Appendix F

Construction Scenario 2 – Phasing Diagrams

PHASING SUMMARY

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Dr (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 128 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D

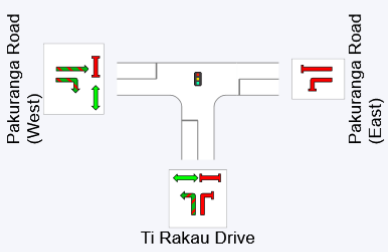
Phase Timing Summary

Phase	A	B	C	D
Phase Change Time (sec)	0	38	50	100
Green Time (sec)	32	6	44	22
Phase Time (sec)	38	12	50	28
Phase Split	30%	9%	39%	22%

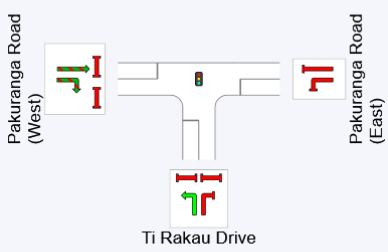
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence

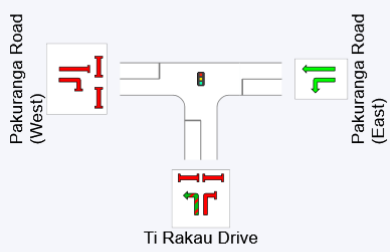
Phase A **REF**



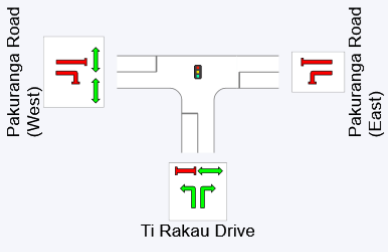
Phase B



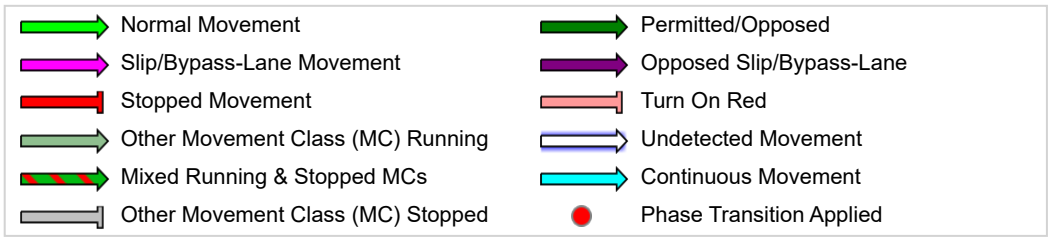
Phase C



Phase D



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 3.0 [3.0 Pakuranga Highway / Pakuranga Rd (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 96 seconds (Site Practical Cycle Time)

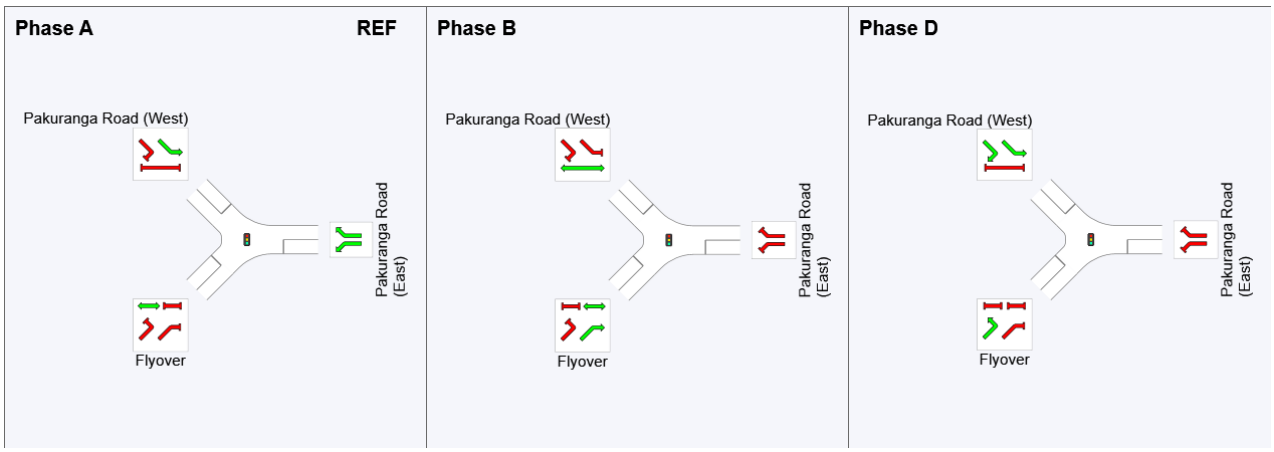
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, D
Output Phase Sequence: A, B, D

Phase Timing Summary

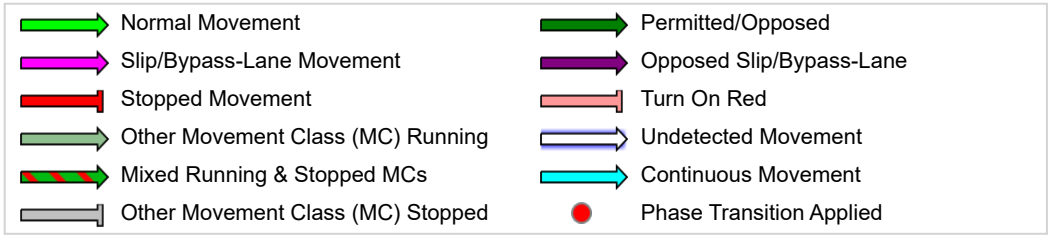
Phase	A	B	D
Phase Change Time (sec)	0	56	78
Green Time (sec)	50	16	12
Phase Time (sec)	56	22	18
Phase Split	58%	23%	19%

See the Timing Analysis 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, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 4.0 [4.0 Palm Ave / Aylesbury St (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 64 seconds (Site Practical Cycle Time)

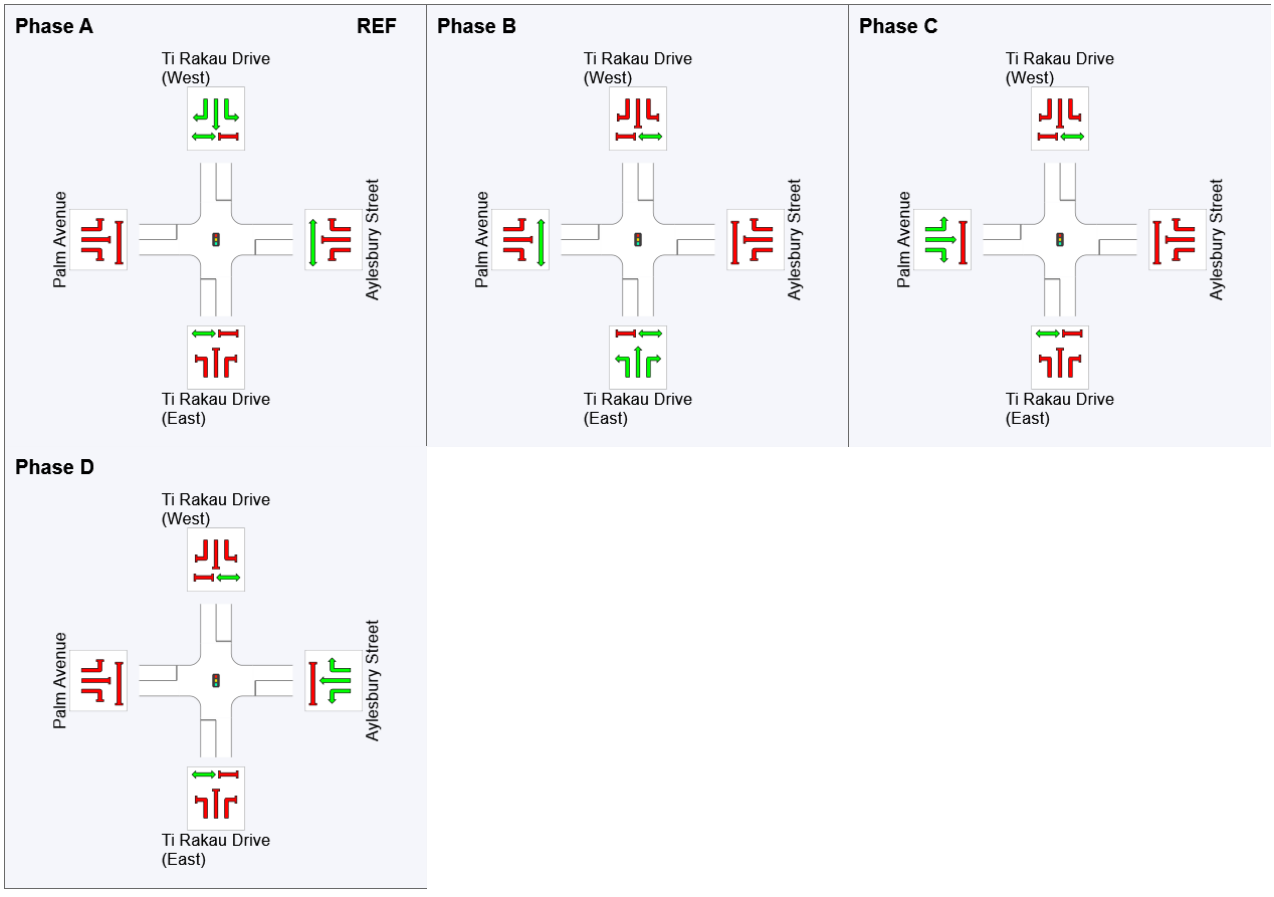
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D

Phase Timing Summary

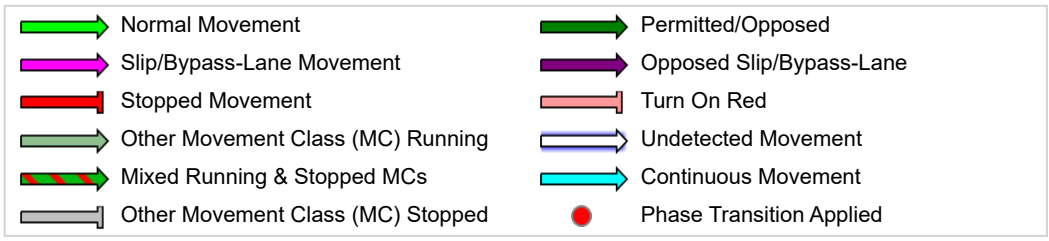
Phase	A	B	C	D
Phase Change Time (sec)	0	17	40	52
Green Time (sec)	11	17	6	6
Phase Time (sec)	17	23	12	12
Phase Split	27%	36%	19%	19%

See the Timing Analysis 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, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 5.0 [5.0 Pakuranga Highway/ Reeves Rd (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 44 seconds (Site Practical Cycle Time)

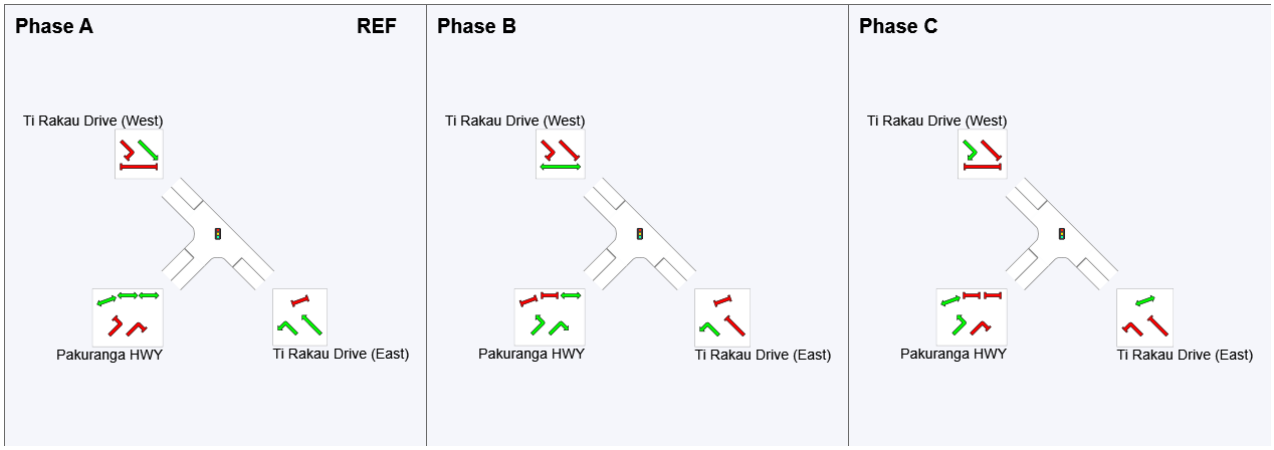
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Map Extract Default
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

Phase Timing Summary

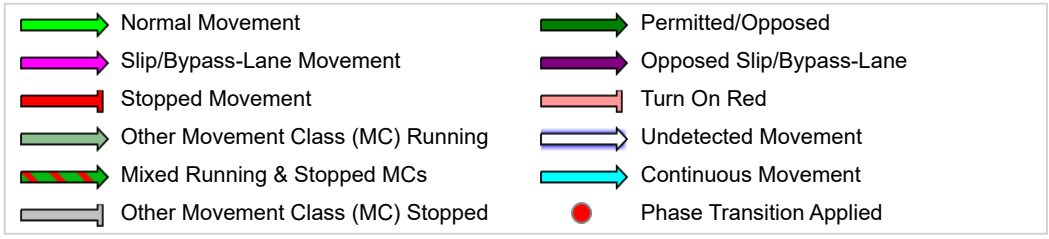
Phase	A	B	C
Phase Change Time (sec)	0	15	32
Green Time (sec)	9	11	6
Phase Time (sec)	15	17	12
Phase Split	34%	39%	27%

See the Timing Analysis 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, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 7.0 [7.0 William Roberts Rd / Ti Rakau Dr (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 65 seconds (Site Practical Cycle Time)

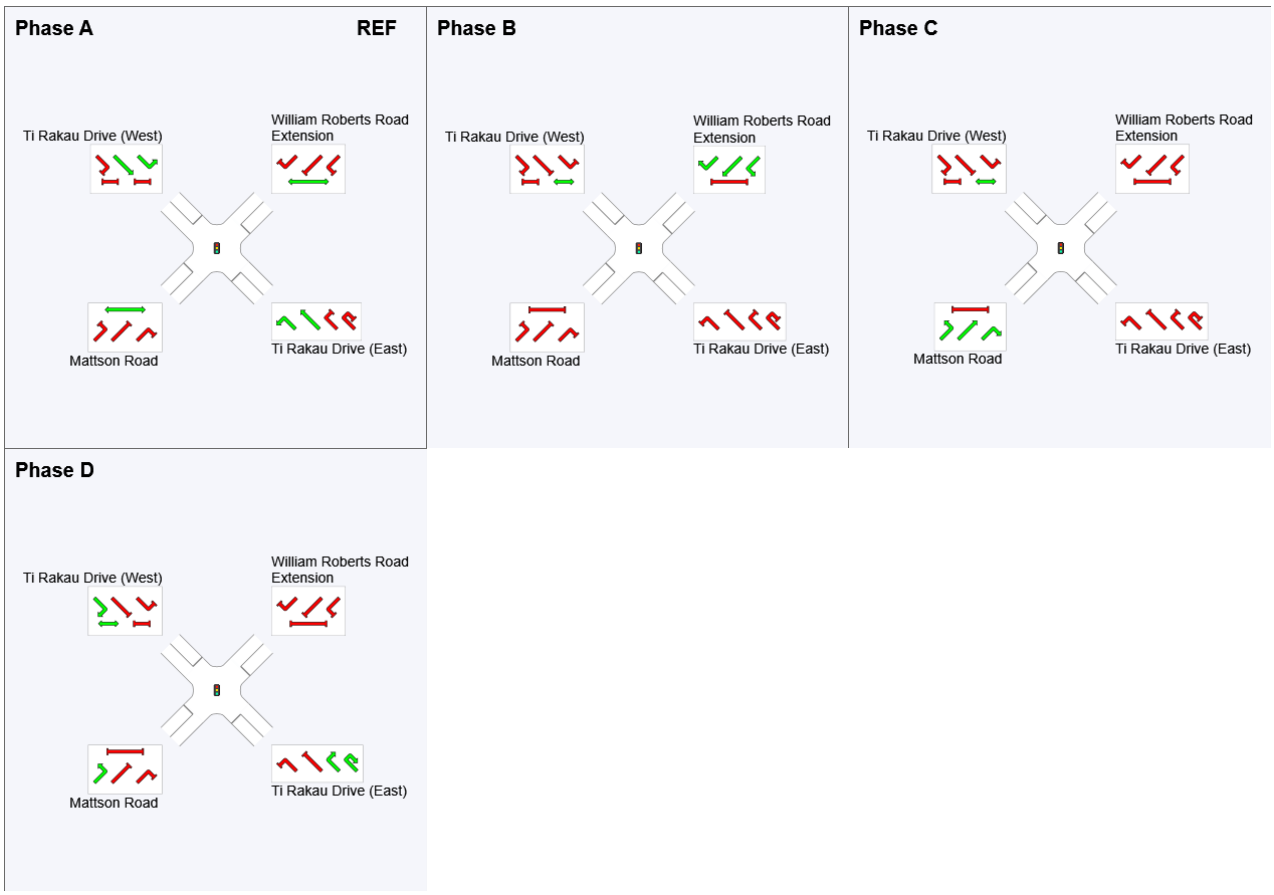
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D

Phase Timing Summary

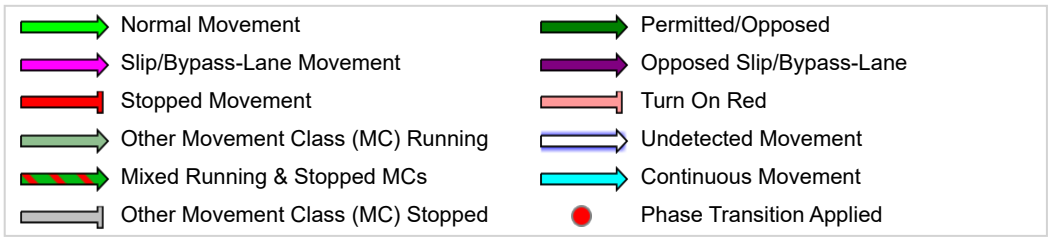
Phase	A	B	C	D
Phase Change Time (sec)	0	29	41	53
Green Time (sec)	23	6	6	6
Phase Time (sec)	29	12	12	12
Phase Split	45%	18%	18%	18%

See the Timing Analysis 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, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Scheme Design
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Practical Cycle Time)

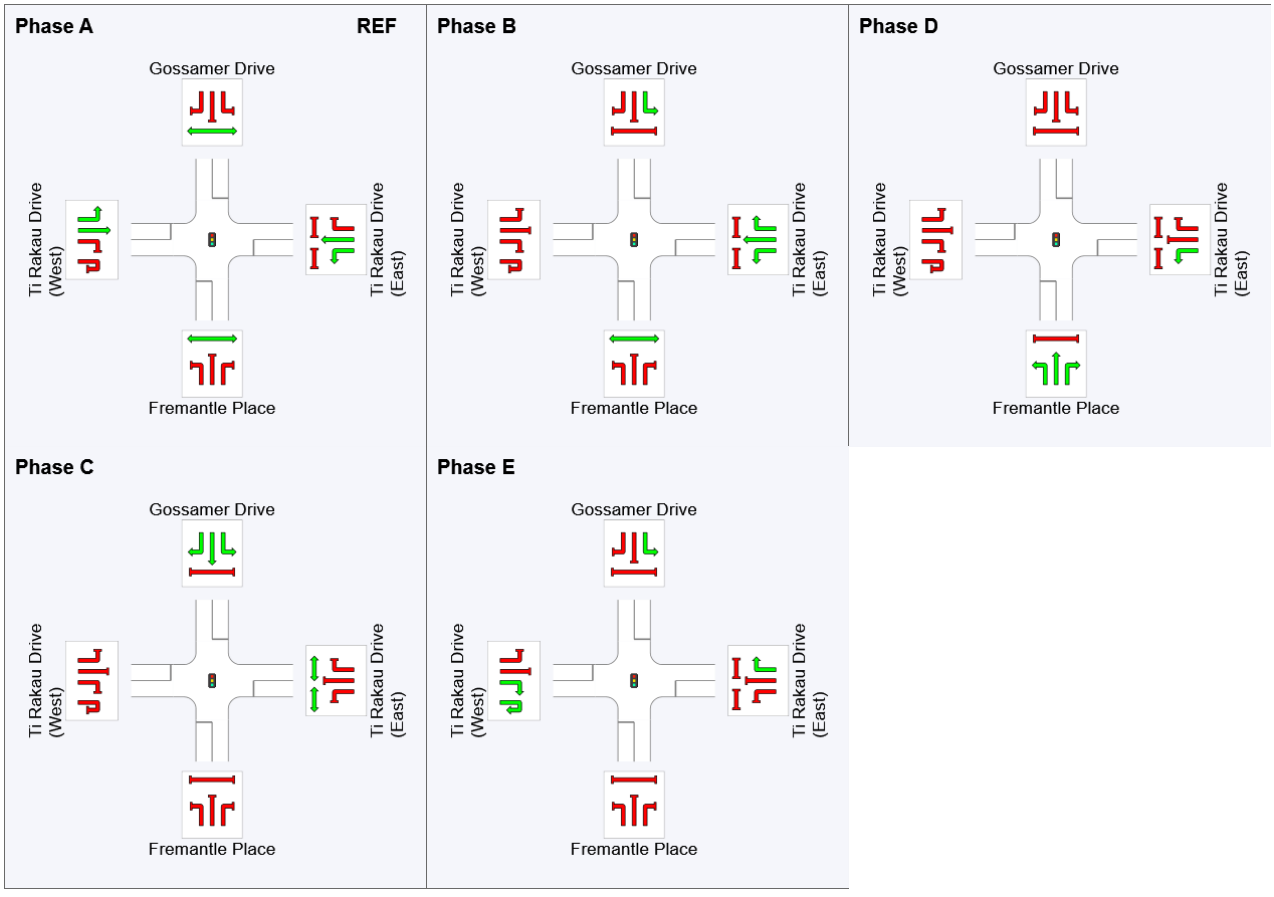
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, D, C, E
Output Phase Sequence: A, B, D, C, E

Phase Timing Summary

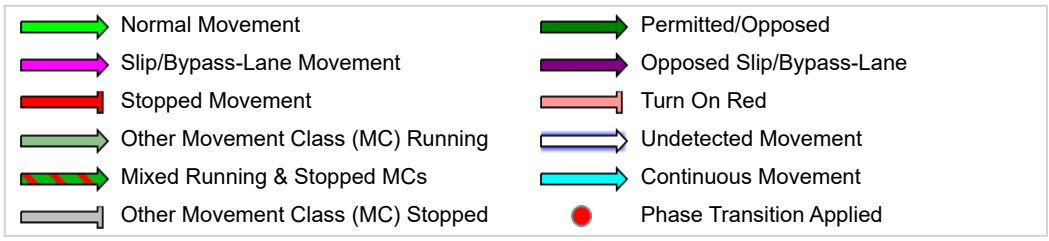
Phase	A	B	D	C	E
Phase Change Time (sec)	0	62	86	98	126
Green Time (sec)	56	18	6	22	18
Phase Time (sec)	62	24	12	28	24
Phase Split	41%	16%	8%	19%	16%

See the Timing Analysis 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, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Dr (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

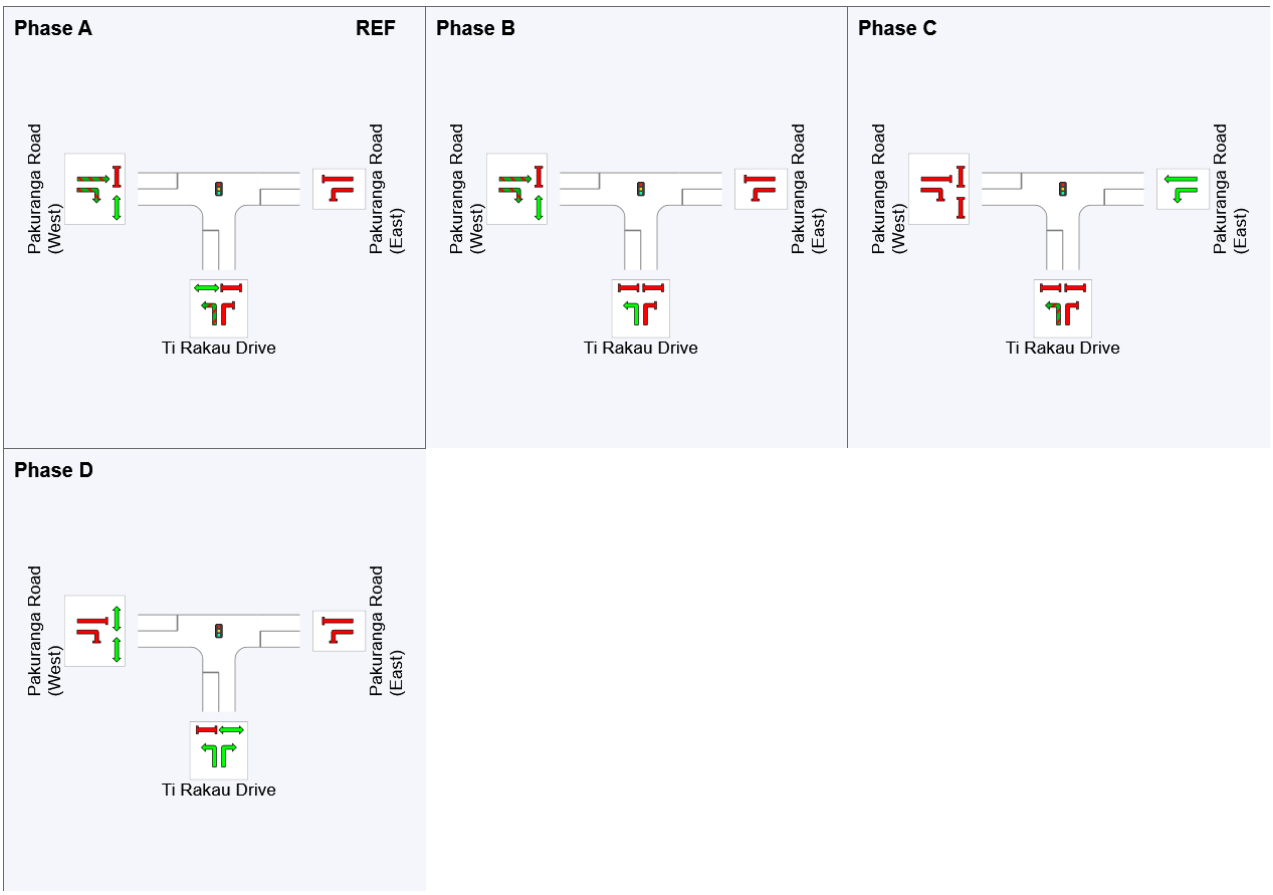
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D

Phase Timing Summary

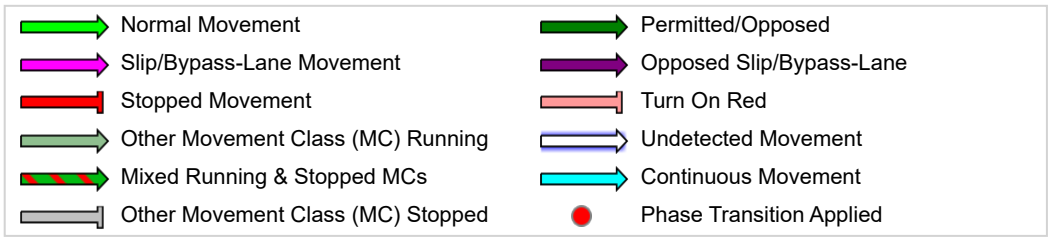
Phase	A	B	C	D
Phase Change Time (sec)	28	100	113	149
Green Time (sec)	66	7	30	23
Phase Time (sec)	72	13	36	29
Phase Split	48%	9%	24%	19%

See the Timing Analysis 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, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 3.0 [3.0 Pakuranga Highway / Pakuranga Rd (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Practical Cycle Time)

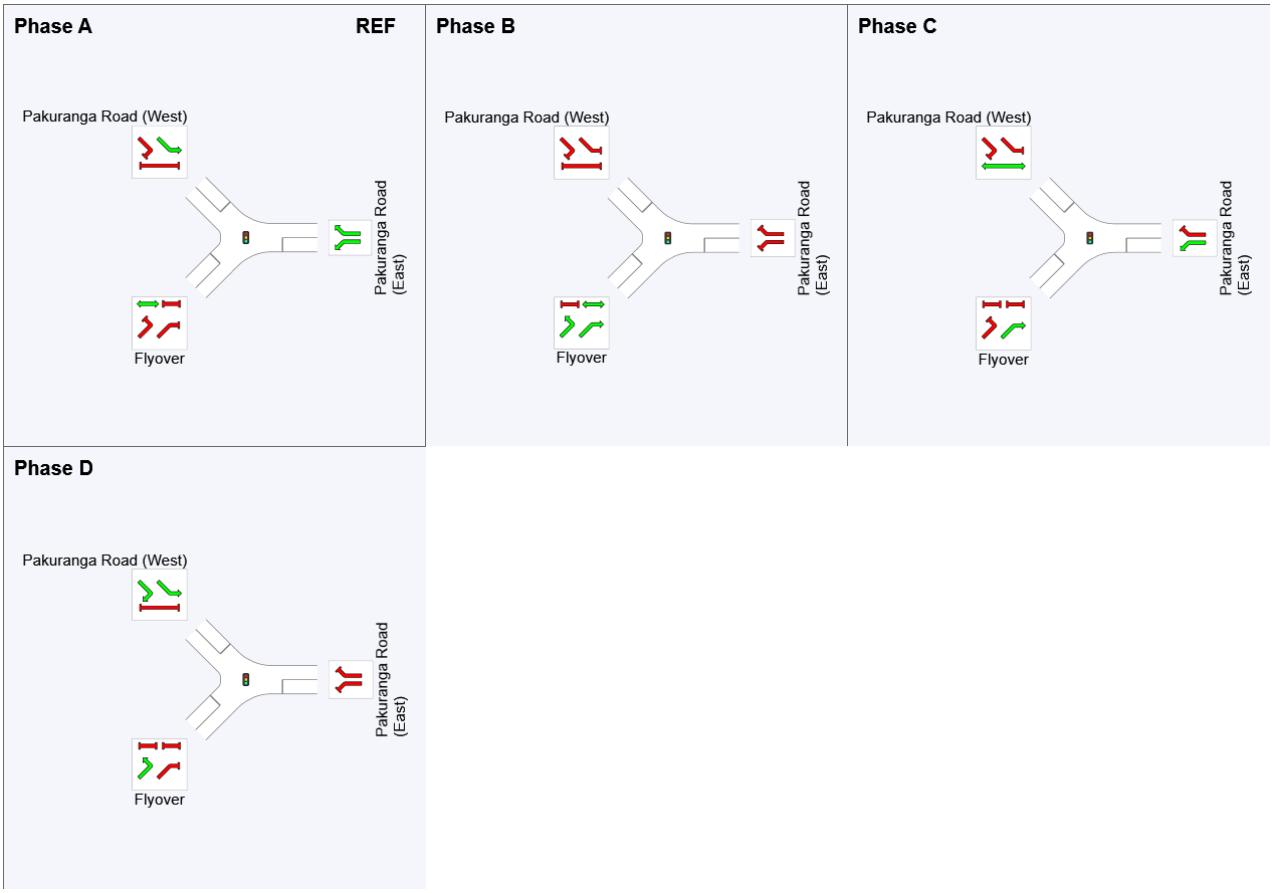
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D

Phase Timing Summary

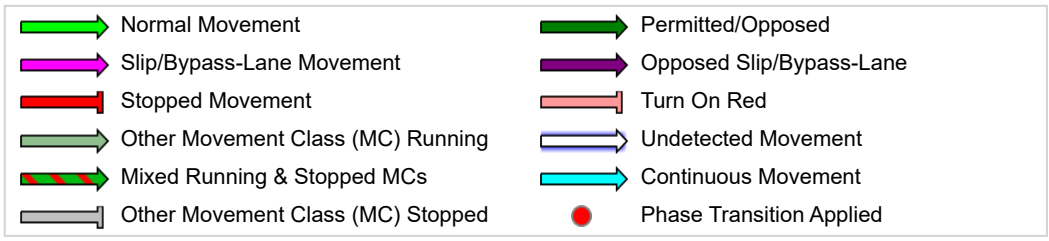
Phase	A	B	C	D
Phase Change Time (sec)	0	44	89	129
Green Time (sec)	38	39	34	15
Phase Time (sec)	44	45	40	21
Phase Split	29%	30%	27%	14%

See the Timing Analysis 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, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 4.0 [4.0 Palm Ave / Aylesbury St (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

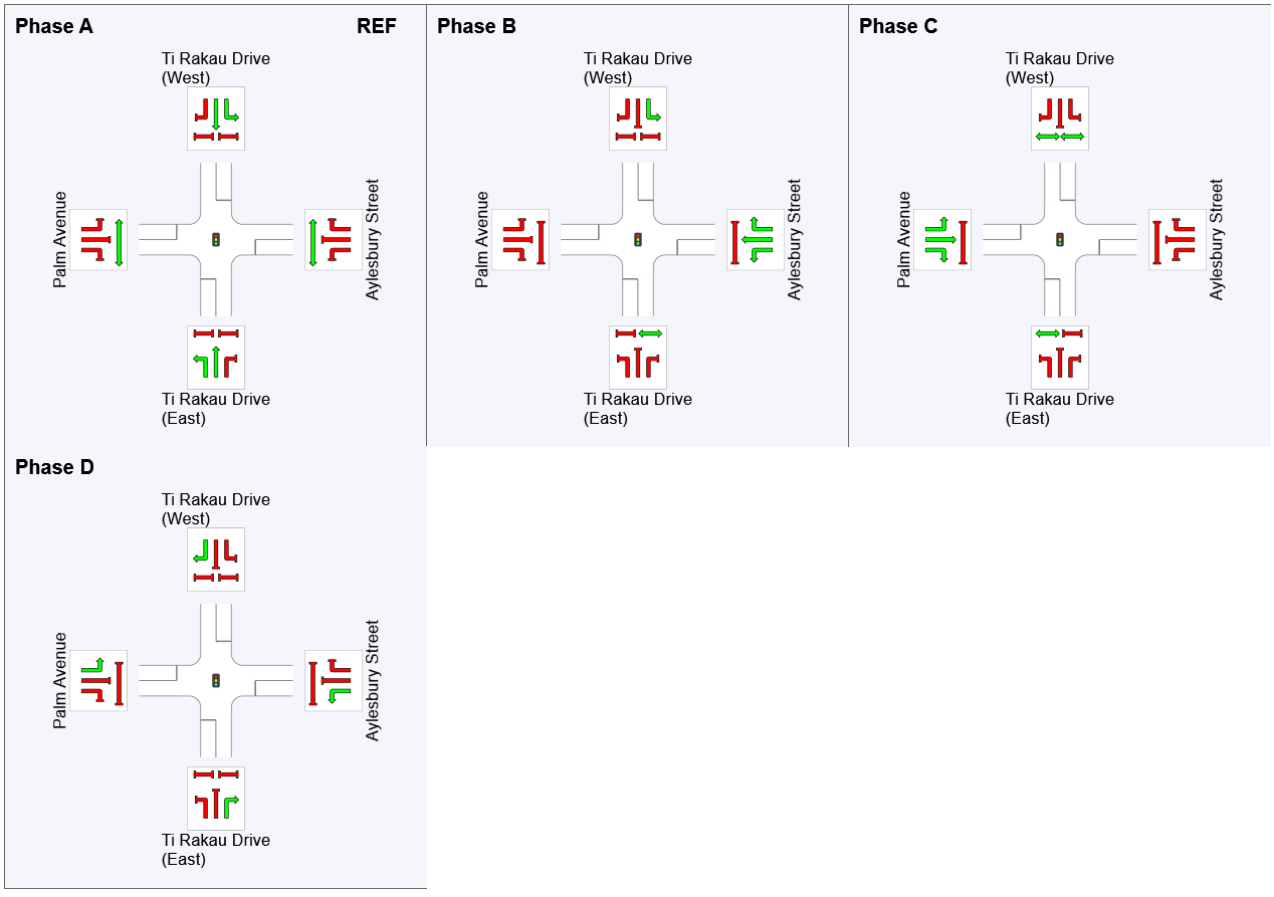
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D

Phase Timing Summary

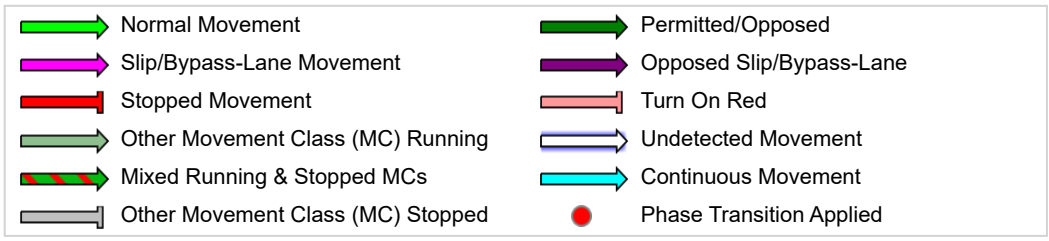
Phase	A	B	C	D
Phase Change Time (sec)	11	113	128	149
Green Time (sec)	96	9	15	6
Phase Time (sec)	102	15	21	12
Phase Split	68%	10%	14%	8%

See the Timing Analysis 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, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 5.0 [5.0 Pakuranga Highway/ Reeves Rd (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

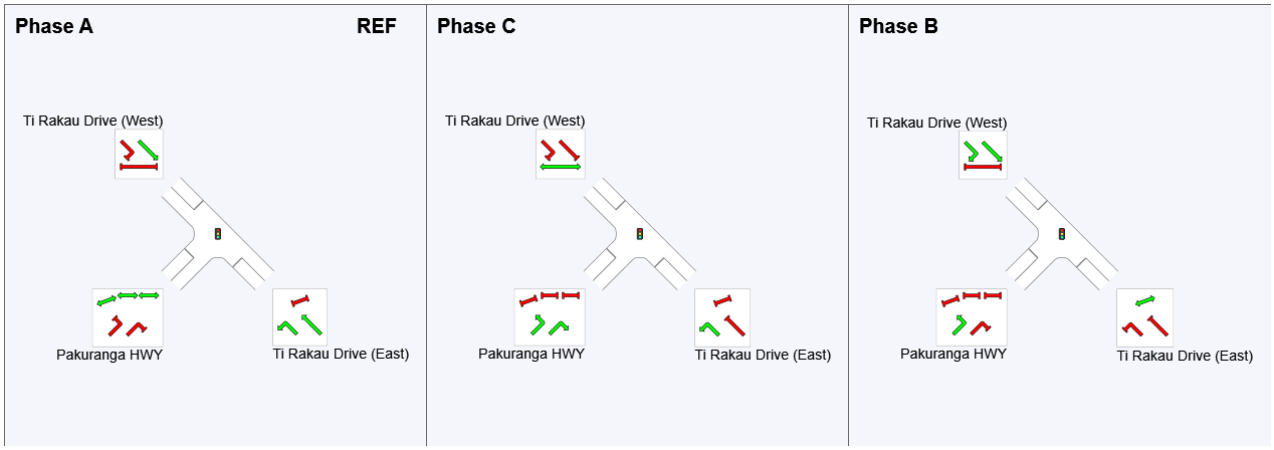
Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Map Extract Default
Reference Phase: Phase A
Input Phase Sequence: A, C, B
Output Phase Sequence: A, C, B

Phase Timing Summary

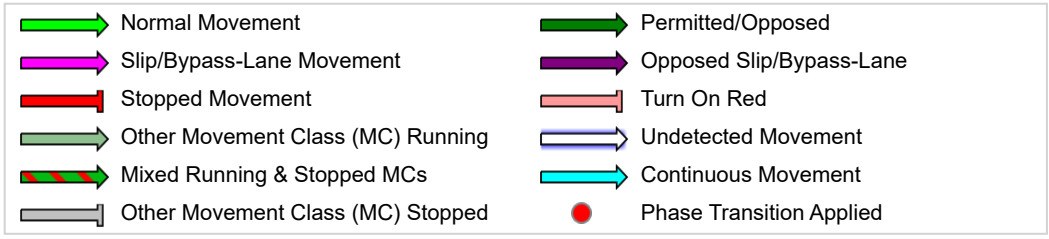
Phase	A	C	B
Phase Change Time (sec)	0	43	135
Green Time (sec)	37	86	9
Phase Time (sec)	43	92	15
Phase Split	29%	61%	10%

See the Timing Analysis 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, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 7.0 [7.0 William Roberts Rd / Ti Rakau Dr (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Site Practical Cycle Time)

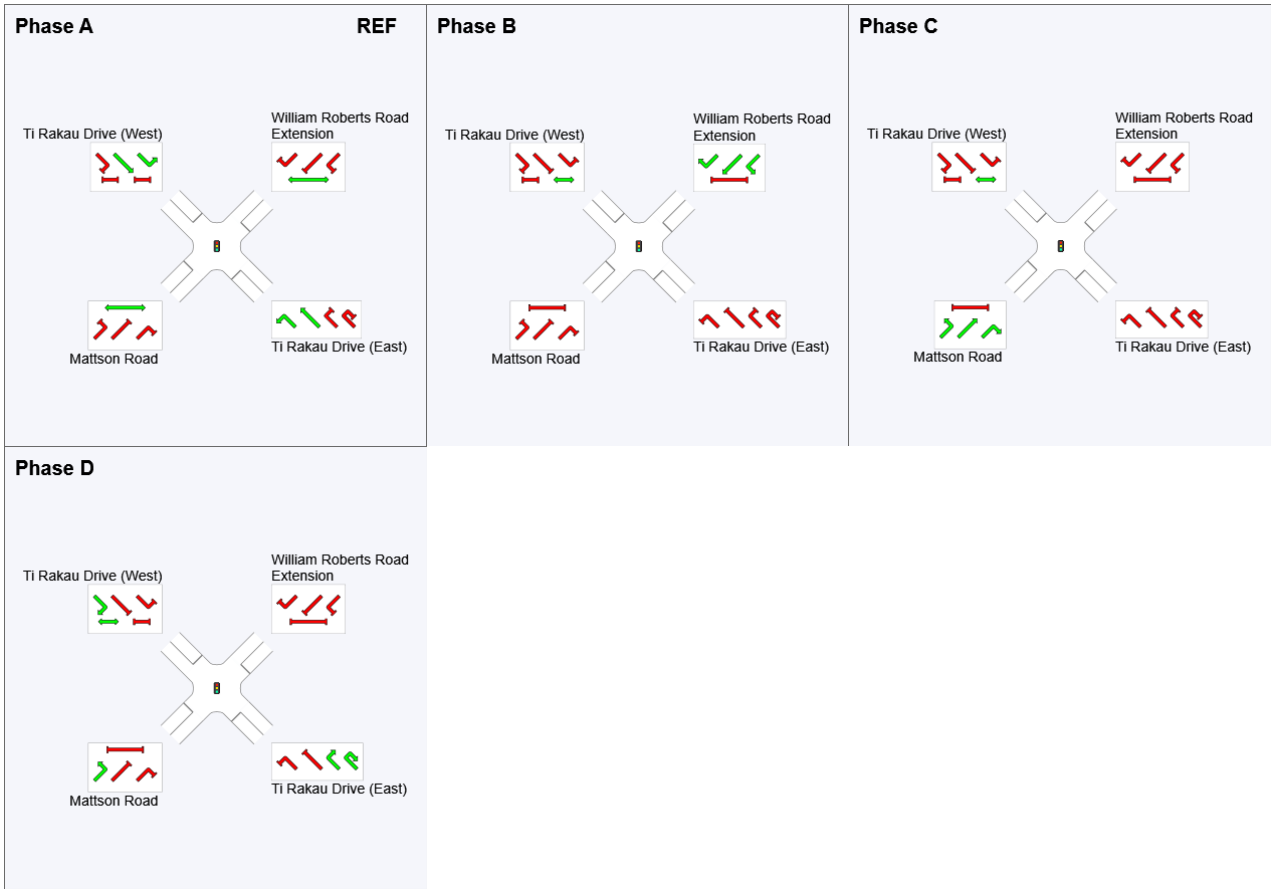
Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D

Phase Timing Summary

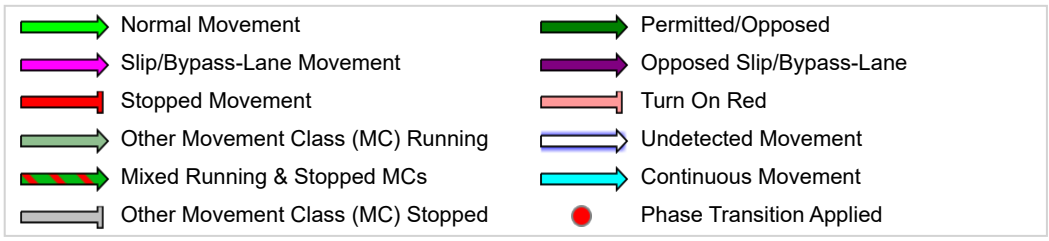
Phase	A	B	C	D
Phase Change Time (sec)	0	86	108	120
Green Time (sec)	80	16	6	24
Phase Time (sec)	86	22	12	30
Phase Split	57%	15%	8%	20%

See the Timing Analysis 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, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Output Phase Sequence



REF: Reference Phase
VAR: Variable Phase



PHASING SUMMARY

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Scheme Design
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Variable Phasing
Reference Phase: Phase A
Input Phase Sequence: A, B, C, D, E
Output Phase Sequence: A, B, C, D, E

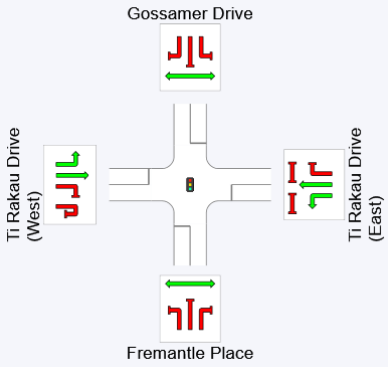
Phase Timing Summary

Phase	A	B	C	D	E
Phase Change Time (sec)	0	57	81	101	124
Green Time (sec)	51	18	14	17	20
Phase Time (sec)	57	24	20	23	26
Phase Split	38%	16%	13%	15%	17%

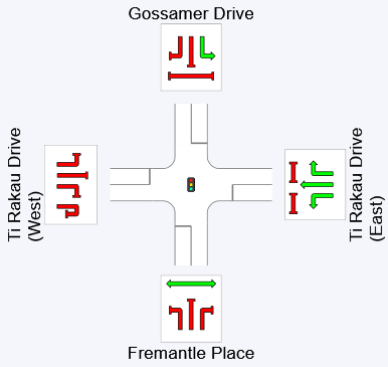
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

Output Phase Sequence

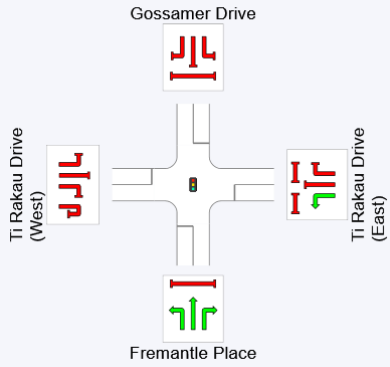
Phase A **REF**



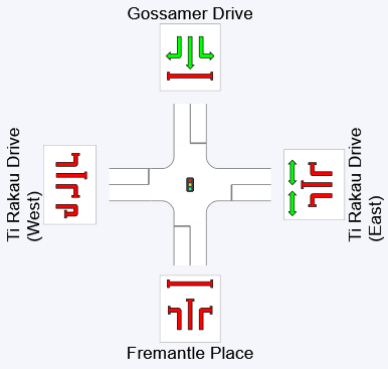
Phase B



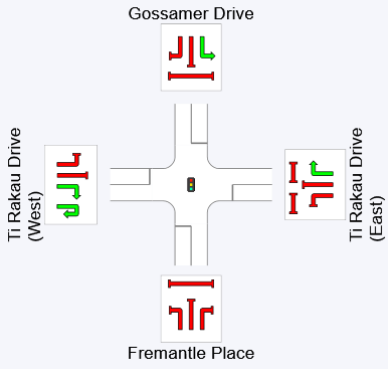
Phase C



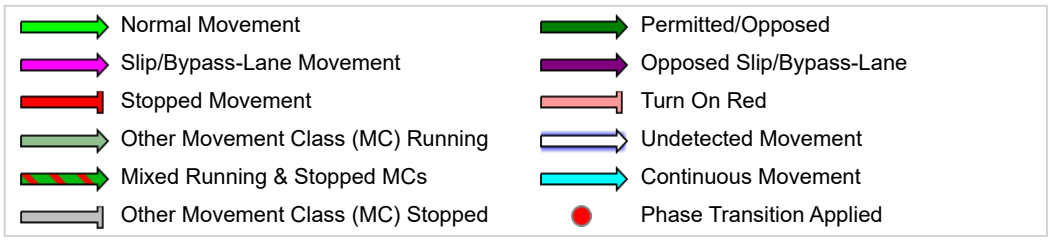
Phase D



Phase E



REF: Reference Phase
VAR: Variable Phase



TIME - DISTANCE DIAGRAM

Time – Distance Diagram for the Selected Route

Movement Class: Light Vehicles

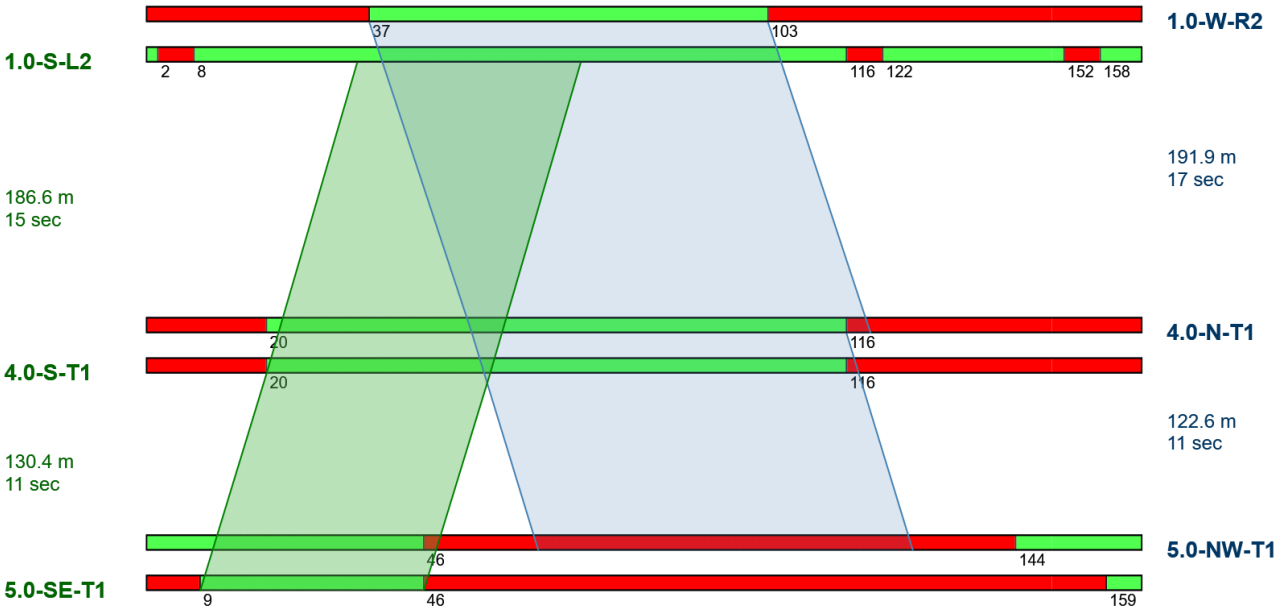
Route: R101 [Route1]

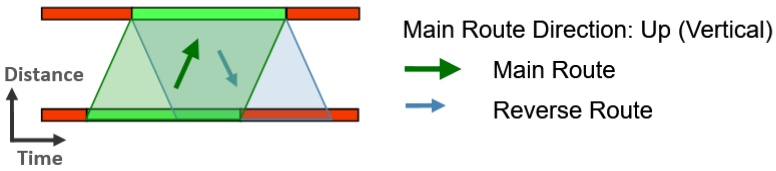
Network: N101 [AM (Network Folder: General)]

New Route
Network Category: (None)
Network Cycle Time = 150 seconds (Network User-Given Cycle Time)

Signal Offsets option used: User

Interactive Offsets





Appendix G

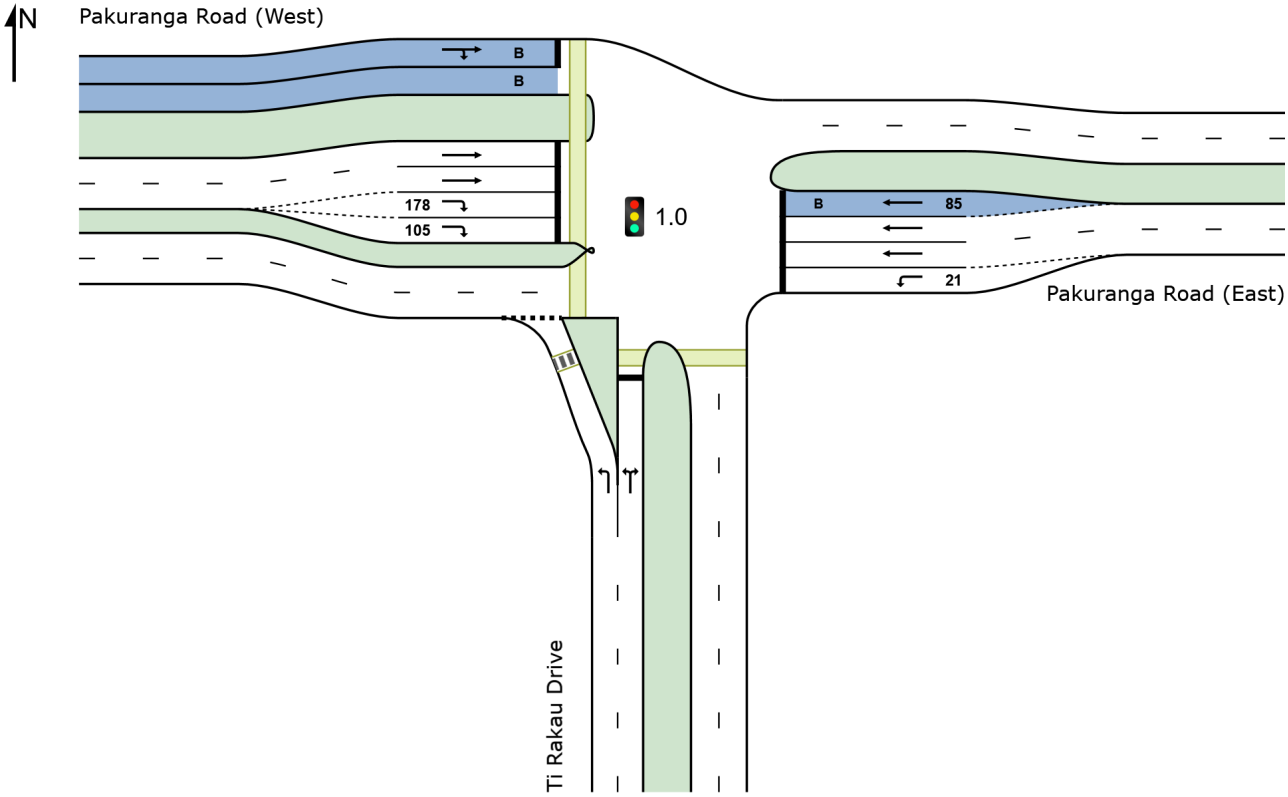
Construction Scenario 2 – Lane Performance Summaries

SITE LAYOUT

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Dr (Site Folder: AM)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



LANE SUMMARY

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Dr (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 128 seconds (Site Practical Cycle Time)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Ti Rakau Drive															
Lane 1	676	9.9	659	10.0	921	0.716	100	22.8	LOS C	20.4	155.3	Full	174	0.0	4.7
Lane 2	118	22.0	116	22.4	278	0.415	58[5]	55.3	LOS E	5.4	44.8	Full	174	0.0	0.0
Approach	794	11.7	774[N1]	11.8		0.716		27.6	LOS C	20.4	155.3				
East: Pakuranga Road (East)															
Lane 1	55	3.6	55	3.6	619	0.089	100	34.7	LOS C	2.0	14.8	Short	21	0.0	NA
Lane 2	531	5.7	529	5.7	590[1]	0.898	100	55.3	LOS E	19.5[N4]	143.2[N4]	Full	98	0.0	50.0
Lane 3	565	5.7	564	5.7	628[1]	0.898	100	55.5	LOS E	19.5[N4]	143.2[N4]	Full	98	0.0	50.0
Lane 4 (B)	21	100.0	21	100.0	404	0.052	6[5]	30.0	LOS C	0.8	10.1	Short	85	0.0	NA
Approach	1172	7.3	1169[N1]	7.3		0.898		54.0	LOS D	19.5	143.2				
West: Pakuranga Road (West)															
Lane 1 (B)	24	100.0	24	100.0	53	0.453	100	72.3	LOS E	1.4	18.6	Full	380	0.0	0.0
Lane 2	413	7.9	413	7.9	461	0.894	100	63.0	LOS E	25.9	193.5	Full	380	0.0	0.0
Lane 3	413	7.9	413	7.9	461	0.894	100	63.0	LOS E	25.9	193.5	Full	380	0.0	0.0
Lane 4	237	15.4	237	15.4	416	0.569	100	50.2	LOS D	11.7	92.6	Short	178	0.0	NA
Lane 5	237	15.4	237	15.4	416	0.569	100	50.2	LOS D	11.7	92.6	Short	105	0.0	NA
Approach	1323	12.2	1323	12.2		0.894		58.6	LOS E	25.9	193.5				
Intersection	3289	10.4	3266[N1]	10.4		0.898		49.6	LOS D	25.9	193.5				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Delay Model: SIDRA Standard (Geometric Delay is included).
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.
5 Lane under-utilisation found by the program
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N4 Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)

South: Ti Rakau Drive

Mov. From S To Exit:	L2 W	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	659	-	659	10.0	921	0.716	100	NA	NA
Lane 2	21	95	116	22.4	278	0.415	58[5]	NA	NA
Approach	680	95	774	11.8		0.716			

East: Pakuranga Road (East)

Mov. From E	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

To Exit:	S	W							
Lane 1	55	-	55	3.6	619	0.089	100	0.0	2
Lane 2	-	529	529	5.7	590[1]	0.898	100	NA	NA
Lane 3	-	564	564	5.7	628[1]	0.898	100	NA	NA
Lane 4	-	21	21	100.0	404	0.052	6[5]	0.0	3
Approach	55	1114	1169	7.3		0.898			

West: Pakuranga Road (West)

Mov. From W To Exit:	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	9	15	24	100.0	53	0.453	100	NA	NA
Lane 2	413	-	413	7.9	461	0.894	100	NA	NA
Lane 3	413	-	413	7.9	461	0.894	100	NA	NA
Lane 4	-	237	237	15.4	416	0.569	100	0.0	3
Lane 5	-	237	237	15.4	416	0.569	100	3.7	4
Approach	834	489	1323	12.2		0.894			

	Total	%HV	Deg.Satn (v/c)
Intersection	3266	10.4	0.898

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

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.

5 Lane under-utilisation found by the program

Merge Analysis

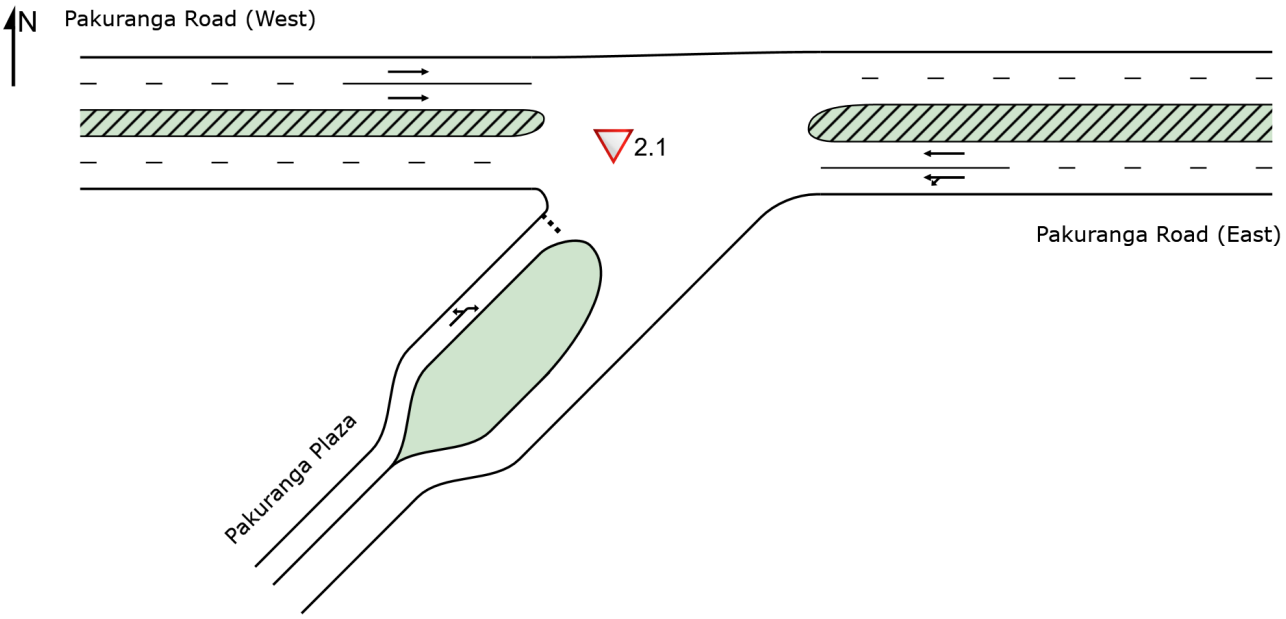
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Ti Rakau Drive Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
East Exit: Pakuranga Road (East) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
West Exit: Pakuranga Road (West) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
Full Length Lane	3	Merge Analysis not applied.										

SITE LAYOUT

Site: 2.1 [2.1 Pakuranga Plaza / Pakuranga Rd (Site Folder: AM)]

Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise | Created: Wednesday, 15 February 2023 9:15:07 am
Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 2.0\2028 Construction 2 AM - XL.sip9

LANE SUMMARY

Site: 2.1 [2.1 Pakuranga Plaza / Pakuranga Rd (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Give-Way (Two-Way)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
East: Pakuranga Road (East)															
Lane 1	624	9.1	624	9.1	1819	0.343	100	1.0	LOS A	0.0	0.0	Full	121	0.0	0.0
Lane 2	643	5.6	643	5.6	1872	0.343	100	0.0	LOS A	0.0	0.0	Full	121	0.0	0.0
Approach	1267	7.3	1267	7.3		0.343		0.5	NA	0.0	0.0				
West: Pakuranga Road (West)															
Lane 1	472	8.4	471	8.4	1840	0.256	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Lane 2	472	8.4	471	8.4	1840	0.256	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Approach	943	8.4	943	8.4		0.256		0.0	NA	0.0	0.0				
SouthWest: Pakuranga Plaza															
Lane 1	28	7.1	28	7.1	113	0.247	100	29.7	LOS D	0.5	3.6	Full	196	-12.5 N7	0.0
Approach	28	7.1	28	7.1		0.247		29.7	LOS D	0.5	3.6				
Intersection	2238	7.8	2238	7.8		0.343		0.7	NA	0.5	3.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N7 The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)

East: Pakuranga Road (East)

Mov. From E To Exit:	L1 SW	T1 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	121	503	624	9.1	1819	0.343	100	NA	NA
Lane 2	-	643	643	5.6	1872	0.343	100	NA	NA
Approach	121	1146	1267	7.3		0.343			

West: Pakuranga Road (West)

Mov. From W To Exit:	T1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	471	471	8.4	1840	0.256	100	NA	NA
Lane 2	471	471	8.4	1840	0.256	100	NA	NA
Approach	943	943	8.4		0.256			

SouthWest: Pakuranga Plaza

Mov. From SW To Exit:	L3	R1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

	W	E							
Lane 1	18	10	28	7.1	113	0.247	100	NA	NA
Approach	18	10	28	7.1		0.247			

	Total	%HV	Deg.Satn (v/c)
Intersection	2238	7.8	0.343

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

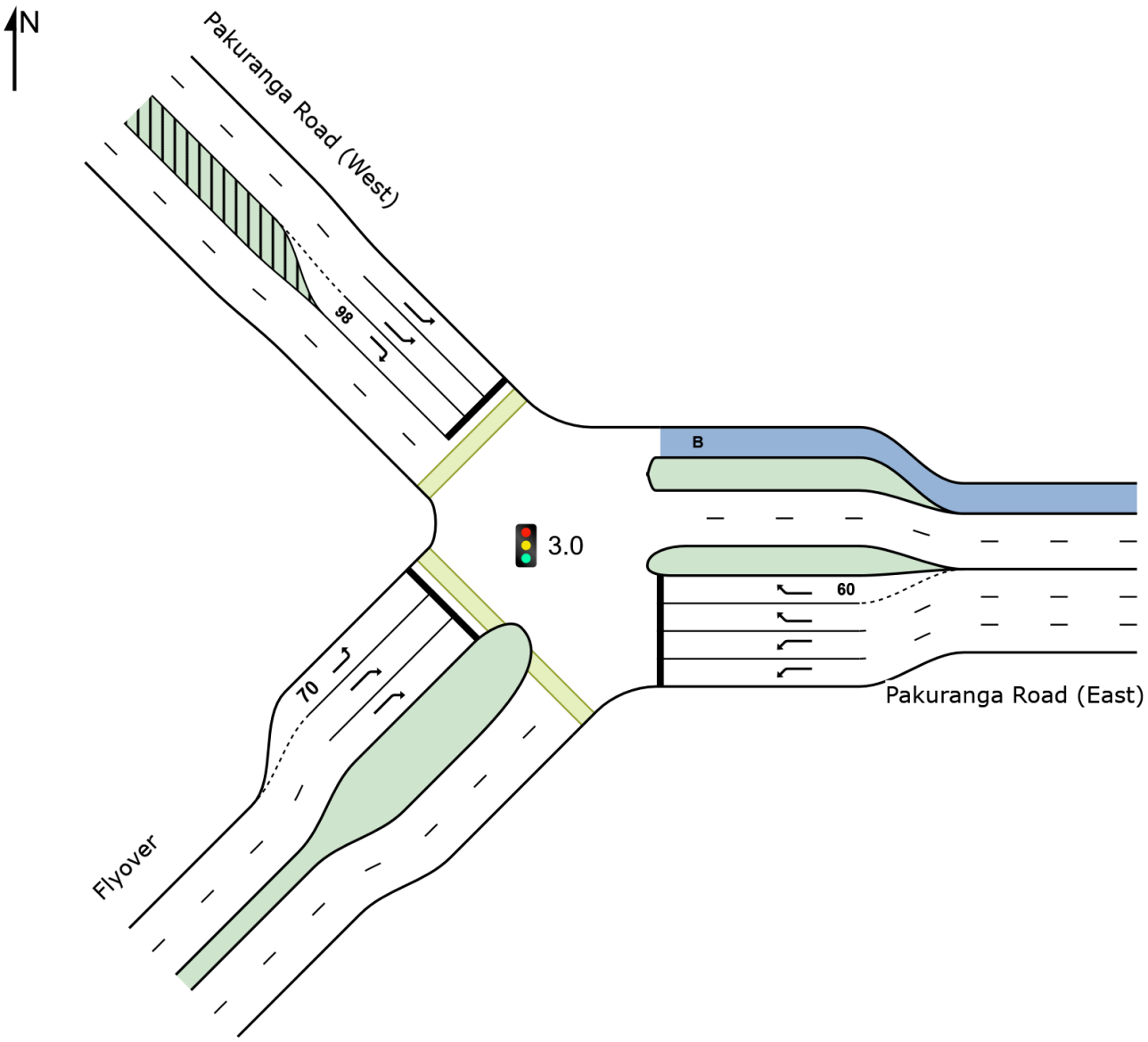
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: Pakuranga Road (East) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
West Exit: Pakuranga Road (West) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
SouthWest Exit: Pakuranga Plaza Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

SITE LAYOUT

Site: 3.0 [3.0 Pakuranga Highway / Pakuranga Rd (Site Folder: AM)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise | Created: Wednesday, 15 February 2023 9:15:11 am
Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 2.0\2028 Construction 2 AM - XL.sip9

LANE SUMMARY

Site: 3.0 [3.0 Pakuranga Highway / Pakuranga Rd (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 96 seconds (Site Practical Cycle Time)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
East: Pakuranga Road (East)															
Lane 1	859	5.3	859	5.3	955	0.899	100	38.7	LOS D	40.0	292.9	Full	183	0.0	58.6
Lane 2	859	5.3	859	5.3	955	0.899	100	38.7	LOS D	40.0	292.9	Full	183	0.0	58.6
Lane 3	566	7.4	566	7.4	692[1]	0.819	100	26.7	LOS C	19.0	141.7	Full	183	0.0	0.0
Lane 4	567	7.4	567	7.4	692[1]	0.819	100	26.7	LOS C	19.0	141.7	Short	60	0.0	NA
Approach	2851	6.1	2851	6.1		0.899		33.9	LOS C	40.0	292.9				
NorthWest: Pakuranga Road (West)															
Lane 1	383	9.7	383	9.7	1262	0.303	100	8.9	LOS A	5.9	44.5	Full	121	0.0	0.0
Lane 2	388	7.5	388	7.5	1280	0.303	100	8.9	LOS A	5.9	44.3	Full	121	0.0	0.0
Lane 3	198	6.6	198	6.6	221	0.898	100	62.3	LOS E	9.8	72.8	Short	98	0.0	NA
Approach	969	8.2	969	8.2		0.898		19.8	LOS B	9.8	72.8				
SouthWest: Flyover															
Lane 1	144	6.9	144	6.9	227	0.635	100	51.0	LOS D	6.1	44.9	Short	70	0.0	NA
Lane 2	281	5.3	281	5.3	315	0.890	100	58.6	LOS E	13.7	100.3	Full	1162	0.0	0.0
Lane 3	281	5.3	281	5.3	315	0.890	100	58.6	LOS E	13.7	100.3	Full	1162	0.0	0.0
Approach	705	5.7	705	5.7		0.890		57.0	LOS E	13.7	100.3				
Intersection	4525	6.5	4525	6.5		0.899		34.5	LOS C	40.0	292.9				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Delay Model: SIDRA Standard (Geometric Delay is included).
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.

Approach Lane Flows (veh/h)

East: Pakuranga Road (East)

Mov. From E To Exit:	L1 SW	R1 NW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	859	-	859	5.3	955	0.899	100	NA	NA
Lane 2	859	-	859	5.3	955	0.899	100	NA	NA
Lane 3	-	566	566	7.4	692[1]	0.819	100	NA	NA
Lane 4	-	567	567	7.4	692[1]	0.819	100	96.6	3
Approach	1718	1133	2851	6.1		0.899			

NorthWest: Pakuranga Road (West)

Mov. From NW To Exit:	L1 E	R2 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	383	-	383	9.7	1262	0.303	100	NA	NA

Lane 2	388	-	388	7.5	1280	0.303	100	NA	NA
Lane 3	-	198	198	6.6	221	0.898	100	0.0	2
Approach	771	198	969	8.2		0.898			

SouthWest: Flyover

Mov. From SW To Exit:	L2 NW	R1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	144	-	144	6.9	227	0.635	100	0.0	2
Lane 2	-	281	281	5.3	315	0.890	100	NA	NA
Lane 3	-	281	281	5.3	315	0.890	100	NA	NA
Approach	144	561	705	5.7		0.890			

	Total	%HV	Deg.Satn (v/c)
Intersection	4525	6.5	0.899

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

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.

Merge Analysis

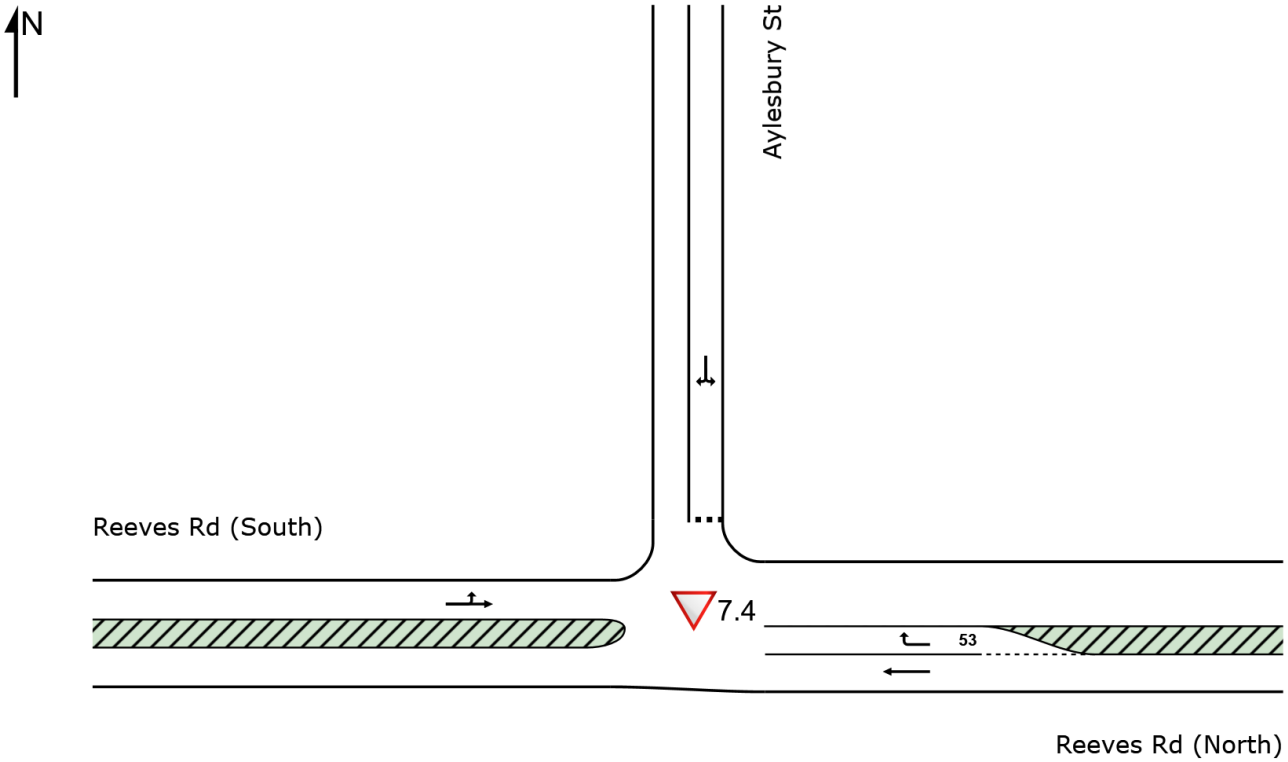
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate sec	Capacity veh/h	Deg. Satn veh/h	Min. Delay v/c	Merge Delay sec	sec
East Exit: Pakuranga Road (East) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
Full Length Lane	3	Merge Analysis not applied.										
NorthWest Exit: Pakuranga Road (West) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
SouthWest Exit: Flyover Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

SITE LAYOUT

Site: 7.4 [7.4 Reeves Rd/ Aylesbury St - XL (Site Folder: AM)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



LANE SUMMARY

Site: 7.4 [7.4 Reeves Rd/ Aylesbury St - XL (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
East: Reeves Rd (North)															
Lane 1	33	3.2	33	3.2	1967	0.017	100	0.0	LOS A	0.0	0.0	Full	55	0.0	0.0
Lane 2	48	6.5	48	6.5	1712	0.028	100	4.1	LOS A	0.1	0.7	Short	53	0.0	NA
Approach	81	5.2	81	5.2		0.028		2.5	NA	0.1	0.7				
North: Aylesbury St															
Lane 1	21	0.0	21	0.0	1296	0.016	100	4.8	LOS A	0.0	0.3	Full	193	0.0	0.0
Approach	21	0.0	21	0.0		0.016		4.8	LOS A	0.0	0.3				
West: Reeves Rd (South)															
Lane 1	21	0.0	21	0.0	1991	0.011	100	2.1	LOS A	0.0	0.0	Full	60	0.0	0.0
Approach	21	0.0	21	0.0		0.011		2.1	NA	0.0	0.0				
Intersection	123	3.4	123	3.4		0.028		2.8	NA	0.1	0.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Approach Lane Flows (veh/h)

East: Reeves Rd (North)

Mov. From E To Exit:	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	33	-	33	3.2	1967	0.017	100	NA	NA
Lane 2	-	48	48	6.5	1712	0.028	100	0.0	1
Approach	33	48	81	5.2		0.028			

North: Aylesbury St

Mov. From N To Exit:	L2 E	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	11	11	21	0.0	1296	0.016	100	NA	NA
Approach	11	11	21	0.0		0.016			

West: Reeves Rd (South)

Mov. From W To Exit:	L2 N	T1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	11	11	21	0.0	1991	0.011	100	NA	NA
Approach	11	11	21	0.0		0.011			

	Total	%HV	Deg.Satn (v/c)
Intersection	123	3.4	0.028

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

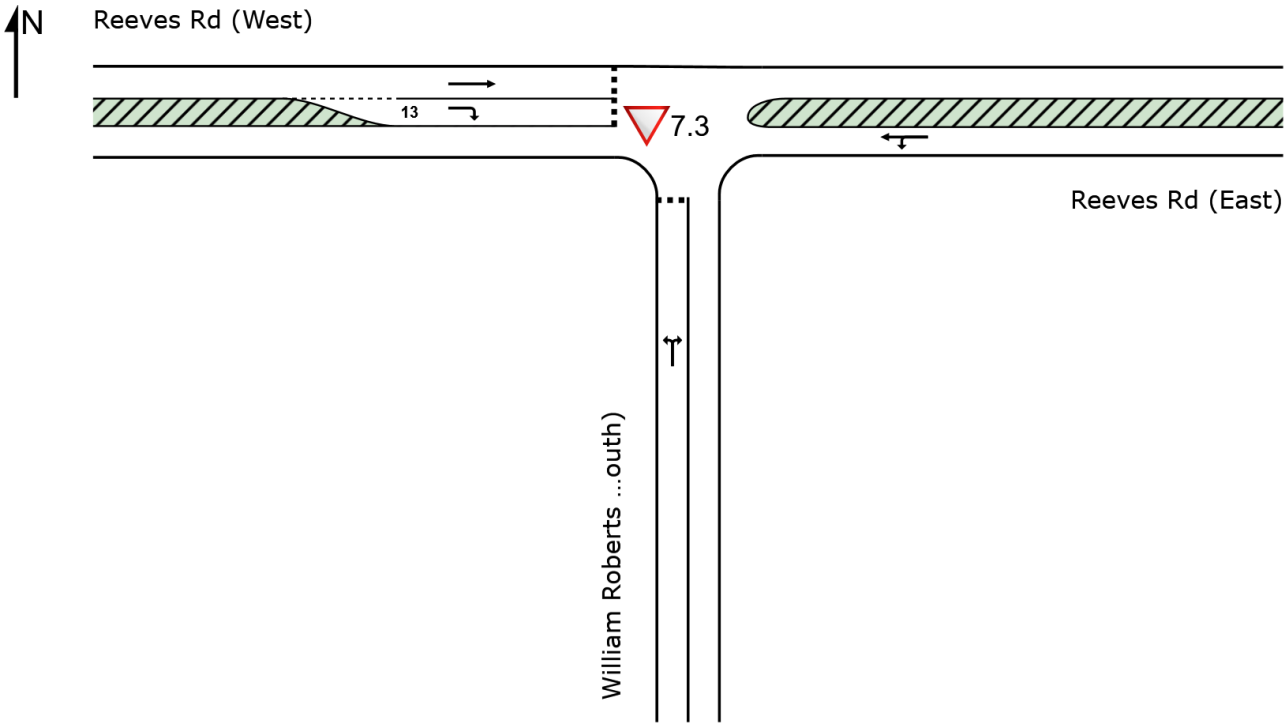
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: Reeves Rd (North) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Aylesbury St Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Reeves Rd (South) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

SITE LAYOUT

Site: 7.3 [7.3 William Roberts Rd / Reeves Rd - XL (Site Folder: AM)]

Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise | Created: Wednesday, 15 February 2023 9:15:29 am
Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 2.0\2028 Construction 2 AM - XL.sip9

LANE SUMMARY

Site: 7.3 [7.3 William Roberts Rd / Reeves Rd - XL (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Give-Way (Two-Way)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: William Roberts Road (South)															
Lane 1	184	8.0	183	8.0	971	0.189	100	5.5	LOS A	0.5	3.9	Full	243	0.0	0.0
Approach	184	8.0	183[N1]	8.0		0.189		5.5	LOS A	0.5	3.9				
East: Reeves Rd (East)															
Lane 1	208	9.6	208	9.6	1734	0.120	100	4.3	LOS A	0.0	0.0	Full	266	0.0	0.0
Approach	208	9.6	208	9.6		0.120		4.3	NA	0.0	0.0				
West: Reeves Rd (West)															
Lane 1	11	0.0	11	0.0	1960	0.005	100	2.7	LOS A	0.0	0.0	Full	55	0.0	0.0
Lane 2	11	0.0	11	0.0	737	0.014	100	6.2	LOS A	0.0	0.2	Short	13	0.0	NA
Approach	21	0.0	21	0.0		0.014		4.4	LOS A	0.0	0.2				
Intersection	414	8.4	413[N1]	8.4		0.189		4.8	NA	0.5	3.9				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)

South: William Roberts Road (South)

Mov. From S To Exit:	L2 W	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	23	160	183	8.0	971	0.189	100	NA	NA
Approach	23	160	183	8.0		0.189			

East: Reeves Rd (East)

Mov. From E To Exit:	L2 S	T1 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	151	58	208	9.6	1734	0.120	100	NA	NA
Approach	151	58	208	9.6		0.120			

West: Reeves Rd (West)

Mov. From W To Exit:	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	11	-	11	0.0	1960	0.005	100	NA	NA
Lane 2	-	11	11	0.0	737	0.014	100	0.0	1

Approach	11	11	21	0.0	0.014

	Total	%HV	Deg.Satn (v/c)
Intersection	413	8.4	0.189

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

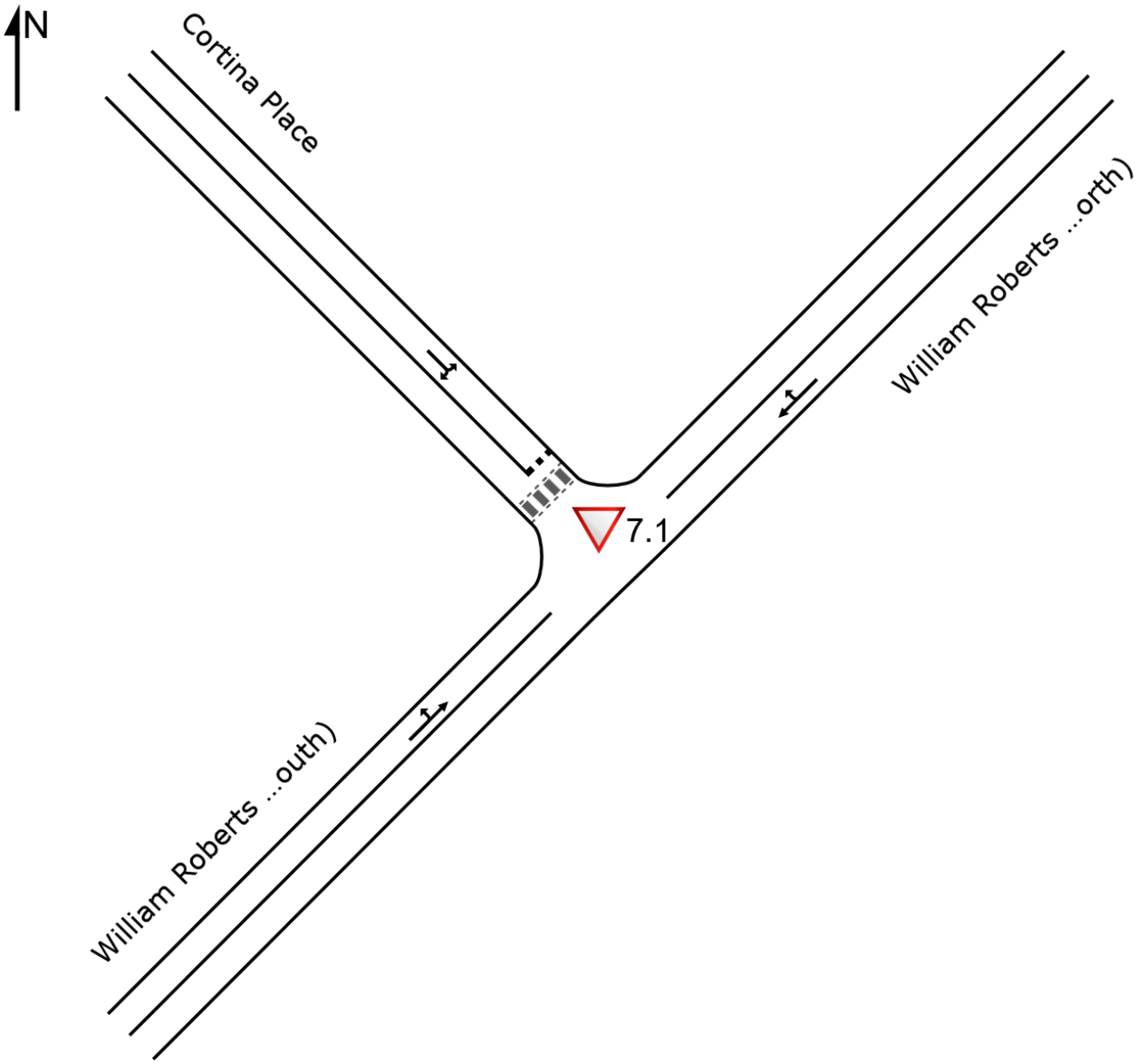
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: William Roberts Road (South) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Reeves Rd (East) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Reeves Rd (West) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

SITE LAYOUT

Site: 7.1 [7.1 William Roberts Rd / Cortina Pl (Site Folder: AM)]

Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise | Created: Wednesday, 15 February 2023 9:15:34 am
Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 2.0\2028 Construction 2 AM - XL.sip9

LANE SUMMARY

Site: 7.1 [7.1 William Roberts Rd / Cortina Pl (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Give-Way (Two-Way)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
NorthEast: William Roberts Road (North)															
Lane 1	267	8.3	267	8.3	1831	0.146	100	0.2	LOS A	0.1	0.5	Full	243	0.0	0.0
Approach	267	8.3	267	8.3		0.146		0.2	NA	0.1	0.5				
NorthWest: Cortina Place															
Lane 1	37	5.4	37	5.4	1137	0.033	100	3.0	LOS A	0.1	0.7	Full	177	0.0	0.0
Approach	37	5.4	37	5.4		0.033		3.0	LOS A	0.1	0.7				
SouthWest: William Roberts Road (South)															
Lane 1	97	7.2	96	7.3	1791	0.054	100	0.5	LOS A	0.0	0.0	Full	110	0.0	0.0
Approach	97	7.2	96[N1]	7.3		0.054		0.5	NA	0.0	0.0				
Intersection	401	7.7	400[N1]	7.8		0.146		0.5	NA	0.1	0.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)

NorthEast: William Roberts Road (North)

Mov. From NE To Exit:	T1 SW	R2 NW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	257	10	267	8.3	1831	0.146	100	NA	NA
Approach	257	10	267	8.3		0.146			

NorthWest: Cortina Place

Mov. From NW To Exit:	L2 NE	R2 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	19	18	37	5.4	1137	0.033	100	NA	NA
Approach	19	18	37	5.4		0.033			

SouthWest: William Roberts Road (South)

Mov. From SW To Exit:	L2 NW	T1 NE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	23	73	96	7.3	1791	0.054	100	NA	NA
Approach	23	73	96	7.3		0.054			

	Total	%HV	Deg.Satn (v/c)

Intersection	400	7.8	0.146

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

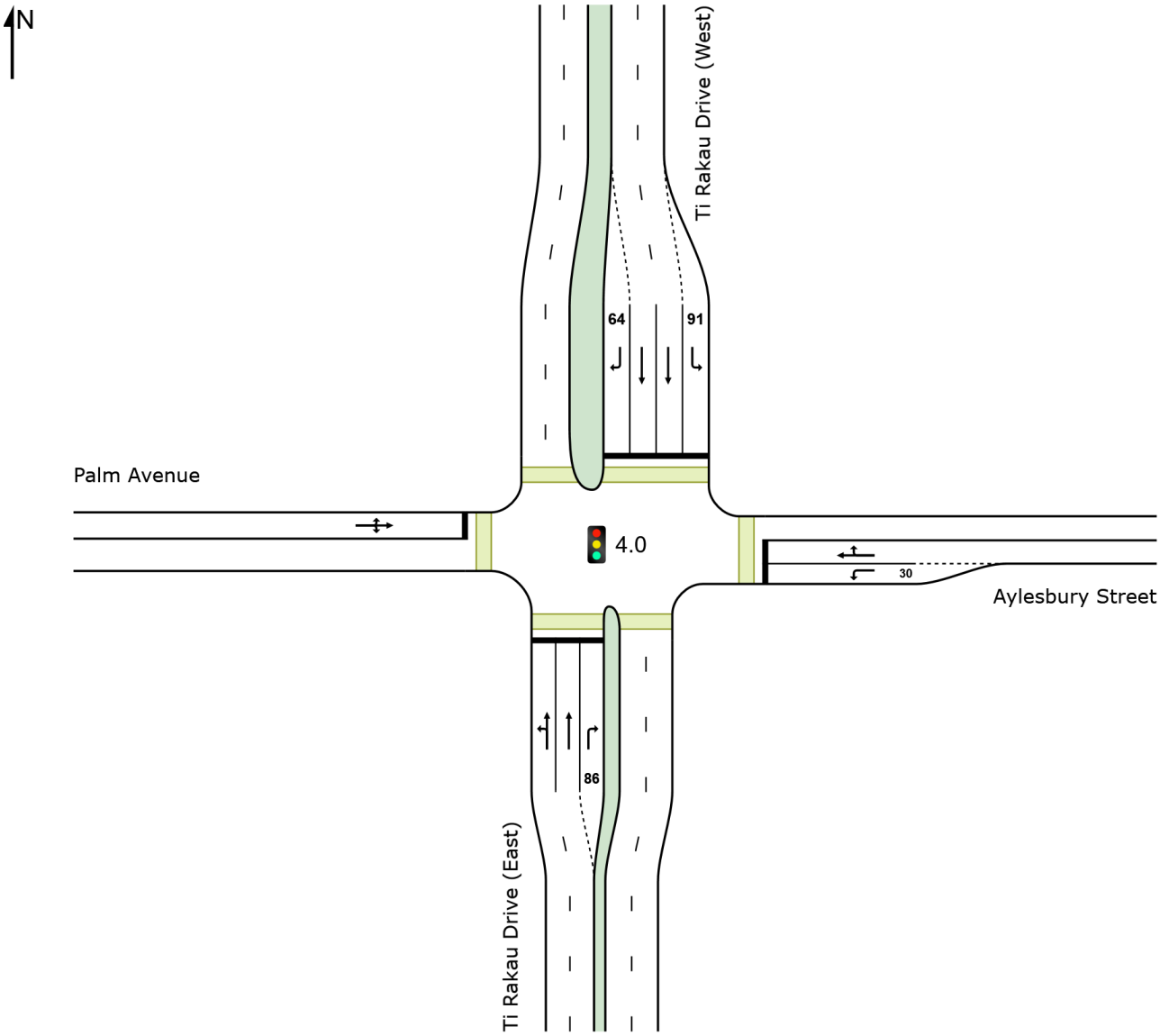
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
NorthEast Exit: William Roberts Road (North) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
NorthWest Exit: Cortina Place Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
SouthWest Exit: William Roberts Road (South) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

SITE LAYOUT

Site: 4.0 [4.0 Palm Ave / Aylesbury St (Site Folder: AM)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise | Created: Wednesday, 15 February 2023 9:15:39 am
Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 2.0\2028 Construction 2 AM - XL.sip9

LANE SUMMARY

Site: 4.0 [4.0 Palm Ave / Aylesbury St (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 64 seconds (Site Practical Cycle Time)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Ti Rakau Drive (East)															
Lane 1	368	11.7	356	11.9	430	0.826	100	34.1	LOS C	11.1	85.9	Full	110	-4.3 N3	0.0
Lane 2	388	12.6	375	12.8	454	0.826	100	33.8	LOS C	11.7	90.6	Full	110	0.0	0.0
Lane 3	11	9.1	11	9.2	439	0.024	100	22.5	LOS C	0.2	1.7	Short	86	0.0	NA
Approach	767	12.1	741 N1	12.3		0.826		33.8	LOS C	11.7	90.6				
East: Aylesbury Street															
Lane 1	12	8.3	12	8.3	152	0.079	100	31.3	LOS C	0.3	2.5	Short	30	0.0	NA
Lane 2	20	0.0	20	0.0	168	0.119	100	31.5	LOS C	0.5	3.8	Full	40	0.0	0.0
Approach	32	3.1	32	3.1		0.119		31.5	LOS C	0.5	3.8				
North: Ti Rakau Drive (West)															
Lane 1	14	7.1	14	7.1	240	0.058	100	30.3	LOS C	0.4	2.6	Short	91	0.0	NA
Lane 2	256	17.4	256	17.4	290	0.882	100	42.1	LOS D	8.8	70.5	Full	174	0.0	0.0
Lane 3	256	17.4	256	17.4	290	0.882	100	42.1	LOS D	8.8	70.5	Full	174	0.0	0.0
Lane 4	23	0.0	23	0.0	308	0.075	100	28.1	LOS C	0.6	3.9	Short	64	0.0	NA
Approach	549	16.4	549	16.4		0.882		41.2	LOS D	8.8	70.5				
West: Palm Avenue															
Lane 1	119	5.0	119	5.0	158	0.751	100	39.1	LOS D	3.7	27.1	Full	87	-2.5 N3	0.0
Approach	119	5.0	119	5.0		0.751		39.1	LOS D	3.7	27.1				
Intersection	1467	13.0	1441 N1	13.2		0.882		37.0	LOS D	11.7	90.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.

Approach Lane Flows (veh/h)

South: Ti Rakau Drive (East)

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	31	325	-	356	11.9	430	0.826	100	NA	NA
Lane 2	-	375	-	375	12.8	454	0.826	100	NA	NA
Lane 3	-	-	11	11	9.2	439	0.024	100	0.0	2
Approach	31	700	11	741	12.3		0.826			

East: Aylesbury Street

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

Lane 1	12	-	-	12	8.3	152	0.079	100	0.0	2
Lane 2	-	10	10	20	0.0	168	0.119	100	NA	NA
Approach	12	10	10	32	3.1		0.119			

North: Ti Rakau Drive (West)

Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	14	-	-	14	7.1	240	0.058	100	0.0	2
Lane 2	-	256	-	256	17.4	290	0.882	100	NA	NA
Lane 3	-	256	-	256	17.4	290	0.882	100	NA	NA
Lane 4	-	-	23	23	0.0	308	0.075	100	0.0	3
Approach	14	512	23	549	16.4		0.882			

West: Palm Avenue

Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	63	10	46	119	5.0	158	0.751	100	NA	NA
Approach	63	10	46	119	5.0		0.751			

	Total	%HV	Deg.Satn (v/c)
Intersection	1441	13.2	0.882

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

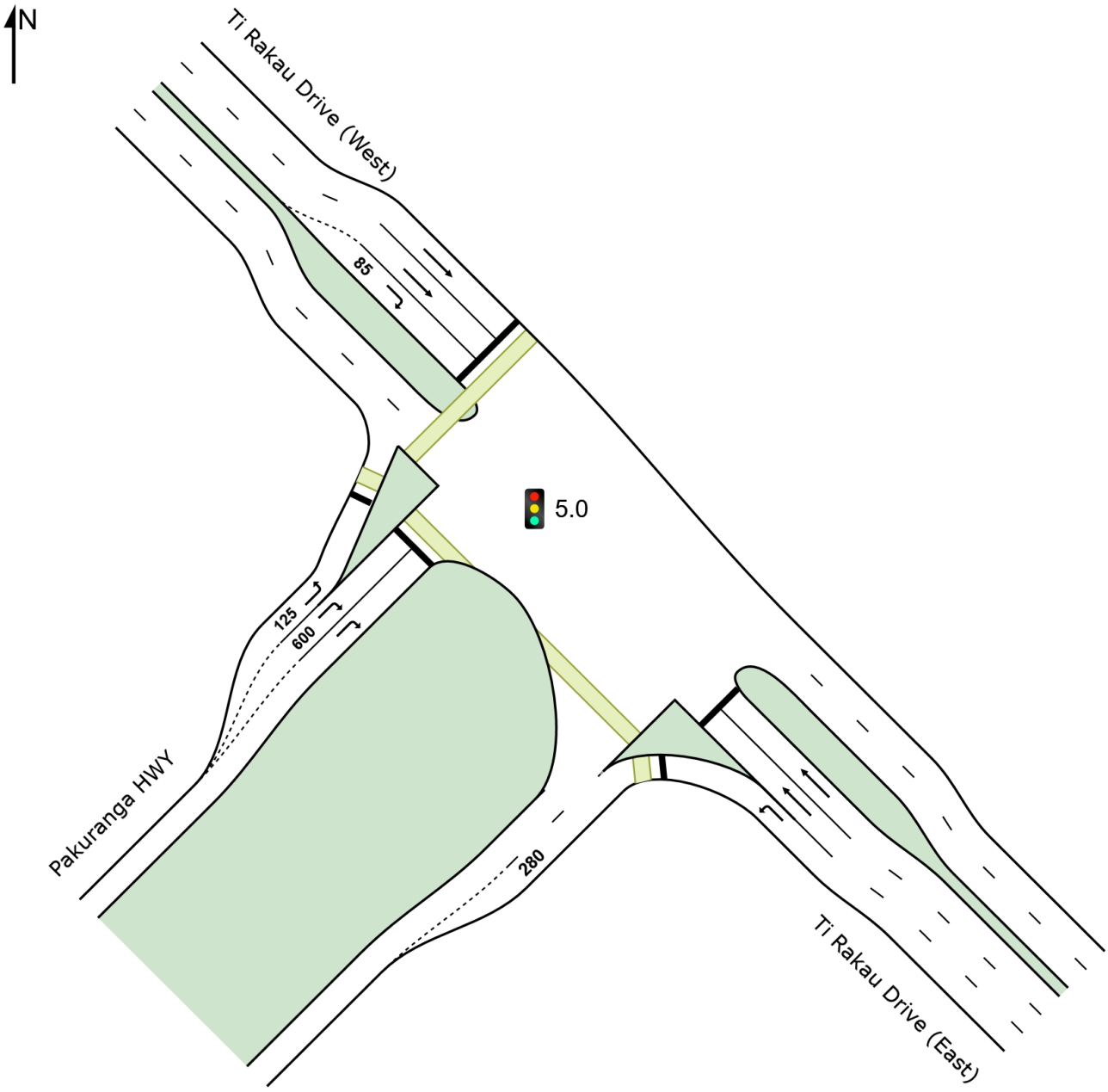
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Ti Rakau Drive (East) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
East Exit: Aylesbury Street Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Ti Rakau Drive (West) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
West Exit: Palm Avenue Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

SITE LAYOUT

Site: 5.0 [5.0 Pakuranga Highway/ Reeves Rd (Site Folder: AM)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



LANE SUMMARY

Site: 5.0 [5.0 Pakuranga Highway/ Reeves Rd (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 44 seconds (Site Practical Cycle Time)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
SouthEast: Ti Rakau Drive (East)															
Lane 1	953	9.9	909	10.0	1019	0.892	100	26.3	LOS C	17.3[N4]	131.5[N4]	Full	90	0.0	50.0
Lane 2	296	13.2	283	13.5	365	0.775	100	21.9	LOS C	6.0	47.1	Full	90	0.0	0.0
Lane 3	295	13.2	282	13.5	364	0.775	100	21.9	LOS C	6.0	47.0	Full	90	-0.3[N3]	0.0
Approach	1544	11.1	1474[N1]	11.4		0.892		24.6	LOS C	17.3	131.5				
NorthWest: Ti Rakau Drive (West)															
Lane 1	222	19.4	222	19.4	358	0.619	100	18.9	LOS B	4.2	34.7	Full	110	0.0	0.0
Lane 2	222	19.4	222	19.4	358	0.619	100	18.9	LOS B	4.2	34.7	Full	110	0.0	0.0
Lane 3	129	6.2	129	6.2	245	0.526	100	25.5	LOS C	2.5	18.7	Short	85	0.0	NA
Approach	572	16.4	572	16.4		0.619		20.4	LOS C	4.2	34.7				
SouthWest: Pakuranga HWY															
Lane 1	185	7.6	185	7.6	916	0.202	100	13.6	LOS B	1.9	14.4	Short	125	0.0	NA
Lane 2	338	8.0	338	8.0	437	0.772	100	27.7	LOS C	7.1	52.9	Short	600	0.0	NA
Lane 3	338	8.0	338	8.0	437	0.772	100	27.7	LOS C	7.1	52.9	Full	623	0.0	0.0
Approach	860	7.9	860	7.9		0.772		24.6	LOS C	7.1	52.9				
Intersection	2976	11.2	2906[N1]	11.5		0.892		23.8	LOS C	17.3	131.5				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N3 Capacity Adjustment due to downstream lane blockage determined by the program.
N4 Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)

SouthEast: Ti Rakau Drive (East)

Mov. From SE To Exit:	L2 SW	T1 NW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	909	-	909	10.0	1019	0.892	100	NA	NA
Lane 2	-	283	283	13.5	365	0.775	100	NA	NA
Lane 3	-	282	282	13.5	364	0.775	100	NA	NA
Approach	909	565	1474	11.4		0.892			

NorthWest: Ti Rakau Drive (West)

Mov. From NW To Exit:	T1 SE	R2 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	222	-	222	19.4	358	0.619	100	NA	NA
Lane 2	222	-	222	19.4	358	0.619	100	NA	NA

Lane 3	-	129	129	6.2	245	0.526	100	0.0	2
Approach	443	129	572	16.4		0.619			
SouthWest: Pakuranga HWY									
Mov. From SW To Exit:	L2 NW	R2 SE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	185	-	185	7.6	916	0.202	100	0.0	2
Lane 2	-	338	338	8.0	437	0.772	100	0.0	3
Lane 3	-	338	338	8.0	437	0.772	100	NA	NA
Approach	185	675	860	7.9		0.772			
	Total	%HV	Deg.Satn (v/c)						
Intersection	2906	11.5	0.892						

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

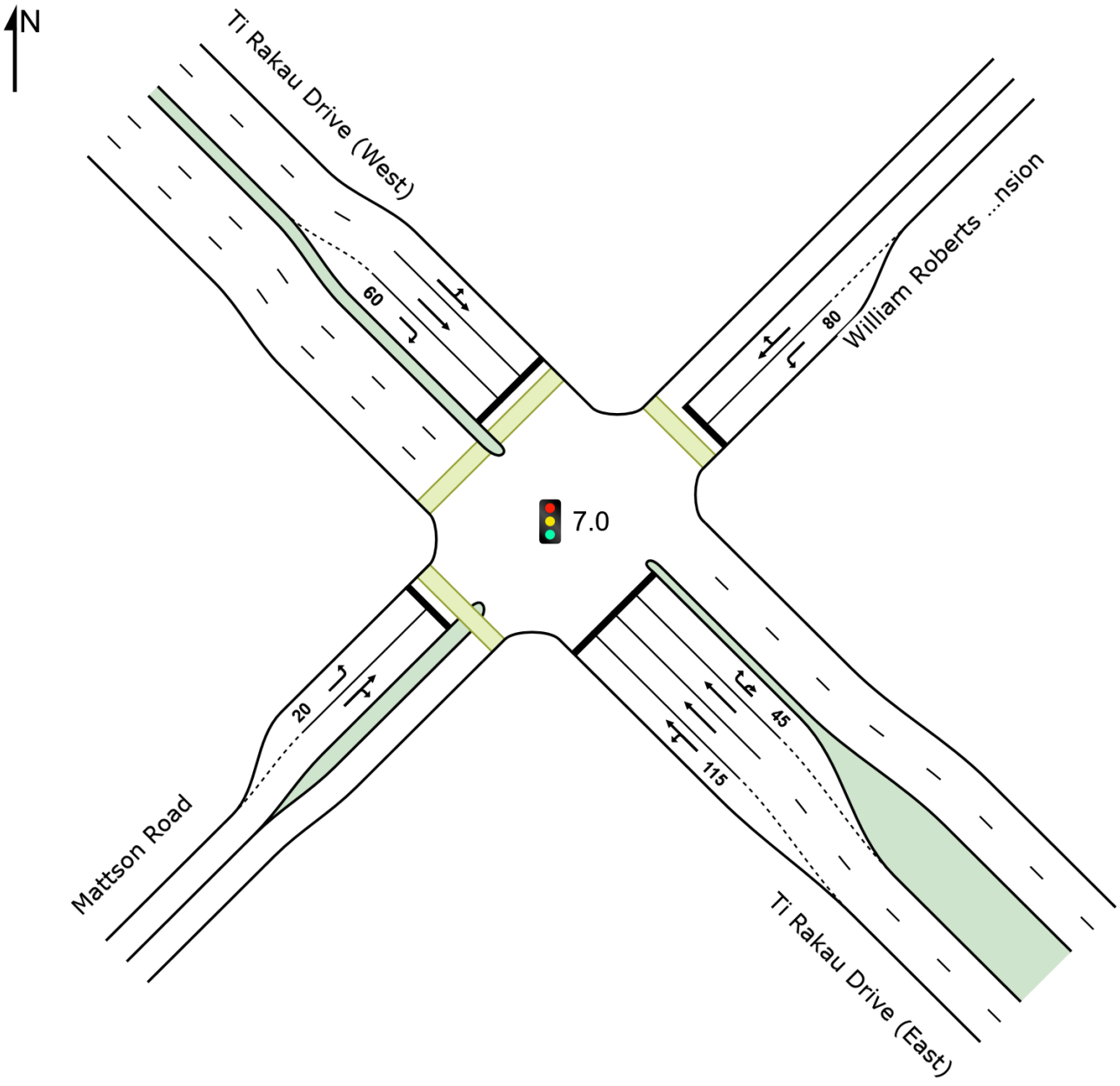
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
NorthWest Exit: Ti Rakau Drive (West) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
SouthWest Exit: Pakuranga HWY Merge Type: **Priority**												
Exit Short Lane	1	280	0.0	129	133	3.00	2.00	909	1666	0.546	0.2	0.5
Merge Lane	2	-	100.0	Merge Lane is not Opposed				129	1800	0.072	0.0	0.0

SITE LAYOUT

Site: 7.0 [7.0 William Roberts Rd / Ti Rakau Dr (Site Folder: AM)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise | Created: Wednesday, 15 February 2023 9:15:54 am
Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 2.0\2028 Construction 2 AM - XL.sip9

LANE SUMMARY

Site: 7.0 [7.0 William Roberts Rd / Ti Rakau Dr (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 65 seconds (Site Practical Cycle Time)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
SouthEast: Ti Rakau Drive (East)															
Lane 1	436	11.0	412	11.3	637	0.646	100	19.6	LOS B	10.0	76.6	Short	115	0.0	NA
Lane 2	437	11.3	412	11.6	638	0.646	100	19.2	LOS B	10.0	76.9	Full	203	0.0	0.0
Lane 3	422	11.3	398	11.6	616[1]	0.646	100	19.0	LOS B	9.5	73.4	Full	203	0.0	0.0
Lane 4	87	6.1	82	6.2	136	0.601	100	40.2	LOS D	2.5	18.4	Short	45	0.0	NA
Approach	1382	10.9	1304[N1]	11.2		0.646		20.6	LOS C	10.0	76.9				
NorthEast: William Roberts Road Extension															
Lane 1	29	10.3	29	10.3	159	0.183	100	33.5	LOS C	0.8	6.2	Short	80	0.0	NA
Lane 2	133	13.7	133	13.7	156	0.852	100	41.5	LOS D	4.5	34.9	Full	110	0.0	0.0
Approach	162	13.1	162	13.1		0.852		40.0	LOS D	4.5	34.9				
NorthWest: Ti Rakau Drive (West)															
Lane 1	543	11.9	543	11.9	627	0.866	100	31.7	LOS C	17.9	137.9	Full	107	0.0	38.2
Lane 2	541	13.2	541	13.2	625[1]	0.866	100	30.0	LOS C	17.6	137.3	Full	107	0.0	37.9
Lane 3	43	12.2	43	12.2	159	0.271	100	37.6	LOS D	1.2	9.5	Short	60	0.0	NA
Approach	1127	12.5	1127	12.5		0.866		31.1	LOS C	17.9	137.9				
SouthWest: Mattson Road															
Lane 1	75	4.2	75	4.2	499	0.150	100	25.0	LOS C	1.6	11.8	Short	20	0.0	NA
Lane 2	71	6.0	71	6.0	166	0.425	100	37.2	LOS D	2.1	15.1	Full	282	0.0	0.0
Approach	145	5.1	145	5.1		0.425		31.0	LOS C	2.1	15.1				
Intersection	2816	11.4	2738[N1]	11.7		0.866		26.6	LOS C	17.9	137.9				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Delay Model: SIDRA Standard (Geometric Delay is included).
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.
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)

SouthEast: Ti Rakau Drive (East)

Mov. From SE To Exit:	L2 SW	T1 NW	R2 NE	U SE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	30	382	-	-	412	11.3	637	0.646	100	0.0	2
Lane 2	-	412	-	-	412	11.6	638	0.646	100	NA	NA
Lane 3	-	398	-	-	398	11.6	616[1]	0.646	100	NA	NA
Lane 4	-	-	32	50	82	6.2	136	0.601	100	0.0	3
Approach	30	1193	32	50	1304	11.2		0.646			

NorthEast: William Roberts Road Extension										
Mov. From NE To Exit:	L2 SE	T1 SW	R2 NW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	29	-	-	29	10.3	159	0.183	100	0.0	2
Lane 2	-	11	122	133	13.7	156	0.852	100	NA	NA
Approach	29	11	122	162	13.1		0.852			
NorthWest: Ti Rakau Drive (West)										
Mov. From NW To Exit:	L2 NE	T1 SE	R2 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	161	382	-	543	11.9	627	0.866	100	NA	NA
Lane 2	-	541	-	541	13.2	625[1]	0.866	100	NA	NA
Lane 3	-	-	43	43	12.2	159	0.271	100	0.0	2
Approach	161	923	43	1127	12.5		0.866			
SouthWest: Mattson Road										
Mov. From SW To Exit:	L2 NW	T1 NE	R2 SE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	75	-	-	75	4.2	499	0.150	100	0.0	2
Lane 2	-	12	59	71	6.0	166	0.425	100	NA	NA
Approach	75	12	59	145	5.1		0.425			

	Total	%HV	Deg.Satn (v/c)
Intersection	2738	11.7	0.866

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

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.

Merge Analysis

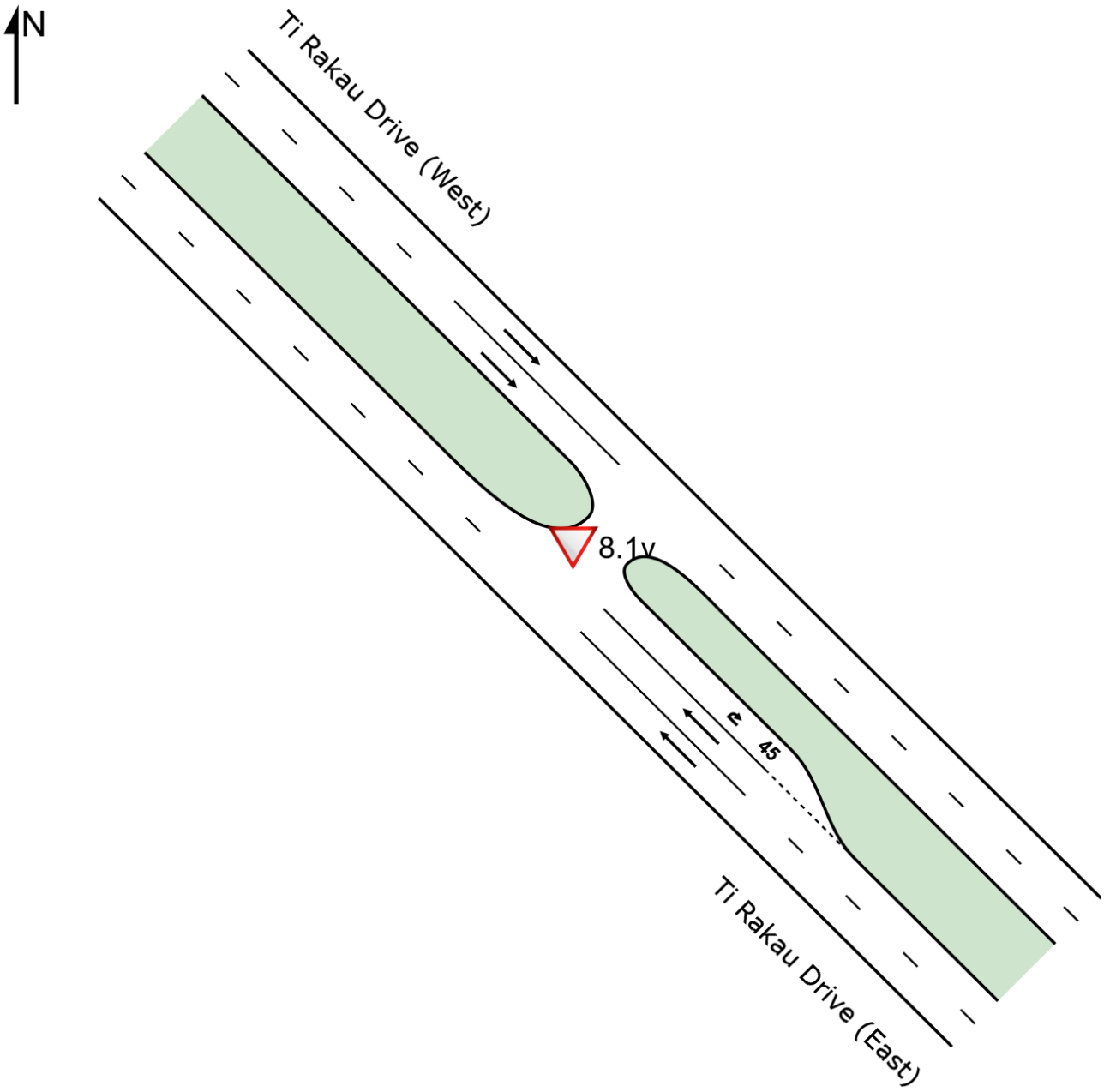
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
NorthEast Exit: William Roberts Road Extension Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
NorthWest Exit: Ti Rakau Drive (West) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
Full Length Lane	3	Merge Analysis not applied.										
SouthWest Exit: Mattson Road Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

SITE LAYOUT

Site: 8.1v [8.1 U-turn - West of Marriot Rd - Conversion (2) (Site Folder: AM)]

Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



LANE SUMMARY

Site: 8.1v [8.1 U-turn - West of Marriot Rd - Conversion (2) (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Give-Way (Two-Way)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
SouthEast: Ti Rakau Drive (East)															
Lane 1	684	10.9	644	11.2	1808	0.356	100	0.0	LOS A	0.0	0.0	Full	147	0.0	0.0
Lane 2	674	10.9	635	11.2	1784	0.356	100	0.0	LOS A	0.0	0.0	Full	147	0.0	0.0
Lane 3	94	5.3	88	5.5	167	0.528	100	37.9	LOS E	1.6	11.7	Short	45	0.0	NA
Approach	1452	10.5	1367 N1	10.8		0.528		2.5	NA	1.6	11.7				
NorthWest: Ti Rakau Drive (West)															
Lane 1	514	11.2	512	11.2	1808	0.283	100	0.0	LOS A	0.0	0.0	Full	73	0.0	0.0
Lane 2	506	13.5	505	13.5	1783	0.283	100	0.0	LOS A	0.0	0.0	Full	73	0.0	0.0
Approach	1020	12.4	1017 N1	12.4		0.283		0.0	NA	0.0	0.0				
Intersection	2472	11.3	2385 N1	11.7		0.528		1.4	NA	1.6	11.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)

SouthEast: Ti Rakau Drive (East)

Mov. From SE To Exit:	T1 NW	U SE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	644	-	644	11.2	1808	0.356	100	NA	NA
Lane 2	635	-	635	11.2	1784	0.356	100	NA	NA
Lane 3	-	88	88	5.5	167	0.528	100	0.0	2
Approach	1279	88	1367	10.8		0.528			

NorthWest: Ti Rakau Drive (West)

Mov. From NW To Exit:	T1 SE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	512	512	11.2	1808	0.283	100	NA	NA
Lane 2	505	505	13.5	1783	0.283	100	NA	NA
Approach	1017	1017	12.4		0.283			

	Total	%HV	Deg.Satn (v/c)
Intersection	2385	11.7	0.528

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

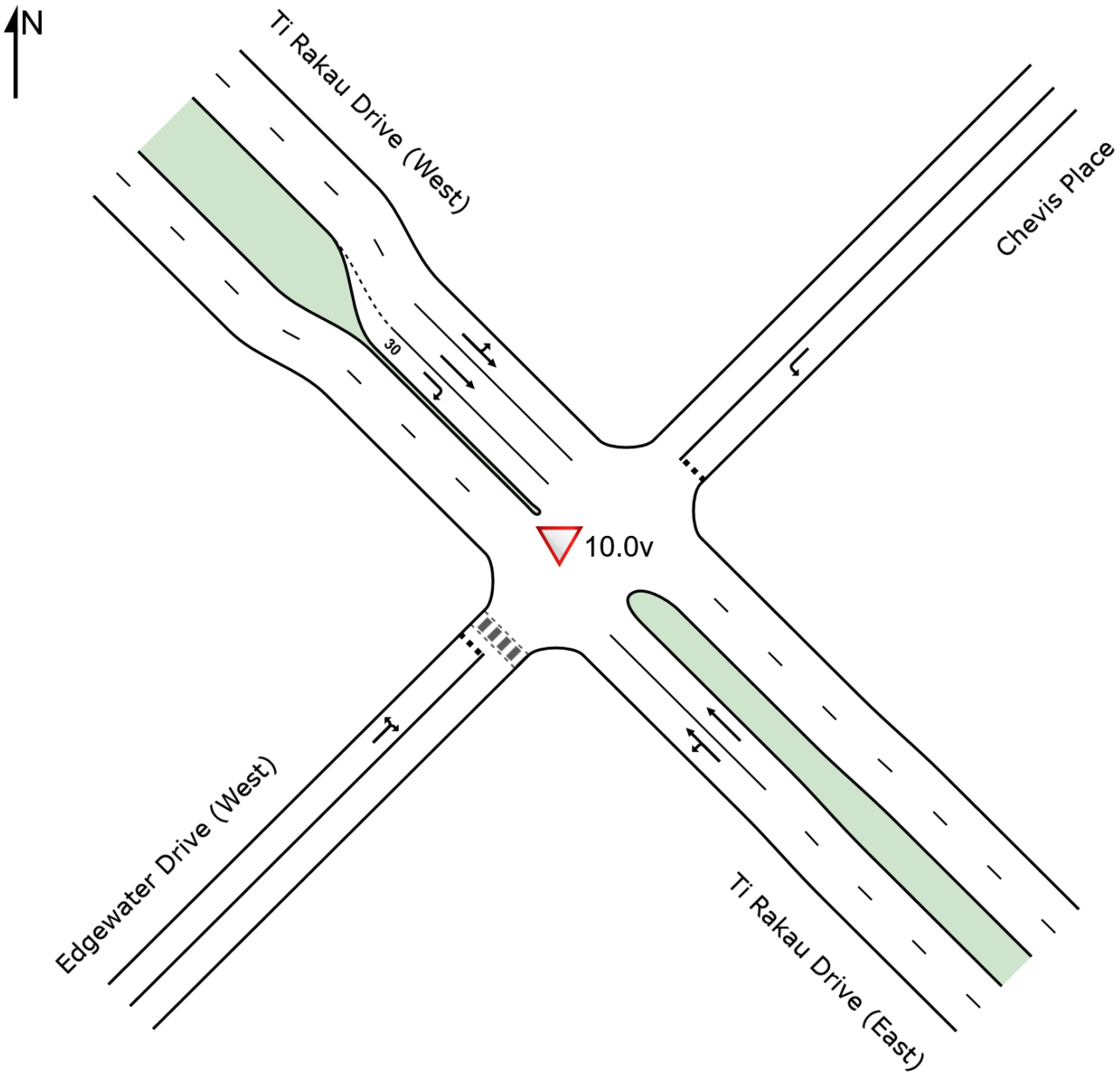
Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
NorthWest Exit: Ti Rakau Drive (West) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

SITE LAYOUT

Site: 10.0v [10.0 Edgewater Dr (West) / Chevis Pl - Conversion - Import (Site Folder: AM)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



LANE SUMMARY

Site: 10.0v [10.0 Edgewater Dr (West) / Chevis Pl - Conversion - Import (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
SouthEast: Ti Rakau Drive (East)															
Lane 1	881	10.9	867	11.0	1699	0.510	100	0.4	LOS A	0.7	5.2	Full	81	0.0	0.0
Lane 2	937	11.3	921	11.4	1806	0.510	100	0.0	LOS A	0.0	0.0	Full	81	0.0	0.0
Approach	1818	11.1	1788 N1	11.2		0.510		0.2	NA	0.7	5.2				
NorthEast: Chevis Place															
Lane 1	10	0.0	10	0.0	859	0.012	100	6.4	LOS A	0.0	0.2	Full	138	0.0	0.0
Approach	10	0.0	10	0.0		0.012		6.4	LOS A	0.0	0.2				
NorthWest: Ti Rakau Drive (West)															
Lane 1	408	10.3	406	10.4	1844	0.220	100	0.1	LOS A	0.0	0.0	Full	68	0.0	0.0
Lane 2	405	10.6	404	10.6	1834	0.220	100	0.0	LOS A	0.0	0.0	Full	68	0.0	0.0
Lane 3	37	8.1	37	8.1	60	0.609	100	100.6	LOS F	1.4	10.6	Short	30	0.0	NA
Approach	850	10.4	846 N1	10.4		0.609		4.4	NA	1.4	10.6				
SouthWest: Edgewater Drive (West)															
Lane 1	192	6.3	192	6.3	96	1.995	100	949.0	LOS F	48.5	357.5	Full	789	0.0	0.0
Approach	192	6.3	192	6.3		1.995		949.0	LOS F	48.5	357.5				
Intersection	2870	10.5	2836 N1	10.6		1.995		65.7	NA	48.5	357.5				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)

SouthEast: Ti Rakau Drive (East)

Mov. From SE To Exit:	L2 SW	T1 NW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	77	790	867	11.0	1699	0.510	100	NA	NA
Lane 2	-	921	921	11.4	1806	0.510	100	NA	NA
Approach	77	1711	1788	11.2		0.510			

NorthEast: Chevis Place

Mov. From NE To Exit:	L2 SE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	10	10	0.0	859	0.012	100	NA	NA
Approach	10	10	0.0		0.012			

NorthWest: Ti Rakau Drive (West)											
Mov. From NW To Exit:	L2 NE	T1 SE	R2 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	10	396	-	406	10.4	1844	0.220	100	NA	NA	
Lane 2	-	404	-	404	10.6	1834	0.220	100	NA	NA	
Lane 3	-	-	37	37	8.1	60	0.609	100	0.0	2	
Approach	10	799	37	846	10.4		0.609				
SouthWest: Edgewater Drive (West)											
Mov. From SW To Exit:	L2 NW	R2 SE	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	182	10	192	6.3		96	1.995	100	NA	NA	
Approach	182	10	192	6.3			1.995				
	Total	%HV	Deg.Satn (v/c)								
Intersection	2836	10.6	1.995								

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

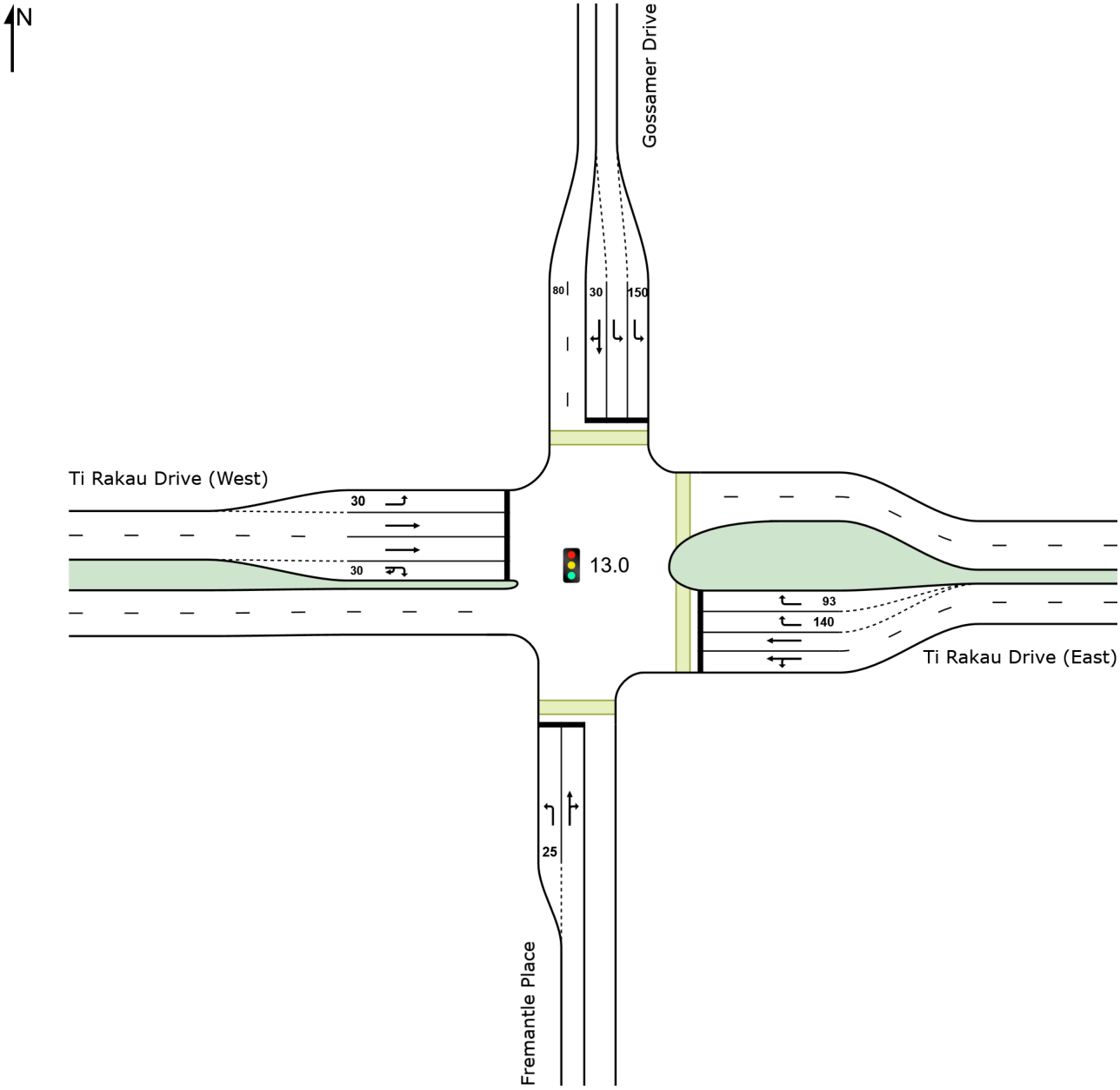
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
NorthEast Exit: Chevis Place Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
NorthWest Exit: Ti Rakau Drive (West) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
SouthWest Exit: Edgewater Drive (West) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

SITE LAYOUT

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: AM)]

Scheme Design
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



LANE SUMMARY

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Scheme Design
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Practical Cycle Time)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Fremantle Place															
Lane 1	19	10.5	19	10.5	66	0.288	100	84.4	LOS F	1.3	9.9	Short	25	0.0	NA
Lane 2	28	7.1	28	7.1	69	0.409	100	85.3	LOS F	1.9	14.3	Full	285	0.0	0.0
Approach	47	8.5	47	8.5		0.409		84.9	LOS F	1.9	14.3				
East: Ti Rakau Drive (East)															
Lane 1	723	10.5	723	10.5	919	0.786	100	33.0	LOS C	37.3	284.5	Full	636	0.0	0.0
Lane 2	638	10.6	638	10.6	811[1]	0.786	100	31.6	LOS C	30.9	236.1	Full	636	0.0	0.0
Lane 3	146	9.1	146	9.1	393	0.372	46[6]	31.2	LOS C	4.9	37.1	Short	140	0.0	NA
Lane 4	315	9.1	315	9.1	393	0.802	100	38.9	LOS D	13.0	98.0	Short	93	0.0	NA
Approach	1822	10.2	1822	10.2		0.802		33.4	LOS C	37.3	284.5				
North: Gossamer Drive															
Lane 1	360	8.2	360	8.2	659	0.547	100	28.7	LOS C	14.1	105.5	Short	150	0.0	NA
Lane 2	345	8.2	345	8.2	631[1]	0.547	100	27.7	LOS C	13.5	100.9	Full	1010	0.0	0.0
Lane 3	133	9.0	133	9.0	139[1]	0.955	100	103.8	LOS F	10.6	79.9	Short	30	0.0	NA
Approach	838	8.4	838	8.4		0.955		40.2	LOS D	14.1	105.5				
West: Ti Rakau Drive (West)															
Lane 1	47	12.8	46	12.9	560	0.083	100	38.6	LOS D	2.0	15.6	Short	30	0.0	NA
Lane 2	578	11.4	570	11.5	608[1]	0.938	100	75.5	LOS E	43.3	333.3	Full	479	0.0	0.0
Lane 3	499	11.4	493	11.5	525[1]	0.938	100	75.6	LOS E	36.3	279.4	Full	479	0.0	0.0
Lane 4	103	14.1	101	14.3	104[1]	0.973	100	117.6	LOS F	8.6	67.8	Short	30	0.0	NA
Approach	1227	11.7	1211[N1]	11.8		0.973		77.6	LOS E	43.3	333.3				
Intersection	3934	10.3	3918[N1]	10.3		0.973		49.1	LOS D	43.3	333.3				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Delay Model: SIDRA Standard (Geometric Delay is included).
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.
6 Lane under-utilisation due to downstream effects
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)

South: Fremantle Place

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	19	-	-	19	10.5	66	0.288	100	0.0	2
Lane 2	-	10	18	28	7.1	69	0.409	100	NA	NA

Approach	19	10	18	47	8.5			0.409			
East: Ti Rakau Drive (East)											
Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	18	705	-	723	10.5		919	0.786	100	NA	NA
Lane 2	-	638	-	638	10.6		811[1]	0.786	100	NA	NA
Lane 3	-	-	146	146	9.1		393	0.372	46[6]	0.0	2
Lane 4	-	-	315	315	9.1		393	0.802	100	19.8	3
Approach	18	1343	461	1822	10.2			0.802			
North: Gossamer Drive											
Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	360	-	-	360	8.2		659	0.547	100	0.0	2
Lane 2	345	-	-	345	8.2		631[1]	0.547	100	NA	NA
Lane 3	-	10	123	133	9.0		139[1]	0.955	100	100.0	2
Approach	705	10	123	838	8.4			0.955			
West: Ti Rakau Drive (West)											
Mov. From W To Exit:	L2 N	T1 E	R2 S	U W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	46	-	-	-	46	12.9	560	0.083	100	0.0	2
Lane 2	-	570	-	-	570	11.5	608[1]	0.938	100	NA	NA
Lane 3	-	493	-	-	493	11.5	525[1]	0.938	100	NA	NA
Lane 4	-	-	12	89	101	14.3	104[1]	0.973	100	92.1	3
Approach	46	1063	12	89	1211	11.8		0.973			
	Total	%HV	Deg.Satn (v/c)								
Intersection	3918	10.3	0.973								

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

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.

6 Lane under-utilisation due to downstream effects

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Fremantle Place Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Ti Rakau Drive (East) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: Gossamer Drive Merge Type: **Zipper**												
Exit Short Lane	1	80	50.0	162	170	2.50	2.00	192	1602	0.120	0.0	0.1
Merge Lane	2	-	50.0	96	101	2.50	2.00	325	1685	0.193	0.0	0.0
West Exit: Ti Rakau Drive (West) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

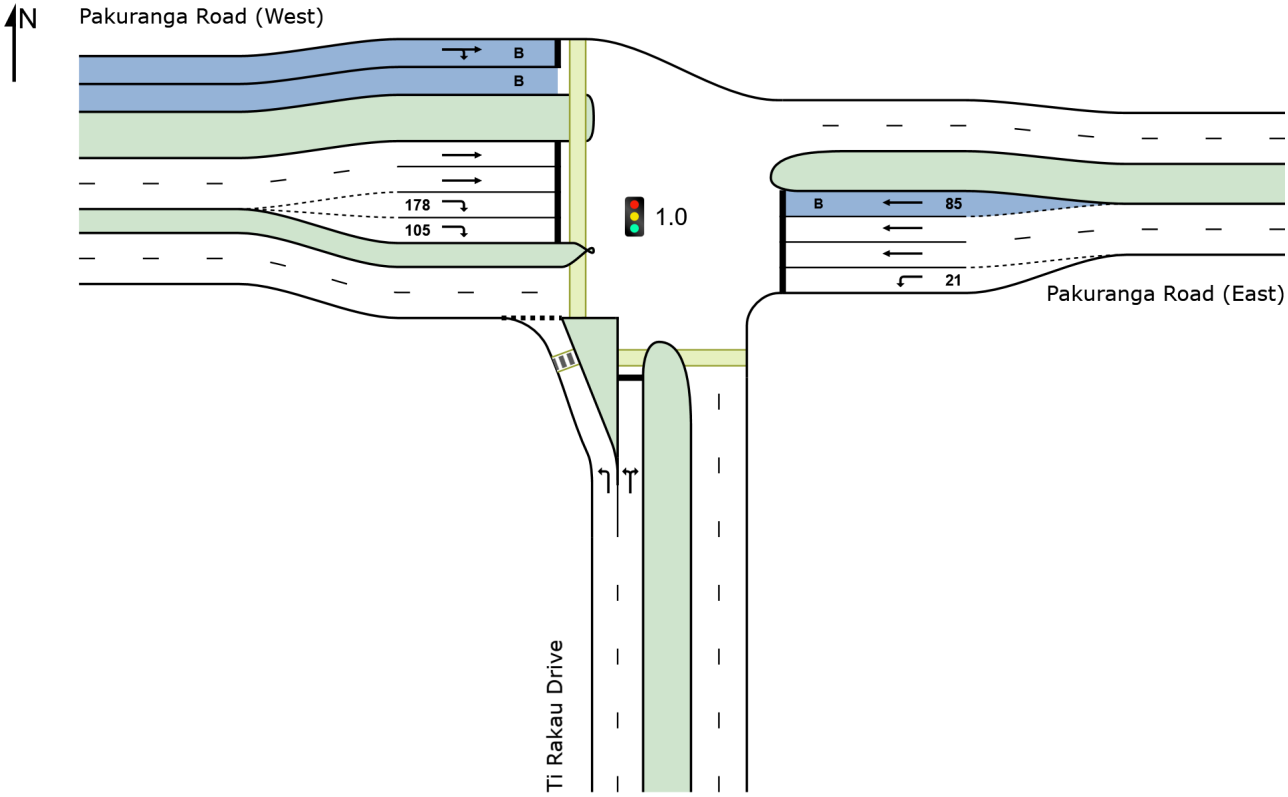
Full Length Lane	2	Merge Analysis not applied.

SITE LAYOUT

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Dr (Site Folder: AM)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



LANE SUMMARY

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Dr (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Ti Rakau Drive															
Lane 1	898	8.7	871	8.8	1121	0.777	100	6.9	LOS A	9.0	67.4	Full	174	0.0	0.0
Lane 2	140	18.6	136	18.9	189	0.720	100	93.1	LOS F	9.0	72.9	Full	174	-24.6 N7	0.0
Approach	1038	10.0	1007 N 1	10.2		0.777		18.6	LOS B	9.0	72.9				
East: Pakuranga Road (East)															
Lane 1	67	1.5	66	1.5	366	0.181	100	58.0	LOS E	3.6	25.5	Short	21	0.0	NA
Lane 2	301	4.4	298	4.4	321 1	0.927	100	83.0	LOS F	19.7 N4	143.2 N4	Full	98	0.0	50.0
Lane 3	352	4.4	347	4.4	374 1	0.927	100	83.1	LOS F	19.7 N4	143.2 N4	Full	98	0.0	50.0
Lane 4 (B)	9	100.0	9	100.0	235	0.038	100	52.2	LOS D	0.5	6.2	Short	85	0.0	NA
Approach	729	5.3	720 N1	5.3		0.927		80.4	LOS F	19.7	143.2				
West: Pakuranga Road (West)															
Lane 1 (B)	42	100.0	42	100.0	45	0.926	100	97.3	LOS F	3.3	42.8	Full	380	-14.9 N7	0.0
Lane 2	572	5.7	572	5.7	609	0.939	100	71.5	LOS E	45.7	335.2	Full	380	-26.0 N7	3.7
Lane 3	568	5.7	568	5.7	605	0.939	100	71.7	LOS E	45.4	333.4	Full	380	-26.5 N7	3.2
Lane 4	273	10.1	273	10.1	758	0.360	100	34.2	LOS C	11.7	89.1	Short	178	0.0	NA
Lane 5	273	10.1	273	10.1	758	0.360	100	34.2	LOS C	11.7	89.1	Short	105	0.0	NA
Approach	1728	9.4	1728	9.4		0.939		60.4	LOS E	45.7	335.2				
Intersection	3495	8.7	3455 N 1	8.8		0.939		52.4	LOS D	45.7	335.2				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Delay Model: SIDRA Standard (Geometric Delay is included).
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.
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N4 Average back of queue has been restricted to the available queue storage space.
N7 The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)

South: Ti Rakau Drive

Mov. From S To Exit:	L2 W	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	871	-	871	8.8	1121	0.777	100	NA	NA
Lane 2	13	123	136	18.9	189	0.720	100	NA	NA
Approach	884	123	1007	10.2		0.777			

East: Pakuranga Road (East)

Mov.	L2	T1	Total	%HV		Deg.	Lane	Prob.	Ov.

From E To Exit:	S	W			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	66	-	66	1.5	366	0.181	100	32.6	2
Lane 2	-	298	298	4.4	321[1]	0.927	100	NA	NA
Lane 3	-	347	347	4.4	374[1]	0.927	100	NA	NA
Lane 4	-	9	9	100.0	235	0.038	100	0.0	3
Approach	66	654	720	5.3		0.927			

West: Pakuranga Road (West)

Mov. From W To Exit:	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	21	21	42	100.0	45	0.926	100	NA	NA
Lane 2	572	-	572	5.7	609	0.939	100	NA	NA
Lane 3	568	-	568	5.7	605	0.939	100	NA	NA
Lane 4	-	273	273	10.1	758	0.360	100	0.0	3
Lane 5	-	273	273	10.1	758	0.360	100	0.1	4
Approach	1161	567	1728	9.4		0.939			

	Total	%HV	Deg.Satn (v/c)
Intersection	3455	8.8	0.939

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

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.

Merge Analysis

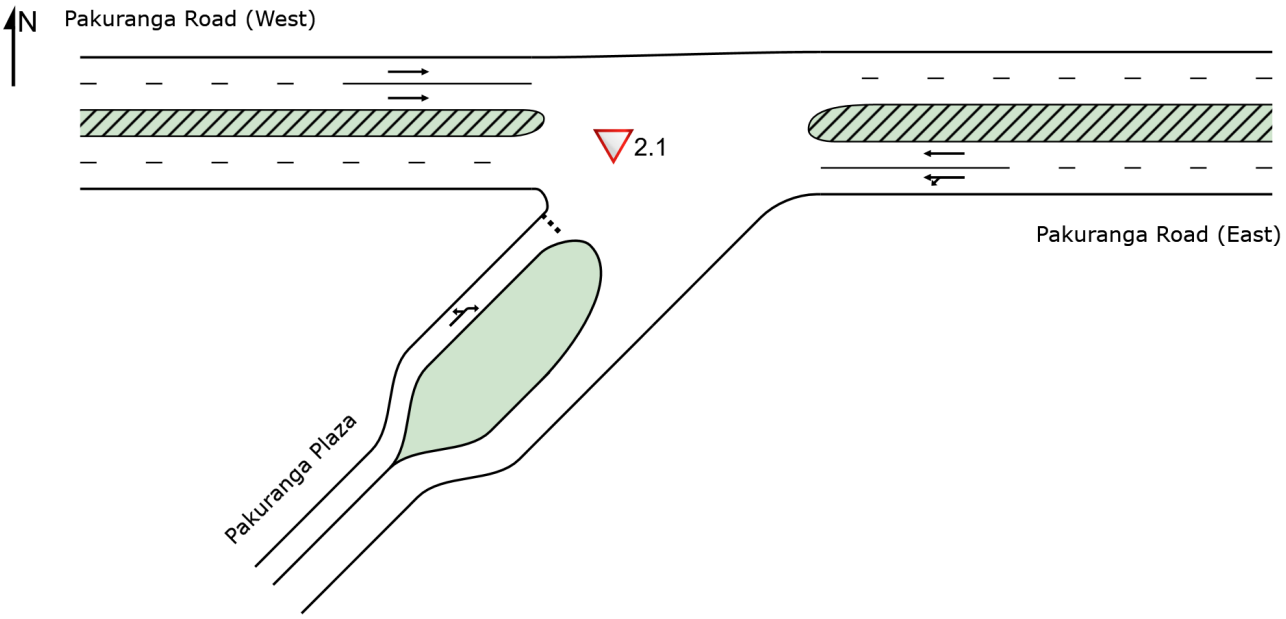
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Ti Rakau Drive Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
East Exit: Pakuranga Road (East) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
West Exit: Pakuranga Road (West) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
Full Length Lane	3	Merge Analysis not applied.										

SITE LAYOUT

Site: 2.1 [2.1 Pakuranga Plaza / Pakuranga Rd (Site Folder: AM)]

Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise | Created: Wednesday, 15 February 2023 9:19:48 am
Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 2.0\2028 Construction 2 PM - XL.sip9

LANE SUMMARY

Site: 2.1 [2.1 Pakuranga Plaza / Pakuranga Rd (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Give-Way (Two-Way)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
East: Pakuranga Road (East)															
Lane 1	553	4.0	553	4.0	1883	0.294	100	0.8	LOS A	0.0	0.0	Full	121	0.0	0.0
Lane 2	561	2.6	561	2.6	1907	0.294	100	0.0	LOS A	0.0	0.0	Full	121	0.0	0.0
Approach	1114	3.3	1114	3.3		0.294		0.4	NA	0.0	0.0				
West: Pakuranga Road (West)															
Lane 1	640	7.7	640	7.7	1847	0.346	100	0.0	LOS A	21.1 N6	157.8 N6	Full	108	0.0	50.0 N6
Lane 2	640	7.7	640	7.7	1847	0.346	100	0.0	LOS A	21.1 N6	157.8 N6	Full	108	0.0	50.0 N6
Approach	1280	7.7	1280	7.7		0.346		0.0	NA	21.1	157.8				
SouthWest: Pakuranga Plaza															
Lane 1	49	2.0	49	2.0	130	0.377	100	31.8	LOS D	0.8	5.9	Full	196	-16.9 N7	0.0
Approach	49	2.0	49	2.0		0.377		31.8	LOS D	0.8	5.9				
Intersection	2443	5.6	2443	5.6		0.377		0.8	NA	21.1	157.8				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N6 Continuous Lane results determined by Back of Queue values of downstream lanes (proportional to lane movement flows) but average back of queue has been restricted to the available queue storage space.
N7 The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)

East: Pakuranga Road (East)

Mov. From E To Exit:	L1 SW	T1 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	80	473	553	4.0	1883	0.294	100	NA	NA
Lane 2	-	561	561	2.6	1907	0.294	100	NA	NA
Approach	80	1034	1114	3.3		0.294			

West: Pakuranga Road (West)

Mov. From W To Exit:	T1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	640	640	7.7	1847	0.346	100	NA	NA
Lane 2	640	640	7.7	1847	0.346	100	NA	NA
Approach	1280	1280	7.7		0.346			

SouthWest: Pakuranga Plaza

Mov. From SW To Exit:	L3 W	R1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	39	10	49	2.0	130	0.377	100	NA	NA
Approach	39	10	49	2.0		0.377			

	Total	%HV	Deg.Satn (v/c)
Intersection	2443	5.6	0.377

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

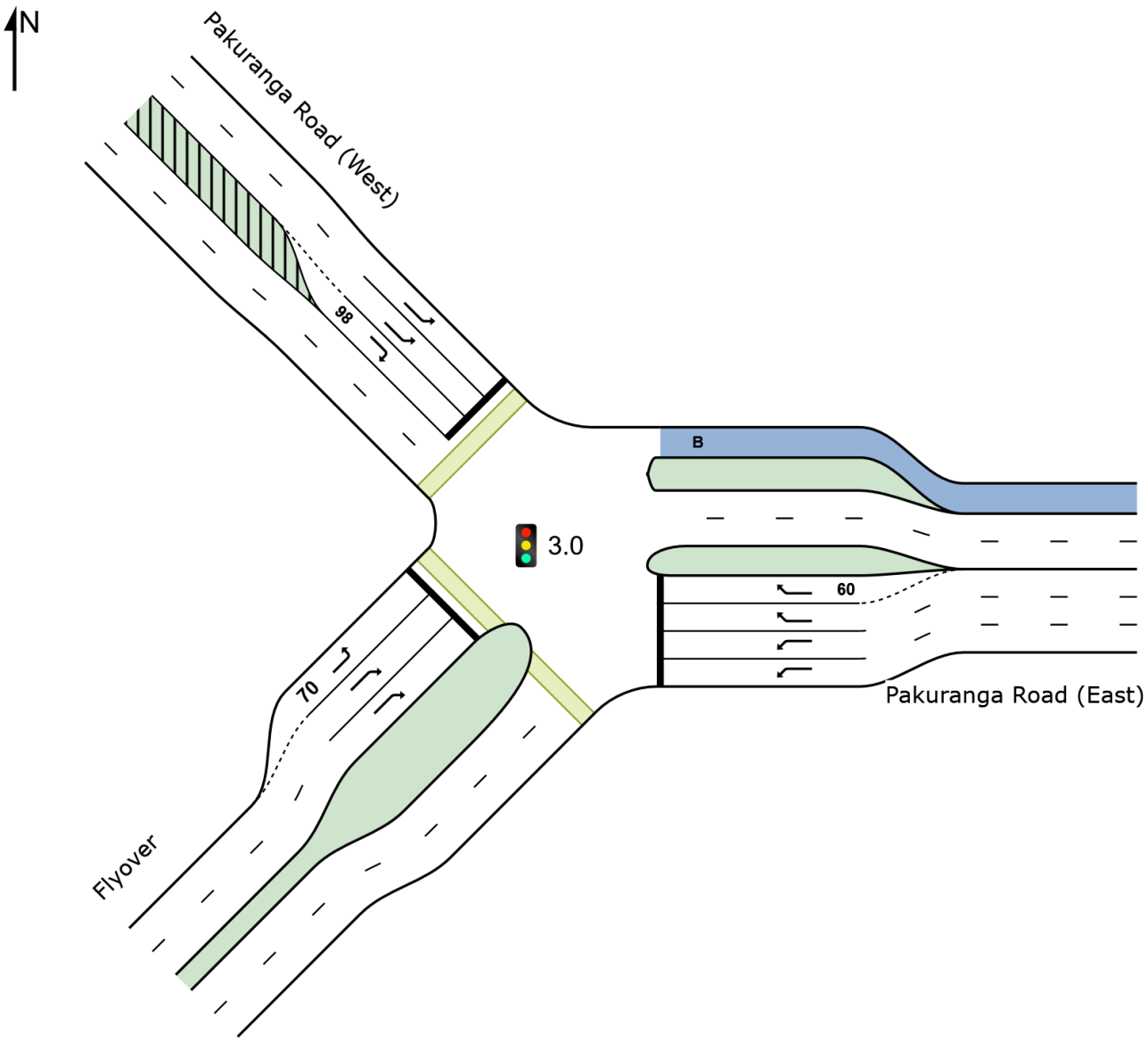
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: Pakuranga Road (East) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
West Exit: Pakuranga Road (West) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
SouthWest Exit: Pakuranga Plaza Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

SITE LAYOUT

Site: 3.0 [3.0 Pakuranga Highway / Pakuranga Rd (Site Folder: AM)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise | Created: Wednesday, 15 February 2023 9:19:53 am
Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 2.0\2028 Construction 2 PM - XL.sip9

LANE SUMMARY

Site: 3.0 [3.0 Pakuranga Highway / Pakuranga Rd (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site Practical Cycle Time)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
East: Pakuranga Road (East)															
Lane 1	321	5.8	321	5.8	878	0.366	100	18.0	LOS B	8.7	64.0	Full	183	0.0	0.0
Lane 2	321	5.8	321	5.8	878	0.366	100	18.0	LOS B	8.7	64.0	Full	183	0.0	0.0
Lane 3	318	5.7	318	5.7	338[1]	0.940	100	87.0	LOS F	24.1	177.0	Full	183	0.0	12.0[8]
Lane 4	318	5.7	318	5.7	338[1]	0.940	100	87.0	LOS F	24.1	177.0	Short	60	0.0	NA
Approach	1278	5.7	1278	5.7		0.940		52.3	LOS D	24.1	177.0				
NorthWest: Pakuranga Road (West)															
Lane 1	662	8.7	662	8.7	705	0.938	100	73.0	LOS E	23.5[N4]	176.8[N4]	Full	121	0.0	50.0
Lane 2	644	5.7	644	5.7	686[1]	0.938	100	72.3	LOS E	24.1[N4]	176.8[N4]	Full	121	0.0	50.0
Lane 3	53	17.0	53	17.0	165	0.322	100	74.2	LOS E	3.3	26.7	Short	98	0.0	NA
Approach	1359	7.6	1359	7.6		0.938		72.7	LOS E	24.1	176.8				
SouthWest: Flyover															
Lane 1	473	0.2	473	0.2	685	0.691	100	28.4	LOS C	13.9	97.7	Short	70	0.0	NA
Lane 2	634	1.8	634	1.8	682[1]	0.930	100	57.0	LOS E	39.2	278.6	Full	1162	0.0	0.0
Lane 3	948	1.8	948	1.8	1020	0.930	100	54.3	LOS D	66.5	472.6	Full	1162	0.0	0.0
Approach	2055	1.5	2055	1.5		0.930		49.2	LOS D	66.5	472.6				
Intersection	4692	4.4	4692	4.4		0.940		56.8	LOS E	66.5	472.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Delay Model: SIDRA Standard (Geometric Delay is included).
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.
8 Probability of Blockage has been set on the basis of a queue that overflows from a short lane.
N4 Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)

East: Pakuranga Road (East)

Mov. From E To Exit:	L1 SW	R1 NW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	321	-	321	5.8	878	0.366	100	NA	NA
Lane 2	321	-	321	5.8	878	0.366	100	NA	NA
Lane 3	-	318	318	5.7	338[1]	0.940	100	NA	NA
Lane 4	-	318	318	5.7	338[1]	0.940	100	100.0	3
Approach	642	636	1278	5.7		0.940			

NorthWest: Pakuranga Road (West)

Mov. From NW To Exit:	L1 E	R2 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

Lane 1	662	-	662	8.7	705	0.938	100	NA	NA
Lane 2	644	-	644	5.7	686[1]	0.938	100	NA	NA
Lane 3	-	53	53	17.0	165	0.322	100	0.0	2
Approach	1306	53	1359	7.6		0.938			

SouthWest: Flyover

Mov. From SW To Exit:	L2 NW	R1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	473	-	473	0.2	685	0.691	100	45.7	2
Lane 2	-	634	634	1.8	682[1]	0.930	100	NA	NA
Lane 3	-	948	948	1.8	1020	0.930	100	NA	NA
Approach	473	1582	2055	1.5		0.930			

	Total	%HV	Deg.Satn (v/c)
Intersection	4692	4.4	0.940

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

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.

Merge Analysis

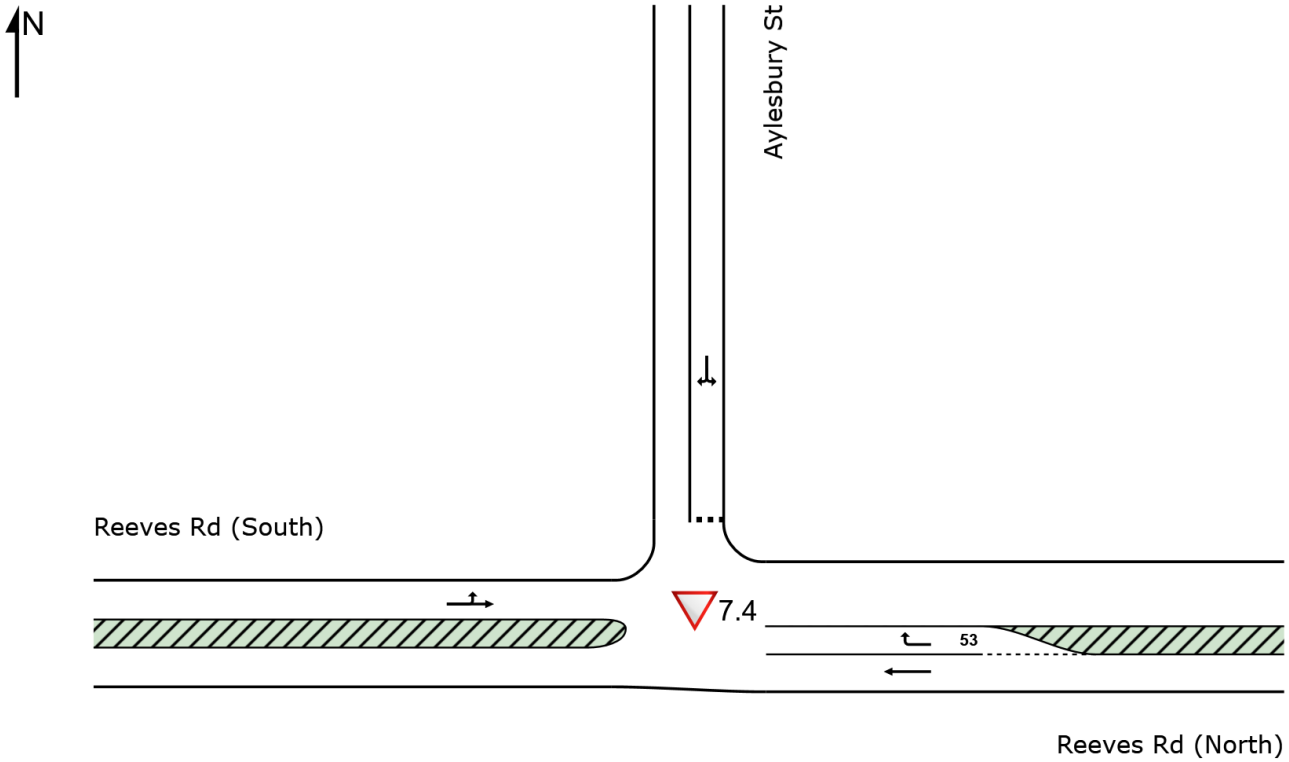
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: Pakuranga Road (East) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
Full Length Lane	3	Merge Analysis not applied.										
NorthWest Exit: Pakuranga Road (West) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
SouthWest Exit: Flyover Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

SITE LAYOUT

Site: 7.4 [7.4 Reeves Rd/ Aylesbury St - XL (Site Folder: AM)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



LANE SUMMARY

Site: 7.4 [7.4 Reeves Rd/ Aylesbury St - XL (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
East: Reeves Rd (North)															
Lane 1	14	7.7	14	7.7	1915	0.007	100	0.0	LOS A	0.0	0.0	Full	55	0.0	0.0
Lane 2	18	5.9	18	5.9	1696	0.011	100	4.2	LOS A	0.0	0.3	Short	53	0.0	NA
Approach	32	6.7	31	6.7		0.011		2.4	NA	0.0	0.3				
North: Aylesbury St															
Lane 1	57	5.6	57	5.6	1319	0.043	100	4.8	LOS A	0.1	0.9	Full	193	0.0	0.0
Approach	57	5.6	57	5.6		0.043		4.8	LOS A	0.1	0.9				
West: Reeves Rd (South)															
Lane 1	35	3.0	35	3.0	1973	0.018	100	1.3	LOS A	0.0	0.0	Full	60	0.0	0.0
Approach	35	3.0	35	3.0		0.018		1.3	NA	0.0	0.0				
Intersection	123	5.1	123	5.1		0.043		3.2	NA	0.1	0.9				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Approach Lane Flows (veh/h)

East: Reeves Rd (North)

Mov. From E To Exit:	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	14	-	14	7.7	1915	0.007	100	NA	NA
Lane 2	-	18	18	5.9	1696	0.011	100	0.0	1
Approach	14	18	31	6.7		0.011			

North: Aylesbury St

Mov. From N To Exit:	L2 E	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	33	24	57	5.6	1319	0.043	100	NA	NA
Approach	33	24	57	5.6		0.043			

West: Reeves Rd (South)

Mov. From W To Exit:	L2 N	T1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	11	24	35	3.0	1973	0.018	100	NA	NA
Approach	11	24	35	3.0		0.018			

	Total	%HV	Deg.Satn (v/c)
Intersection	123	5.1	0.043

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

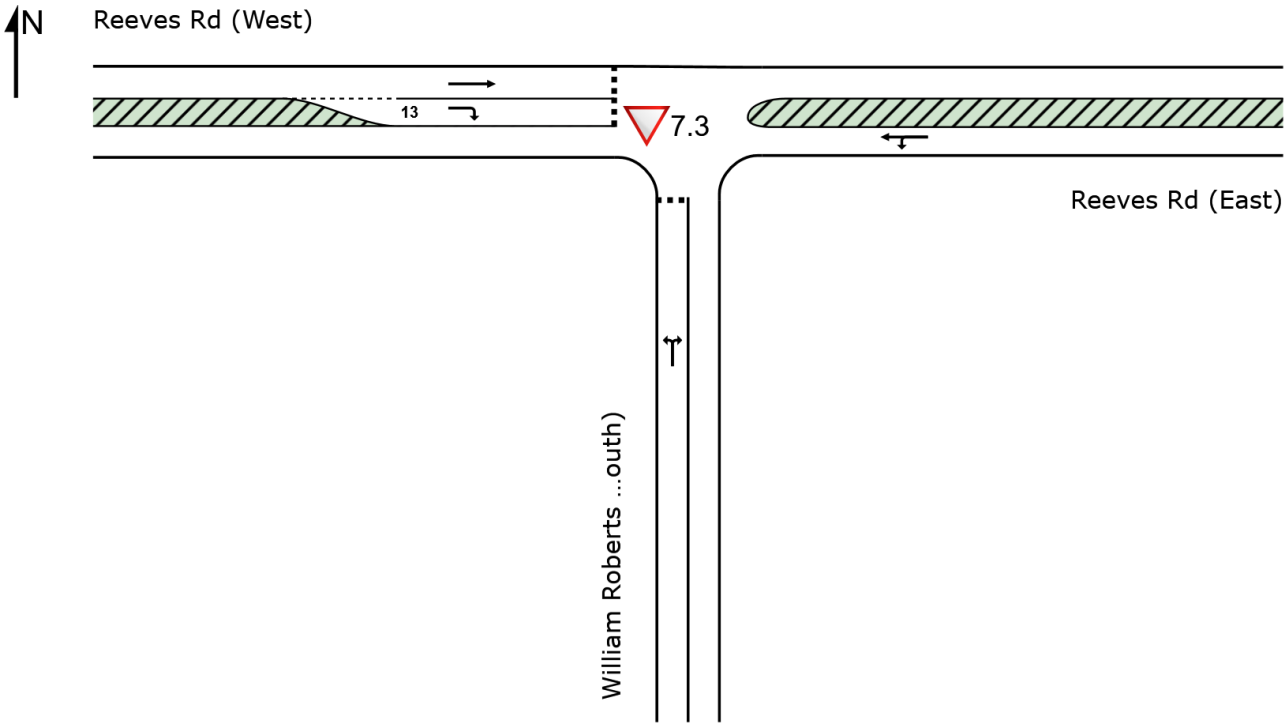
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: Reeves Rd (North) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Aylesbury St Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Reeves Rd (South) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

SITE LAYOUT

Site: 7.3 [7.3 William Roberts Rd / Reeves Rd - XL (Site Folder: AM)]

Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise | Created: Wednesday, 15 February 2023 9:20:06 am
Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 2.0\2028 Construction 2 PM - XL.sip9

LANE SUMMARY

Site: 7.3 [7.3 William Roberts Rd / Reeves Rd - XL (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Give-Way (Two-Way)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: William Roberts Road (South)															
Lane 1	397	14.3	395	14.4	962	0.411	100	5.6	LOS A	1.5	11.6	Full	243	0.0	0.0
Approach	397	14.3	395[N1]	14.4		0.411		5.6	LOS A	1.5	11.6				
East: Reeves Rd (East)															
Lane 1	159	8.6	159	8.6	1729	0.092	100	4.5	LOS A	0.0	0.0	Full	266	0.0	0.0
Approach	159	8.6	159	8.6		0.092		4.5	NA	0.0	0.0				
West: Reeves Rd (West)															
Lane 1	17	6.3	17	6.3	1884	0.009	100	2.7	LOS A	0.0	0.0	Full	55	0.0	0.0
Lane 2	40	5.3	40	5.3	554	0.072	100	8.2	LOS A	0.2	1.3	Short	13	0.0	NA
Approach	57	5.6	57	5.6		0.072		6.5	LOS A	0.2	1.3				
Intersection	613	12.0	611[N1]	12.1		0.411		5.4	NA	1.5	11.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)

South: William Roberts Road (South)

Mov. From S To Exit:	L2 W	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	27	368	395	14.4	962	0.411	100	NA	NA
Approach	27	368	395	14.4		0.411			

East: Reeves Rd (East)

Mov. From E To Exit:	L2 S	T1 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	147	12	159	8.6	1729	0.092	100	NA	NA
Approach	147	12	159	8.6		0.092			

West: Reeves Rd (West)

Mov. From W To Exit:	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	17	-	17	6.3	1884	0.009	100	NA	NA
Lane 2	-	40	40	5.3	554	0.072	100	0.0	1

Approach	17	40	57	5.6	0.072
	Total	%HV	Deg.Satn (v/c)		
Intersection	611	12.1		0.411	

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

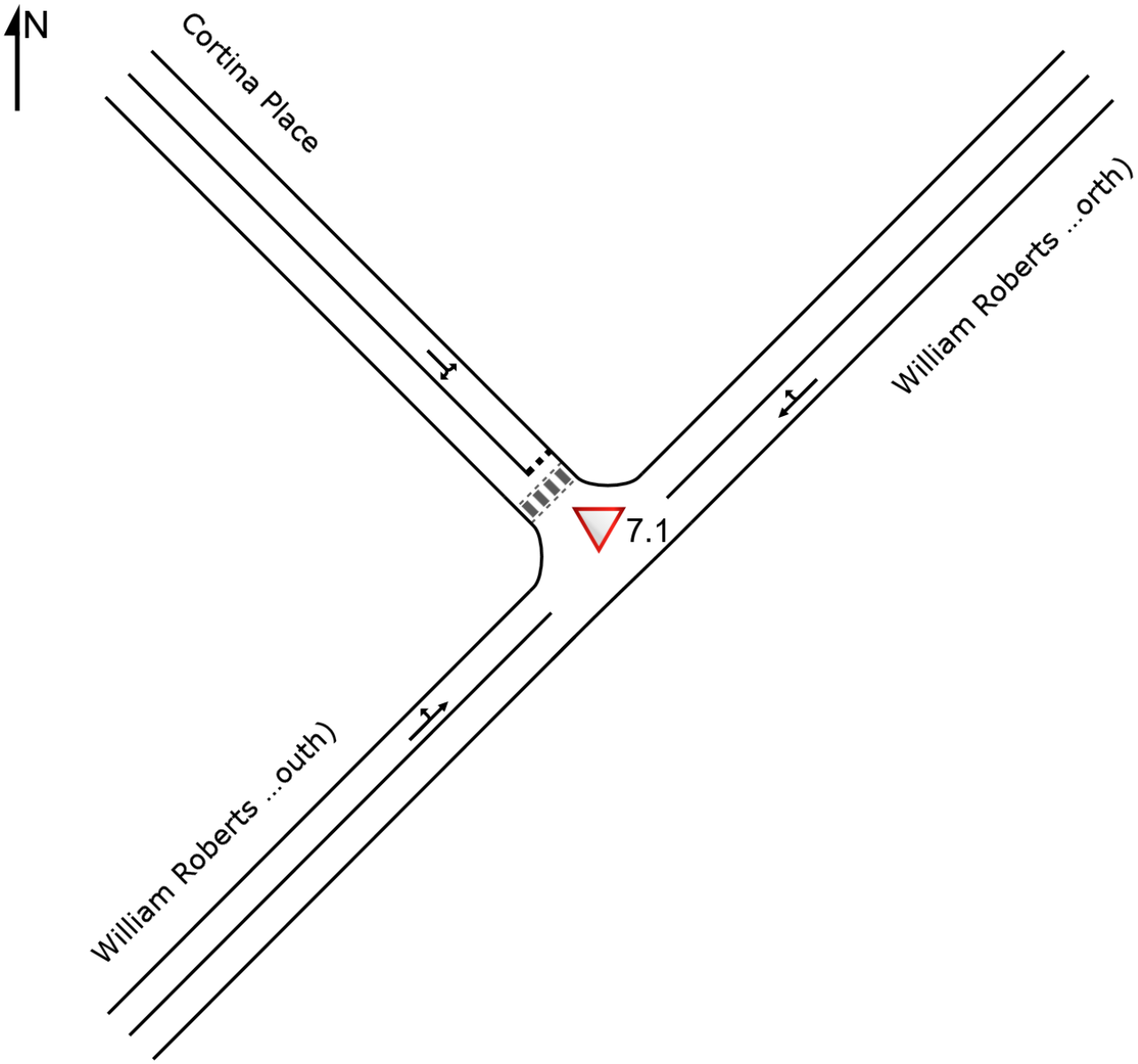
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: William Roberts Road (South) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Reeves Rd (East) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Reeves Rd (West) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

SITE LAYOUT

Site: 7.1 [7.1 William Roberts Rd / Cortina Pl (Site Folder: AM)]

Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



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Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 2.0\2028 Construction 2 PM - XL.sip9

LANE SUMMARY

Site: 7.1 [7.1 William Roberts Rd / Cortina Pl (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Give-Way (Two-Way)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
NorthEast: William Roberts Road (North)															
Lane 1	265	7.6	265	7.6	1838	0.144	100	0.1	LOS A	0.1	0.5	Full	243	0.0	0.0
Approach	265	7.6	265	7.6		0.144		0.1	NA	0.1	0.5				
NorthWest: Cortina Place															
Lane 1	37	5.4	37	5.4	1126	0.033	100	3.0	LOS A	0.1	0.7	Full	177	-1.0 N7	0.0
Approach	37	5.4	37	5.4		0.033		3.0	LOS A	0.1	0.7				
SouthWest: William Roberts Road (South)															
Lane 1	99	9.1	97	9.2	1771	0.055	100	0.5	LOS A	0.0	0.0	Full	110	0.0	0.0
Approach	99	9.1	97 N1	9.2		0.055		0.5	NA	0.0	0.0				
Intersection	401	7.7	399 N1	7.8		0.144		0.5	NA	0.1	0.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N7 The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)

NorthEast: William Roberts Road (North)

Mov. From NE To Exit:	T1 SW	R2 NW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	255	10	265	7.6	1838	0.144	100	NA	NA
Approach	255	10	265	7.6		0.144			

NorthWest: Cortina Place

Mov. From NW To Exit:	L2 NE	R2 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	19	18	37	5.4	1126	0.033	100	NA	NA
Approach	19	18	37	5.4		0.033			

SouthWest: William Roberts Road (South)

Mov. From SW To Exit:	L2 NW	T1 NE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	23	75	97	9.2	1771	0.055	100	NA	NA
Approach	23	75	97	9.2		0.055			

	Total	%HV	Deg.Satn (v/c)
Intersection	399	7.8	0.144

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

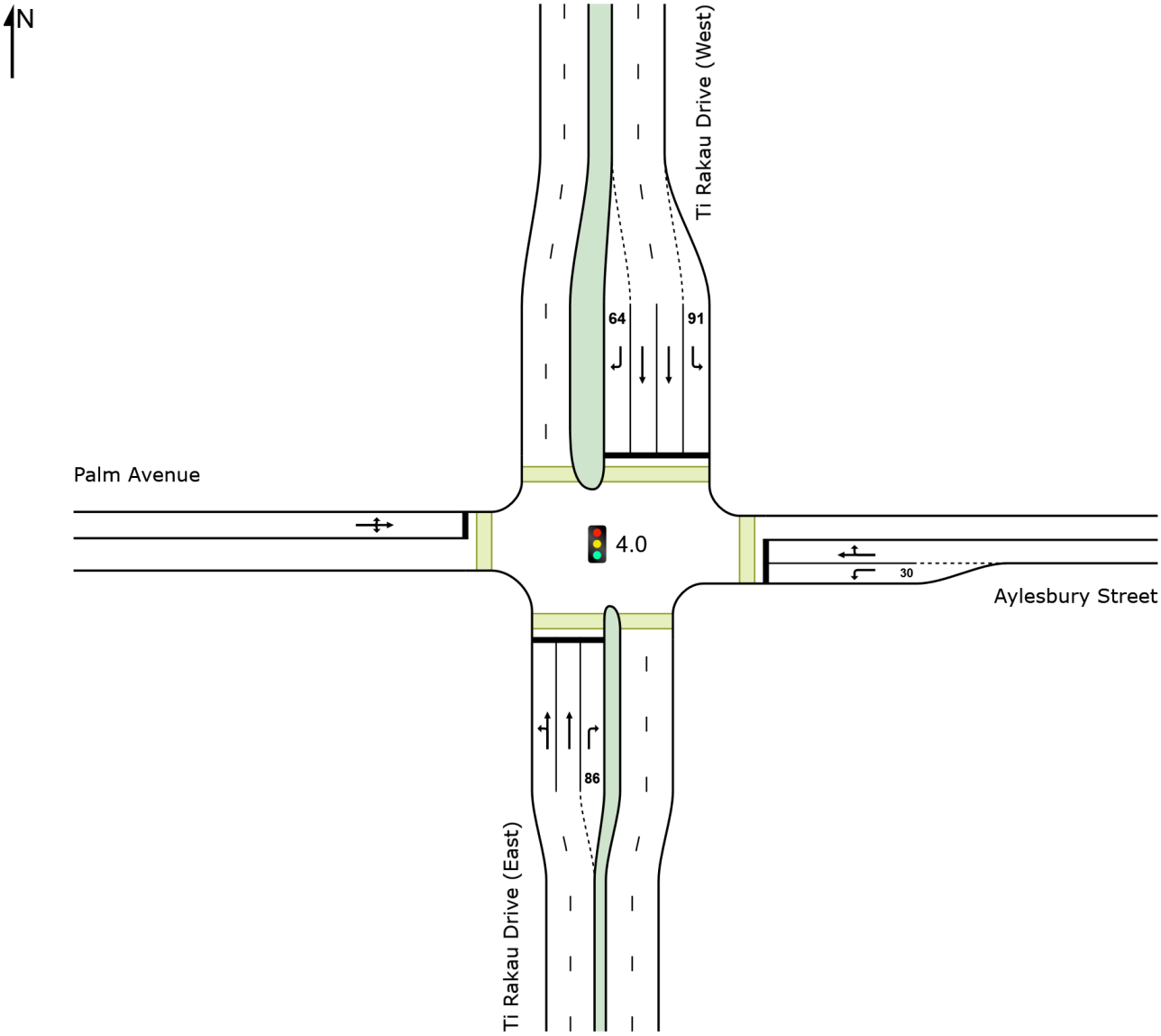
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
NorthEast Exit: William Roberts Road (North) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
NorthWest Exit: Cortina Place Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
SouthWest Exit: William Roberts Road (South) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

SITE LAYOUT

Site: 4.0 [4.0 Palm Ave / Aylesbury St (Site Folder: AM)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise | Created: Wednesday, 15 February 2023 9:20:23 am
Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 2.0\2028 Construction 2 PM - XL.sip9

LANE SUMMARY

Site: 4.0 [4.0 Palm Ave / Aylesbury St (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Ti Rakau Drive (East)															
Lane 1	518	10.5	490	10.8	1093	0.448	100	8.2	LOS A	5.4	41.6	Full	110	0.0	0.0
Lane 2	525	10.5	496	10.9	1106	0.448	100	6.4	LOS A	3.5	27.0	Full	110	0.0	0.0
Lane 3	11	9.1	10	9.3	66	0.157	100	83.3	LOS F	0.7	5.4	Short	86	0.0	NA
Approach	1054	10.5	996[N1]	10.8		0.448		8.1	LOS A	5.4	41.6				
East: Aylesbury Street															
Lane 1	25	8.0	25	8.0	81	0.308	100	52.1	LOS D	1.4	10.1	Short	30	-50.0[N7]	NA
Lane 2	20	0.0	20	0.0	108	0.186	100	76.1	LOS E	1.3	9.1	Full	40	0.0	0.0
Approach	45	4.4	45	4.4		0.308		62.8	LOS E	1.4	10.1				
North: Ti Rakau Drive (West)															
Lane 1	10	0.0	10	0.0	1277	0.008	100	9.7	LOS A	0.1	1.0	Short	91	0.0	NA
Lane 2	453	8.2	453	8.2	571[1]	0.793	100	24.1	LOS C	19.9	148.9	Full	174	-50.0[N7]	1.0
Lane 3	449	8.2	449	8.2	566[1]	0.793	100	17.5	LOS B	15.0	112.5	Full	174	-49.2[N7]	0.0
Lane 4	61	1.6	61	1.6	71	0.861	100	92.4	LOS F	4.5	31.9	Short	64	0.0	NA
Approach	973	7.7	972[N1]	7.7		0.861		25.2	LOS C	19.9	148.9				
West: Palm Avenue															
Lane 1	96	4.2	96	4.2	119	0.806	100	84.7	LOS F	6.9	49.8	Full	87	-29.2[N7]	0.0
Approach	96	4.2	96	4.2		0.806		84.7	LOS F	6.9	49.8				
Intersection	2168	8.9	2109[N1]	9.1		0.861		20.6	LOS C	19.9	148.9				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Delay Model: SIDRA Standard (Geometric Delay is included).
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.
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N7 The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)

South: Ti Rakau Drive (East)

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	54	436	-	490	10.8	1093	0.448	100	NA	NA
Lane 2	-	496	-	496	10.9	1106	0.448	100	NA	NA
Lane 3	-	-	10	10	9.3	66	0.157	100	0.0	2
Approach	54	932	10	996	10.8		0.448			
East: Aylesbury Street										

Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	25	-	-	25	8.0	81	0.308	100	0.0	2
Lane 2	-	10	10	20	0.0	108	0.186	100	NA	NA
Approach	25	10	10	45	4.4		0.308			
North: Ti Rakau Drive (West)										
Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	10	-	-	10	0.0	1277	0.008	100	0.0	2
Lane 2	-	453	-	453	8.2	571[1]	0.793	100	NA	NA
Lane 3	-	449	-	449	8.2	566[1]	0.793	100	NA	NA
Lane 4	-	-	61	61	1.6	71	0.861	100	0.0	3
Approach	10	901	61	972	7.7		0.861			
West: Palm Avenue										
Mov. From W To Exit:	L2 N	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	45	10	41	96	4.2	119	0.806	100	NA	NA
Approach	45	10	41	96	4.2		0.806			

	Total	%HV	Deg.Satn (v/c)
Intersection	2109	9.1	0.861

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

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.

Merge Analysis

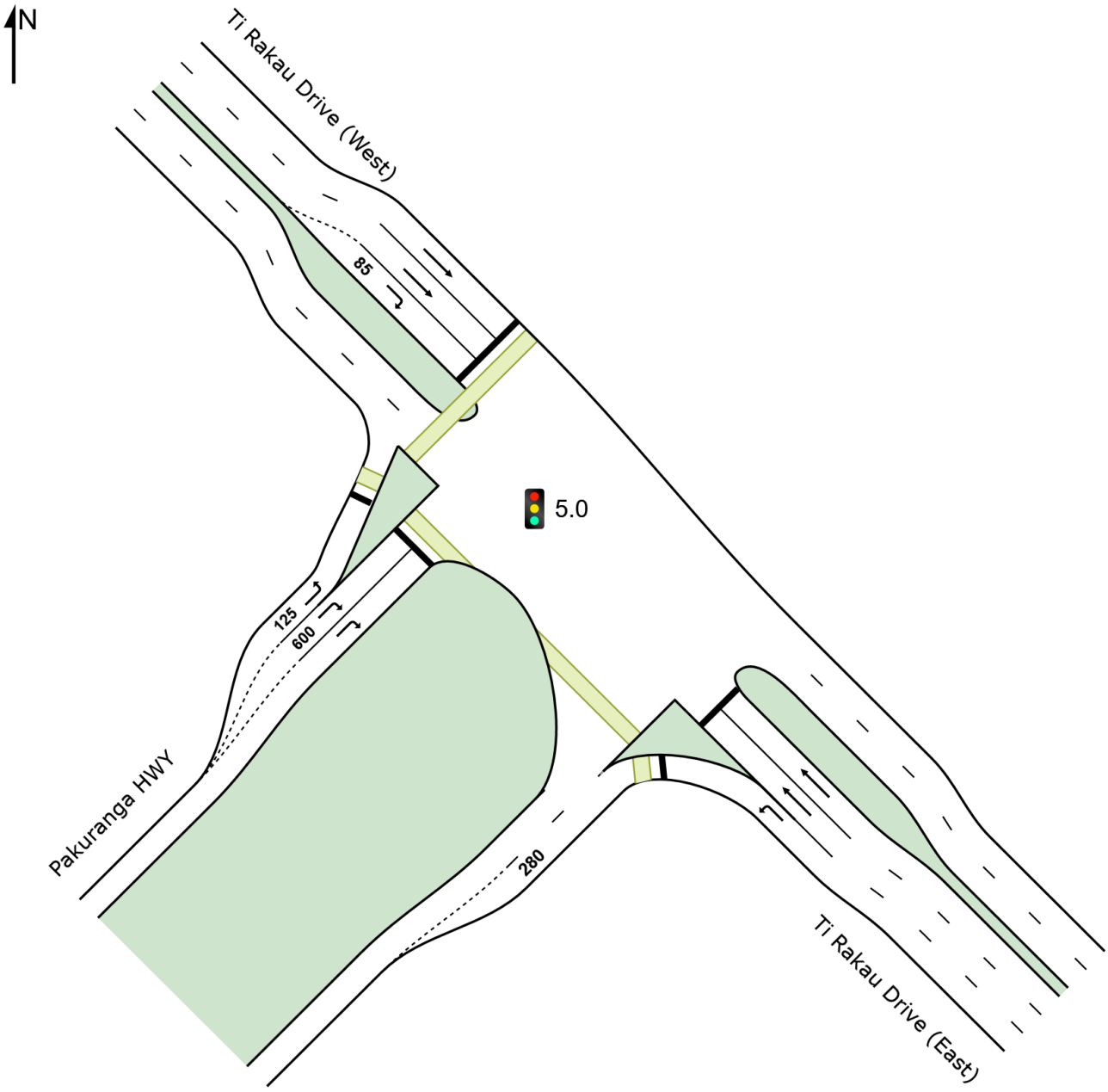
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Ti Rakau Drive (East) Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									
East Exit: Aylesbury Street Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
North Exit: Ti Rakau Drive (West) Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									
Full Length Lane	2	Merge Analysis not applied.									
West Exit: Palm Avenue Merge Type: **Not Applied**											
Full Length Lane	1	Merge Analysis not applied.									

SITE LAYOUT

Site: 5.0 [5.0 Pakuranga Highway/ Reeves Rd (Site Folder: AM)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



LANE SUMMARY

Site: 5.0 [5.0 Pakuranga Highway/ Reeves Rd (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
SouthEast: Ti Rakau Drive (East)															
Lane 1	836	7.2	775	7.3	1510	0.513	100	7.4	LOS A	12.4	92.0	Full	90	0.0	17.0
Lane 2	449	8.9	416	9.1	452	0.922	100	78.0	LOS E	17.4[N4]	131.5[N4]	Full	90	0.0	50.0
Lane 3	449	8.9	416	9.1	452	0.922	100	78.0	LOS E	17.4[N4]	131.5[N4]	Full	90	0.0	50.0
Approach	1734	8.1	1608[N1]	8.3		0.922		44.0	LOS D	17.4	131.5				
NorthWest: Ti Rakau Drive (West)															
Lane 1	320	9.9	320	9.9	321	0.997	100	110.4	LOS F	21.2[N4]	160.7[N4]	Full	110	-50.0[N7]	50.0
Lane 2	314	9.9	314	9.9	315[1]	0.997	100	109.2	LOS F	21.2[N4]	160.7[N4]	Full	110	-50.0[N7]	50.0
Lane 3	69	23.2	69	23.2	97	0.714	100	85.7	LOS F	4.8	40.4	Short	85	0.0	NA
Approach	703	11.2	703	11.2		0.997		107.4	LOS F	21.2	160.7				
SouthWest: Pakuranga HWY															
Lane 1	147	21.1	147	21.1	1081	0.136	100	16.9	LOS B	3.4	27.8	Short	125	0.0	NA
Lane 2	473	12.8	473	12.8	471[1]	1.004	100	119.1	LOS F	49.6	385.6	Short	600	-50.0[N7]	NA
Lane 3	488	12.8	488	12.8	485	1.004	100	118.3	LOS F	50.9	395.7	Full	623	-50.0[N7]	0.0
Approach	1108	13.9	1108	13.9		1.004		105.2	LOS F	50.9	395.7				
Intersection	3545	10.5	3418[N1]	10.9		1.004		76.9	LOS E	50.9	395.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Delay Model: SIDRA Standard (Geometric Delay is included).
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.
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N4 Average back of queue has been restricted to the available queue storage space.
N7 The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach Lane Flows (veh/h)

SouthEast: Ti Rakau Drive (East)

Mov. From SE To Exit:	L2 SW	T1 NW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	775	-	775	7.3	1510	0.513	100	NA	NA
Lane 2	-	416	416	9.1	452	0.922	100	NA	NA
Lane 3	-	416	416	9.1	452	0.922	100	NA	NA
Approach	775	833	1608	8.3		0.922			

NorthWest: Ti Rakau Drive (West)

Mov. From NW To Exit:	T1 SE	R2 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

Lane 1	320	-	320	9.9	321	0.997	100	NA	NA
Lane 2	314	-	314	9.9	315[1]	0.997	100	NA	NA
Lane 3	-	69	69	23.2	97	0.714	100	0.0	2
Approach	634	69	703	11.2		0.997			

SouthWest: Pakuranga HWY

Mov. From SW To Exit:	L2 NW	R2 SE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	147	-	147	21.1	1081	0.136	100	0.0	2
Lane 2	-	473	473	12.8	471[1]	1.004	100	0.0	3
Lane 3	-	488	488	12.8	485	1.004	100	NA	NA
Approach	147	961	1108	13.9		1.004			

	Total	%HV	Deg.Satn (v/c)
Intersection	3418	10.9	1.004

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

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.

Merge Analysis

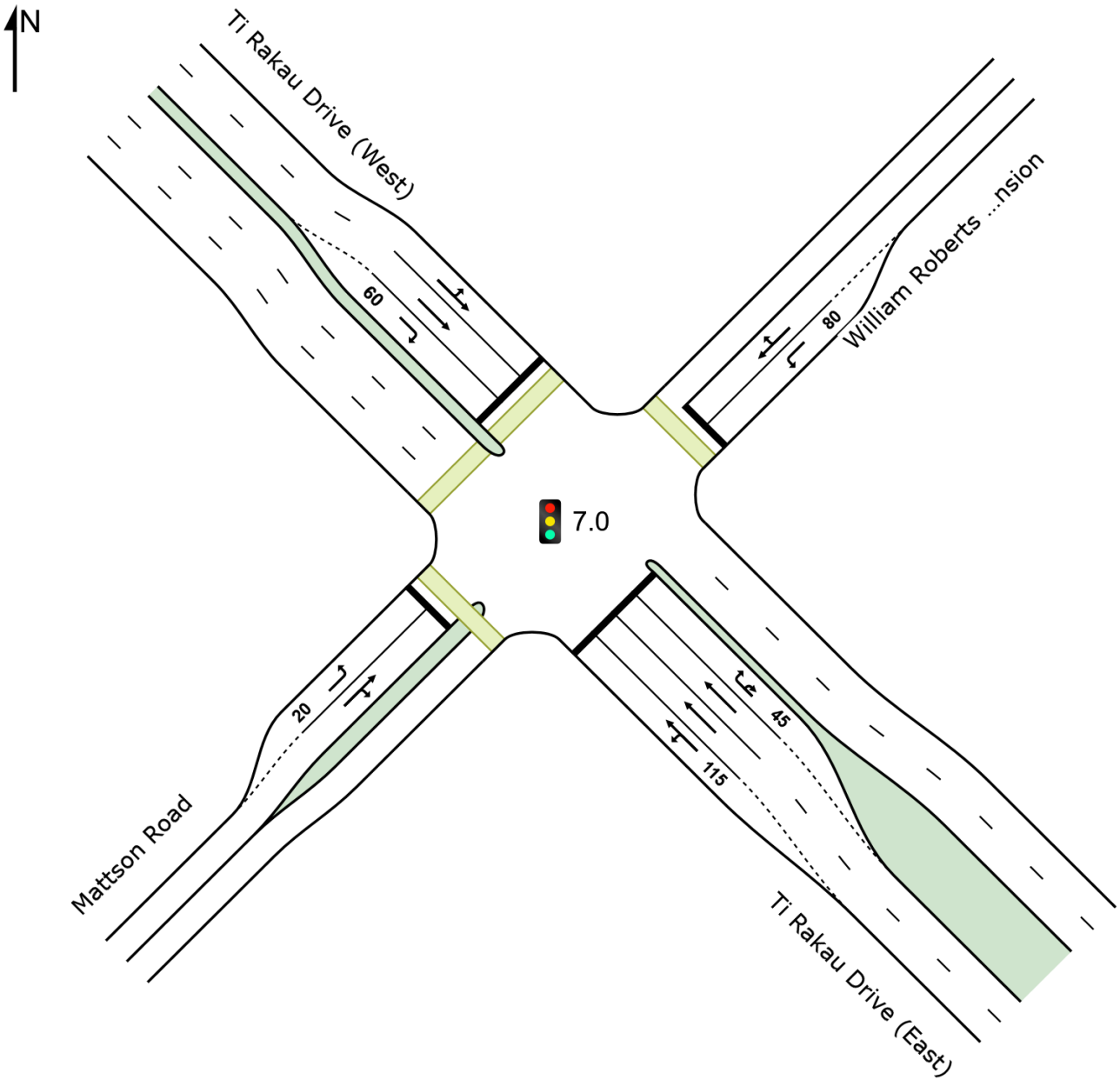
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
NorthWest Exit: Ti Rakau Drive (West) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
SouthWest Exit: Pakuranga HWY Merge Type: **Priority**												
Exit Short Lane	1	280	0.0	69	77	3.00	2.00	775	1723	0.450	0.1	0.2
Merge Lane	2	-	100.0	Merge Lane is not Opposed				69	1800	0.038	0.0	0.0

SITE LAYOUT

Site: 7.0 [7.0 William Roberts Rd / Ti Rakau Dr (Site Folder: AM)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Organisation: AECOM AUSTRALIA PTY LTD | Licence: NETWORK / Enterprise | Created: Wednesday, 15 February 2023 9:20:36 am
Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\CS 2.0\2028 Construction 2 PM - XL.sip9

LANE SUMMARY

Site: 7.0 [7.0 William Roberts Rd / Ti Rakau Dr (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Site Practical Cycle Time)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
SouthEast: Ti Rakau Drive (East)															
Lane 1	603	7.8	552	8.1	980	0.563	100	24.8	LOS C	23.5	175.6	Short	115	0.0	NA
Lane 2	605	7.8	554	8.0	983	0.563	100	24.4	LOS C	23.5	176.1	Full	203	0.0	2.1
Lane 3	431	7.8	394	8.0	700[1]	0.563	100	21.7	LOS C	14.9	111.4	Full	203	0.0	0.0
Lane 4	182	10.5	167	10.8	176[1]	0.947	100	101.4	LOS F	13.2	101.3	Short	45	0.0	NA
Approach	1821	8.1	1667[N1]	8.3		0.947		31.6	LOS C	23.5	176.1				
NorthEast: William Roberts Road Extension															
Lane 1	80	5.0	80	5.0	190	0.420	100	71.2	LOS E	5.0	36.7	Short	80	0.0	NA
Lane 2	169	9.0	169	9.0	186	0.908	100	89.3	LOS F	12.7	95.4	Full	110	0.0	2.1
Approach	249	7.7	249	7.7		0.908		83.5	LOS F	12.7	95.4				
NorthWest: Ti Rakau Drive (West)															
Lane 1	897	10.7	897	10.7	946	0.948	100	60.8	LOS E	20.5[N4]	156.4[N4]	Full	107	0.0	50.0
Lane 2	839	9.3	839	9.3	884[1]	0.948	100	57.4	LOS E	20.7[N4]	156.4[N4]	Full	107	0.0	50.0
Lane 3	124	6.8	124	6.8	286	0.434	100	67.5	LOS E	7.4	55.0	Short	60	0.0	NA
Approach	1860	9.8	1860	9.8		0.948		59.7	LOS E	20.7	156.4				
SouthWest: Mattson Road															
Lane 1	16	0.0	16	0.0	446	0.035	100	51.8	LOS D	0.8	5.5	Short	20	0.0	NA
Lane 2	58	1.8	58	1.8	74	0.783	100	89.9	LOS F	4.1	29.5	Full	282	0.0	0.0
Approach	74	1.4	74	1.4		0.783		81.8	LOS F	4.1	29.5				
Intersection	4004	8.7	3849[N1]	9.1		0.948		49.5	LOS D	23.5	176.1				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Delay Model: SIDRA Standard (Geometric Delay is included).
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.
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
N4 Average back of queue has been restricted to the available queue storage space.

Approach Lane Flows (veh/h)

SouthEast: Ti Rakau Drive (East)

Mov. From SE To Exit:	L2 SW	T1 NW	R2 NE	U SE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	35	517	-	-	552	8.1	980	0.563	100	54.1	2
Lane 2	-	554	-	-	554	8.0	983	0.563	100	NA	NA
Lane 3	-	394	-	-	394	8.0	700[1]	0.563	100	NA	NA
Lane 4	-	-	104	63	167	10.8	176[1]	0.947	100	91.7	3

Approach	35	1465	104	63	1667	8.3		0.947			
NorthEast: William Roberts Road Extension											
Mov. From NE To Exit:	L2 SE	T1 SW	R2 NW	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	80	-	-	80	5.0		190	0.420	100	0.0	2
Lane 2	-	11	158	169	9.0		186	0.908	100	NA	NA
Approach	80	11	158	249	7.7			0.908			
NorthWest: Ti Rakau Drive (West)											
Mov. From NW To Exit:	L2 NE	T1 SE	R2 SW	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	349	548	-	897	10.7		946	0.948	100	NA	NA
Lane 2	-	839	-	839	9.3		884[1]	0.948	100	NA	NA
Lane 3	-	-	124	124	6.8		286	0.434	100	7.2	2
Approach	349	1387	124	1860	9.8			0.948			
SouthWest: Mattson Road											
Mov. From SW To Exit:	L2 NW	T1 NE	R2 SE	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	16	-	-	16	0.0		446	0.035	100	0.0	2
Lane 2	-	11	47	58	1.8		74	0.783	100	NA	NA
Approach	16	11	47	74	1.4			0.783			
	Total	%HV	Deg.Satn (v/c)								
Intersection	3849	9.1	0.948								

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

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.

Merge Analysis

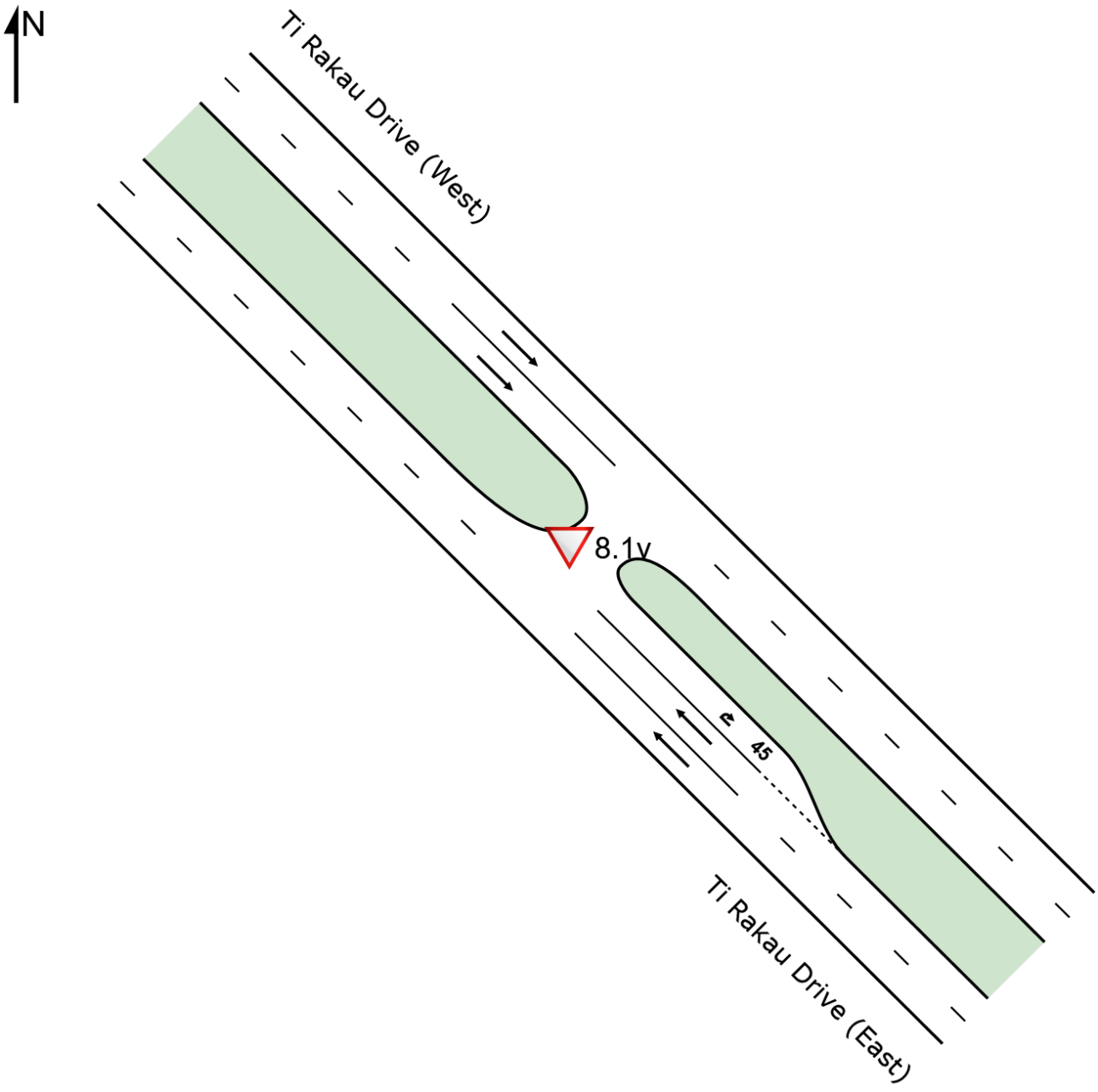
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
NorthEast Exit: William Roberts Road Extension Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
NorthWest Exit: Ti Rakau Drive (West) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
Full Length Lane	3	Merge Analysis not applied.										
SouthWest Exit: Mattson Road Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

SITE LAYOUT

Site: 8.1v [8.1 U-turn - West of Marriot Rd (Site Folder: AM)]

Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



LANE SUMMARY

Site: 8.1v [8.1 U-turn - West of Marriot Rd (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Site Category: (None)
Give-Way (Two-Way)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
SouthEast: Ti Rakau Drive (East)															
Lane 1	766	12.4	689	12.9	1790	0.385	100	0.1	LOS A	0.0	0.0	Full	147	0.0	0.0
Lane 2	756	12.4	680	12.9	1766	0.385	100	0.1	LOS A	0.0	0.0	Full	147	0.0	0.0
Lane 3	91	5.5	81	5.7	147	0.555	100	43.7	LOS E	1.7	12.2	Short	45	0.0	NA
Approach	1613	12.0	1450 N1	12.5		0.555		2.5	NA	1.7	12.2				
NorthWest: Ti Rakau Drive (West)															
Lane 1	535	13.8	531	13.9	1807	0.294	100	0.0	LOS A	0.0	0.0	Full	73	0.0	0.0
Lane 2	535	13.8	531	13.9	1807	0.294	100	0.0	LOS A	0.0	0.0	Full	73	0.0	0.0
Approach	1069	13.8	1062 N1	13.9		0.294		0.0	NA	0.0	0.0				
Intersection	2682	12.7	2512 N1	13.6		0.555		1.5	NA	1.7	12.2				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)

SouthEast: Ti Rakau Drive (East)

Mov. From SE To Exit:	T1 NW	U SE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	689	-	689	12.9	1790	0.385	100	NA	NA
Lane 2	680	-	680	12.9	1766	0.385	100	NA	NA
Lane 3	-	81	81	5.7	147	0.555	100	0.0	2
Approach	1368	81	1450	12.5		0.555			

NorthWest: Ti Rakau Drive (West)

Mov. From NW To Exit:	T1 SE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	531	531	13.9	1807	0.294	100	NA	NA
Lane 2	531	531	13.9	1807	0.294	100	NA	NA
Approach	1062	1062	13.9		0.294			

	Total	%HV	Deg.Satn (v/c)
Intersection	2512	13.6	0.555

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

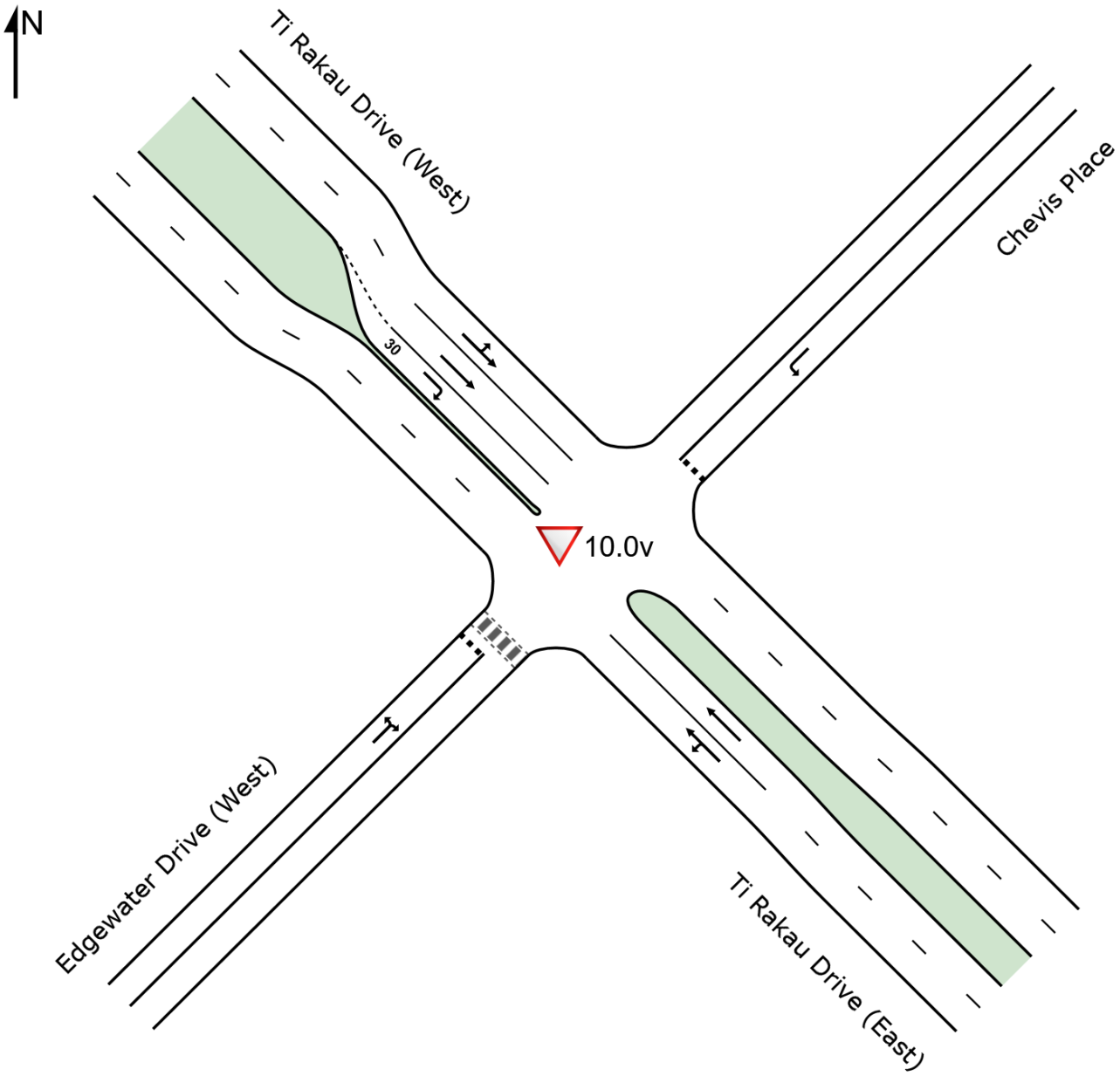
Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
NorthWest Exit: Ti Rakau Drive (West) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										

SITE LAYOUT

Site: 10.0v [10.0 Edgewater Dr (West) / Chevis Pl - Conversion - Import (Site Folder: AM)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



LANE SUMMARY

Site: 10.0v [10.0 Edgewater Dr (West) / Chevis Pl - Conversion - Import (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
SouthEast: Ti Rakau Drive (East)															
Lane 1	892	7.8	835	7.9	1648	0.506	100	1.0	LOS A	1.5	11.3	Full	81	0.0	0.0
Lane 2	995	8.4	931	8.5	1838	0.506	100	0.0	LOS A	0.0	0.0	Full	81	0.0	0.0
Approach	1887	8.1	1765 N1	8.2		0.506		0.5	NA	1.5	11.3				
NorthEast: Chevis Place															
Lane 1	10	0.0	10	0.0	858	0.012	100	6.4	LOS A	0.0	0.2	Full	138	0.0	0.0
Approach	10	0.0	10	0.0		0.012		6.4	LOS A	0.0	0.2				
NorthWest: Ti Rakau Drive (West)															
Lane 1	410	10.8	406	10.8	1839	0.221	100	0.1	LOS A	0.0	0.0	Full	68	0.0	0.0
Lane 2	407	11.0	404	11.1	1829	0.221	100	0.0	LOS A	0.0	0.0	Full	68	0.0	0.0
Lane 3	37	8.1	37	8.2	67	0.545	100	83.8	LOS F	1.3	9.4	Short	30	0.0	NA
Approach	854	10.8	846 N1	10.8		0.545		3.7	NA	1.3	9.4				
SouthWest: Edgewater Drive (West)															
Lane 1	192	6.3	192	6.3	100	1.925	100	894.4	LOS F	47.2	348.4	Full	789	0.0	0.0
Approach	192	6.3	192	6.3		1.925		894.4	LOS F	47.2	348.4				
Intersection	2943	8.7	2814 N1	9.1		1.925		62.5	NA	47.2	348.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)

SouthEast: Ti Rakau Drive (East)

Mov. From SE To Exit:	L2 SW	T1 NW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	185	650	835	7.9	1648	0.506	100	NA	NA
Lane 2	-	931	931	8.5	1838	0.506	100	NA	NA
Approach	185	1580	1765	8.2		0.506			

NorthEast: Chevis Place

Mov. From NE To Exit:	L2 SE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	10	10	0.0	858	0.012	100	NA	NA
Approach	10	10	0.0		0.012			

NorthWest: Ti Rakau Drive (West)											
Mov. From NW To Exit:	L2 NE	T1 SE	R2 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	10	396	-	406	10.8	1839	0.221	100	NA	NA	
Lane 2	-	404	-	404	11.1	1829	0.221	100	NA	NA	
Lane 3	-	-	37	37	8.2	67	0.545	100	0.0	2	
Approach	10	800	37	846	10.8		0.545				

SouthWest: Edgewater Drive (West)									
Mov. From SW To Exit:	L2 NW	R2 SE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	182	10	192	6.3	100	1.925	100	NA	NA
Approach	182	10	192	6.3		1.925			

	Total	%HV	Deg.Satn (v/c)
Intersection	2814	9.1	1.925

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

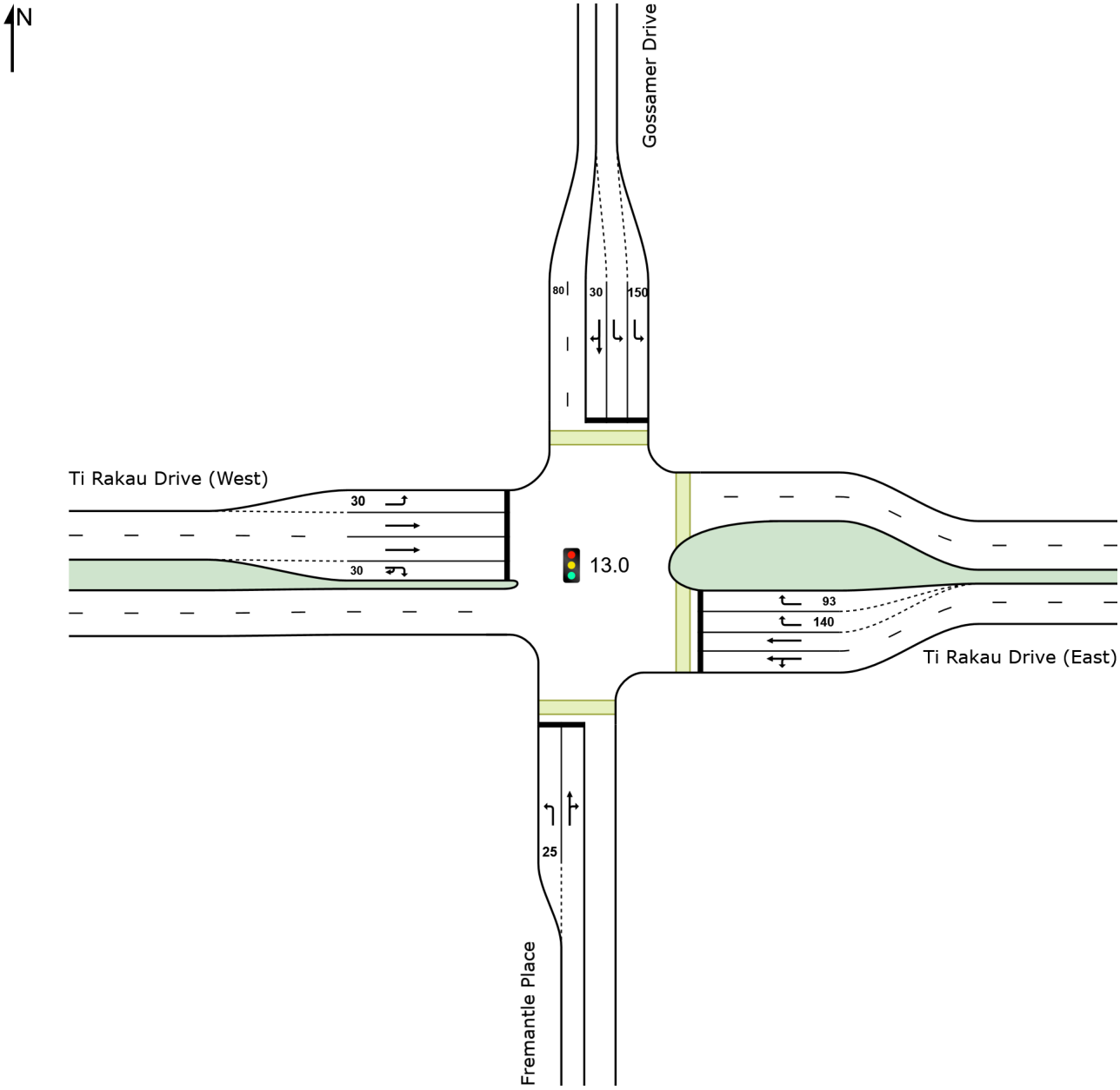
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
NorthEast Exit: Chevis Place Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
NorthWest Exit: Ti Rakau Drive (West) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
SouthWest Exit: Edgewater Drive (West) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

SITE LAYOUT

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: AM)]

Scheme Design
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



LANE SUMMARY

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (Site Folder: AM)]

Network: N101 [AM (Network Folder: General)]

Scheme Design
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Phase Times)

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE [Veh	Dist] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Fremantle Place															
Lane 1	25	4.0	25	4.0	161	0.156	100	72.5	LOS E	1.5	11.2	Short	25	0.0	NA
Lane 2	31	3.2	31	3.2	165	0.188	100	73.2	LOS E	1.9	13.8	Full	285	0.0	0.0
Approach	56	3.6	56	3.6		0.188		72.9	LOS E	1.9	13.8				
East: Ti Rakau Drive (East)															
Lane 1	873	11.0	873	11.0	859	1.016	100	105.9	LOS F	84.5	647.4	Full	636	0.0	16.6
Lane 2	817	11.1	817	11.1	804[1]	1.016	100	108.0	LOS F	79.7	610.7	Full	636	0.0	11.3
Lane 3	79	8.4	79	8.4	417	0.190	46[6]	28.4	LOS C	2.3	17.6	Short	140	0.0	NA
Lane 4	171	8.4	171	8.4	417	0.410	100	30.1	LOS C	5.4	40.6	Short	93	0.0	NA
Approach	1940	10.7	1940	10.7		1.016		96.9	LOS F	84.5	647.4				
North: Gossamer Drive															
Lane 1	559	7.5	559	7.5	629	0.889	100	51.9	LOS D	26.1	194.7	Short	150	0.0	NA
Lane 2	494	7.5	494	7.5	556[1]	0.889	100	49.7	LOS D	23.0	171.2	Full	1010	0.0	0.0
Lane 3	100	8.0	100	8.0	188	0.532	100	73.5	LOS E	6.4	47.6	Short	30	0.0	NA
Approach	1153	7.5	1153	7.5		0.889		52.9	LOS D	26.1	194.7				
West: Ti Rakau Drive (West)															
Lane 1	19	5.3	19	5.3	532	0.035	100	41.4	LOS D	0.8	6.1	Short	30	0.0	NA
Lane 2	429	10.7	420	10.8	577[1]	0.727	100	49.7	LOS D	23.7	181.4	Full	479	0.0	0.0
Lane 3	392	10.7	383	10.8	527[1]	0.727	100	48.5	LOS D	21.1	161.0	Full	479	0.0	0.0
Lane 4	48	6.5	46	6.5	175	0.266	100	70.0	LOS E	2.8	20.8	Short	30	0.0	NA
Approach	888	10.4	868[N1]	10.4		0.727		50.1	LOS D	23.7	181.4				
Intersection	4037	9.6	4017[N1]	9.7		1.016		73.8	LOS E	84.5	647.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab).
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Delay Model: SIDRA Standard (Geometric Delay is included).
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.
6 Lane under-utilisation due to downstream effects
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach Lane Flows (veh/h)

South: Fremantle Place

Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	25	-	-	25	4.0	161	0.156	100	0.0	2
Lane 2	-	13	18	31	3.2	165	0.188	100	NA	NA
Approach	25	13	18	56	3.6		0.188			

East: Ti Rakau Drive (East)											
Mov. From E To Exit:	L2 S	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	14	859	-	873	11.0	859	1.016	100	NA	NA
Lane 2	-	817	-	817	11.1	804[1]	1.016	100	NA	NA
Lane 3	-	-	79	79	8.4	417	0.190	46[6]	0.0	2
Lane 4	-	-	171	171	8.4	417	0.410	100	0.0	3
Approach	14	1676	250	1940	10.7		1.016			
North: Gossamer Drive											
Mov. From N To Exit:	L2 E	T1 S	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	559	-	-	559	7.5	629	0.889	100	38.9	2
Lane 2	494	-	-	494	7.5	556[1]	0.889	100	NA	NA
Lane 3	-	10	90	100	8.0	188	0.532	100	57.8	2
Approach	1053	10	90	1153	7.5		0.889			
West: Ti Rakau Drive (West)											
Mov. From W To Exit:	L2 N	T1 E	R2 S	U W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	19	-	-	-	19	5.3	532	0.035	100	0.0	2
Lane 2	-	420	-	-	420	10.8	577[1]	0.727	100	NA	NA
Lane 3	-	383	-	-	383	10.8	527[1]	0.727	100	NA	NA
Lane 4	-	-	10	37	46	6.5	175	0.266	100	0.0	3
Approach	19	803	10	37	868	10.4		0.727			

	Total	%HV	Deg.Satn (v/c)
Intersection	4017	9.7	1.016

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

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.

6 Lane under-utilisation due to downstream effects

Merge Analysis

	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Fremantle Place Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Ti Rakau Drive (East) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										
North Exit: Gossamer Drive Merge Type: **Zipper**												
Exit Short Lane	1	80	50.0	92	95	2.50	2.00	98	1691	0.058	0.0	0.0
Merge Lane	2	-	50.0	49	51	2.50	2.00	184	1743	0.105	0.0	0.0
West Exit: Ti Rakau Drive (West) Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
Full Length Lane	2	Merge Analysis not applied.										