Reference: 13.519r03v01

traffix
traffic & transport planners

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50 Holt Street
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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."

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

b) **Phasing**

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

TRAFFIX Response: 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."

TRAFFIX Response: 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"

TRAFFIX Response: 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**.

Table 1: SIDRA Movement Summaries

Intersection Description	Control Type	Scenario	Period	Degree of Saturation	Intersection Delay	Level of Service
Wonderland Drive / Wallgrove Road / M7 Control Centre	Signalised	AM Peak	Existing	0.732	27.7s	B
			Future	0.748	27.9s	B
		PM Peak	Existing	0.692	26.9s	B
			Future	0.740	27.5s	B

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

Transport
Roads & Maritime
Services

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:

1. 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

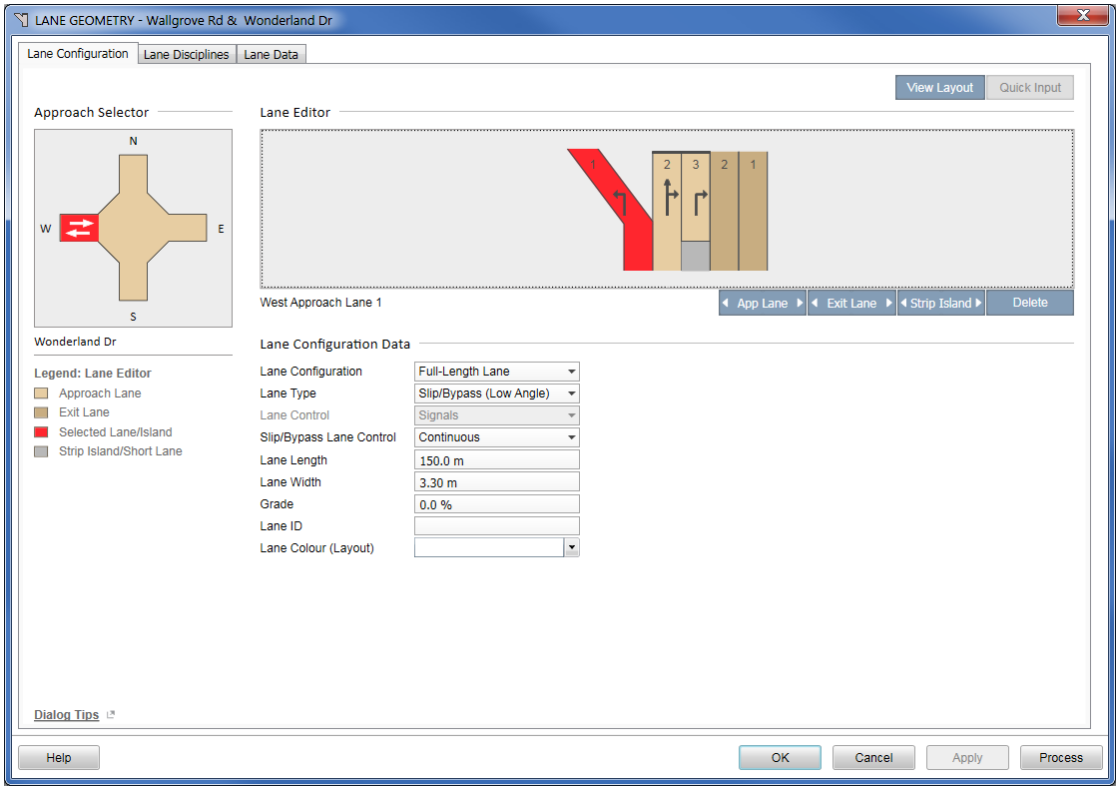
Eastern Creek – Energy from Waste

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.

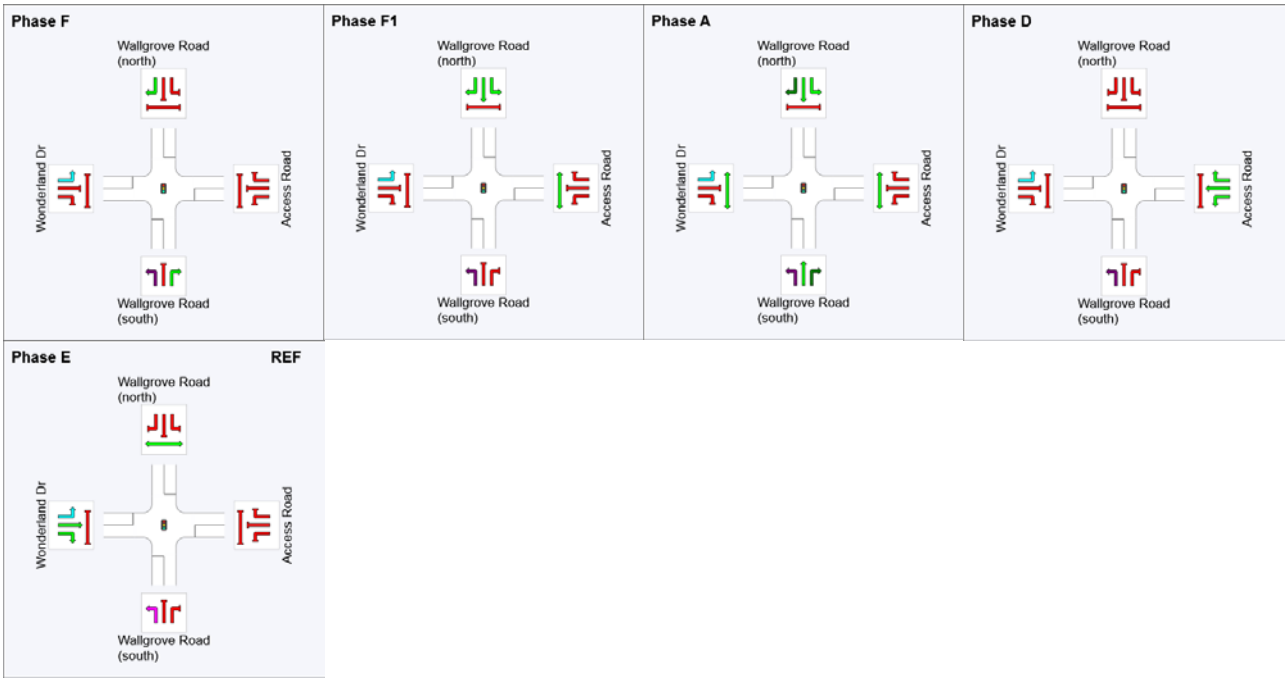


Phasing:

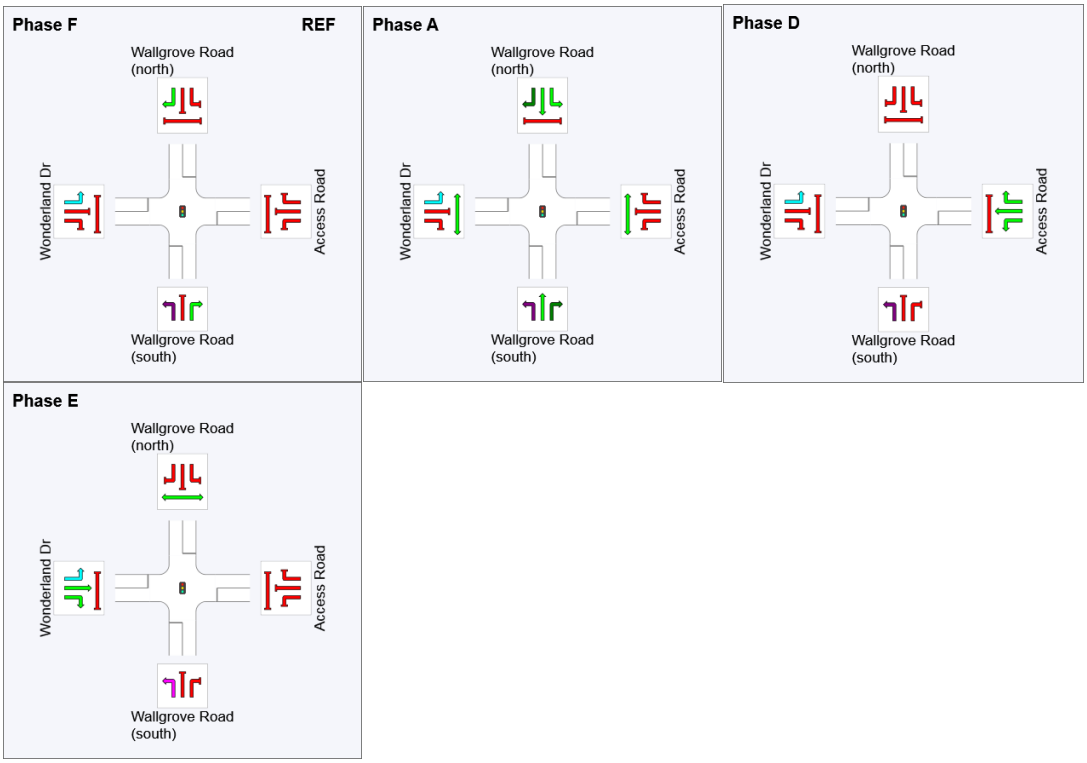
Phasing sequence adopted in the model is different than what's shown by SCATS. Cycle time of 120 sec seems OK.

Model Phasing:

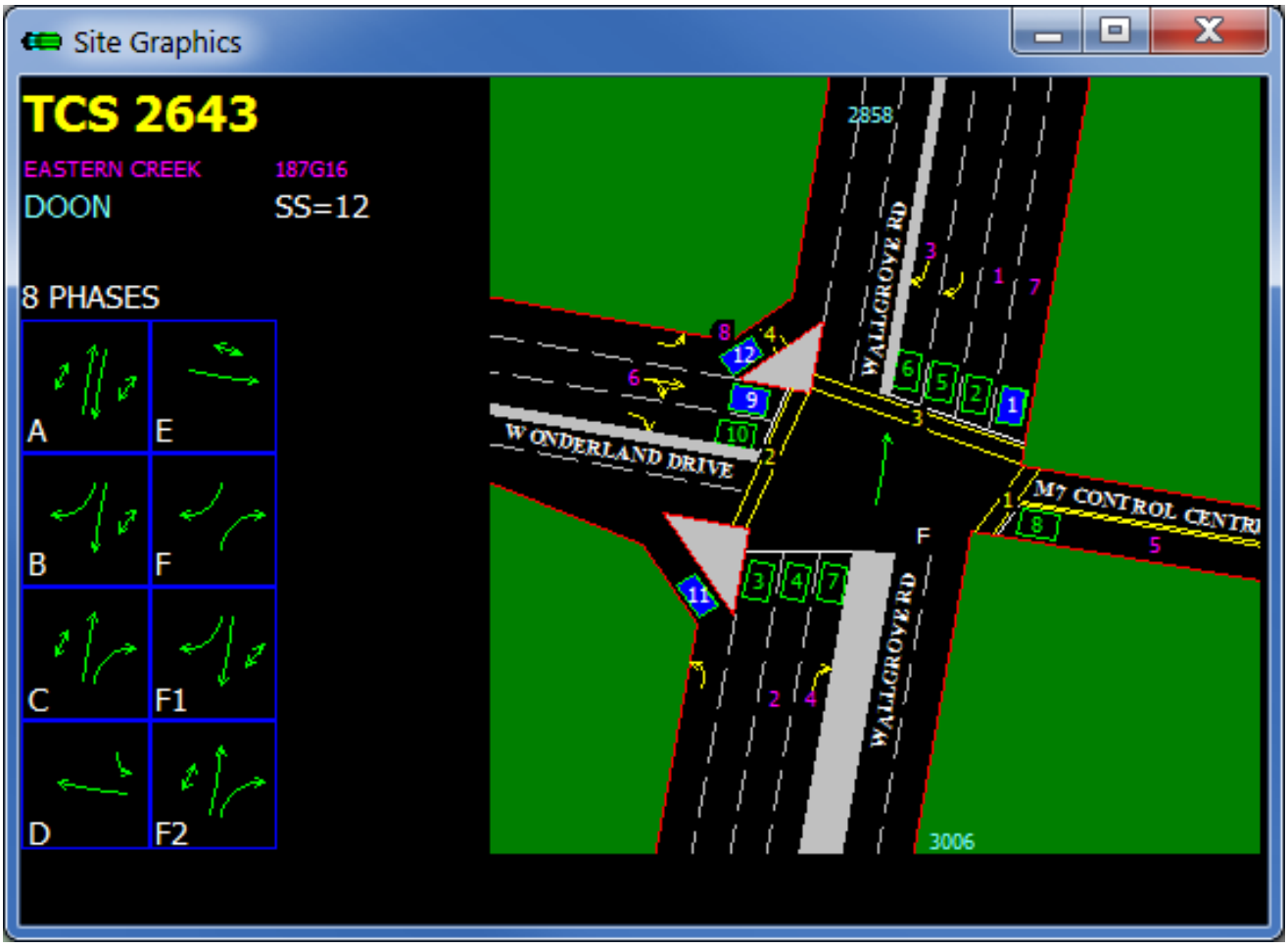
AM Peak



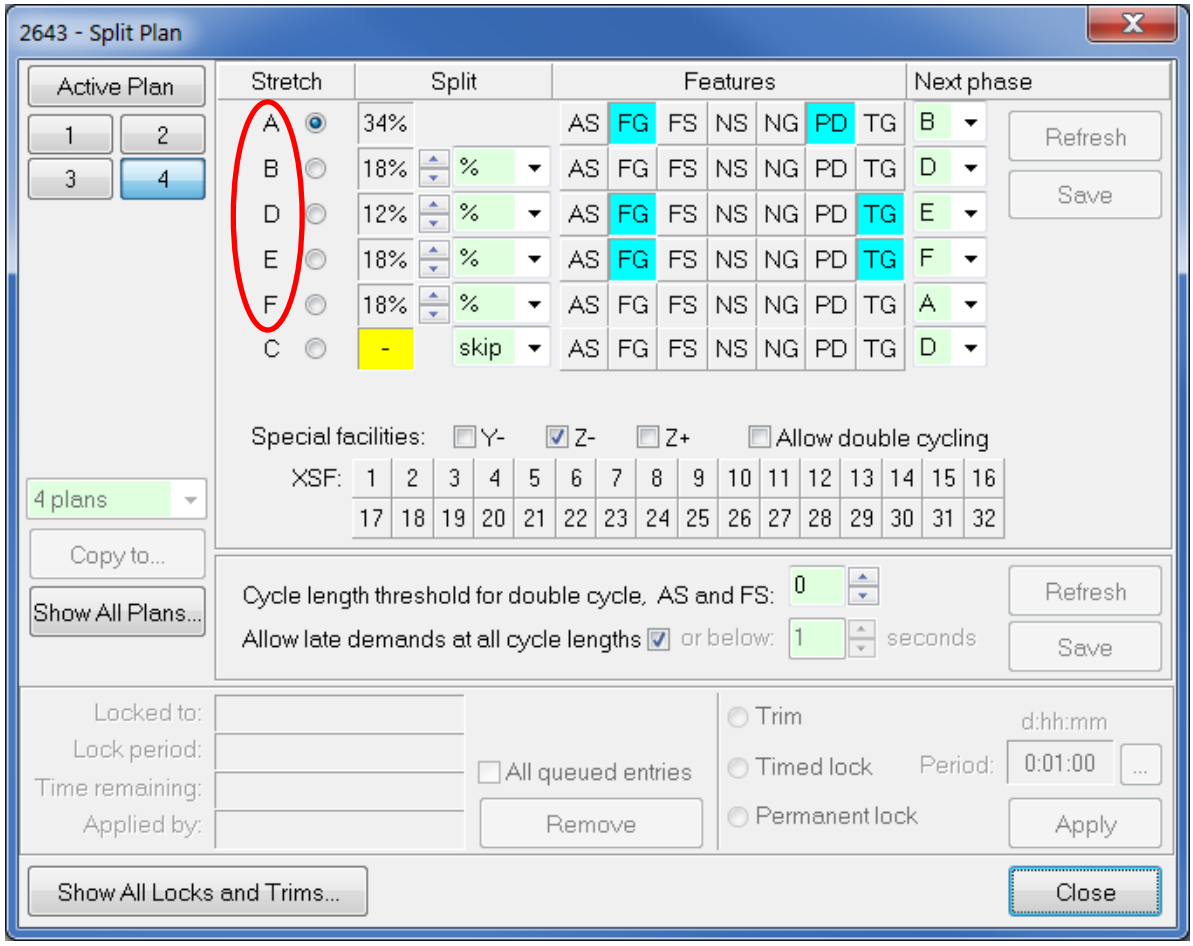
PM Peak:



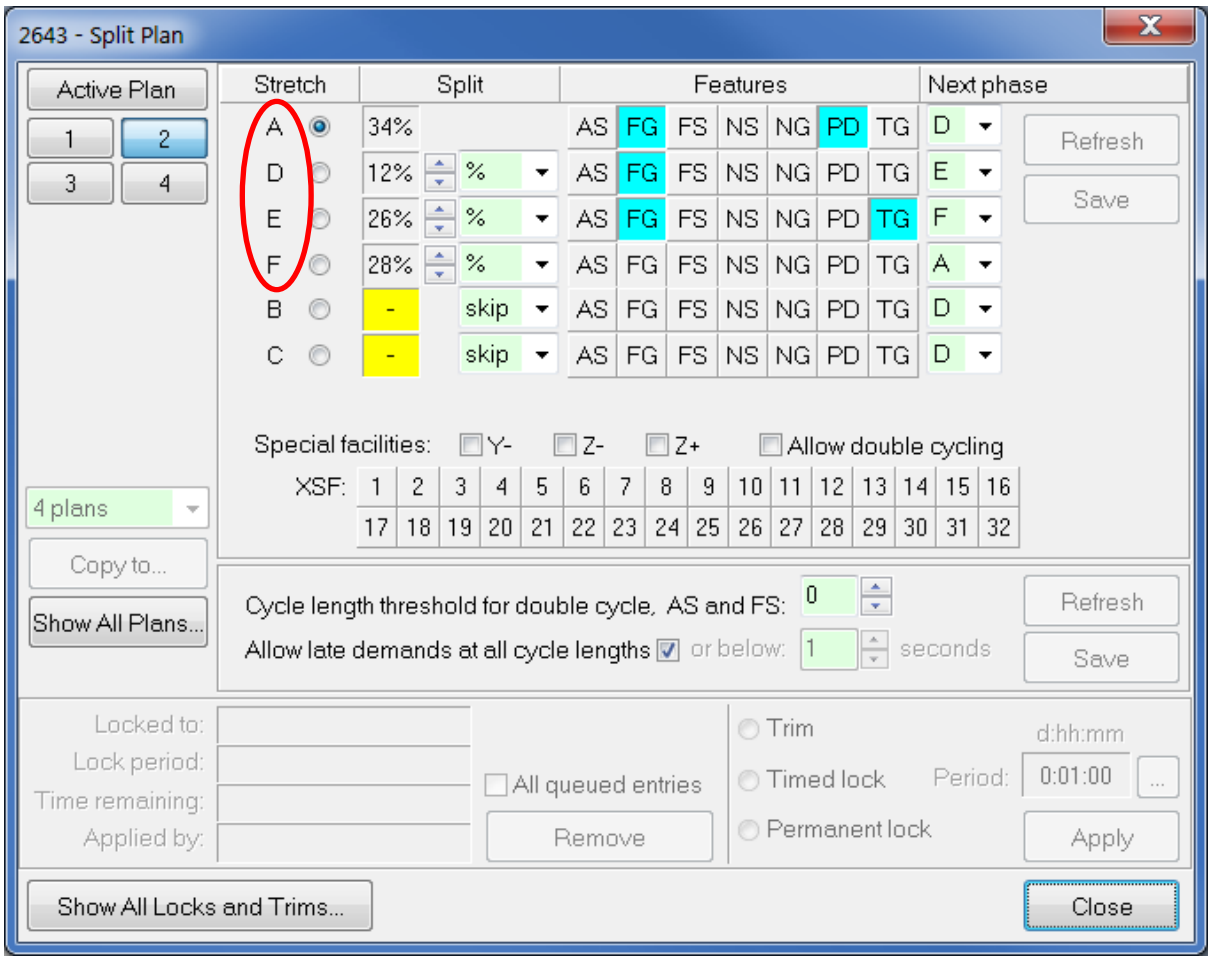
SCATS Sequence:



AM Peak:

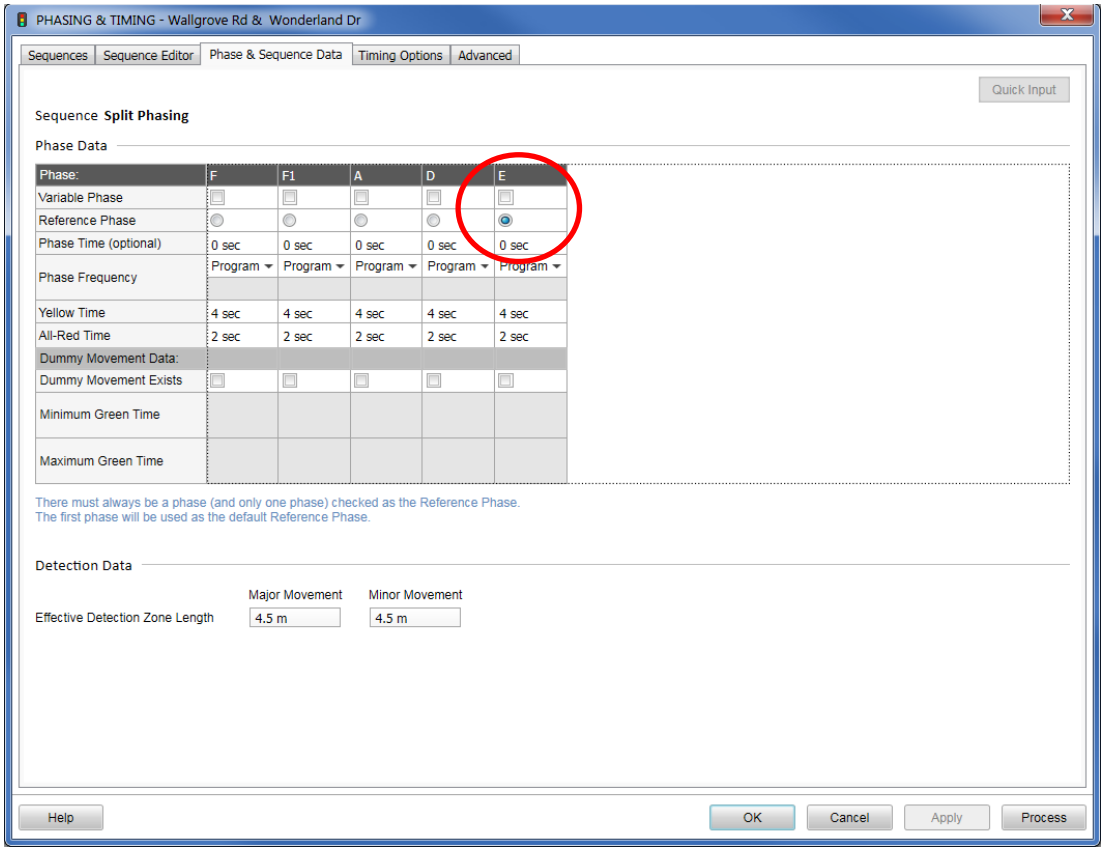


PM Peak:

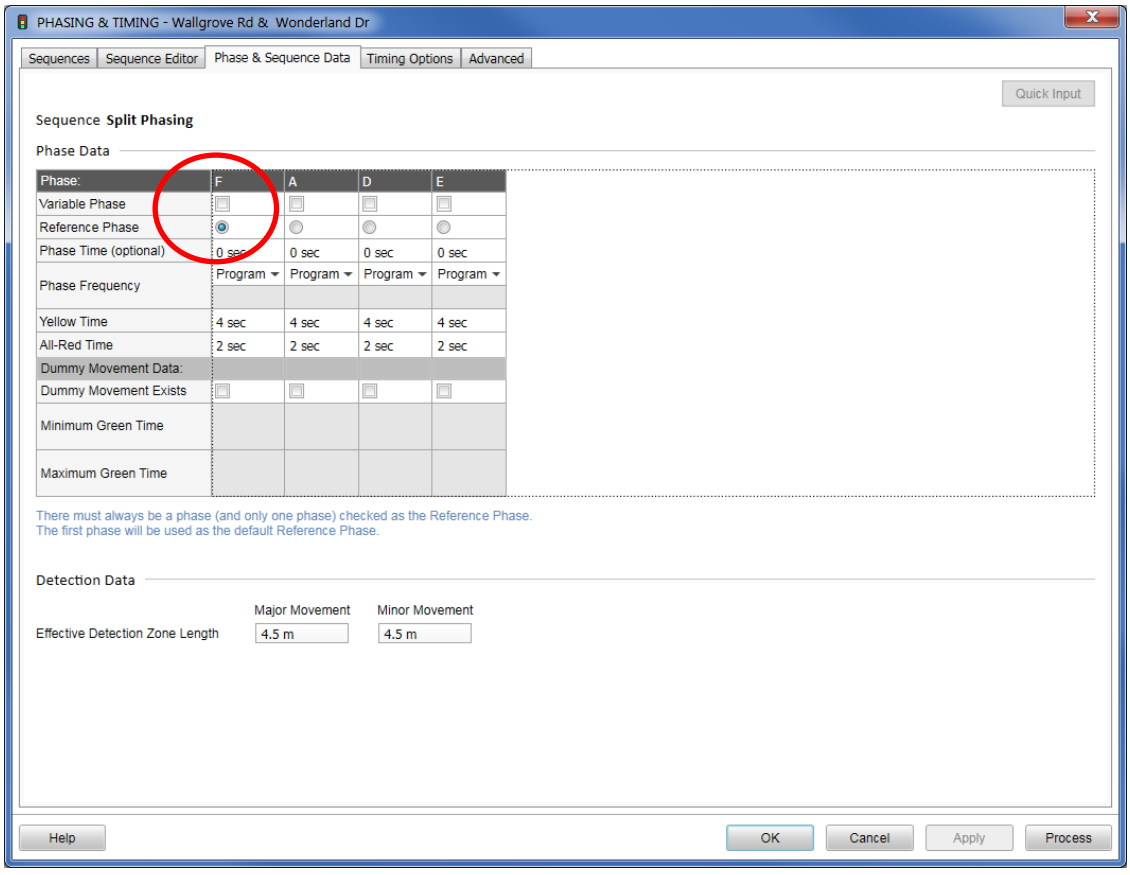


As shown above the reference phase in both AM and PM peak is “A” phase. In model “E” phase is ref phase in AM peak and “F” phase is ref phase in PM peak.

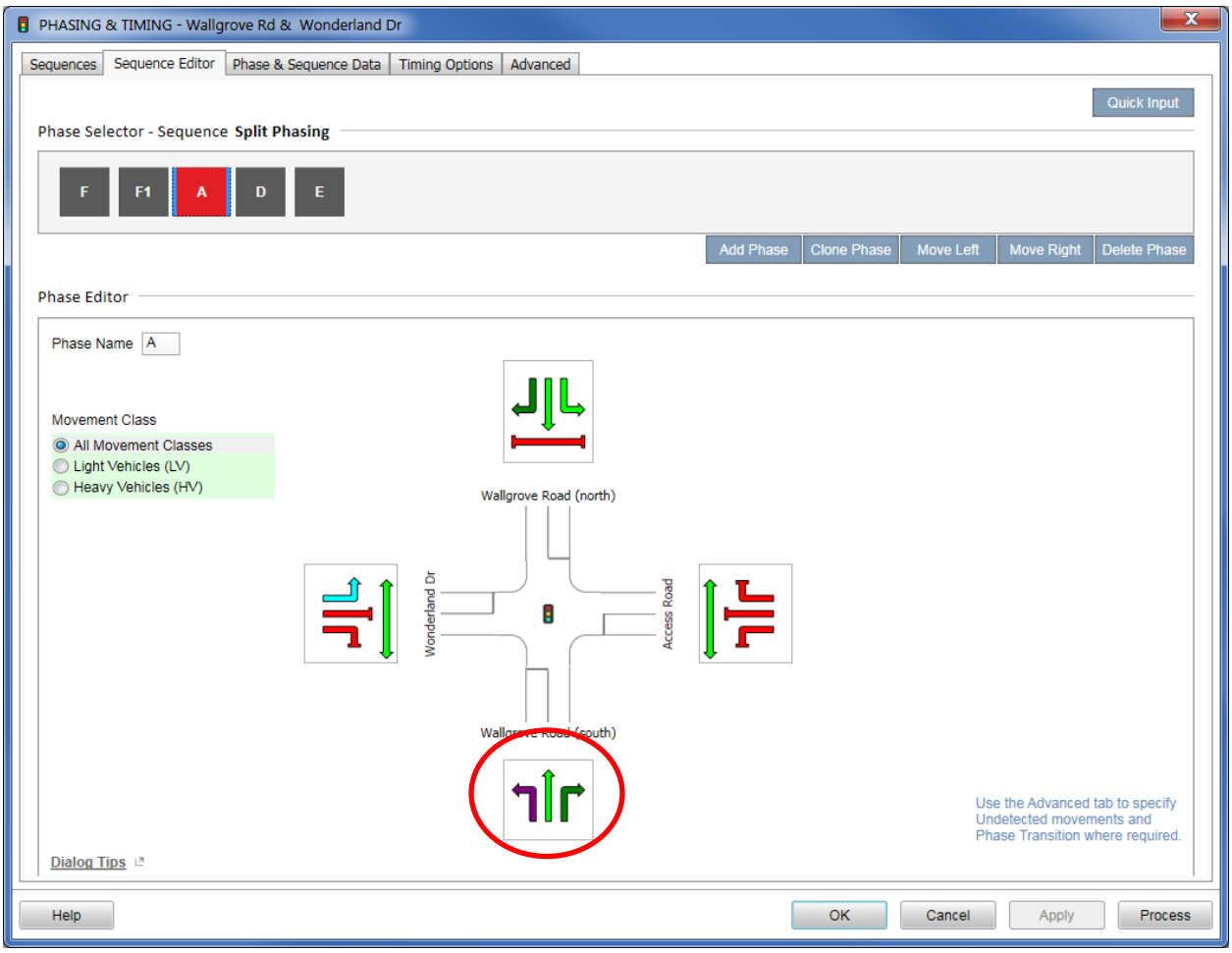
AM Peak



PM Peak

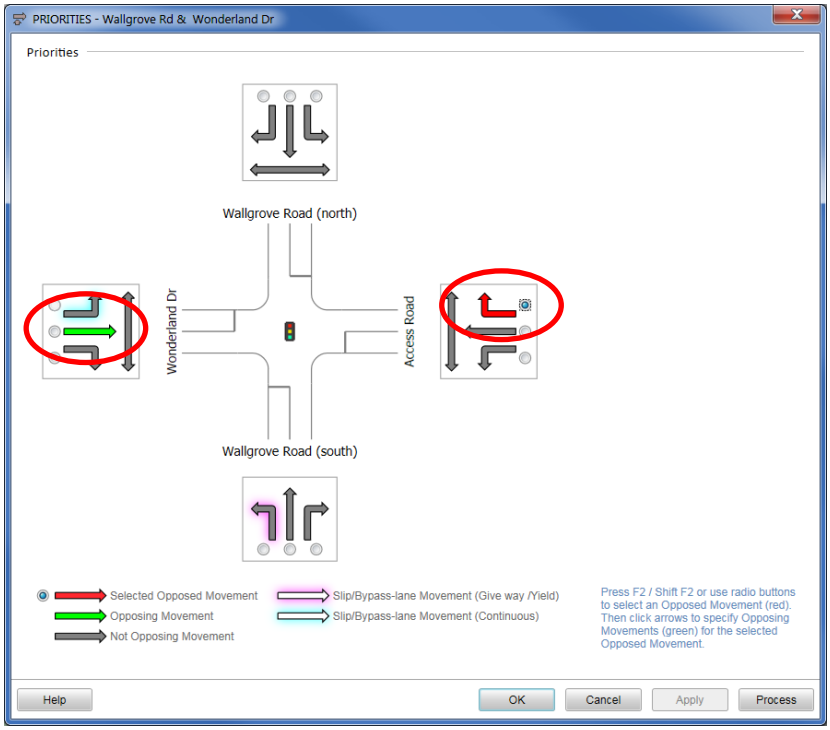


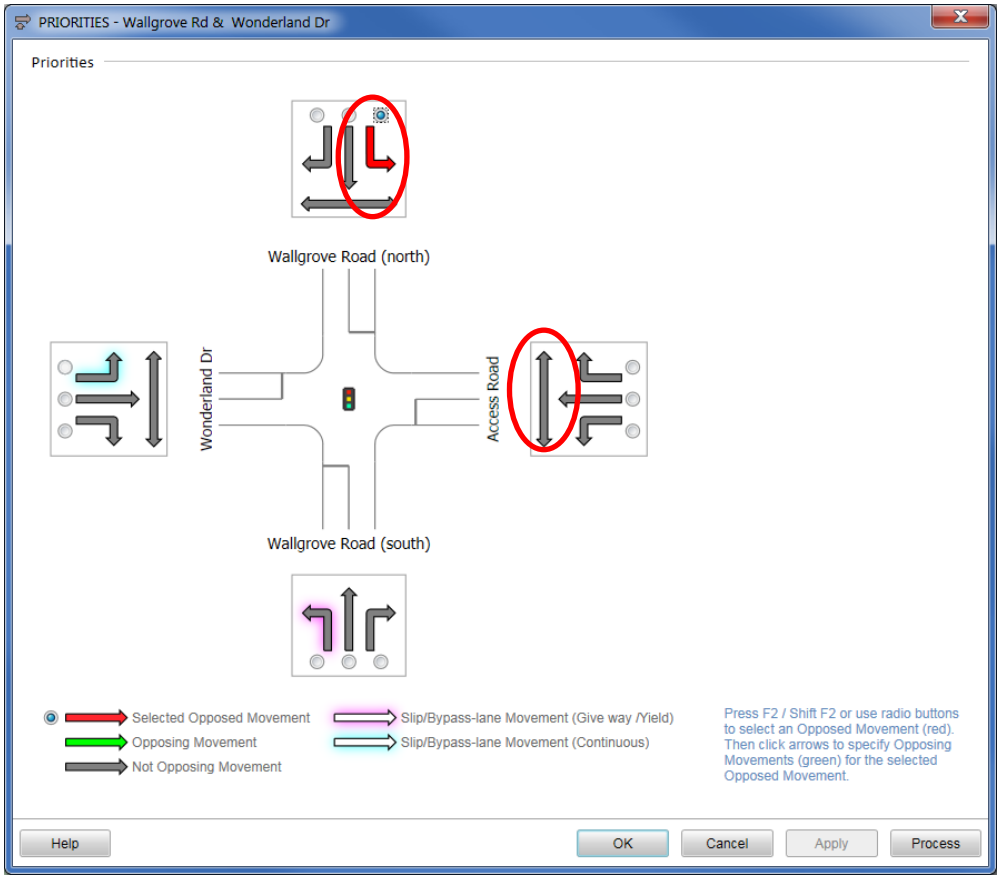
Right filter turns are allowed in the model in both AM and PM peak from Wallgrove Rd. Please check with Network OPS team if that's the case.

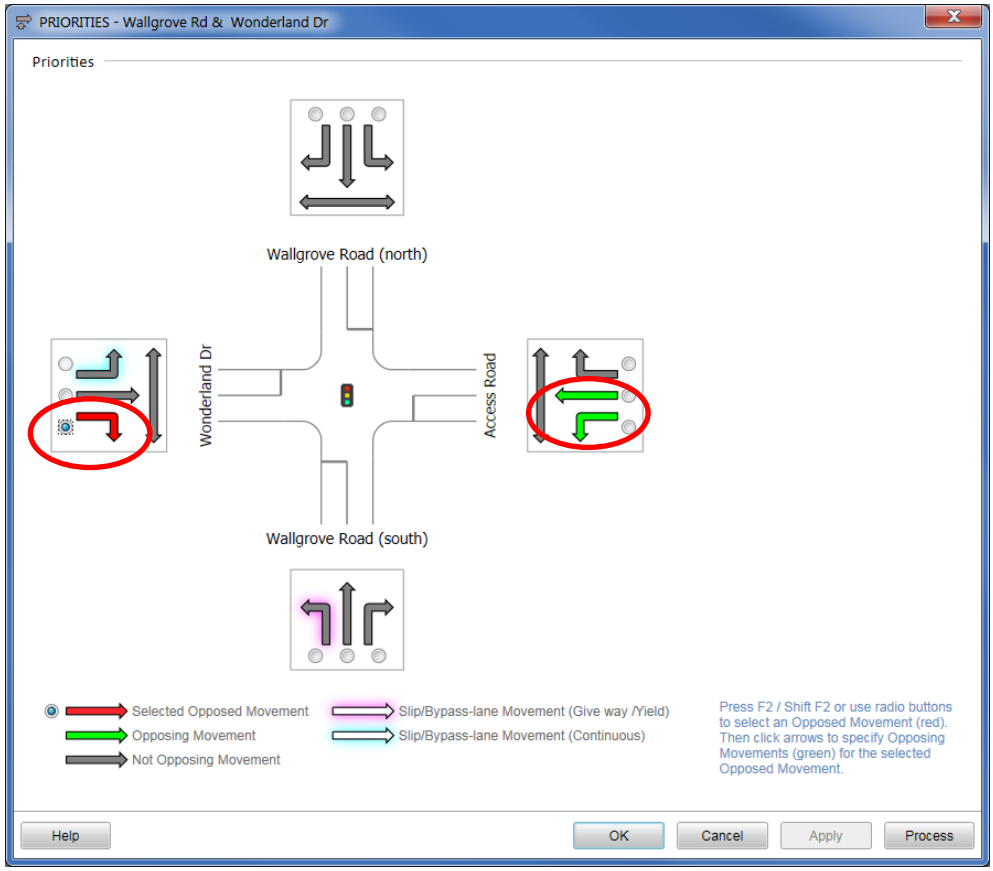


Priorities:

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.

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.

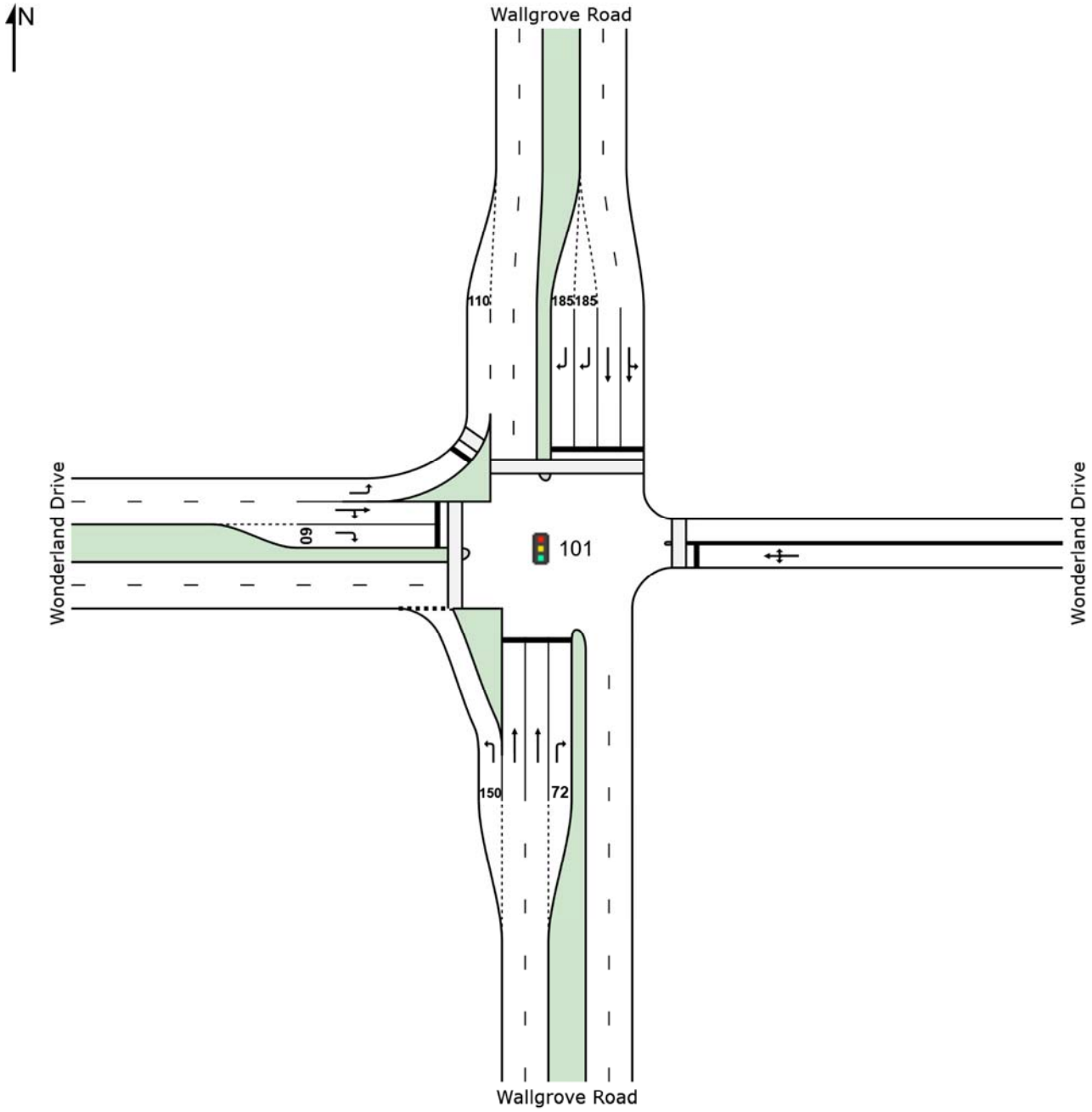
Attachment 2

SIDRA Outputs

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.

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back 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
Approach		915	6.0	0.630	30.0	LOS C	16.8	123.8	0.80	0.76	45.8
East: Wonderland 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
Approach		7	0.0	0.057	30.7	LOS C	0.3	1.8	0.95	0.63	24.2
North: Wallgrove 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
Approach		1754	6.0	0.732	26.5	LOS B	27.4	201.7	0.90	0.80	48.0
West: Wonderland 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
Approach		202	6.3	0.186	27.2	LOS B	3.4	25.4	0.74	0.70	39.6
All Vehicles		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.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate 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 Pedestrians		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.

PHASING SUMMARY

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

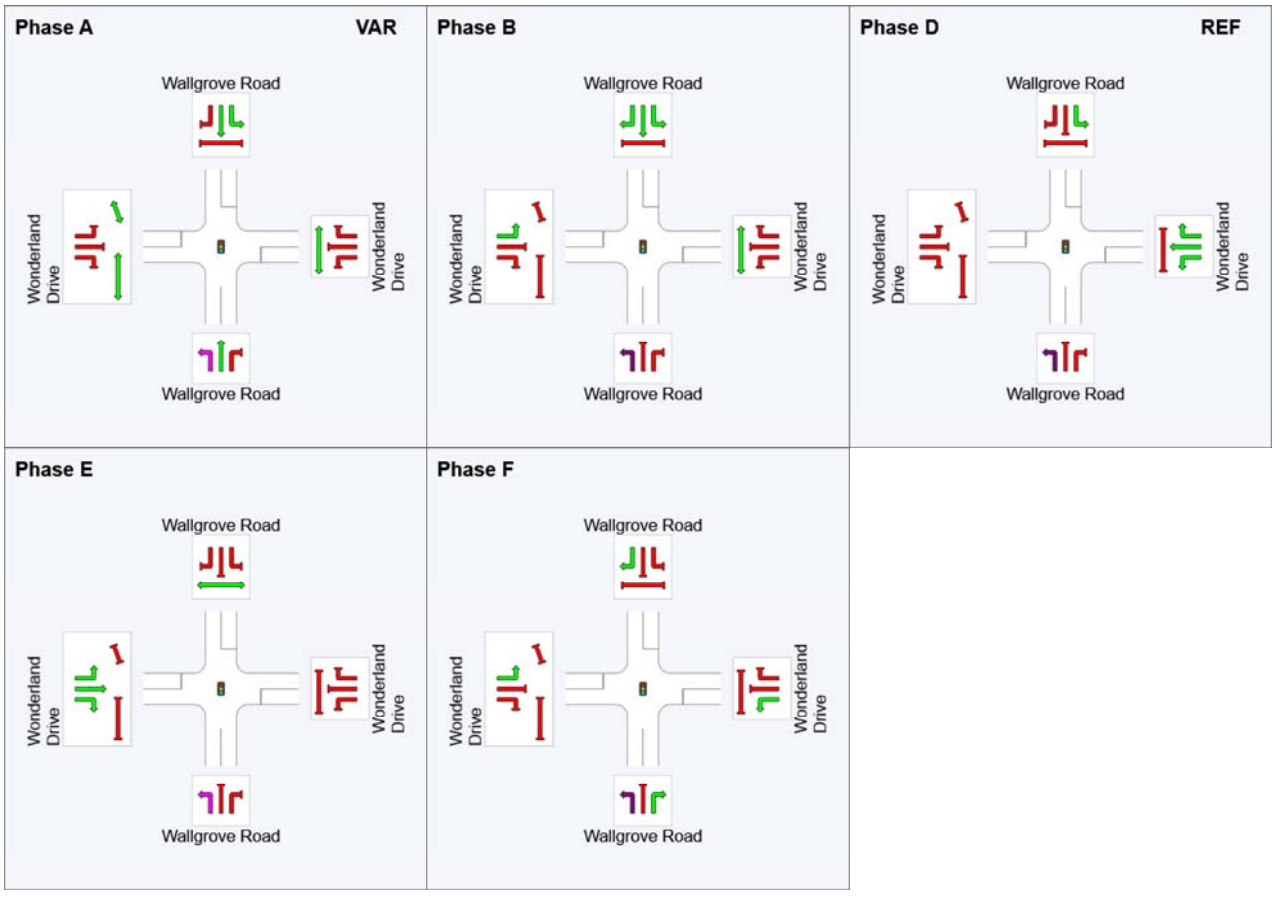
Wallgrove Road and Wonderland Drive Intersection
Existing
AM
Signals - Fixed Time Isolated Cycle Time = 108 seconds (Optimum Cycle Time - Minimum Delay)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

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)

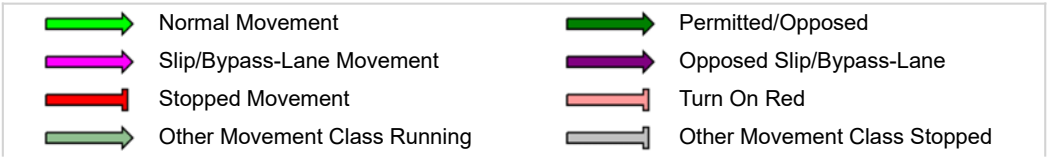
Phase Timing Results

Phase	A	B	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 Classes

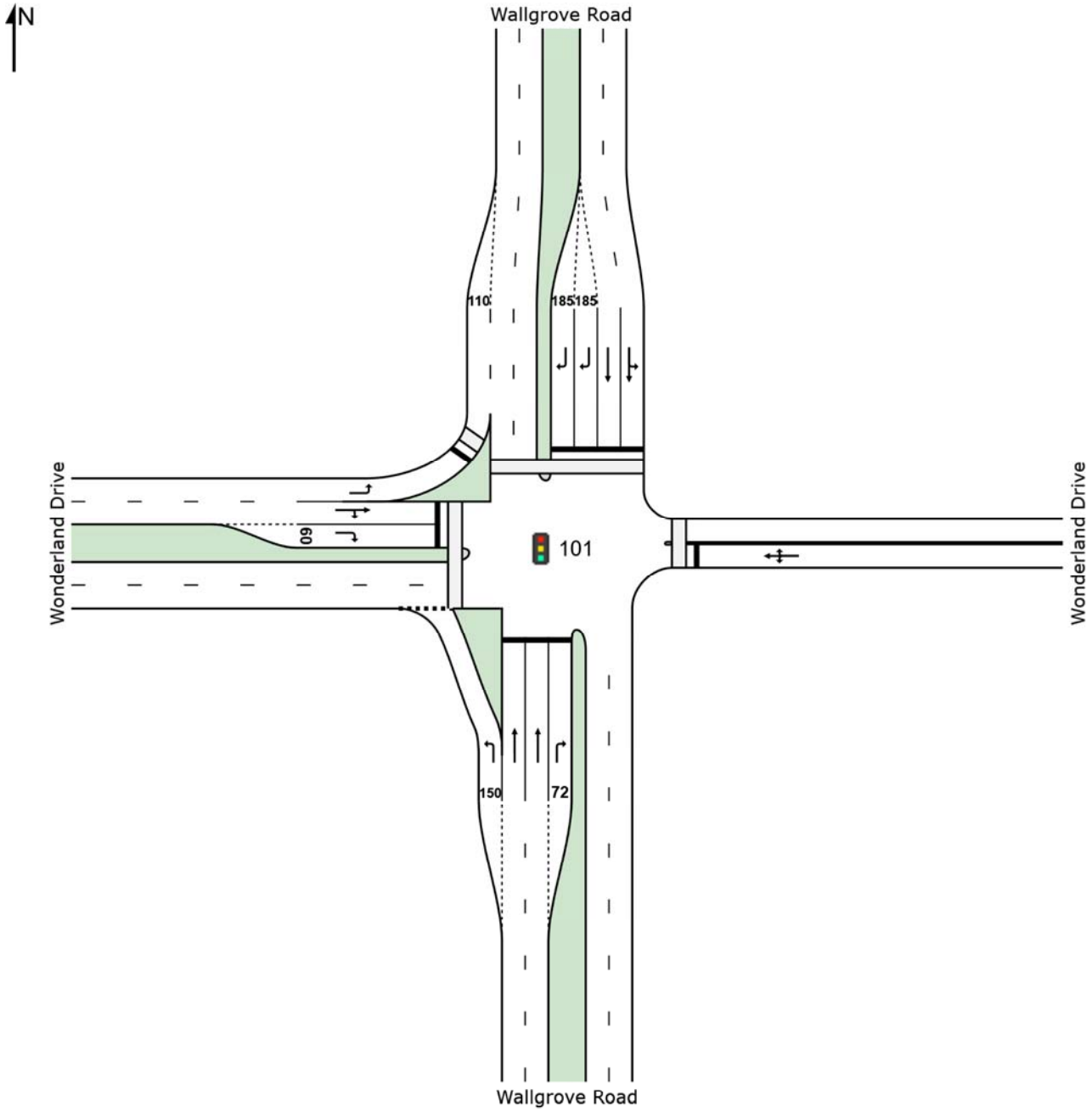
Undetected Movement


Phase Transition Applied

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 Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Wallgrove 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
Approach		933	6.7	0.678	31.0	LOS C	17.1	125.9	0.81	0.78	45.1
East: Wonderland 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
Approach		7	0.0	0.056	29.9	LOS C	0.3	1.8	0.95	0.63	24.4
North: Wallgrove 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
Approach		1772	6.4	0.748	26.5	LOS B	27.4	202.0	0.91	0.81	47.9
West: Wonderland 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
Approach		238	11.9	0.224	25.9	LOS B	4.0	30.6	0.73	0.70	40.0
All Vehicles		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.
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Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate 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 Pedestrians		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.
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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
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Variable Sequence Analysis applied. The results are given for the selected output sequence.

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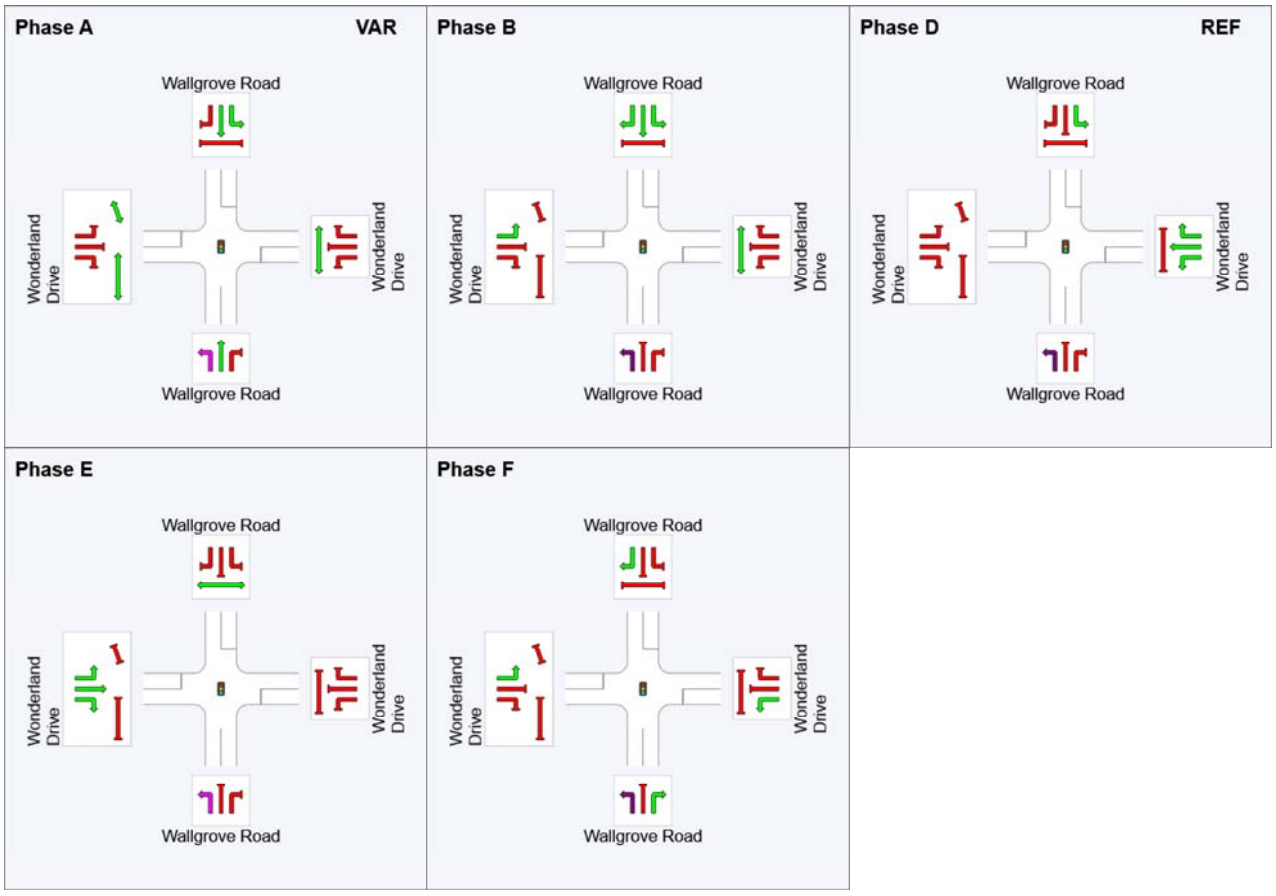
Input Phase Sequence: A*, B, D, E, F
Output Phase Sequence: A*, B, D, E, F
(* Variable Phase)

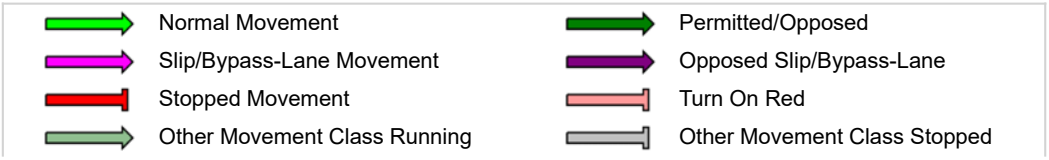
Phase Timing Results

Phase	A	B	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 Classes

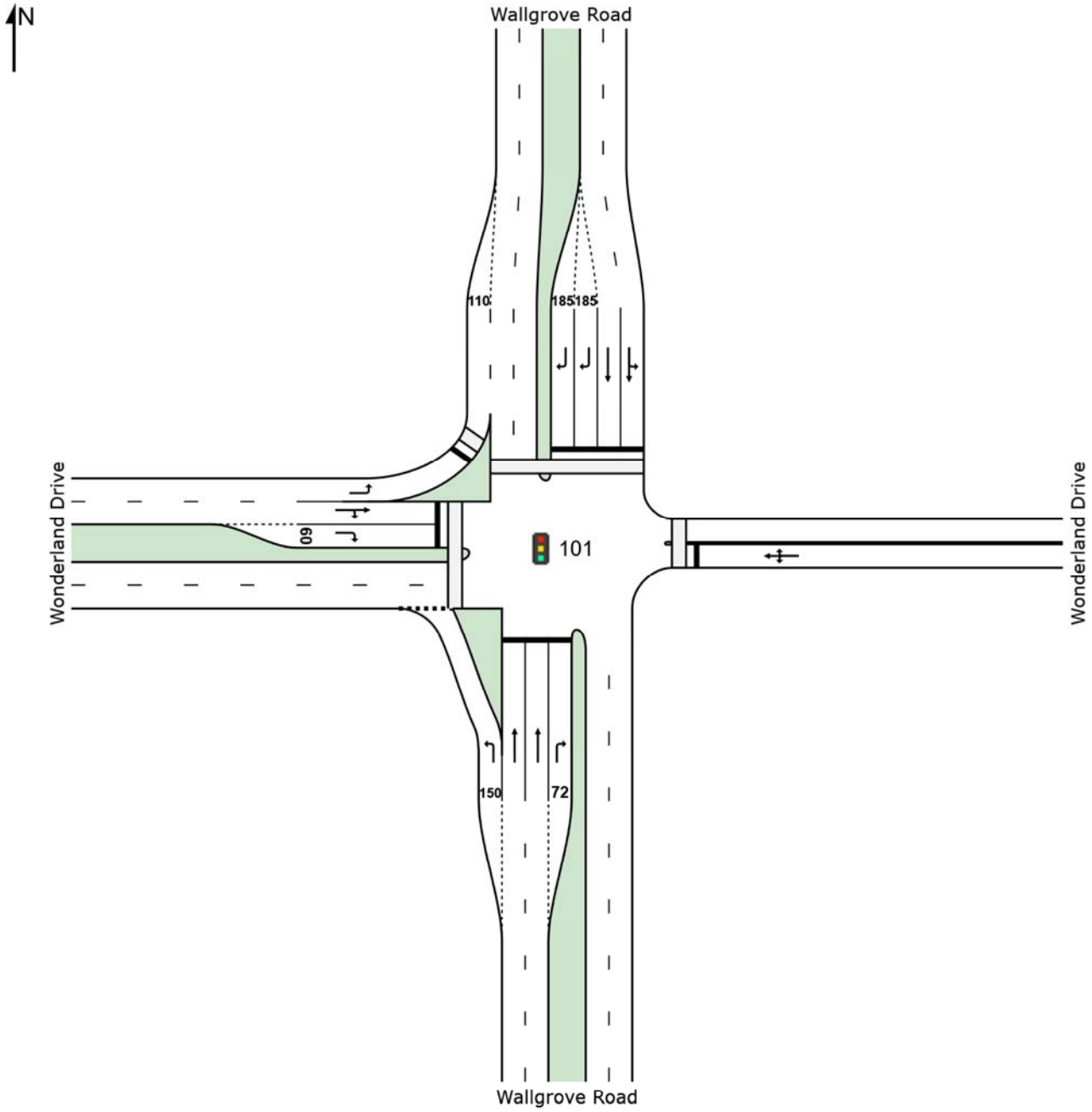
Undetected Movement


Phase Transition Applied

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.

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Wallgrove 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
Approach		1322	6.0	0.687	21.9	LOS B	25.4	187.0	0.80	0.74	51.9
East: Wonderland 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
Approach		39	5.4	0.303	32.0	LOS C	1.4	10.6	0.98	0.71	24.9
North: Wallgrove 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
Approach		984	6.0	0.487	23.3	LOS B	15.7	115.2	0.74	0.64	50.9
West: Wonderland 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
Approach		580	6.0	0.692	44.0	LOS D	16.7	123.2	0.94	0.82	32.1
All Vehicles		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.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate 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 Slip/Bypass Lane Crossing	53	15.1	LOS B	0.1	0.1	0.53	0.53
All Pedestrians		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.

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.

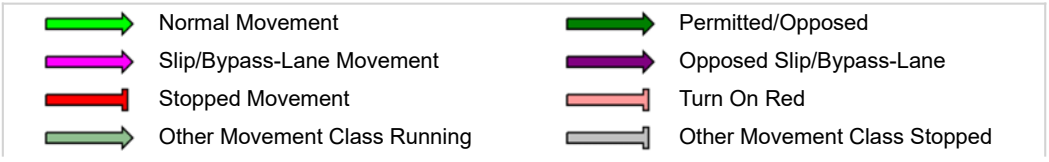
Phase Times determined by the program
Phase Sequence: Variable Phasing
Reference Phase: Phase D
Input Phase Sequence: A*, D, E, F
Output Phase Sequence: A*, D, E, F
(* Variable Phase)

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%.

REF: Reference Phase
VAR: Variable Phase




Mixed Running & Stopped Movement Classes

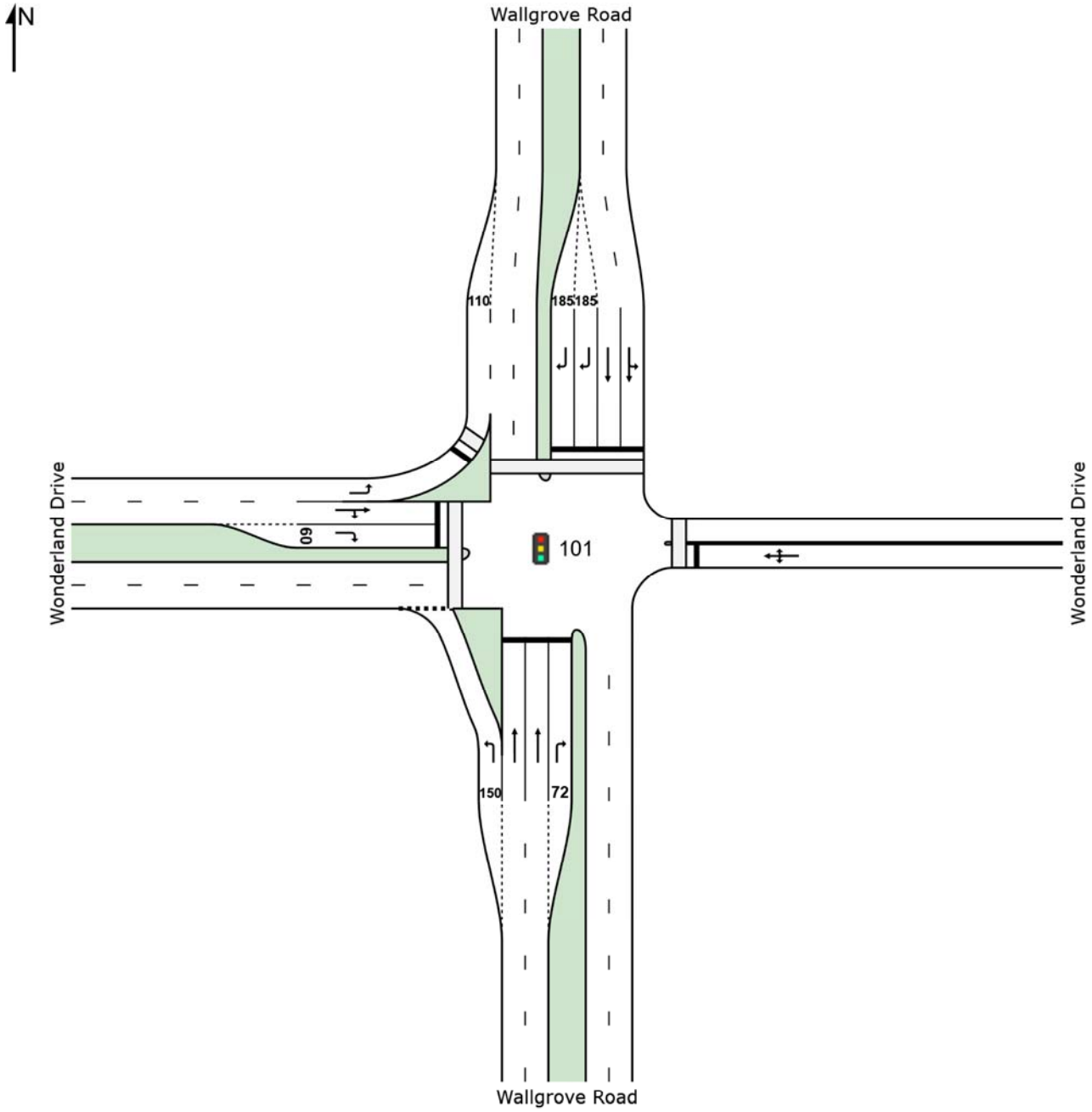
Undetected Movement


Phase Transition Applied

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.

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Wallgrove 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
Approach		1340	6.4	0.740	23.3	LOS B	25.5	187.8	0.84	0.78	50.9
East: Wonderland 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
Approach		39	5.4	0.284	28.8	LOS C	1.3	9.5	0.98	0.71	25.5
North: Wallgrove 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
Approach		1002	6.6	0.525	25.0	LOS B	15.7	115.8	0.79	0.68	49.9
West: Wonderland 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
Approach		617	8.2	0.709	40.6	LOS C	17.0	127.6	0.93	0.82	33.3
All Vehicles		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).
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Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate 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 Pedestrians		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.

PHASING SUMMARY

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

Wallgrove Road and Wonderland Drive Intersection
Existing + Development
PM
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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%

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REF: Reference Phase
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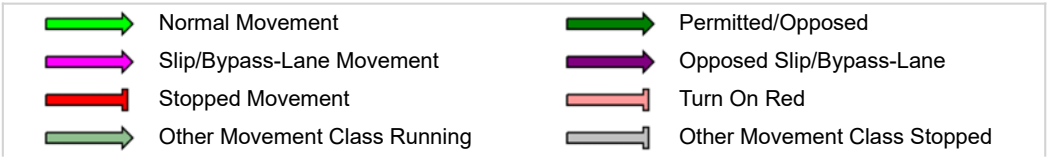


Mixed Running & Stopped Movement Classes

Undetected Movement


Phase Transition Applied