

Reference: 13.519r03v01

traffic & transport planners

Suite 2.08 50 Holt Street Surry Hills NSW 2010 PO Box 1124 Strawberry Hills NSW 2012 t: +61 2 8324 8700 f: +61 2 9380 4481 w: www.traffix.com.au director Graham Pindar acn: 065132961 abn: 66065132961

2 June 2017

Holly Patrick Level 23, Darling Park Tower 2 201 Sussex Street Sydney NSW 2000

Attention: Holly Patrick, Senior Consultant

Site:	Energy from Waste Facility – Honeycomb Drive, Eastern Creek
RMS Ref:	SYD13/01383/05 (A1762650)
Council Ref:	SSD 6236
Subject:	Response to SIDRA Review Comments

Dear Holly,

I refer to the proposed Energy from Waste Electricity Generation Plant (EfW Facility) at Eastern Creek and the subsequent comments received by Roads and Maritime Services (herein referred to as 'RMS') in a letter dated 24 May 2017.

Traffix has now had the opportunity to review the comments and prepare a response with additional information where required. The comments have been reproduced below with Traffix' response provided immediately thereafter.

It is pertinent to note that this letter is supplementary to, and should therefore be read in conjunction with the Traffic Impact Assessment (ref. 13.519r01v11) prepared for the subject development by Traffix in November 2016.

RMS Comments

1. Updated Traffic Assessment Report and SIDRA analysis in accordance with "Eastern Creek – Energy from Waste – SIDRA Model Review Comments. (Reproduced in **Attachment 1)**

a) Lane Geometry

"Left slip lane in the model on Wonderland Dr is shown as low angle continuous slip lane. It is signalised lane with ped crossing and ped actuated signals. This lane is free flowing lane till the signals are actuated by push button. It is perhaps OK to accept it as continuous lane provided ped volume is low on this approach. Please check with Networks Ops."

<u>TRAFFIX Response</u>: The left slip lane in the model on Wonderland Dr is now correctly modelled with ped actuated signals in the revised model.

1



b) Phasing

"Phasing sequence adopted in the model is different than what's shown by SCATS. Cycle time of 120 sec seems OK."

<u>TRAFFIX Response</u>: Noted, all revised models have been assessed adopting the SCATS sequence provided with an optimized cycle time of 100-150 seconds, which is within the accepted maximum practical cycle length for traffic signals under saturated conditions in accordance with *Roads and Maritimes Services Traffic Modelling Guidelines (Feb, 2013)*.

"As shown above the reference phase in both AM and PM peak is 'A' phase. In model 'E' phase is ref phase in AM peak and 'F' phase is ref phase in PM peak."

TRAFFIX Response: All reference phase in the revised models have been corrected, and is set to 'A' phase.

"Right filter turns are allowed in the model in both AM and PM peak from Wallgrove Rd. Please check with Network OPS team if that's the case."

<u>TRAFFIX Response</u>: Right turn filers at this intersection does not comply with today's standard practice and therefore have all been disabled.

c) **Priorities**

"With current phasing in the model, noticed minor error under priorities in AM and PM peak: Opposing movements are shown incorrectly. It should be in accordance with phasing diagram. See below.

Please note that once the phasing is corrected priorities needs to be checked if the opposing movements are correctly shown"

<u>TRAFFIX Response</u>: We have reviewed the model priorities and confirm that that all priorities are now correctly shown. Notwithstanding, we note there may have been a confusion with regards to the split phasing and priorities shown and emphasise that it is correct to show the 'normal' priorities (i.e. through movement is an opposing movement for the opposite right turn movement) and this does not conflict with the split phasing (i.e. whilst the through movement is an opposing movement the right turn movement will be unimpeded due to split phasing.)

Subsequent to our response provided above, the revised SIDRA output results are summarised in **Table 1**. Reference should also be made to the detailed SIDRA movement summaries reproduced in **Attachment 2**.



Intersection Description	Control Type	Scenario	Period	Degree of Saturation	Intersection Delay	Level of Service	
		AM Book	Existing	0.732	27.7s	В	
Wonderland Drive / Wallgrove Road / M7 Control Centre	Signalised	AIVIFEAK	Future	0.748	0.748 27.9s		
		PM Pook	Existing	0.692	26.9s	В	
		r IVI reak	Future	0.740	27.5s	В	

Table 1: SIDRA Movement Summaries

It can be seen from **Table 1** that the intersection currently operates a LoS B in both the AM and PM peak periods and will continue to operate satisfactorily at LoS B in future.

On the above basis, that projected increase in traffic generation potential of the proposed development could not be expected to have any unacceptable traffic implications in terms of road network capacity.

We trust the advice provided in this letter satisfies your requirements, please contact the undersigned should you have any queries or require any further information regarding the above.

Yours faithfully,

traffix

Thomas Yang Senior Engineer

Encl: Attachment 1 – SIDRA Model Review Comments Attachment 2 – SIDRA Outputs



Attachment 1

SIDRA Model Review Comments

traffic impact studies | expert witness | local govt. liaison | traffic calming | development advice | parking studies pedestrian studies | traffic control plans | traffic management studies | intersection design | transport studies

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24 May 2017

Our Reference: SYD13/01383/05 (A1762650) Council Ref: SSD 6236

Senior Consultant URBIS Level 23, Darling Park Tower 2 201 Sussex Street Sydney, NSW 2000

Attention: Rachael Snape

SIDRA MODELLING FOR ENERGY FROM WASTE FACILITY HONEYCOMB DRIVE EASTERN CREEK

Dear Sir/Madam,

Reference is made to your correspondence dated 18 April 2017 with regard to the abovementioned Development Application, which was referred to Roads and Maritime Services (Roads and Maritime) for comment.

Roads and Maritime has reviewed the submitted documentation and request the following information for further assessment:

 Updated Traffic Assessment Report and SIDRA analysis in accordance with "Eastern Creek – Energy from Waste - SIDRA Model Review Comments" document attached to this correspondence.

The applicant is advised that the above information is required to allow Roads and Maritime to complete the assessment of this Application. Roads and Maritime may also request further information once the assessment is carried out.

Any inquiries in relation to this Application can be directed to Amanda Broderick on 8849 2391 or development.sydney@rms.nsw.gov.au.

Yours sincerely

Pahee Rathan A/Senior Land Use Assessment Coordinator Network Sydney West Precinct

Roads and Maritime Services



Eastern Creek – Energy from Waste Sidra Model Review Comments

Eastern Creek – Sidra model Review Comments

Lane Geometry:

Left slip lane in the model on Wonderland Dr is shown as low angle continuous slip lane. It is signalised lane with ped crossing and ped actuated signals. This lane is free flowing lane till the signals are actuated by push button. It is perhaps OK to accept it as continuous lane provided ped volume is low on this approach. Please check with Networks Ops.

LANE GEOMETRY - Wallgrove Rd &	Wonderland Dr				X
Lane Configuration Lane Disciplines	Lane Data				
Approach Selector	Lane Editor			View Layout	Quick Input
	West Approach Lane 1		App Lane 🕨 Exc	t Lane → ◀ Strip Island ▶	Delete
S Wonderland Dr	Lane Configuration Data				
Lengend: Lane Editor Approach Lane Exit Lane Selected Lane/Island Strip Island/Short Lane	Lane Configuration Data Lane Configuration Lane Type Lane Control Slip/Bypass Lane Control Lane Length Lane Width Grade Lane ID Lane Colour (Layout)	Full-Length Lane ▼ Stip/Bypass (Low Angle) ▼ Signals ▼ Continuous ▼ 150.0 m 3.30 m 0.0 % ▼			
Dialog Tips					
Help			ОК	Cancel Apply	Process

Phasing:

Phasing sequence adopted in the model is different than what's shown by SCATS. Cycle time of 120 sec seems OK.

Model Phasing:

AM Peak



PM Peak:



SCATS Sequence:



AM Peak:

2643 - Split Plan													×
Active Plan	Stretch	Split				Fe	eature	es			Nex	d phas	e
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	C 🔘	- skip	•	AS	FG	FS	NS	NG	PD	ΤG	D	•	
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4 plana –	XSF:	1 2 3 4	5	6	7 8	3 9	10	11	12	13 14	4 15	5 16	
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PM Peak:

2643 - Split Plan																X
Active Plan	Stretch		S	plit				Fe	eature	es			Ne:	xt pl	hase	
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As shown above the reference phase in both AM and PM peak is "A" phase. In model "E" phase is ref phase in AM peak and "F" phase is ref phase in PM peak.

AM Peak

PHASING & TIMING - Wa	allgrove Rd & V	Vonderland	Dr								
equences Sequence Edito	or Phase & Sec	quence Data	Timing Opt	ions Advan	ced						
											Quick Input
Sequence Solit Phasing	,										Genere mpor
olume Data	5										
Phase Data							 				
Phase:	F	F1	A	D	E						
Variable Phase											
Reference Phase	0	\odot	0	0	۲						
Phase Time (optional)	0 sec	0 sec	0 sec	0 sec	0 sec						
Phase Frequency	Program +	Program +	Program +	Program +	Program +	-					
Vollow Time	4	4	4	4	4						
All-Red Time	2 500	2 000	2 500	4 Sec	4 Sec						
Dummy Movement Data:	2 300	2 300	2 300	2 300	2 300						
Dummy Movement Exists											
Minimum Green Time						-					
Maximum Green Time						-					
There must always be a ph The first phase will be used Detection Data	ase (and only or d as the default F	ne phase) cho Reference Ph	ecked as the ase.	Reference P	nase.						
	Majo	r Movement	Minor Mo	vement							
Effective Detection Zone Le	ength 4.5	m	4.5 m								
Help							OK	Cano	el	Apply	Proces

PM Peak

PHASING & TIMING - Wa	llgrove Rd & \	Wonderland	Dr	
Sequences Sequence Edito	or Phase & Se	equence Data	Timina Opti	ons Advanced
	_			
Sequence Split Phasing	\$			
Phase Data	\frown			
Phase:	F	A	D	E
Variable Phase				
Reference Phase	۲	0	\bigcirc	0
Phase Time (optional)	0 ser	0 sec	0 sec	0 sec
Phase Frequency	Program -	 Program - 	Program -	Program -
Yellow Time	4 sec	4 sec	4 sec	4 sec
All-Red Time	2 sec	2 sec	2 sec	2 sec
Dummy Movement Data:				
Dummy Movement Exists				
Minimum Green Time				
Maximum Green Time				
There must always be a ph The first phase will be used Detection Data	ase (and only o i as the default I	ne phase) che Reference Ph	ecked as the F ase.	Reference Phase
	Majo	or Movement	Minor Mo	vement
			45 m	
Effective Detection Zone Le	ength 4.5	o m	1.5 11	
Effective Detection Zone Le	ength 4.5	o m	1.5 11	
Effective Detection Zone Lo	ength 4.5	o m	1.5 11	
Effective Detection Zone Le	ength 4.5	⁵ m	1.5 11	
Effective Detection Zone Le	ength 4.5	5 m	1.5 11	
Effective Detection Zone Le	ength 4.5	5 m	1.5 11	
Effective Detection Zone Le	ength <u>4.5</u>	5 m		
Effective Detection Zone Le	ength 4.5	9 m	1.5 11	

Right filter turns are allowed in the model in both AM and PM peak from Wallgrove Rd. Please check with Network OPS team if that's the case.

PHASING & TIMING - Wallgrove Rd & Wonderland Dr	
Sequences Sequence Editor Phase & Sequence Data Timing Options Advanced	
	Quick Input
Phase Selector - Sequence Split Phasing	
F F1 A D E	
	Add Phase Clone Phase Move Left Move Right Delete Phase
Phone Editor	
Phase Name A	
Movement Class	
All Movement Classes Light Vehicles (LV)	
Heavy Vehicles (HV) Wallgrove Road (north)	
	↑<u>L</u>
Wallasve Road (couth)	
	Use the Advanced tab to specify Undetected movements and
Dialog Tips	Phase Transition where required.
нер	OK Gancel Apply Process

Priorities:

With current phasing in the model, noticed minor error under priorities in AM and PM peak: Opposing movements are shown incorrectly. It should be in accordance with phasing diagram. See below

😴 PRIORITIES - Wallgrove Rd & Wonderland Dr
Priorities
ĴĴĽ.
Wallgrove Road (north)
Wallgrove Road (south)
Selected Opposed Movement Silp/Bypass-lane Movement (Give way /Neld) Solposing Movement Silp/Bypass-lane Movement (Continuous) Not Opposing Movement Not Opposing Movement
Help OK Cancel Apply Process





Please note that once the phasing is corrected priorities needs to be checked if the opposing movements are correctly shown.

General Comments:

- PM model and model with development volumes should be checked for the similar issues.
- Amended model should be given to RMS for review.



SIDRA Outputs

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SITE LAYOUT

Site: 101 [Upgraded Wallgrove Road / Wonderland Drive EX AM]

Wallgrove Road and Wonderland Drive Intersection Existing AM

Signals - Fixed Time Isolated



Project: \\192.168.3.1\tdata\Synergy\Projects\13\13.519\Modelling\13.519ms07v02 TNG, Eastern Creek (Updated as per the RMS Comments).sip7

MOVEMENT SUMMARY

Site: 101 [Upgraded Wallgrove Road / Wonderland Drive EX AM]

Wallgrove Road and Wonderland Drive Intersection

Existing

AM

Signals - Fixed Time Isolated Cycle Time = 108 seconds (Optimum Cycle Time - Minimum Delay) Variable Sequence Analysis applied. The results are given for the selected output sequence.

Move	Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h		
South: Wallgrove Road													
1	L2	159	6.0	0.117	8.4	LOS A	1.4	10.6	0.25	0.65	51.4		
2	T1	744	5.9	0.630	34.2	LOS C	16.8	123.8	0.91	0.79	45.8		
3	R2	12	9.1	0.090	59.5	LOS E	0.6	4.5	0.96	0.68	18.4		
Appro	ach	915	6.0	0.630	30.0	LOS C	16.8	123.8	0.80	0.76	45.8		
East: \	Wonderl	and Drive											
4	L2	3	0.0	0.057	30.7	LOS C	0.3	1.8	0.95	0.63	22.2		
5	T1	1	0.0	0.057	30.7	LOS C	0.3	1.8	0.95	0.63	13.8		
6	R2	3	0.0	0.057	30.7	LOS C	0.3	1.8	0.95	0.63	28.5		
Appro	ach	7	0.0	0.057	30.7	LOS C	0.3	1.8	0.95	0.63	24.2		
North:	Wallgro	ve Road											
7	L2	18	5.9	0.732	31.6	LOS C	27.2	200.1	0.86	0.78	31.8		
8	T1	1279	6.0	0.732	24.3	LOS B	27.4	201.7	0.87	0.78	50.9		
9	R2	457	6.0	0.729	32.5	LOS C	6.6	48.2	1.00	0.85	40.2		
Appro	ach	1754	6.0	0.732	26.5	LOS B	27.4	201.7	0.90	0.80	48.0		
West:	Wonder	land Drive											
10	L2	135	6.3	0.186	18.2	LOS B	3.4	25.4	0.67	0.69	47.4		
11	T1	1	0.0	0.108	48.4	LOS D	1.5	11.1	0.87	0.71	12.4		
12	R2	66	6.3	0.108	45.2	LOS D	1.5	11.1	0.87	0.71	26.5		
Appro	ach	202	6.3	0.186	27.2	LOS B	3.4	25.4	0.74	0.70	39.6		
All Vel	hicles	2878	6.0	0.732	27.7	LOS B	27.4	201.7	0.86	0.78	46.7		

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab). Vehicle movement LOS values are based on average delay per movement.

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

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

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

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

Move	Movement Performance - Pedestrians												
Mov	Description	Demand	Average	Level of	Average Bac	k of Queue	Prop.	Effective					
ID	Description	Flow	Delay	Service	Pedestrian	Distance	Queued	Stop Rate					
		ped/h	sec		ped	m		per ped					
P2	East Full Crossing	26	17.8	LOS B	0.0	0.0	0.57	0.57					
P3	North Full Crossing	53	48.3	LOS E	0.2	0.2	0.95	0.95					
P4	West Full Crossing	53	34.3	LOS D	0.1	0.1	0.80	0.80					
P4S	West Slip/Bypass Lane Crossing	53	26.8	LOS C	0.1	0.1	0.71	0.71					
All Pe	destrians	184	33.8	LOS D			0.78	0.78					

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay) Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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PHASING SUMMARY

Site: 101 [Upgraded Wallgrove Road / Wonderland Drive EX AM]

Wallgrove Road and Wonderland Drive Intersection

Existing AM

Signals - Fixed Time Isolated Cycle Time = 108 seconds (Optimum Cycle Time - Minimum Delay) Variable Sequence Analysis applied. The results are given for the selected output sequence.

Phase Times determined by the program Phase Sequence: Variable Phasing Reference Phase: Phase D Input Phase Sequence: A*, B, D, E, F Output Phase Sequence: A*, B, D, E, F (* Variable Phase)

Phase Timing Results

Phase	A	В	D	E	F
Phase Change Time (sec)	51	91	0	12	37
Green Time (sec)	34	11	6	19	8
Phase Time (sec)	40	17	12	25	14
Phase Split	37%	16%	11%	23%	13%

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



REF: Reference Phase VAR: Variable Phase



	Mixed Running & Stopped Movement Cla	asses	
\longrightarrow	Undetected Movement	•	Phase Transition Applied

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SITE LAYOUT

Site: 101 [Upgraded Wallgrove Road / Wonderland Drive EX+DEV AM]

Wallgrove Road and Wonderland Drive Intersection Existing + Development AM

Signals - Fixed Time Isolated



Project: \\192.168.3.1\tdata\Synergy\Projects\13\13.519\Modelling\13.519ms07v02 TNG, Eastern Creek (Updated as per the RMS Comments).sip7

MOVEMENT SUMMARY

Site: 101 [Upgraded Wallgrove Road / Wonderland Drive EX+DEV AM]

Wallgrove Road and Wonderland Drive Intersection

Existing + Development

AM

Signals - Fixed Time Isolated Cycle Time = 106 seconds (Optimum Cycle Time - Minimum Delay) Variable Sequence Analysis applied. The results are given for the selected output sequence.

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South	Wallgro	ove Road									
1	L2	177	9.5	0.135	8.5	LOS A	1.6	12.3	0.26	0.65	51.0
2	T1	744	5.9	0.678	35.9	LOS C	17.1	125.9	0.94	0.81	45.0
3	R2	12	9.1	0.088	58.4	LOS E	0.6	4.4	0.96	0.68	18.6
Appro	ach	933	6.7	0.678	31.0	LOS C	17.1	125.9	0.81	0.78	45.1
East: \	Wonderl	and Drive									
4	L2	3	0.0	0.056	29.9	LOS C	0.3	1.8	0.95	0.63	22.4
5	T1	1	0.0	0.056	29.9	LOS C	0.3	1.8	0.95	0.63	13.9
6	R2	3	0.0	0.056	29.9	LOS C	0.3	1.8	0.95	0.63	28.7
Appro	ach	7	0.0	0.056	29.9	LOS C	0.3	1.8	0.95	0.63	24.4
North:	Wallgro	ve Road									
7	L2	18	5.9	0.748	32.1	LOS C	27.2	200.4	0.88	0.80	31.7
8	T1	1279	6.0	0.748	24.8	LOS B	27.4	202.0	0.88	0.80	50.6
9	R2	475	7.3	0.713	31.0	LOS C	6.5	48.3	0.99	0.84	40.9
Appro	ach	1772	6.4	0.748	26.5	LOS B	27.4	202.0	0.91	0.81	47.9
West:	Wonder	land Drive									
10	L2	162	12.3	0.224	17.2	LOS B	4.0	30.6	0.67	0.70	47.7
11	T1	1	0.0	0.123	47.6	LOS D	1.7	12.8	0.87	0.72	12.5
12	R2	75	11.3	0.123	44.4	LOS D	1.7	12.8	0.87	0.72	26.4
Appro	ach	238	11.9	0.224	25.9	LOS B	4.0	30.6	0.73	0.70	40.0
All Vel	nicles	2949	6.9	0.748	27.9	LOS B	27.4	202.0	0.87	0.79	46.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab). Vehicle movement LOS values are based on average delay per movement.

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

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

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

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

Move	Movement Performance - Pedestrians											
Mov		Demand	Average	Level of	Average Back	c of Queue	Prop.	Effective				
ID	Description	Flow	Delay	Service	Pedestrian	Distance	Queued	Stop Rate				
		ped/h	sec		ped	m		per ped				
P2	East Full Crossing	26	18.2	LOS B	0.0	0.0	0.59	0.59				
P3	North Full Crossing	53	47.3	LOS E	0.1	0.1	0.95	0.95				
P4	West Full Crossing	53	35.8	LOS D	0.1	0.1	0.82	0.82				
P4S	West Slip/Bypass Lane Crossing	53	28.0	LOS C	0.1	0.1	0.73	0.73				
All Pe	destrians	184	34.3	LOS D			0.80	0.80				

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay) Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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PHASING SUMMARY

Site: 101 [Upgraded Wallgrove Road / Wonderland Drive EX+DEV AM]

Wallgrove Road and Wonderland Drive Intersection

Existing + Development

AM

Signals - Fixed Time Isolated Cycle Time = 106 seconds (Optimum Cycle Time - Minimum Delay) Variable Sequence Analysis applied. The results are given for the selected output sequence.

Phase Times determined by the program Phase Sequence: Variable Phasing Reference Phase: Phase D Input Phase Sequence: A*, B, D, E, F Output Phase Sequence: A*, B, D, E, F (* Variable Phase)

Phase Timing Results

Phase	A	В	D	E	F
Phase Change Time (sec)	51	88	0	12	37
Green Time (sec)	31	12	6	19	8
Phase Time (sec)	37	18	12	25	14
Phase Split	35%	17%	11%	24%	13%

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



REF: Reference Phase VAR: Variable Phase



	Mixed Running & Stopped Movement C	lasses	
\longrightarrow	Undetected Movement	•	Phase Transition Applied

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SITE LAYOUT

Site: 101 [Upgraded Wallgrove Road / Wonderland Drive EX PM]

Wallgrove Road and Wonderland Drive Intersection Existing PM

Signals - Fixed Time Isolated



Project: \\192.168.3.1\tdata\Synergy\Projects\13\13.519\Modelling\13.519ms07v02 TNG, Eastern Creek (Updated as per the RMS Comments).sip7

MOVEMENT SUMMARY

Site: 101 [Upgraded Wallgrove Road / Wonderland Drive EX PM]

Wallgrove Road and Wonderland Drive Intersection

Existing

PM

Signals - Fixed Time Isolated Cycle Time = 108 seconds (Optimum Cycle Time - Minimum Delay) Variable Sequence Analysis applied. The results are given for the selected output sequence.

Move	ment P	erformance	- Vehic	cles							
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South	: Wallgro	ove Road									
1	L2	57	5.6	0.037	7.1	LOS A	0.2	1.7	0.14	0.61	53.0
2	T1	1264	6.0	0.687	22.6	LOS B	25.4	187.0	0.83	0.75	51.9
3	R2	1	0.0	0.010	60.4	LOS E	0.1	0.4	0.96	0.59	18.3
Appro	ach	1322	6.0	0.687	21.9	LOS B	25.4	187.0	0.80	0.74	51.9
East:	Wonderl	and Drive									
4	L2	19	5.6	0.303	32.0	LOS C	1.4	10.6	0.98	0.71	21.7
5	T1	1	0.0	0.303	32.0	LOS C	1.4	10.6	0.98	0.71	13.6
6	R2	19	5.6	0.303	32.0	LOS C	1.4	10.6	0.98	0.71	28.1
Appro	ach	39	5.4	0.303	32.0	LOS C	1.4	10.6	0.98	0.71	24.9
North:	Wallgro	ve Road									
7	L2	2	0.0	0.487	26.5	LOS B	15.5	113.8	0.71	0.63	33.3
8	T1	895	6.0	0.487	19.3	LOS B	15.7	115.2	0.71	0.63	53.9
9	R2	87	6.0	0.442	63.9	LOS E	2.4	17.7	1.00	0.74	29.3
Appro	ach	984	6.0	0.487	23.3	LOS B	15.7	115.2	0.74	0.64	50.9
West:	Wonder	land Drive									
10	L2	354	6.0	0.692	41.7	LOS C	16.7	123.2	0.95	0.84	35.8
11	T1	1	0.0	0.361	50.8	LOS D	5.4	39.5	0.92	0.78	12.1
12	R2	225	6.1	0.361	47.6	LOS D	5.4	39.5	0.92	0.78	25.8
Appro	ach	580	6.0	0.692	44.0	LOS D	16.7	123.2	0.94	0.82	32.1
All Vel	hicles	2925	6.0	0.692	26.9	LOS B	25.4	187.0	0.81	0.72	47.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab). Vehicle movement LOS values are based on average delay per movement.

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

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

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

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

Move	Movement Performance - Pedestrians											
Mov		Demand	Average	Level of .	Average Back	c of Queue	Prop.	Effective				
ID	Description	Flow	Delay	Service	Pedestrian	Distance	Queued	Stop Rate				
		ped/h	sec		ped	m		per ped				
P2	East Full Crossing	26	16.7	LOS B	0.0	0.0	0.56	0.56				
P3	North Full Crossing	53	48.3	LOS E	0.2	0.2	0.95	0.95				
P4	West Full Crossing	53	20.8	LOS C	0.1	0.1	0.62	0.62				
P4S West Cross	West Slip/Bypass Lane Crossing	53	15.1	LOS B	0.1	0.1	0.53	0.53				
All Pe	destrians	184	26.4	LOS C			0.68	0.68				

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay) Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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PHASING SUMMARY

Site: 101 [Upgraded Wallgrove Road / Wonderland Drive EX PM]

Wallgrove Road and Wonderland Drive Intersection

Existing PM

Signals - Fixed Time Isolated Cycle Time = 108 seconds (Optimum Cycle Time - Minimum Delay) Variable Sequence Analysis applied. The results are given for the selected output sequence.

Phase Times determined by the program Phase Sequence: Variable Phasing Reference Phase: Phase D Input Phase Sequence: A*, D, E, F Output Phase Sequence: A*, D, E, F (* Variable Phase)

Phase Timing Results

Phase	A	D	E	F
Phase Change Time (sec)	49	0	12	37
Green Time (sec)	53	6	19	6
Phase Time (sec)	59	12	25	12
Phase Split	55%	11%	23%	11%

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



VAR: Variable Phase



	Mixed Running & Stopped Movement C	lasses	
\longrightarrow	Undetected Movement	•	Phase Transition Applied

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SITE LAYOUT

Site: 101 [Upgraded Wallgrove Road / Wonderland Drive EX+DEV PM]

Wallgrove Road and Wonderland Drive Intersection Existing + Development PM

Signals - Fixed Time Isolated



Project: \\192.168.3.1\tdata\Synergy\Projects\13\13.519\Modelling\13.519ms07v02 TNG, Eastern Creek (Updated as per the RMS Comments).sip7

MOVEMENT SUMMARY

Site: 101 [Upgraded Wallgrove Road / Wonderland Drive EX+DEV PM]

Wallgrove Road and Wonderland Drive Intersection

Existing + Development PM

Signals - Fixed Time Isolated Cycle Time = 101 seconds (Optimum Cycle Time - Minimum Delay) Variable Sequence Analysis applied. The results are given for the selected output sequence.

Move	ement P	Performance	- Vehi	cles							
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South	: Wallgro	ove Road									
1	L2	75	14.1	0.051	7.2	LOS A	0.3	2.1	0.14	0.61	52.1
2	T1	1264	6.0	0.740	24.2	LOS B	25.5	187.8	0.88	0.79	50.9
3	R2	1	0.0	0.010	56.5	LOS E	0.1	0.4	0.96	0.59	18.8
Appro	ach	1340	6.4	0.740	23.3	LOS B	25.5	187.8	0.84	0.78	50.9
East:	Wonderl	and Drive									
4	L2	19	5.6	0.284	28.8	LOS C	1.3	9.5	0.98	0.71	22.3
5	T1	1	0.0	0.284	28.8	LOS C	1.3	9.5	0.98	0.71	14.0
6	R2	19	5.6	0.284	28.8	LOS C	1.3	9.5	0.98	0.71	28.8
Appro	ach	39	5.4	0.284	28.8	LOS C	1.3	9.5	0.98	0.71	25.5
North:	Wallgro	ove Road									
7	L2	2	0.0	0.525	27.9	LOS B	15.6	114.4	0.76	0.67	32.9
8	T1	895	6.0	0.525	20.8	LOS B	15.7	115.8	0.76	0.67	53.0
9	R2	105	12.0	0.518	60.5	LOS E	2.7	21.1	1.00	0.75	30.0
Appro	ach	1002	6.6	0.525	25.0	LOS B	15.7	115.8	0.79	0.68	49.9
West:	Wonder	land Drive									
10	L2	381	8.6	0.709	38.6	LOS C	17.0	127.6	0.95	0.85	36.9
11	T1	1	0.0	0.356	47.0	LOS D	5.2	38.5	0.91	0.77	12.6
12	R2	235	7.6	0.356	43.8	LOS D	5.2	38.5	0.91	0.77	26.9
Appro	ach	617	8.2	0.709	40.6	LOS C	17.0	127.6	0.93	0.82	33.3
All Ve	hicles	2998	6.8	0.740	27.5	LOS B	25.5	187.8	0.85	0.76	46.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab). Vehicle movement LOS values are based on average delay per movement.

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

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

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

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

Move	Movement Performance - Pedestrians											
Mov	Description	Demand	Average	Level of	Average Bac	k of Queue	Prop.	Effective				
ID	Description	Flow	Delay	Service	Pedestrian	Distance	Queued	Stop Rate				
		ped/h	sec		ped	m		per ped				
P2	East Full Crossing	26	17.8	LOS B	0.0	0.0	0.59	0.59				
P3	North Full Crossing	53	44.8	LOS E	0.1	0.1	0.94	0.94				
P4	West Full Crossing	53	22.3	LOS C	0.1	0.1	0.66	0.66				
P4S	West Slip/Bypass Lane Crossing	53	16.1	LOS B	0.1	0.1	0.57	0.57				
All Pe	destrians	184	26.3	LOS C			0.71	0.71				

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay) Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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PHASING SUMMARY

Site: 101 [Upgraded Wallgrove Road / Wonderland Drive EX+DEV PM]

Wallgrove Road and Wonderland Drive Intersection

Existing + Development PM

Signals - Fixed Time Isolated Cycle Time = 101 seconds (Optimum Cycle Time - Minimum Delay) Variable Sequence Analysis applied. The results are given for the selected output sequence.

Phase Times determined by the program Phase Sequence: Variable Phasing Reference Phase: Phase D Input Phase Sequence: A*, D, E, F Output Phase Sequence: A*, D, E, F (* Variable Phase)

Phase Timing Results

Phase	A	D	E	F
Phase Change Time (sec)	49	0	12	37
Green Time (sec)	46	6	19	6
Phase Time (sec)	52	12	25	12
Phase Split	51%	12%	25%	12%

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



VAR: Variable Phase



	Mixed Running & Stopped Movement Classes		
\longrightarrow	Undetected Movement	•	Phase Transition Applied

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