

Appendix I

EB2/EB3R Final Scenario – Lane Performance Summaries

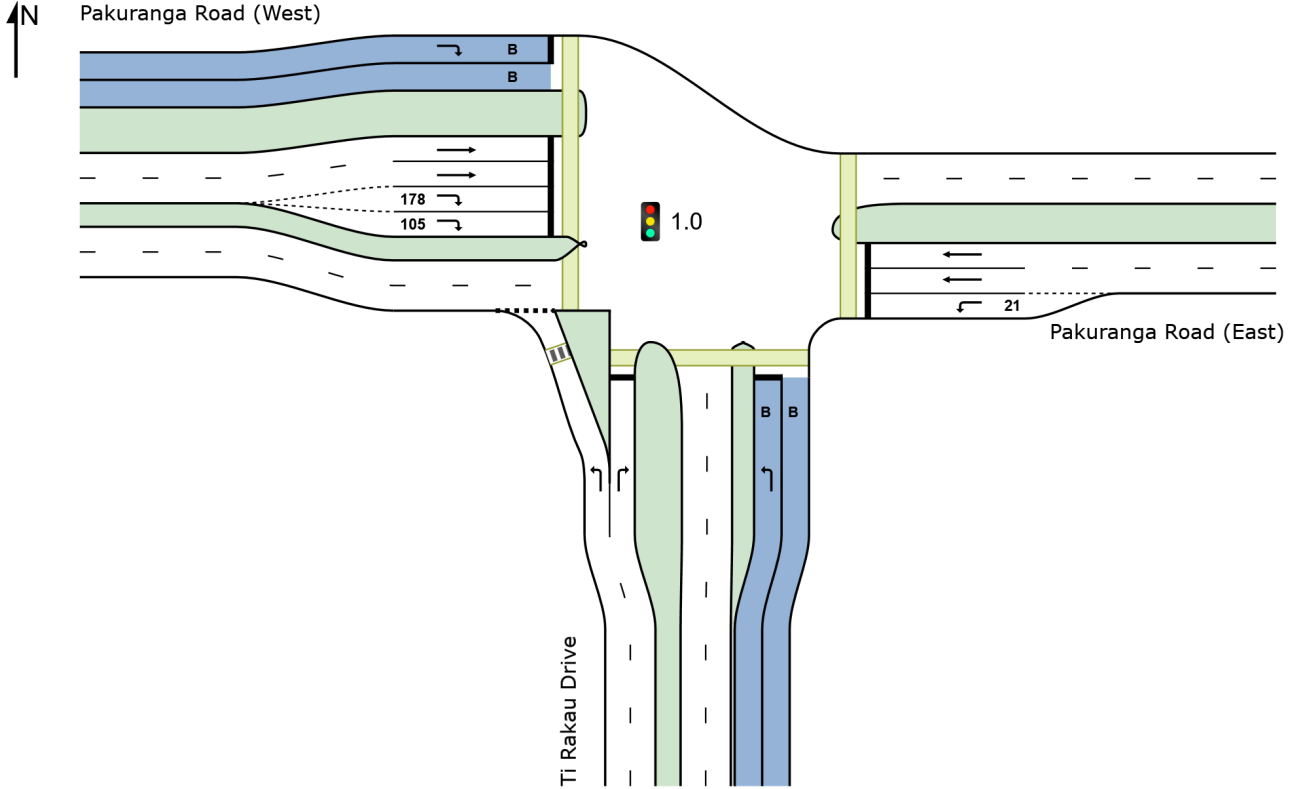
SITE LAYOUT

 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.



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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\Operational\2028 EB2-EB3R-Final-Xroads-AM.sip9

LANE SUMMARY

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

Network: N101 [AM -
Continous Lane & Phase &
Single lane (Network Folder:
General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 100 seconds (Site User-Given Phase Times)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h	[HV %	[Total veh/h	[HV %	veh/h	v/c	%	sec		[Veh	[Dist] m		m	%	%
South: Ti Rakau Drive															
Lane 1	870	9.5	870	9.5	931	0.935	100	46.2	LOS D	33.6 ^{N4}	254.3 ^{N4}	Full	174	0.0	50.0
Lane 2	211	7.1	211	7.1	440	0.480	100	39.5	LOS D	8.0	59.2	Full	174	0.0	0.0
Lane 3 (B)	53	100.0	53	100.0	279	0.190	100	27.7	LOS C	1.4	17.7	Full	174	0.0	0.0
Approach	1134	13.3	1134	13.3		0.935		44.1	LOS D	33.6	254.3				
East: Pakuranga Road (East)															
Lane 1	93	1.1	93	1.1	623	0.149	100	29.1	LOS C	2.8	19.8	Short	21	0.0	NA
Lane 2	436	5.6	435	5.6	548 ¹	0.794	100	34.5	LOS C	17.7	129.8	Full	98	0.0	40.8
Lane 3	507	5.6	505	5.6	636	0.794	100	35.2	LOS D	19.5 ^{N4}	143.2 ^{N4}	Full	98	0.0	50.0
Approach	1036	5.2	1034 ^{N1}	5.2		0.794		34.4	LOS C	19.5	143.2				
West: Pakuranga Road (West)															
Lane 1 (B)	23	100.0	23	100.0	263	0.087	100	27.4	LOS C	0.6	7.3	Full	380	0.0	0.0
Lane 2	363	7.4	363	7.4	629	0.576	100	29.3	LOS C	13.1	97.2	Full	380	0.0	0.0
Lane 3	363	7.4	363	7.4	629	0.576	100	29.3	LOS C	13.1	97.2	Full	380	0.0	0.0
Lane 4	295	16.9	295	16.9	396	0.746	100	45.5	LOS D	12.7	101.7	Short	178	0.0	NA
Lane 5	295	16.9	295	16.9	396	0.746	100	45.5	LOS D	12.7	101.7	Short	105	0.0	NA
Approach	1338	13.2	1338	13.2		0.746		36.4	LOS D	13.1	101.7				
Intersection	3508	10.9	3506 ^{N1}	10.9		0.935		38.3	LOS D	33.6	254.3				

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.

^{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	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	W	E								
Lane 1	870	-	870	9.5	931	0.935	100	NA	NA	
Lane 2	-	211	211	7.1	440	0.480	100	NA	NA	
Lane 3	53	-	53	100.0	279	0.190	100	NA	NA	
Approach	923	211	1134	13.3		0.935				
East: Pakuranga Road (East)										

Mov. From E To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	93	-	93	1.1	623	0.149	100	9.7	2
Lane 2	-	435	435	5.6	548 ¹	0.794	100	NA	NA
Lane 3	-	505	505	5.6	636	0.794	100	NA	NA
Approach	93	941	1034	5.2		0.794			
West: Pakuranga Road (West)									
Mov. From W To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	-	23	23	100.0	263	0.087	100	NA	NA
Lane 2	363	-	363	7.4	629	0.576	100	NA	NA
Lane 3	363	-	363	7.4	629	0.576	100	NA	NA
Lane 4	-	295	295	16.9	396	0.746	100	0.0	3
Lane 5	-	295	295	16.9	396	0.746	100	12.1	4
Approach	725	613	1338	13.2		0.746			
Total %HV Deg. Satn (v/c)									
Intersection	3506	10.9		0.935					

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.

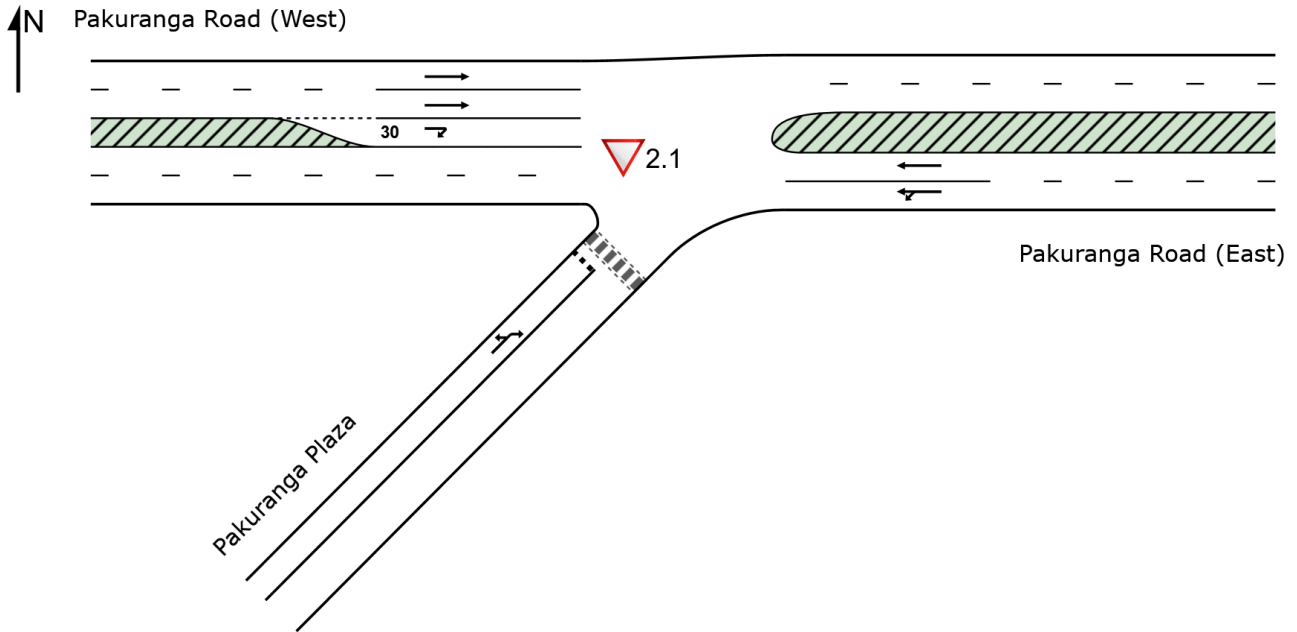
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate % veh/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
South Exit: Ti Rakau Drive												
Merge Type: Not Applied		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

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.



LANE SUMMARY

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

Network: N101 [AM - Continuous Lane & Phase & Single lane (Network Folder: General)]

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

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]	veh/h	v/c	%	sec		[Veh]	[Dist]		m	%	%
East: Pakuranga Road (East)															
Lane 1	520	5.3	520	5.3	1779	0.292	100	0.7	LOS A	0.4	2.8	Full	121	0.0	0.0
Lane 2	547	5.4	547	5.4	1874	0.292	100	0.0	LOS A	0.0	0.0	Full	121	0.0	0.0
Approach	1067	5.3	1067	5.3		0.292		0.4	NA	0.4	2.8				
West: Pakuranga Road (West)															
Lane 1	521	7.4	521	7.4	1850	0.282	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Lane 2	420	7.4	420	7.4	1491	0.282	100	0.0	LOS A	0.0	0.0	Full	108	-18.2 ^{N3}	0.0
Lane 3	34	3.1	34	3.1	489	0.069	100	13.4	LOS B	0.2	1.4	Short	30	0.0	NA
Approach	975	7.3	975	7.3		0.282		0.5	NA	0.2	1.4				
SouthWest: Pakuranga Plaza															
Lane 1	55	5.5	55	5.5	45	1.232	100	383.0	LOS F	7.8	57.1	Full	196	-14.2 ^{N7}	0.0
Approach	55	5.5	55	5.5		1.232		383.0	LOS F	7.8	57.1				
Intersection	2097	6.3	2097	6.3		1.232		10.5	NA	7.8	57.1				

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.

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.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

^{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	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	68	452	520	5.3	1779	0.292	100	NA	NA	
Lane 2	-	547	547	5.4	1874	0.292	100	NA	NA	
Approach	68	999	1067	5.3		0.292				
West: Pakuranga Road (West)										
Mov. From W To Exit:	T1	R3	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	521	-	521	7.4	1850	0.282	100	NA	NA	
Lane 2	420	-	420	7.4	1491	0.282	100	NA	NA	
Lane 3	-	34	34	3.1	489	0.069	100	0.0	2	

Approach	941	34	975	7.3		0.282				
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. Lane No.	
Lane 1	15	40	55	5.5	45	1.232	100	NA	NA	
Approach	15	40	55	5.5		1.232				
Total %HV Deg. Satn (v/c)										
Intersection	2097	6.3		1.232						

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

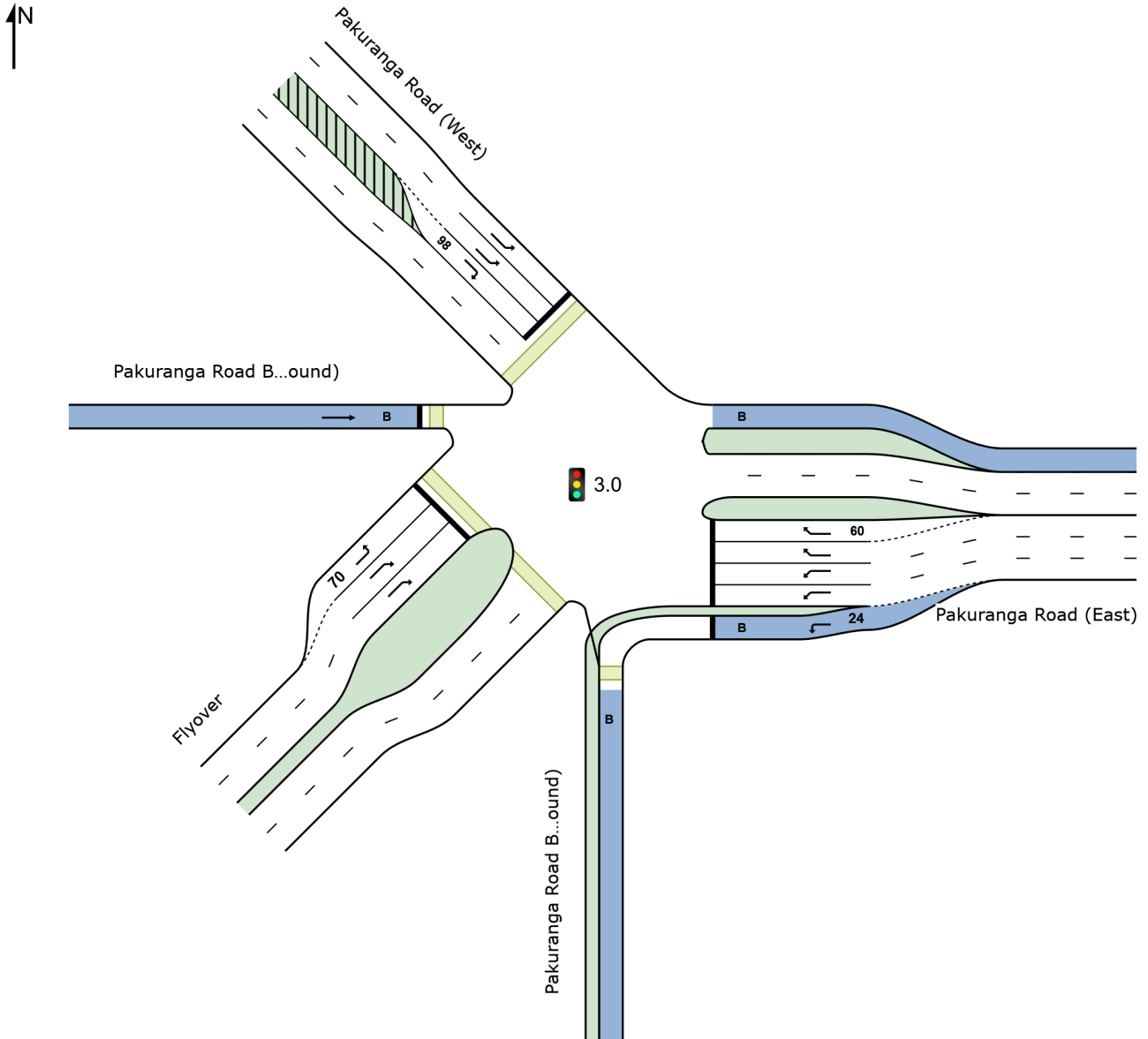
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: Pakuranga Road (East)												
Merge Type: Not Applied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



LANE SUMMARY

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

Network: N101 [AM - Continous Lane & Phase & Single lane (Network Folder: General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Phase Times)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]	veh/h	v/c	%	sec		[Veh]	[Dist]		m	%	%
East: Pakuranga Road (East)															
Lane 1 (B)	28	100.0	28	100.0	687	0.041	100	16.6	LOS B	0.7	8.9	Short	24	0.0	NA
Lane 2	1026	5.1	1026	5.1	1105 ¹	0.928	100	42.8	LOS D	66.0	482.1	Full	183	0.0	100.0
Lane 3	1068	5.1	1068	5.1	1151	0.928	100	42.8	LOS D	71.1	519.3	Full	183	0.0	100.0
Lane 4	446	4.7	446	4.7	587 ¹	0.760	100	33.3	LOS C	20.2	147.5	Full	183	0.0	0.0
Lane 5	446	4.7	446	4.7	587 ¹	0.760	100	33.3	LOS C	20.2	147.5	Short	60	0.0	NA
Approach	3014	5.9	3014	5.9		0.928		39.7	LOS D	71.1	519.3				
NorthWest: Pakuranga Road (West)															
Lane 1	370	6.8	367	6.8	1223	0.301	100	13.8	LOS B	9.6	71.1	Full	121	0.0	0.0
Lane 2	370	6.8	367	6.8	1223	0.301	100	13.8	LOS B	9.6	71.1	Full	121	0.0	18.2 ⁸
Lane 3	242	9.5	240	9.5	288	0.834	100	77.1	LOS E	16.5	125.3	Short	98	0.0	NA
Approach	982	7.4	975 ^{N1}	7.5		0.834		29.4	LOS C	16.5	125.3				
West: Pakuranga Road Busway Link (Northbound)															
Lane 1 (B)	9	100.0	9	100.0	295	0.031	100	45.9	LOS D	0.4	5.8	Full	215	0.0	0.0
Approach	9	100.0	9	100.0		0.031		45.9	LOS D	0.4	5.8				
SouthWest: Flyover															
Lane 1	173	8.7	173	8.7	299	0.578	100	68.5	LOS E	10.6	79.6	Short	70	0.0	NA
Lane 2	362	7.0	362	7.0	383 ¹	0.945	100	89.1	LOS F	28.0	208.0	Full	1162	0.0	0.0
Lane 3	436	7.0	436	7.0	461	0.945	100	89.1	LOS F	34.5	256.3	Full	1162	0.0	0.0
Approach	971	7.3	971	7.3		0.945		85.4	LOS F	34.5	256.3				
Intersection	4976	6.6	4969 ^{N1}	6.6		0.945		46.6	LOS D	71.1	519.3				

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.

⁸ Probability of Blockage has been set on the basis of a queue that overflows from a short lane.

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

Approach Lane Flows (veh/h)											
East: Pakuranga Road (East)											
Mov. From E To Exit:	L2	L1	R1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. %	Ov. Lane No.
Lane 1	28	-	-	28	100.0	687	0.041	100	0.0		2
Lane 2	-	1026	-	1026	5.1	1105 ¹	0.928	100	NA		NA

Lane 3	-	1068	-	1068	5.1	1151	0.928	100	NA	NA
Lane 4	-	-	446	446	4.7	587 ¹	0.760	100	NA	NA
Lane 5	-	-	446	446	4.7	587 ¹	0.760	100	100.0	4
Approach	28	2094	892	3014	5.9		0.928			
NorthWest: Pakuranga Road (West)										
Mov. From NW To Exit:	L1	R2	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	E	SW								
Lane 1	367	-	367	6.8		1223	0.301	100	NA	NA
Lane 2	367	-	367	6.8		1223	0.301	100	NA	NA
Lane 3	-	240	240	9.5		288	0.834	100	37.5	2
Approach	735	240	975	7.5			0.834			
West: Pakuranga Road Busway Link (Northbound)										
Mov. From W To Exit:	T1	Total	%HV			Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	E									
Lane 1	9	9	100.0			295	0.031	100	NA	NA
Approach	9	9	100.0				0.031			
SouthWest: Flyover										
Mov. From SW To Exit:	L2	R1	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	NW	E								
Lane 1	173	-	173	8.7		299	0.578	100	26.7	2
Lane 2	-	362	362	7.0		383 ¹	0.945	100	NA	NA
Lane 3	-	436	436	7.0		461	0.945	100	NA	NA
Approach	173	798	971	7.3			0.945			
Total %HV Deg. Satn (v/c)										
Intersection	4969	6.6		0.945						

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 sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
South Exit: Pakuranga Road Busway Link (Southbound)											
Merge Type: Not Applied											
Full Length Lane	1	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.									
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.									

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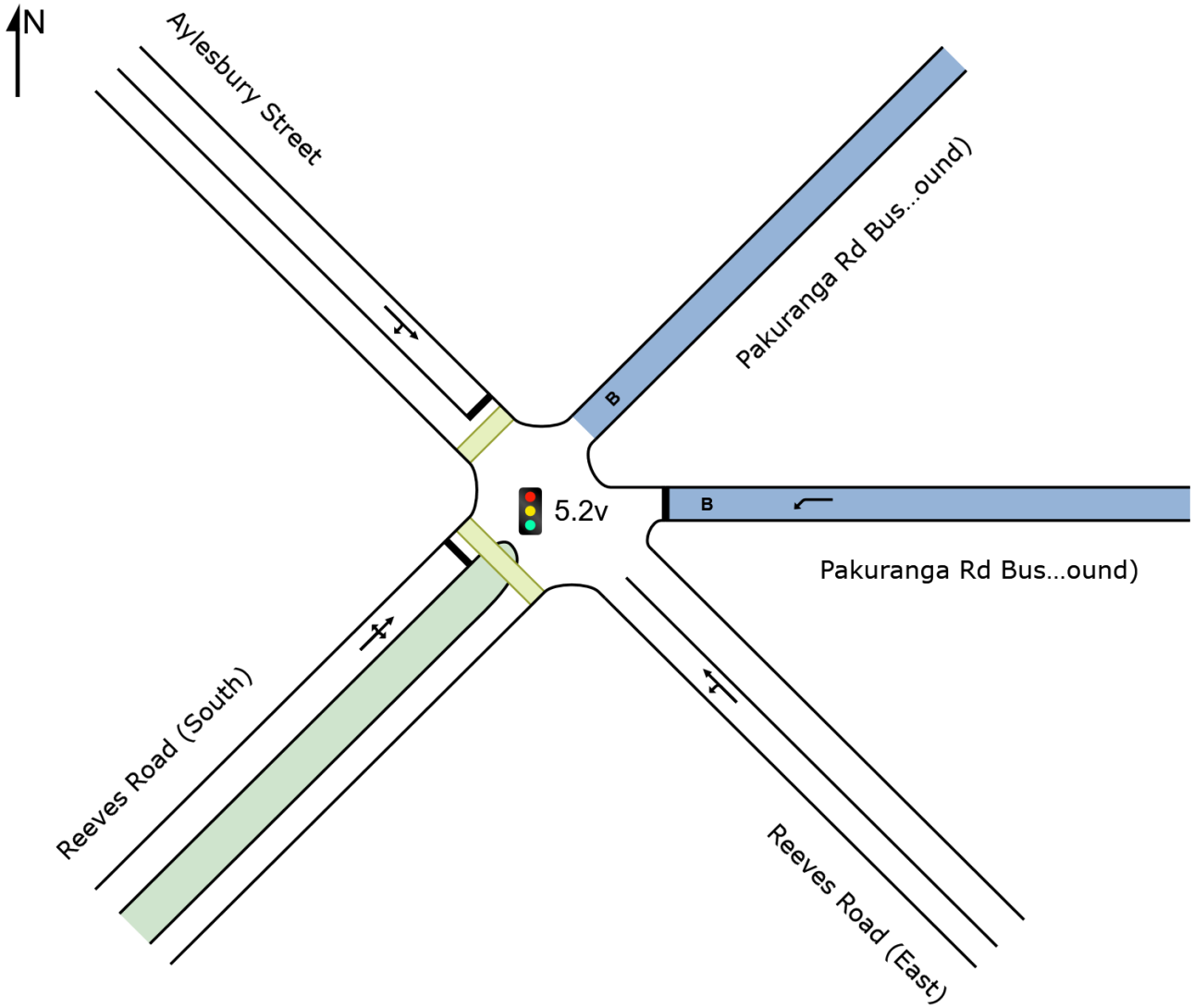
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Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\Operational\2028 EB2-EB3R-Final-Xroads-AM.sip9

SITE LAYOUT

**Site: 5.2v [5.2 Aylesbury St/ Reeves Rd/ Busway Link
signalised (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.

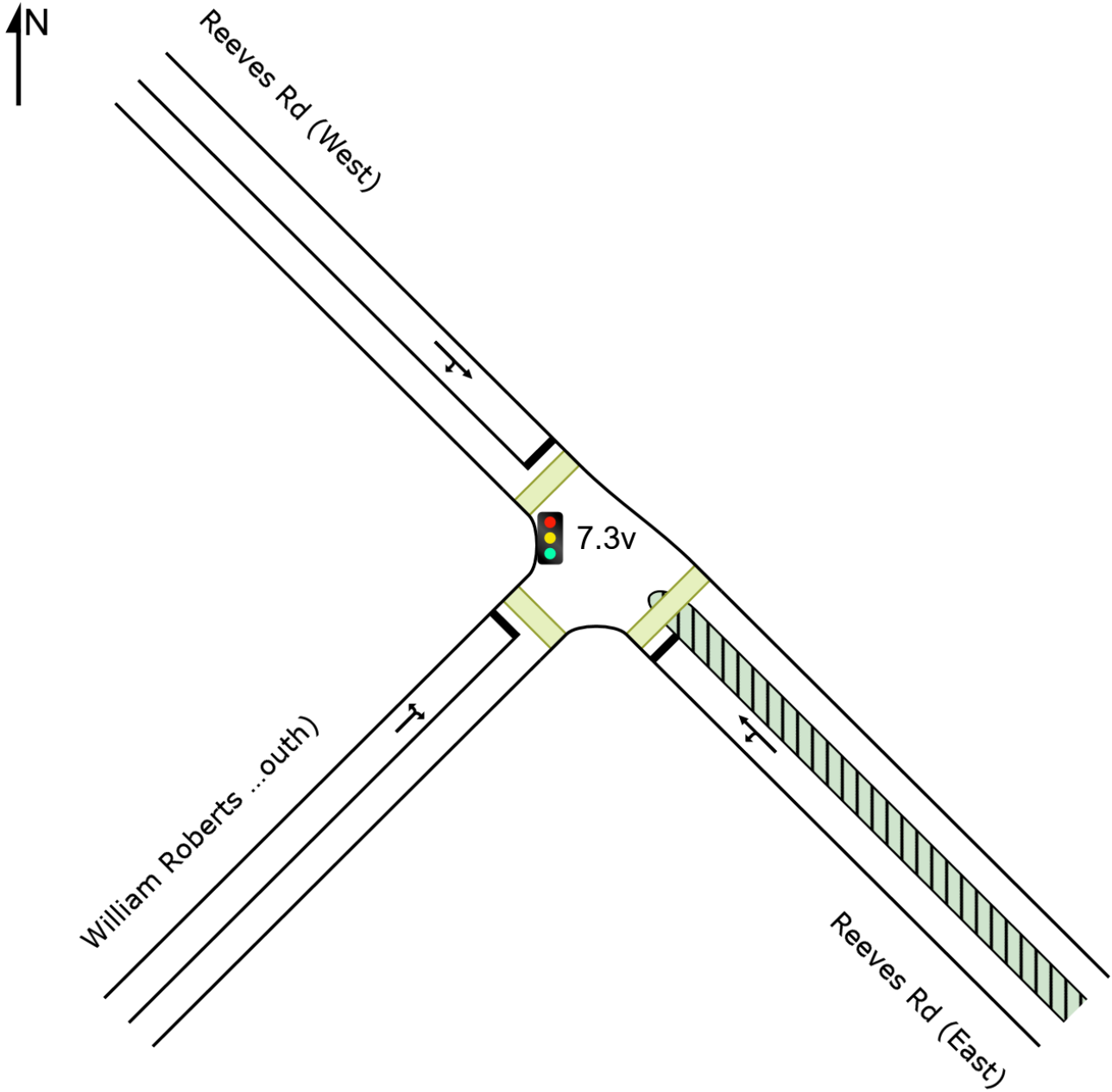


SITE LAYOUT

Site: 7.3v [7.3 William Roberts Rd / Reeves Rd signalised (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.



CCG LANE SUMMARY

Common Control Group: CCG3 [Aylesbury/ WR/ Reeves Rd]

Network: N101 [AM - Continuous Lane & Phase & Single lane (Network Folder: General)]

EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 158 seconds (CCG Practical Cycle Time)

Lane Use and Performance (CCG)															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]						[Veh]	[Dist]				
	veh/h	%	veh/h	%	veh/h	v/c	%	sec			m	m	%	%	
Site: 5.2v [5.2 Aylesbury St/ Reeves Rd/ Busway Link signalised]															
SouthEast: Reeves Road (East)															
Lane 1	201	9.5	201	9.5	1739	0.116	100	1.9	LOS A	0.0	0.0	Full	27	0.0	0.0
Approach	201	9.5	201	9.5		0.116		1.9	LOS A	0.0	0.0				
East: Pakuranga Rd Busway Link (Southbound)															
Lane 1 (B)	28	100.0	28	100.0	101	0.278	100	80.5	LOS F	1.9	24.7	Full	203	0.0	0.0
Approach	28	100.0	28	100.0		0.278		80.5	LOS F	1.9	24.7				
NorthWest: Aylesbury Street															
Lane 1	22	9.1	22	9.1	65	0.338	100	85.7	LOS F	1.6	12.0	Full	284	0.0	0.0
Approach	22	9.1	22	9.1		0.338		85.7	LOS F	1.6	12.0				
SouthWest: Reeves Road (South)															
Lane 1	96	19.9	96	19.9	102	0.938	100	103.6	LOS F	7.8	64.2	Full	180	-3.6 ^{N7}	0.0
Approach	96	19.9	96	19.9		0.938		103.6	LOS F	7.8	64.2				
Intersection	347	19.6	347	19.6		0.938		41.6	LOS D	7.8	64.2				
Site: 7.3v [7.3 William Roberts Rd / Reeves Rd signalised]															
SouthEast: Reeves Rd (East)															
Lane 1	370	9.5	370	9.5	417	0.888	100	78.9	LOS E	27.8	210.1	Full	810	0.0	0.0
Approach	370	9.5	370	9.5		0.888		78.9	LOS E	27.8	210.1				
NorthWest: Reeves Rd (West)															
Lane 1	83	10.8	83	10.8	463	0.179	100	2.0	LOS A	0.1	1.1	Full	27	0.0	0.0
Approach	83	10.8	83	10.8		0.179		2.0	LOS A	0.1	1.1				
SouthWest: William Roberts Road (South)															
Lane 1	395	12.2	395	12.2	443	0.891	100	76.7	LOS E	29.4	227.6	Full	223	0.0	16.8
Approach	395	12.2	395	12.2		0.891		76.7	LOS E	29.4	227.6				
Intersection	848	10.8	848	10.8		0.891		70.4	LOS E	29.4	227.6				

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).

Queue Model: SIDRA Standard.

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 (CCG) (veh/h)													
Site: 5.2v [5.2 Aylesbury St/ Reeves Rd/ Busway Link signalised]													

SouthEast: Reeves Road (East)										
Mov. From SE To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	162	39	201	9.5	1739	0.116	100	NA	NA	
Approach	162	39	201	9.5		0.116				
East: Pakuranga Rd Busway Link (Southbound)										
Mov. From E To Exit:	L1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.		
Lane 1	28	28	100.0	101	0.278	100	NA	NA		
Approach	28	28	100.0		0.278					
NorthWest: Aylesbury Street										
Mov. From NW To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	11	11	22	9.1	65	0.338	100	NA	NA	
Approach	11	11	22	9.1		0.338				
SouthWest: Reeves Road (South)										
Mov. From SW To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	12	9	75	96	19.9	102	0.938	100	NA	NA
Approach	12	9	75	96	19.9		0.938			
Total		%HV		Deg.Satn (v/c)						
Intersection	347	19.6	0.938							
Site: 7.3v [7.3 William Roberts Rd / Reeves Rd signalised]										
SouthEast: Reeves Rd (East)										
Mov. From SE To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	212	158	370	9.5	417	0.888	100	NA	NA	
Approach	212	158	370	9.5		0.888				
NorthWest: Reeves Rd (West)										
Mov. From NW To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	59	24	83	10.8	463	0.179	100	NA	NA	
Approach	59	24	83	10.8		0.179				
SouthWest: William Roberts Road (South)										
Mov. From SW To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	42	353	395	12.2	443	0.891	100	NA	NA	
Approach	42	353	395	12.2		0.891				

	Total	%HV	Deg.Satn (v/c)
Intersection	848	10.8	0.891

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

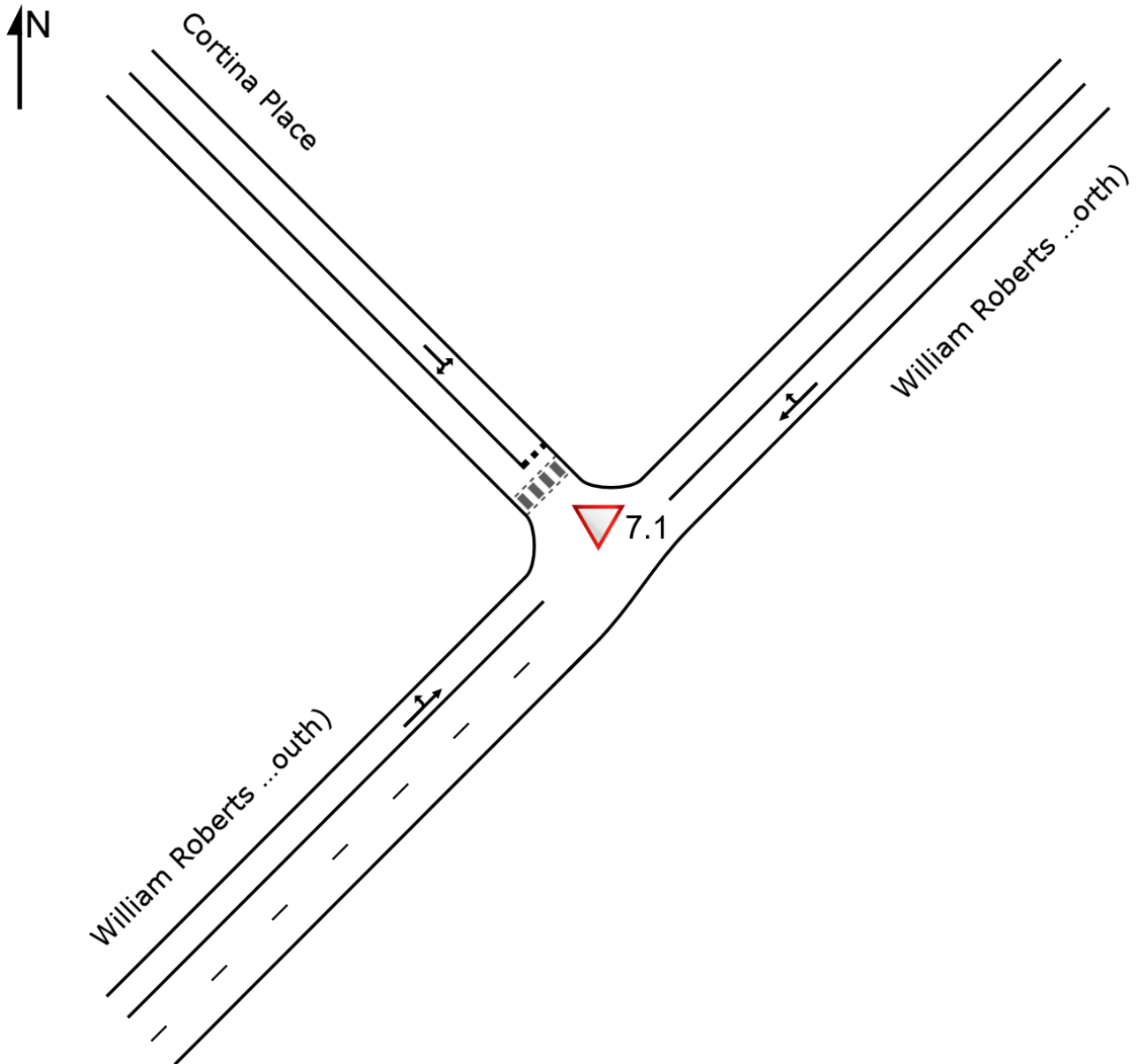
Merge Analysis (CCG)											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
Site: 5.2v [5.2 Aylesbury St/ Reeves Rd/ Busway Link signalised]											
SouthEast Exit: Reeves Road (East)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
NorthEast Exit: Pakuranga Rd Busway Link (Northbound)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
NorthWest Exit: Aylesbury Street											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
SouthWest Exit: Reeves Road (South)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
Site: 7.3v [7.3 William Roberts Rd / Reeves Rd signalised]											
SouthEast Exit: Reeves Rd (East)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
NorthWest Exit: Reeves Rd (West)											
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: 7.1 [7.1 William Roberts Rd / Cortina PI (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: 7.1 [7.1 William Roberts Rd / Cortina PI (Site Folder: AM)]

Network: N101 [AM - Continuous Lane & Phase & Single lane (Network Folder: General)]

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

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]	veh/h	v/c	%	sec		[Veh]	[Dist]		m	%	%
NorthEast: William Roberts Road (North)															
Lane 1	249	10.0	249	10.0	1451	0.172	100	2.5	LOS A	0.6	4.6	Full	223	0.0	0.0
Approach	249	10.0	249	10.0		0.172		2.5	NA	0.6	4.6				
NorthWest: Cortina Place															
Lane 1	136	15.4	136	15.4	747	0.182	100	3.6	LOS A	0.5	4.1	Full	177	-10.3 ^{N7}	0.0
Approach	136	15.4	136	15.4		0.182		3.6	LOS A	0.5	4.1				
SouthWest: William Roberts Road (South)															
Lane 1	457	10.5	457	10.5	1355	0.337	100	1.0	LOS A	0.7	5.1	Full	110	-12.7 ^{N7}	0.0
Approach	457	10.5	457	10.5		0.337		1.0	NA	0.7	5.1				
Intersection	842	11.2	842	11.2		0.337		1.9	NA	0.7	5.1				

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.

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)										
NorthEast: William Roberts Road (North)										
Mov. From NE To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	161	88	249	10.0	1451	0.172	100	NA	NA	
Approach	161	88	249	10.0		0.172				
NorthWest: Cortina Place										
Mov. From NW To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	77	59	136	15.4	747	0.182	100	NA	NA	
Approach	77	59	136	15.4		0.182				
SouthWest: William Roberts Road (South)										
Mov. From SW To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	129	328	457	10.5	1355	0.337	100	NA	NA	

Approach	129	328	457	10.5	0.337
Total %HV Deg.Satn (v/c)					
Intersection	842	11.2		0.337	

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 % 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.									
Full Length Lane	2	Merge Analysis not applied.									

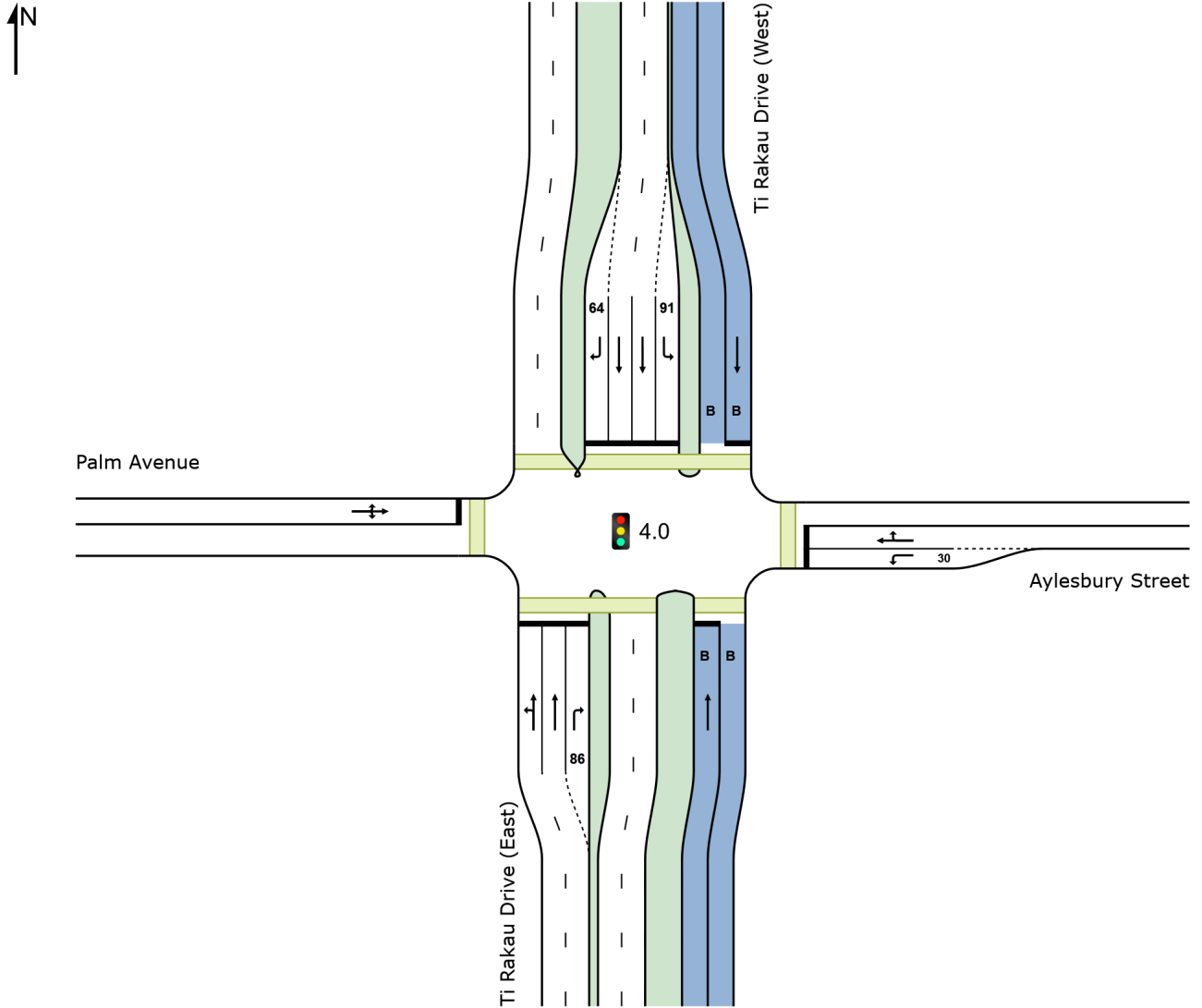
SITE LAYOUT

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

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

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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\Operational\2028 EB2-EB3R-Final-Xroads-AM.sip9

LANE SUMMARY

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

Network: N101 [AM - Continuous Lane & Phase & Single lane (Network Folder: General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Site User-Given Phase Times)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]	veh/h	v/c	%	sec		[Veh]	[Dist]		m	%	%
South: Ti Rakau Drive (East)															
Lane 1	333	9.8	333	9.8	393	0.848	100	65.2	LOS E	21.2 ^{N4}	160.7 ^{N4}	Full	110	-42.2 ^{N3}	50.0
Lane 2	628	9.8	628	9.8	741 ¹	0.848	100	47.0	LOS D	21.2 ^{N4}	160.7 ^{N4}	Full	110	0.0	50.0
Lane 3	33	3.0	33	3.0	69	0.478	100	85.4	LOS F	2.3	16.4	Short	86	0.0	NA
Lane 4 (B)	53	100.0	53	100.0	613	0.086	100	4.4	LOS A	0.0	0.6	Full	110	0.0	0.0
Approach	1047	14.1	1047	14.1		0.848		51.8	LOS D	21.2	160.7				
East: Aylesbury Street															
Lane 1	113	9.7	113	9.7	139	0.812	100	49.1	LOS D	5.6	42.1	Short	30	0.0	NA
Lane 2	154	6.5	154	6.5	156 ¹	0.985	100	112.9	LOS F	7.9 ^{N4}	58.4 ^{N4}	Full	40	0.0	50.0
Approach	267	7.9	267	7.9		0.985		85.9	LOS F	7.9	58.4				
North: Ti Rakau Drive (West)															
Lane 1 (B)	23	100.0	23	100.0	613	0.038	100	4.4	LOS A	0.0	0.2	Full	174	0.0	0.0
Lane 2	106	14.2	106	14.2	960	0.110	100	17.2	LOS B	2.9	22.7	Short	91	0.0	NA
Lane 3	271	15.5	271	15.5	740	0.366	100	33.2	LOS C	11.7	92.6	Full	174	0.0	0.0
Lane 4	271	15.5	271	15.5	740	0.366	100	33.2	LOS C	11.7	92.6	Full	174	0.0	0.0
Lane 5	15	6.7	15	6.7	67	0.223	100	83.9	LOS F	1.0	7.5	Short	64	0.0	NA
Approach	686	17.9	686	17.9		0.366		30.8	LOS C	11.7	92.6				
West: Palm Avenue															
Lane 1	118	5.1	118	5.1	166	0.712	100	75.1	LOS E	7.9	57.6	Full	87	-31.0 ^{N7}	0.0
Approach	118	5.1	118	5.1		0.712		75.1	LOS E	7.9	57.6				
Intersection	2118	14.1	2118	14.1		0.985		50.6	LOS D	21.2	160.7				

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.

^{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.

^{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	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.	Ov. Lane No.
Lane 1	90	243	-	333	9.8	393	0.848	100	NA	NA	NA

Lane 2	-	628	-	628	9.8	741 ¹	0.848	100	NA	NA
Lane 3	-	-	33	33	3.0	69	0.478	100	0.0	2
Lane 4	-	53	-	53	100.0	613	0.086	100	NA	NA
Approach	90	924	33	1047	14.1		0.848			
East: Aylesbury Street										
Mov.	L2	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.
From E						Cap.	Satn	Util.	SL	Lane
To Exit:	S	W	N			veh/h	v/c	%	%	No.
Lane 1	113	-	-	113	9.7	139	0.812	100	46.3	2
Lane 2	-	8	146	154	6.5	156 ¹	0.985	100	NA	NA
Approach	113	8	146	267	7.9		0.985			
North: Ti Rakau Drive (West)										
Mov.	L2	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.
From N						Cap.	Satn	Util.	SL	Lane
To Exit:	E	S	W			veh/h	v/c	%	%	No.
Lane 1	-	23	-	23	100.0	613	0.038	100	NA	NA
Lane 2	106	-	-	106	14.2	960	0.110	100	0.0	3
Lane 3	-	271	-	271	15.5	740	0.366	100	NA	NA
Lane 4	-	271	-	271	15.5	740	0.366	100	NA	NA
Lane 5	-	-	15	15	6.7	67	0.223	100	0.0	4
Approach	106	565	15	686	17.9		0.366			
West: Palm Avenue										
Mov.	L2	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.
From W						Cap.	Satn	Util.	SL	Lane
To Exit:	N	E	S			veh/h	v/c	%	%	No.
Lane 1	53	20	45	118	5.1	166	0.712	100	NA	NA
Approach	53	20	45	118	5.1		0.712			
Total %HV Deg.Satn (v/c)										
Intersection	2118	14.1		0.985						

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	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate 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.
Full Length Lane	3										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.
Full Length Lane	3										Merge Analysis not applied.
West Exit: Palm Avenue											
Merge Type: Not Applied											

Full Length Lane 1 Merge Analysis not applied.

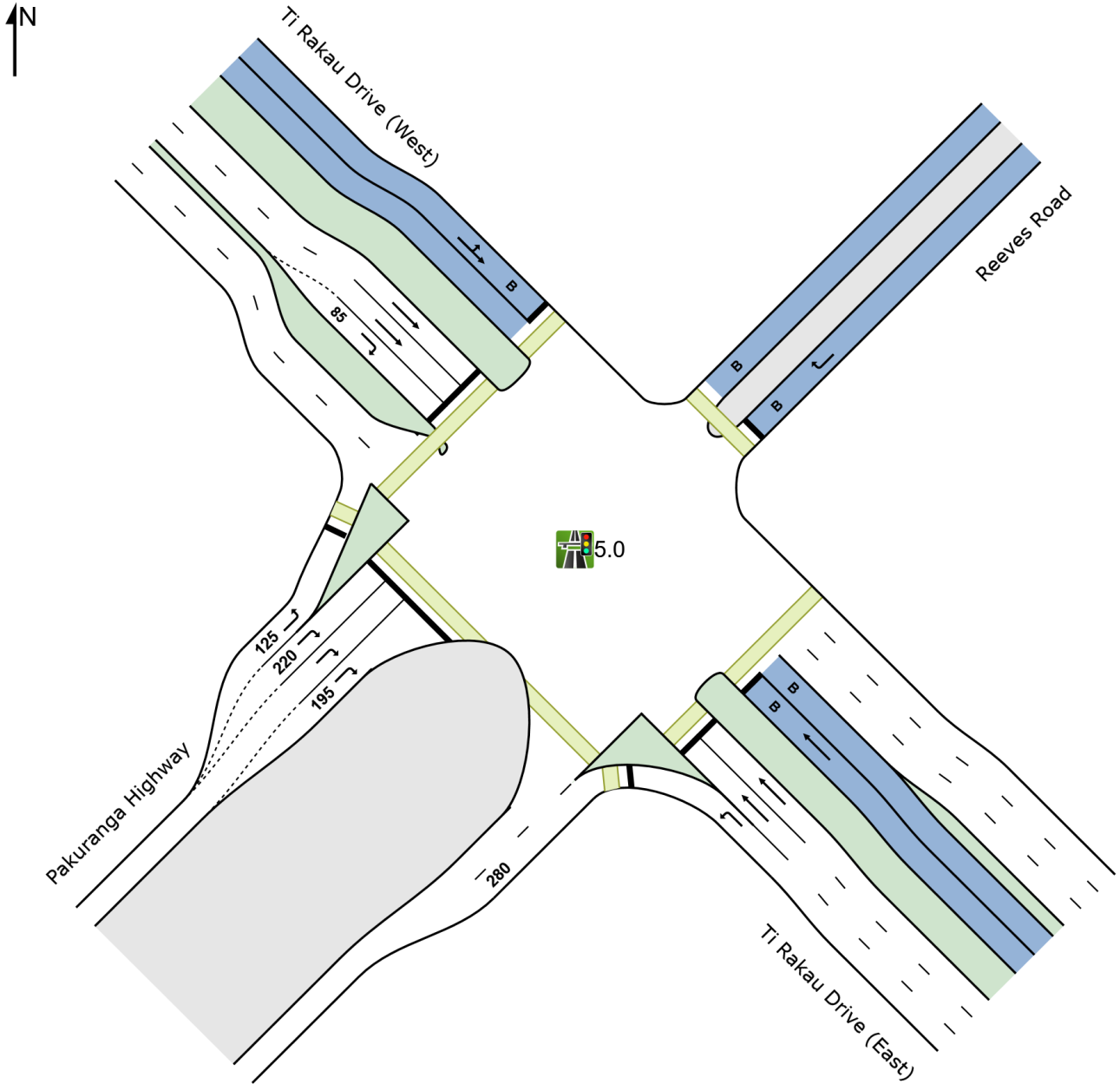
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Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\Operational\2028 EB2-EB3R-Final-Xroads-AM.sip9

SITE LAYOUT

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

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

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



Lane 1	910	-	910	13.0		1319	0.690	100	NA	NA
Lane 2	-	408	408	9.9		498	0.819	100	NA	NA
Lane 3	-	408	408	9.9		498	0.819	100	NA	NA
Lane 4	-	25	25	100.0		199	0.126	100	NA	NA
Approach	910	841	1751	12.8			0.819			
NorthEast: Reeves Road										
Mov.	R2	Total	%HV			Cap.	Deg.	Lane	Prob.	Ov.
From NE						veh/h	Satn	Util.	SL	Lane
To Exit:	NW						v/c	%	%	No.
Lane 1	28	28	100.0			292	0.096	100	NA	NA
Approach	28	28	100.0				0.096			
NorthWest: Ti Rakau Drive (West)										
Mov.	L2	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.
From NW						Cap.	Satn	Util.	SL	Lane
To Exit:	NE	SE	SW			veh/h	v/c	%	%	No.
Lane 1	9	13	-	22	100.0	225	0.098	100	NA	NA
Lane 2	-	254	-	254	15.7	505	0.504	100	NA	NA
Lane 3	-	254	-	254	15.7	505	0.504	100	NA	NA
Lane 4	-	-	146	146	8.9	197	0.741	100	2.0	3
Approach	9	522	146	677	17.0		0.741			
SouthWest: Pakuranga Highway										
Mov.	L2	R2	Total	%HV			Deg.	Lane	Prob.	Ov.
From SW						Cap.	Satn	Util.	SL	Lane
To Exit:	NW	SE				veh/h	v/c	%	%	No.
Lane 1	141	-	141	7.1		322	0.439	100	0.0	2
Lane 2	-	245	245	10.2		338	0.725	100	0.0	3
Lane 3	-	245	245	10.2		338	0.725	100	NA	NA
Lane 4	-	245	245	10.2		338	0.725	100	0.0	3
Approach	141	736	877	9.7			0.725			
Total %HV Deg.Satn (v/c)										
Intersection	3333	13.6					0.819			

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	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.										
Full Length Lane	3	Merge Analysis not applied.										
Full Length Lane	4	Merge Analysis not applied.										
NorthEast Exit: Reeves Road												
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: Pakuranga Highway												

Merge Type: Zipper												
Exit Short Lane	1	280	50.0	73	76	2.50	2.00	910	1714	0.531	0.0	0.1
Merge Lane	2	-	50.0	455	484	2.50	2.00	146	1155	0.126	0.6	0.8

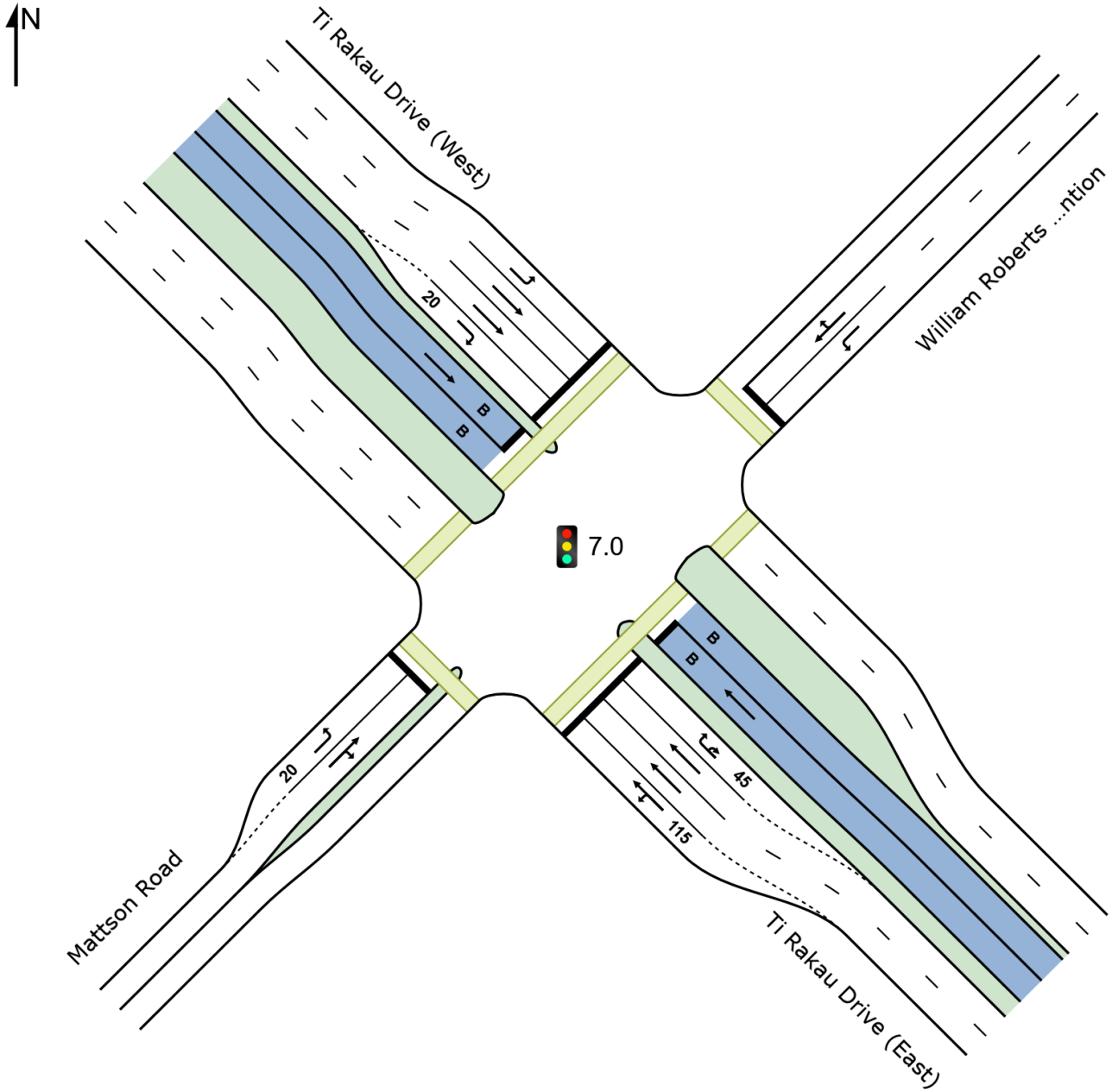
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Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\Operational\2028 EB2-EB3R-Final-Xroads-AM.sip9

SITE LAYOUT

**Site: 7.0 [7.0 William Roberts Rd/ Mattson Rd/ Ti Rakau Drive
(Site Folder: AM)]**

Scheme Design
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: 7.0 [7.0 William Roberts Rd/ Mattson Rd/ Ti Rakau Drive (Site Folder: AM)]

Network: N101 [AM - Continous Lane & Phase & Single lane (Network Folder: General)]

Scheme Design

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110 seconds (Network Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV %	[Total veh/h	HV %						[Veh	Dist] m				
SouthEast: Ti Rakau Drive (East)															
Lane 1	462	11.3	462	11.3	682	0.677	100	30.9	LOS C	18.5	141.9	Short	115	0.0	NA
Lane 2	576	11.8	576	11.8	852	0.677	100	24.1	LOS C	21.3	164.5	Full	207	0.0	0.0
Lane 3	476	11.8	476	11.8	703 ¹	0.677	100	22.2	LOS C	16.3	125.4	Full	207	0.0	0.0
Lane 4	116	8.9	116	8.9	165	0.701	100	61.1	LOS E	5.8	43.7	Short	45	0.0	NA
Lane 5 (B)	25	100.0	25	100.0	564	0.044	100	1.7	LOS A	0.1	0.9	Full	207	0.0	0.0
Approach	1655	12.8	1655	12.8		0.701		27.7	LOS C	21.3	164.5				
NorthEast: William Roberts Road Extention															
Lane 1	83	14.5	83	14.5	167	0.496	100	55.0	LOS E	4.0	31.2	Full	112	0.0	0.0
Lane 2	137	11.7	137	11.7	171	0.800	100	60.2	LOS E	7.1	54.9	Full	110	0.0	0.0
Approach	220	12.7	220	12.7		0.800		58.2	LOS E	7.1	54.9				
NorthWest: Ti Rakau Drive (West)															
Lane 1	346	11.3	346	11.3	420	0.824	100	53.3	LOS D	17.4	133.4	Full	107	0.0	35.2
Lane 2	441	12.5	441	12.5	848	0.520	100	21.7	LOS C	14.7	114.1	Full	107	0.0	20.9
Lane 3	420	12.5	420	12.5	806 ¹	0.520	100	21.3	LOS C	13.8	106.8	Full	107	0.0	14.8
Lane 4	22	18.2	22	18.2	178	0.123	100	53.9	LOS D	1.0	8.0	Short	20	0.0	NA
Lane 5 (B)	13	100.0	13	100.0	564	0.023	100	1.7	LOS A	0.0	0.4	Full	107	0.0	0.0
Approach	1242	13.2	1242	13.2		0.824		30.7	LOS C	17.4	133.4				
SouthWest: Mattson Road															
Lane 1	25	0.0	25	0.0	118	0.212	100	60.1	LOS E	1.2	8.4	Short	20	0.0	NA
Lane 2	88	9.1	88	9.1	114	0.770	100	65.2	LOS E	4.6	34.8	Full	282	0.0	0.0
Approach	113	7.1	113	7.1		0.770		64.0	LOS E	4.6	34.8				
Intersectio n	3230	12.7	3230	12.7		0.824		32.2	LOS C	21.3	164.5				

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.

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	38	424	-	-	462	11.3	682	0.677	100	34.3	2	
Lane 2	-	576	-	-	576	11.8	852	0.677	100	NA	NA	

Lane 3	-	476	-	-	476	11.8	703 ¹	0.677	100	NA	NA
Lane 4	-	-	63	53	116	8.9	165	0.701	100	12.3	3
Lane 5	-	25	-	-	25	100.0	564	0.044	100	NA	NA
Approach	38	1501	63	53	1655	12.8		0.701			
NorthEast: William Roberts Road Extension											
Mov.	L2	T1	R2	Total	%HV		Cap.	Deg.	Lane	Prob.	Ov.
From NE							veh/h	Satn	Util.	SL	Lane
To Exit:	SE	SW	NW					v/c	%	%	No.
Lane 1	83	-	-	83	14.5		167	0.496	100	NA	NA
Lane 2	-	11	126	137	11.7		171	0.800	100	NA	NA
Approach	83	11	126	220	12.7			0.800			
NorthWest: Ti Rakau Drive (West)											
Mov.	L2	T1	R2	Total	%HV		Cap.	Deg.	Lane	Prob.	Ov.
From NW							veh/h	Satn	Util.	SL	Lane
To Exit:	NE	SE	SW					v/c	%	%	No.
Lane 1	346	-	-	346	11.3		420	0.824	100	NA	NA
Lane 2	-	441	-	441	12.5		848	0.520	100	NA	NA
Lane 3	-	420	-	420	12.5		806 ¹	0.520	100	NA	NA
Lane 4	-	-	22	22	18.2		178	0.123	100	0.0	3
Lane 5	-	13	-	13	100.0		564	0.023	100	NA	NA
Approach	346	874	22	1242	13.2			0.824			
SouthWest: Mattson Road											
Mov.	L2	T1	R2	Total	%HV		Cap.	Deg.	Lane	Prob.	Ov.
From SW							veh/h	Satn	Util.	SL	Lane
To Exit:	NW	NE	SE					v/c	%	%	No.
Lane 1	25	-	-	25	0.0		118	0.212	100	0.0	2
Lane 2	-	49	39	88	9.1		114	0.770	100	NA	NA
Approach	25	49	39	113	7.1			0.770			
Total %HV Deg.Satn (v/c)											
Intersection	3230	12.7		0.824							

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 % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate 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.								
Full Length Lane	3		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.								
Full Length Lane	4		Merge Analysis not applied.								
SouthWest Exit: Mattson Road											

Merge Type: **Not Applied**

Full Length Lane 1 Merge Analysis not applied.

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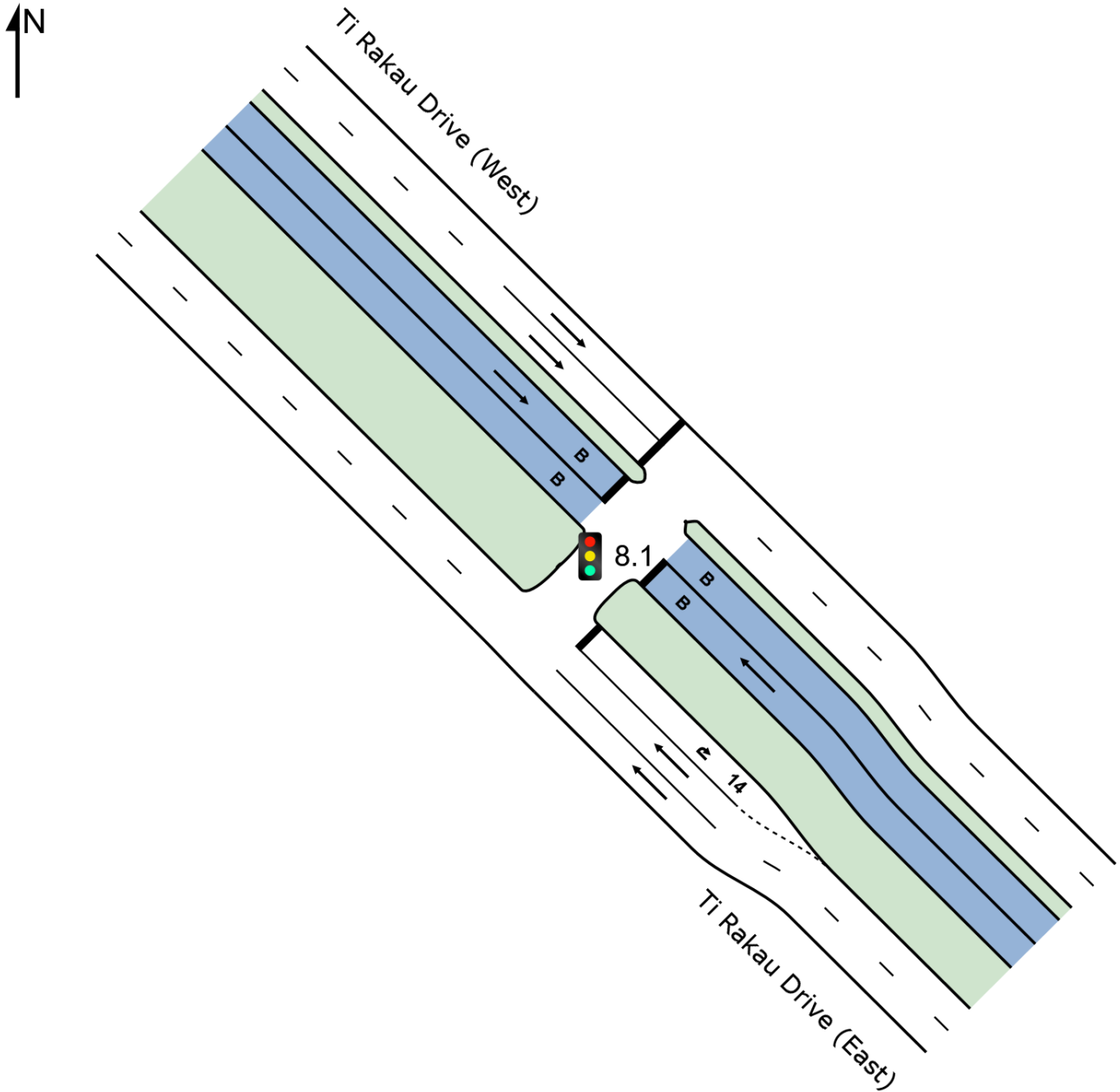
SITE LAYOUT

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

Network: N101 [AM -
Continous Lane & Phase &
Single lane (Network Folder:
General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 30 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]	veh/h	v/c	%	sec		[Veh]	[Dist]		m	%	%
SouthEast: Ti Rakau Drive (East)															
Lane 1	787	11.4	787	11.4	1806	0.436	100	0.1	LOS A	0.0	0.0	Full	147	0.0	0.0
Lane 2	787	11.4	787	11.4	1806	0.436	100	0.1	LOS A	0.0	0.0	Full	147	0.0	0.0
Lane 3	65	4.6	65	4.6	269	0.242	100	18.1	LOS B	0.8	5.8	Short	14	0.0	NA
Lane 4 (B)	25	100.0	25	100.0	478	0.052	100	2.1	LOS A	0.1	0.9	Full	147	0.0	0.0
Approach	1664	12.5	1664	12.5		0.436		0.8	LOS A	0.8	5.8				
NorthWest: Ti Rakau Drive (West)															
Lane 1	490	12.6	489	12.6	717	0.682	100	9.5	LOS A	6.0	46.6	Full	73	0.0	0.0
Lane 2	490	12.6	489	12.6	717	0.682	100	9.5	LOS A	6.0	46.6	Full	73	0.0	0.0
Lane 3 (B)	13	100.0	13	100.0	478	0.027	100	2.1	LOS A	0.0	0.5	Full	73	0.0	0.0
Approach	992	13.7	992	13.7		0.682		9.4	LOS A	6.0	46.6				
Intersectio n	2656	13.0	2656	13.0		0.682		4.0	LOS A	6.0	46.6				

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.

Approach Lane Flows (veh/h)										
SouthEast: Ti Rakau Drive (East)										
Mov.	T1	U	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane
From SE	NW	SE			veh/h	v/c	%	%	No.	
To Exit:										
Lane 1	787	-	787	11.4	1806	0.436	100	NA	NA	
Lane 2	787	-	787	11.4	1806	0.436	100	NA	NA	
Lane 3	-	65	65	4.6	269	0.242	100	0.0	2	
Lane 4	25	-	25	100.0	478	0.052	100	NA	NA	
Approach	1599	65	1664	12.5		0.436				
NorthWest: Ti Rakau Drive (West)										
Mov.	T1	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL	Ov.	Ov. Lane	
From NW	SE			veh/h	v/c	%	%	No.		
To Exit:										
Lane 1	489	489	12.6	717	0.682	100	NA	NA		
Lane 2	489	489	12.6	717	0.682	100	NA	NA		
Lane 3	13	13	100.0	478	0.027	100	NA	NA		
Approach	992	992	13.7		0.682					
Total %HV Deg.Satn (v/c)										

Intersection 2656 13.0 0.682

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

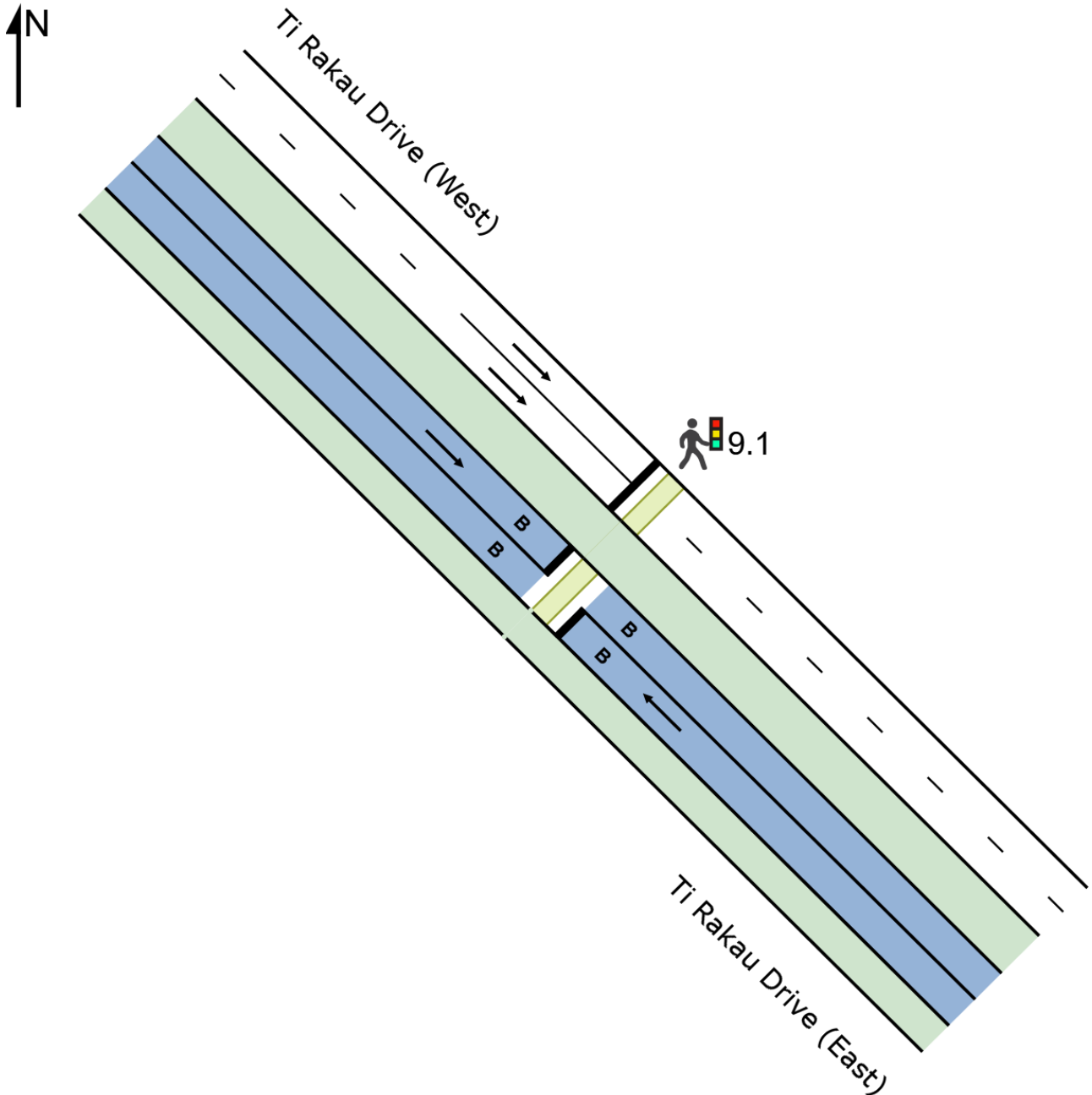
Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East)											
Merge Type: Not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

SITE LAYOUT

 Site: 9.1 [9.1 Staggered Crossing - East of Marriot Rd (Site Folder: AM)]

Site Category: (None)
Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Coordinated

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



LANE SUMMARY

 Site: 9.1 [9.1 Staggered Crossing - East of Marriot Rd (Site Folder: AM)]

 Network: N101 [AM - Continous Lane & Phase & Single lane (Network Folder: General)]

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 40 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]						[Veh]	[Dist m]				
SouthEast: Ti Rakau Drive (East)															
Lane 1 (B)	25	100.0	25	100.0	370	0.068	100	5.5	LOS A	0.2	2.2	Full	45	0.0	0.0
Approach	25	100.0	25	100.0		0.068		5.5	LOS A	0.2	2.2				
NorthWest: Ti Rakau Drive (West)															
Lane 1	546	12.0	546	12.0	730	0.749	100	13.2	LOS B	2.3 ^{N4}	17.5 ^{N4}	Full	12	0.0	50.0
Lane 2	547	12.0	547	12.0	730	0.749	100	13.2	LOS B	2.3 ^{N4}	17.5 ^{N4}	Full	12	0.0	50.0
Lane 3 (B)	13	100.0	13	100.0	370	0.035	100	5.4	LOS A	0.1	1.1	Full	12	0.0	0.0
Approach	1106	13.0	1106	13.0		0.749		13.1	LOS B	2.3	17.5				
Intersection	1131	14.9	1131	14.9		0.749		13.0	LOS B	2.3	17.5				

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.

^{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:	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	25	25	100.0	370	0.068	100	NA	NA	
Approach	25	25	100.0		0.068				
NorthWest: Ti Rakau Drive (West)									
Mov. From NW To Exit:	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	546	546	12.0	730	0.749	100	NA	NA	
Lane 2	547	547	12.0	730	0.749	100	NA	NA	
Lane 3	13	13	100.0	370	0.035	100	NA	NA	
Approach	1106	1106	13.0		0.749				
Total %HV Deg. Satn (v/c)									
Intersection	1131	14.9			0.749				

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	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate 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.									
Full Length Lane	3	Merge Analysis not applied.									
NorthWest Exit: Ti Rakau Drive (West)											
Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									

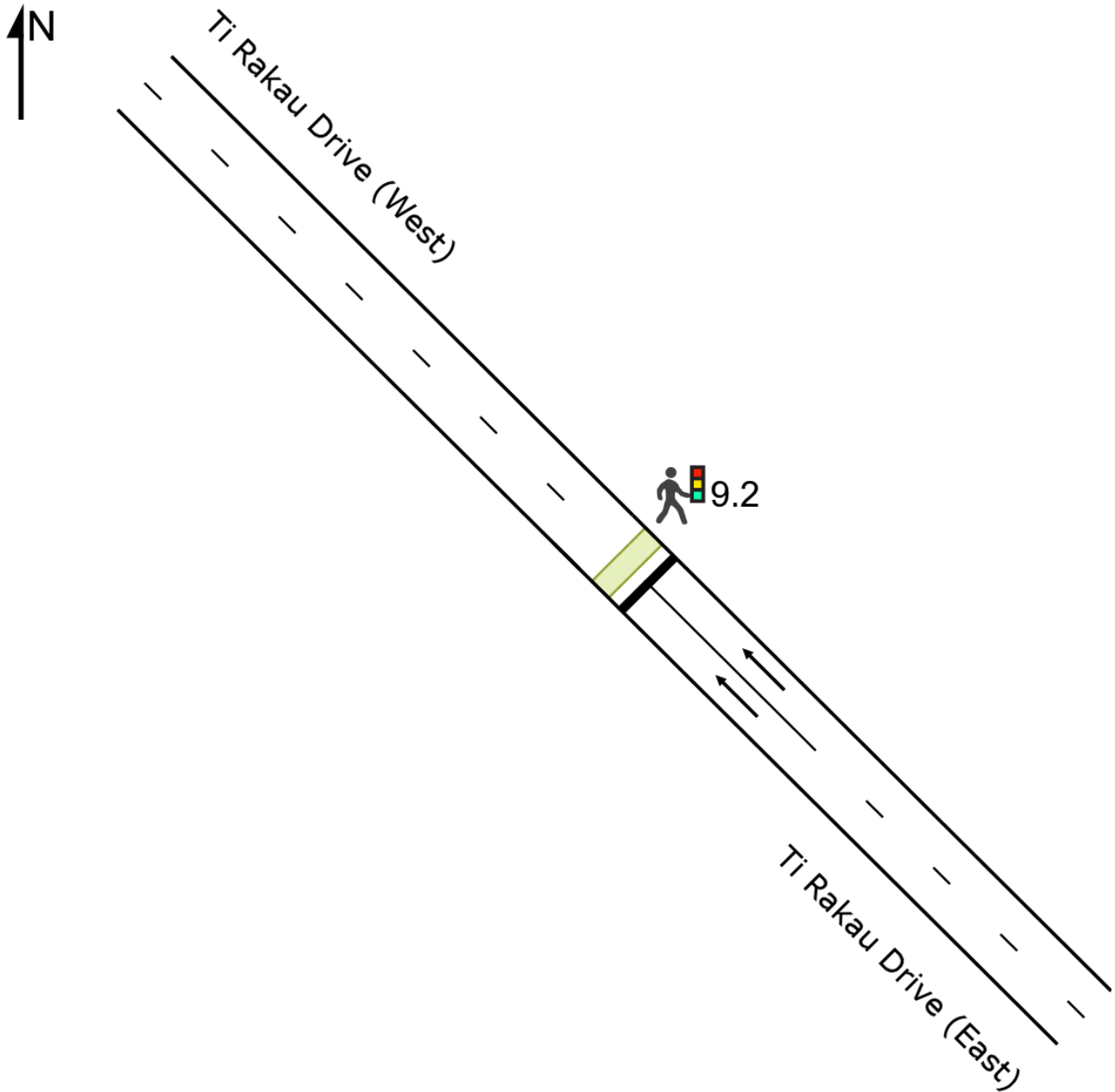
SITE LAYOUT

 Site: 9.2 [9.2 Staggered Crossing - East of Marriot Rd (Site Folder: AM)]

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated

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LANE SUMMARY

 Site: 9.2 [9.2 Staggered Crossing - East of Marriot Rd (Site Folder: AM)]

 Network: N101 [AM - Continous Lane & Phase & Single lane (Network Folder: General)]

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 50 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]						[Veh]	[Dist m]				
SouthEast: Ti Rakau Drive (East)															
Lane 1	820	11.2	820	11.2	931	0.880	100	24.5	LOS C	8.6 ^{N4}	65.8 ^{N4}	Full	45	0.0	50.0
Lane 2	820	11.2	820	11.2	931	0.880	100	24.5	LOS C	8.6 ^{N4}	65.8 ^{N4}	Full	45	0.0	50.0
Approach	1639	11.2	1639	11.2		0.880		24.5	LOS C	8.6	65.8				
Intersection	1639	11.2	1639	11.2		0.880		24.5	LOS C	8.6	65.8				

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.

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.

^{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:	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Ov. %	Ov. Lane No.
Lane 1	820	820	11.2	931	0.880	100	NA	NA	NA
Lane 2	820	820	11.2	931	0.880	100	NA	NA	NA
Approach	1639	1639	11.2		0.880				
Total %HV Deg. Satn (v/c)									
Intersection	1639	11.2		0.880					

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	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec		
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.										

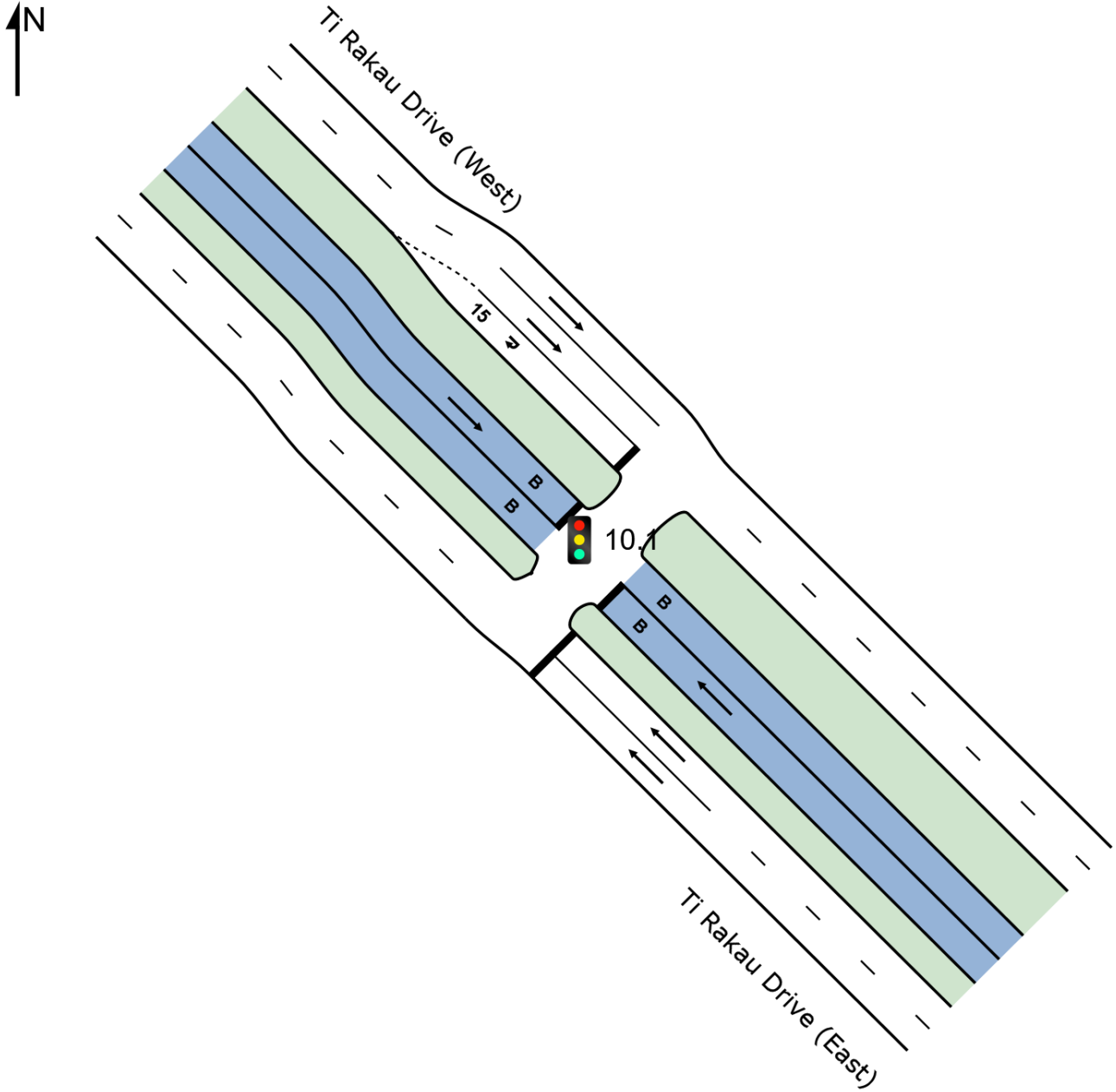
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SITE LAYOUT

 Site: 10.1 [10.1 U-turn - East of Edgewater Dr (West) (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: 10.1 [10.1 U-turn - East of Edgewater Dr (West) (Site Folder: AM)]

Network: N101 [AM - Continous Lane & Phase & Single lane (Network Folder: General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 40 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	[HV %	[Total veh/h	[HV %						[Veh	[Dist] m				
SouthEast: Ti Rakau Drive (East)															
Lane 1	857	11.4	857	11.4	993	0.863	100	17.0	LOS B	12.2 ^{N4}	93.5 ^{N4}	Full	64	0.0	50.0
Lane 2	719	11.4	719	11.4	834	0.863	100	18.3	LOS B	12.2 ^{N4}	93.5 ^{N4}	Full	64	-16.0 ^{N7}	50.0
Lane 3 (B)	25	100.0	25	100.0	657	0.038	100	0.2	LOS A	0.0	0.1	Full	64	0.0	0.0
Approach	1601	12.8	1601	12.8		0.863		17.3	LOS B	12.2	93.5				
NorthWest: Ti Rakau Drive (West)															
Lane 1	503	12.7	503	12.7	1792	0.281	100	0.0	LOS A	0.0	0.0	Full	81	0.0	0.0
Lane 2	503	12.7	503	12.7	1792	0.281	100	0.0	LOS A	0.0	0.0	Full	81	0.0	0.0
Lane 3	76	3.9	76	3.9	170	0.447	100	24.9	LOS C	1.4	9.9	Short	15	-16.0 ^{N7}	NA
Lane 4 (B)	13	100.0	13	100.0	657	0.020	100	0.2	LOS A	0.0	0.1	Full	81	0.0	0.0
Approach	1095	13.2	1095	13.2		0.447		1.7	LOS A	1.4	9.9				
Intersectio n	2696	12.9	2696	12.9		0.863		11.0	LOS B	12.2	93.5				

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.

^{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:	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.		
	NW									
Lane 1	857	857	11.4	993	0.863	100	NA	NA		
Lane 2	719	719	11.4	834	0.863	100	NA	NA		
Lane 3	25	25	100.0	657	0.038	100	NA	NA		
Approach	1601	1601	12.8		0.863					
NorthWest: Ti Rakau Drive (West)										
Mov. From NW To Exit:	T1	U	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
	SE	NW								
Lane 1	503	-	503	12.7	1792	0.281	100	NA	NA	
Lane 2	503	-	503	12.7	1792	0.281	100	NA	NA	
Lane 3	-	76	76	3.9	170	0.447	100	0.0	2	
Lane 4	13	-	13	100.0	657	0.020	100	NA	NA	
Approach	1019	76	1095	13.2		0.447				

	Total	%HV	Deg.Satn (v/c)
Intersection	2696	12.9	0.863

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 % 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.
Full Length Lane	3										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.

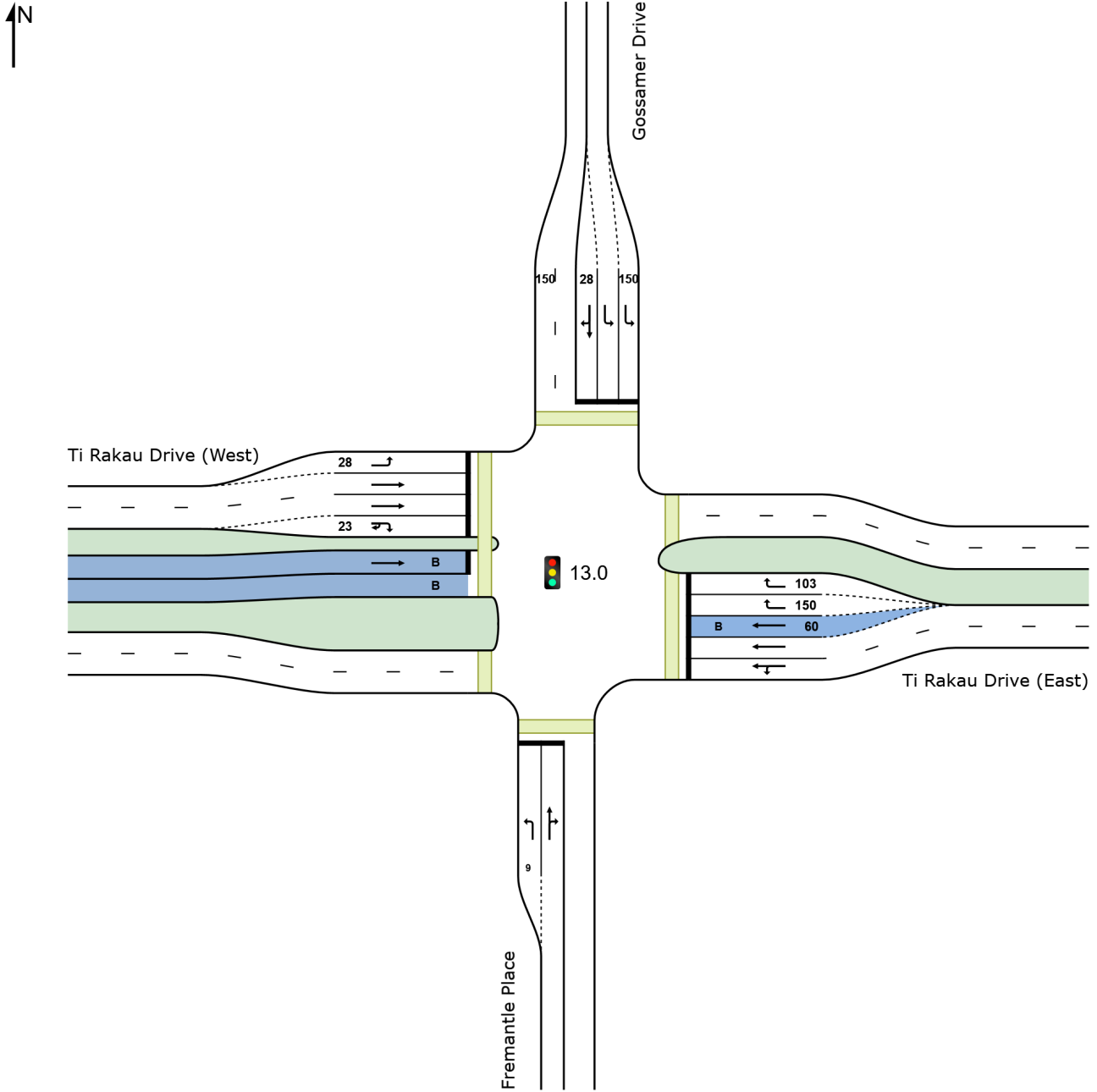
SITE LAYOUT

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr (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.



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Project: C:\Users\jacques.vandenneever\Eastern Busway Alliance\PAA - 05 DESIGN MGMT\12 Transport\3-3. Integrated Transport

Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\Operational\2028 EB2-EB3R-Final-Xroads-AM.sip9

LANE SUMMARY

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

Network: N101 [AM - Continuous Lane & Phase & Single lane (Network Folder: General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 150 seconds (Site User-Given Phase Times)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]	veh/h	v/c	%	sec		[Veh]	[Dist]		m	%	%
South: Fremantle Place															
Lane 1	20	5.0	20	5.0	34	0.580	100	92.4	LOS F	1.5	10.7	Short	9	0.0	NA
Lane 2	23	13.0	23	13.0	67	0.344	100	85.5	LOS F	1.6	12.3	Full	285	0.0	0.0
Approach	43	9.3	43	9.3		0.580		88.7	LOS F	1.6	12.3				
East: Ti Rakau Drive (East)															
Lane 1	778	11.5	778	11.5	959	0.811	100	24.0	LOS C	28.2	216.8	Full	636	0.0	0.0
Lane 2	757	11.6	757	11.6	933 ¹	0.811	100	22.8	LOS C	25.9	199.4	Full	636	0.0	0.0
Lane 3 (B)	28	100.0	28	100.0	266	0.105	100	34.9	LOS C	1.1	14.0	Short	60	0.0	NA
Lane 4	164	6.9	164	6.9	235	0.695	82 ⁶	72.4	LOS E	10.6	78.4	Short	150	0.0	NA
Lane 5	199	6.9	199	6.9	235	0.848	100	80.8	LOS F	14.1	104.3	Short	103	0.0	NA
Approach	1926	11.9	1926	11.9		0.848		33.7	LOS C	28.2	216.8				
North: Gossamer Drive															
Lane 1	334	10.6	334	10.6	292	1.143	100	180.0	LOS F	35.4	270.2	Short	150	0.0	NA
Lane 2	337	10.6	337	10.6	295	1.143	100	179.9	LOS F	35.7	272.8	Full	1010	0.0	0.0
Lane 3	48	8.3	48	8.3	123	0.390	100	78.8	LOS E	3.1	23.5	Short	28	0.0	NA
Approach	719	10.4	719	10.4		1.143		173.2	LOS F	35.7	272.8				
West: Ti Rakau Drive (West)															
Lane 1	53	9.4	53	9.4	815	0.065	100	14.5	LOS B	0.9	7.2	Short	28	0.0	NA
Lane 2	472	12.7	472	12.7	458 ¹	1.029	100	131.5	LOS F	46.9	364.2	Full	479	0.0	0.0
Lane 3	458	12.7	458	12.7	445 ¹	1.029	100	132.0	LOS F	45.7	354.7	Full	479	0.0	0.0
Lane 4	53	7.5	53	7.5	185	0.287	100	67.8	LOS E	3.2	23.8	Short	23	0.0	NA
Lane 5 (B)	27	100.0	27	100.0	271	0.100	100	34.8	LOS C	1.0	13.5	Full	479	0.0	0.0
Approach	1063	14.5	1063	14.5		1.029		120.3	LOS F	46.9	364.2				
Intersection	3751	12.3	3751	12.3		1.143		85.6	LOS F	46.9	364.2				

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.
- 6 Lane under-utilisation due to downstream effects

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

Lane 1	20	-	-	20	5.0	34	0.580	100	31.1	2	
Lane 2	-	11	12	23	13.0	67	0.344	100	NA	NA	
Approach	20	11	12	43	9.3		0.580				
East: Ti Rakau Drive (East)											
Mov. From E To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	16	762	-	778	11.5	959	0.811	100	NA	NA	
Lane 2	-	757	-	757	11.6	933 ¹	0.811	100	NA	NA	
Lane 3	-	28	-	28	100.0	266	0.105	100	0.0	2	
Lane 4	-	-	164	164	6.9	235	0.695	82 ⁶	0.0	2	
Lane 5	-	-	199	199	6.9	235	0.848	100	16.1	4	
Approach	16	1547	363	1926	11.9		0.848				
North: Gossamer Drive											
Mov. From N To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	334	-	-	334	10.6	292	1.143	100	69.9	2	
Lane 2	337	-	-	337	10.6	295	1.143	100	NA	NA	
Lane 3	-	10	38	48	8.3	123	0.390	100	0.0	2	
Approach	671	10	38	719	10.4		1.143				
West: Ti Rakau Drive (West)											
Mov. From W To Exit:	L2	T1	R2	U	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	53	-	-	-	53	9.4	815	0.065	100	0.0	2
Lane 2	-	472	-	-	472	12.7	458 ¹	1.029	100	NA	NA
Lane 3	-	458	-	-	458	12.7	445 ¹	1.029	100	NA	NA
Lane 4	-	-	10	43	53	7.5	185	0.287	100	18.1	3
Lane 5	-	27	-	-	27	100.0	271	0.100	100	NA	NA
Approach	53	957	10	43	1063	14.5		1.029			
Total %HV Deg. Satn (v/c)											
Intersection	3751	12.3		1.143							

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	Critical Gap sec	Follow-up Headway sec	Lane 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	150	50.0	100	103	2.50	2.00	228	1682	0.135	0.0	0.0
Merge Lane	2	-	50.0	114	118	2.50	2.00	199	1665	0.120	0.0	0.1

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.
Full Length Lane	3	Merge Analysis not applied.

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Project: C:\Users\jacques.vandenneever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\Operational\2028 EB2-EB3R-Final-Xroads-AM.sip9

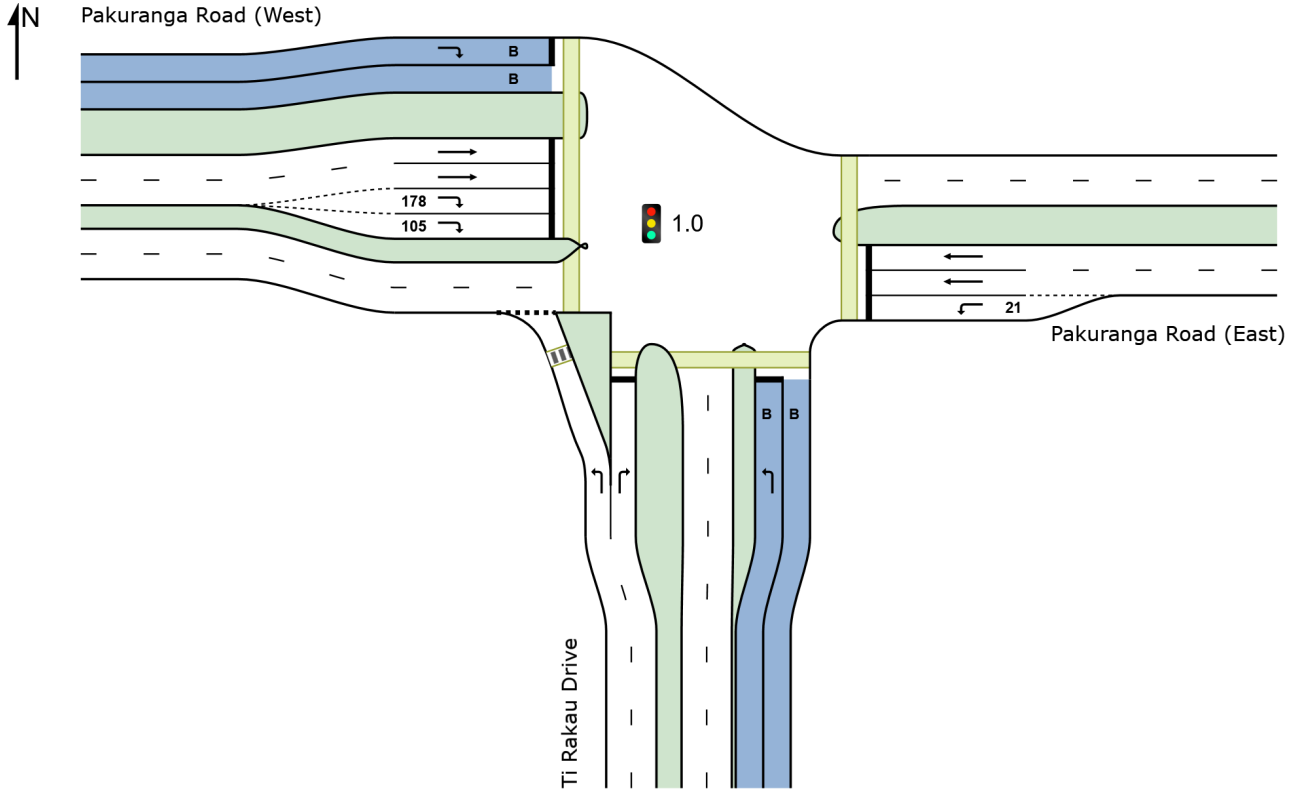
SITE LAYOUT

 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.



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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\Operational\2028 EB2-EB3R-Final-Xroads-PM.sip9

LANE SUMMARY

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

Network: N101 [PM - Continuous Lane & Phase & Single lane (Network Folder: General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 97 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]						[Veh]	[Dist m]				
South: Ti Rakau Drive															
Lane 1	986	7.3	986	7.3	1078	0.915	100	32.4	LOS C	34.2 ^{N4}	254.3 ^{N4}	Full	174	0.0	50.0
Lane 2	184	6.0	184	6.0	493	0.373	100	35.2	LOS D	6.3	46.7	Full	174	0.0	0.0
Lane 3 (B)	53	100.0	53	100.0	287	0.184	100	26.1	LOS C	1.3	16.7	Full	174	0.0	0.0
Approach	1223	11.1	1223	11.1		0.915		32.5	LOS C	34.2	254.3				
East: Pakuranga Road (East)															
Lane 1	67	1.5	66	1.5	528	0.126	100	32.0	LOS C	2.1	14.7	Short	21	0.0	NA
Lane 2	265	4.8	262	4.8	479 ¹	0.548	100	31.0	LOS C	9.3	67.6	Full	98	0.0	0.0
Lane 3	301	4.8	298	4.8	543	0.548	100	31.7	LOS C	10.8	78.5	Full	98	0.0	0.0
Approach	633	4.4	627 ^{N1}	4.5		0.548		31.4	LOS C	10.8	78.5				
West: Pakuranga Road (West)															
Lane 1 (B)	23	100.0	23	100.0	271	0.085	100	26.0	LOS C	0.5	6.8	Full	380	0.0	0.0
Lane 2	479	5.3	479	5.3	541	0.884	100	46.9	LOS D	23.1	168.9	Full	380	0.0	0.0
Lane 3	479	5.3	479	5.3	541	0.884	100	46.9	LOS D	23.1	168.9	Full	380	0.0	0.0
Lane 4	382	8.1	382	8.1	432	0.883	100	54.5	LOS D	18.7	139.6	Short	178	0.0	NA
Lane 5	382	8.1	382	8.1	432	0.883	100	54.5	LOS D	18.7	139.6	Short	105	0.0	NA
Approach	1743	7.8	1743	7.8		0.884		49.9	LOS D	23.1	168.9				
Intersection	3599	8.3	3593 ^N	8.4		0.915		40.8	LOS D	34.2	254.3				

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.

^{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	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Ov. Lane No.	
	W	E								
Lane 1	986	-	986	7.3	1078	0.915	100	NA	NA	
Lane 2	-	184	184	6.0	493	0.373	100	NA	NA	
Lane 3	53	-	53	100.0	287	0.184	100	NA	NA	
Approach	1039	184	1223	11.1		0.915				
East: Pakuranga Road (East)										
Mov.	L2	T1	Total	%HV	Deg.	Lane	Prob.	Ov.		
					Satn	Util.	SL	Lane		
					v/c	%	%	No.		

From E To Exit:	S	W			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.
Lane 1	66	-	66	1.5	528	0.126	100	0.0	2
Lane 2	-	262	262	4.8	479 ¹	0.548	100	NA	NA
Lane 3	-	298	298	4.8	543	0.548	100	NA	NA
Approach	66	560	627	4.5		0.548			
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	-	23	23	100.0	271	0.085	100	NA	NA
Lane 2	479	-	479	5.3	541	0.884	100	NA	NA
Lane 3	479	-	479	5.3	541	0.884	100	NA	NA
Lane 4	-	382	382	8.1	432	0.883	100	0.0	3
Lane 5	-	382	382	8.1	432	0.883	100	41.2	4
Approach	957	786	1743	7.8		0.884			
Total %HV Deg. Satn (v/c)									
Intersection	3593	8.4		0.915					

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.

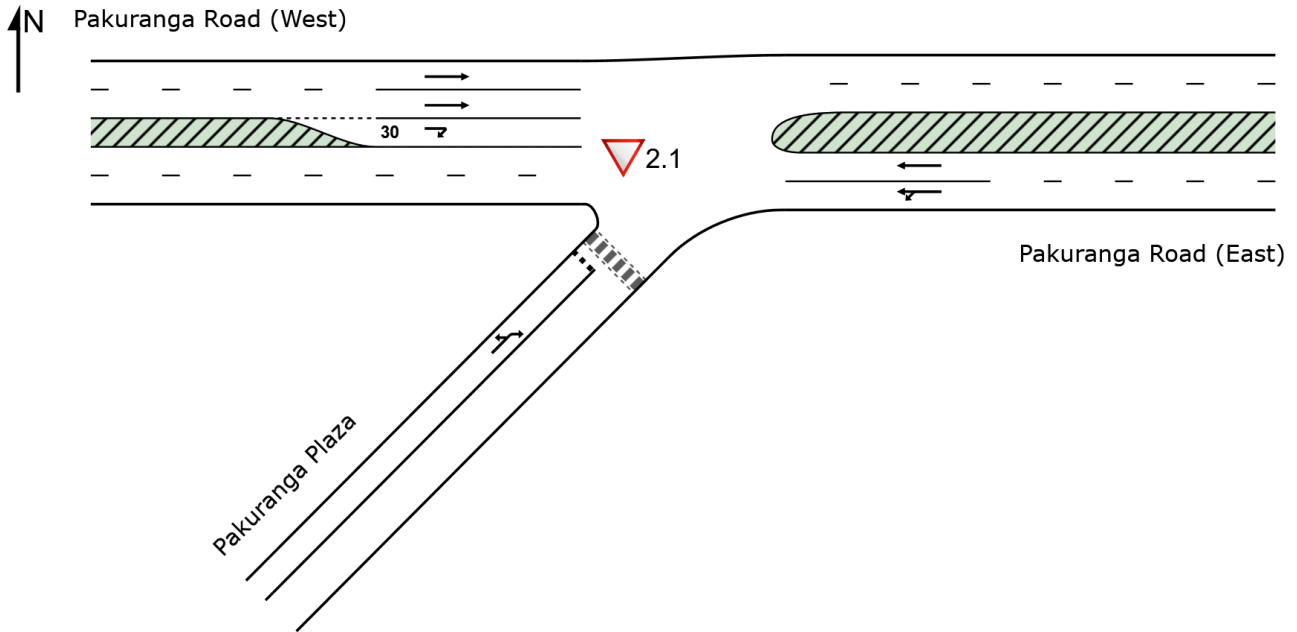
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate % veh/h	Critical Gap pcu/h	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
South Exit: Ti Rakau Drive												
Merge Type: Not Applied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



LANE SUMMARY

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

Network: N101 [PM - Continuous Lane & Phase & Single lane (Network Folder: General)]

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

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]						[Veh]	[Dist m]				
East: Pakuranga Road (East)															
Lane 1	321	4.6	321	4.6	1801	0.178	100	0.6	LOS A	0.2	1.2	Full	121	0.0	0.0
Lane 2	336	4.5	336	4.5	1885	0.178	100	0.0	LOS A	0.0	0.0	Full	121	0.0	0.0
Approach	657	4.6	657	4.6		0.178		0.3	NA	0.2	1.2				
West: Pakuranga Road (West)															
Lane 1	571	5.4	571	5.4	1874	0.305	100	0.0	LOS A	2.6 ^{N5}	19.0 ^{N5}	Full	108	0.0	0.0
Lane 2	561	5.4	561	5.4	1843	0.305	100	0.0	LOS A	0.6 ^{N5}	4.3 ^{N5}	Full	108	0.0	0.0
Lane 3	24	0.0	24	0.0	839	0.029	100	9.5	LOS A	0.1	0.6	Short	30	0.0	NA
Approach	1156	5.3	1156	5.3		0.305		0.2	NA	2.6	19.0				
SouthWest: Pakuranga Plaza															
Lane 1	75	6.7	75	6.7	34	2.201	100	1156.4	LOS F	21.6	160.1	Full	196	-44.4 ^{N3}	8.2
Approach	75	6.7	75	6.7		2.201		1156.4	LOS F	21.6	160.1				
Intersection	1888	5.1	1888	5.1		2.201		46.2	NA	21.6	160.1				

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.

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.

^{N3} Capacity Adjustment due to downstream lane blockage determined by the program.

^{N5} Continuous Lane results determined by Back of Queue values of downstream lanes (proportional to lane movement flows).

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	34	287	321	4.6	1801	0.178	100	NA	NA	
Lane 2	-	336	336	4.5	1885	0.178	100	NA	NA	
Approach	34	623	657	4.6		0.178				
West: Pakuranga Road (West)										
Mov. From W To Exit:	T1 E	R3 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	571	-	571	5.4	1874	0.305	100	NA	NA	
Lane 2	561	-	561	5.4	1843	0.305	100	NA	NA	
Lane 3	-	24	24	0.0	839	0.029	100	0.0	2	

Approach	1132	24	1156	5.3		0.305				
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. Lane No.	
Lane 1	15	60	75	6.7	34	2.201	100	NA	NA	
Approach	15	60	75	6.7		2.201				
Total %HV Deg. Satn (v/c)										
Intersection	1888	5.1		2.201						

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

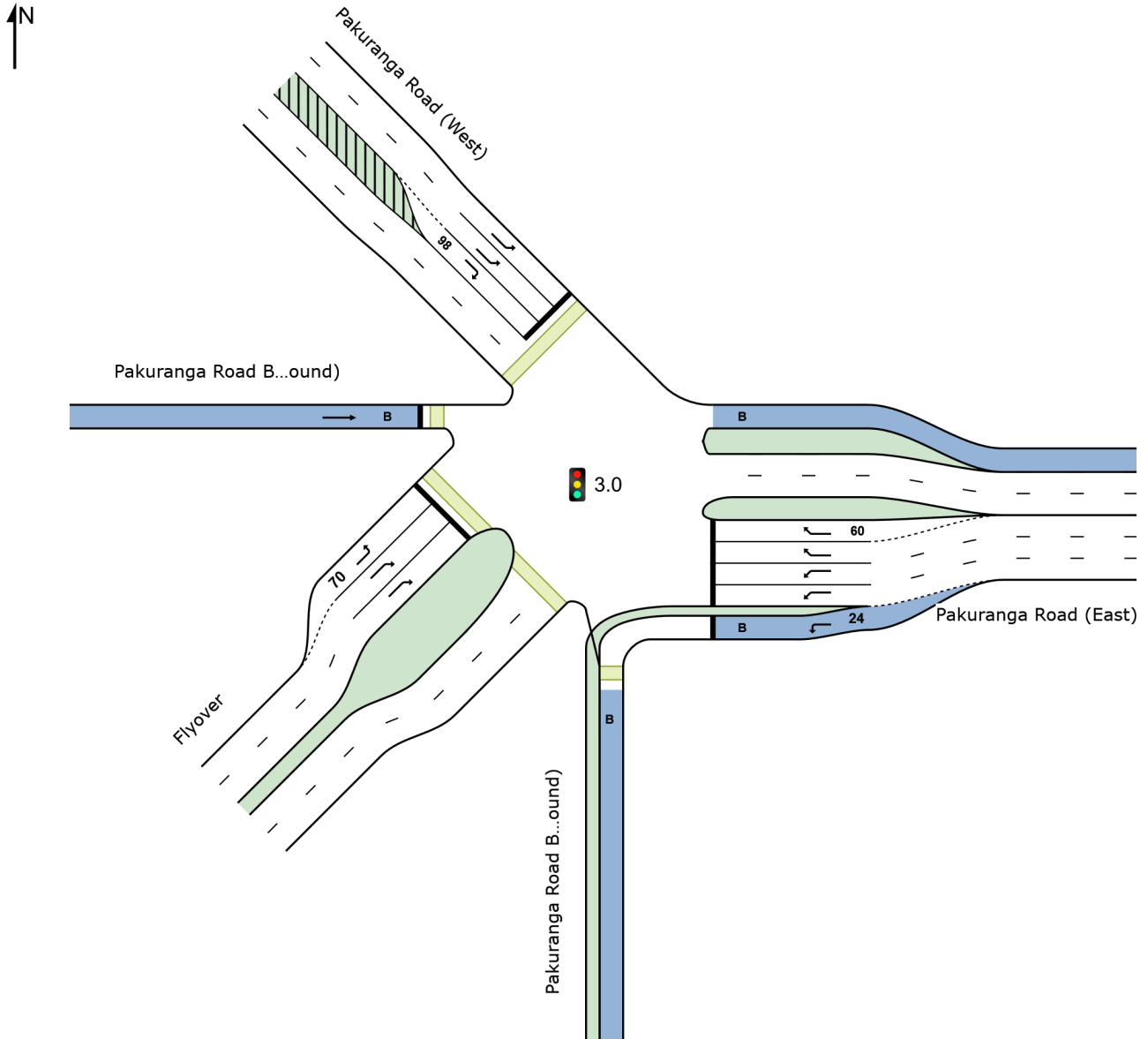
Merge Analysis												
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane %	Opposing Flow Rate veh/h	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
East Exit: Pakuranga Road (East)												
Merge Type: Not Applied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



LANE SUMMARY

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

Network: N101 [PM - Continous Lane & Phase & Single lane (Network Folder: General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Phase Times)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]	veh/h	v/c	%	sec		[Veh]	[Dist]		m	%	%
East: Pakuranga Road (East)															
Lane 1 (B)	28	100.0	28	100.0	676	0.041	100	14.9	LOS B	0.6	7.4	Short	24	0.0	NA
Lane 2	474	5.4	474	5.4	1066 ¹	0.444	100	16.0	LOS B	12.6	92.4	Full	183	0.0	0.0
Lane 3	502	5.4	502	5.4	1130	0.444	100	16.3	LOS B	13.7	100.1	Full	183	0.0	0.0
Lane 4	269	4.1	269	4.1	385 ¹	0.698	100	52.0	LOS D	13.3	96.7	Full	183	0.0	0.0
Lane 5	269	4.1	269	4.1	385 ¹	0.698	100	52.0	LOS D	13.3	96.7	Short	60	0.0	NA
Approach	1541	6.7	1541	6.7		0.698		28.6	LOS C	13.7	100.1				
NorthWest: Pakuranga Road (West)															
Lane 1	573	5.2	559	5.1	704	0.795	100	40.4	LOS D	24.2 ^{N4}	176.8 ^{N4}	Full	121	0.0	50.0
Lane 2	541	5.2	527	5.1	663 ¹	0.795	100	39.9	LOS D	24.2 ^{N4}	176.8 ^{N4}	Full	121	0.0	50.0
Lane 3	78	11.5	76	11.4	214	0.356	100	58.0	LOS E	3.8	28.9	Short	98	0.0	NA
Approach	1192	5.6	1162 ^{N1}	5.6		0.795		41.3	LOS D	24.2	176.8				
West: Pakuranga Road Busway Link (Northbound)															
Lane 1 (B)	9	100.0	9	100.0	617	0.015	100	14.9	LOS B	0.2	2.9	Full	215	0.0	0.0
Approach	9	100.0	9	100.0		0.015		14.9	LOS B	0.2	2.9				
SouthWest: Flyover															
Lane 1	119	6.7	119	6.7	227	0.524	100	60.2	LOS E	6.0	44.6	Short	70	0.0	NA
Lane 2	731	4.2	731	4.2	883 ¹	0.827	100	31.3	LOS C	31.3	227.0	Full	1162	0.0	0.0
Lane 3	814	4.2	814	4.2	984	0.827	100	32.0	LOS C	36.7	266.0	Full	1162	0.0	0.0
Approach	1664	4.4	1664	4.4		0.827		33.7	LOS C	36.7	266.0				
Intersection	4406	5.7	4376 ^{N1}	5.8		0.827		33.9	LOS C	36.7	266.0				

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)											
East: Pakuranga Road (East)											
Mov. From E To Exit:	L2	L1	R1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	28	-	-	28	100.0	676	0.041	100	0.0	2	
Lane 2	-	474	-	474	5.4	1066 ¹	0.444	100	NA	NA	

Lane 3	-	502	-	502	5.4	1130	0.444	100	NA	NA
Lane 4	-	-	269	269	4.1	385 ¹	0.698	100	NA	NA
Lane 5	-	-	269	269	4.1	385 ¹	0.698	100	59.3	4
Approach	28	976	537	1541	6.7		0.698			
NorthWest: Pakuranga Road (West)										
Mov.	L1	R2	Total	%HV		Cap.	Deg.	Lane	Prob.	Ov.
From NW						veh/h	Satn	Util.	SL	Lane
To Exit:	E	SW					v/c	%	%	No.
Lane 1	559	-	559	5.1		704	0.795	100	NA	NA
Lane 2	527	-	527	5.1		663 ¹	0.795	100	NA	NA
Lane 3	-	76	76	11.4		214	0.356	100	0.0	2
Approach	1086	76	1162	5.6			0.795			
West: Pakuranga Road Busway Link (Northbound)										
Mov.	T1	Total	%HV			Cap.	Deg.	Lane	Prob.	Ov.
From W						veh/h	Satn	Util.	SL	Lane
To Exit:	E						v/c	%	%	No.
Lane 1	9	9	100.0			617	0.015	100	NA	NA
Approach	9	9	100.0				0.015			
SouthWest: Flyover										
Mov.	L2	R1	Total	%HV		Cap.	Deg.	Lane	Prob.	Ov.
From SW						veh/h	Satn	Util.	SL	Lane
To Exit:	NW	E					v/c	%	%	No.
Lane 1	119	-	119	6.7		227	0.524	100	0.0	2
Lane 2	-	731	731	4.2		883 ¹	0.827	100	NA	NA
Lane 3	-	814	814	4.2		984	0.827	100	NA	NA
Approach	119	1545	1664	4.4			0.827			
Total %HV Deg.Satn (v/c)										
Intersection	4376	5.8					0.827			

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 sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec	
South Exit: Pakuranga Road Busway Link (Southbound)											
Merge Type: Not Applied											
Full Length Lane	1	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.									
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.									

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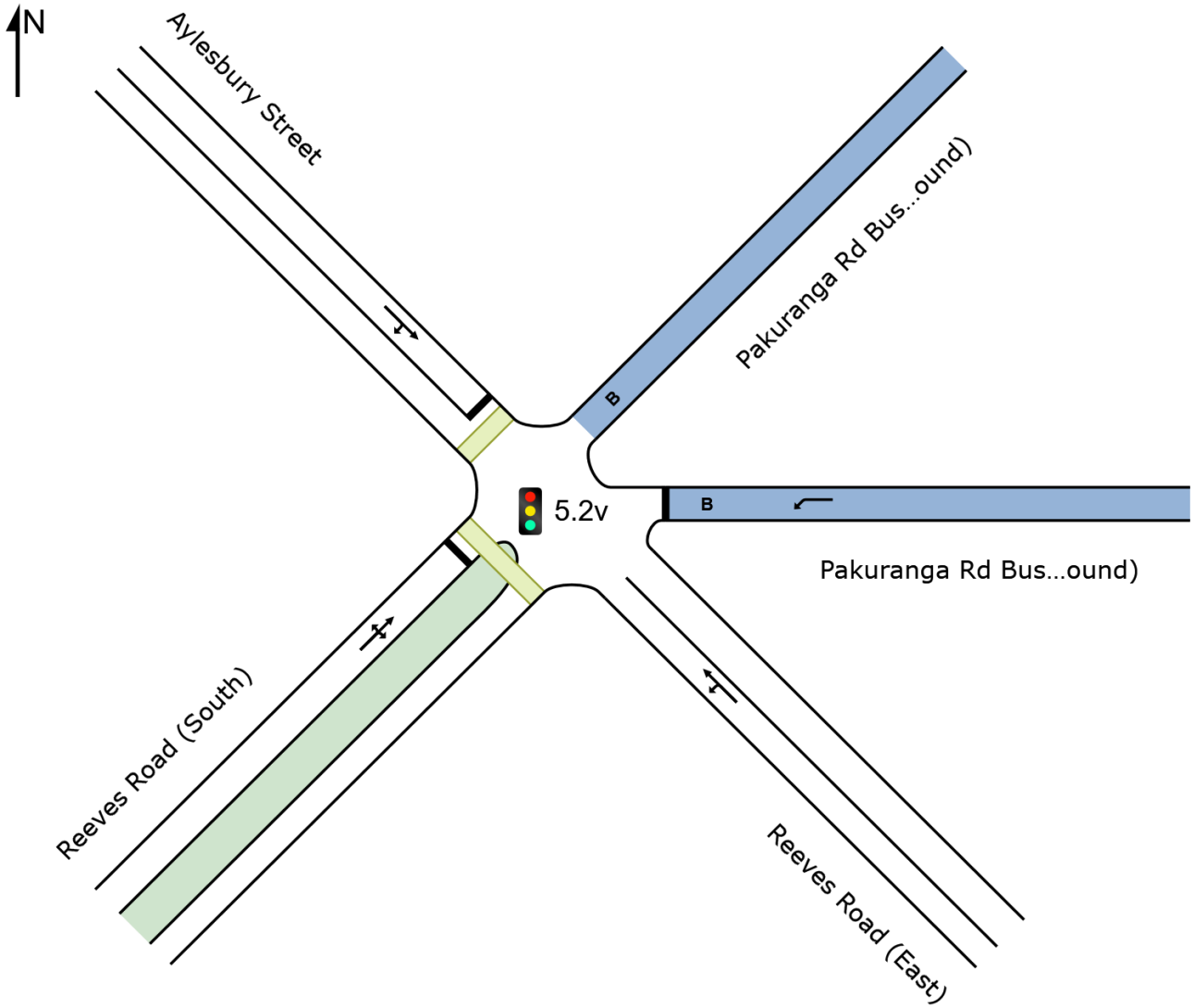
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SITE LAYOUT

**Site: 5.2v [5.2 Aylesbury St/ Reeves Rd/ Busway Link
signalised (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.

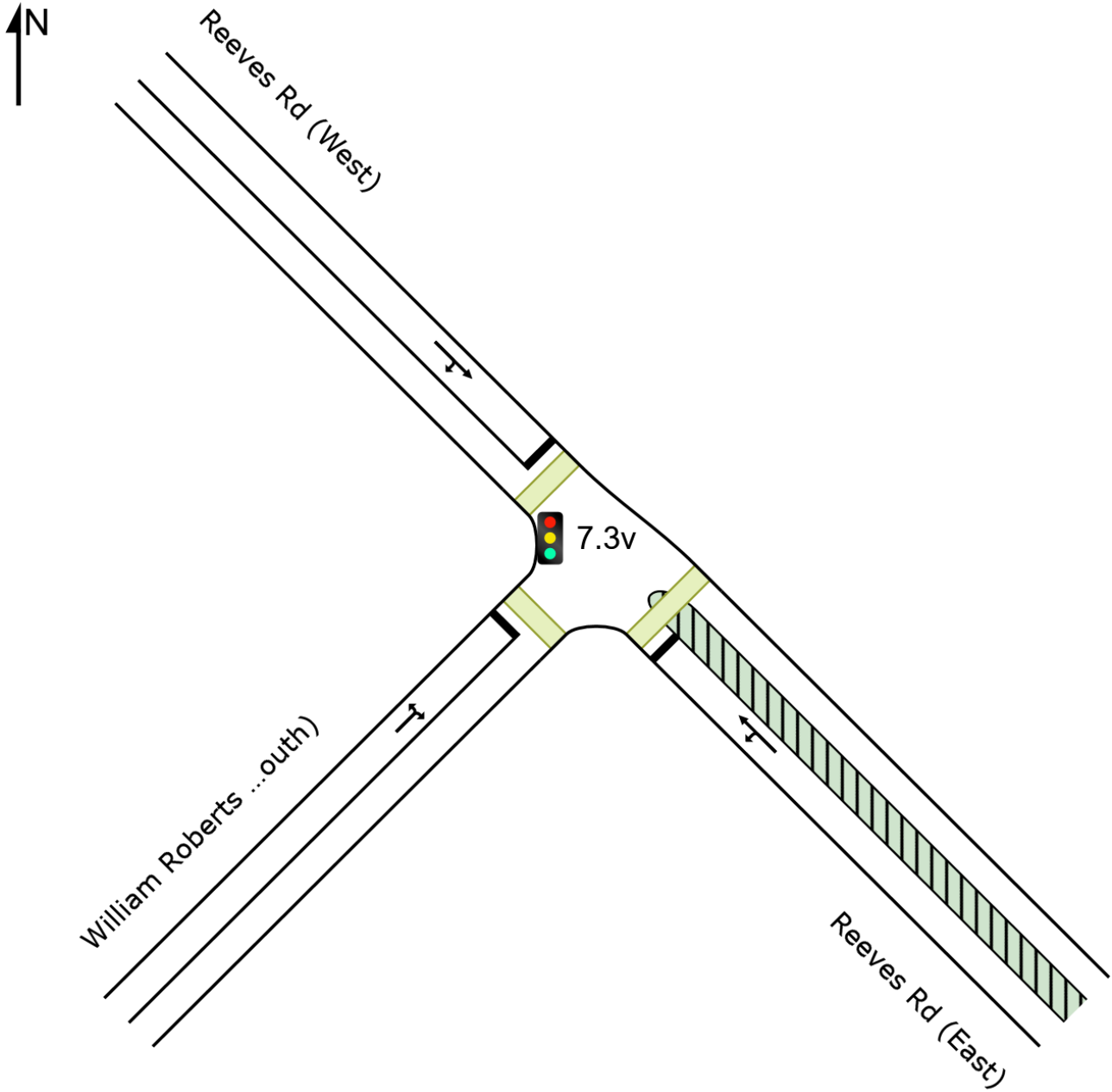


SITE LAYOUT

Site: 7.3v [7.3 William Roberts Rd / Reeves Rd signalised (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.



CCG LANE SUMMARY

Common Control Group: CCG3 [Aylesbury/ WR/ Reeves Rd]

Network: N101 [PM - Continuous Lane & Phase & Single lane (Network Folder: General)]

EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 130 seconds (CCG Practical Cycle Time)

Lane Use and Performance (CCG)															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV %	[Total veh/h	HV %						[Veh	Dist] m				
Site: 5.2v [5.2 Aylesbury St/ Reeves Rd/ Busway Link signalised]															
SouthEast: Reeves Road (East)															
Lane 1	72	6.9	72	6.9	1772	0.041	100	1.9	LOS A	0.0	0.0	Full	27	0.0	0.0
Approach	72	6.9	72	6.9		0.041		1.9	LOS A	0.0	0.0				
East: Pakuranga Rd Busway Link (Southbound)															
Lane 1 (B)	28	100.0	28	100.0	122	0.229	100	64.4	LOS E	1.5	19.9	Full	203	0.0	0.0
Approach	28	100.0	28	100.0		0.229		64.4	LOS E	1.5	19.9				
NorthWest: Aylesbury Street															
Lane 1	118	5.1	118	5.1	127	0.927	100	83.2	LOS F	8.0	58.5	Full	284	-9.1 ^{N7}	0.0
Approach	118	5.1	118	5.1		0.927		83.2	LOS F	8.0	58.5				
SouthWest: Reeves Road (South)															
Lane 1	114	14.1	113	14.1	134	0.845	100	75.3	LOS E	7.2	56.2	Full	180	-8.4 ^{N7}	0.0
Approach	114	14.1	113	14.1		0.845		75.3	LOS E	7.2	56.2				
Intersection	332	16.6	331	16.6		0.927		61.2	LOS E	8.0	58.5				
Site: 7.3v [7.3 William Roberts Rd / Reeves Rd signalised]															
SouthEast: Reeves Rd (East)															
Lane 1	131	5.3	131	5.3	154	0.851	100	76.4	LOS E	8.2	60.0	Full	810	0.0	0.0
Approach	131	5.3	131	5.3		0.851		76.4	LOS E	8.2	60.0				
NorthWest: Reeves Rd (West)															
Lane 1	200	6.5	200	6.5	654	0.306	100	22.1	LOS C	5.3 ^{N4}	39.5 ^{N4}	Full	27	0.0	50.0
Approach	200	6.5	200	6.5		0.306		22.1	LOS C	5.3	39.5				
SouthWest: William Roberts Road (South)															
Lane 1	437	6.9	437	6.9	477	0.917	100	66.1	LOS E	27.9	206.7	Full	223	0.0	8.1
Approach	437	6.9	437	6.9		0.917		66.1	LOS E	27.9	206.7				
Intersection	768	6.5	768	6.5		0.917		56.4	LOS E	27.9	206.7				

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).

Queue Model: SIDRA Standard.

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

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

^{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 (CCG) (veh/h)

Site: 5.2v [5.2 Aylesbury St/ Reeves Rd/ Busway Link signalised]										
SouthEast: Reeves Road (East)										
Mov. From SE To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	55	17	72	6.9	1772	0.041	100	NA	NA	
Approach	55	17	72	6.9		0.041				
East: Pakuranga Rd Busway Link (Southbound)										
Mov. From E To Exit:	L1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.		
Lane 1	28	28	100.0	122	0.229	100	NA	NA		
Approach	28	28	100.0		0.229					
NorthWest: Aylesbury Street										
Mov. From NW To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	107	11	118	5.1	127	0.927	100	NA	NA	
Approach	107	11	118	5.1		0.927				
SouthWest: Reeves Road (South)										
Mov. From SW To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	11	9	94	113	14.1	134	0.845	100	NA	NA
Approach	11	9	94	113	14.1		0.845			
Total		%HV		Deg.Satn (v/c)						
Intersection	331	16.6	0.927							
Site: 7.3v [7.3 William Roberts Rd / Reeves Rd signalised]										
SouthEast: Reeves Rd (East)										
Mov. From SE To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	86	45	131	5.3	154	0.851	100	NA	NA	
Approach	86	45	131	5.3		0.851				
NorthWest: Reeves Rd (West)										
Mov. From NW To Exit:	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	162	38	200	6.5	654	0.306	100	NA	NA	
Approach	162	38	200	6.5		0.306				
SouthWest: William Roberts Road (South)										
Mov. From SW To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	26	411	437	6.9	477	0.917	100	NA	NA	

Approach	26	411	437	6.9	0.917
	Total	%HV	Deg.Satn	(v/c)	
Intersection	768	6.5		0.917	

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

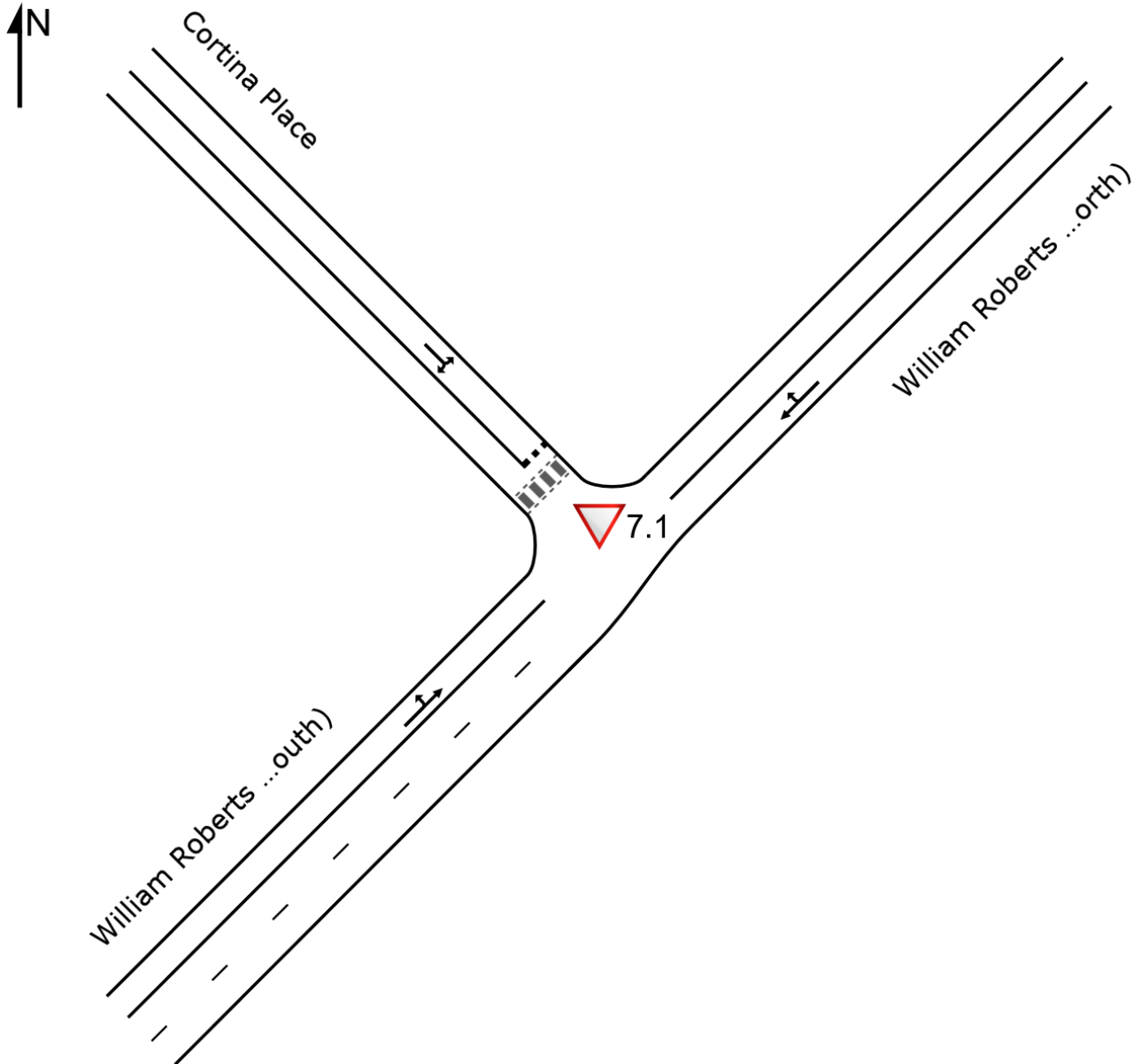
Merge Analysis (CCG)											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
Site: 5.2v [5.2 Aylesbury St/ Reeves Rd/ Busway Link signalised]											
SouthEast Exit: Reeves Road (East)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
NorthEast Exit: Pakuranga Rd Busway Link (Northbound)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
NorthWest Exit: Aylesbury Street											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
SouthWest Exit: Reeves Road (South)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
Site: 7.3v [7.3 William Roberts Rd / Reeves Rd signalised]											
SouthEast Exit: Reeves Rd (East)											
Merge Type: Not Applied											
Full Length Lane	1										Merge Analysis not applied.
NorthWest Exit: Reeves Rd (West)											
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: 7.1 [7.1 William Roberts Rd / Cortina PI (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: 7.1 [7.1 William Roberts Rd / Cortina PI (Site Folder: AM)]

Network: N101 [PM - Continuous Lane & Phase & Single lane (Network Folder: General)]

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

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]						[Veh]	[Dist m]				
NorthEast: William Roberts Road (North)															
Lane 1	139	6.5	139	6.5	1580	0.088	100	1.8	LOS A	0.2	1.6	Full	223	0.0	0.0
Approach	139	6.5	139	6.5		0.088		1.8	NA	0.2	1.6				
NorthWest: Cortina Place															
Lane 1	276	8.3	276	8.3	899	0.307	100	3.3	LOS A	1.1	7.9	Full	177	-3.0 ^{N7}	0.0
Approach	276	8.3	276	8.3		0.307		3.3	LOS A	1.1	7.9				
SouthWest: William Roberts Road (South)															
Lane 1	416	7.7	416	7.7	1510	0.275	100	0.9	LOS A	0.5	4.0	Full	110	-4.3 ^{N7}	0.0
Approach	416	7.7	416	7.7		0.275		0.9	NA	0.5	4.0				
Intersection	831	7.7	831	7.7		0.307		1.9	NA	1.1	7.9				

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.

^{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	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	106	33	139	6.5	1580	0.088	100	NA	NA	
Approach	106	33	139	6.5		0.088				
NorthWest: Cortina Place										
Mov. From NW To Exit:	L2	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	144	132	276	8.3	899	0.307	100	NA	NA	
Approach	144	132	276	8.3		0.307				
SouthWest: William Roberts Road (South)										
Mov. From SW To Exit:	L2	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	101	315	416	7.7	1510	0.275	100	NA	NA	

Approach	101	315	416	7.7	0.275
Total %HV Deg.Satn (v/c)					
Intersection	831	7.7	0.307		

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 % 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.									
Full Length Lane	2	Merge Analysis not applied.									

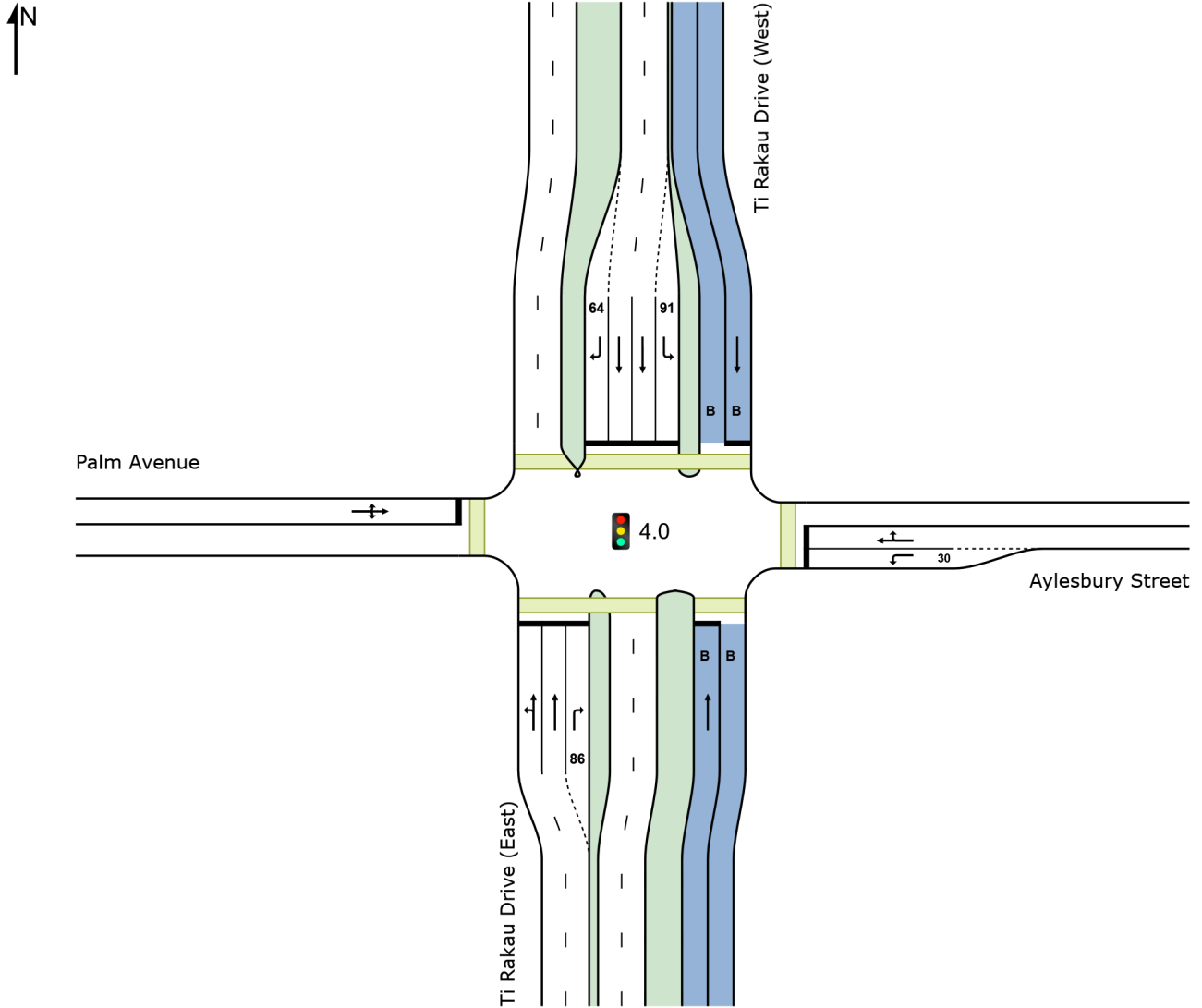
SITE LAYOUT

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

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

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



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Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\Operational\2028 EB2-EB3R-Final-Xroads-PM.sip9

Lane 1	80	313	-	393	8.0	390	1.007	100	NA	NA
Lane 2	-	742	-	742	7.1	737 ¹	1.007	100	NA	NA
Lane 3	-	-	65	65	4.6	68	0.952	100	0.0	2
Lane 4	-	53	-	53	100.0	613	0.086	100	NA	NA
Approach	80	1108	65	1253	11.2		1.007			
East: Aylesbury Street										
Mov. From E To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	49	-	-	49	8.2	125	0.393	100	0.0	2
Lane 2	-	15	87	102	8.8	199 ¹	0.512	100	NA	NA
Approach	49	15	87	151	8.6		0.512			
North: Ti Rakau Drive (West)										
Mov. From N To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	-	23	-	23	100.0	613	0.038	100	NA	NA
Lane 2	256	-	-	256	7.4	1004	0.255	100	0.0	3
Lane 3	-	268	-	268	7.8	687	0.390	100	NA	NA
Lane 4	-	268	-	268	7.8	687	0.390	100	NA	NA
Lane 5	-	-	31	31	3.2	69	0.450	100	0.0	4
Approach	256	559	31	845	10.1		0.450			
West: Palm Avenue										
Mov. From W To Exit:	L2	T1	R2	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	36	21	33	90	4.4	173	0.521	100	NA	NA
Approach	36	21	33	90	4.4		0.521			
Total %HV Deg. Satn (v/c)										
Intersection	2339	10.3		1.007						

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	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane 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.
Full Length Lane	3										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.
Full Length Lane	3										Merge Analysis not applied.
West Exit: Palm Avenue											
Merge Type: Not Applied											

Full Length Lane 1 Merge Analysis not applied.

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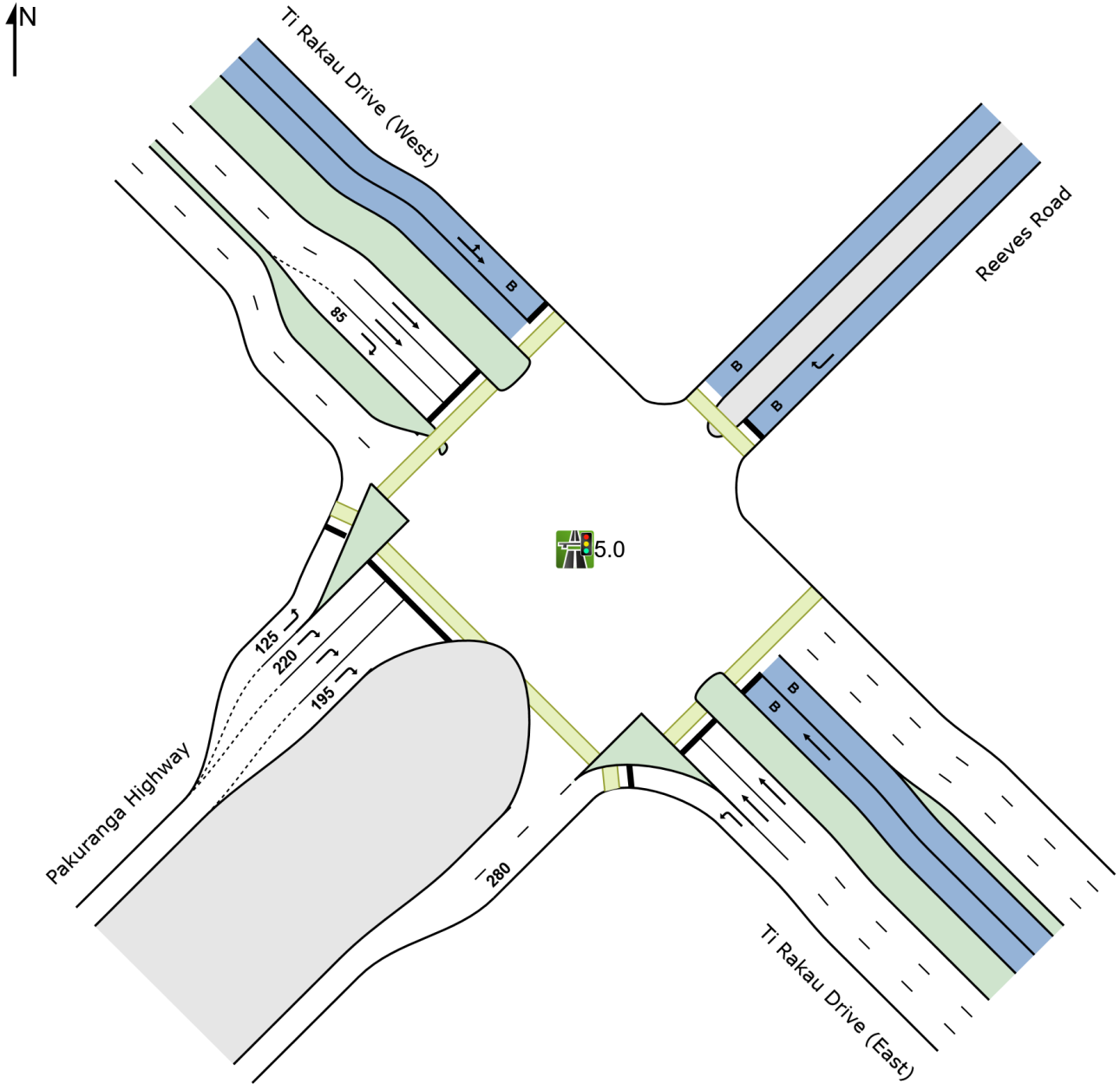
Project: C:\Users\jacques.vandenneever\Eastern Busway Alliance\PAA - 05 DESIGN MGMT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\Operational\2028 EB2-EB3R-Final-Xroads-PM.sip9

SITE LAYOUT

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

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

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 [PM - Continuous Lane & Phase & Single lane (Network Folder: General)]

Site Category: (None)

Single Point Interchange (Signals) - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 150 seconds (Site User-Given Phase Times)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]						[Veh]	[Dist m]				
SouthEast: Ti Rakau Drive (East)															
Lane 1	817	8.2	817	8.2	1420	0.575	100	9.7	LOS A	17.6 ^{N4}	131.5 ^{N4}	Full	90	0.0	50.0
Lane 2	432	7.2	432	7.2	482	0.896	100	58.5	LOS E	17.7 ^{N4}	131.5 ^{N4}	Full	90	-50.0 ^{N7}	50.0
Lane 3	432	7.2	432	7.2	482	0.896	100	58.5	LOS E	17.7 ^{N6}	131.5 ^{N6}	Full	90	-50.0 ^{N3}	50.0
Lane 4 (B)	13	100.0	13	100.0	279	0.047	100	34.1	LOS C	0.5	6.4	Full	90	0.0	0.0
Approach	1694	8.4	1694	8.4		0.896		34.8	LOS C	17.7	131.5				
NorthEast: Reeves Road															
Lane 1 (B)	9	100.0	9	100.0	190	0.047	100	44.5	LOS D	0.4	5.3	Full	50	0.0	0.0
Approach	9	100.0	9	100.0		0.047		44.5	LOS D	0.4	5.3				
NorthWest: Ti Rakau Drive (West)															
Lane 1 (B)	53	100.0	53	100.0	319	0.166	100	34.9	LOS C	2.0	25.5	Full	110	0.0	0.0
Lane 2	244	7.4	243	7.4	259	0.939	100	65.9	LOS E	14.2	105.6	Full	110	0.0	11.3
Lane 3	244	7.4	243	7.4	259	0.939	100	65.9	LOS E	14.2	105.6	Full	110	0.0	11.3
Lane 4	75	12.0	75	12.0	136	0.551	100	79.7	LOS E	4.9	38.1	Short	85	0.0	NA
Approach	615	15.9	615	15.9		0.939		64.9	LOS E	14.2	105.6				
SouthWest: Pakuranga Highway															
Lane 1	289	7.6	289	7.6	344	0.840	100	65.7	LOS E	20.0	149.2	Short	125	-50.0 ^{N7}	NA
Lane 2	376	7.5	376	7.5	451	0.833	100	70.1	LOS E	24.9	185.7	Short	220	0.0	NA
Lane 3	376	7.5	376	7.5	451	0.833	100	70.1	LOS E	24.9	185.7	Full	623	0.0	0.0
Lane 4	376	7.5	376	7.5	451	0.833	100	70.1	LOS E	24.9	185.7	Short	195	0.0	NA
Approach	1417	7.6	1417	7.6		0.840		69.2	LOS E	24.9	185.7				
Intersection	3735	9.5	3735	9.5		0.939		52.8	LOS D	24.9	185.7				

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.

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.

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)									
SouthEast: Ti Rakau Drive (East)									
Mov. From SE	L2	T1	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane

To Exit:	SW	NW				veh/h	v/c	%	%	No.
Lane 1	817	-	817	8.2		1420	0.575	100	NA	NA
Lane 2	-	432	432	7.2		482	0.896	100	NA	NA
Lane 3	-	432	432	7.2		482	0.896	100	NA	NA
Lane 4	-	13	13	100.0		279	0.047	100	NA	NA
Approach	817	877	1694	8.4			0.896			
NorthEast: Reeves Road										
Mov.	R2	Total	%HV			Cap.	Deg.	Lane	Prob.	Ov.
From NE						veh/h	Satn	Util.	SL	Lane
To Exit:	NW						v/c	%	%	No.
Lane 1	9	9	100.0			190	0.047	100	NA	NA
Approach	9	9	100.0				0.047			
NorthWest: Ti Rakau Drive (West)										
Mov.	L2	T1	R2	Total	%HV		Cap.	Deg.	Lane	Prob.
From NW							veh/h	Satn	Util.	SL
To Exit:	NE	SE	SW					v/c	%	%
Lane 1	28	25	-	53	100.0		319	0.166	100	NA
Lane 2	-	243	-	243	7.4		259	0.939	100	NA
Lane 3	-	243	-	243	7.4		259	0.939	100	NA
Lane 4	-	-	75	75	12.0		136	0.551	100	0.0
Approach	28	512	75	615	15.9			0.939		
SouthWest: Pakuranga Highway										
Mov.	L2	R2	Total	%HV			Cap.	Deg.	Lane	Prob.
From SW							veh/h	Satn	Util.	SL
To Exit:	NW	SE						v/c	%	%
Lane 1	289	-	289	7.6			344	0.840	100	31.2
Lane 2	-	376	376	7.5			451	0.833	100	0.0
Lane 3	-	376	376	7.5			451	0.833	100	NA
Lane 4	-	376	376	7.5			451	0.833	100	10.6
Approach	289	1128	1417	7.6				0.840		
Total %HV Deg.Satn (v/c)										
Intersection	3735	9.5						0.939		

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	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay Rate 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.
Full Length Lane	3										Merge Analysis not applied.
Full Length Lane	4										Merge Analysis not applied.
NorthEast Exit: Reeves Road											
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: Pakuranga Highway

Merge Type: **Zipper**

Exit Short Lane	1	280	50.0	37	40	2.50	2.00	817	1756	0.465	0.0	0.0
Merge Lane	2	-	50.0	408	425	2.50	2.00	75	1248	0.060	0.4	0.5

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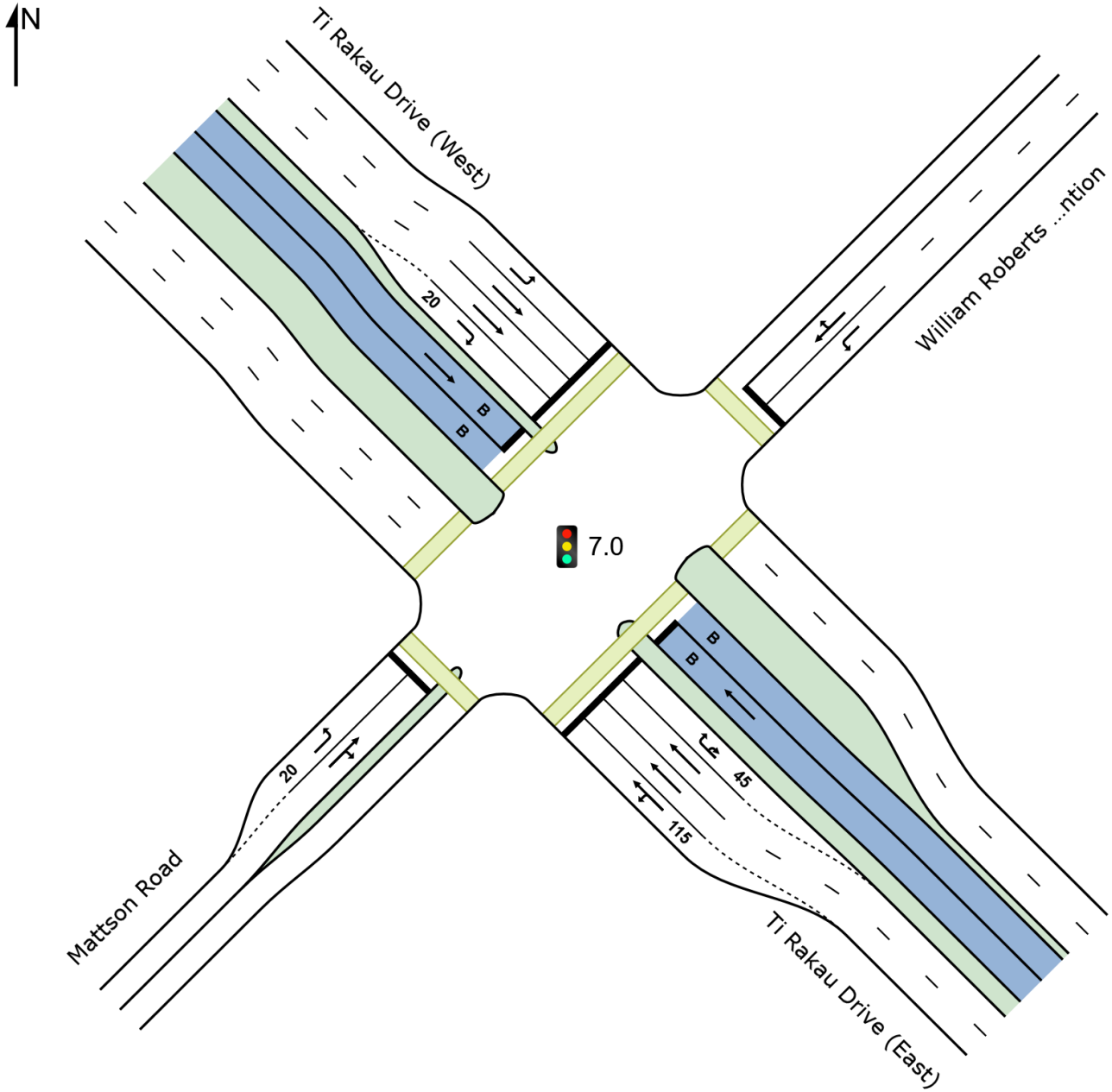
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SITE LAYOUT

**Site: 7.0 [7.0 William Roberts Rd/ Mattson Rd/ Ti Rakau Drive
(Site Folder: AM)]**

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

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



Lane 1	78	449	-	-	527	7.3	699	0.753	100	55.0	2
Lane 2	-	643	-	-	643	7.6	854 ¹	0.753	100	NA	NA
Lane 3	-	590	-	-	590	7.6	784 ¹	0.753	100	NA	NA
Lane 4	-	-	55	68	123	7.5	173	0.708	100	23.9	3
Lane 5	-	13	-	-	13	100.0	607	0.021	100	NA	NA
Approach	78	1695	55	68	1895	8.2		0.753			
NorthEast: William Roberts Road Extension											
Mov. From NE To Exit:	L2	T1	R2	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	SE	SW	NW								
Lane 1	115	-	-	115	7.8		160	0.717	100	NA	NA
Lane 2	-	36	84	120	7.5		163	0.735	100	NA	NA
Approach	115	36	84	235	7.7			0.735			
NorthWest: Ti Rakau Drive (West)											
Mov. From NW To Exit:	L2	T1	R2	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	NE	SE	SW								
Lane 1	330	-	-	330	7.9		525	0.629	100	NA	NA
Lane 2	-	665	-	665	7.4		941	0.707	100	NA	NA
Lane 3	-	638	-	638	7.4		903 ¹	0.707	100	NA	NA
Lane 4	-	-	28	28	7.1		205	0.136	100	0.0	3
Lane 5	-	25	-	25	100.0		607	0.041	100	NA	NA
Approach	330	1328	28	1686	8.9			0.707			
SouthWest: Mattson Road											
Mov. From SW To Exit:	L2	T1	R2	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
	NW	NE	SE								
Lane 1	10	-	-	10	0.0		93	0.108	100	0.0	2
Lane 2	-	30	26	56	3.6		93	0.602	100	NA	NA
Approach	10	30	26	66	3.0			0.602			
Total %HV Deg. Satn (v/c)											
Intersection	3882	8.4		0.753							

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 % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity 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.									
Full Length Lane	3		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.									

Full Length Lane	4	Merge Analysis not applied.
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SouthWest Exit: Mattson Road		
Merge Type: Not Applied		

Full Length Lane	1	Merge Analysis not applied.
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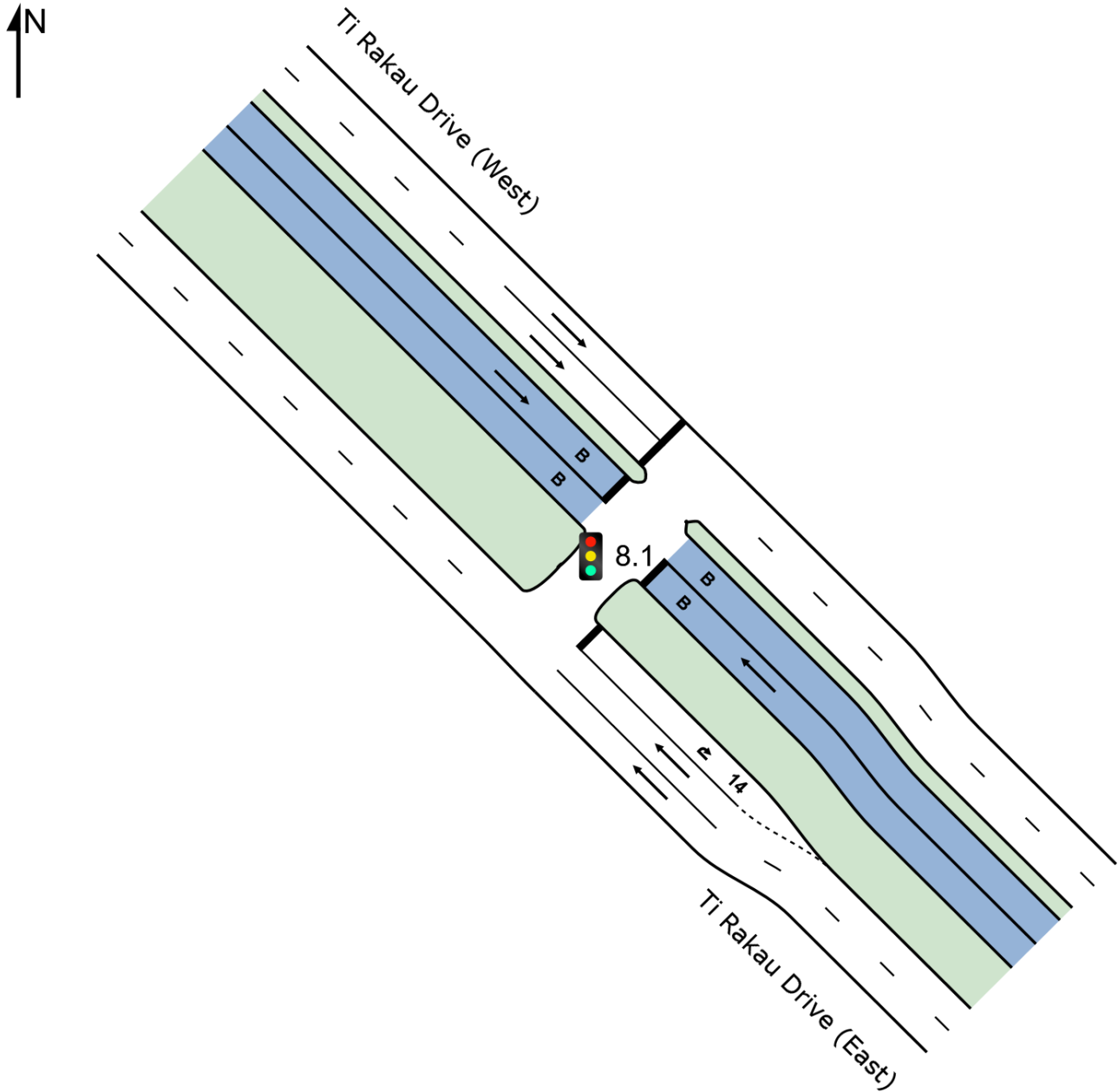
SITE LAYOUT

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

Network: N101 [PM - Continuous Lane & Phase & Single lane (Network Folder: General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 40 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]	veh/h	v/c	%	sec		[Veh]	[Dist]		m	%	%
SouthEast: Ti Rakau Drive (East)															
Lane 1	926	7.6	899	7.6	1848	0.486	100	0.1	LOS A	0.0	0.0	Full	147	0.0	0.0
Lane 2	926	7.6	899	7.6	1848	0.486	100	0.1	LOS A	0.0	0.0	Full	147	0.0	0.0
Lane 3	75	6.7	73	6.7	199	0.365	100	24.4	LOS C	1.3	9.4	Short	14	0.0	NA
Lane 4 (B)	13	100.0	13	100.0	657	0.020	100	0.2	LOS A	0.0	0.1	Full	147	0.0	0.0
Approach	1940	8.2	1884 ^N ₁	8.2		0.486		1.0	LOS A	1.3	9.4				
NorthWest: Ti Rakau Drive (West)															
Lane 1	726	7.4	726	7.4	1018	0.713	100	8.4	LOS A	10.3	76.6	Full	73	0.0	19.4
Lane 2	726	7.4	726	7.4	1018	0.713	100	8.4	LOS A	10.3	76.6	Full	73	0.0	19.4
Lane 3 (B)	25	100.0	25	100.0	657	0.038	100	0.2	LOS A	0.0	0.1	Full	73	0.0	0.0
Approach	1477	9.0	1477	9.0		0.713		8.3	LOS A	10.3	76.6				
Intersection	3417	8.5	3360 ^N ₁	8.7		0.713		4.2	LOS A	10.3	76.6				

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.

Approach Lane Flows (veh/h)										
SouthEast: Ti Rakau Drive (East)										
Mov.	T1	U	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane No.	
From SE To Exit:	NW	SE			veh/h	v/c	%	%		
Lane 1	899	-	899	7.6	1848	0.486	100	NA	NA	
Lane 2	899	-	899	7.6	1848	0.486	100	NA	NA	
Lane 3	-	73	73	6.7	199	0.365	100	0.0	2	
Lane 4	13	-	13	100.0	657	0.020	100	NA	NA	
Approach	1811	73	1884	8.2		0.486				
NorthWest: Ti Rakau Drive (West)										
Mov.	T1	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane No.		
From NW To Exit:	SE			veh/h	v/c	%	%			
Lane 1	726	726	7.4	1018	0.713	100	NA	NA		
Lane 2	726	726	7.4	1018	0.713	100	NA	NA		
Lane 3	25	25	100.0	657	0.038	100	NA	NA		
Approach	1477	1477	9.0		0.713					

	Total	%HV	Deg.Satn (v/c)
Intersection	3360	8.7	0.713

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

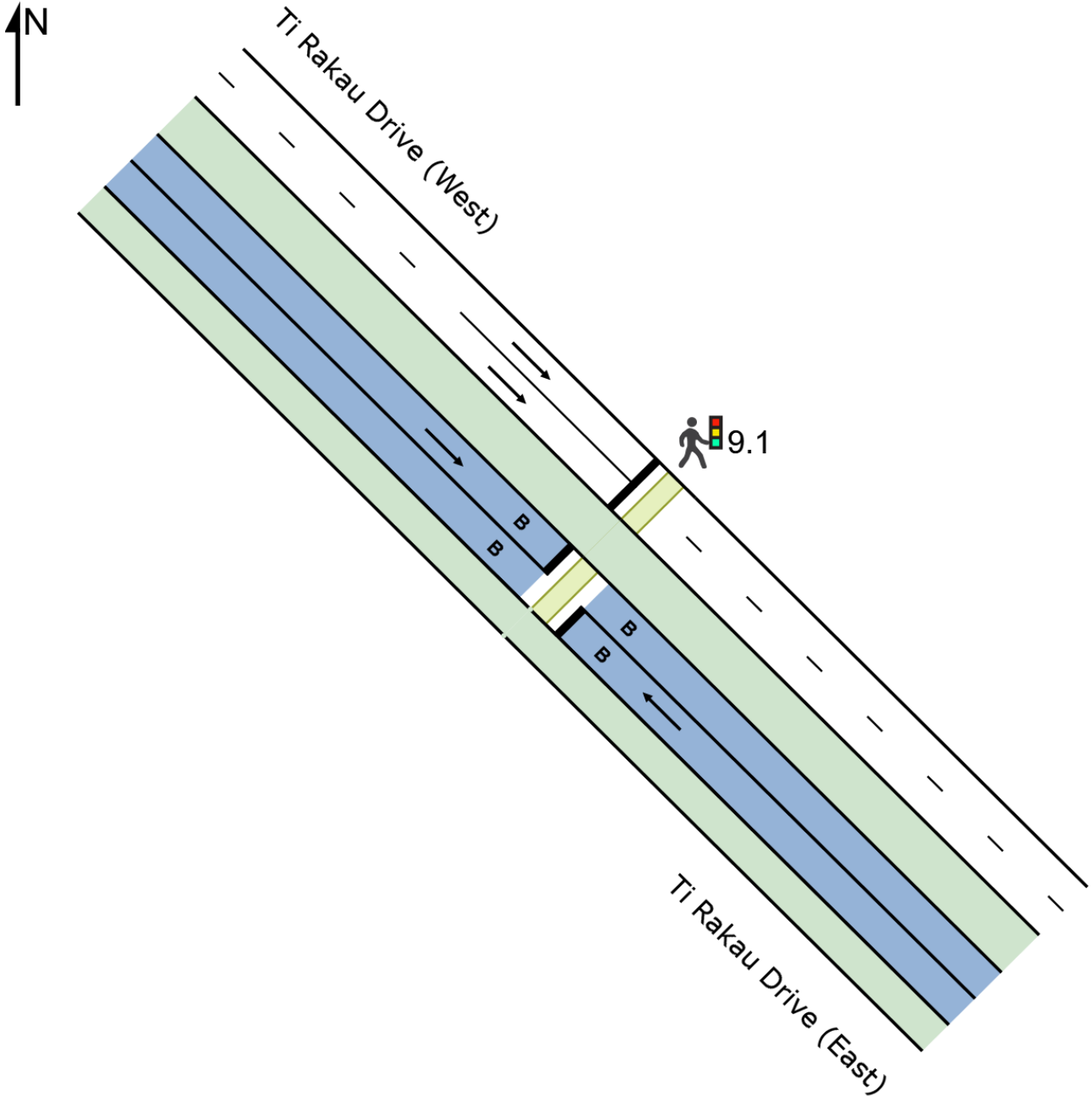
Merge Analysis											
	Exit Lane Number	Short Lane Length m	Percent Opng in Lane % veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Rakau Drive (East)											
Merge Type: Not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

SITE LAYOUT

 Site: 9.1 [9.1 Staggered Crossing - East of Marriot Rd (Site Folder: AM)]

Site Category: (None)
Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Coordinated

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



LANE SUMMARY

 Site: 9.1 [9.1 Staggered Crossing - East of Marriot Rd (Site Folder: AM)]

 Network: N101 [PM - Continuous Lane & Phase & Single lane (Network Folder: General)]

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 50 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]						[Veh]	[Dist m]				
SouthEast: Ti Rakau Drive (East)															
Lane 1 (B)	13	100.0	13	100.0	433	0.030	100	4.2	LOS A	0.1	0.9	Full	45	0.0	0.0
Approach	13	100.0	13	100.0		0.030		4.2	LOS A	0.1	0.9				
NorthWest: Ti Rakau Drive (West)															
Lane 1	741	7.6	740	7.6	952	0.777	100	12.9	LOS B	2.4 ^{N4}	17.5 ^{N4}	Full	12	0.0	50.0
Lane 2	741	7.6	740	7.6	952	0.777	100	12.9	LOS B	2.4 ^{N4}	17.5 ^{N4}	Full	12	0.0	50.0
Lane 3 (B)	25	100.0	25	100.0	433	0.058	100	4.2	LOS A	0.1	1.8	Full	12	0.0	0.0
Approach	1506	9.1	1506	9.1		0.777		12.8	LOS B	2.4	17.5				
Intersection	1519	9.9	1519	9.9		0.777		12.7	LOS B	2.4	17.5				

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.

^{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:	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Prob. Ov. %	Ov. Lane No.
Lane 1	13	13	100.0	433	0.030	100	NA	NA	NA
Approach	13	13	100.0		0.030				
NorthWest: Ti Rakau Drive (West)									
Mov. From NW To Exit:	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL %	Prob. Ov. %	Ov. Lane No.
Lane 1	740	740	7.6	952	0.777	100	NA	NA	NA
Lane 2	740	740	7.6	952	0.777	100	NA	NA	NA
Lane 3	25	25	100.0	433	0.058	100	NA	NA	NA
Approach	1506	1506	9.1		0.777				
Total %HV Deg. Satn (v/c)									
Intersection	1519	9.9			0.777				

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	Critical Gap sec	Follow-up Headway sec	Lane Capacity Flow Rate 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.									
Full Length Lane	3	Merge Analysis not applied.									
NorthWest Exit: Ti Rakau Drive (West)											
Merge Type: Not Applied											
Full Length Lane	1	Merge Analysis not applied.									

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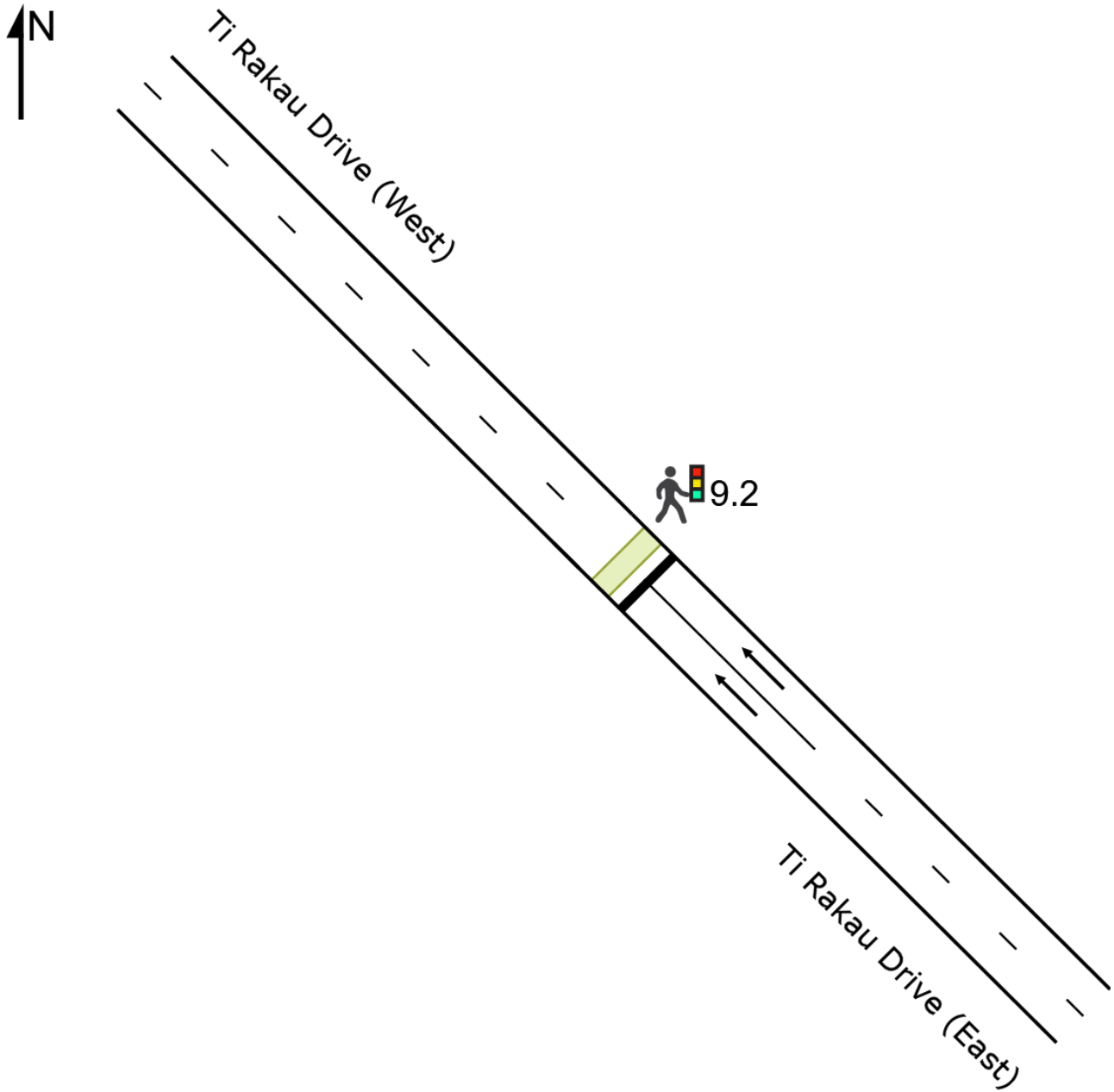
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 Project: C:\Users\jacques.vandenheever\Eastern Busway Alliance\PAA - 05 DESIGN MGMNT\12 Transport\3-3. Integrated Transport Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\Operational\2028 EB2-EB3R-Final-Xroads-PM.sip9

SITE LAYOUT

 Site: 9.2 [9.2 Staggered Crossing - East of Marriot Rd (Site Folder: AM)]

Site Category: (None)
Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated

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



LANE SUMMARY

 Site: 9.2 [9.2 Staggered Crossing - East of Marriot Rd (Site Folder: AM)]

 Network: N101 [PM - Continous Lane & Phase & Single lane (Network Folder: General)]

Site Category: (None)

Pedestrian Crossing (Signalised) - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 60 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]						[Veh]	[Dist m]				
SouthEast: Ti Rakau Drive (East)															
Lane 1	957	7.6	890	7.6	1087	0.819	100	16.6	LOS B	8.8 ^{N4}	65.8 ^{N4}	Full	45	0.0	50.0
Lane 2	957	7.6	890	7.6	1087	0.819	100	16.6	LOS B	8.8 ^{N4}	65.8 ^{N4}	Full	45	0.0	50.0
Approach	1914	7.6	1780 ^{N1}	7.6		0.819		16.6	LOS B	8.8	65.8				
Intersection	1914	7.6	1780 ^{N1}	8.1		0.819		16.6	LOS B	8.8	65.8				

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.

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.

^{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:	T1	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	890	890	7.6	1087	0.819	100	NA	NA	
Lane 2	890	890	7.6	1087	0.819	100	NA	NA	
Approach	1780	1780	7.6		0.819				
Total %HV Deg. Satn (v/c)									
Intersection	1780		8.1		0.819				

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	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	
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.

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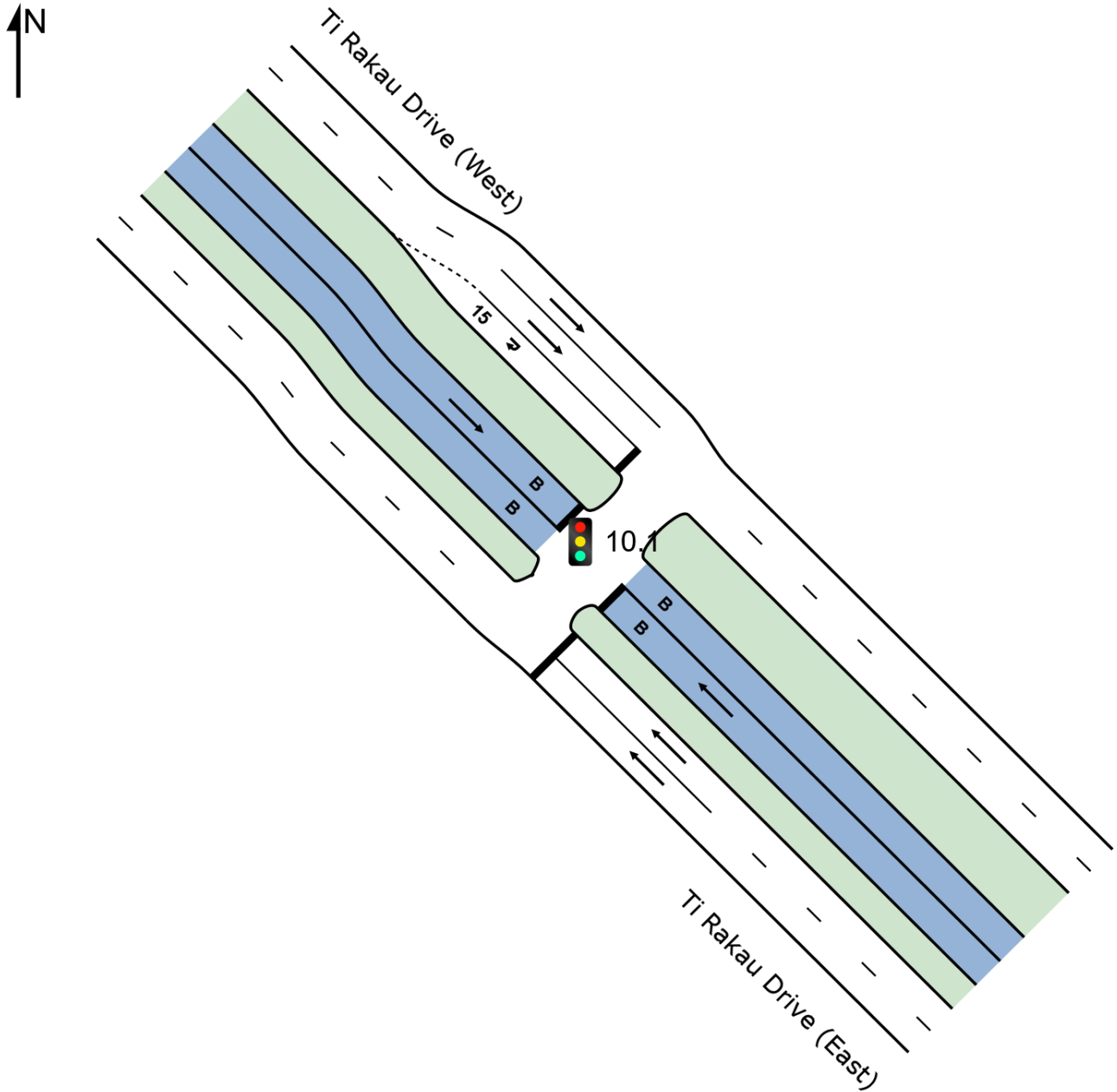
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SITE LAYOUT

Site: 10.1 [10.1 U-turn - East of Edgewater Dr (West) (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: 10.1 [10.1 U-turn - East of Edgewater Dr (West) (Site Folder: AM)]

Network: N101 [PM - Continous Lane & Phase & Single lane (Network Folder: General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 50 seconds (Site Practical Cycle Time)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
	[Total veh/h	HV %	[Total veh/h	HV %						[Veh	Dist] m				
SouthEast: Ti Rakau Drive (East)															
Lane 1	1023	7.6	1016	7.6	1161	0.875	100	18.1	LOS B	12.5 ^{N4}	93.5 ^{N4}	Full	64	-1.9 ^{N7}	50.0
Lane 2	868	7.6	863	7.6	986	0.875	100	19.8	LOS B	12.5 ^{N4}	93.5 ^{N4}	Full	64	-16.7 ^{N7}	50.0
Lane 3 (B)	13	100.0	13	100.0	764	0.017	100	0.2	LOS A	0.0	0.1	Full	64	0.0	0.0
Approach	1904	8.2	1892 ^{N1}	8.2		0.875		18.8	LOS B	12.5	93.5				
NorthWest: Ti Rakau Drive (West)															
Lane 1	694	7.9	694	7.9	1846	0.376	100	0.0	LOS A	0.0	0.0	Full	81	0.0	0.0
Lane 2	694	7.9	694	7.9	1846	0.376	100	0.0	LOS A	0.0	0.0	Full	81	0.0	0.0
Lane 3	97	3.1	97	3.1	136	0.714	100	33.8	LOS C	2.4	17.5	Short	15	-16.7 ^{N7}	NA
Lane 4 (B)	25	100.0	25	100.0	764	0.033	100	0.2	LOS A	0.0	0.1	Full	81	0.0	0.0
Approach	1509	9.1	1509	9.1		0.714		2.2	LOS A	2.4	17.5				
Intersection	3413	8.6	3401 ^{N1}	8.6		0.875		11.4	LOS B	12.5	93.5				

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.

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:	T1	Total	%HV		Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.		
	NW									
Lane 1	1016	1016	7.6		1161	0.875	100	NA	NA	
Lane 2	863	863	7.6		986	0.875	100	NA	NA	
Lane 3	13	13	100.0		764	0.017	100	NA	NA	
Approach	1892	1892	8.2			0.875				
NorthWest: Ti Rakau Drive (West)										
Mov. From NW To Exit:	T1	U	Total	%HV	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.		
	SE	NW								
Lane 1	694	-	694	7.9	1846	0.376	100	NA	NA	
Lane 2	694	-	694	7.9	1846	0.376	100	NA	NA	
Lane 3	-	97	97	3.1	136	0.714	100	29.1	2	
Lane 4	25	-	25	100.0	764	0.033	100	NA	NA	

Approach	1412	97	1509	9.1	0.714
Total %HV Deg.Satn (v/c)					
Intersection	3401	8.6		0.875	

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 % 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.
Full Length Lane	3										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.

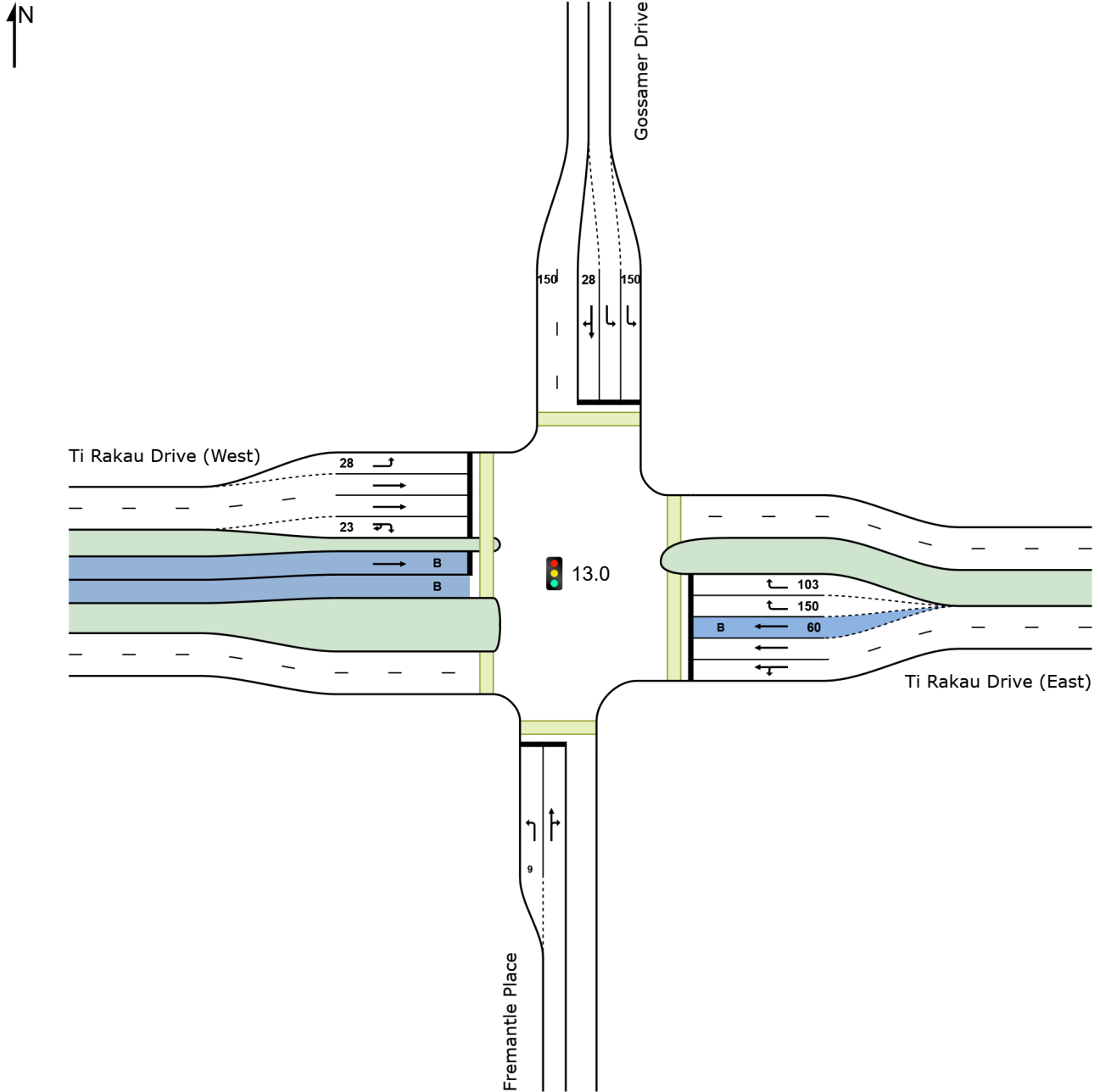
SITE LAYOUT

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

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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Assessment\ITA 2 - EB2,3R\Version 9 (Addendum)\AIMSUN and SIDRA\Operational\2028 EB2-EB3R-Final-Xroads-PM.sip9

LANE SUMMARY

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

Network: N101 [PM - Continuous Lane & Phase & Single lane (Network Folder: General)]

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 160 seconds (Site User-Given Phase Times)

Lane Use and Performance															
	DEMAND FLOWS		ARRIVAL FLOWS		Cap.	Deg. Satn	Lane Util.	Aver. Delay	Level of Service	85% BACK OF QUEUE		Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[Total veh/h]	[HV %]	[Total veh/h]	[HV %]	veh/h	v/c	%	sec		[Veh]	[Dist]		m	%	%
South: Fremantle Place															
Lane 1	10	0.0	10	0.0	27	0.369	100	98.3	LOS F	0.8	5.5	Short	9	-19.1 ^{N7}	NA
Lane 2	24	4.2	24	4.2	88	0.272	100	87.2	LOS F	1.7	12.3	Full	285	0.0	0.0
Approach	34	2.9	34	2.9		0.369		90.5	LOS F	1.7	12.3				
East: Ti Rakau Drive (East)															
Lane 1	874	7.6	874	7.6	892	0.980	100	74.1	LOS E	69.3	516.7	Full	636	-18.7 ^{N7}	0.0
Lane 2	955	7.6	955	7.6	974 ¹	0.980	100	70.0	LOS E	72.6	541.8	Full	636	-10.6 ^{N7}	0.5
Lane 3 (B)	13	100.0	13	100.0	272	0.048	100	37.8	LOS D	0.5	7.1	Short	60	0.0	NA
Lane 4	210	5.6	210	5.6	180	1.168	82 ⁶	242.5	LOS F	28.1	206.3	Short	150	0.0	NA
Lane 5	257	5.6	257	5.6	180	1.425	100	456.9	LOS F	48.0	351.7	Short	103	0.0	NA
Approach	2309	7.7	2309	7.7		1.425		130.1	LOS F	72.6	541.8				
North: Gossamer Drive															
Lane 1	200	8.7	200	8.7	257	0.779	100	67.7	LOS E	11.2	84.4	Short	150	0.0	NA
Lane 2	202	8.7	202	8.7	259	0.779	100	67.6	LOS E	11.3	85.2	Full	1010	0.0	0.0
Lane 3	101	5.0	101	5.0	78	1.292	100	346.1	LOS F	16.4	119.3	Short	28	-9.0 ^{N7}	NA
Approach	503	8.0	503	8.0		1.292		123.6	LOS F	16.4	119.3				
West: Ti Rakau Drive (West)															
Lane 1	126	4.8	126	4.8	959	0.131	100	12.6	LOS B	2.2	15.8	Short	28	0.0	NA
Lane 2	594	8.1	594	8.1	529 ¹	1.123	100	199.7	LOS F	76.2	570.3	Full	479	0.0	30.9
Lane 3	641	8.1	641	8.1	571 ¹	1.123	100	198.3	LOS F	81.9	613.1	Full	479	0.0	37.6
Lane 4	53	7.5	53	7.5	140	0.378	100	78.3	LOS E	3.6	26.7	Short	23	0.0	NA
Lane 5 (B)	25	100.0	25	100.0	276	0.091	100	38.3	LOS D	1.1	13.9	Full	479	0.0	0.0
Approach	1439	9.4	1439	9.4		1.123		175.4	LOS F	81.9	613.1				
Intersection	4285	8.3	4285	8.3		1.425		144.2	LOS F	81.9	613.1				

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.
- 6 Lane under-utilisation due to downstream effects
- 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: Fremantle Place									
Mov.	L2	T1	R2	Total	%HV	Deg.	Lane	Prob.	Ov.

From S To Exit:	W	N	E			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.	
Lane 1	10	-	-	10	0.0	27	0.369	100	0.0	2	
Lane 2	-	10	14	24	4.2	88	0.272	100	NA	NA	
Approach	10	10	14	34	2.9		0.369				
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	23	851	-	874	7.6	892	0.980	100	NA	NA	
Lane 2	-	955	-	955	7.6	974 ¹	0.980	100	NA	NA	
Lane 3	-	13	-	13	100.0	272	0.048	100	0.0	2	
Lane 4	-	-	210	210	5.6	180	1.168	82 ⁶	95.8	2	
Lane 5	-	-	257	257	5.6	180	1.425	100	100.0	4	
Approach	23	1819	467	2309	7.7		1.425				
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	200	-	-	200	8.7	257	0.779	100	0.0	2	
Lane 2	202	-	-	202	8.7	259	0.779	100	NA	NA	
Lane 3	-	17	84	101	5.0	78	1.292	100	100.0	2	
Approach	402	17	84	503	8.0		1.292				
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	126	-	-	-	126	4.8	959	0.131	100	0.0	2
Lane 2	-	594	-	-	594	8.1	529 ¹	1.123	100	NA	NA
Lane 3	-	641	-	-	641	8.1	571 ¹	1.123	100	NA	NA
Lane 4	-	-	10	43	53	7.5	140	0.378	100	28.5	3
Lane 5	-	25	-	-	25	100.0	276	0.091	100	NA	NA
Approach	126	1260	10	43	1439	9.4		1.123			
Total %HV Deg. Satn (v/c)											
Intersection	4285	8.3		1.425							

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	pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Capacity 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	150	50.0	90	93	2.50	2.00	316	1695	0.186	0.0	0.0
Merge Lane	2	-	50.0	158	162	2.50	2.00	180	1611	0.112	0.0	0.1
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.										
Full Length Lane	3	Merge Analysis not applied.										

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