

# **Appendix D**

**Construction Scenario 1 – Phasing Diagrams** 

## Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder:

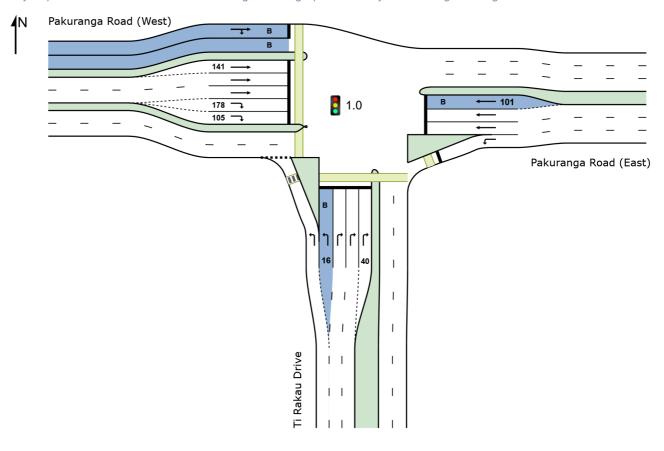
General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated

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Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder:

**■■** Network: N101 General)] [Construction 1 (Network Folder: AM)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

**Phase Sequence: Map Extract Default** 

Reference Phase: Phase A

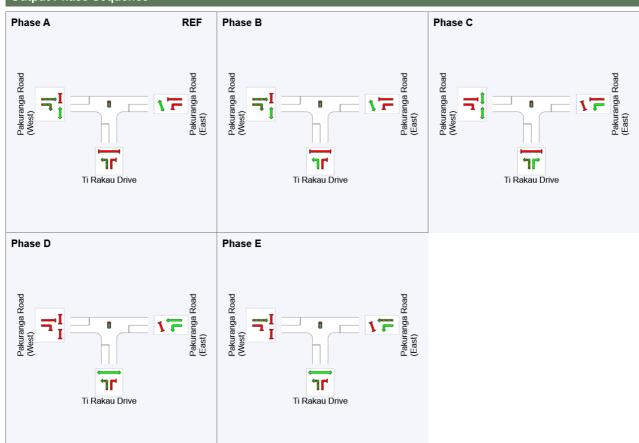
Input Phase Sequence: A, B, C, D, E Output Phase Sequence: A, B, C, D, E

### Phase Timing Summary

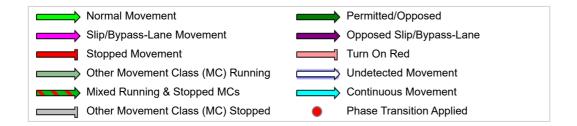
Phase	Α	В	С	D	E
Phase Change Time (sec)	0	23	35	64	78
Green Time (sec)	17	6	23	8	46
Phase Time (sec)	23	12	29	14	52
Phase Split	18%	9%	22%	11%	40%

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

### **Output Phase Sequence**



**REF: Reference Phase** VAR: Variable Phase



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Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder:

**■■** Network: N101 General)] [Construction 1 (Network

Folder: PM)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 70 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

**Phase Sequence: Map Extract Default** 

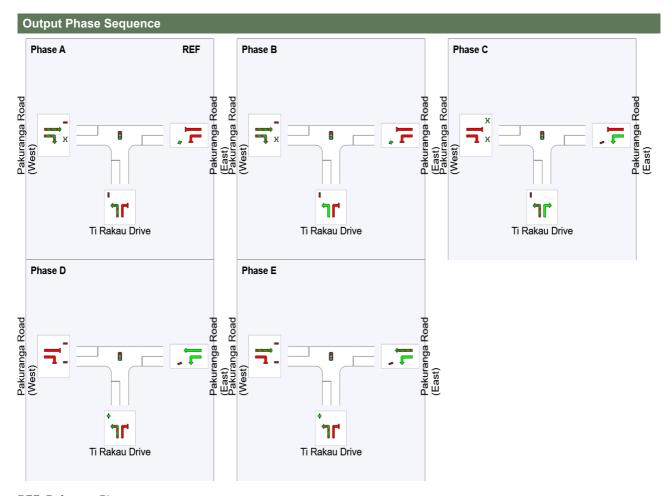
Reference Phase: Phase A

Input Phase Sequence: A, B, C, D, E Output Phase Sequence: A, B, C, D, E

### **Phase Timing Summary**

Phase	Α	В	С	D	Е
Phase Change Time (sec)	0	13	25	47	59
Green Time (sec)	7	6	16	6	5
Phase Time (sec)	13	12	22	12	11
Phase Split	19%	17%	31%	17%	16%

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



REF: Reference Phase VAR: Variable Phase



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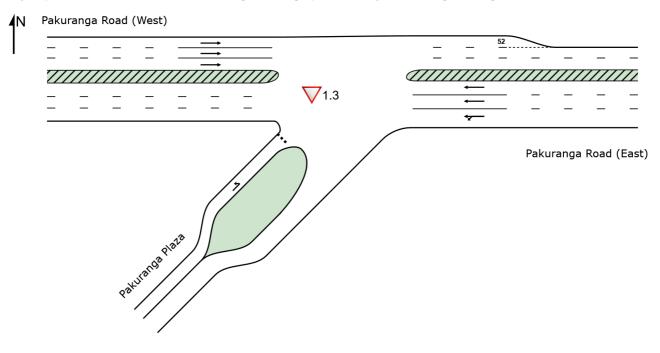
## V Site: 1.3 [1.3 Mall/ Pakuranga Rd WR Closure (Site Folder:

General)]

New Site

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

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

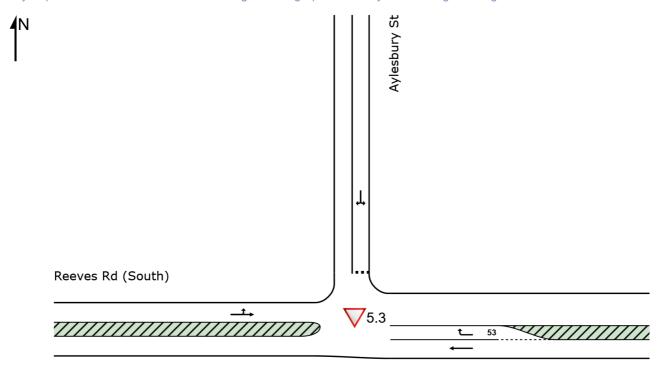


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## V Site: 5.3 [5.3 Reeves Rd/ Aylesbury St (Site Folder: General)]

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

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Reeves Rd (North)

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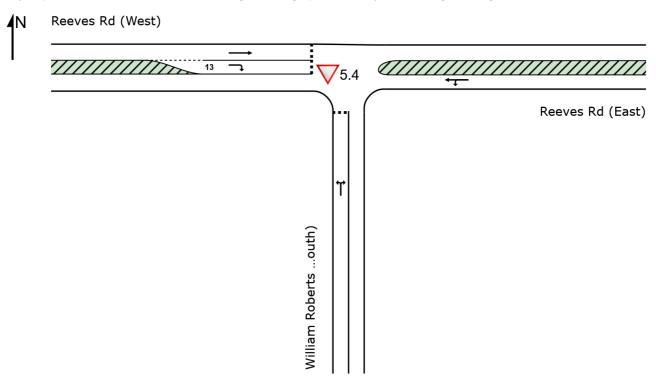
## V Site: 5.4 [5.4 Reeves Rd / William Roberts Rd WR Closure C

(Site Folder: General)]

New Site

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

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

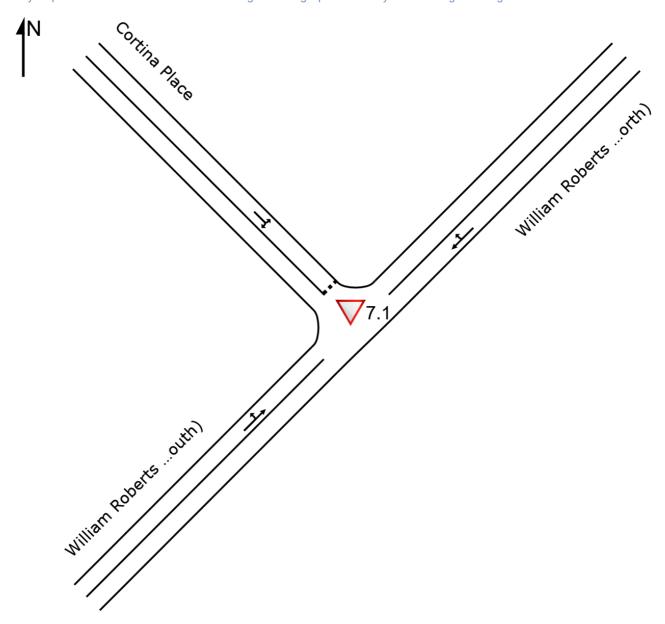


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V Site: 7.1 [7.1 William Roberts Rd / Cortina PI WR Closure

(Site Folder: General)]

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

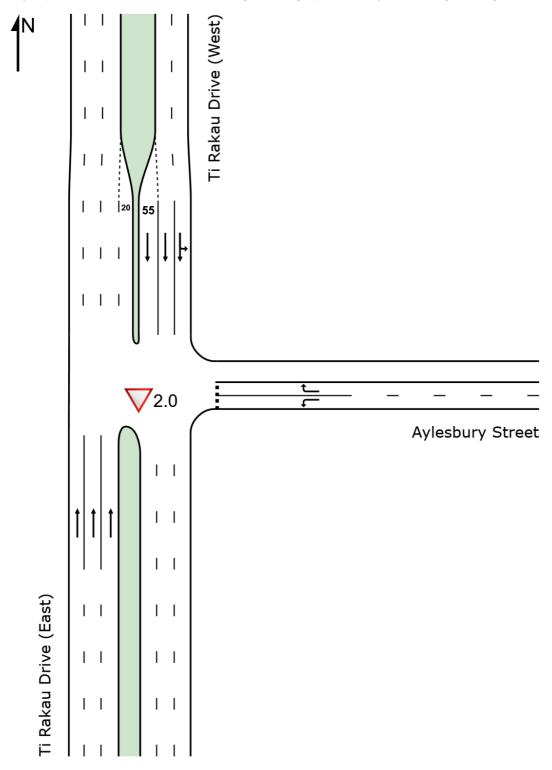


## V Site: 2.0 [2.0 Aylesbury St North/Ti Rakau Dr (Site Folder:

General)]

New Site

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

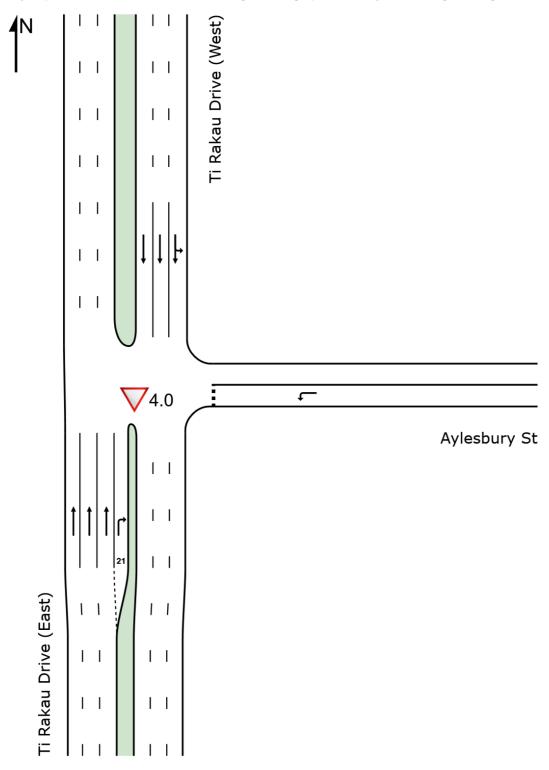


## **▽** Site: 4.0 [4.0 Aylesbury St South/ Ti Rakau Dr (Site Folder:

General)]

New Site

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



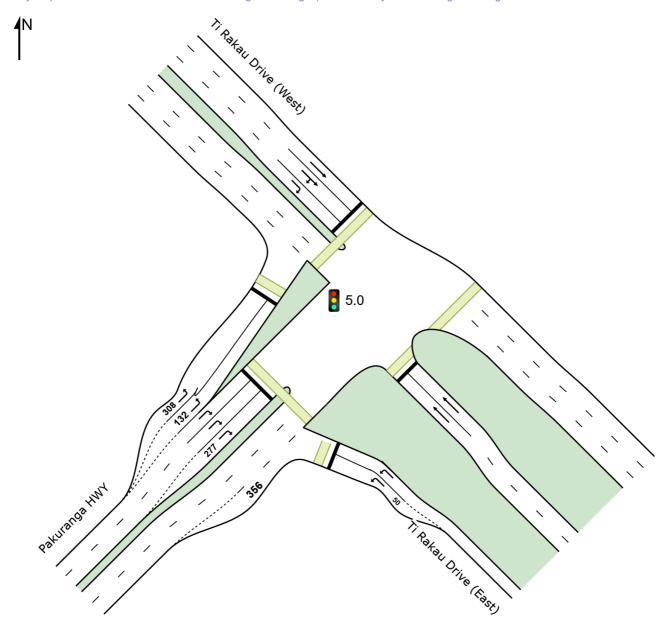
Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd Mitigation 1 C (Site

Folder: General)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated



Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd Mitigation 1 C (Site

■ Network: N101 Folder: General)1 [Construction 1 (Network Folder: AM)]

New Site

Site Category: (None)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user Phase Sequence: Map Extract Default Reference Phase: Phase A

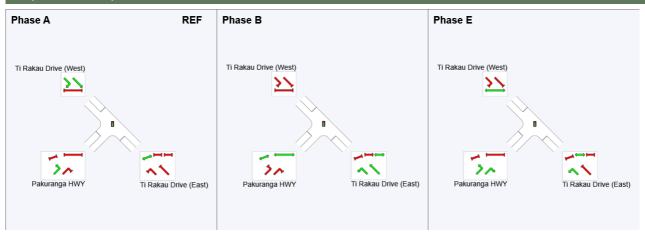
Input Phase Sequence: A, B, E Output Phase Sequence: A, B, E

#### **Phase Timing Summary**

Phase	Α	В	E
Phase Change Time (sec)	0	23	48
Green Time (sec)	20	19	12
Phase Time (sec)	26	24	15
Phase Split	40%	37%	23%

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

#### **Output Phase Sequence**



REF: Reference Phase VAR: Variable Phase



Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd Mitigation 1 C (Site

■ Network: N101 Folder: General)1 [Construction 1 (Network Folder: PM)]

New Site

Site Category: (None)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

**Phase Sequence: Map Extract Default** 

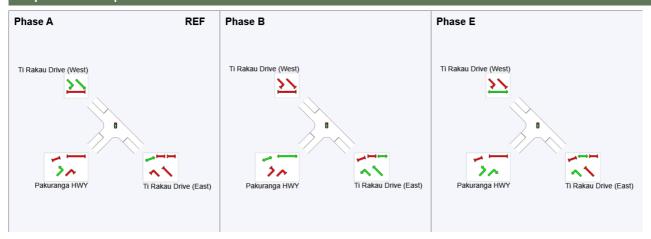
Reference Phase: Phase A Input Phase Sequence: A, B, E Output Phase Sequence: A, B, E

#### **Phase Timing Summary**

Phase	Α	В	E
Phase Change Time (sec)	0	14	28
Green Time (sec)	8	8	6
Phase Time (sec)	14	14	12
Phase Split	35%	35%	30%

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

### **Output Phase Sequence**



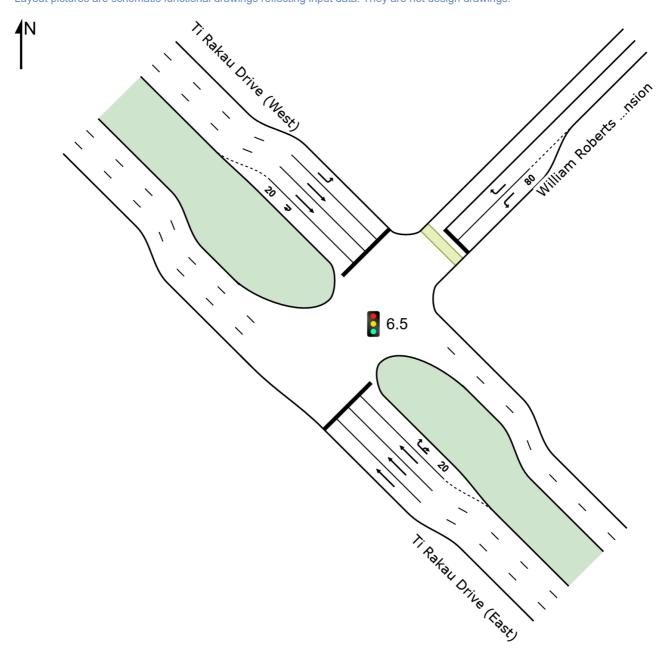
REF: Reference Phase VAR: Variable Phase



## Site: 6.5 [6.5 William Roberts Rd / Ti Rakau Dr C (Site Folder:

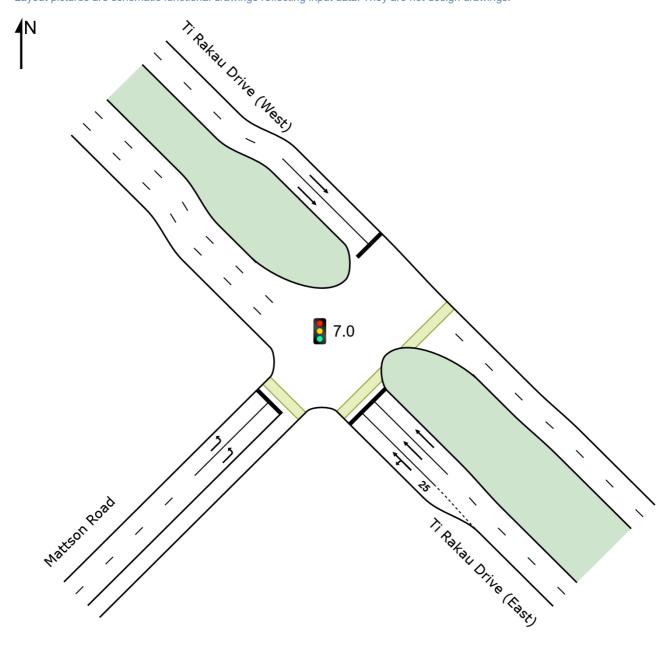
General)]

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



## Site: 7.0 [7.0 Mattson Rd/ Ti Rakau Dr C (Site Folder: General)]

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



### **CCG PHASING SUMMARY**

□□ Common Control Group: CCG1 [WR/ Mattson]

■■ Network: N101 [Construction 1 (Network

Folder: AM)]

Timings based on settings in the Network Timing dialog Phase Times specified by the user Phase Sequence: CCG Phasing Reference Phase: Phase A

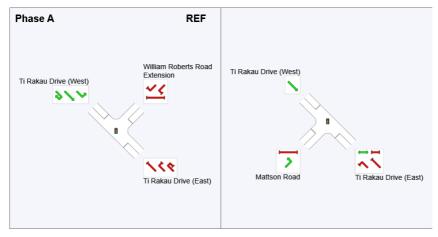
Input Phase Sequence: A, A2, B, B2, C Output Phase Sequence: A, A2, B, B2, C

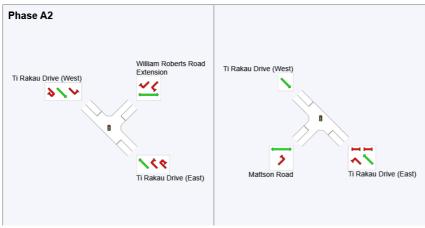
### **Phase Timing Summary (CCG)**

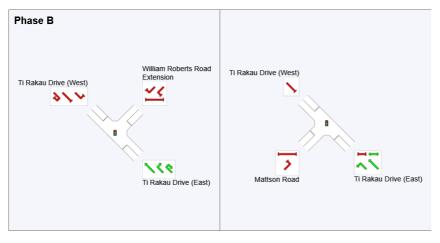
Phase	Α	A2	В	B2	С
Phase Change Time (sec)	0	18	43	82	101
Green Time (sec)	12	19	33	13	24
Phase Time (sec)	18	25	39	19	30
Phase Split	14%	19%	30%	15%	23%

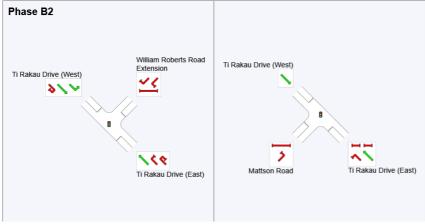
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

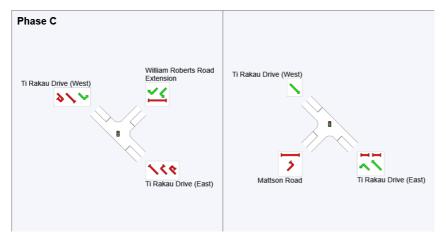
#### **Output Phase Sequence (CCG)**











REF: Reference Phase VAR: Variable Phase



### **CCG PHASING SUMMARY**

□□ Common Control Group: CCG1 [WR/ Mattson]

■■ Network: N101 [Construction 1 (Network

Folder: PM)]

Timings based on settings in the Network Timing dialog Phase Times specified by the user Phase Sequence: CCG Phasing Reference Phase: Phase A

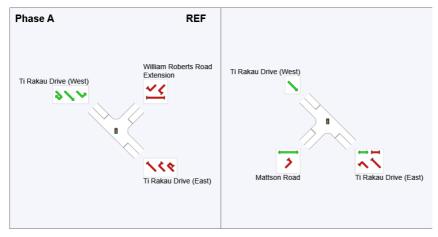
Input Phase Sequence: A, A2, B, B2, C Output Phase Sequence: A, A2, B, B2, C

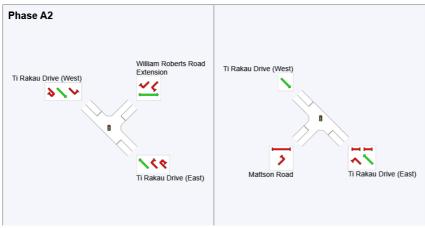
### **Phase Timing Summary (CCG)**

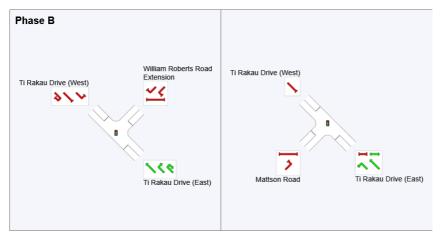
Phase	Α	A2	В	B2	С
Phase Change Time (sec)	0	46	70	95	118
Green Time (sec)	40	18	19	17	26
Phase Time (sec)	46	24	25	23	32
Phase Split	31%	16%	17%	15%	21%

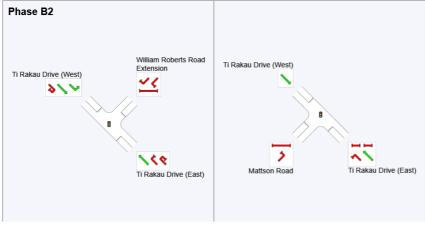
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

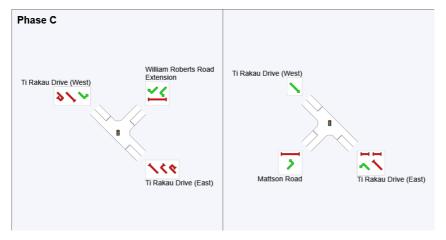
#### **Output Phase Sequence (CCG)**











REF: Reference Phase VAR: Variable Phase

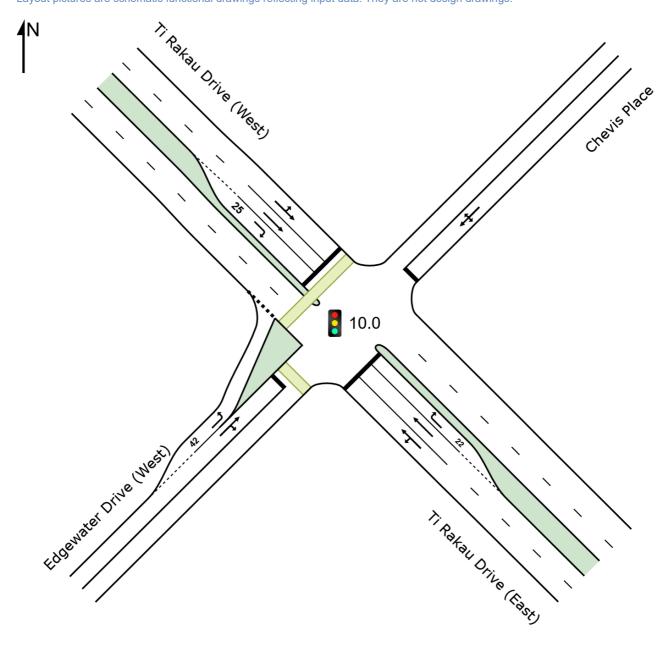


## Site: 10.0 [10.0 Edgewater Dr (West) / Chevis PI (Site Folder:

General)]

New Site

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



Site: 10.0 [10.0 Edgewater Dr (West) / Chevis PI (Site Folder: General)]

[Construction 1 (Network

Folder: AM)]

■■ Network: N101

New Site

Site Category: (None)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Variable Phasing Reference Phase: Phase A

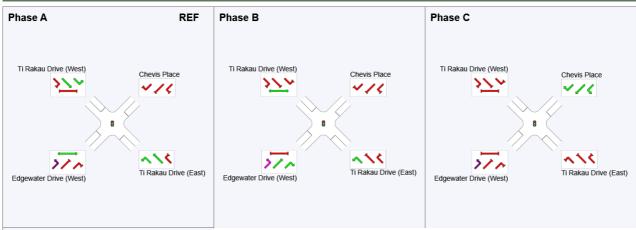
Input Phase Sequence: A, B, C, D
Output Phase Sequence: A, B, C, D

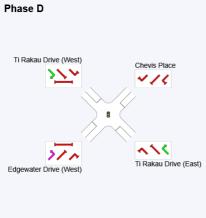
### **Phase Timing Summary**

Phase	Α	В	С	D
Phase Change Time (sec)	0	46	66	78
Green Time (sec)	40	14	6	6
Phase Time (sec)	46	20	12	12
Phase Split	51%	22%	13%	13%

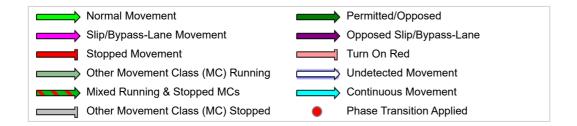
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

### **Output Phase Sequence**





REF: Reference Phase VAR: Variable Phase



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Site: 10.0 [10.0 Edgewater Dr (West) / Chevis PI (Site Folder: General)]

[Construction 1 (Network

Folder: PM)]

■■ Network: N101

New Site

Site Category: (None)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

Phase Sequence: Variable Phasing

Reference Phase: Phase A

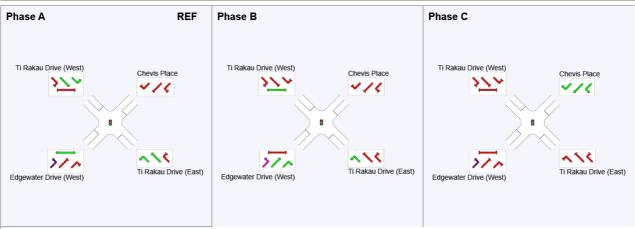
Input Phase Sequence: A, B, C, D Output Phase Sequence: A, B, C, D

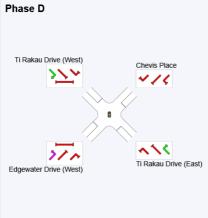
### **Phase Timing Summary**

Phase	Α	В	С	D
Phase Change Time (sec)	0	55	76	88
Green Time (sec)	49	15	6	6
Phase Time (sec)	55	21	12	12
Phase Split	55%	21%	12%	12%

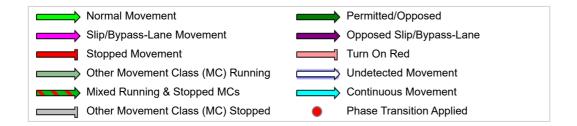
See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified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

## Output Phase Sequence





REF: Reference Phase VAR: Variable Phase



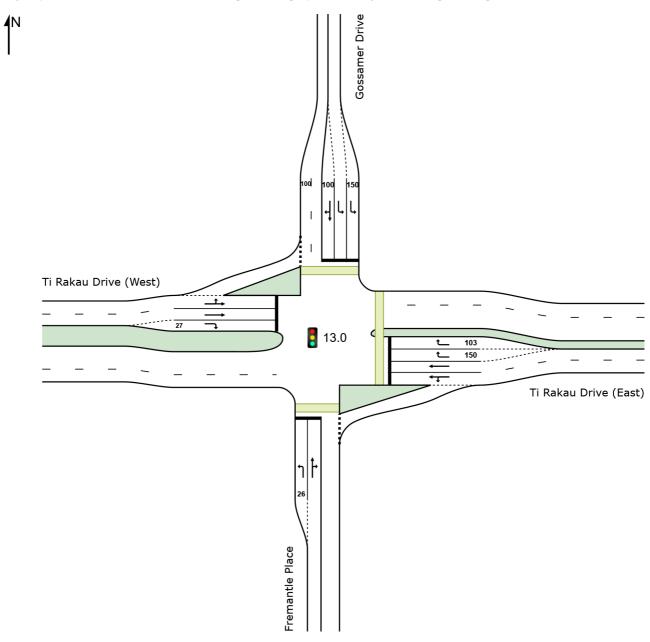
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## Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr Mitigation 2 (Site

Folder: General)]

Scheme Design

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



Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr Mitigation 2 (Site

■■ Network: N101 Folder: General)] [Construction 1 (Network

Folder: AM)]

Scheme Design Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site Practical Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times determined by the program

Downstream lane blockage effects included in determining phase times

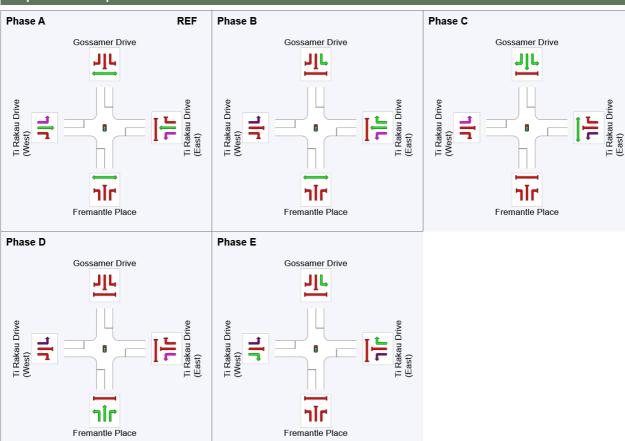
Green Split Priority has been specified Phase Sequence: Variable Phasing Reference Phase: Phase A Input Phase Sequence: A, B, C, D, E Output Phase Sequence: A, B, C, D, E

#### **Phase Timing Summary**

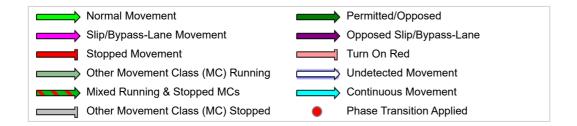
Phase	Α	В	С	D	Е
Phase Change Time (sec)	0	39	56	81	93
Green Time (sec)	33	11	19	6	11
Phase Time (sec)	39	17	25	12	17
Phase Split	35%	15%	23%	11%	15%

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

#### **Output Phase Sequence**



REF: Reference Phase VAR: Variable Phase



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Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr Mitigation 2 (Site

**■■** Network: N101 Folder: General)] [Construction 1 (Network

Folder: PM)]

Scheme Design Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 154 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog

Phase Times specified by the user Phase Sequence: Variable Phasing

Reference Phase: Phase A

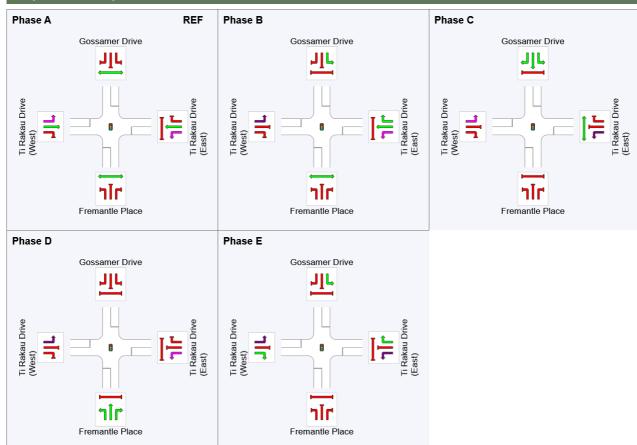
Input Phase Sequence: A, B, C, D, E Output Phase Sequence: A, B, C, D, E

#### **Phase Timing Summary**

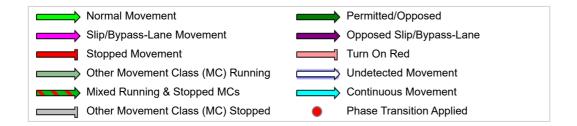
Phase	Α	В	С	D	E
Phase Change Time (sec)	0	50	90	119	134
Green Time (sec)	44	34	23	10	14
Phase Time (sec)	50	40	28	16	20
Phase Split	32%	26%	18%	10%	13%

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

#### **Output Phase Sequence**



REF: Reference Phase VAR: Variable Phase



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# **Appendix E**

**Construction Scenario 1 – Lane performance Summaries** 

### LANE SUMMARY

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder:

**■■** Network: N101 General)] [Construction 1 (Network Folder: AM)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 130 seconds (Site Practical Cycle Time)

Lane Use	and P	erforn	nance												
	DEM			IVAL	Сар.	Deg.	Lane		Level of		ACK OF	Lane	Lane	Сар.	Prob.
	FLC Total	WS HV1	FLC Total	WS HV 1	Сар.	Satn	Util.	Delay	Service	QUI [Veh	EUE Dist ]	Config	Length	Adj.	Block.
	veh/h	%	veh/h	%	veh/h	v/c	%	sec		[ 10	m		m	%	%
South: Ti R	akau D	rive													
Lane 1	618	9.4	574	9.4	878 <sup>1</sup>	0.655	100	13.3	LOS B	19.4	146.7	Full	130	0.0	<mark>15.9</mark>
Lane 2 (B)	17	100.0	17	100.0	78	0.218	100	73.9	LOS E	1.1	14.4	Short	16	0.0	NA
Lane 3	221	3.6	205	3.6		0.644	100	59.0	LOS E	12.3	88.7	Full	130	0.0	0.0
Lane 4	199	3.6	185	3.6		0.644	100	58.3	LOS E	11.0	79.0	Full	130	0.0	0.0
Lane 5	199	3.6	185	3.6	288 <sup>1</sup>	0.644	100	58.3	LOS E	11.0	79.0	Short	40	0.0	NA
Approach	1254	7.7	1167 <sup>N</sup>	7.8		0.655		36.5	LOS D	19.4	146.7				
East: Paku	ranga F	Road (E	ast)												
Lane 1	1114	5.0	1100	5.0	1221	0.900	100	30.9	LOS C	25.3 <sup>N4</sup>	184.4 <sup>N4</sup>	Full	113	0.0	50.0
Lane 2	552	6.0	545	6.0		0.632	100	28.3	LOSC	25.1 <sup>N4</sup>	184.4 <sup>N4</sup>	Full	113	0.0	50.0
Lane 3	530	6.0	523	6.0	828 <sup>1</sup>	0.632	100	27.8	LOS C	24.5	180.5	Full	113	0.0	<mark>48.0</mark>
Lane 4 (B)	25	100.0	25	100.0	73	0.340	100	69.7	LOS E	1.6	21.4	Short	101	0.0	NA
Approach	2221	6.6	2193 <sup>N</sup>	6.5		0.900		30.0	LOSC	25.3	184.4				
West: Paku	ıranga	Road (\	West)												
Lane 1 (B)	24	100.0	24	100.0	52	0.460	100	72.1	LOS E	1.6	20.9	Full	388	0.0	0.0
Lane 2	259	8.1	259	8.1		0.264	100	17.6	LOS B	8.8	65.7	Short	141	0.0	NA
Lane 3	259	8.1	259	8.1		0.264	100	17.6	LOS B	8.8	65.7	Full	388	0.0	0.0
Lane 4	259	8.1	259	8.1	978	0.264	100	17.6	LOS B	8.8	65.7	Full	388	0.0	0.0
Lane 5	192	15.9	192	15.9		0.885	100	78.6	LOS E	13.8	109.9	Short	178	0.0	NA
Lane 6	192	15.9	192	15.9	217	0.885	100	78.6	LOS E	13.8	109.9	Short	105	0.0	NA
Approach	1184	12.5	1184	12.5		0.885		38.5	LOS D	13.8	109.9				
Intersectio n	4659	8.4	4543 <sup>N</sup>	8.6		0.900		33.9	LOSC	25.3	184.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab). Lane LOS values are based on average delay per lane.

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

- 1 Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
- 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 Flo	ows (v	eh/h)						
South: Ti Ra	akau Drive	)							
Mov.	L2	R2	Total	%HV		Deg.	Lane		
From S					Cap.	Satn		SL Ov.	Lane
To Exit:	W	Ε			veh/h	v/c	%	%	No.
Lane 1	574	-	574	9.4	878 <sup>1</sup>	0.655	100	NA	NA
Lane 2	17	_	17	100.0	78	0.218	100	0.0	1

Lane 3	-	205	205	3.6	319	0.644	100	NA	NA	
Lane 4	-	185	185	3.6	288 <sup>1</sup>	0.644	100	NA	NA	
Lane 5	-	185	185	3.6	288 <sup>1</sup>	0.644	100	<mark>68.2</mark>	4	
Approach	591	575	1167	7.8		0.655				
East: Pakura	nga Roa	ad (Eas	t)							
Mov.	L2	T1	Total	%HV		Deg.	Lane	Prob.	Ov.	
From E					Cap.	Satn		SL Ov.	Lane	
To Exit:	S	W			veh/h	v/c	%	%	No.	
Lane 1	1100	-	1100	5.0	1221	0.900	100	NA	NA	
Lane 2	-	545	545	6.0		0.632	100	NA	NA	
Lane 3	-	523	523	6.0	828 <sup>1</sup>	0.632	100	NA	NA	
Lane 4	_	25	25	100.0		0.340	100	0.0	3	
Approach	1100	1093	2193	6.5		0.900				
West: Pakura	anga Ro	ad (We	st)							
Mov.	T1	R2	Total	%HV		Deg.		Prob.	Ov.	
From W					Cap.	Satn		SL Ov.	Lane	
To Exit:	Е	S			veh/h	v/c	%	%	No.	
Lane 1	9	15	24	100.0	52	0.460	100	NA	NA	
Lane 2	259	-	259	8.1	978	0.264	100	0.0	3	
Lane 3	259	-	259	8.1	978	0.264	100	NA	NA	
Lane 4	259	-	259	8.1	978	0.264	100	NA	NA	
Lane 5	_	192	192	15.9	217	0.885	100	0.0	4	
Lane 6	_	192	192	15.9	217	0.885	100	<mark>9.1</mark>	5	
Approach	785	399	1184	12.5		0.885				
.,										
	Total	%HV [	Deg.Sat	in (v/c)						
Intersection	4543	8.6		0.900						

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					
Exil Lane Number	Lane Opng in Flow Rate	Critical Gap sec	Follow-up Lane Capacity Headway Flow Rate sec veh/h veh/h	Satn Delay	Merge Delay sec
South Exit: Ti Rakau Drive Merge Type: <b>Not Applied</b>					
Full Length Lane 1	Merge Analysis not applied.				
Full Length Lane 2	Merge Analysis not applied.				
East Exit: Pakuranga Road Merge Type: <b>Not Applied</b>	I (East)				
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: Pakuranga Roa Merge Type: <b>Not Applied</b>	d (West)				
Full Length Lane 1	Merge Analysis not applied.				
Full Length Lane 2	Merge Analysis not applied.				
Full Length Lane 3	Merge Analysis not applied.				

## LANE SUMMARY

Site: 1.0 [1.0 Pakuranga Rd / Ti Rakau Rd (Site Folder:

**■■** Network: N101 General)] [Construction 1 (Network Folder: PM)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 70 seconds (Site Practical Cycle Time)

Lane Use	Lane Use and Performance														
	DEM			RIVAL	Can	Deg.	Lane		Level of		CK OF		Lane	Сар.	Prob.
	FLC [ Total	WS HV1	FLC Total	)WS HV 1	Сар.	Satn	Util.	Delay	Service	QUE [Veh	:UE Dist ]	Config	Length	Adj.	Block.
	veh/h	%	veh/h		veh/h	v/c	%	sec		[ 70	m		m	%	%
South: Ti R	akau D	rive													
Lane 1	624	6.4	592	6.4	1121 <sup>1</sup>	0.528	100	7.8	LOS A	7.2	53.3	Full	130	0.0	0.0
Lane 2 (B)	13	100.0	13	100.0	145	0.090	100	39.0	LOS D	0.4	5.7	Short	16	0.0	NA
Lane 3	362	6.7	343	6.7		0.852	100	40.7	LOS D	13.4	99.5	Full	130	0.0	0.0
Lane 4	333	6.7	316	6.7		0.852	100	40.5	LOS D	12.3	90.7	Full	130	0.0	0.0
Lane 5	333	6.7	316	6.7	371 <sup>1</sup>	0.852	100	40.5	LOS D	12.3	90.7	Short	40	0.0	NA
Approach	1665	7.3	1581 <sup>N</sup>	7.4		0.852		28.3	LOS C	13.4	99.5				
East: Pakui	ranga F	Road (E	ast)												
Lane 1	448	2.2	438	2.2	1013	0.432	100	15.4	LOS B	8.7	62.3	Full	113	0.0	0.0
Lane 2	385	8.2	376	8.2	447	0.841	100	34.3	LOS C	14.4	107.8	Full	113	0.0	0.7
Lane 3	385	8.2	376	8.2	447	0.841	100	34.3	LOS C	14.4	107.8	Full	113	0.0	0.7
Lane 4 (B)	11	100.0	11	100.0	102	0.107	100	36.2	LOS D	0.4	4.9	Short	101	0.0	NA
Approach	1229	6.8	1201 <sup>N</sup>	6.9		0.841		27.4	LOS C	14.4	107.8				
West: Paku	ıranga	Road (\	West)												
Lane 1 (B)	42	100.0	42	100.0	98	0.429	100	35.8	LOS D	1.4	18.7	Full	388	0.0	0.0
Lane 2	419	8.0	419	8.0	474	0.883	100	38.0	LOS D	17.2	128.6	Short	141	0.0	NA
Lane 3	419	8.0	419	8.0	474	0.883	100	38.0	LOS D	17.2	128.6	Full	388	0.0	0.0
Lane 4	419	8.0	419	8.0	474	0.883	100	38.0	LOS D	17.2	128.6	Full	388	0.0	0.0
Lane 5	157	3.5	157	3.5	180	0.871	100	48.3	LOS D	6.4	45.9	Short	178	0.0	NA
Lane 6	157	3.5	157	3.5	180	0.871	100	48.3	LOS D	6.4	45.9	Short	105	0.0	NA
Approach	1613	9.5	1613	9.5		0.883		40.0	LOS D	17.2	128.6				
Intersectio n	4507	8.0	4396 <sup>N</sup>	8.2		0.883		32.3	LOS C	17.2	128.6				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab). Lane LOS values are based on average delay per lane.

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

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

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

Approa	ch Lane Flo	ws (v	/eh/h)						
South: Ti	Rakau Drive								
Mov. From S To Exit:	L2 W	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c		Prob. SL Ov. %	
Lane 1	592	-	592	6.4	1121 <sup>1</sup>	0.528	100	NA	NA
Lane 2	13	-	13	100.0	145	0.090	100	0.0	1
Lane 3	-	343	343	6.7	403	0.852	100	NA	NA

Lane 4	-	316	316	6.7	371 <sup>1</sup>	0.852	100	NA	NA
Lane 5	-	316	316	6.7	371 <sup>1</sup>	0.852	100	<mark>81.5</mark>	4
Approach	605	976	1581	7.4		0.852			
East: Pakura	inga Ro	ad (Eas	it)						
Mov. From E	L2	T1	Total	%HV	Cap.	Deg. Satn		Prob. SL Ov.	Ov. Lane
To Exit:	S	W			veh/h	v/c	%	%	No.
Lane 1	438	-	438	2.2	1013	0.432	100	NA	NA
Lane 2	-	376	376	8.2	447	0.841	100	NA	NA
Lane 3	-	376	376	8.2	447	0.841	100	NA	NA
Lane 4	-	11	11	100.0	102	0.107	100	0.0	3
Approach	438	763	1201	6.9		0.841			
West: Pakura	anga Ro	ad (We							
Mov.	T1	R2	Total	%HV	0	Deg.		Prob.	Ov.
From W To Exit:	Е	S			Cap. veh/h	Satn v/c	Util.	SL Ov. %	Lane No.
Lane 1	21	21	42	100.0	98	0.429	100	NA	NA
Lane 2	419	-	419	8.0	474	0.883	100	0.0	3
Lane 3	419	-	419	8.0	474	0.883	100	NA	NA
Lane 4	419	-	419	8.0	474	0.883	100	NA	NA
Lane 5	-	157	157	3.5	180	0.871	100	0.0	4
Lane 6	-	157	157	3.5	180	0.871	100	0.0	5
Approach	1278	335	1613	9.5		0.883			
	Total	%HV[	Deg.Sa	tn (v/c)					

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								
Exi Lane Numbe	Lane	Percent Op Opng in Flo Lane % veh		Critical Gap sec	Follow-up Headway sec	apacity veh/h	Deg. Satn I	Merge Delay sec
South Exit: Ti Rakau Drive Merge Type: <b>Not Applied</b>								
Full Length Lane Full Length Lane	J	Analysis not Analysis not	• •					
East Exit: Pakuranga Road Merge Type: <b>Not Applied</b>	l (East)							
Full Length Lane Full Length Lane Full Length Lane	Merge /	Analysis not Analysis not Analysis not	applied.					
West Exit: Pakuranga Roa Merge Type: <b>Not Applied</b>								
Full Length Lane  Full Length Lane  2	Merge /	Analysis not Analysis not	applied.					
Full Length Lane	ivierge /	Analysis not	applied.					

**▽** Site: 1.3 [1.3 Mall/ Pakuranga Rd WR Closure (Site Folder: General)]

[Construction 1 (Network Folder: AM)]

■■ Network: N101

New Site

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

Lane Use	and P	erfori	nance												
	DEM/ FLO		ARRI FLO\ [Total	NS	Сар.	Deg. Satn	Lane Util.		Level of Service		ACK OF EUE Dist ]	Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	veh/h	%	veh/h	%	veh/h	v/c	%	sec			m		m	%	%
East: Paku	ranga R	toad (I	East)												
Lane 1	764	8.5	764	8.5	1966	0.389	100	0.6	LOS A	9.4 <sup>N5</sup>	70.8 <sup>N5</sup>	Full	152	0.0	<mark>16.0</mark>
Lane 2	736	5.5	736	5.5	1893	0.389	100	0.0	LOS A	0.0	0.0	Full	152	0.0	0.0
Lane 3	736	5.5	736	5.5	1893	0.389	100	0.0	LOS A	0.0	0.0	Full	152	0.0	0.0
Approach	2237	6.5	2237	6.5		0.389		0.2	NA	9.4	70.8				
West: Paku	ıranga F	Road (	West)												
Lane 1	183	6.8	180	6.9	1798	0.100	31 <sup>6</sup>	1.4	LOS A	0.0	0.0	Full	108	0.0	0.0
Lane 2	592	6.8	580	6.9	1789	0.324	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Lane 3	608	6.8	596	6.9	1837	0.324	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Approach	1384	6.8	1356 <sup>N</sup>	6.9		0.324		0.2	NA	0.0	0.0				
SouthWest	: Pakura	anga F	Plaza												
Lane 1	25	8.0	25	8.0	266	0.094	100	4.9	LOS A	0.3 <sup>N5</sup>	2.6 <sup>N5</sup>	Full	196	-49.9 <sup>N7</sup>	<mark>10.8</mark>
Approach	25	8.0	25	8.0		0.094		4.9	LOS A	0.3	2.6				
Intersectio n	3646	6.6	3618 <sup>N</sup>	6.7		0.389		0.3	NA	9.4	70.8				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab). Lane LOS values are based on average delay per lane.

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

- 6 Lane under-utilisation due to downstream effects
- N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
- N5 Continuous Lane results determined by Back of Queue values of downstream lanes (proportional to lane movement flows).
- N7 The capacity reduction has been determined from the queue blockage probability of a Site further downstream due to intermediate continuous lanes.

Approach L	_ane Fl	lows (\	/eh/h)						
East: Pakura						_	_		_
Mov. From E To Exit:	L1 SW	T1 W	Total	%HV	Cap. veh/h	Deg. Satn v/c		Prob. SL Ov. %	Ov. Lane No.
Lane 1 Lane 2 Lane 3	74 - -	690 736 736	764 736 736	8.5 5.5 5.5	1966 1893 1893		100 100 100	NA NA NA	NA NA NA
Approach	74	2163	2237	6.5		0.389			
West: Pakura	anga Ro	ad (We	est)						
Mov. From W To Exit:	T1 E	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.

Lane 1	180	180	6.9	1798	0.100	31 <sup>6</sup>	NA	NA	
Lane 2	580	580	6.9	1789	0.324	100	NA	NA	
Lane 3	596	596	6.9	1837	0.324	100	NA	NA	
Approach	1356	1356	6.9		0.324				
SouthWest: I	Pakuran	iga Plaz	za						
Mov. From SW To Exit:	L3 W	Total	%HV	Cap. veh/h	Deg. Satn v/c		Prob. SL Ov. %	Ov. Lane No.	
Lane 1	25	25	8.0	266	0.094	100	NA	NA	
Approach	25	25	8.0		0.094				
	Total	%HV[	Deg.Satn (v/c)						
Intersection	3618	6.7	0.389						

6 Lane under-utilisation due to downstream effects

Merge Analysis												
	Exit ₋ane nber		Percent Opng in Lane	Flow		Critical Gap sec	Follow-up Headway sec		Capacity veh/h		Min. Delay sec	Merge Delay sec
East Exit: Pakuranga F Merge Type: <b>Priority</b>	Road (	East)										
Exit Short Lane	1	52	0.0	580	600	3.00	2.00	180	1180	0.152	1.1	1.4
Merge Lane	2	-	100.0	Me	rge La	ne is not C	pposed	580	1800	0.322	0.0	0.0
West Exit: Pakuranga Merge Type: <b>Not Appl</b>		(West)										
Full Length Lane	1	Merge	Analysis	not ap	oplied.							
Full Length Lane	2	Merge	Analysis	not ap	oplied.							
Full Length Lane	3	Merge	Analysis	not ap	oplied.							
SouthWest Exit: Pakur Merge Type: <b>Not Appl</b>	-	Plaza										
Full Length Lane	1	Merge	Analysis	not ap	oplied.							

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**▽** Site: 1.3 [1.3 Mall/ Pakuranga Rd WR Closure (Site Folder: General)]

[Construction 1 (Network Folder: PM)]

■ Network: N101

New Site

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

Lane Use	and P	erfori	mance												
	DEM/ FLO [ Total veh/h	WS	ARRI FLO¹ [ Total veh/h	WS	Cap.	Deg. Satn v/c	Lane Util. %		Level of Service	95% BA QUE [ Veh		Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
East: Paku	ranga R	load (I	East)												
Lane 1	439	8.0	439	8.0	1973	0.222	100	0.4	LOS A	0.0	0.0	Short	52	0.0	NA
Lane 2	420	5.9	420	5.9	1887	0.222	100	0.0	LOS A	0.0	0.0	Full	152	0.0	0.0
Lane 3	420	5.9	420	5.9	1887	0.222	100	0.0	LOS A	0.0	0.0	Full	152	0.0	0.0
Approach	1278	6.7	1278	6.7		0.222		0.2	NA	0.0	0.0				
West: Paku	ıranga F	Road (	West)												
Lane 1	765	8.2	754	8.3	1783	0.423	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Lane 2	760	8.2	749	8.3	1774	0.423	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Lane 3	781	8.2	770	8.3	1822	0.423	100	0.0	LOS A	0.0	0.0	Full	108	0.0	0.0
Approach	2306	8.2	2273 <sup>N</sup>	8.3		0.423		0.0	NA	0.0	0.0				
SouthWest	: Pakura	anga F	Plaza												
Lane 1	38	2.6	38	2.6	849	0.045	100	2.0	LOS A	0.2	1.1	Full	196	0.0	0.0
Approach	38	2.6	38	2.6		0.045		2.0	LOSA	0.2	1.1				
Intersectio n	3622	7.6	3589 <sup>N</sup>	7.7		0.423		0.1	NA	0.2	1.1				

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.

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

Approach	2273	2273	8.3		0.423			
SouthWest:	Pakuran	ga Plaz	a					
Mov. From SW To Exit:	L3 W	Total	%HV	Cap. veh/h	Deg. Satn v/c		Prob. SL Ov. %	Ov. Lane No.
Lane 1	38	38	2.6	849	0.045	100	NA	NA
Approach	38	38	2.6		0.045			
	Total	%HV[	Deg.Satn (v/c)					
Intersection	3589	7.7	0.423					

Merge Analysis								
	xit ine per		Opng in Lane	Opposing Flow Rate veh/h pcu/h	Follow-up Headway sec	Capacity veh/h	Delay	Merge Delay sec
East Exit: Pakuranga Ro Merge Type: <b>Not Applie</b>		East)						
Full Length Lane Full Length Lane Full Length Lane	1 2 3	Merge A	Analysis	not applied not applied not applied				
West Exit: Pakuranga R Merge Type: <b>Not Applie</b>		(West)						
Full Length Lane Full Length Lane Full Length Lane	1 2 3	Merge A	Analysis	not applied not applied not applied				
SouthWest Exit: Pakura Merge Type: <b>Not Applie</b>	_	Plaza						
Full Length Lane	1	Merge	Analysis	not applied				

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Project: C:\Users\jacques.vandenheever\Downloads\2028 Construction 1 PM (2).sip9

V Site: 5.3 [5.3 Reeves Rd/ Aylesbury St (Site Folder: General)]

■ Network: N101 [Construction 1 (Network

Folder: AM)]

New Site

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

Lane Use	and Pe	erforr	nance												
	DEM/ FLO¹ [ Total veh/h	WS	ARRI FLO [ Total veh/h	WS	Cap.	Deg. Satn v/c	Lane Util. %		Level of Service		ACK OF EUE Dist ] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
East: Reev	es Rd (l	North)													
Lane 1	32	3.1	32	3.1	1969	0.016	100	0.0	LOS A	0.0	0.0	Full	55	0.0	0.0
Lane 2	51	5.9	51	5.9	1719	0.029	100	4.4	LOS A	0.1	1.0	Short	53	0.0	NA
Approach	83	4.8	82 <sup>N1</sup>	4.8		0.029		2.7	NA	0.1	1.0				
North: Ayle	sbury S	t													
Lane 1	20	0.0	20	0.0	1296	0.015	100	0.4	LOS A	0.1	0.4	Full	193	0.0	0.0
Approach	20	0.0	20	0.0		0.015		0.4	LOSA	0.1	0.4				
West: Ree	ves Rd (	South	)												
Lane 1	20	0.0	20	0.0	1991	0.010	100	2.2	LOS A	0.0	0.0	Full	60	0.0	0.0
Approach	20	0.0	20	0.0		0.010		2.2	NA	0.0	0.0				
Intersectio n	123	3.3	122 <sup>N1</sup>	3.3		0.029		2.2	NA	0.1	1.0				

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.

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

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

Approach l	Lane Flo	ows (v	eh/h)						
East: Reeves	s Rd (Noi	rth)							
Mov. From E To Exit:	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	32	-	32	3.1	1969	0.016	100	NA	NA
Lane 2	-	51	51	5.9	1719	0.029	100	0.0	1
Approach	32	51	82	4.8		0.029			
North: Aylest	oury St								
Mov. From N To Exit:	L2 E	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	10	10	20	0.0	1296	0.015	100	NA	NA
Approach	10	10	20	0.0		0.015			
West: Reeve	s Rd (So	uth)							
Mov. From W To Exit:	L2 N	T1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	10	10	20	0.0	1991	0.010	100	NA	NA

Approach	10	10	20	0.0	0.010
	Total	%HV De	eg.Satn	(v/c)	
Intersection	122	3.3	(	0.029	

Merge Analysis			
Exit Lane Number	Lane Opng in Flow Rate	Critical Gap sec	Merge Delay sec
East Exit: Reeves Rd (Nort Merge Type: <b>Not Applied</b>			
Full Length Lane 1	Merge Analysis not applied.		
North Exit: Aylesbury St Merge Type: <b>Not Applied</b>			
Full Length Lane 1	Merge Analysis not applied		
West Exit: Reeves Rd (Sou Merge Type: <b>Not Applied</b>	uth)		
Full Length Lane 1	Merge Analysis not applied		

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V Site: 5.3 [5.3 Reeves Rd/ Aylesbury St (Site Folder: General)]

■ Network: N101 [Construction 1 (Network

Folder: PM)]

New Site

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

Lane Use	Lane Use and Performance														
	DEM/ FLO [ Total veh/h		ARRI FLO [Total veh/h	WS	Cap.	Deg. Satn v/c	Lane Util.		Level of Service		ACK OF EUE Dist ] m	Lane Config	Lane Length m	Cap. Adj.	Prob. Block. %
East: Reev	es Rd (l	North)													
Lane 1	24	4.2	24	4.2	1955	0.012	100	0.0	LOS A	0.0	0.0	Full	55	0.0	0.0
Lane 2	20	5.0	20	5.1	1717	0.012	100	4.4	LOS A	0.1	0.4	Short	53	0.0	NA
Approach	44	4.5	43 <sup>N1</sup>	4.6		0.012		2.0	NA	0.1	0.4				
North: Ayle	sbury S	t													
Lane 1	53	1.9	53	1.9	1477	0.036	100	0.2	LOS A	0.1	1.0	Full	193	0.0	0.0
Approach	53	1.9	53	1.9		0.036		0.2	LOSA	0.1	1.0				
West: Ree	ves Rd (	(South	)												
Lane 1	26	0.0	26	0.0	2003	0.013	100	1.7	LOS A	0.0	0.0	Full	60	0.0	0.0
Approach	26	0.0	26	0.0		0.013		1.7	NA	0.0	0.0				
Intersectio n	123	2.4	122 <sup>N1</sup>	2.5		0.036		1.1	NA	0.1	1.0				

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.

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

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

Approach L	ane Flo	ows (v	/eh/h)						
East: Reeves	Rd (No	rth)							
Mov. From E To Exit:	T1 W	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	24	-	24	4.2	1955	0.012	100	NA	NA
Lane 2	-	20	20	5.1	1717	0.012	100	0.0	1
Approach	24	20	43	4.6		0.012			
North: Aylesb	oury St								
Mov. From N To Exit:	L2 E	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	43	10	53	1.9	1477	0.036	100	NA	NA
Approach	43	10	53	1.9		0.036			
West: Reeve	s Rd (So	outh)							
Mov. From W To Exit:	L2 N	T1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	10	16	26	0.0	2003	0.013	100	NA	NA

Approach	10	16	26	0.0	0.013
	Total	%HV De	eg.Satn	(v/c)	
Intersection	122	2.5	(	0.036	

Merge Analysis					
Exit Lane Number	Short Percent Opposin Lane Opng in Flow Ra Length Lane	te Gap	Follow-up Lane Capacity Headway Flow Rate	Satn Delay	Merge Delay
East Exit: Reeves Rd (North	m % veh/h pcı n)	ı/h sec	sec veh/h veh/h	v/c sec	sec
Merge Type: Not Applied					
Full Length Lane 1	Merge Analysis not applie	ed.			
North Exit: Aylesbury St Merge Type: <b>Not Applied</b>					
Full Length Lane 1	Merge Analysis not applie	ed.			
West Exit: Reeves Rd (Sout Merge Type: <b>Not Applied</b>	th)				
Full Length Lane 1	Merge Analysis not applie	ed.			

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V Site: 5.4 [5.4 Reeves Rd / William Roberts Rd WR Closure C (Site Folder: General)]

[Construction 1 (Network Folder: AM)]

■ Network: N101

New Site

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

Lane Use	and P	erforr	nance												
	DEM/ FLO [ Total	WS HV]		WS HV]	Сар.		Lane Util.		Level of Service		ACK OF EUE Dist ]	Lane Config	Lane Length	Cap. Adj.	Prob. Block.
Courtle Mill	veh/h	%	veh/h	% .b.\	veh/h	v/c	%	sec			m		m	%	%
South: Will	iam Rot	eris F	ta (Soul	.m)											
Lane 1	166	7.9	163	8.0	1112	0.146	100	2.9	LOS A	0.5	4.1	Full	243	0.0	0.0
Approach	166	7.9	163 <sup>N1</sup>	8.0		0.146		2.9	LOS A	0.5	4.1				
East: Reev	es Rd (l	East)													
Lane 1	320	7.8	320	7.8	1741	0.184	100	4.1	LOS A	0.0	0.0	Full	266	0.0	0.0
Approach	320	7.8	320	7.8		0.184		4.1	NA	0.0	0.0				
West: Ree	ves Rd (	(West)													
Lane 1	11	0.0	11	0.0	1960	0.005	100	2.7	LOS A	0.0	0.0	Full	55	0.0	0.0
Lane 2	11	0.0	11	0.0	775	0.014	100	6.2	LOS A	0.0	0.3	Short	13	0.0	NA
Approach	21	0.0	21	0.0		0.014		4.5	LOS A	0.0	0.3				
Intersectio n	506	7.5	504 <sup>N1</sup>	7.6		0.184		3.8	NA	0.5	4.1				

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.

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

Approach L	ane Flo	ows (v	reh/h)							
South: Willian	n Robert	ts Rd (	South)							
Mov. From S To Exit:	L2 W	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	51	112	163	8.0	1112	0.146	100	NA	NA	
Approach	51	112	163	8.0		0.146				
East: Reeves	Rd (Eas	st)								
Mov. From E To Exit:	L2 S	T1 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	284	36	320	7.8	1741	0.184	100	NA	NA	
Approach	284	36	320	7.8		0.184				
West: Reeves	s Rd (We	est)								
Mov. From W To Exit:	T1 E	R2 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	11	-	11	0.0	1960	0.005	100	NA	NA	
Lane 2	-	11	11	0.0	775	0.014	100	0.0	1	

Approach	11	11	21	0.0	0.014
	Total	%HV De	eg.Satr	ı (v/c)	
Intersection	504	7.6		0.184	

Merge Analysis							
Exit Lane Number		Percent Opposing Opng in Flow Rate Lane % veh/h pcu/h	Critical Gap sec	Follow-up Lane ( Headway Flow Rate sec veh/h	Capacity veh/h	Deg. Satn I	Merge Delay sec
South Exit: William Roberts Merge Type: <b>Not Applied</b>	Rd (Sout						
Full Length Lane 1	Merge	Analysis not applied.					
East Exit: Reeves Rd (East) Merge Type: <b>Not Applied</b>							
Full Length Lane 1	Merge	Analysis not applied.					
West Exit: Reeves Rd (West Merge Type: <b>Not Applied</b>	)						
Full Length Lane 1	Merge	Analysis not applied.					

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V Site: 5.4 [5.4 Reeves Rd / William Roberts Rd WR Closure C (Site Folder: General)]

Network: N101 [Construction 1 (Network

Folder: PM)]

New Site

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

Lane Use and Performance															
	DEM FLO [ Total veh/h		ARRI FLO [ Total veh/h	WS	Cap.	Deg. Satn v/c	Lane Util.	Delay	Level of Service		ACK OF EUE Dist ]	Lane Config		Cap. Adj. %	Prob. Block.
South: Will					ven/m	V/C	70	sec		_	m		m	70	70
Lane 1	234	4.7	228	4.8	1052	0.216	100	3.1	LOS A	0.8	6.0	Full	243	0.0	0.0
Approach	234	4.7	228 <sup>N1</sup>	4.8		0.216		3.1	LOS A	8.0	6.0				
East: Reev	/es Rd (	East)													
Lane 1	277	8.7	277	8.7	1728	0.160	100	4.3	LOS A	0.0	0.0	Full	266	0.0	0.0
Approach	277	8.7	277	8.7		0.160		4.3	NA	0.0	0.0				
West: Ree	ves Rd	(West)	)												
Lane 1	36	2.9	36	2.9	1923	0.019	100	2.7	LOS A	0.0	0.0	Full	55	0.0	0.0
Lane 2	27	3.8	27	3.8	729	0.038	100	6.6	LOS A	0.1	0.9	Short	13	0.0	NA
Approach	63	3.3	63	3.3		0.038		4.4	LOS A	0.1	0.9				
Intersectio n	574	6.5	568 <sup>N1</sup>	6.5		0.216		3.9	NA	0.8	6.0				

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.

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

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

Approach I	Lane Flo	ows (v	reh/h)						
South: Willian	m Rober	ts Rd (	South)						
Mov. From S To Exit:	L2 W	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	24	204	228	4.8	1052	0.216	100	NA	NA
Approach	24	204	228	4.8		0.216			
East: Reeves	s Rd (Ea	st)							
Mov. From E To Exit:	L2 S	T1 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	256	21	277	8.7	1728	0.160	100	NA	NA
Approach	256	21	277	8.7		0.160			
West: Reeve	s Rd (W	est)							
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 Lane 2	36 -	- 27	36 27	2.9 3.8	1923 729	0.019 0.038	100 100	NA 0.0	NA 1

Approach	36	27	63	3.3	0.038
	Total	%HV De	eg.Satr	ı (v/c)	
Intersection	568	6.5	(	0.216	

Merge Analysis							
Exit Lane Number		Percent Opposing Opng in Flow Rate Lane % veh/h pcu/h	Critical Gap sec	Headway I	Rate	Deg. Satn I	Merge Delay sec
South Exit: William Roberts Merge Type: <b>Not Applied</b>	Rd (Sout	h)					
Full Length Lane 1	Merge	Analysis not applied.					
East Exit: Reeves Rd (East Merge Type: <b>Not Applied</b>	)						
Full Length Lane 1	Merge	Analysis not applied.					
West Exit: Reeves Rd (West Merge Type: Not Applied	it)						
Full Length Lane 1	Merge	Analysis not applied.					

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**▽** Site: 7.1 [7.1 William Roberts Rd / Cortina PI WR Closure (Site Folder: General)]

[Construction 1 (Network Folder: AM)]

■ Network: N101

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

Lane Use	and Pe	erforr	nance												
	DEM/ FLO\ [ Total veh/h	NS	ARRI FLO [ Total veh/h	WS	Cap.	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service		ACK OF EUE Dist ] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block.
NorthEast:	William	Robe	rts Road	d (Nor	th)										
Lane 1	319	9.4	319	9.4	1216	0.262	100	0.2	LOS A	0.2	1.2	Full	243	-32.5 <sup>N3</sup>	0.0
Approach	319	9.4	319	9.4		0.262		0.2	NA	0.2	1.2				
NorthWest	Cortina	Place	)												
Lane 1	30	6.7	30	6.7	764	0.039	100	3.7	LOS A	0.1	8.0	Full	177	-21.3 <sup>N3</sup>	0.0
Approach	30	6.7	30	6.7		0.039		3.7	LOS A	0.1	8.0				
SouthWest	: Willian	Robe	erts Roa	ad (So	uth)										
Lane 1	204	6.9	200	6.9	1798	0.111	100	0.4	LOS A	0.0	0.0	Full	110	0.0	0.0
Approach	204	6.9	200 <sup>N1</sup>	6.9		0.111		0.4	NA	0.0	0.0				
Intersectio n	553	8.3	549 <sup>N1</sup>	8.4		0.262		0.5	NA	0.2	1.2				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab). Lane LOS values are based on average delay per lane.

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

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

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

Approach I	Lane Flo	ows (v	/eh/h)							
NorthEast: W	Villiam Ro	oberts l	Road (N	North)						
Mov. From NE To Exit:	T1 SW	R2 NW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	303	16	319	9.4	1216	0.262	100	NA	NA	
Approach	303	16	319	9.4		0.262				
NorthWest: 0	Cortina P	lace								
Mov. From NW To Exit:	L2 NE	R2 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	14	16	30	6.7	764	0.039	100	NA	NA	
Approach	14	16	30	6.7		0.039				
SouthWest: \	William F	oberts	Road (	(South)						
Mov. From SW To Exit:	L2 NW	T1 NE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	42	158	200	6.9	1798	0.111	100	NA	NA	
Approach	42	158	200	6.9		0.111				

	Total %HV Deg.	Satn (v/c)
ntersection	549 8.4	0.262

Merge Analysis							
E> Lan Numbe	ie Lane		Critical Gap sec	Follow-up Lan Headway Flo Rat sec veh	w te	Deg. Min Satn Delay v/c sec	Delay
NorthEast Exit: William R Merge Type: <b>Not Applied</b>		ad (North)					
Full Length Lane	1 Merg	e Analysis not applied.					
NorthWest Exit: Cortina F Merge Type: <b>Not Applied</b>							
Full Length Lane	1 Merg	e Analysis not applied.					
SouthWest Exit: William F Merge Type: <b>Not Applied</b>		oad (South)					
Full Length Lane	1 Merg	e Analysis not applied.					

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**▽** Site: 7.1 [7.1 William Roberts Rd / Cortina PI WR Closure (Site Folder: General)]

■■ Network: N101 [Construction 1 (Network

Folder: PM)]

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

Lane Use	and Pe	erforr	nance												
	DEMA FLOV [ Total veh/h	NS	ARRI FLO [ Total veh/h	WS	Cap.		Lane Util. %		Level of Service		ACK OF EUE Dist ] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block.
NorthEast:	William	Robe	rts Road	d (Nor	th)										
Lane 1	288	8.7	288	8.7	1351	0.213	100	0.3	LOS A	0.2	1.3	Full	243	<mark>-24.7</mark> N3	0.0
Approach	288	8.7	288	8.7		0.213		0.3	NA	0.2	1.3				
NorthWest	Cortina	Place	)												
Lane 1	59	6.8	59	6.8	698	0.085	100	4.2	LOS A	0.2	1.8	Full	177	-19.6 <sup>N3</sup>	0.0
Approach	59	6.8	59	6.8		0.085		4.2	LOS A	0.2	1.8				
SouthWest	: Willian	n Robe	erts Roa	ad (So	uth)										
Lane 1	250	4.8	242	4.9	1830	0.132	100	0.2	LOS A	0.0	0.0	Full	110	0.0	0.0
Approach	250	4.8	242 <sup>N1</sup>	4.9		0.132		0.2	NA	0.0	0.0				
Intersectio n	597	6.9	589 <sup>N1</sup>	7.0		0.213		0.7	NA	0.2	1.8				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab). Lane LOS values are based on average delay per lane.

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

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

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

Approach	Lane Flo	ows (v	eh/h)						
NorthEast: V	Villiam R	oberts l	Road (N	North)					
Mov. From NE To Exit:	T1 SW	R2 NW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	269	19	288	8.7	1351	0.213	100	NA	NA
Approach	269	19	288	8.7		0.213			
NorthWest:	Cortina P	lace							
Mov. From NW To Exit:	L2 NE	R2 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	18	41	59	6.8	698	0.085	100	NA	NA
Approach	18	41	59	6.8		0.085			
SouthWest:	William F	Roberts	Road (	(South)					
Mov. From SW To Exit:	L2 NW	T1 NE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	27	215	242	4.9	1830	0.132	100	NA	NA
Approach	27	215	242	4.9		0.132			

	Total	%HV De(	g.Satn (v/c)		
Intersection	589	7.0	0.213		

Merge Analysis							
Exit Lane Number	Lane	Percent Opposing Opng in Flow Rate Lane % veh/h pcu/h	Critical Gap sec	Headway F	Rate	Deg. Satn D v/c	Merge Delay sec
NorthEast Exit: William Rob Merge Type: <b>Not Applied</b>	erts Roa	d (North)					
Full Length Lane 1	Merge	Analysis not applied.					
NorthWest Exit: Cortina Pla Merge Type: <b>Not Applied</b>	ice						
Full Length Lane 1	Merge	Analysis not applied.					
SouthWest Exit: William Ro Merge Type: <b>Not Applied</b>	berts Roa	ad (South)					
Full Length Lane 1	Merge	Analysis not applied.					

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V Site: 2.0 [2.0 Aylesbury St North/Ti Rakau Dr (Site Folder: General)]

[Construction 1 (Network Folder: AM)]

■■ Network: N101

New Site

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

Lane Use	and P	erfori	mance												
	DEM/ FLO [ Total veh/h		ARRI FLO [ Total veh/h	WS	Cap.	Deg. Satn	Lane Util.		Level of Service		ACK OF EUE Dist ] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block.
South: Ti R				/0	VCII/II	V/C	70	300					- '''	70	70
Lane 1	363	7.8	339	7.9	1503	0.225	100	0.0	LOS A	0.0	0.0	Full	63	-15.9 <sup>N3</sup>	0.0
Lane 2	439	7.8	409	7.9	1816	0.225	100	0.0	LOS A	0.0	0.0	Full	63	0.0	0.0
Lane 3	441	7.8	411	7.9	1826	0.225	100	0.0	LOS A	0.0	0.0	Full	63	0.0	0.0
Approach	1244	7.8	1159 <sup>N</sup>	7.9		0.225		0.0	NA	0.0	0.0				
East: Ayles	bury St	reet													
Lane 1	14	7.1	14	7.1	724	0.019	100	3.2	LOS A	0.1	0.6	Full	28	0.0	0.0
Lane 2	10	0.0	10	0.0	6	1.667	100	1303.7	LOS F	6.4	44.7	Full	28	0.0	<mark>21.2</mark>
Approach	24	4.2	24	4.2		1.667		545.0	LOS F	6.4	44.7				
North: Ti R	akau Dr	ive (W	/est)												
Lane 1	595	8.6	589	8.6	1795	0.328	100	0.2	LOS A	0.0	0.0	Full	130	0.0	0.0
Lane 2	449	8.7	444	8.7	1354	0.328	100	0.0	LOS A	0.0	0.0	Full	130	<mark>-24.6</mark> <sup>N7</sup>	
Lane 3	474	8.7	469	8.7	1429	0.328	100	0.0	LOS A	0.0	0.0	Short	55	<mark>-22.5</mark> <sup>N7</sup>	NA
Approach	1517	8.7	1503 <sup>N</sup>	8.7		0.328		0.1	NA	0.0	0.0				
Intersectio n	2785	8.3	2686 <sup>N</sup>	8.6		1.667		4.9	NA	6.4	44.7				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab). Lane LOS values are based on average delay per lane.

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

- N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.
- 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 l	Lane FI	ows (\	/eh/h)						
South: Ti Ra	kau Driv	e (East	)						
Mov. From S	T1	Total	%HV		Cap.	Deg. Satn		Prob. SL Ov.	Ov. Lane
To Exit:	N				veh/h		%	% %	No.
Lane 1	339	339	7.9		1503	0.225	100	NA	NA
Lane 2	409	409	7.9		1816	0.225	100	NA	NA
Lane 3	411	411	7.9		1826	0.225	100	NA	NA
Approach	1159	1159	7.9			0.225			
East: Aylesb	ury Stree	et							
Mov. From E	L2	R2	Total	%HV	Сар.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane

To Exit:	S	N			veh/h	v/c	%	%	No.	
Lane 1	14	-	14	7.1	724	0.019	100	NA	NA	
Lane 2	-	10	10	0.0	6	1.667	100	NA	NA	
Approach	14	10	24	4.2		1.667				
North: Ti Rak	au Driv	e (West	i)							
Mov. From N	L2	T1	Total	%HV	Cap.	Deg. Satn	Util.	Prob. SL Ov.	Ov. Lane	
To Exit:	Е	S			veh/h	v/c	%	%	No.	
Lane 1	19	570	589	8.6	1795	0.328	100	NA	NA	
Lane 2	-	444	444	8.7	1354	0.328	100	NA	NA	
Lane 3	-	469	469	8.7	1429	0.328	100	0.0	2	
Approach	19	1484	1503	8.7		0.328				
	Total	%HV[	Deg.Sat	n (v/c)						
Intersection	2686	8.6		1.667						

Merge Analysis												
E La Numb			Percent Opng in Lane %	Flow		Critical Gap sec	Follow-up Headway		Capacity veh/h	Deg. Satn		Merge Delay sec
South Exit: Ti Rakau Driv Merge Type: <b>Not Applie</b>	•	East)										
Full Length Lane Full Length Lane Full Length Lane	1 2 3	Merge	Analysis Analysis Analysis	not ap	pplied.							
East Exit: Aylesbury Stre Merge Type: <b>Not Applie</b>												
Full Length Lane	1	Merge .	Analysis	not ap	plied.							
North Exit: Ti Rakau Driv Merge Type: <b>Priority</b>	e (V	Vest)										
Exit Short Lane Merge Lane	4 3	20 -	0.0 100.0		428 rge Lar	3.00 ne is not O	2.00 pposed	6 411		0.004 0.229	0.7 0.0	0.7 0.0

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V Site: 2.0 [2.0 Aylesbury St North/Ti Rakau Dr (Site Folder: General)]

■■ Network: N101 [Construction 1 (Network Folder: PM)]

New Site

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

Lane Use and Performance															
	DEMA FLO [ Total veh/h		ARRI FLO\ [ Total veh/h	NS	Cap.	Deg. Satn v/c	Lane Util.		Level of Service		ACK OF EUE Dist ] m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block.
South: Ti R															
Lane 1	537	7.3	513	7.3	1794	0.286	100	0.0	LOS A	0.0	0.0	Full	63	0.0	0.0
Lane 2	545	7.3	521	7.3	1823	0.286	100	0.0	LOS A	0.0	0.0	Full	63	0.0	0.0
Lane 3	548	7.3	524	7.3	1832	0.286	100	0.0	LOS A	0.0	0.0	Full	63	0.0	0.0
Approach	1630	7.3	1558 <sup>N</sup>	7.3		0.286		0.0	NA	0.0	0.0				
East: Ayles	East: Aylesbury Street														
Lane 1	36	5.6	36	5.6	1047	0.034	100	1.0	LOS A	0.1	1.0	Full	28	0.0	0.0
Lane 2	20	5.0	20	5.0	7	2.913	100	2137.3	LOS F	15.0	109.8	Full	28	0.0	100.0
Approach	56	5.4	56	5.4		2.913		764.0	LOS F	15.0	109.8				
North: Ti Ra	akau Dr	ive (W	/est)												
Lane 1	253	5.5	249	5.5	1830	0.136	100	0.2	LOS A	0.0	0.0	Full	130	0.0	0.0
Lane 2	253	5.7	250	5.7	1831	0.136	100	0.0	LOS A	0.0	0.0	Full	130	0.0	0.0
Lane 3	260	5.7	256	5.7	1880	0.136	100	0.0	LOS A	0.0	0.0	Short	55	0.0	NA
Approach	765	5.6	755 <sup>N1</sup>	5.7		0.136		0.1	NA	0.0	0.0				
Intersectio n	2451	6.7	2369 <sup>N</sup>	7.0		2.913		18.1	NA	15.0	109.8				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab). Lane LOS values are based on average delay per lane.

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

 $\label{eq:hv} \mbox{HV (\%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.}$ 

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

Approach	Lane F	lows (\	/eh/h)						
South: Ti Ra	akau Driv	e (East	:)						
Mov. From S To Exit:	T1 N	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	513	513	7.3		1794	0.286	100	NA	NA
Lane 2	521	521	7.3		1823	0.286	100	NA	NA
Lane 3	524	524	7.3		1832	0.286	100	NA	NA
Approach	1558	1558	7.3			0.286			
East: Aylest	oury Stre	et							
Mov. From E To Exit:	L2 S	R2 N	Total	%HV	Cap. veh/h	Deg. Satn v/c		Prob. SL Ov. %	Ov. Lane No.
Lane 1	36	-	36	5.6	1047	0.034	100	NA	NA
Lane 2	-	20	20	5.0	7	2.913	100	NA	NA

Approach	36	20	56	5.4		2.913			
North: Ti Rak	kau Drive	e (West	:)						
Mov. From N To Exit:	L2 E	T1 S	Total	%HV	Cap. veh/h	Deg. Satn v/c		Prob. SL Ov. %	Ov. Lane No.
Lane 1	10	240	249	5.5	1830	0.136	100	NA	NA
Lane 2	-	250	250	5.7	1831	0.136	100	NA	NA
Lane 3	-	256	256	5.7	1880	0.136	100	0.0	2
Approach	10	745	755	5.7		0.136			
	Total	%HV [	Deg.Sat	n (v/c)					
Intersection	2369	7.0		2.913					

Merge Analysis												
E La Numb			Percent Opng in Lane %	Flow		Critical Gap sec	Follow-up Headway	Flow Rate	Capacity veh/h	Deg. Satn I v/c		Merge Delay sec
South Exit: Ti Rakau Driv Merge Type: <b>Not Applie</b>	٠,	East)										
Full Length Lane Full Length Lane Full Length Lane	1 2 3	Merge	Analysis Analysis Analysis	not ap	plied.							
East Exit: Aylesbury Stre Merge Type: Not Applie												
Full Length Lane	1	Merge /	Analysis	not ap	plied.							
North Exit: Ti Rakau Driv Merge Type: <b>Priority</b>	e (V	Vest)										
Exit Short Lane Merge Lane	4 3	20	0.0 100.0	524 Me	543 rge Lan	3.00 ne is not O	2.00 pposed	7 524	1241 1800		0.9 0.0	1.0 0.0

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V Site: 4.0 [4.0 Aylesbury St South/ Ti Rakau Dr (Site Folder: General)]

Network: N101 [Construction 1 (Network

Folder: AM)]

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

Lane Use	and Pe	erfori	mance												
	DEM/ FLO' [ Total	WS HV]	ARRI FLO [Total	WS HV]	Cap.	Deg. Satn	Lane Util.	Delay	Level of Service		ACK OF EUE Dist ]	Lane Config	Lane Length	Cap. Adj.	Prob. Block.
South: Ti R	veh/h akau Dr	% ive (E	veh/h ast)	%	veh/h	v/c	%	sec			m		m	%	%
Lane 1	402	7.8	390	7.7	1779	0.219	100	0.0	LOS A	0.0	0.0	Full	84	0.0	0.0
Lane 2	410	7.8	399	7.7	1818	0.219	100	0.0	LOS A	0.0	0.0	Full	84	0.0	0.0
Lane 3	403	7.8	391	7.7	1784	0.219	100	0.0	LOS A	0.0	0.0	Full	84	0.0	0.0
Lane 4	20	5.0	19	4.9	100	0.195	100	40.0	LOS E	0.5	3.4	Short	21	0.0	NA
Approach	1235	7.8	1200 <sup>N</sup>	7.7		0.219		0.7	NA	0.5	3.4				
East: Ayles	bury St														
Lane 1	12	0.0	12	0.0	681	0.018	100	2.0	LOS A	0.0	0.3	Full	93	-18.8 <sup>N3</sup>	0.0
Approach	12	0.0	12	0.0		0.018		2.0	LOSA	0.0	0.3				
North: Ti Ra	akau Dr	ive (W	/est)												
Lane 1	451	8.6	434	8.6	1489	0.292	100	0.1	LOS A	0.0	0.0	Full	45	-18.4 <sup>N3</sup>	0.0
Lane 2	541	8.8	521	8.8	1787	0.292	100	0.0	LOS A	9.8 <sup>N6</sup>	73.4 <sup>N6</sup>	Full	45	0.0	50.0 <sub>6</sub> <sup>N</sup>
Lane 3	547	8.8	527	8.8	1806	0.292	100	0.0	LOS A	9.8 <sup>N6</sup>	73.4 <sup>N6</sup>	Full	45	0.0	50.0 <sub>6</sub> <sup>N</sup>
Approach	1540	8.7	1482 <sup>N</sup>	8.8		0.292		0.0	NA	9.8	73.4				
Intersectio n	2787	8.3	2694 <sup>N</sup>	8.5		0.292		0.3	NA	9.8	73.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab). Lane LOS values are based on average delay per lane.

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

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

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

Approach	Approach Lane Flows (veh/h)													
South: Ti R	akau Driv	e (East	)											
Mov.	T1	R2	Total	%HV	Con	Deg.			Ov.					
From S To Exit:	N	Е			Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.					
Lane 1	390	-	390	7.7	1779	0.219	100	NA	NA					
Lane 2	399	-	399	7.7	1818	0.219	100	NA	NA					
Lane 3	391	-	391	7.7	1784	0.219	100	NA	NA					
Lane 4	-	19	19	4.9	100	0.195	100	0.0	3					
Approach	1181	19	1200	7.7		0.219								
East: Ayles	bury St													
Mov.	L2	Total	%HV			Deg.	Lane	Prob.	Ov.					

From E						Satn			Lane	
To Exit:	S				Cap. veh/h	v/c	%	%	No.	
Lane 1	12	12	0.0		681	0.018	100	NA	NA	
Approach	12	12	0.0			0.018				
North: Ti Rak	au Driv	e (West	t)							
Mov. From N	L2	T1	Total	%HV	Cap.	Deg. Satn		SL Ov.	Ov. Lane	
To Exit:	E	S			veh/h	v/c	%	%	No.	
Lane 1	10	425	434	8.6	1489	0.292	100	NA	NA	
Lane 2	-	521	521	8.8	1787	0.292	100	NA	NA	
Lane 3	-	527	527	8.8	1806	0.292	100	NA	NA	
Approach	10	1472	1482	8.8		0.292				
	Total	%HV[	Deg.Sat	n (v/c)						
Intersection	2694	8.5		0.292						

Merge Analysis								
Ex Lan Numbe	e Lane	Opng in Lane	Opposing Flow Rate veh/h pcu/h	Critical Gap sec		capacity veh/h	Deg. Satn I	Merge Delay sec
South Exit: Ti Rakau Drive Merge Type: <b>Not Applied</b>	(East)							
Full Length Lane	2 Merge	Analysis	not applied. not applied. not applied.					
East Exit: Aylesbury St Merge Type: <b>Not Applied</b>								
Full Length Lane	1 Merge	Analysis	not applied.					
North Exit: Ti Rakau Drive Merge Type: <b>Not Applied</b>	(West)							
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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**▽** Site: 4.0 [4.0 Aylesbury St South/ Ti Rakau Dr (Site Folder: General)]

■■ Network: N101 [Construction 1 (Network Folder: PM)]

New Site

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

Lane Use and Performance  DEMAND ARRIVAL Deg. Lane Aver. Level of 95% BACK OF Lane Lane Cap. Prob.															
	DEM. FLO [ Total veh/h		ARRI FLO [ Total veh/h	WS	Cap.	Deg. Satn v/c	Lane Util.		Level of Service	95% BA QUE [ Veh		Lane Config	Lane Length m	Cap. Adj.	Prob. Block.
South: Ti R	akau D	rive (E	ast)												
Lane 1 Lane 2	536 547	7.3 7.3	524 536	7.3 7.3		0.294 0.294	100 100	0.0	LOS A LOS A	0.0 0.0	0.0	Full Full	84 84	0.0	0.0 0.0
Lane 3	538	7.3	526	7.3	1791	0.294	100	0.0	LOSA	0.0	0.0	Full	84	0.0	0.0
Lane 4 Approach	10 1631	7.4	10 1596 <sup>N</sup>	9.9 7.3		0.027	100	0.1	LOS B NA	0.1	0.5	Short	21	0.0	NA
East: Ayles	bury St														
Lane 1	40	10.0	40	10.0	982	0.041	100	1.1	LOS A	0.1	1.1	Full	93	0.0	0.0
Approach	40	10.0	40	10.0		0.041		1.1	LOS A	0.1	1.1				
North: Ti Ra	akau Dr	rive (W	est)												
Lane 1	267	5.8	255	5.9	1855	0.137	100	0.1	LOS A	0.0	0.0	Full	45	0.0	0.0
Lane 2	262	6.0	250	6.2	1817	0.137	100	0.0	LOS A	0.0	0.0	Full	45	0.0	0.0
Lane 3	264	6.0	252	6.2	1836	0.137	100	0.0	LOS A	0.0	0.0	Full	45	0.0	0.0
Approach	793	5.9	<mark>757</mark> N1	6.1		0.137		0.1	NA	0.0	0.0				
Intersectio n	2464	6.9	2393 <sup>N</sup>	7.1		0.294		0.1	NA	0.1	1.1				

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).

 $\label{eq:hv} \mbox{HV (\%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.}$ 

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

Approach	Lane FI	ows (v	reh/h)						
South: Ti Ra	akau Driv	e (East	)						
Mov. From S To Exit:	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c		Prob. SL Ov. %	Ov. Lane No.
Lane 1 Lane 2 Lane 3	524 536 526	- - -	524 536 526	7.3 7.3 7.3	1823	0.294 0.294 0.294	100 100 100	NA NA NA	NA NA NA
Lane 4	-	10	10	9.9	357	0.027	100	0.0	3
Approach  East: Aylest	1586 bury St	10	1596	7.3		0.294			
Mov. From E To Exit:	L2 S	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	40	40	10.0		982	0.041	100	NA	NA

Approach	40	40	10.0			0.041			
North: Ti Rak	kau Drive	e (West	:)						
Mov. From N To Exit:	L2 E	T1 S	Total	%HV	Cap. veh/h	Deg. Satn v/c		Prob. SL Ov. %	Ov. Lane No.
Lane 1	10	245	255	5.9	1855	0.137	100	NA	NA
Lane 2	-	250	250	6.2	1817	0.137	100	NA	NA
Lane 3	-	252	252	6.2	1836	0.137	100	NA	NA
Approach	10	747	757	6.1		0.137			
	Total	%HV[	Deg.Sat	n (v/c)					
Intersection	2393	7.1		0.294					

Merge Analysis										
E Lai Numb			Opng in Lane	Opposing Flow Rate veh/h pcu/l	: (	ical Gap sec	Follow-up Headway sec	Capacity veh/h	Delay	Merge Delay sec
South Exit: Ti Rakau Driv Merge Type: <b>Not Applie</b>	٠,	East)								
Full Length Lane	1	Merge	Analysis	not applied	<b>1</b> .					
Full Length Lane	2	Merge	Analysis	not applied	i.					
Full Length Lane	3	Merge	Analysis	not applied	<b>l</b> .					
East Exit: Aylesbury St Merge Type: <b>Not Applie</b>	d									
Full Length Lane	1	Merge	Analysis	not applied	i.					
North Exit: Ti Rakau Driv Merge Type: <b>Not Applie</b>	٠,	Vest)								
Full Length Lane	1	Merge	Analysis	not applied	i.					
Full Length Lane	2	Merge	Analysis	not applied	<b>1</b> .					
Full Length Lane	3	Merge	Analysis	not applied	d.					

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Project: C:\Users\jacques.vandenheever\Downloads\2028 Construction 1 PM (2).sip9

Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd Mitigation 1 C (Site

■■ Network: N101 Folder: General)] [Construction 1 (Network

Folder: AM)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 65 seconds (Site User-Given Phase Times)

Lane Use	and P	erforr	nance												
	DEM FLO [ Total		ARRI FLO [Total	WS	Сар.	Deg. Satn	Lane Util.		Level of Service		ACK OF EUE Dist ]	Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	veh/h	%	veh/h	%	veh/h	v/c	%	sec			m		m	%	%
SouthEast:	Ti Rak	au Driv	∕e (East	:)											
Lane 1	635	9.5	598	9.4		0.782	100	112.7	LOS F	15.2	115.0	Short	50	0.0	NA
Lane 2	635	9.5	598	9.4	764 <sup>1</sup>	0.782	100	19.2	LOS B	15.2	115.0	Full	90	0.0	<mark>27.3</mark> 8
Lane 3	308	11.3	290	11.3	520	0.559	100	21.6	LOS C	8.0	61.6	Full	90	0.0	0.0
Lane 4	311	11.3	293	11.3	525	0.559	100	21.6	LOS C	8.1	62.3	Full	90	0.0	0.0
Approach	1889	10.1	1780 <sup>N</sup>	10.0		0.782		51.4	LOS D	15.2	115.0				
NorthWest	Ti Rak	au Driv	ve (Wes	it)											
Lane 1	403	18.9	389	19.1	528	0.735	73 <sup>5</sup>	24.2	LOS C	12.0	97.8	Full	84	0.0	<mark>18.8</mark>
Lane 2	577	5.2	555	5.2	554	1.002	100	75.9	LOS E	18.7 <sup>N4</sup>	137.1 <sup>N4</sup>	Full	84	0.0	<mark>50.0</mark>
Lane 3	562	5.2	541	5.2	540	1.002	100	76.2	LOS E	18.7 <sup>N4</sup>	137.1 <sup>N4</sup>	Full	84	0.0	<mark>50.0</mark>
Approach	1542	8.8	1484 <sup>N</sup>	8.8		1.002		62.5	LOS E	18.7	137.1				
SouthWest	: Pakur	anga F	ΗWY												
Lane 1	306	4.4	306	4.4	1053	0.291	100	14.9	LOS B	4.9	35.3	Short	308	0.0	NA
Lane 2	311	4.4	311	4.4	1069	0.291	100	14.9	LOS B	4.9	35.8	Short	132	0.0	NA
Lane 3	273	8.8	273	8.8	317	0.860	100	44.0	LOS D	10.2	77.0	Full	1650	0.0	0.0
Lane 4	276	8.8	276	8.8	321	0.860	100	43.9	LOS D	10.3	77.7	Full	1650	0.0	0.0
Lane 5	276	8.8	276	8.8	321	0.860	100	43.9	LOS D	10.3	77.7	Short	277	0.0	NA
Approach	1442	6.9	1442	6.9		0.860		31.5	LOS C	10.3	77.7				
Intersectio n	4873	8.7	4706 <sup>N</sup>	9.1		1.002		48.8	LOS D	18.7	137.1				

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.

- Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
- 5 Lane under-utilisation found by the program
- 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.
- N4 Average back of queue has been restricted to the available queue storage space.

Approach	l ano Fl	ows (v	(eh/h)						
SouthEast:									
Mov. From SE To Exit:	L2 SW	T1 NW	Total	%HV	Cap. veh/h	Deg. Satn v/c		Prob. SL Ov. %	
Lane 1 Lane 2	598 598	-	598 598	9.4 9.4	764 <sup>1</sup> 764 <sup>1</sup>	0.782 0.782	100 100	82.9 NA	2 NA
Lane 3	-	290	290	11.3	520	0.559	100	NA	NA

Approach   1196   584   1780   10.0   0.782	Lane 4	-	293	293	11.3	525	0.559	100	NA	NA
Mov.         T1         R2         Total         %HV         Deg. Sath veh/h         Lane Prob. Will. SL Ov. Lane Prob. No.           Lane 1         389         - 389         19.1         528         0.735         735         NA         NA           Lane 2         - 555         555         5.2         554         1.002         100         NA         NA           Lane 3         - 541         541         5.2         540         1.002         100         NA         NA           Approach         389         1096         1484         8.8         1.002         100         NA         NA           SouthWest: Pakuranga HWY         Mov.         L2         R2         Total         %HV         Deg. Cap. Sath Util. SL Ov. Lane Prob. Ov. Util. SL Ov. Lane Veh/h         Veh/h         V/c         %         %         No.           Lane 1         306         - 306         4.4         1053         0.291         100         0.0         3           Lane 2         311         - 311         4.4         1069         0.291         100         0.0         3           Lane 3         - 273         273         8.8         317         0.860         100         NA <t< td=""><td>Approach</td><td>1196</td><td>584</td><td>1780</td><td>10.0</td><td></td><td>0.782</td><td></td><td></td><td></td></t<>	Approach	1196	584	1780	10.0		0.782			
Mov. From NW To Exit:         T1 R2 Total         %HV Veh/h         Deg. Veh/h veh/h         Lane Prob. Veh/h veh/h         Ov. Util. SL Ov. Lane No.           Lane 1 389 - 389 19.1         528 0.735 735 NA NA NA Lane 2 - 555 555 552 555 5.2         554 1.002 100 NA	NorthWest: 1	ī Rakau	ı Drive (	West)						
To Exit: SE SW				, ,	%HV		Deg.	Lane	Prob.	Ov.
Lane 1 389 - 389 19.1 528 0.735 73 <sup>5</sup> NA NA Lane 2 - 555 555 5.2 554 1.002 100 NA NA Lane 3 - 541 541 5.2 540 1.002 100 NA NA Approach 389 1096 1484 8.8 1.002  SouthWest: Pakuranga HWY  Mov. L2 R2 Total %HV  Mov. L2 R2 Total %HV  To Exit: NW SE  Lane 1 306 - 306 4.4 1053 0.291 100 0.0 3 Lane 2 311 - 311 4.4 1069 0.291 100 0.0 3 Lane 3 - 273 273 8.8 317 0.860 100 NA NA Lane 4 - 276 276 8.8 321 0.860 100 NA NA Lane 5 - 276 276 8.8 321 0.860 100 0.0 4  Approach 617 825 1442 6.9 0.860  Total %HV Deg.Satn (v/c)	From NW									
Lane 2 - 555 555 5.2 554 1.002 100 NA NA Lane 3 - 541 541 5.2 540 1.002 100 NA NA Approach 389 1096 1484 8.8 1.002  SouthWest: Pakuranga HWY  Mov.	To Exit:	SE	SW			veh/h	v/c		%	No.
Lane 3 - 541 541 5.2 540 1.002 100 NA NA Approach 389 1096 1484 8.8 1.002  SouthWest: Pakuranga HWY  Mov.	Lane 1	389	-	389	19.1	528	0.735	73 <sup>5</sup>	NA	NA
Approach         389         1096         1484         8.8         1.002           SouthWest: Pakuranga HWY           Mov.         L2         R2         Total         %HV         Deg. Satn veh/h         Lane Prob. Ov. Util. SL Ov. Lane Veh/h         Work         Work         No.           Lane 1         306         -         306         4.4         1053         0.291         100         0.0         3           Lane 2         311         -         311         4.4         1069         0.291         100         0.0         3           Lane 3         -         273         273         8.8         317         0.860         100         NA         NA           Lane 4         -         276         276         8.8         321         0.860         100         NA         NA           Lane 5         -         276         276         8.8         321         0.860         100         0.0         4           Approach         617         825         1442         6.9         0.860	Lane 2	-	555	555	5.2	554	1.002	100	NA	NA
SouthWest: Pakuranga HWY           Mov.         L2         R2         Total         %HV         Deg. Veh/h         Lane Prob. Util. SL Ov. Lane Veh/h         Ov. Weh/h           To Exit:         NW         SE         No.         Weh/h         V/c         Weh/h         No.           Lane 1         306         -         306         4.4         1053         0.291         100         0.0         3           Lane 2         311         -         311         4.4         1069         0.291         100         0.0         3           Lane 3         -         273         273         8.8         317         0.860         100         NA         NA           Lane 4         -         276         276         8.8         321         0.860         100         NA         NA           Lane 5         -         276         276         8.8         321         0.860         100         0.0         4           Approach         617         825         1442         6.9         0.860         0.860	Lane 3	-	541	541	5.2	540	1.002	100	NA	NA
Mov. From SW To Exit:         L2         R2         Total         %HV         Deg. Veh/h         Lane Prob. V/c         Ov. Util. SL Ov. Lane No.           Lane 1         306         - 306         4.4         1053         0.291         100         0.0         3           Lane 2         311         - 311         4.4         1069         0.291         100         0.0         3           Lane 3         - 273         273         8.8         317         0.860         100         NA         NA           Lane 4         - 276         276         8.8         321         0.860         100         NA         NA           Lane 5         - 276         276         8.8         321         0.860         100         0.0         4           Approach         617         825         1442         6.9         0.860         100         0.0         4	Approach	389	1096	1484	8.8		1.002			
Mov. From SW To Exit:         L2         R2         Total         %HV         Deg. Veh/h         Lane Prob. V/c         Ov. Util. SL Ov. Lane No.           Lane 1         306         - 306         4.4         1053         0.291         100         0.0         3           Lane 2         311         - 311         4.4         1069         0.291         100         0.0         3           Lane 3         - 273         273         8.8         317         0.860         100         NA         NA           Lane 4         - 276         276         8.8         321         0.860         100         NA         NA           Lane 5         - 276         276         8.8         321         0.860         100         0.0         4           Approach         617         825         1442         6.9         0.860         100         0.0         4	South\Magte	Dokuron	-a- LI\A/	V						
From SW To Exit:  NW SE  Cap. Veh/h V/c  Whill SL OV. Lane No.  Lane 1 306 - 306 4.4 1053 0.291 100 0.0 3 Lane 2 311 - 311 4.4 1069 0.291 100 0.0 3 Lane 3 - 273 273 8.8 317 0.860 100 NA NA Lane 4 - 276 276 8.8 321 0.860 100 NA NA Lane 5 - 276 276 8.8 321 0.860 100 0.0 4  Approach 617 825 1442 6.9  Total %HV Deg.Satn (v/c)					0/11\/		Dog	Long	Duah	0,4
To Exit: NW SE		L2	K2	Total	%HV	Cap				
Lane 2 311 - 311 4.4 1069 0.291 100 0.0 3 Lane 3 - 273 273 8.8 317 0.860 100 NA NA Lane 4 - 276 276 8.8 321 0.860 100 NA NA Lane 5 - 276 276 8.8 321 0.860 100 0.0 4 Approach 617 825 1442 6.9 0.860  Total %HV Deg.Satn (v/c)		NW	SE							
Lane 3 - 273 273 8.8 317 0.860 100 NA NA Lane 4 - 276 276 8.8 321 0.860 100 NA NA Lane 5 - 276 276 8.8 321 0.860 100 0.0 4  Approach 617 825 1442 6.9 0.860  Total %HV Deg.Satn (v/c)	Lane 1	306		000						
Lane 4 - 276 276 8.8 321 0.860 100 NA NA Lane 5 - 276 276 8.8 321 0.860 100 0.0 4  Approach 617 825 1442 6.9 0.860  Total %HV Deg.Satn (v/c)			-	306	4.4	1053	0.291	100	0.0	3
Lane 4 - 276 276 8.8 321 0.860 100 NA NA Lane 5 - 276 276 8.8 321 0.860 100 0.0 4  Approach 617 825 1442 6.9 0.860  Total %HV Deg.Satn (v/c)	Lane 2	311								-
Lane 5       -       276       276       8.8       321       0.860       100       0.0       4         Approach       617       825       1442       6.9       0.860         Total %HV Deg.Satn (v/c)			-	311	4.4	1069	0.291	100	0.0	3
Approach 617 825 1442 6.9 0.860  Total %HV Deg.Satn (v/c)	Lane 3	-	- 273	311 273	4.4 8.8	1069 317	0.291 0.860	100 100	0.0 NA	3 NA
Total %HV Deg.Satn (v/c)	Lane 3 Lane 4	-	- 273 276	311 273 276	4.4 8.8 8.8	1069 317 321	0.291 0.860 0.860	100 100 100	0.0 NA NA	3 NA NA
	Lane 3 Lane 4 Lane 5	- - -	273 276 276	311 273 276 276	4.4 8.8 8.8 8.8	1069 317 321	0.291 0.860 0.860 0.860	100 100 100	0.0 NA NA	3 NA NA
Interconting 4706 0.4 4.000	Lane 3 Lane 4 Lane 5	- - - 617	273 276 276 825	311 273 276 276 1442	4.4 8.8 8.8 8.8 6.9	1069 317 321	0.291 0.860 0.860 0.860	100 100 100	0.0 NA NA	3 NA NA
	Lane 3 Lane 4 Lane 5	- - - 617	273 276 276 825	311 273 276 276 1442	4.4 8.8 8.8 8.8 6.9	1069 317 321	0.291 0.860 0.860 0.860	100 100 100	0.0 NA NA	3 NA NA

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

Merge Analysis												
	Exit ane ber		Percent Opng in Lane %		Rate	Critical Gap sec	Follow-up Headway sec		Capacity veh/h		Min. Delay sec	Merge Delay sec
SouthEast Exit: Ti Raka Merge Type: <b>Not Applic</b>		ve (East)										
Full Length Lane Full Length Lane Full Length Lane	1 2 3	Merge A Merge A Merge A	nalysis	not ap	plied.							
NorthWest Exit: Ti Raka Merge Type: <b>Not Applie</b>		ive (West	)									
Full Length Lane Full Length Lane Full Length Lane	1 2 3	Merge A	nalysis nalysis nalysis	not ap	plied.							
SouthWest Exit: Pakura Merge Type: <b>Priority</b>	nga	HWY										
Exit Short Lane Merge Lane	1 2	356 -	0.0 100.0	1152 Mer		3.00 e is not O	2.00 pposed	598 1152		1.080 0.640	4.1 0.0	93.5 0.0

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Site: 5.0 [5.0 Pakuranga HWY/ Reeves Rd Mitigation 1 C (Site

■ Network: N101 Folder: General)] [Construction 1 (Network

Folder: PM)]

New Site

Site Category: (None)

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

Lane Use	and P	erfori	mance												
	DEM.	WS	ARRI FLO	WS	Сар.	Deg. Satn	Lane Util.		Level of Service	95% BA QUE	UE	Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	[ Total veh/h	HV]	[ Total veh/h	HV J %	veh/h	v/c	%	sec		[ Veh	Dist ] m		m	%	%
SouthEast:				)											
Lane 1	603	7.1	568	6.8	858	0.662	100	15.7	LOS B	8.8	65.3	Short	50	0.0	NA
Lane 2	603	7.1	568	6.8	858	0.662	100	13.2	LOS B	8.8	65.3	Full	90	0.0	0.0
Lane 3	313	7.9	295	7.8	363	0.812	100	21.5	LOS C	6.7	50.1	Full	90	0.0	0.0
Lane 4	316	7.9	298	7.8	367	0.812	100	21.5	LOS C	6.8	50.6	Full	90	0.0	0.0
Approach	1835	7.4	1728 <sup>N</sup>	7.2		0.812		16.9	LOS B	8.8	65.3				
NorthWest	Ti Raka	au Dri	ve (Wes	t)											
Lane 1	280	5.5	268	5.7	372	0.719	100	18.8	LOS B	5.6	40.9	Full	84	0.0	0.0
Lane 2	283	5.6	271	5.8	376	0.719	100	19.1	LOS B	5.6	41.4	Full	84	0.0	0.0
Lane 3	259	7.6	248	7.6	345	0.719	100	23.5	LOS C	5.2	38.8	Full	84	0.0	0.0
Approach	822	6.2	786 <sup>N1</sup>	6.4		0.719		20.4	LOS C	5.6	41.4				
SouthWest	: Pakura	anga H	HWY												
Lane 1	495	6.9	495	6.9	885	0.560	100	15.4	LOS B	6.9	51.4	Short	308	0.0	NA
Lane 2	503	6.9	503	6.9	899	0.560	100	15.4	LOS B	7.0	52.2	Short	132	0.0	NA
Lane 3	202	3.4	202	3.4	268	0.754	100	28.7	LOS C	4.4	32.0	Full	1650	0.0	0.0
Lane 4	204	3.4	204	3.4	270	0.754	100	28.6	LOS C	4.5	32.3	Full	1650	0.0	0.0
Lane 5	204	3.4	204	3.4	270	0.754	100	28.6	LOS C	4.5	32.3	Short	277	0.0	NA
Approach	1608	5.6	1608	5.6		0.754		20.4	LOS C	7.0	52.2				
Intersectio n	4265	6.5	4123 <sup>N</sup>	6.7		0.812		18.9	LOS B	8.8	65.3				

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.

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

Approach	Lane Flo	ows (v	reh/h)						
SouthEast:	Ti Rakau I	Drive (	East)						
Mov. From SE To Exit:	L2 SW	T1 NW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	568	-	568	6.8	858	0.662	100	<mark>29.3</mark>	2
Lane 2	568	-	568	6.8	858	0.662	100	NA	NA
Lane 3	-	295	295	7.8	363	0.812	100	NA	NA
Lane 4	-	298	298	7.8	367	0.812	100	NA	NA
Approach	1135	593	1728	7.2		0.812			
NorthWest:	Ti Rakau l	Drive (	West)						
Mov. From NW	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane

lo Exit:	SE	SW			veh/h	V/C	%	%	No.	
Lane 1	268	-	268	5.7	372	0.719	100	NA	NA	
Lane 2	253	18	271	5.8	376	0.719	100	NA	NA	
Lane 3	-	248	248	7.6	345	0.719	100	NA	NA	
Approach	521	266	786	6.4		0.719				
SouthWest:	Pakuran	ga HW	Y							
Mov.	L2	R2	Total	%HV		Deg.		Prob.	Ov.	
From SW					Cap. veh/h	Satn v/c	Util. %	SL Ov. %	Lane No.	
To Exit:	NW	SE			ven/n	٧/٥	70	70	INO.	
Lane 1	495	-	495	6.9	885	0.560	100	0.0	3	
Lane 2	503	-	503	6.9	899	0.560	100	0.0	3	
Lane 3	-	202	202	3.4	268	0.754	100	NA	NA	
Lane 4	-	204	204	3.4	270	0.754	100	NA	NA	
Lane 5	-	204	204	3.4	270	0.754	100	0.0	4	
Approach	998	610	1608	5.6		0.754				
	Total	%HV	Deg.Sat	tn (v/c)						
Intersection	4123	6.7		0.812						

Merge Analysis												
	xit ine per	Lane Length	Percent Opng in Lane	Flow		Critical Gap			Capacity veh/h	Deg. Satn v/c	Delay	Merge Delay
SouthEast Exit: Ti Rakau Merge Type: <b>Not Applie</b>		m ve (East)		ven/m	pcu/II	sec	Sec (	/en/m	ven/m	V/C	sec	sec
Full Length Lane	1	Merge /	Analysis	not ap	plied.							
Full Length Lane	2	Merge /	Analysis	not ap	plied.							
Full Length Lane	3	Merge /	Analysis	not ap	plied.							
NorthWest Exit: Ti Rakar Merge Type: <b>Not Applie</b>		ive (West	t)									
Full Length Lane	1	Merge /	Analysis	not ap	plied.							
Full Length Lane	2	Merge /	Analysis	not ap	plied.							
Full Length Lane	3	Merge /	Analysis	not ap	plied.							
SouthWest Exit: Pakurar Merge Type: <b>Priority</b>	nga l	HWY										
Exit Short Lane	1	356	0.0	585	605	3.00	2.00	568	1175	0.483	1.1	2.5
Merge Lane	2	-	100.0	Ме	rge Lar	ne is not O	pposed	585	1800	0.325	0.0	0.0

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# **CCG LANE SUMMARY**

□□ Common Control Group: CCG1 [WR/ Mattson]

■■ Network: N101 [Construction 1 (Network

Folder: AM)]

EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 131 seconds (CCG User-Given Phase Times)

Lane Use	and P	erforr	nance	(CCG	;)										
	DEM		ARR			Deg.	Lane		Level of	95% BA	ACK OF		Lane	Сар.	Prob.
	FLO		FLO		Сар.	Satn	Util.	Delay	Service		EUE Diet 1	Config	Length	Adj.	Block.
	[ Total veh/h	пv ј %	[ Total veh/h	пv ј %	veh/h	v/c	%	sec		[ Veh	Dist ] m		m	%	%
Site: 6.5 [6															
SouthEast:	Ti Raka	au Driv	∕e (East	)											
Lane 1	525	10.3	487	10.2	1069	0.455	100	16.0	LOS B	12.9 <sup>N4</sup>	97.9 <sup>N4</sup>	Full	60	0.0	<del>50.0</del>
Lane 2	525	10.3	487	10.2	1069	0.455	100	14.3	LOS B	12.9 <sup>N4</sup>	97.9 <sup>N4</sup>	Full	60	0.0	<mark>50.0</mark>
Lane 3	482	10.3	447	10.2	982 <sup>1</sup>	0.455	100	13.3	LOS B	12.1	91.8	Full	60	0.0	<mark>43.9</mark>
Lane 4	45	4.4	42	4.4	386	0.108	100	45.4	LOS D	1.9	13.7	Short	20	0.0	NA
Approach	1578	10.1	1461 <sup>N</sup>	10.0		0.455		15.5	LOS B	12.9	97.9				
NorthEast:	William	Robe	rts Road	d Exte	nsion										
Lane 1	33	12.1	33	12.1	312	0.106	100	50.1	LOS D	1.8	13.6	Short	80	0.0	NA
Lane 2	281	8.5	281	8.5	319	0.881	100	69.9	LOS E	20.0	150.6	Full	110	0.0	<mark>33.6</mark>
Approach	314	8.9	314	8.9		0.881		67.8	LOS E	20.0	150.6				
NorthWest	: Ti Rak	au Driv	ve (Wes	t)											
Lane 1	182	7.1	180	7.1	819	0.220	100	26.7	LOS C	6.7	50.0	Full	107	0.0	0.0
Lane 2	527	12.8	521	12.8		0.762	100	25.6	LOS C	17.8	138.1	Full	107	0.0	<mark>28.2</mark>
Lane 3	473	12.8	468	12.8	614 <sup>1</sup>	0.762	100	23.1	LOS C	14.3	111.0	Full	107	0.0	8.3
Lane 4	49	16.3	48	16.3	115	0.422	100	70.3	LOS E	3.1	24.7	Short	20	0.0	NA
Approach	1231	12.1	1217 <sup>N</sup>	12.1		0.762		26.6	LOS C	17.8	138.1				
Intersectio n	3123	10.8	2992 <sup>N</sup>	11.3		0.881		25.5	LOS C	20.0	150.6				
	O Motte	on Dd	/ Ti Dok	ou Dr	Cl										
Site: 7.0 [7					Cj										
SouthEast:			,	•	-aa1		400	440		40.0		01 1		N7	
Lane 1	427	9.3	393	9.2		0.782 0.782	100	14.3	LOS B	13.0	98.5	Short	25	-48.1 <sup>N7</sup> -50.0 <sup>N3</sup>	NA
Lane 2	367 701	9.5 11.7	337	9.4		0.782	100	12.6 6.5	LOS B LOS A	8.8	66.5 160.0	Full	143 143	-50.0 -43.9 <sup>N3</sup>	0.0 <mark>15.2</mark>
Lane 3 Approach	1495	10.5	646 1376 <sup>N</sup>	11.8		0.782	100	10.2	LOS A	20.8	160.0	Full	143	<del>-43.9</del>	15.2
Арргоасп	1495	10.5	1	10.4		0.702		10.2	LOS B	20.0	100.0				
NorthWest	: Ti Rak	au Driv	ve (Wes	t)											
Lane 1	531	11.5	524	11.5	1185	0.443	100	2.4	LOSA	3.4	26.5	Full	60	0.0	0.0
Lane 2	524	13.7	517	13.7	1169		100	2.6	LOSA	3.7	28.7	Full	60	0.0	0.0
Approach	1055	12.6	1042 <sup>N</sup>	12.6		0.443		2.5	LOS A	3.7	28.7				
SouthWest	: Mattso	on Roa	ıd												
Lane 1	53	5.5	53	5.5	81	0.651	100	73.6	LOS E	3.6	26.6	Full	282	-50.0 <sup>N7</sup>	0.0
Lane 2	56	5.5	56	5.5	86	0.651	100	73.2	LOS E	3.8	28.0	Full	282	-47.1 <sup>N3</sup>	0.0
Approach	109	5.5	109	5.5		0.651		73.4	LOS E	3.8	28.0				
Intersectio n	2659	11.1	2527 <sup>N</sup>	11.7		0.782		9.7	LOSA	20.8	160.0				

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).

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.

- 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.
- 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.

Internal	R2 NE 20 20 1 Roberts R2 NW - 281 281	U SE 21 21 21 tts Road Total 33 281 314	487 487 447 42 1461 I Extens %HV 12.1 8.5 8.9	%HV  10.2 10.2 10.2 4.4 10.0 sion		1069 982 <sup>1</sup> 386 Cap. veh/h	Deg. Satn v/c  0.455 0.455 0.455 0.108 0.455  Deg. Satn v/c  0.106 0.881 0.881  Deg. Satn	Util. %  100 100 100 100 100  Lane Util. %  100 100	SL Ov. % 0.0 NA Prob.	Ov. Lane No. NA NA NA 3		
From SE NW To Exit:  Lane 1	NE 20 20 20 n Roberts R2 NW - 281 281 tau Drive	SE 21 21 21 ts Road Total  33 281 314 e (West U	487 487 447 42 1461 I Extens %HV 12.1 8.5 8.9	10.2 10.2 10.2 4.4 10.0		veh/h 1069 1069 982 386  Cap. veh/h 312 319	Satn v/c  0.455 0.455 0.455 0.108 0.455  Deg. Satn v/c  0.106 0.881  Deg. Deg.	Util. %  100 100 100 100 100  Lane Util. %  100 100	SL OV. %  NA NA NA 0.0  Prob. SL OV. %  0.0 NA	NA N		
To Exit:  Lane 1	- 20 20 20 20 30 Roberts R2 NW - 281 281	21 21 21 21 ts Road Total 33 281 314 e (West U	487 447 42 1461 I Extens %HV 12.1 8.5 8.9	10.2 10.2 4.4 10.0 sion		1069 1069 982 <sup>1</sup> 386 Cap. veh/h	0.455 0.455 0.455 0.108 0.455 Deg. Satn v/c 0.106 0.881 0.881	100 100 100 100 100 Lane Util. %	Prob. Prob.	NA NA NA 3  Ov. Lane No. 2 NA		
Lane 2 487 Lane 3 447 Lane 4 - Approac 1420 h  NorthEast: William Mov. L2 From NE SE To Exit: Lane 1 33 Lane 2 - Approac 33 h  NorthWest: Ti Raka Mov. L2 From NW NE To Exit: Lane 1 180 Lane 2 - Lane 3 - Lane 3 - Lane 4 - Approac 180 h  Total 6  Intersec 2992 6 tion  Site: 7.0 [7.0 Matts SouthEast: Ti Raka	- 20 20 20 20 n Roberts R2 NW - 281 281 281	21 21 21 21 ts Road Total 33 281 314 e (West U	487 447 42 1461 I Extens %HV 12.1 8.5 8.9	10.2 10.2 4.4 10.0 sion		1069 982 <sup>1</sup> 386 Cap. veh/h 312 319	0.455 0.455 0.108 0.455 Deg. Satn v/c 0.106 0.881 0.881	100 100 100 100 Lane Util. %	NA NA 0.0 Prob. SL Ov. % 0.0 NA	NA NA 3  Ov. Lane No. 2 NA		
Lane 3 447 Lane 4 - Approac 1420 h  NorthEast: William Mov. L2 From NE SE To Exit: Lane 1 33 Lane 2 - Approac 33 h  NorthWest: Ti Raka Mov. L2 From NW NE To Exit: Lane 1 180 Lane 2 - Lane 3 - Lane 4 - Approac 180 h  Total 6  Intersec 2992 6 tion  Site: 7.0 [7.0 Matts SouthEast: Ti Raka Mov. L2	20 20 20 n Roberts R2 NW - 281 281 tau Drive	21 21 21 ts Road Total 33 281 314 e (West U	447 42 1461 I Extens %HV 12.1 8.5 8.9	10.2 4.4 10.0 sion		982 <sup>1</sup> 386 Cap. veh/h 312 319	0.455 0.108 0.455 Deg. Satn v/c 0.106 0.881 0.881	100 100 Lane Util. % 100 100	Prob. SL Ov. % 0.0 NA	Ov. Lane No. 2 NA		
Lane 4 - Approac 1420 h  NorthEast: William Mov. L2 From NE SE To Exit: Lane 1 33 Lane 2 - Approac 33 h  NorthWest: Ti Raka Mov. L2 From NW NE To Exit: Lane 1 180 Lane 2 - Lane 3 - Lane 4 - Approac 180 h  Total G  Intersec 2992 ction Site: 7.0 [7.0 Matts SouthEast: Ti Raka Mov. L2	20 20 n Roberts R2 NW - 281 281 281	21 21 ts Road Total 33 281 314 e (West U	42 1461 I Extens %HV 12.1 8.5 8.9	4.4 10.0		Cap. veh/h 312 319	0.108 0.455 Deg. Satn v/c 0.106 0.881 0.881	Lane Util. % 100 100	Prob. SL Ov. % 0.0 NA	Ov. Lane No. 2 NA		
Approac h  NorthEast: William  Mov. L2  From  NE SE  To Exit:  Lane 1 33  Lane 2 -  Approac 33  h  NorthWest: Ti Raka  Mov. L2  From  NW NE  To Exit:  Lane 1 180  Lane 2 -  Lane 3 -  Lane 4 -  Approac 180  h  Total 1  Intersec 2992 1500  Site: 7.0 [7.0 Matts  SouthEast: Ti Raka  Mov. L2	20 n Roberts R2 NW - 281 281 au Drive	ts Road Total  33 281 314 e (West U	1461 I Extens %HV  12.1 8.5 8.9 t) Total	10.0		Cap. veh/h 312 319	0.455  Deg. Satn v/c  0.106 0.881 0.881	Lane Util. % 100 100	Prob. SL Ov. % 0.0 NA	Ov. Lane No. 2 NA		
h  NorthEast: William  Mov. L2  From  NE SE  To Exit:  Lane 1 33  Lane 2 -  Approac 33  h  NorthWest: Ti Raka  Mov. L2  From  NW NE  To Exit:  Lane 1 180  Lane 2 -  Lane 3 -  Lane 4 -  Approac 180  h  Total  Intersec 2992  tion  Site: 7.0 [7.0 Matts  SouthEast: Ti Raka  Mov. L2	n Roberts R2 NW - 281 281 tau Drive	ts Road Total  33 281 314  e (West U	12.1 8.5 8.9 Total	sion		312 319	Deg. Satn v/c 0.106 0.881 0.881	Util. % 100 100	SL Ov. % 0.0 NA Prob.	Lane No. 2 NA		
Mov. L2 From NE SE To Exit: Lane 1 33 Lane 2 - Approac 33 h  NorthWest: Ti Raka Mov. L2 From NW NE To Exit: Lane 1 180 Lane 2 - Lane 3 - Lane 4 - Approac 180 h  Total G  Intersec 2992 tion Site: 7.0 [7.0 Matts SouthEast: Ti Raka Mov. L2	R2 NW - 281 281 281 tau Drive	33 281 314 e (West U	%HV  12.1 8.5 8.9  t)  Total			312 319	Satn v/c 0.106 0.881 0.881	Util. % 100 100	SL Ov. % 0.0 NA Prob.	Lane No. 2 NA		
From NE To Exit: Lane 1 33 Lane 2 - Approac 33 h  NorthWest: Ti Raka Mov. L2 From NW NE To Exit: Lane 1 180 Lane 2 - Lane 3 - Lane 4 - Approac 180 h  Total  Intersec 2992 tion Site: 7.0 [7.0 Matts SouthEast: Ti Raka Mov. L2	NW - 281 281 281 xau Drive	33 281 314 e (West U	12.1 8.5 8.9 t)	%HV		312 319	Satn v/c 0.106 0.881 0.881	Util. % 100 100	SL Ov. % 0.0 NA Prob.	Lane No. 2 NA		
NE To Exit: Lane 1 33 Lane 2 - Approac 33 h  NorthWest: Ti Raka Mov. L2 From NW NE To Exit: Lane 1 180 Lane 2 - Lane 3 - Lane 4 - Approac 180 h  Total 0  Intersec 2992 1 tion  Site: 7.0 [7.0 Matts SouthEast: Ti Raka Mov. L2	- 281 281 au Drive	281 314 e (West U	8.5 8.9 t) Total	%HV		312 319	v/c 0.106 0.881 0.881	% 100 100	% 0.0 NA Prob.	No. 2 NA Ov.		
To Exit:  Lane 1	- 281 281 au Drive	281 314 e (West U	8.5 8.9 t) Total	%HV		312 319	0.106 0.881 0.881	100 100	0.0 NA	2 NA		
Lane 1 33 Lane 2 - Approac 33 h  NorthWest: Ti Raka Mov. L2 From NW NE To Exit: Lane 1 180 Lane 2 - Lane 3 - Lane 4 - Approac 180 h  Total 1  Intersec 2992 tion  Site: 7.0 [7.0 Matts SouthEast: Ti Raka Mov. L2	281 281 au Drive	281 314 e (West U	8.5 8.9 t) Total	%HV		319	0.881 0.881 Deg.	100 Lane	NA Prob.	NA Ov.		
Lane 2 - Approac 33 h  NorthWest: Ti Raka Mov. L2 From NW NE To Exit: Lane 1 180 Lane 2 - Lane 3 - Lane 4 - Approac 180 h  Total 0  Intersec 2992 tion  Site: 7.0 [7.0 Matts SouthEast: Ti Raka Mov. L2	281 281 au Drive	281 314 e (West U	8.5 8.9 t) Total	%HV		319	0.881 0.881 Deg.	100 Lane	NA Prob.	NA Ov.		
Approac 33 h  NorthWest: Ti Raka Mov. L2 From NW NE To Exit: Lane 1 180 Lane 2 - Lane 3 - Lane 4 - Approac 180 h  Total On Total	281 au Drive T1	314 e (West	8.9 t) Total	%HV			0.881 Deg.	Lane	Prob.	Ov.		
h  NorthWest: Ti Raka  Mov. L2  From  NW NE  To Exit:  Lane 1 180  Lane 2 -  Lane 3 -  Lane 4 -  Approac 180  h  Total  Intersec 2992 tion  Site: 7.0 [7.0 Matts  SouthEast: Ti Raka  Mov. L2	au Drive T1	e (West U NW	t) Total	%HV		Cap.	Deg.					
Mov. L2 From NW NE To Exit: Lane 1 180 Lane 2 - Lane 3 - Lane 4 - Approac 180 h  Total Intersec 2992 tion Site: 7.0 [7.0 Matts SouthEast: Ti Raka	T1	NW	Total	%HV		Сар.						
From NW To Exit: Lane 1 180 Lane 2 - Lane 3 - Lane 4 - Approac 180 h  Total  Intersec 2992 tion Site: 7.0 [7.0 Matts SouthEast: Ti Raka Mov. L2		NW		%HV		Сар.						
NW NE To Exit:  Lane 1 180  Lane 2 -  Lane 3 -  Lane 4 -  Approac 180  h  Total 0  Intersec 2992 of tion  Site: 7.0 [7.0 Matts  SouthEast: Ti Raka  Mov. L2	SE_					Cap.	Satn					
To Exit:  Lane 1 180  Lane 2 -  Lane 3 -  Lane 4 -  Approac 180  h  Total  Intersec 2992 tion  Site: 7.0 [7.0 Matts  SouthEast: Ti Raka  Mov. L2	SE					I. /I.			SL Ov.	Lane		
Lane 2 - Lane 3 - Lane 4 - Approac 180 h  Total  Intersec 2992 tion  Site: 7.0 [7.0 Matts SouthEast: Ti Raka Mov. L2		-				veh/h	v/c	%	%	No.		
Lane 3 - Lane 4 - Approac 180 h  Total  Intersec 2992 tion  Site: 7.0 [7.0 Matts SouthEast: Ti Raka Mov. L2	-		180	7.1		819	0.220	100	NA	NA		
Lane 4 - Approac 180 h  Total 180 Intersec 2992 tion Site: 7.0 [7.0 Matts SouthEast: Ti Raka	521	-	521	12.8			0.762	100	NA	NA		
Approac 180 h  Total 180 h  Intersec 2992 tion Site: 7.0 [7.0 Matts SouthEast: Ti Raka	468	-	468	12.8		614 <sup>1</sup>	0.762	100	NA	NA		
h Total of Intersec 2992 tion Site: 7.0 [7.0 Matts SouthEast: Ti Raka	-	48	48	16.3		115	0.422	100	<mark>24.3</mark>	3		
Intersec 2992 tion Site: 7.0 [7.0 Matts SouthEast: Ti Raka Mov. L2	988	48	1217	12.1			0.762					
tion Site: 7.0 [7.0 Matts SouthEast: Ti Raka Mov. L2	%HV De	eg.Satr	n (v/c)									
Site: 7.0 [7.0 Matts SouthEast: Ti Raka Mov. L2	11.3		0.881									
SouthEast: Ti Raka Mov. L2	son Pd/	Ti Rake	au Dr C	1								
Mov. L2				′1								
						Deg.	Lane	Prob.	Ov.			
		Total	701 TV		Сар.	Satn		SL Ov.	Lane			
SE SW To Exit:	NW				veh/h	v/c	%	%	No.			
Lane 1 28		393	9.2		503 <sup>1</sup>	0.782	100	<mark>100.0</mark>	2			
Lane 2 -	365	337	9.4		432 <sup>1</sup>	0.782	100	NA	NA			
Lane 3 -	365 337		11.8			0.782	100	NA	NA			
•		646				0.782						
h	337 646		10.4			J JL						

Mov. From NW To Exit:	T1 SE	Total	%HV	Cap. veh/h	Deg. Satn v/c		Prob. SL Ov. %	Ov. Lane No.	
Lane 1	524	524	11.5	1185	0.443	100	NA	NA	
Lane 2	517	517	13.7	1169	0.443	100	NA	NA	
Approac h	1042	1042	12.6		0.443				
SouthWes	st: Matts	on Roa	ıd						
Mov. From	L2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane	
SW To Exit:	NW			veh/h	v/c	%	%	No.	
Lane 1	53	53	5.5	81	0.651	100	NA	NA	
Lane 2	56	56	5.5	86	0.651	100	NA	NA	
Approac h	109	109	5.5		0.651				
	Total	%HV	Deg.Satn (v/c)						
Intersec tion	2527	11.7	0.782						

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	(CCG)									
	Exit Lane Number		Opng in Lane	Opposing Flow Rate veh/h pcu/h	Critical Gap sec	Follow-up Headway	Capacity veh/h	Deg. Satn [	Min. Delay sec	Merge Delay sec
Site: 6.5 [6.5 Willia	am Robert	s Rd / Ti	Rakau [	Or C]						
SouthEast Exit: Ti Merge Type: <b>Not</b> A		ve (East	)							
Full Length Lane Full Length Lane	1 2	•	•	not applied. not applied.						
NorthEast Exit: Will Merge Type: <b>Not A</b>		erts Road	d Extensi	on						
Full Length Lane	1	Merge	Analysis	not applied.						
NorthWest Exit: Ti Merge Type: <b>Not A</b>		ive (Wes	t)							
Full Length Lane Full Length Lane	1 2	•	•	not applied. not applied.						
Full Length Lane	3	Merge	Analysis	not applied.						
Site: 7.0 [7.0 Matts	on Rd/ Ti	Rakau D	r C]							
SouthEast Exit: Ti Merge Type: <b>Not</b> A		ve (East	)							
Full Length Lane Full Length Lane	1 2	•	•	not applied. not applied.						
NorthWest Exit: Ti Merge Type: <b>Not A</b>		ive (Wes	t)							
Full Length Lane Full Length Lane	1 2	_	-	not applied. not applied.						
Full Length Lane	3	Merge	Analysis	not applied.						
SouthWest Exit: M Merge Type: <b>Not A</b>		ad								

# **CCG LANE SUMMARY**

□□ Common Control Group: CCG1 [WR/ Mattson]

■■ Network: N101 [Construction 1 (Network

Folder: PM)]

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

1 11				<b>'00</b>	.,									
Lane Use							A	11	0E0/ D	AOK OF	1	1	0	Durk
	DEM. FLO		ARRI FLO		Cap. Sat	g. Lane n Util.		Level of Service		ACK OF EUE	Lane	Lane Length	Cap. Adj.	Prob. Block.
	[ Total		[ Total			0	Dolay	0011100	[ Veh	Dist ]	Joining	Longan	, iaj.	Dioon.
	veh/h	%	veh/h	%		c %	sec			m		m	%	%
Site: 6.5 [6.	.5 Willia	am Ro	berts Ro	I / Ti F	Rakau Dr C]									
SouthEast:	Ti Raka	au Driv	/e (East)	)										
Lane 1	510	7.6	473	7.3	815 0.58	0 100	7.4	LOSA	8.6	64.0	Full	60	0.0	<mark>10.8</mark>
Lane 2	510	7.6	473	7.3	815 0.58	0 100	3.8	LOSA	4.7	35.3	Full	60	0.0	0.0
Lane 3	510	7.6	473	7.3	815 0.58	0 100	3.7	LOSA	4.6	34.1	Full	60	0.0	0.0
Lane 4	71	2.8	66	2.7	210 0.31	4 100	57.1	LOS E	3.8	27.2	Short	20	0.0	NA
Approach	1602	7.4	1484 <sup>N</sup>	7.1	0.58	0	7.3	LOSA	8.6	64.0				
NorthEast:	William	Robe	rts Road	Exte	nsion									
Lane 1	52	7.7	52	7.7	304 0.17	1 100	59.0	LOS E	3.3	24.3	Short	80	0.0	NA
Lane 2	245	8.6	245	8.6	302 0.81	2 100	71.7	LOS E	18.4	138.6	Full	110	0.0	<mark>26.0</mark>
Approach	297	8.4	297	8.4	0.81	2	69.4	LOS E	18.4	138.6				
NorthWest:	Ti Raka	au Dri	ve (Wes	t)										
Lane 1	198	5.6	194	5.6	1125 0.17	2 100	16.5	LOS B	5.7	41.7	Full	107	0.0	0.0
Lane 2	449	5.4	440	5.4	1012 0.43		11.3	LOS B	10.5	77.0	Full	107	0.0	0.0
Lane 3	335	5.4	328	5.4	753 <sup>1</sup> 0.43		10.5	LOS B	7.2	53.1	Full	107	0.0	0.0
Lane 4	179	0.6	175	0.6	199 <sup>1</sup> 0.88	1 100	77.6	LOS E	13.4	94.2	Short	20	0.0	NA
Approach	1161	4.7	1138 <sup>N</sup>	4.7	0.88	1	22.2	LOS C	13.4	94.2				
Intersectio n	3060	6.4	2918 <sup>N</sup>	6.8	0.88	1	19.4	LOS B	18.4	138.6				
Site: 7.0 [7.	.0 Matts	on Rd	/ Ti Rak	au Dr	C]									
SouthEast:	Ti Raka	au Driv	/e (East)	)										
Lane 1	131	8.0	121	7.5	133 <sup>1</sup> 0.90	4 100	75.4	LOS E	8.8	65.6	Short	25	<mark>-7.2</mark> N3	NA
Lane 2	665	6.6	614	6.3	679 <sup>1</sup> 0.90	4 100	52.7	LOS D	31.6 <sup>N4</sup>	233.4 <sup>N4</sup>	Full	143	0.0	<mark>50.0</mark>
Lane 3	795	8.1	734	7.9	812 0.90	4 100	53.4	LOS D	31.2 <sup>N4</sup>	233.4 <sup>N4</sup>	Full	143	0.0	<mark>50.0</mark>
Approach	1591	7.5	1468 <sup>N</sup>	7.2	0.90	4	54.9	LOS D	31.6	233.4				
NorthWest:	Ti Raka	au Dri	ve (Wes	t)										
Lane 1	433	3.5	424	3.5	1505 0.28	2 100	1.3	LOSA	2.2	16.0	Full	60	0.0	0.0
Lane 2	422	7.3	414	7.5	1468 0.28	2 100	1.5	LOSA	2.5	18.9	Full	60	0.0	0.0
Approach	855	5.4	838 <sup>N1</sup>	5.4	0.28	2	1.4	LOSA	2.5	18.9				
SouthWest	: Mattsc	n Roa	ıd										<b>.</b>	
Lane 1	28	5.0	28	5.0	276 0.10		60.9	LOS E	1.7	12.7	Full	282	-10.8 <sup>N3</sup>	0.0
Lane 2	32	5.0	32	5.0	309 0.10	3 100	60.7	LOS E	2.0	14.2	Full	282	0.0	0.0
Approach	60	5.0	60	5.0	0.10	3	60.8	LOS E	2.0	14.2				
Intersectio n	2506	6.7	2366 <sup>N</sup>	7.1	0.90	4	36.1	LOS D	31.6	233.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab). Lane LOS values are based on average delay per lane.

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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.

- 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.
- 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.

Approac	h Lane	Flows	(CCG	) (veh/l	h)							
Site: 6.5 [						Cl						
SouthEast												
Mov.	T1	R2	U	Total	%HV			Deg.	Lane	Prob.	Ov.	
From							Cap.	Satn		SL Ov.	Lane	
SE To Evit	NW	NE	SE				veh/h	v/c	%	%	No.	
To Exit: Lane 1	473		_	473	7.3		Q15	0.580	100	NA	NA	
Lane 2	473	-	_	473	7.3			0.580	100	NA	NA	
Lane 3	473	_	_	473	7.3			0.580	100	NA	NA	
Lane 4	-	47	19	66	2.7			0.314	100	33.0	3	
Approac	1418	47	19	1484	7.1		210	0.580	100	00.0		
h	1410	71	13	1404	7.1			0.500				
NorthEast	· \\/illiam	n Dohor	te Door	l Evtone	rion							
Mov.	L2	R2		%HV	SIOIT	-	-	Deg.	Lane	Prob.	Ov.	
From	LZ	114	Total	/UIIV			Сар.	Satn		SL Ov.	Lane	
NE	SE	NW					veh/h	v/c	%	%	No.	
To Exit:											_	
Lane 1	52	-	52	7.7				0.171	100	0.0	2	
Lane 2 Approac		245	245	8.6			302	0.812	100	NA	NA	
h	52	245	297	8.4				0.812				
NorthWes			•	·								
Mov.	L2	T1	U	Total	%HV		Cap.	Deg. Satn	Lane	Prob. SL Ov.	Ov.	
From NW	NE	SE	NW				veh/h	V/C	0tii. %	3L OV. %	Lane No.	
To Exit:	INL	JL.	INVV									
Lane 1	194	-	-	194	5.6		1125	0.172	100	NA	NA	
Lane 2	-	440	-	440	5.4			0.435	100	NA	NA	
Lane 3	-	328	-	328	5.4		753 <sup>1</sup>	0.435	100	NA	NA	
Lane 4	-	-	175	175	0.6		199 <sup>1</sup>	0.881	100	100.0	3	
Approac	194	768	175	1138	4.7			0.881				
h												
	Total	%HV [	Deg.Sat	n (v/c)								
Intersec	0040	0.0		0.004								
tion	2918	6.8		0.881								
Site: 7.0 [	7 0 Matt	son Rd	/ Ti Rak	au Dr C	:1							
SouthEas					,							
Mov.	L2	T1	Total	%HV			Deg.	Lane	Prob.	Ov.		
From						Сар.	Satn	Util.	SL Ov.	Lane		
SE To Evite	SW	NW				veh/h	v/c	%	%	No.		
To Exit:	15	76	101	7.5		133 <sup>1</sup>	0.904	100	06 <u>1</u>	2		
Lane 1 Lane 2	45 -	76 614	121 614	7.5 6.3			0.904	100 100	<mark>96.1</mark> NA	NA		
Lane 3	_	734	734	7.9			0.904	100	NA	NA		
Approac	<u>-</u> 45	1423	1468	7.9		012	0.904	100	INA	INA		
h	+0	1723	1700	1.2			0.904					
North\\/c=	tı Ti Deli	ou Driv	10 (\Mo-	<b>+</b> \								
NorthWes Mov.	t: II Rak T1	au Driv Total		ι)			Deg	Lana	Prob.	Ov.		
From		Total	70 M V			Сар.	Deg. Satn		SL Ov.	Lane		
7 10111												

NW To Exit:	SE			veh/h	v/c	%	%	No.	
Lane 1	424	424	3.5	1505	0.282	100	NA	NA	
Lane 2	414	414	7.5	1468	0.282	100	NA	NA	
Approac h	838	838	5.4		0.282				
SouthWes	st: Matts	on Roa	ıd						
Mov. From	L2	Total	%HV	Cap.	Deg. Satn	Util.	Prob. SL Ov.	Ov. Lane	
SW To Exit:	NW			veh/h	v/c	%	%	No.	
Lane 1	28	28	5.0	276	0.103	100	NA	NA	
Lane 2	32	32	5.0	309	0.103	100	NA	NA	
Approac h	60	60	5.0		0.103				
	Total	%HV I	Deg.Satn (v/c)						
Intersec tion	2366	7.1	0.904						

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 (C	CG)									
	Exit Lane umber		Opng in Lane	Opposing Flow Rate veh/h pcu/h	Critical Gap sec	Follow-up Headway	Capacity veh/h	Deg. Satn I	Min. Delay sec	Merge Delay sec
Site: 6.5 [6.5 William	Robert	s Rd / Ti	Rakau [	Or C]						
SouthEast Exit: Ti Ra Merge Type: <b>Not Ap</b>		ve (East	)							
Full Length Lane Full Length Lane	1 2	•	•	not applied. not applied.						
NorthEast Exit: Willia Merge Type: <b>Not Ap</b>		erts Road	d Extensi	ion						
Full Length Lane	1	Merge	Analysis	not applied.						
NorthWest Exit: Ti Ra Merge Type: <b>Not Ap</b>		ive (Wes	st)							
Full Length Lane Full Length Lane Full Length Lane	1 2 3	Merge	Analysis	not applied. not applied. not applied.						
Site: 7.0 [7.0 Mattsor	n Rd/ Ti	Rakau D	r C]							
SouthEast Exit: Ti Ra Merge Type: <b>Not Ap</b>		ve (East	)							
Full Length Lane Full Length Lane	1 2	•	•	not applied. not applied.						
NorthWest Exit: Ti Ra Merge Type: <b>Not Ap</b>		ive (Wes	st)							
Full Length Lane Full Length Lane Full Length Lane	1 2 3	Merge	Analysis	not applied. not applied. not applied.						
SouthWest Exit: Mat Merge Type: <b>Not Ap</b>		ad								
Full Length Lane	1	Merge	Analysis	not applied.						

Site: 10.0 [10.0 Edgewater Dr (West) / Chevis PI (Site Folder: General)]

[Construction 1 (Network

Folder: AM)]

■ Network: N101

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Practical Cycle Time)

Lane Use	and P	erforr	nance												
	DEM FLO [ Total veh/h		ARR FLO [ Total veh/h	WS	Cap.	Deg. Satn	Lane Util.	Delay	Level of Service		ACK OF EUE Dist ]	Lane Config	Lane Length	Cap. Adj. %	Prob. Block.
SouthEast:					ven/n	V/C	70	sec			m		m	70	70
Lane 1	697	9.7	691	9.7	819	0.844	100	30.3	LOS C	30.5	231.4	Full	162	0.0	37.6
Lane 2	678	10.5	672	10.6	796 <sup>1</sup>	0.844	100	30.2	LOS C	29.7	226.5	Full	162	0.0	35.6
Lane 3	10	0.0	10	0.0		0.084	100	49.4	LOS D	0.4	3.0	Short	22	0.0	NA
Approach	1385	10.0	1373 <sup>N</sup>	10.1		0.844		30.4	LOS C	30.5	231.4				
NorthEast:	Chevis	Place													
Lane 1	46	2.2	46	2.2	123	0.373	100	50.1	LOS D	2.1	14.8	Full	138	0.0	0.0
Approach	46	2.2	46	2.2		0.373		50.1	LOS D	2.1	14.8				
NorthWest	: Ti Rak	au Driv	ve (Wes	st)											
Lane 1	530	12.5	494	12.7	821	0.601	100	20.5	LOS C	14.3 <sup>N4</sup>	111.0 <sup>N4</sup>	Full	68	0.0	<mark>50.0</mark>
Lane 2	461	12.7	429	12.9	713 <sup>1</sup>	0.601	100	19.9	LOS B	13.9	108.2	Full	68	0.0	<mark>47.6</mark>
Lane 3	47	12.8	44	12.8	113	0.387	100	51.5	LOS D	2.0	15.5	Short	25	0.0	NA
Approach	1038	12.6	966 <sup>N1</sup>	12.8		0.601		21.6	LOS C	14.3	111.0				
SouthWest	: Edgev	vater D	Prive (W	est)											
Lane 1	117	8.5	117	8.5	743	0.157	100	13.0	LOS B	2.2	16.8	Short	42	0.0	NA
Lane 2	41	4.9	41	4.9	281	0.146	100	39.7	LOS D	1.6	11.6	Full	789	0.0	0.0
Approach	158	7.6	158	7.6		0.157		19.9	LOS B	2.2	16.8				
Intersectio n	2627	10.8	2544 <sup>N</sup>	11.1		0.844		26.7	LOS C	30.5	231.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab). Lane LOS values are based on average delay per lane.

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

 $\label{eq:hv} \mbox{HV (\%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.}$ 

- 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 L	ane Fl	ows (v	eh/h)							
SouthEast: Ti	i Rakau	Drive (	East)							
Mov. From SE To Exit:	L2 SW	T1 NW	R2 NE	Total	%HV	Cap. veh/h	Deg. Satn v/c		Prob. SL Ov. %	Ov. Lane No.
Lane 1 Lane 2 Lane 3	94 - -	597 672 -	- - 10	691 672 10	9.7 10.6 0.0	796 <sup>1</sup>	0.844 0.844 0.084	100 100 100	NA	NA NA 2
Approach NorthEast: Cl	94 hevis Pl	1269 ace	10	1373	10.1		0.844			

Mov. From NE To Exit:	L2 SE	T1 SW	R2 NW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	SL Ov.	Ov. Lane No.	
Lane 1	19	10	17	46	2.2	123	0.373	100	NA	NA	
Approach	19	10	17	46	2.2		0.373				
NorthWest: T	ī Rakau	Drive (	West)								
Mov. From NW To Exit:	L2 NE	T1 SE	R2 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c		Prob. SL Ov. %	Ov. Lane No.	
Lane 1	9	484	-	494	12.7	821	0.601	100	NA	NA	
Lane 2	-	429	-	429	12.9	713 <sup>1</sup>	0.601	100	NA	NA	
Lane 3	-	-	44	44	12.8	113	0.387	100	0.0	2	
Approach	9	913	44	966	12.8		0.601				
SouthWest: E	Edgewa	ter Drive	e (West	)							
Mov. From SW To Exit:	L2 NW	T1 NE	R2 SE	Total	%HV	Cap. veh/h	Deg. Satn v/c		Prob. SL Ov. %	Ov. Lane No.	
Lane 1	117	-	-	117	8.5	743	0.157	100	0.0	2	
Lane 2	-	10	31	41	4.9	281	0.146	100	NA	NA	
Approach	117	10	31	158	7.6		0.157				
	Total	%HV C	eg.Sat	n (v/c)							
Intersection	2544	11.1		0.844							

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									
1	Exit Lane Number		Opng in Lane	Opposing Flow Rate veh/h pcu/h	Critical Gap sec	Follow-up Headway sec	Capacity veh/h	Deg. Satn I v/c	Merge Delay sec
SouthEast Exit: Ti R Merge Type: <b>Not A</b>		ve (East)							
Full Length Lane Full Length Lane	1 2	•	•	not applied. not applied.					
NorthEast Exit: Che Merge Type: <b>Not A</b>		)							
Full Length Lane	1	Merge /	Analysis	not applied.					
NorthWest Exit: Ti F Merge Type: <b>Not A</b>		ive (Wes	t)						
Full Length Lane Full Length Lane	1 2	•	•	not applied. not applied.					
SouthWest Exit: Ed Merge Type: <b>Not Ap</b>	_	Drive (We	est)						
Full Length Lane	1	Merge /	Analysis	not applied.					

Site: 10.0 [10.0 Edgewater Dr (West) / Chevis PI (Site Folder: General)]

[Construction 1 (Network Folder: PM)]

■ Network: N101

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site Practical Cycle Time)

Lane Use	and P	erforr	nance												
	DEM. FLO [ Total		ARRI FLO\ [Total	WS	Сар.	Deg. Satn	Lane Util.		Level of Service		ACK OF EUE Dist ]	Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	veh/h	% _	veh/h	%	veh/h	v/c	%	sec		<u>.</u>	m <sup>1</sup>		m	%	%
SouthEast:	Ti Rak	au Driv	/e (East	)											
Lane 1	825	6.9	816	6.9		0.892	100	36.3	LOS D	35.6 <sup>N4</sup>			162	0.0	<mark>50.0</mark>
Lane 2	809	7.2	801	7.3	897 <sup>1</sup>	0.892	100	36.3	LOS D	35.6 <sup>N4</sup>	264.4 <sup>N4</sup>	Full	162	0.0	<b>50.0</b>
Lane 3	10	0.0	10	0.0	107	0.093	100	55.1	LOS E	0.5	3.4	Short	22	0.0	NA
Approach	1644	7.0	1627 <sup>N</sup>	7.1		0.892		36.4	LOS D	35.6	264.4				
NorthEast:	Chevis	Place													
Lane 1	30	0.0	30	0.0	113	0.265	100	54.6	LOS D	1.5	10.4	Full	138	0.0	0.0
Approach	30	0.0	30	0.0		0.265		54.6	LOS D	1.5	10.4				
NorthWest	Ti Rak	au Dri	ve (Wes	t)											
Lane 1	418	7.4	381	6.3	941	0.405	100	17.4	LOS B	11.7	86.5	Full	68	0.0	<mark>26.9</mark>
Lane 2	356	7.6	324	6.5	800 <sup>1</sup>	0.405	100	16.9	LOS B	9.7	72.0	Full	68	0.0	10.1
Lane 3	46	6.5	42	4.9	107	0.389	100	57.0	LOS E	2.1	15.4	Short	25	0.0	NA
Approach	820	7.4	<mark>747</mark> <sup>N1</sup>	6.3		0.405		19.4	LOS B	11.7	86.5				
SouthWest	: Edgev	vater D	Prive (W	est)											
Lane 1	87	6.9	87	6.9	676	0.129	100	16.1	LOS B	2.0	15.1	Short	42	0.0	NA
Lane 2	51	3.9	51	3.9	272	0.187	100	44.7	LOS D	2.2	16.1	Full	789	0.0	0.0
Approach	138	5.8	138	5.8		0.187		26.7	LOS C	2.2	16.1				
Intersectio n	2632	7.0	2542 <sup>N</sup>	7.2		0.892		31.1	LOSC	35.6	264.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab). Lane LOS values are based on average delay per lane.

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

 $\label{eq:hv} \mbox{HV (\%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.}$ 

- 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 L	_ane FI	ows (v	eh/h)											
SouthEast: T	hEast: Ti Rakau Drive (East)													
Mov. From SE	L2	T1	R2	Total	%HV	Cap.	Deg. Satn	Util.	Prob. SL Ov.					
To Exit:	SW	NW	NE			veh/h	v/c	%	%	No.				
Lane 1	92	724	-	816	6.9	915	0.892	100	NA	NA				
Lane 2	-	801	-	801	7.3	897 <sup>1</sup>	0.892	100	NA	NA				
Lane 3	-	-	10	10	0.0	107	0.093	100	0.0	2				
Approach	92	1525	10	1627	7.1		0.892							
NorthEast: C	hevis Pl	ace												

Mov. From NE To Exit:	L2 SE	T1 SW	R2 NW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	10	10	10	30	0.0	113	0.265	100	NA	NA	
Approach	10	10	10	30	0.0		0.265				
NorthWest: T	ī Rakau	Drive (	West)								
Mov. From NW To Exit:	L2 NE	T1 SE	R2 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	9	372	_	381	6.3	941	0.405	100	NA	NA	
Lane 2	-	324	_	324	6.5		0.405	100	NA	NA	
Lane 3	-	-	42	42	4.9	107	0.389	100	0.0	2	
Approach	9	696	42	747	6.3		0.405				
SouthWest: E	Edgewat	er Drive	e (West	)							
Mov. From SW To Exit:	L2 NW	T1 NE	R2 SE	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.	
Lane 1	87	_	_	87	6.9	676	0.129	100	0.0	2	
Lane 2	-	10	41	51	3.9		0.187	100	NA	NA	
Approach	87	10	41	138	5.8		0.187				
	Total	%HV C	eg.Sat	n (v/c)							
Intersection	2542	7.2		0.892							

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									
1	Exit Lane Number	Lane	Opng in I Lane	Opposing Flow Rate eh/h pcu/h	Critical Gap sec	Follow-up Headway sec	apacity veh/h	Deg. Satn I v/c	Merge Delay sec
SouthEast Exit: Ti F Merge Type: <b>Not A</b>		ve (East)							
Full Length Lane Full Length Lane	1 2	Ū	•	ot applied. ot applied.					
NorthEast Exit: Che Merge Type: <b>Not A</b>		)							
Full Length Lane	1	Merge A	nalysis n	ot applied.					
NorthWest Exit: Ti F Merge Type: <b>Not A</b>		ive (West	)						
Full Length Lane Full Length Lane	1 2	Ū	•	ot applied. ot applied.					
SouthWest Exit: Ed Merge Type: <b>Not A</b>	_	Drive (We	est)						
Full Length Lane	1	Merge A	nalysis n	ot applied.					

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr Mitigation 2 (Site

**■■** Network: N101 Folder: General)] [Construction 1 (Network

Folder: AM)]

Scheme Design Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site Practical Cycle Time)

Lane Use	and P	erforr	nance												
	DEM FLO [ Total		ARR FLO [ Total	WS	Сар.	Deg. Satn	Lane Util.		Level of Service		ACK OF EUE Dist ]	Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	veh/h	%	veh/h	%	veh/h	v/c	%	sec			m ¯		m	%	%
South: Free	mantle l	Place													
Lane 1	18	5.6	18	5.6	96	0.188	100	61.6	LOS E	1.0	7.2	Short	26	0.0	NA
Lane 2	26	3.8	26	3.8	100	0.259	100	60.1	LOS E	1.4	10.3	Full	285	0.0	0.0
Approach	44	4.5	44	4.5		0.259		60.8	LOS E	1.4	10.3				
East: Ti Ra	kau Dri	ve (Ea	st)												
Lane 1	624	10.2	624	10.2	824	0.758	100	26.8	LOS C	27.6	210.2	Full	636	0.0	0.0
Lane 2	610	10.4	610	10.4	804	0.758	100	26.8	LOS C	27.1	206.8	Full	636	0.0	0.0
Lane 3	168	11.0	168	11.0	339	0.496	57 <sup>6</sup>	27.0	LOS C	4.3	33.2	Short	150	0.0	NA
Lane 4	296	11.0	296	11.0	339	0.873	100	39.2	LOS D	10.5	80.5	Short	103	0.0	NA
Approach	1698	10.5	1698	10.5		0.873		29.0	LOS C	27.6	210.2				
North: Gos	samer l	Orive													
Lane 1	393	7.6	393	7.6	741	0.530	100	19.7	LOS B	11.2	83.6	Short	150	0.0	NA
Lane 2	393	7.6	393	7.6	741	0.530	100	19.7	LOS B	11.2	83.6	Full	1010	0.0	0.0
Lane 3	132	7.6	132	7.6	301	0.439	100	49.2	LOS D	6.5	48.4	Short	100	0.0	NA
Approach	917	7.6	917	7.6		0.530		23.9	LOS C	11.2	83.6				
West: Ti Ra	akau Dr	ive (W	est)												
Lane 1	516	12.2	481	12.4	541	0.888	100	54.4	LOS D	29.0	224.9	Full	479	0.0	0.0
Lane 2	496	12.3	461	12.5	519 <sup>1</sup>	0.888	100	52.2	LOS D	28.0	216.6	Full	479	0.0	0.0
Lane 3	10	0.0	9	0.0	180	0.052	100	53.8	LOS D	0.5	3.2	Short	27	0.0	NA
Approach	1022	12.1	951 <sup>N1</sup>	12.3		0.888		53.3	LOS D	29.0	224.9				
Intersectio n	3681	10.2	3610 <sup>N</sup>	10.4		0.888		34.5	LOS C	29.0	224.9				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Network Data dialog (Network tab). Lane LOS values are based on average delay per lane.

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

Delay Model: SIDRA Standard (Geometric Delay is included).

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

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

- Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Some upstream delays at entry to short lanes are not included.
- 6 Lane under-utilisation due to downstream effects
- N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach I	Lane Flo	ows (v	eh/h)							
South: Frema	antle Plac	се								
Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c		Prob. SL Ov. %	
Lane 1	18	-	-	18	5.6	96	0.188	100	0.0	2
Lane 2	-	10	16	26	3.8	100	0.259	100	NA	NA
Approach	18	10	16	44	4.5		0.259			

East: Ti Raka	u Drive	(East)									
Mov.	L2	T1	R2	Total	%HV		Deg.		Prob.	Ov.	
From E						Cap. veh/h	Satn v/c	Util. %	SL Ov.	Lane No.	
To Exit:	S	W	N								
Lane 1	19	605	-	624	10.2		0.758	100	NA	NA	
Lane 2	-	610	-	610	10.4		0.758	100	NA	NA	
Lane 3	-	-	168	168	11.0		0.496	57 <sup>6</sup>	0.0	2	
Lane 4	-	-	296	296	11.0	339	0.873	100	0.0	3	
Approach	19	1215	464	1698	10.5		0.873				
North: Gossa	mer Dri	ve									
Mov.	L2	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	
From N						Cap. veh/h	Satn v/c	Util. %	SL Ov.	Lane No.	
To Exit:	Е	S	W			ven/m	V/C	70	70	INO.	
Lane 1	393	-	-	393	7.6	741	0.530	100	0.0	2	
Lane 2	393	-	-	393	7.6	741	0.530	100	NA	NA	
Lane 3	-	10	122	132	7.6	301	0.439	100	0.0	2	
Approach	785	10	122	917	7.6		0.530				
West: Ti Raka	au Drive	e (West)									
Mov.	L2	T1	R2	Total	%HV		Deg.		Prob.	Ov.	
From W						Cap. veh/h	Satn v/c	Util. %	SL Ov.	Lane	
To Exit:	N	Е	S			ven/m	V/C	70		No.	
Lane 1	18	463	-	481	12.4	541	0.888	100	NA	NA	
Lane 2	-	461	-	461	12.5	519 <sup>1</sup>	0.888	100	NA	NA	
Lane 3	-	-	9	9	0.0	180	0.052	100	0.0	2	
Approach	18	924	9	951	12.3		0.888				
	Total	%HVD	eg.Sat	n (v/c)							
Intersection	3610	10.4		0.888							

- 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												
_	xit ne oer		Percent Opng in Lane %	Flow		Critical Gap sec	Follow-up Headway sec		Capacity veh/h		Min. Delay sec	Merge Delay sec
South Exit: Fremantle Pl Merge Type: <b>Not Applie</b>												
Full Length Lane	1	Merge	Analysis	not ap	oplied.							
East Exit: Ti Rakau Drive Merge Type: <b>Not Applie</b>	•	ıst)										
Full Length Lane	1	Merge	Analysis	not ap	oplied.							
Full Length Lane	2	Merge	Analysis	not ap	oplied.							
North Exit: Gossamer Di Merge Type: <b>Zipper</b>	rive											
Exit Short Lane	1	100	50.0	153	161	2.50	2.00	186	1612	0.115	0.0	0.1
Merge Lane	2	-	50.0	93	98	2.50	2.00	306	1689	0.181	0.0	0.0
West Exit: Ti Rakau Driv Merge Type: <b>Not Applie</b>	`	est)										
Full Length Lane	1	Merge	Analysis	not ap	oplied.							
Full Length Lane	2	Merge	Analysis	not ap	oplied.							

Site: 13.0 [13.0 Gossamer Dr / Ti Rakau Dr Mitigation 2 (Site

**■■** Network: N101 Folder: General)] [Construction 1 (Network

Folder: PM)]

Scheme Design Site Category: (None)

Lane Use	and P	erforr	nance												
	DEM FLC [Total		ARR FLO [ Total	WS	Сар.	Deg. Satn	Lane Util.		Level of Service		ACK OF EUE Dist ]	Lane Config	Lane Length	Cap. Adj.	Prob. Block.
	veh/h	%	veh/h	%	veh/h	v/c	%	sec			m ¯		m	%	%
South: Fre	mantle	Place													
Lane 1	12	8.3	12	8.3	112	0.107	100	80.0	LOS E	0.9	6.6	Short	26	0.0	NA
Lane 2	27	3.7	27	3.7	120	0.226	100	79.2	LOS E	2.0	14.4	Full	285	0.0	0.0
Approach	39	5.1	39	5.1		0.226		79.4	LOS E	2.0	14.4				
East: Ti Ra	kau Dri	ve (Ea	st)												
Lane 1	879	7.1	879	7.1	1007	0.873	100	35.1	LOS D	58.4	433.8	Full	636	0.0	0.0
Lane 2	745	7.1	745	7.1	854 <sup>1</sup>	0.873	100	34.9	LOS C	46.6	346.0	Full	636	0.0	0.0
Lane 3	245	8.0	245	8.0	539	0.455	57 <sup>6</sup>	28.2	LOS C	7.8	58.6	Short	150	0.0	NA
Lane 4	432	8.0	432	8.0	539	0.801	100	38.3	LOS D	19.1	142.6	Short	103	0.0	NA
Approach	2301	7.3	2301	7.3		0.873		34.9	LOS C	58.4	433.8				
North: Gos	samer l	Drive													
Lane 1	200	14.5	200	14.5	828	0.241	100	18.8	LOS B	6.1	48.1	Short	150	0.0	NA
Lane 2	200	14.5	200	14.5	828	0.241	100	18.8	LOS B	6.1	48.1	Full	1010	0.0	0.0
Lane 3	47	8.5	47	8.5	260	0.180	100	65.7	LOS E	3.1	23.3	Short	100	0.0	NA
Approach	446	13.9	446	13.9		0.241		23.7	LOS C	6.1	48.1				
West: Ti Ra	akau Dr	ive (W	est)												
Lane 1	411	7.2	372	6.2	539	0.690	100	53.5	LOS D	23.9	176.5	Full	479	0.0	0.0
Lane 2	387	8.1	350	7.0	508 <sup>1</sup>	0.690	100	52.2	LOS D	23.2	172.1	Full	479	0.0	0.0
Lane 3	10	0.0	9	0.0	164	0.056	100	74.2	LOS E	0.6	4.5	Short	27	0.0	NA
Approach	808	7.5	731 <sup>N1</sup>	6.5		0.690		53.1	LOS D	23.9	176.5				
Intersectio n	3594	8.2	3517 <sup>N</sup>	8.4		0.873		37.8	LOS D	58.4	433.8				

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).

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- 6 Lane under-utilisation due to downstream effects
- N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Approach I	_ane Flo	ows (v	eh/h)							
South: Frema	antle Plac	се								
Mov. From S To Exit:	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c		Prob. SL Ov. %	
Lane 1	12	-	-	12	8.3	112	0.107	100	0.0	2
Lane 2	-	10	17	27	3.7	120	0.226	100	NA	NA
Approach	12	10	17	39	5.1		0.226			

East: Ti Raka	u Drive	(East)									
Mov.	L2	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	
From E To Exit:		107				Cap. veh/h	Satn v/c	Util. %	SL Ov.	Lane No.	
	S	W	N								
Lane 1	20	859	-	879	7.1		0.873	100	NA	NA	
Lane 2	-	745	-	745	7.1		0.873	100	NA	NA	
Lane 3	-	-	245	245	8.0		0.455	57 <sup>6</sup>	0.5	2	
Lane 4	-	-	432	432	8.0	539	0.801	100	<mark>34.7</mark>	3	
Approach	20	1604	677	2301	7.3		0.873				
North: Gossa	mer Dri	ve									
Mov.	L2	T1	R2	Total	%HV		Deg.		Prob.	Ov.	
From N						Cap.	Satn		SL Ov.	Lane	
To Exit:	Ε	S	W			veh/h	v/c	%	%	No.	
Lane 1	200	-	-	200	14.5	828	0.241	100	0.0	2	
Lane 2	200	-	-	200	14.5	828	0.241	100	NA	NA	
Lane 3	-	10	37	47	8.5	260	0.180	100	0.0	2	
Approach	399	10	37	446	13.9		0.241				
West: Ti Raka	au Drive	(West)									
Mov.	L2	T1	R2	Total	%HV		Deg.	Lane	Prob.	Ov.	
From W						Cap.	Satn		SL Ov.	Lane	
To Exit:	N	E	S			veh/h	v/c	%	%	No.	
Lane 1	50	322	-	372	6.2	539	0.690	100	NA	NA	
Lane 2	-	350	-	350	7.0	508 <sup>1</sup>	0.690	100	NA	NA	
Lane 3	-	-	9	9	0.0	164	0.056	100	0.0	2	
Approach	50	672	9	731	6.5		0.690				
	Total	%HVD	eg.Sat	n (v/c)							
Intersection	3517	8.4		0.873							

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- 6 Lane under-utilisation due to downstream effects

Merge Analysis												
	xit ne oer		Percent Opng in Lane %	Flow		Critical Gap sec	Follow-up Headway sec		Capacity veh/h		Min. Delay sec	Merge Delay sec
South Exit: Fremantle P Merge Type: <b>Not Applie</b>												
Full Length Lane	1	Merge	Analysis	not a	oplied.							
East Exit: Ti Rakau Drive Merge Type: <b>Not Applie</b>	•	ıst)										
Full Length Lane	1	Merge	Analysis	not ap	oplied.							
Full Length Lane	2	Merge	Analysis	not a	oplied.							
North Exit: Gossamer D Merge Type: <b>Zipper</b>	rive											
Exit Short Lane	1	100	50.0	221	230	2.50	2.00	295	1525	0.194	0.0	0.1
Merge Lane	2	-	50.0	148	153	2.50	2.00	442	1623	0.272	0.0	0.1
West Exit: Ti Rakau Driv Merge Type: <b>Not Applie</b>	`	/est)										
Full Length Lane	1	Merge .	Analysis	not a	oplied.							
Full Length Lane	2	Merge	Analysis	not a	oplied.							