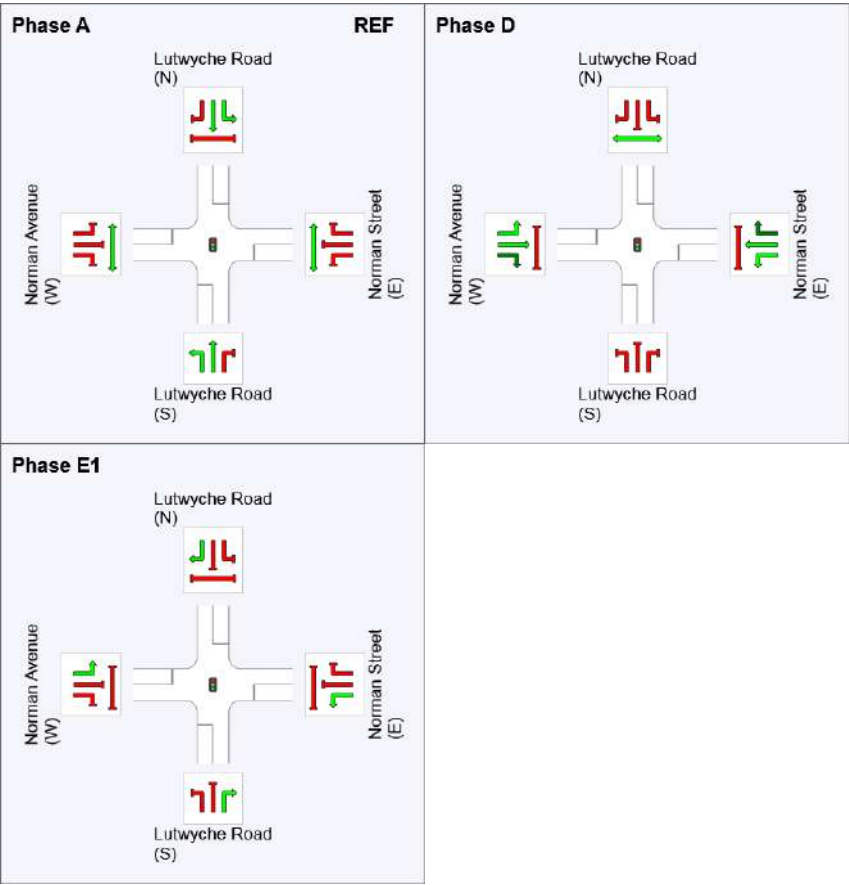
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, D, E1
Output Phase Sequence: A, D, E1

Phase Timing Summary

Phase	A	D	E1
Phase Change Time (sec)	0	104	130
Green Time (sec)	98	20	14
Phase Time (sec)	104	26	20
Phase Split	69 %	17 %	13 %

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



LANE SUMMARY

Site: 1 [2021 PM BG + Dev]

Intersection 1 - Lutwyche Road/Norman Ave

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 150 seconds (Site User-Given Cycle Time)

Lane Use and Performance													
	Demand	Flows	Cap.	Deg.	Lane	Average	Level of	95% Back of	Queue	Lane	Lane	Cap.	Prob.
	Total	HV		Satn	Util.	Delay	Service	Veh	Dist	Config	Length	Adj.	Block.
	veh/h	%	veh/h	v/c	%	sec			m		m	%	%
South: Lutwyche Road (S)													
Lane 1	759	5.0	1231	0.617	100	16.1	LOS B	31.5	230.1	Full	290	0.0	0.0
Lane 2	761	5.0	1234	0.617	100	15.9	LOS B	31.6	230.6	Full	290	0.0	0.0
Lane 3	685	5.0	1110 ¹	0.617	100	14.9	LOS B	26.6	194.2	Full	290	0.0	0.0
Lane 4	85	5.0	167	0.509	100	77.6	LOS E	6.1	44.8	Short	50	0.0	NA
Approach	2291	5.0		0.617		17.9	LOS B	31.6	230.6				
East: Norman Street (E)													
Lane 1	31	5.0	478	0.064	100	49.1	LOS D	1.6	12.0	Short	40	0.0	NA
Lane 2	39	5.0	163	0.239	100	72.1	LOS E	2.7	19.5	Full	370	0.0	0.0
Approach	69	5.0		0.239		62.0	LOS E	2.7	19.5				
North: Lutwyche Road (N)													
Lane 1	512	5.0	1231	0.416	100	13.2	LOS B	17.4	127.0	Full	270	0.0	0.0
Lane 2	513	5.0	1234	0.416	100	13.0	LOS B	17.4	127.2	Full	270	0.0	0.0
Lane 3	420	5.0	1009 ¹	0.416	100	12.1	LOS B	13.3	97.3	Full	270	0.0	0.0
Lane 4	102	5.0	167	0.610	100	78.6	LOS E	7.4	54.4	Short	40	0.0	NA
Approach	1547	5.0		0.610		17.2	LOS B	17.4	127.2				
West: Norman Avenue (W)													
Lane 1	64	5.0	478	0.134	100	50.1	LOS D	3.5	25.8	Short	25	0.0	NA
Lane 2	51	5.0	187	0.270	100	69.8	LOS E	3.4	25.1	Full	340	0.0	0.0
Approach	115	5.0		0.270		58.8	LOS E	3.5	25.8				
Intersection	4022	5.0		0.617		19.6	LOS B	31.6	230.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

PHASING SUMMARY

 **Site: 1 [2031 PM BG]**

Intersection 1 - Lutwyche Road/Norman Ave
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Site User-Given Cycle Time)

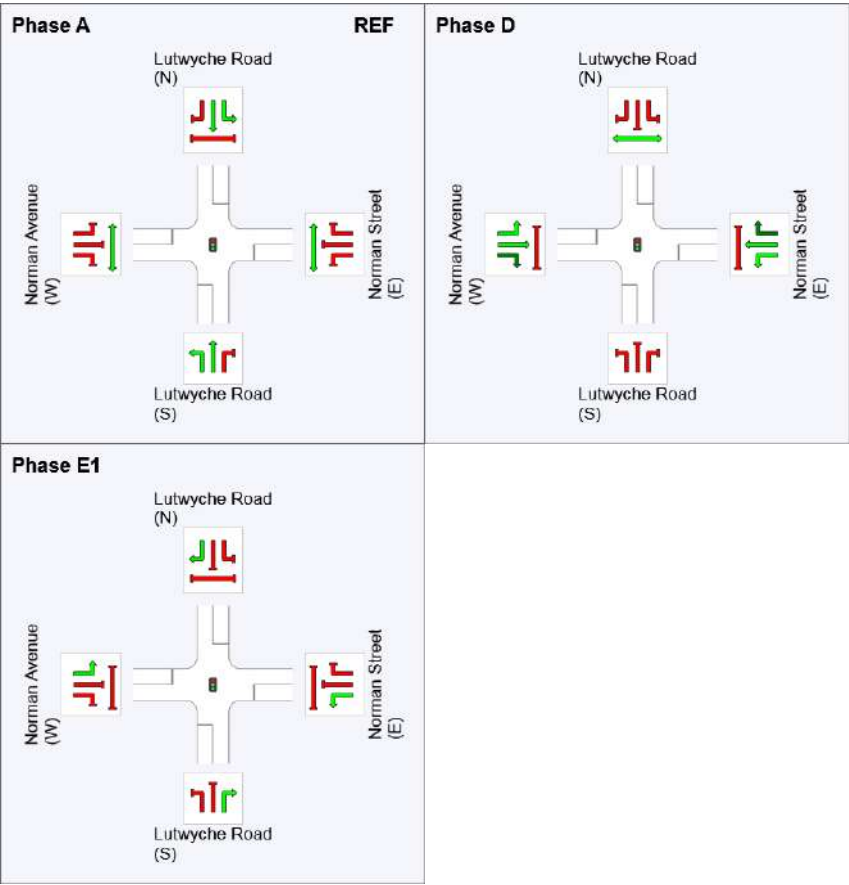
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, D, E1
Output Phase Sequence: A, D, E1

Phase Timing Summary

Phase	A	D	E1
Phase Change Time (sec)	0	106	132
Green Time (sec)	100	20	12
Phase Time (sec)	106	26	18
Phase Split	71 %	17 %	12 %

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



LANE SUMMARY



Site: 1 [2031 PM BG]

Intersection 1 - Lutwyche Road/Norman Ave

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 150 seconds (Site User-Given Cycle Time)

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back Veh	Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Lutwyche Road (S)													
Lane 1	778	5.0	1256	0.620	100	15.2	LOS B	31.6	230.6	Full	290	0.0	0.0
Lane 2	780	5.0	1259	0.620	100	14.9	LOS B	31.7	231.1	Full	290	0.0	0.0
Lane 3	703	5.0	1135 ¹	0.620	100	13.9	LOS B	26.7	194.8	Full	290	0.0	0.0
Lane 4	85	5.0	143	0.594	100	80.5	LOS F	6.3	45.9	Short	50	0.0	NA
Approach	2347	5.0		0.620		17.1	LOS B	31.7	231.1				
East: Norman Street (E)													
Lane 1	31	5.0	454	0.067	100	50.7	LOS D	1.7	12.2	Short	40	0.0	NA
Lane 2	39	5.0	188	0.207	100	68.7	LOS E	2.6	19.0	Full	370	0.0	0.0
Approach	69	5.0		0.207		60.8	LOS E	2.6	19.0				
North: Lutwyche Road (N)													
Lane 1	509	5.0	1256	0.406	100	12.2	LOS B	16.6	121.1	Full	270	0.0	0.0
Lane 2	511	5.0	1259	0.406	100	12.0	LOS B	16.6	121.4	Full	270	0.0	0.0
Lane 3	480	5.0	1184 ¹	0.406	100	11.7	LOS B	15.3	111.6	Full	270	0.0	0.0
Lane 4	33	5.0	143	0.227	100	77.4	LOS E	2.3	16.8	Short	40	0.0	NA
Approach	1533	5.0		0.406		13.4	LOS B	16.6	121.4				
West: Norman Avenue (W)													
Lane 1	29	5.0	454	0.065	100	50.7	LOS D	1.6	11.8	Short	25	0.0	NA
Lane 2	36	5.0	186	0.192	100	68.7	LOS E	2.4	17.4	Full	340	0.0	0.0
Approach	65	5.0		0.192		60.6	LOS E	2.4	17.4				
Intersection	4015	5.0		0.620		17.1	LOS B	31.7	231.1				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

PHASING SUMMARY

 **Site: 1 [2031 PM BG + Dev]**

Intersection 1 - Lutwyche Road/Norman Ave
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Site User-Given Cycle Time)

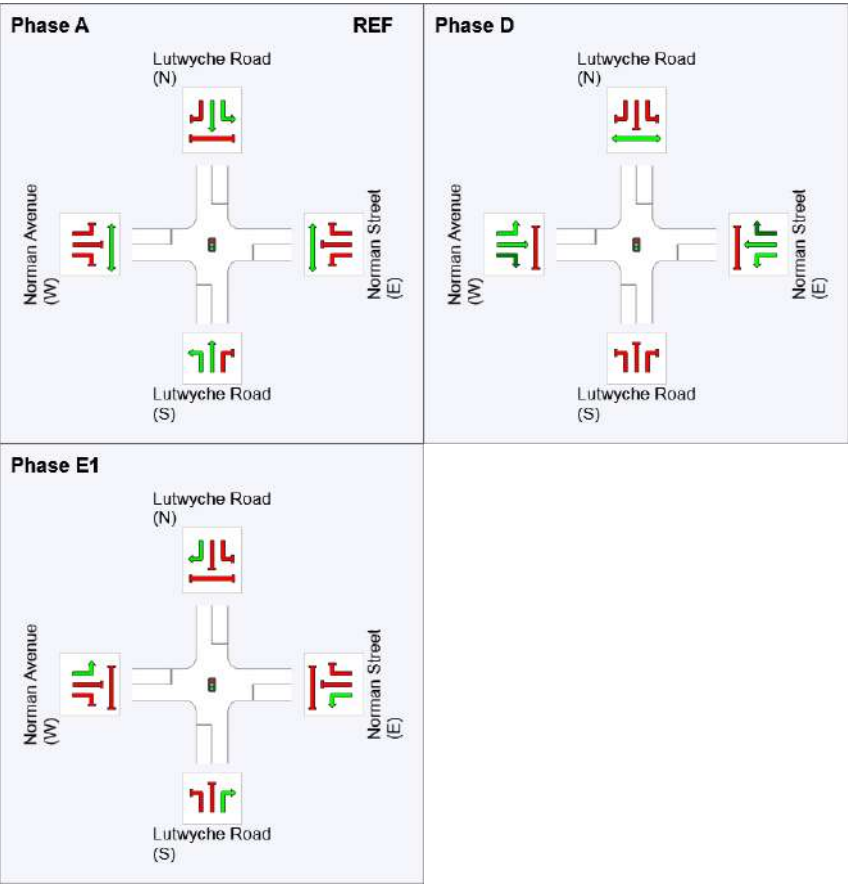
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, D, E1
Output Phase Sequence: A, D, E1

Phase Timing Summary

Phase	A	D	E1
Phase Change Time (sec)	0	104	130
Green Time (sec)	98	20	14
Phase Time (sec)	104	26	20
Phase Split	69 %	17 %	13 %

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



LANE SUMMARY



Site: 1 [2031 PM BG + Dev]

Intersection 1 - Lutwyche Road/Norman Ave

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 150 seconds (Site User-Given Cycle Time)

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back Veh	Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Lutwyche Road (S)													
Lane 1	795	5.0	1231	0.646	100	16.7	LOS B	34.1	249.1	Full	290	0.0	0.0
Lane 2	797	5.0	1234	0.646	100	16.4	LOS B	34.2	249.6	Full	290	0.0	0.0
Lane 3	721	5.0	1115 ¹	0.646	100	15.3	LOS B	28.9	210.8	Full	290	0.0	0.0
Lane 4	85	5.0	167	0.509	100	77.6	LOS E	6.1	44.8	Short	50	0.0	NA
Approach	2399	5.0		0.646		18.3	LOS B	34.2	249.6				
East: Norman Street (E)													
Lane 1	31	5.0	478	0.064	100	49.1	LOS D	1.6	12.0	Short	40	0.0	NA
Lane 2	39	5.0	163	0.239	100	72.1	LOS E	2.7	19.5	Full	370	0.0	0.0
Approach	69	5.0		0.239		62.0	LOS E	2.7	19.5				
North: Lutwyche Road (N)													
Lane 1	536	5.0	1231	0.435	100	13.4	LOS B	18.5	135.3	Full	270	0.0	0.0
Lane 2	537	5.0	1234	0.435	100	13.2	LOS B	18.6	135.6	Full	270	0.0	0.0
Lane 3	444	5.0	1019 ¹	0.435	100	12.3	LOS B	14.3	104.6	Full	270	0.0	0.0
Lane 4	102	5.0	167	0.610	100	78.6	LOS E	7.4	54.4	Short	40	0.0	NA
Approach	1619	5.0		0.610		17.2	LOS B	18.6	135.6				
West: Norman Avenue (W)													
Lane 1	64	5.0	478	0.134	100	50.1	LOS D	3.5	25.8	Short	25	0.0	NA
Lane 2	51	5.0	187	0.270	100	69.8	LOS E	3.4	25.1	Full	340	0.0	0.0
Approach	115	5.0		0.270		58.8	LOS E	3.5	25.8				
Intersection	4202	5.0		0.646		19.7	LOS B	34.2	249.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

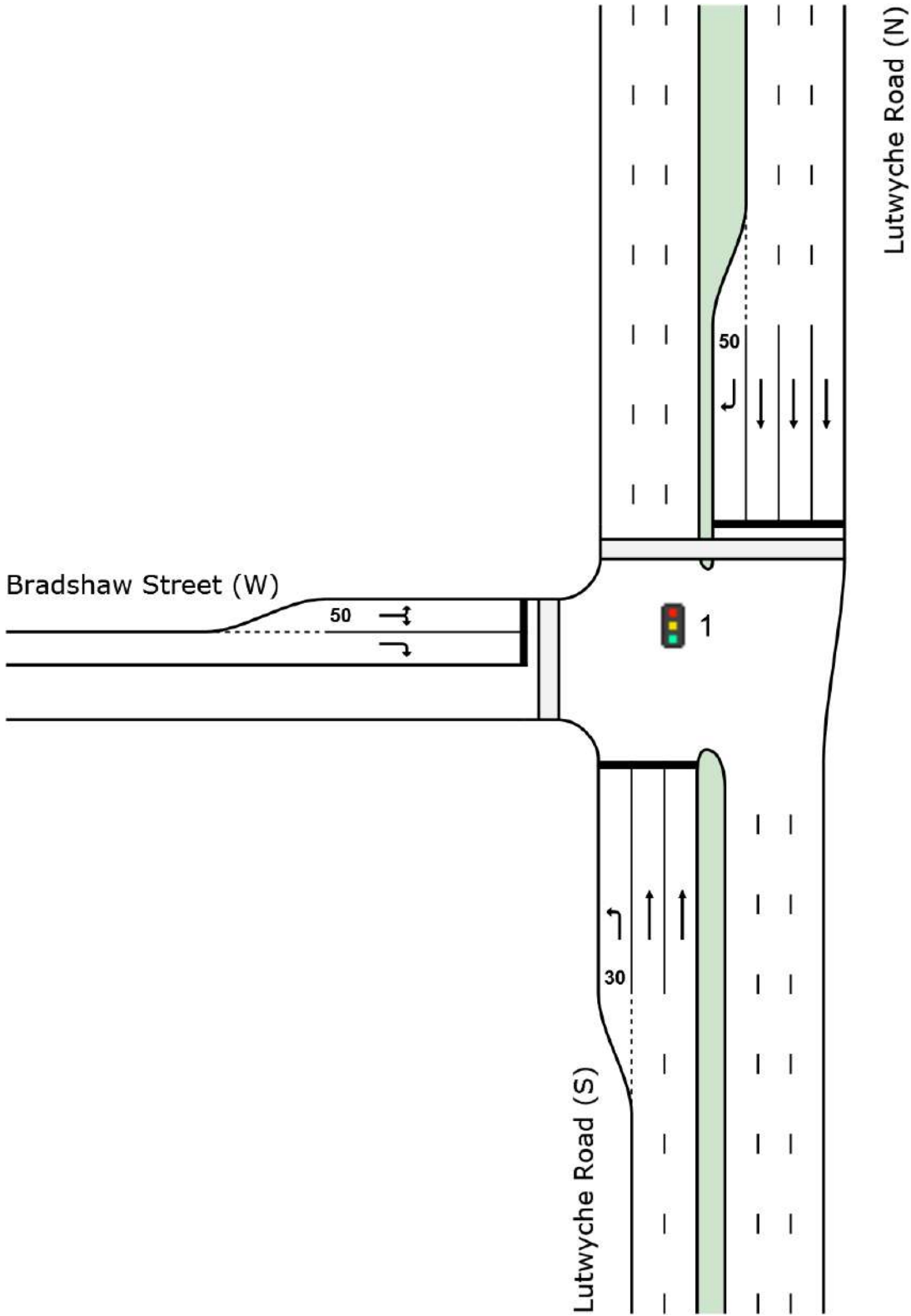
SITE LAYOUT

 **Site: 1 [2021 AM BG]**

Intersection 2 - Lutwyche Road/Bradshaw Street

Site Category: (None)

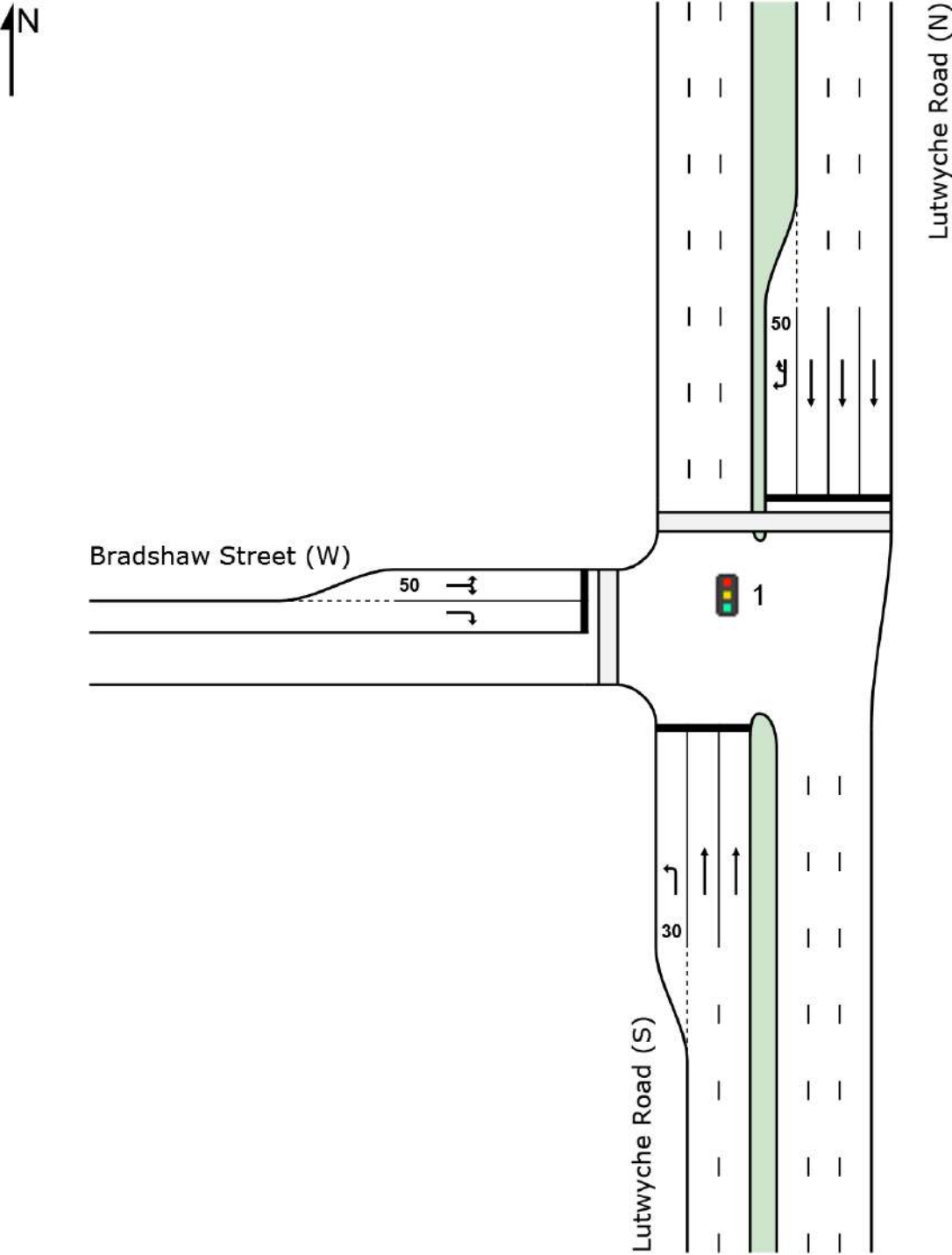
Signals - Fixed Time Isolated



SITE LAYOUT

 **Site: 1 [2021 AM BG + Dev]**

Intersection 2 - Lutwyche Road/Bradshaw Street
Site Category: (None)
Signals - Fixed Time Isolated



PHASING SUMMARY

 **Site: 1 [2021 AM BG]**

Intersection 2 - Lutwyche Road/Bradshaw Street
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 151 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

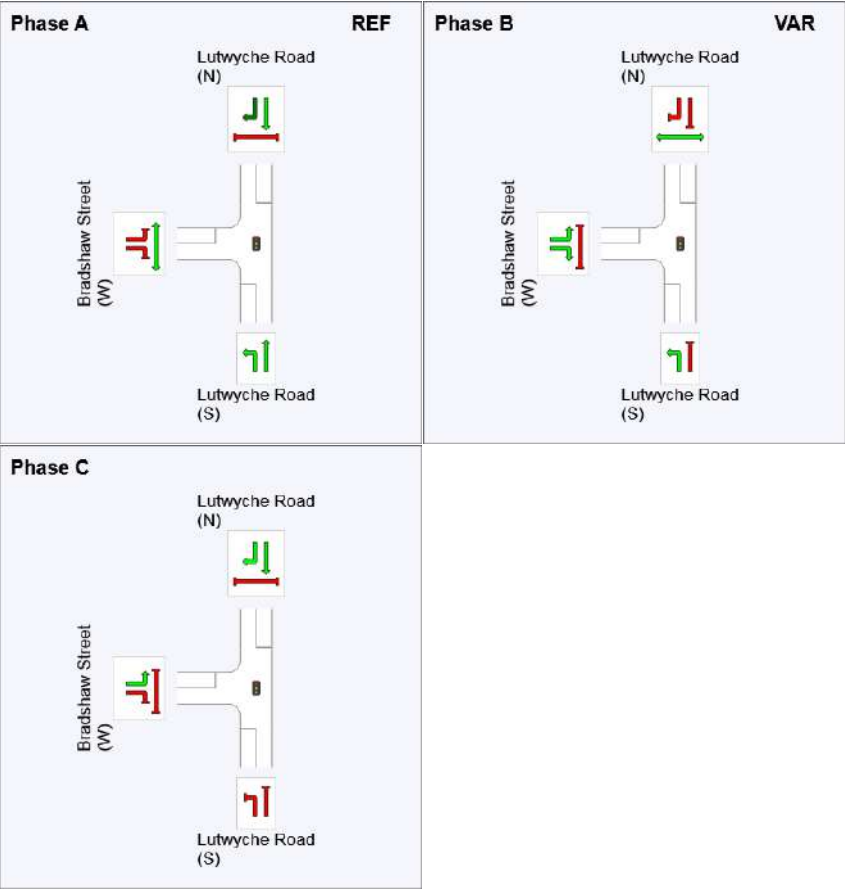
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B*, C
Output Phase Sequence: A, B*, C
(* Variable Phase)

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	98	139
Green Time (sec)	92	35	6
Phase Time (sec)	98	41	12
Phase Split	65 %	27 %	8 %

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



LANE SUMMARY



Site: 1 [2021 AM BG]

Intersection 2 - Lutwyche Road/Bradshaw Street

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 151 seconds (Site User-Given Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Lutwyche Road (S)													
Lane 1	125	5.0	1579	0.079	100	5.9	LOS A	1.1	8.3	Short	30	0.0	NA
Lane 2	599	5.0	992 ¹	0.603	100	17.7	LOS B	24.6	179.9	Full	70	0.0	93.9
Lane 3	694	5.0	1151	0.603	100	19.2	LOS B	30.9	225.6	Full	70	0.0	100.0
Approach	1418	5.0		0.603		17.4	LOS B	30.9	225.6				
North: Lutwyche Road (N)													
Lane 1	785	5.0	1301	0.604	100	13.1	LOS B	30.1	219.5	Full	290	0.0	0.0
Lane 2	785	5.0	1301	0.604	100	13.1	LOS B	30.1	219.5	Full	290	0.0	0.0
Lane 3	751	5.0	1245 ¹	0.604	100	12.7	LOS B	27.9	203.7	Full	290	0.0	0.0
Lane 4	10	5.0	240	0.042	100	20.0	LOS B	0.2	1.8	Short	50	0.0	NA
Approach	2332	5.0		0.604		13.0	LOS B	30.1	219.5				
West: Bradshaw Street (W)													
Lane 1	221	5.0	358 ¹	0.616	100	59.6	LOS E	14.2	103.5	Short	50	0.0	NA
Lane 2	218	5.0	354 ¹	0.616	100	60.3	LOS E	14.1	102.8	Full	500	0.0	0.0
Approach	439	5.0		0.616		60.0	LOS E	14.2	103.5				
Intersection	4189	5.0		0.616		19.4	LOS B	30.9	225.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

PHASING SUMMARY

 **Site: 1 [2021 AM BG + Dev]**

Intersection 2 - Lutwyche Road/Bradshaw Street
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 151 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

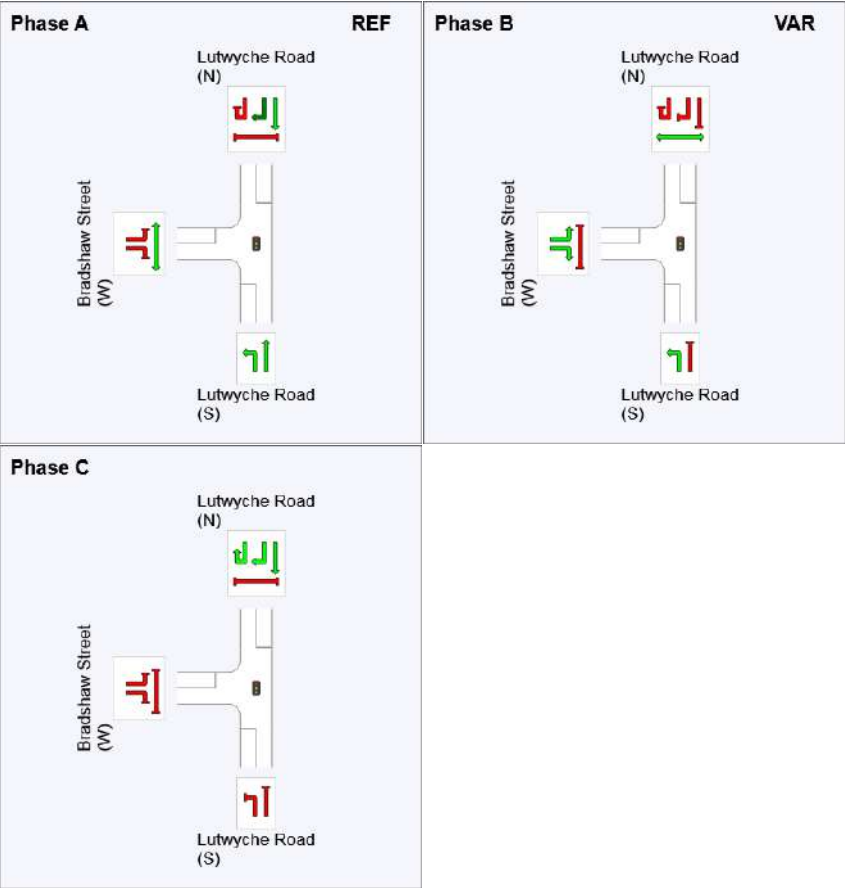
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B*, C
Output Phase Sequence: A, B*, C
(* Variable Phase)

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	87	139
Green Time (sec)	81	46	6
Phase Time (sec)	87	52	12
Phase Split	58 %	34 %	8 %

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



LANE SUMMARY



Site: 1 [2021 AM BG + Dev]

Intersection 2 - Lutwyche Road/Bradshaw Street

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 151 seconds (Site User-Given Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Lane Use and Performance													
	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Lutwyche Road (S)													
Lane 1	191	5.0	1579	0.121	100	6.0	LOS A	1.8	13.2	Short	30	0.0	NA
Lane 2	616	5.0	804 ¹	0.765	100	25.4	LOS C	30.6	223.1	Full	70	0.0	100.0
Lane 3	775	5.0	1013	0.765	100	29.1	LOS C	44.1	321.9	Full	70	0.0	100.0
Approach	1582	5.0		0.765		24.9	LOS C	44.1	321.9				
North: Lutwyche Road (N)													
Lane 1	822	5.0	1163	0.707	100	20.8	LOS C	40.3	294.2	Full	290	0.0	6.3
Lane 2	822	5.0	1163	0.707	100	20.8	LOS C	40.3	294.2	Full	290	0.0	6.3
Lane 3	678	5.0	958 ¹	0.707	100	18.3	LOS B	29.2	213.3	Full	290	0.0	0.0
Lane 4	31	1.6	71	0.439	100	54.7	LOS D	1.5	10.9	Short	50	0.0	NA
Approach	2353	5.0		0.707		20.5	LOS C	40.3	294.2				
West: Bradshaw Street (W)													
Lane 1	295	5.0	395 ¹	0.746	100	54.0	LOS D	18.4	134.2	Short	50	0.0	NA
Lane 2	295	5.0	395 ¹	0.746	100	54.0	LOS D	18.4	134.2	Full	500	0.0	0.0
Approach	589	5.0		0.746		54.0	LOS D	18.4	134.2				
Intersection	4524	5.0		0.765		26.4	LOS C	44.1	321.9				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

PHASING SUMMARY

 **Site: 1 [2031 AM BG]**

Intersection 2 - Lutwyche Road/Bradshaw Street
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 151 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

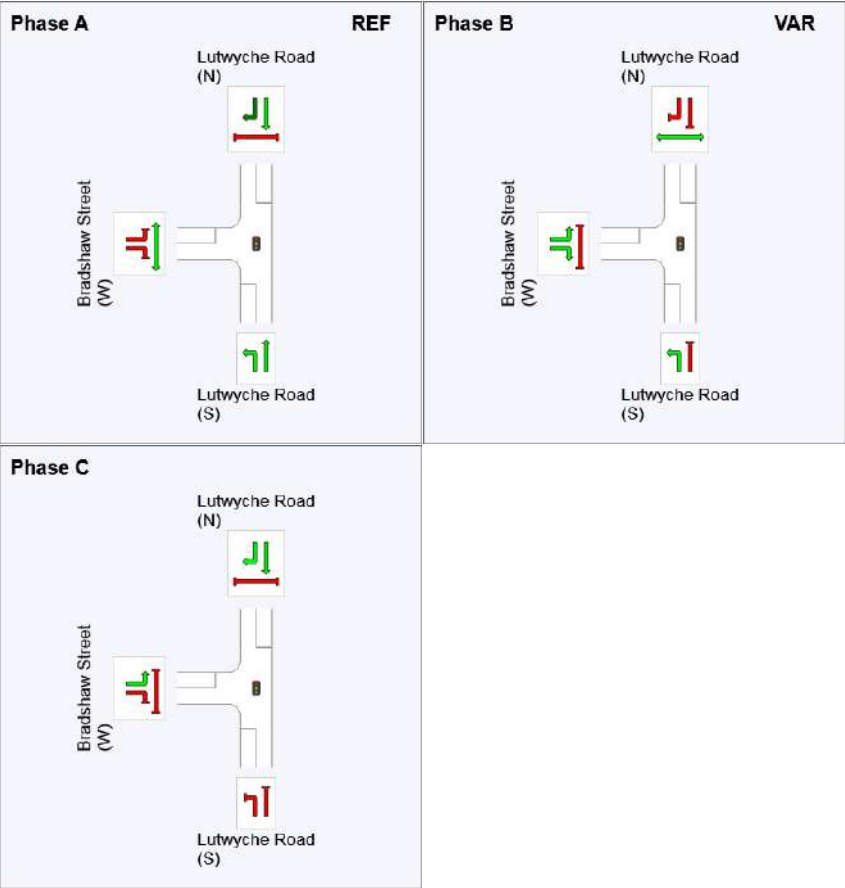
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B*, C
Output Phase Sequence: A, B*, C
(* Variable Phase)

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	98	139
Green Time (sec)	92	35	6
Phase Time (sec)	98	41	12
Phase Split	65 %	27 %	8 %

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



LANE SUMMARY



Site: 1 [2031 AM BG]

Intersection 2 - Lutwyche Road/Bradshaw Street

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 151 seconds (Site User-Given Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Lane Use and Performance													
	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Lutwyche Road (S)													
Lane 1	125	5.0	1579	0.079	100	5.9	LOS A	1.1	8.3	Short	30	0.0	NA
Lane 2	630	5.0	995 ¹	0.633	100	18.2	LOS B	26.6	194.2	Full	70	0.0	100.0
Lane 3	729	5.0	1151	0.633	100	19.8	LOS B	33.4	243.9	Full	70	0.0	100.0
Approach	1484	5.0		0.633		17.9	LOS B	33.4	243.9				
North: Lutwyche Road (N)													
Lane 1	827	5.0	1301	0.635	100	13.7	LOS B	32.9	240.0	Full	290	0.0	0.0
Lane 2	827	5.0	1301	0.635	100	13.7	LOS B	32.9	240.0	Full	290	0.0	0.0
Lane 3	788	5.0	1240 ¹	0.635	100	13.2	LOS B	30.2	220.7	Full	290	0.0	0.0
Lane 4	10	5.0	224	0.045	100	21.0	LOS C	0.2	1.8	Short	50	0.0	NA
Approach	2451	5.0		0.635		13.5	LOS B	32.9	240.0				
West: Bradshaw Street (W)													
Lane 1	222	5.0	356 ¹	0.624	100	59.7	LOS E	14.3	104.4	Short	50	0.0	NA
Lane 2	220	5.0	352 ¹	0.624	100	60.4	LOS E	14.2	103.6	Full	500	0.0	0.0
Approach	442	5.0		0.624		60.0	LOS E	14.3	104.4				
Intersection	4377	5.0		0.635		19.7	LOS B	33.4	243.9				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

PHASING SUMMARY

 **Site: 1 [2031 AM BG + Dev]**

Intersection 2 - Lutwyche Road/Bradshaw Street
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 151 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Green Split Priority has been specified

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B*, C

Output Phase Sequence: A, B*, C

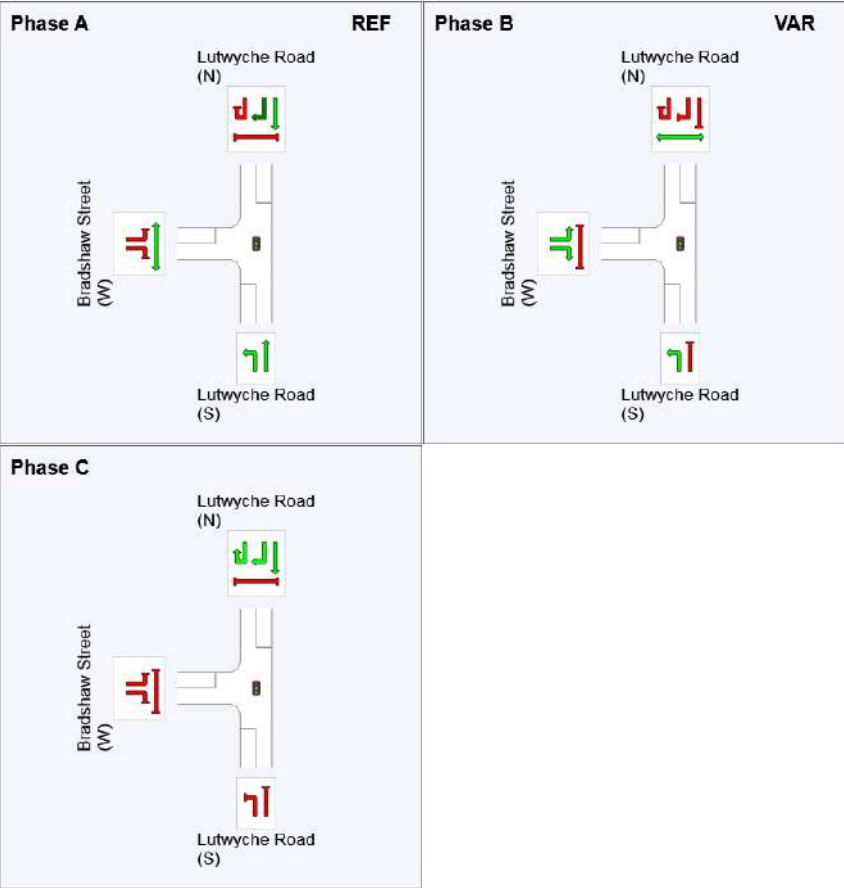
(* Variable Phase)

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	89	139
Green Time (sec)	83	44	6
Phase Time (sec)	89	50	12
Phase Split	59 %	33 %	8 %

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



LANE SUMMARY



Site: 1 [2031 AM BG + Dev]

Intersection 2 - Lutwyche Road/Bradshaw Street

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 151 seconds (Site User-Given Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Lane Use and Performance													
	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Lutwyche Road (S)													
Lane 1	191	5.0	1579	0.121	100	6.0	LOS A	1.8	13.2	Short	30	0.0	NA
Lane 2	647	5.0	830 ¹	0.780	100	24.6	LOS C	32.0	233.7	Full	70	0.0	100.0
Lane 3	810	5.0	1038	0.780	100	28.3	LOS C	46.1	336.6	Full	70	0.0	100.0
Approach	1648	5.0		0.780		24.2	LOS C	46.1	336.6				
North: Lutwyche Road (N)													
Lane 1	862	5.0	1188	0.726	100	20.1	LOS C	42.4	309.5	Full	290	0.0	10.9
Lane 2	862	5.0	1188	0.726	100	20.1	LOS C	42.4	309.6	Full	290	0.0	10.9
Lane 3	716	5.0	987 ¹	0.726	100	17.6	LOS B	30.8	224.8	Full	290	0.0	0.0
Lane 4	31	1.6	71	0.439	100	56.5	LOS E	1.5	10.9	Short	50	0.0	NA
Approach	2472	5.0		0.726		19.8	LOS B	42.4	309.6				
West: Bradshaw Street (W)													
Lane 1	295	5.0	374 ¹	0.787	100	58.4	LOS E	19.4	141.3	Short	50	0.0	NA
Lane 2	295	5.0	374 ¹	0.787	100	58.4	LOS E	19.4	141.3	Full	500	0.0	0.0
Approach	589	5.0		0.787		58.4	LOS E	19.4	141.3				
Intersection	4709	5.0		0.787		26.2	LOS C	46.1	336.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

PHASING SUMMARY

 **Site: 1 [2021 PM BG]**

Intersection 2 - Lutwyche Road/Bradshaw Street
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 151 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Green Split Priority has been specified

Phase Sequence: Variable Phasing

Reference Phase: Phase A

Input Phase Sequence: A, B*, C

Output Phase Sequence: A, B*, C

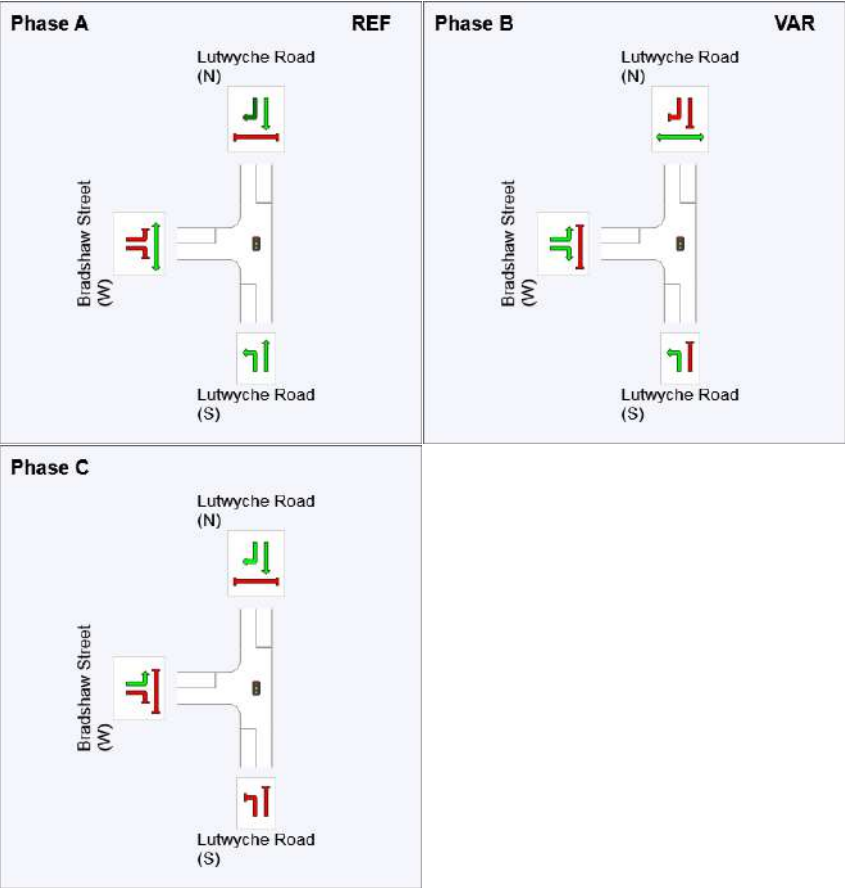
(* Variable Phase)

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	113	139
Green Time (sec)	107	20	6
Phase Time (sec)	113	26	12
Phase Split	75 %	17 %	8 %

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



LANE SUMMARY



Site: 1 [2021 PM BG]

Intersection 2 - Lutwyche Road/Bradshaw Street

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 151 seconds (Site User-Given Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Lane Use and Performance													
	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Lutwyche Road (S)													
Lane 1	441	5.0	1579	0.279	100	6.2	LOS A	5.0	36.3	Short	30	0.0	NA
Lane 2	851	5.0	906 ¹	0.940	100	39.7	LOS D	49.2	358.9	Full	70	0.0	100.0
Lane 3	1258	5.0	1338	0.940	100	32.4	LOS C	91.0	664.5	Full	70	0.0	100.0
Approach	2550	5.0		0.940		30.3	LOS C	91.0	664.5				
North: Lutwyche Road (N)													
Lane 1	447	5.0	1488	0.300	100	4.6	LOS A	8.9	64.7	Full	290	0.0	0.0
Lane 2	447	5.0	1488	0.300	100	4.6	LOS A	8.9	64.7	Full	290	0.0	0.0
Lane 3	447	5.0	1488	0.300	100	4.6	LOS A	8.9	64.7	Full	290	0.0	0.0
Lane 4	23	5.0	129	0.179	100	45.6	LOS D	1.2	8.9	Short	50	0.0	NA
Approach	1364	5.0		0.300		5.3	LOS A	8.9	64.7				
West: Bradshaw Street (W)													
Lane 1	90	5.0	241	0.372	100	70.2	LOS E	6.1	44.5	Short	50	0.0	NA
Lane 2	88	5.0	238	0.372	100	71.0	LOS E	6.0	44.0	Full	500	0.0	0.0
Approach	178	5.0		0.372		70.6	LOS E	6.1	44.5				
Intersection	4092	5.0		0.940		23.7	LOS C	91.0	664.5				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

PHASING SUMMARY

 **Site: 1 [2021 PM BG + Dev]**

Intersection 2 - Lutwyche Road/Bradshaw Street
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 151 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

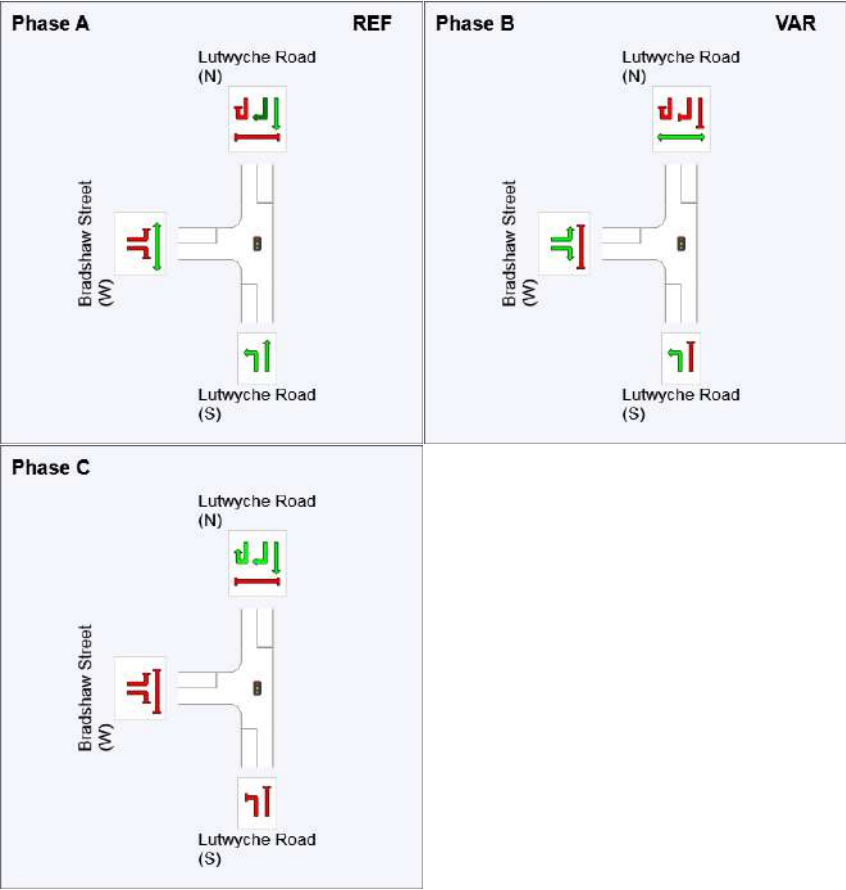
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B*, C
Output Phase Sequence: A, B*, C
(* Variable Phase)

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	113	139
Green Time (sec)	107	20	6
Phase Time (sec)	113	26	12
Phase Split	75 %	17 %	8 %

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



LANE SUMMARY



Site: 1 [2021 PM BG + Dev]

Intersection 2 - Lutwyche Road/Bradshaw Street

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 151 seconds (Site User-Given Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Lane Use and Performance													
	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Back of Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Lutwyche Road (S)													
Lane 1	496	5.0	1579	0.314	100	6.3	LOS A	5.8	42.6	Short	30	0.0	NA
Lane 2	864	5.0	871 ¹	0.992	100	69.1	LOS E	63.1	460.5	Full	70	0.0	100.0
Lane 3	1327	5.0	1338	0.992	100	62.2	LOS E	126.8	925.8	Full	70	0.0	100.0
Approach	2687	5.0		0.992		54.1	LOS D	126.8	925.8				
North: Lutwyche Road (N)													
Lane 1	447	5.0	1488	0.300	100	4.6	LOS A	8.9	64.7	Full	290	0.0	0.0
Lane 2	447	5.0	1488	0.300	100	4.6	LOS A	8.9	64.7	Full	290	0.0	0.0
Lane 3	447	5.0	1488	0.300	100	4.6	LOS A	8.9	64.7	Full	290	0.0	0.0
Lane 4	40	2.9	86	0.465	100	70.7	LOS E	2.6	18.8	Short	50	0.0	NA
Approach	1381	4.9		0.465		6.5	LOS A	8.9	64.7				
West: Bradshaw Street (W)													
Lane 1	158	5.0	238	0.665	100	74.5	LOS E	11.4	83.0	Short	50	0.0	NA
Lane 2	158	5.0	238	0.665	100	74.5	LOS E	11.4	83.0	Full	500	0.0	0.0
Approach	316	5.0		0.665		74.5	LOS E	11.4	83.0				
Intersection	4384	5.0		0.992		40.6	LOS D	126.8	925.8				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

PHASING SUMMARY

 **Site: 1 [2031 PM BG]**

Intersection 2 - Lutwyche Road/Bradshaw Street
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 151 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

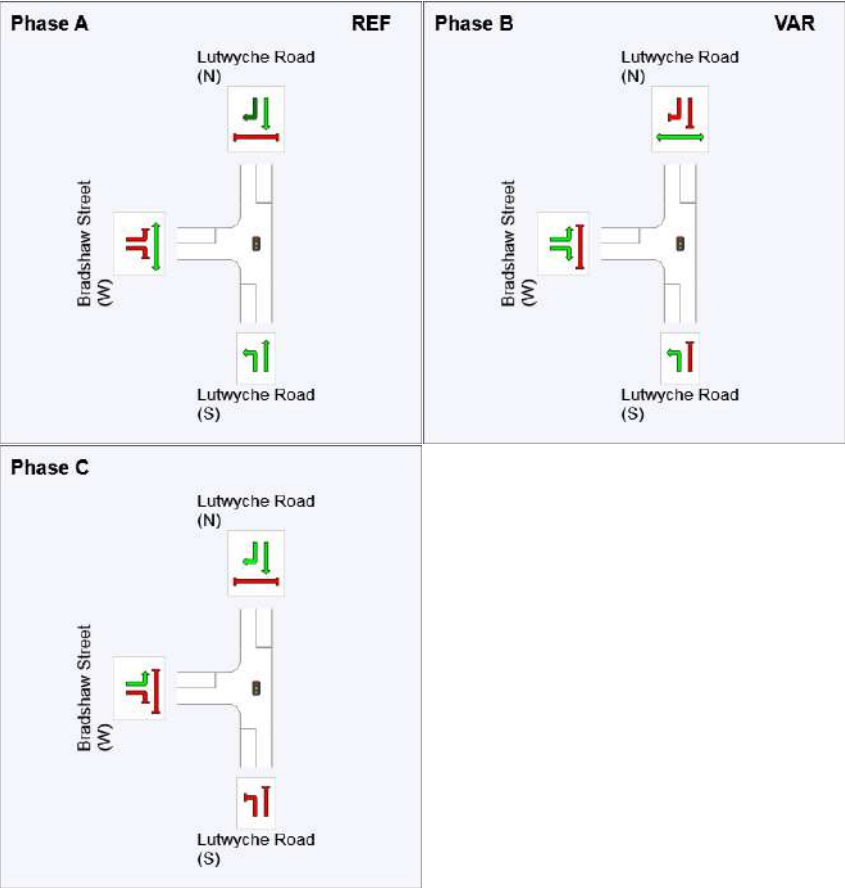
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B*, C
Output Phase Sequence: A, B*, C
(* Variable Phase)

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	113	139
Green Time (sec)	107	20	6
Phase Time (sec)	113	26	12
Phase Split	75 %	17 %	8 %

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



LANE SUMMARY



Site: 1 [2031 PM BG]

Intersection 2 - Lutwyche Road/Bradshaw Street

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 151 seconds (Site User-Given Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Lane Use and Performance													
	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Back of Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Lutwyche Road (S)													
Lane 1	441	5.0	1579	0.279	100	6.2	LOS A	5.0	36.3	Short	30	0.0	NA
Lane 2	901	5.0	916 ¹	0.983	100	62.5	LOS E	64.0	467.5	Full	70	0.0	100.0
Lane 3	1316	5.0	1338	0.983	100	56.3	LOS E	120.3	878.5	Full	70	0.0	100.0
Approach	2658	5.0		0.983		50.1	LOS D	120.3	878.5				
North: Lutwyche Road (N)													
Lane 1	470	5.0	1488	0.316	100	4.7	LOS A	9.5	69.2	Full	290	0.0	0.0
Lane 2	470	5.0	1488	0.316	100	4.7	LOS A	9.5	69.2	Full	290	0.0	0.0
Lane 3	470	5.0	1488	0.316	100	4.7	LOS A	9.5	69.2	Full	290	0.0	0.0
Lane 4	23	5.0	124	0.186	100	55.1	LOS E	1.3	9.8	Short	50	0.0	NA
Approach	1433	5.0		0.316		5.5	LOS A	9.5	69.2				
West: Bradshaw Street (W)													
Lane 1	90	5.0	241	0.372	100	70.2	LOS E	6.1	44.5	Short	50	0.0	NA
Lane 2	88	5.0	238	0.372	100	71.0	LOS E	6.0	44.0	Full	500	0.0	0.0
Approach	178	5.0		0.372		70.6	LOS E	6.1	44.5				
Intersection	4269	5.0		0.983		36.0	LOS D	120.3	878.5				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

PHASING SUMMARY

 **Site: 1 [2031 PM BG + Dev]**

Intersection 2 - Lutwyche Road/Bradshaw Street
Site Category: (None)
Signals - Fixed Time Isolated Cycle Time = 151 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

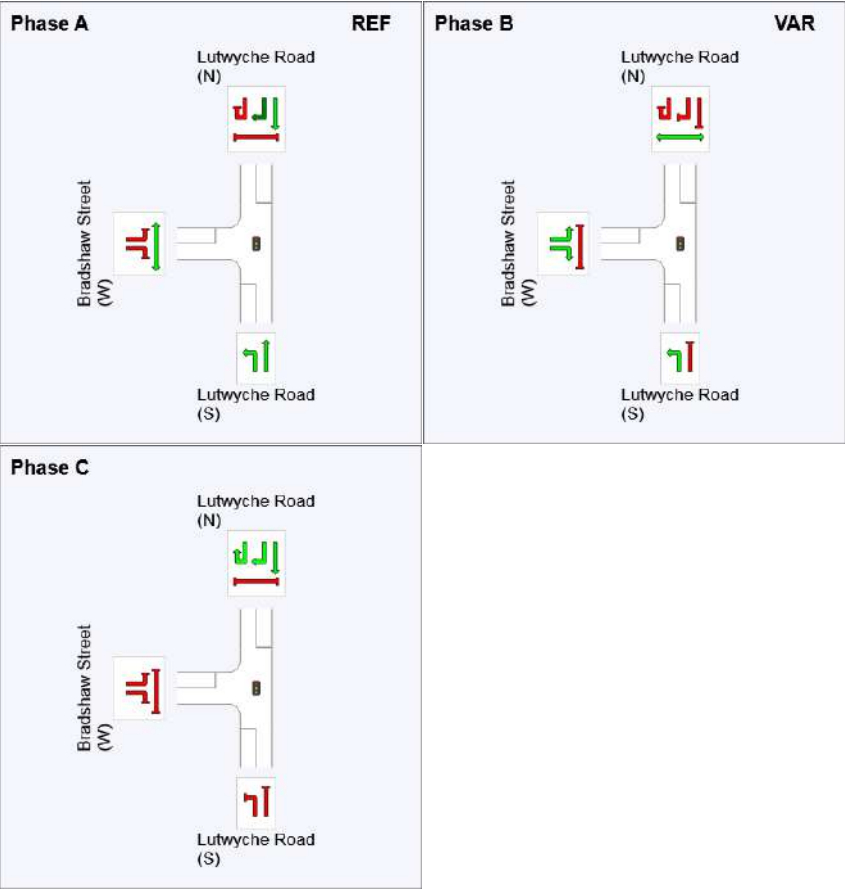
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B*, C
Output Phase Sequence: A, B*, C
(* Variable Phase)

Phase Timing Summary

Phase	A	B	C
Phase Change Time (sec)	0	113	139
Green Time (sec)	107	20	6
Phase Time (sec)	113	26	12
Phase Split	75 %	17 %	8 %

See the Phase Information section in the Detailed Output report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



LANE SUMMARY



Site: 1 [2031 PM BG + Dev]

Intersection 2 - Lutwyche Road/Bradshaw Street

Site Category: (None)

Signals - Fixed Time Isolated Cycle Time = 151 seconds (Site User-Given Cycle Time)

Variable Sequence Analysis applied. The results are given for the selected output sequence.

Lane Use and Performance													
	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Lutwyche Road (S)													
Lane 1	490	5.0	1579	0.310	100	6.3	LOS A	5.7	41.9	Short	30	0.0	NA
Lane 2	916	5.0	891 ¹	1.028	100	102.7	LOS F	106.5	777.6	Full	70	0.0	100.0
Lane 3	1375	5.0	1338	1.028	100	87.7	LOS F	149.3	1089.7	Full	70	0.0	100.0
Approach	2781	5.0		1.028		78.3	LOS E	149.3	1089.7				
North: Lutwyche Road (N)													
Lane 1	470	5.0	1488	0.316	100	4.7	LOS A	9.5	69.2	Full	290	0.0	0.0
Lane 2	470	5.0	1488	0.316	100	4.7	LOS A	9.5	69.2	Full	290	0.0	0.0
Lane 3	470	5.0	1488	0.316	100	4.7	LOS A	9.5	69.2	Full	290	0.0	0.0
Lane 4	40	2.9	87	0.461	100	69.5	LOS E	2.6	18.6	Short	50	0.0	NA
Approach	1450	4.9		0.461		6.5	LOS A	9.5	69.2				
West: Bradshaw Street (W)													
Lane 1	151	5.0	238	0.636	100	73.8	LOS E	10.8	78.6	Short	50	0.0	NA
Lane 2	151	5.0	238	0.636	100	73.8	LOS E	10.8	78.6	Full	500	0.0	0.0
Approach	302	5.0		0.636		73.8	LOS E	10.8	78.6				
Intersection	4533	5.0		1.028		55.0	LOS E	149.3	1089.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

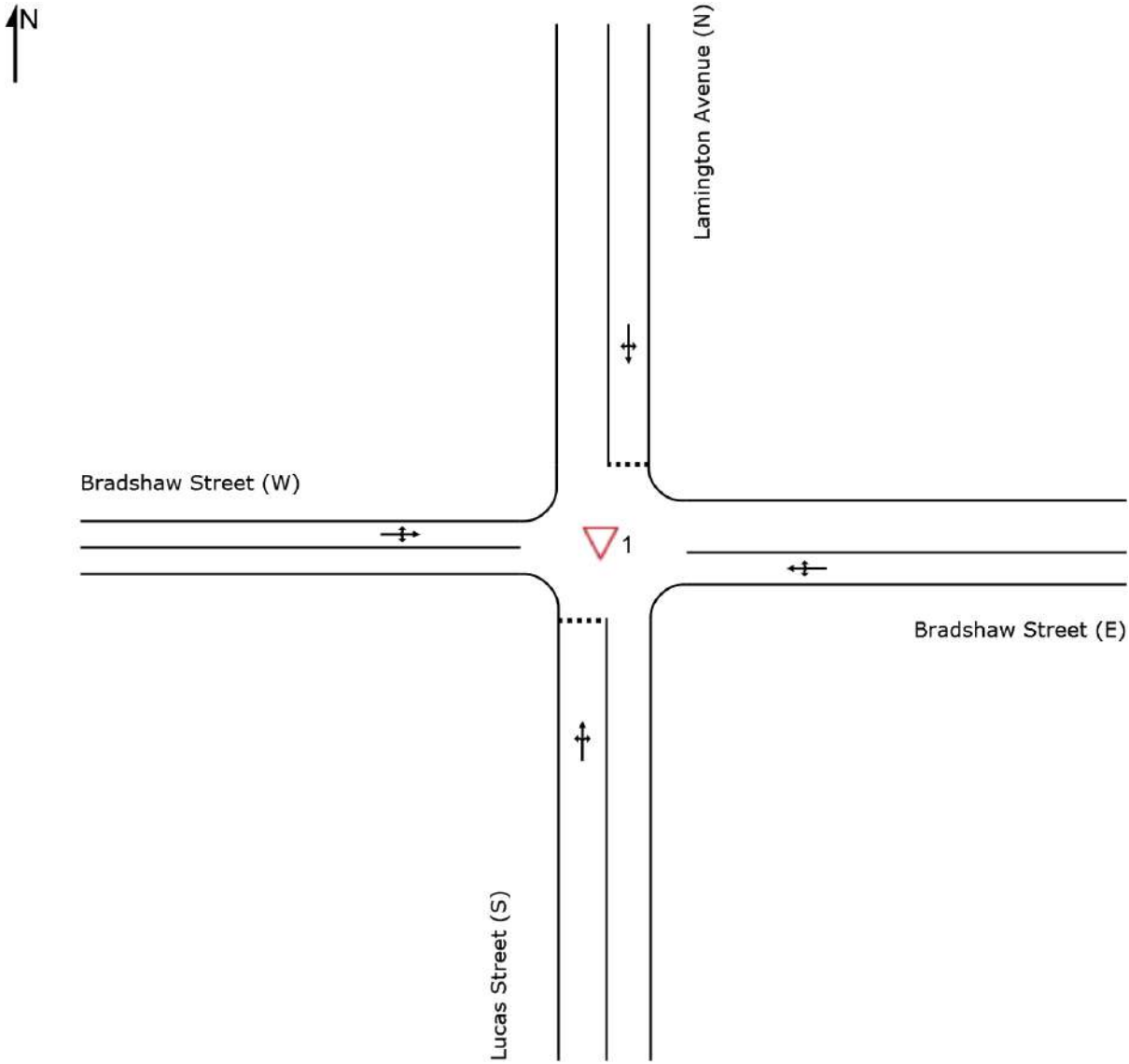
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

¹ Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.

SITE LAYOUT

 Site: 1 [2031 AM BG]

Intersection 3 - Bradshaw Street/Lamington Avenue
Site Category: (None)
Giveaway / Yield (Two-Way)



LANE SUMMARY



Site: 1 [2031 AM BG]

Intersection 3 - Bradshaw Street/Lamington Avenue

Site Category: (None)

Giveway / Yield (Two-Way)

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Lucas Street (S)													
Lane 1	52	5.0	1184	0.044	100	6.5	LOS A	0.1	1.0	Full	500	0.0	0.0
Approach	52	5.0		0.044		6.5	LOS A	0.1	1.0				
East: Bradshaw Street (E)													
Lane 1	142	5.0	1858	0.076	100	1.7	LOS A	0.2	1.4	Full	70	0.0	0.0
Approach	142	5.0		0.076		1.7	NA	0.2	1.4				
North: Lamington Avenue (N)													
Lane 1	79	5.0	1066	0.074	100	7.1	LOS A	0.3	1.8	Full	500	0.0	0.0
Approach	79	5.0		0.074		7.1	LOS A	0.3	1.8				
West: Bradshaw Street (W)													
Lane 1	502	5.0	1881	0.267	100	1.2	LOS A	0.3	2.1	Full	500	0.0	0.0
Approach	502	5.0		0.267		1.2	NA	0.3	2.1				
Intersection	775	5.0		0.267		2.3	NA	0.3	2.1				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

LANE SUMMARY



Site: 1 [2031 AM BG+DEV]

Intersection 3 - Bradshaw Street/Lamington Avenue

Site Category: (None)

Giveway / Yield (Two-Way)

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Lucas Street (S)													
Lane 1	52	5.0	1073	0.048	100	6.8	LOS A	0.2	1.1	Full	500	0.0	0.0
Approach	52	5.0		0.048		6.8	LOS A	0.2	1.1				
East: Bradshaw Street (E)													
Lane 1	204	5.0	1650	0.124	100	3.9	LOS A	0.6	4.6	Full	70	0.0	0.0
Approach	204	5.0		0.124		3.9	NA	0.6	4.6				
North: Lamington Avenue (N)													
Lane 1	280	5.0	1039	0.269	100	7.6	LOS A	1.1	7.8	Full	500	0.0	0.0
Approach	280	5.0		0.269		7.6	LOS A	1.1	7.8				
West: Bradshaw Street (W)													
Lane 1	572	5.0	1870	0.306	100	1.8	LOS A	0.3	2.2	Full	500	0.0	0.0
Approach	572	5.0		0.306		1.8	NA	0.3	2.2				
Intersection	1107	5.0		0.306		3.9	NA	1.1	7.8				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

LANE SUMMARY



Site: 1 [2031 PM BG]

Intersection 3 - Bradshaw Street/Lamington Avenue

Site Category: (None)

Giveway / Yield (Two-Way)

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Lucas Street (S)													
Lane 1	76	5.0	1029	0.074	100	7.1	LOS A	0.2	1.6	Full	500	0.0	0.0
Approach	76	5.0		0.074		7.1	LOS A	0.2	1.6				
East: Bradshaw Street (E)													
Lane 1	472	5.0	1946	0.242	100	0.7	LOS A	0.4	2.7	Full	70	0.0	0.0
Approach	472	5.0		0.242		0.7	NA	0.4	2.7				
North: Lamington Avenue (N)													
Lane 1	78	5.0	1108	0.070	100	6.8	LOS A	0.2	1.6	Full	500	0.0	0.0
Approach	78	5.0		0.070		6.8	LOS A	0.2	1.6				
West: Bradshaw Street (W)													
Lane 1	212	5.0	1854	0.114	100	1.5	LOS A	0.1	0.5	Full	500	0.0	0.0
Approach	212	5.0		0.114		1.5	NA	0.1	0.5				
Intersection	837	5.0		0.242		2.1	NA	0.4	2.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

LANE SUMMARY



Site: 1 [2031 PM BG+DEV]

Intersection 3 - Bradshaw Street/Lamington Avenue

Site Category: (None)

Giveway / Yield (Two-Way)

Lane Use and Performance													
	Demand Total veh/h	Flows HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Queue Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Lucas Street (S)													
Lane 1	76	5.0	928	0.082	100	7.5	LOS A	0.2	1.8	Full	500	0.0	0.0
Approach	76	5.0		0.082		7.5	LOS A	0.2	1.8				
East: Bradshaw Street (E)													
Lane 1	523	5.0	1921	0.272	100	1.4	LOS A	0.8	5.7	Full	70	0.0	0.0
Approach	523	5.0		0.272		1.4	NA	0.8	5.7				
North: Lamington Avenue (N)													
Lane 1	266	5.0	1160	0.230	100	6.9	LOS A	0.9	6.4	Full	500	0.0	0.0
Approach	266	5.0		0.230		6.9	LOS A	0.9	6.4				
West: Bradshaw Street (W)													
Lane 1	269	5.0	1841	0.146	100	2.4	LOS A	0.1	0.5	Full	500	0.0	0.0
Approach	269	5.0		0.146		2.4	NA	0.1	0.5				
Intersection	1135	5.0		0.272		3.3	NA	0.9	6.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road lanes.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX H

TAPS and ROH Code Response

Transport, Access, Parking and Servicing Code

Performance outcomes	Acceptable outcomes	Assessment
<p>PO1</p> <p>Development is designed:</p> <ul style="list-style-type: none"> (a) to include a technically competent and accurate response to the transport and traffic elements of the development; (b) in accordance with the standards in the Transport, access, parking and servicing planning scheme policy; (c) to ensure the efficient operation and safety of the development and its surrounds. <p>Note—The acceptable outcome and performance outcome can be demonstrated through a development application that:</p> <ul style="list-style-type: none"> • is accompanied by sufficient information, including computer modelling input and output data, to allow the proposed development to be properly assessed against the requirements of this code and the standards and guidelines of the Transport, access, parking and servicing planning scheme policy; • is certified by a Registered Professional Engineer Queensland that all plans, documents and dimensioned drawings 	<p>AO1</p> <p>Development complies with the standards in the Transport, access, parking and servicing planning scheme policy.</p>	<p>PO</p> <p>A traffic impact assessment has been prepared and certified by an RPEQ.</p> <p>Geometric Layout</p> <p>We note the site layout will require further refinement to comply with the TAPS PSP and Australian Standards. This is described in Section 3.10 and 7.3 of the traffic impact assessment report.</p> <p>Access</p> <p>See Section 3.2 of the traffic impact assessment.</p> <p>Servicing</p> <p>Please see Section 3.8.2 of the traffic impact assessment.</p>

<p>comply with the requirements of this code and the standards and guidelines of the Transport, access, parking and servicing planning scheme policy;</p> <ul style="list-style-type: none"> ensures that any computer modelling input and output data are accurate, reasonable and carried out in accordance with sound traffic engineering practices. 		
<p>PO2</p> <p>Development of a major size incorporates on-site provision for integration with the public transport network and the management of vehicles, public transport, pedestrians and cyclists, including providing appropriate pedestrian and cyclist linkages to adjoining uses, public areas and the transport network consistent with the planning by the Queensland Government and Council.</p>	<p>AO2</p> <p>No acceptable outcome is prescribed.</p>	<p>Complies</p> <p>The intent of the ground level is to be highly pedestrianized with the laneway activation and pedestrian connections to the adjacent Busway Station. Furthermore, footpaths will be provided along both the Lamington Avenue and Lutwyche Road frontage of the site.</p>
<p>PO3</p> <p>Development provides vehicle access that is located and designed so as to have no significant impact on the safety, efficiency, function, convenience of use or capacity of the road network.</p>	<p>AO3.1</p> <p>Development provides site access that is located and designed in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.</p>	<p>PO3</p> <p>The configuration of each driveway is compliant with the TAPS PSP.</p> <p>See Section 3.2.1 of the traffic impact assessment.</p>
	<p>AO3.2</p> <p>Development provides an easement for a vehicular access benefiting all adjoining landowners and the Council if the vehicular access services more than an individual development or premises.</p>	<p>Complies</p> <p>It is proposed to provide an access easement between the subject site and the adjacent BHC development.</p>

<p>PO4</p> <p>Development provides walking and cycle routes through the site which:</p> <ul style="list-style-type: none"> (a) link to the external network and pedestrian and cyclist destinations such as schools, shopping centres, open space, public transport stations, shops and local activity centres along the safest, most direct and convenient routes; (b) encourage walking and cycling; (c) ensure pedestrian and cyclist safety; (d) provide a direct and legible network. <p>Note—The Infrastructure design planning scheme policy provides additional guidance on how to comply with this performance outcome.</p>	<p>AO4.1</p> <p>Development provides walking and cycle routes which are constructed on the carriageway or through the site to:</p> <ul style="list-style-type: none"> (a) create a walking or cycle route along the full frontage of the site; (b) connect to public transport and existing cycle and walking routes at the frontage or boundary of the site. <p>AO4.2</p> <p>Development provides walking and cycle routes that are constructed in compliance with the standards in the Transport, access, parking and servicing planning scheme policy and the Infrastructure design planning scheme policy.</p> <p>AO4.3</p> <p>Development provides walking and cycle routes which do not include a potential entrapment area, blind corner or sudden change in level that restrict sightlines.</p>	<p>Complies</p> <p>The intent of the ground level is to be highly pedestrianized with the laneway activation and pedestrian connections to the adjacent Busway Station. Furthermore, footpaths will be provided along both the Lamington Avenue and Lutwyche Road frontage of the site.</p>
<p>PO5</p> <p>Development provides secure and convenient bicycle parking which:</p> <ul style="list-style-type: none"> (a) for visitors is obvious and located close to the building's main entrance; (b) for employees is conveniently located to provide secure and convenient access between the bicycle storage area, end-of-trip facilities and the main area of the building; 	<p>AO5.1</p> <p>Development provides on-site bicycle parking spaces in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.</p> <p>AO5.2</p> <p>Development provides bicycle parking spaces for employees which are co-located with end-of-trip facilities (shower cubicles and lockers) in</p>	<p>Complies</p> <p>Please see Section 3.7 of the traffic impact assessment.</p> <p>Complies/Able to comply</p> <p>Subject to relevant condition of approval.</p>

<p>(c) is easily and safely accessible from outside the site;</p> <p>(d) does not impact adversely on visual amenity;</p> <p>(e) does not impede the movement of pedestrians or other vehicles;</p> <p>(f) is designed to comply with a recognised standard for the construction of bicycle facilities.</p> <p>Note—For a performance outcome relating to the number of bicycle parking spaces provided, the application must demonstrate how the needs of the intended users of the site differ from the standard rates in the Transport, access, parking and servicing planning scheme policy.</p>	<p>compliance with the Transport, access, parking and servicing planning scheme policy and AS 2890.3-1993 Bicycle parking facilities.</p>	
	<p>AO5.3</p> <p>Development ensures that the location of visitor bicycle parking is discernible either by direct view or using signs from the street.</p>	<p>Complies/Able to comply</p> <p>Signage may be required as the spaces and end of trip facilities are located on ground level within the carpark</p>
	<p>AO5.4</p> <p>Development provides visitor bicycle parking which does not impede pedestrian movement.</p>	<p>Complies</p> <p>There is a dedicated bicycle store on ground level.</p>
	<p>AO5.5</p> <p>Development provides bicycle parking which is constructed in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.</p>	<p>Complies/Able to comply</p> <p>Subject to relevant condition of approval.</p>
<p>PO6</p> <p>Development provides shower cubicles and lockers in sufficient numbers to meet the needs and volume of predicted pedestrian and cyclist users.</p> <p>Note—For a performance outcome the application must demonstrate how the needs of the intended users of the site differ from the standard rates in the Transport, access, parking and servicing planning scheme policy.</p>	<p>AO6</p> <p>Development provides shower cubicles and lockers for pedestrians and cyclists in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.</p>	<p>Complies/Able to comply</p> <p>Subject to relevant condition of approval.</p>
<p>PO7</p> <p>Development provides pedestrian and cyclist access to the site which is designed to provide</p>	<p>AO7</p> <p>Development provides pedestrian and cycle access that is designed and constructed in</p>	<p>Complies/Able to comply</p> <p>Subject to detailed design and appropriate MUTCD signage.</p>

safe movement and avoid unnecessary conflict between pedestrians, cyclists and motor vehicles.	compliance with the site access design guidelines, pedestrian facilities standards and cyclist facilities standards in the Transport, access, parking and servicing planning scheme policy.	The intent of the ground level is to be highly pedestrianized with the laneway activation and pedestrian connections to the adjacent Busway Station. Furthermore, footpaths will be provided along both the Lamington Avenue and Lutwyche Road frontage of the site.
PO8 Development provides pedestrian and cyclist access to and from the site which is located to take advantage of safe crossing points of the adjacent road system, key destinations and public transport facilities.	AO8 No acceptable outcome is prescribed.	Complies The site is connected to both the Lutwyche Rd and Lamington Ave footpaths.
PO9 Development provides access driveways in the road area that are located, designed and controlled to: (a) minimise adverse impacts on the safety and operation of the transport network, including the movement of pedestrians and cyclists; (b) ensure the amenity of adjacent premises, from impacts such as noise and light.	AO9.1 No acceptable outcome for access is prescribed, for a major development (as described in the Transport, access, parking and servicing planning scheme policy).	PO The proposed access arrangement will have negligible impact on the safety and operation of the surrounding transport network. The Lutwyche Road access will be restricted to left-in/ left-out to minimise conflict points on the major road.
	AO9.2 Development which is not a major development (as described in the Transport, access, parking and servicing planning scheme policy) provides a single site access driveway in the road area to the lowest order road to which the site has frontage.	N/A Development is a major development.
	AO9.3	PO See Section 3.3 of the traffic impact assessment.

	Development ensures that sight distances to and from all proposed access driveways in the road area and intersections are in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	The road geometry proximity to access points does not preclude achieving appropriate sight distances. Note that kerbside parking has the potential to reduce available sight distance. We suggest Council consider “No Stopping” lines adjacent / proximate to driveways to promote appropriate sight distances and vehicle movements.
	AO9.4 Development provides access driveways in the road area which: <ul style="list-style-type: none"> (a) are located, designed and controlled in compliance with the standards in the Transport, access, parking and servicing planning scheme policy; (b) are not provided through a bus stop, taxi rank or pedestrian crossing or refuge. 	PO See Section 3.2 of the traffic impact assessment.
	AO9.5 Development makes provision for shared access arrangements particularly where it is necessary to limit access points to a major road.	AO An access easement is proposed between the subject site and the adjacent BHC site.
PO10 Redevelopment provides for: <ul style="list-style-type: none"> (a) the closure of all access driveways in the road area that no longer comply with the standards in the Transport, access, parking and servicing planning scheme policy; (b) the reinstatement of adjacent footpaths. 	AO10 No acceptable outcome is prescribed.	PO Access points are generally in compliance with Council’s TAPS PSP. See Section 3.2 of the traffic impact assessment.
PO11	AO11.1	PO

<p>Development provides that an internal approach to an access driveway in the road area is designed and located to provide for the safety of pedestrians and cyclists using paths adjacent to the frontage of the site, and motorists.</p>	<p>Development provides sight distances to and from all proposed access driveways in the road area and intersections which are in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.</p>	<p>See Section 3.3 of the traffic impact assessment. The road geometry proximity to access points does not preclude achieving appropriate sight distances. Note that kerbside parking has the potential to reduce available sight distance. We suggest Council consider “No Stopping” lines adjacent / proximate to driveways to promote appropriate sight distances and vehicle movements.</p>
	<p>AO11.2</p> <p>Development ensures that convex mirrors are only used in a site:</p> <ul style="list-style-type: none"> (a) as a secondary support at access driveways; (b) in addition to acceptable sight splays that comply with the sight distances standards in the Transport, access, parking and servicing planning scheme policy. 	<p>AO</p> <p>It is not anticipated that convex mirror will be required as part of this proposal.</p>
<p>PO12</p> <p>Development in the City core and City frame as identified in Figure a provides car parking spaces at rates to discourage private car use and encourage walking, cycling and the use of public transport.</p>	<p>AO12</p> <p>Development in the City core and City frame as identified in Figure a provides maximum car-parking rates in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.</p> <p>Note—For accepted development subject to compliance with identified requirements including an existing premises, no reduction to existing car parking is required to comply with a maximum car-parking rate in the Transport,</p>	<p>N/A</p>

	access, parking and servicing planning scheme policy.	
<p>PO13</p> <p>Development outside of the City core and City frame as identified in Figure a provides on-site car parking spaces to accommodate the design peak parking demand without any overflow of car parking to an adjacent premises or adjacent street.</p>	<p>AO13</p> <p>Development outside of the City core and City frame as identified in Figure a:</p> <ul style="list-style-type: none"> (a) provides on-site car parking spaces in compliance with the standards in the Transport, access, parking and servicing planning scheme policy; or (b) for accepted development subject to compliance with identified requirements, does not result in on-street car parking if no parking standard is identified in the Transport, access, parking and servicing planning scheme policy. <p>Note—For accepted development subject to compliance with identified requirements including an existing premises, no reduction to existing car parking is required to comply with a maximum car-parking rate in the Transport, access, parking and servicing planning scheme policy.</p>	<p>AO</p> <p>Carparking is provided in accordance with Council's TAPS PSP.</p> <p>Per Section 3.5 there is a significant degree of flexibility as to the number of spaces that can be provided as some uses are subject to parking minimums (residential, hotel, bar) and others are subject to parking maximums (centre activities).</p> <p>We suggest Council consider conditioning a number of parking spaces that allows flexibility to improve the site layout as part of design development (see Section 7.4 and 3.10 of the traffic impact assessment).</p>
<p>PO14</p> <p>Development ensures that the number of car parking spaces and design of the car parking area:</p>	<p>AO14.1</p> <p>Development provides a number of car parking spaces on site equalling the sum of the maximum design peak parking demand for the individual uses at any point in time.</p>	<p>AO</p> <p>Carparking is provided in accordance with Council's TAPS PSP.</p>

<p>(a) meet the combined design peak parking demand for residential, visitor and business parking;</p> <p>(b) allow for the temporal sharing of car-parking spaces for uses with different peak parking demands.</p> <p>Note—In order to demonstrate that adequate car parking is provided, a traffic impact assessment prepared in compliance with the Transport, access, parking and servicing planning scheme policy is to identify the appropriate number of car parking spaces to be provided.</p>	<p>AO14.2</p> <p>Development involving mixed use provides a non-residential car parking area with shared parking for all the businesses in the development.</p>	<p>AO</p> <p>Carparking is provided in accordance with Council's TAPS PSP.</p>
<p>PO15</p> <p>Development provides a car park layout which allows for on-site vehicle parking that:</p> <p>(a) is clearly defined, safe and easily accessible;</p> <p>(b) is designed to contain potential adverse impacts within the site;</p> <p>(c) does not detract from the aesthetics or amenity of an area;</p> <p>(d) discourages on-street parking if parking has an adverse traffic management safety or amenity impact;</p> <p>(e) is consistent with safe and convenient pedestrian and cyclist movement.</p>	<p>AO15</p> <p>Development provides parking bays, queue areas and manoeuvring areas which are designed for the design service vehicle to the standards in the Transport, access, parking and servicing planning scheme policy.</p>	<p>PO</p> <p>The site layout is generally in accordance with Council's TAPS PSP. See Section 3.10 and 7.4.</p> <p>In summary further design refinements will be required as part of design development however there is a significant flexibility in the number of parking spaces required to comply with Council's TAPS PSP therefore we expect such refinements are feasible and can be completed in such a way so as to not bring about issues in terms of carparking provision compliance.</p>
<p>PO16</p> <p>Development creates a safe environment by incorporating the key elements of crime prevention through environmental design.</p>	<p>AO16</p> <p>Development incorporates the key elements of crime prevention through environmental design</p>	<p>Not applicable to the traffic impact assessment.</p>

	<p>in its layout, building and structure design and landscaping by:</p> <ul style="list-style-type: none"> (a) facilitating casual surveillance opportunities and including good sightlines to publicly accessible areas such as car parks, pathways, public toilets and communal areas; (b) defining different uses and ownerships through design and restricting access from non-residential uses into private residential dwellings; (c) promoting safety and minimising opportunities for graffiti and vandalism through exterior building design and orientation of buildings and use of active frontages; (d) ensuring publicly accessible areas such as car parks, pathways, public toilets and communal areas are well lit; (e) including way-finding cues; (f) minimising predictable routes and entrapment locations near public spaces such as car parks, public toilets, ATMs and communal areas. <p>Note—For guidance in achieving the key elements of crime prevention through environmental design, refer to the Crime prevention through environmental design planning scheme policy.</p>	
PO17	AO17	Not applicable to the traffic impact assessment.

Development minimises the potential for graffiti and vandalism through access control, canvas reduction and easy maintenance selection.	<p>Development incorporates graffiti and vandalism prevention techniques in its layout, building and structure design and landscaping, by:</p> <ul style="list-style-type: none"> (a) denying access to potential canvases through access control techniques; (b) reducing potential canvases through canvas reduction techniques; (c) ensuring graffiti can be readily and quickly removed through easy maintenance selection techniques. <p>Note—For guidance on graffiti and vandalism prevention techniques, refer to the Graffiti prevention planning scheme policy.</p>	
<p>PO18</p> <p>Development is serviced by an adequate number and size of service vehicles.</p>	<p>AO18</p> <p>Development ensures that the number and size of design service vehicles selected for the site is in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.</p>	<p>PO</p> <p>See Section 3.8 of the traffic impact assessment.</p>
<p>PO19</p> <p>Development layout provides for services which:</p> <ul style="list-style-type: none"> (a) are wholly within the site, other than service vehicle manoeuvring areas which may overhang the verge on a minor road where use of the footpath is not adversely affected; (b) are clearly defined, safe and easily accessible; 	<p>AO19.1</p> <p>Development ensures that a service bay provided on site:</p> <ul style="list-style-type: none"> (a) is provided and designed to comply with the design vehicle table and service area design standards in the Transport, access, parking and servicing planning scheme policy; (b) is located away from street frontages and screened from adjoining premises. 	<p>PO</p> <p>See Section 3.8 of the traffic impact assessment</p>

(c) are designed to contain potential adverse impacts of servicing within the site; (d) do not detract from the aesthetics or amenity of the surrounding area.	AO19.2 Development provides on-site servicing facilities and associated on-site vehicle manoeuvring areas which are designed in compliance with the service area design standards in the Transport, access, parking and servicing planning scheme policy.	PO See Section 3.8 of the traffic impact assessment
	AO19.3 Development provides service areas for refuse collection in compliance with the standards in the Refuse planning scheme policy, Transport, access, parking and servicing planning scheme policy and the Infrastructure design planning scheme policy.	PO See Section 3.8, 3.10 and 7.4 of the traffic impact assessment.
PO20 Development provides service vehicle access routes to and from the site which minimise the impact on: (a) amenity and safety in residential areas; (b) streets not constructed to a standard that accommodate increased heavy vehicle movements.	AO20 Development ensures that service vehicles use the shortest and most direct route to the major road network in compliance with the heavy vehicle standards in the Transport, access, parking and servicing planning scheme policy.	Complies Servicing demand for the proposed development is anticipated to be relatively low. Loading will generally occur outside of peak periods. Therefore, the servicing requirements will have marginal impacts on the surrounding road network. The loading dock is located on Lamington Avenue at the southern extent of the site. It is anticipated that service vehicles will generally access the site from the south which should minimise amenity impacts on local residents.
If for development which is required to be serviced by a b-double (Austroad class 10 vehicle), multi-combination vehicle, over-dimensional vehicle or any other vehicle identified by the Queensland Government as requiring a permit to operate on the road (freight-dependent development)		
PO21	AO21.1	N/A

<p>Development which is freight-dependent development ensures that the traffic generated by the development does not impact on:</p> <ul style="list-style-type: none"> (a) the operation of the transport network; (b) the safety and amenity of a residential area; (c) a road not constructed to accommodate a non-standard vehicle such as a road only constructed to accommodate a vehicle that has a legal right of access to all roads including Austroads vehicles classes 1–9. 	<p>Development which is freight-dependent development is located on a site which:</p> <ul style="list-style-type: none"> (a) has frontage to or direct access to the freight network in the Road hierarchy overlay via roads in a zone in the Industry zones category; or (b) can be serviced by a route that can act as a primary freight access route and connect to an existing primary freight route without impacting on the safe operation of the road network in compliance with the heavy vehicle standards in the Transport, access, parking and servicing planning scheme policy. 	
	<p>AO21.2</p> <p>Development which is freight-dependent development provides any necessary upgrade to a road used as an access route in compliance with the Infrastructure design planning scheme policy.</p>	N/A

Road hierarchy overlay code

Performance outcomes	Acceptable outcomes	Assessment
Section A—If for accepted development subject to compliance with identified requirements (acceptable outcomes only) or assessable development for a material change of use		
PO1 Development ensures that: <ul style="list-style-type: none"> (a) vehicle access is provided to each premises, which has no significant impact on the safety, efficiency, function, convenience of use or capacity of: <ul style="list-style-type: none"> (i) the road hierarchy shown on the Road hierarchy overlay map; (ii) public transport operations; (iii) pedestrian and cyclist movement; (b) the safety and efficiency of primary freight routes are protected and enhanced, supporting major industry areas; (c) site access driveways in the road area accommodate all turns only when such arrangements are safe and can be demonstrated to not inhibit transport system operation. 	AO1.1 Development ensures that an access driveway is provided from: <ul style="list-style-type: none"> (a) a minor road; (b) a district road or suburban road if the development has high traffic-generating potential. 	Complies No new points of access to a major road are proposed.
	AO1.2 Development ensures that an access driveway is not provided to or from a primary freight route identified on the Road hierarchy overlay map.	Complies Access is not provided on a primary freight route.
	AO1.3 Development ensures that a use other than a use with high traffic-generating potential gains all vehicular access, other than for service vehicles, via the lowest order road in the road hierarchy to which the site has frontage.	N/A Use has high traffic-generating potential.
	AO1.4 Development ensures that a turn to and from a major road is restricted to a left turn only.	Complies Existing / proposed major road access limited to left-in / left-out movements.

	<p>A01.5</p> <p>Development ensures that vehicle access is provided to an abutting site that only has frontage to an arterial road, to facilitate access to the abutting site via an alternative street.</p>	<p>Complies</p> <p>Lutwyche Rd access point is shared between subject site and adjacent BHC development.</p>
Section B—If for assessable development for a material change of use		
<p>PO2</p> <p>Development does not compromise the safety, efficiency and function of the road hierarchy and addresses all the impacts to the road network.</p>	<p>A02.1</p> <p>Development ensures that the traffic generated by the development is consistent with the road hierarchy classification, function and expected traffic flows for the area.</p>	<p>Complies</p> <p>The traffic generated by the development is consistent with the road hierarchy classification.</p>
	<p>A02.2</p> <p>Development mitigates an impact on the road hierarchy if the development:</p> <ul style="list-style-type: none"> (a) is for a major development; or (b) involves an access driveway to a major road; or (c) involves an access driveway within 100m of a signalised intersection. <p>Note—This can be demonstrated in a transport impact assessment report prepared and certified by a Registered Professional Engineer Queensland in accordance with the Transport, access, parking and servicing planning scheme policy.</p>	<p>Complies</p> <p>Traffic impact is relatively minimal and likely off-set by way of infrastructure charges.</p> <p>See Section 5.0 of the traffic impact assessment.</p>
Section C—If for assessable development for a material change of use or reconfiguring of a lot		

<p>PO3</p> <p>Development makes provision for the extension, expansion and widening of the existing and future road network where required.</p>	<p>A03</p> <p>No acceptable outcome is prescribed.</p>	<p>Complies</p> <p>It is understood that the current site layout is adequate in the context of future road expansions / widenings.</p>
<p>PO3A</p> <p>Development provides for the payment of extra trunk infrastructure costs for the following:</p> <ul style="list-style-type: none"> (a) for development completely or partly outside the priority infrastructure area in the Local government infrastructure plan; (b) for development completely inside the priority infrastructure area in the Local government infrastructure plan involving: <ul style="list-style-type: none"> (i) trunk infrastructure that is to be provided earlier than planned in the Local government infrastructure plan; (ii) long term infrastructure for the road network which is made necessary by development that is not assumed future urban development; (iii) other infrastructure for the road network associated with development that is not assumed future urban development which is made necessary by the development. <p>Editor's note—The payment of extra trunk infrastructure costs for development completely</p>	<p>A03A</p> <p>No acceptable outcome is prescribed.</p>	<p>Not relevant to this traffic impact assessment. Although it is noted that the development is subject to pay infrastructure charges.</p>

<p>inside the priority infrastructure area in the Local government infrastructure plan is to be worked out in accordance with the Charges Resolution.</p> <p>Editor's note—See section 130 Imposing Development conditions (Conditions for extra trunk infrastructure costs) of the <i>Planning Act 2016</i>.</p>		
<p>If on a site in or adjacent to the District road sub-category which has a width less than 20 metres, or to the Suburban road sub-category or to the Arterial road sub-category</p>		
<p>PO4</p> <p>Development protects a corridor for the road network shown on the Road hierarchy overlay map to ensure the following are not compromised:</p> <ul style="list-style-type: none"> (a) the long term infrastructure for the road network in the Long term infrastructure plans; (b) the existing and planned infrastructure for the road network in the Local government infrastructure plan; (c) the provision of long term, existing and planned infrastructure for the road network which: <ul style="list-style-type: none"> (i) is required to service the development or existing and future urban development in the planning scheme area; or 	<p>AO4</p> <p>Development protects a corridor for the road network shown on the Road hierarchy overlay map in compliance with the following:</p> <ul style="list-style-type: none"> (a) for the long term infrastructure for the road network, the Long term infrastructure plans; (b) for existing and planned infrastructure for the road network, the Local government infrastructure plan; (c) the standards for the road network in the Infrastructure design planning scheme policy. 	<p>Complies</p> <p>It is understood that the current site layout is adequate in the context of future road expansions / widenings.</p>

<p>(ii) is in the interests of rational development or the efficient and orderly planning of the general area in which the site is situated.</p> <p>Editor's note—A condition which requires a proposed development to keep permanent improvements and structures associated with the approved development clear of the area of long term infrastructure, may be imposed.</p>		
Section D—If reconfiguring a lot or involving an extension or change to the road hierarchy		
<p>PO5</p> <p>Development ensures that a new road connection provides:</p> <p>(a) safe, efficient and convenient connectivity of the new road to the major road network;</p> <p>(b) a minimum number of intersections to the major road network.</p>	<p>AO5</p> <p>Development provides access to the road network in a manner that preserves the function of the road hierarchy and addresses all impacts to the road network.</p>	<p>Complies</p> <p>See Section 3.2 and 3.3 of the traffic impact assessment.</p>
<p>PO6</p> <p>Development ensures that an extension of or change to the road network:</p> <p>(a) provides internal connectivity and connects to the external road network;</p> <p>(b) provides pedestrian connectivity to facilitate ease of access by the shortest reasonable route to neighbourhood facilities, parks, schools, shops, bus routes, transport facilities or open space systems;</p>	<p>AO6.1</p> <p>Development ensures that a new or upgraded road is designed and constructed in accordance with its road hierarchy classification as shown on the Road hierarchy overlay and the standards in the Infrastructure design planning scheme policy.</p>	<p>NA</p> <p>No new or upgraded public roads are proposed.</p>
	<p>AO6.2</p> <p>Development preserves the function of the road hierarchy and addresses all impacts on the road network.</p>	<p>Complies</p> <p>See Section 5.0 of the traffic impact assessment.</p>

<ul style="list-style-type: none"> (c) provides cycle connectivity to facilitate ease of access by the shortest reasonable distance to the next higher order cycle route; (d) includes the provision of bus routes that provide ease of access to bus customers; (e) minimises vehicle volumes and speed in residential streets while providing connectivity to major roads in a reasonable travel time; (f) provides a street layout that minimises travel time and traffic volumes on minor roads; (g) provides high permeability for pedestrian and cycle networks; (h) provides safe accessibility to lots by having more than one street providing access to the area; (i) preserves the function of the road hierarchy and addresses all impacts to the road network. 	<p>Note—This can be demonstrated in a transport impact assessment report prepared and certified by a Registered Professional Engineer Queensland in accordance with the Transport, access, parking and servicing planning scheme policy and the Infrastructure design planning scheme policy (Traffic impact assessment and definitions section).</p>	<p>Development preserves the function of the road hierarchy and addresses all impacts on the road network.</p>
<p>PO7</p> <p>Development ensures that premises and vehicle access are located and controlled so as to have no significant impact on the safety, efficiency, function, convenience of use or capacity of the major road network and preserves the function of the road hierarchy.</p>	<p>A07</p> <p>Development ensures that residential lots are laid out to ensure a future use does not directly ingress from or egress to a major road.</p>	<p>Complies</p> <p>Future uses will not achieve access to / from a major road.</p>
<p>PO8</p>	<p>A08</p>	<p>NA</p>

Development ensures that an intersection is designed and constructed in accordance with its hierarchical classification as shown on the Road hierarchy overlay map.	Development ensures that an intersection is designed to the standard of the highest order road at the point of intersection in accordance with the road design standard in the Infrastructure design planning scheme policy.	No new intersections are proposed.
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