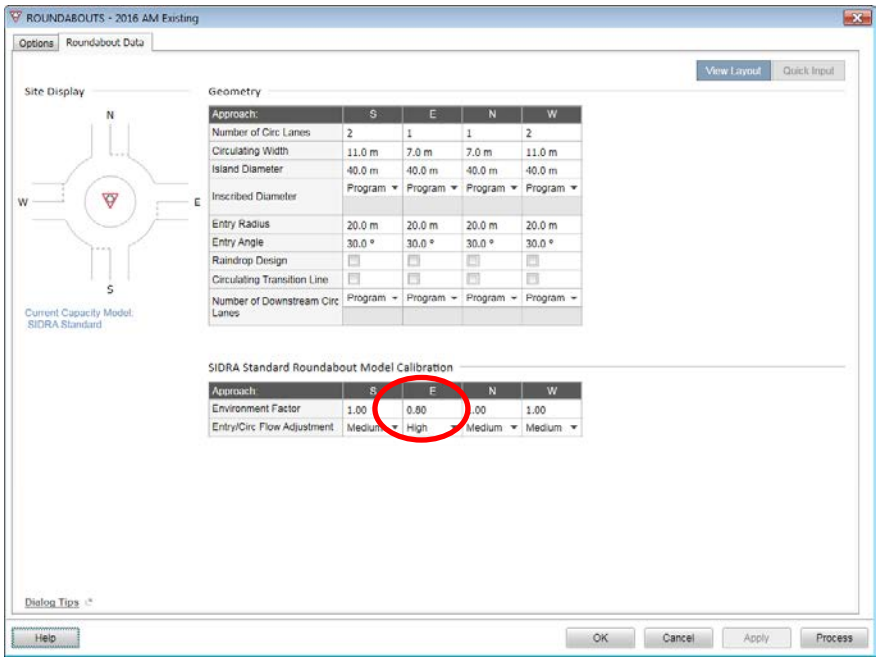
The Horsley Dr Business Park Stage 2

SIDRA Modelling Review Comments

The Horsley Drive / Cowpasture Rd Roundabout: (2016 AM Existing) & (2016 PM Existing)

- Environmental Factor value of 0.8 has been adopted in the model for East approach. Why?? Default SIDRA values is **1.0** for Std left drive and NSW software setup. A value less than 1.0 is reduces the follow-up headway and critical gap parameters and gives increase in capacity. Any changes to SIDRA default parameters should be justified.



- Lane length on northern approach should be approx.160m instead of 180m.
- Results tabulated in Table 3 (page17) of the report don't seem to match with model output for this scenario. Table 3 indicates that in AM Peak the intersection is likely to be operating at LOS C with DOS 0.85 and Ave delay of 41.1. Model Output summary shows different results.

Site: m01 [2016 AM Existing]

Lane Use and Performance

	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Cowpasture Road													
Lane 1	2	0.0	1920	0.001	100	3.1	LOS A	0.0	0.0	Short	61	0.0	NA
Lane 2 d	1163	4.9	1466	0.793	100	6.5	LOS A	9.0	65.9	Full	500	0.0	0.0
Lane 3	855	4.1	1078	0.793	100	14.4	LOS A	8.7	62.8	Full	500	0.0	0.0
Approach	2020	4.5		0.793		9.8	LOS A	9.0	65.9				
East: The Horsley Drive (East)													
Lane 1 d	439	14.0	1588	0.276	100	7.9	LOS A	2.4	18.9	Full	500	0.0	0.0
Lane 2	306	9.8	1107	0.276	100	11.6	LOS A	2.1	15.7	Full	500	0.0	0.0
Approach	745	12.3		0.276		9.5	LOS A	2.4	18.9				
North: The Horsley Drive (North)													
Lane 1 d	689	8.6	807	0.853	100	25.3	LOS B	17.8	134.1	Full	180	0.0	0.0
Lane 2	485	10.6	569	0.853	100	29.9	LOS C	14.4	110.0	Full	180	0.0	0.0
Approach	1174	9.4		0.853		27.2	LOS B	17.8	134.1				
West: Lizard Log Access Road													
Lane 1 d	4	0.0	353	0.012	100	12.8	LOS A	0.1	0.6	Full	400	0.0	0.0
Lane 2	2	0.0	248	0.009	100	16.7	LOS B	0.0	0.3	Full	400	0.0	0.0
Approach	6	0.0		0.012		14.1	LOS A	0.1	0.6				
Intersection	3945	7.4		0.853		14.9	LOS B	17.8	134.1				

- Similar issues in PM peak as well. Table 3 states that in PM Peak intersection operate at LOS F with DOS 1.42 and Ave delay of 457. Model Output summary shows different Ave delay.

Site: m01 [2016 PM Existing]

The Horsley Drive x Cowpasture Road
Roundabout

Lane Use and Performance

	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Cowpasture Road													
Lane 1	4	0.0	1915	0.002	100	3.2	LOS A	0.0	0.1	Short	61	0.0	NA
Lane 2 d	494	3.6	1446	0.342	100	3.9	LOS A	2.1	15.3	Full	500	0.0	0.0
Lane 3	359	7.1	1050	0.342	100	10.4	LOS A	1.9	14.2	Full	500	0.0	0.0
Approach	857	5.0		0.342		6.6	LOS A	2.1	15.3				
East: The Horsley Drive (East)													
Lane 1 d	728	3.8	511	1.424	100	450.7	LOS F	168.0	1214.0	Full	500	0.0	47.3
Lane 2	437	5.0	307	1.424	100	454.9	LOS F	102.0	744.5	Full	500	0.0	18.4
Approach	1165	4.2		1.424		452.3	LOS F	168.0	1214.0				
North: The Horsley Drive (North)													
Lane 1	654	6.8	1044	0.626	68 5	7.1	LOS A	6.3	46.7	Full	180	0.0	0.0
Lane 2 d	1277	3.3	1396	0.914	100	13.3	LOS A	24.5	176.2	Full	180	0.0	4.4
Approach	1931	4.5		0.914		11.2	LOS A	24.5	176.2				
West: Lizard Log Access Road													
Lane 1	2	0.0	660	0.003	100	3.7	LOS A	0.0	0.1	Full	400	0.0	0.0
Lane 2 d	16	0.0	946	0.017	100	3.9	LOS A	0.1	0.5	Full	400	0.0	0.0
Approach	18	0.0		0.017		3.8	LOS A	0.1	0.5				
Intersection	3971	4.5		1.424		139.6	LOS F	168.0	1214.0				

The Horsley Drive / Cowpasture Rd Roundabout: (2016 AM Existing - Upgraded) & (2016 PM Existing - upgraded)

- Similar Issues as above (dot Point 1 & 2).

The Horsley Drive / Cowpasture Rd Roundabout: (2016 AM Base Interim) & (2016 PM interim)

- Similar Issues as above (dot Point 1 & 2).
- Results tabulated in Table 4 (page18) of the report don't seem to match with model output for this scenario.

Site: m01 [2016 AM Base - Interim]

The Horsley Drive x Cowpasture Road
Roundabout

Lane Use and Performance

	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Cowpasture Road													
Lane 1	2	0.0	1920	0.001	100	3.1	LOS A	0.0	0.0	Short	61	0.0	NA
Lane 2 d	1175	5.1	1454	0.808	100	6.9	LOS A	9.7	70.5	Full	500	0.0	0.0
Lane 3	861	4.1	1065	0.808	100	14.9	LOS B	9.2	66.7	Full	500	0.0	0.0
Approach	2038	4.6		0.808		10.3	LOS A	9.7	70.5				
East: The Horsley Drive (East)													
Lane 1 d	435	14.3	1330	0.327	100	8.0	LOS A	2.5	19.4	Full	500	0.0	0.0
Lane 2	335	10.3	1023	0.327	100	11.6	LOS A	2.2	16.8	Full	500	0.0	0.0

Approach	769	12.6		0.327		9.6	LOS A	2.5	19.4				
North: The Horsley Drive (North)													
Lane 1 d	766	8.8	801	0.957	100	46.6	LOS D	31.9	240.2	Full	180	0.0	14.3
Lane 2	422	11.0	567	0.745	78 5	20.2	LOS B	9.6	73.4	Full	180	0.0	0.0
Approach	1188	9.6		0.957		37.2	LOS C	31.9	240.2				
West: Lizard Log Access Road													
Lane 1 d	4	0.0	341	0.012	100	13.4	LOS A	0.1	0.6	Full	400	0.0	0.0
Lane 2	2	0.0	239	0.009	100	17.3	LOS B	0.0	0.3	Full	400	0.0	0.0
Approach	6	0.0		0.012		14.7	LOS B	0.1	0.6				
Intersection	4002	7.6		0.957		18.2	LOS B	31.9	240.2				

Site: m01 [2016 PM Base - Interim]

The Horsley Drive x Cowpasture Road
Roundabout

Lane Use and Performance

	Demand Flows Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Veh	Dist m	Lane Config	Lane Length m	Cap. Adj. %	Prob. Block. %
South: Cowpasture Road													
Lane 1	4	0.0	1913	0.002	100	3.2	LOS A	0.0	0.1	Short	61	0.0	NA
Lane 2 d	506	3.7	1299	0.390	100	4.4	LOS A	2.6	18.8	Full	500	0.0	0.0
Lane 3	353	7.2	906	0.390	100	11.2	LOS A	2.3	17.0	Full	500	0.0	0.0
Approach	863	5.1		0.390		7.1	LOS A	2.6	18.8				
East: The Horsley Drive (East)													
Lane 1 d	709	3.8	889	0.797	100	16.1	LOS B	10.3	74.6	Full	500	0.0	0.0
Lane 2	465	5.3	583	0.797	100	22.8	LOS B	8.0	58.2	Full	500	0.0	0.0
Approach	1174	4.4		0.797		18.7	LOS B	10.3	74.6				
North: The Horsley Drive (North)													
Lane 1 d	1099	5.8	1358	0.809	100	8.6	LOS A	13.6	99.9	Full	180	0.0	0.0
Lane 2	874	3.5	1080	0.809	100	10.5	LOS A	13.4	96.3	Full	180	0.0	0.0
Approach	1973	4.8		0.809		9.5	LOS A	13.6	99.9				
West: Lizard Log Access Road													
Lane 1	2	0.0	612	0.003	100	4.4	LOS A	0.0	0.1	Full	400	0.0	0.0
Lane 2 d	16	0.0	837	0.019	100	4.5	LOS A	0.1	0.6	Full	400	0.0	0.0
Approach	18	0.0		0.019		4.5	LOS A	0.1	0.6				
Intersection	4027	4.7		0.809		11.6	LOS A	13.6	99.9				

The Horsley Drive / Cowpasture Rd Roundabout: (2026 AM Base) & (2026 PM Base)

- Similar Issues as above (dot Point 1 & 2).

The Horsley Drive / Cowpasture Rd Roundabout: (2026 AM Base Upgraded) & (2026 PM Base Upgraded)

- Similar Issues as above (dot Point 1 & 2).

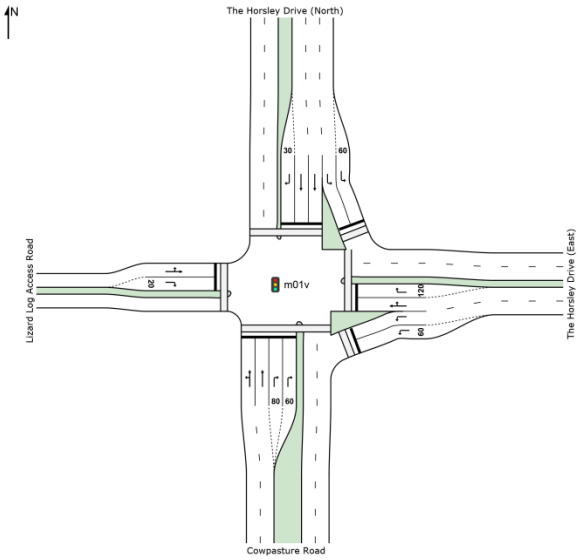
The Horsley Drive / Cowpasture Rd Roundabout: (2026 AM Base + Stage 2) & (2026 PM Base + Stage 2)

- Similar Issues as above (dot Point 1 & 2).

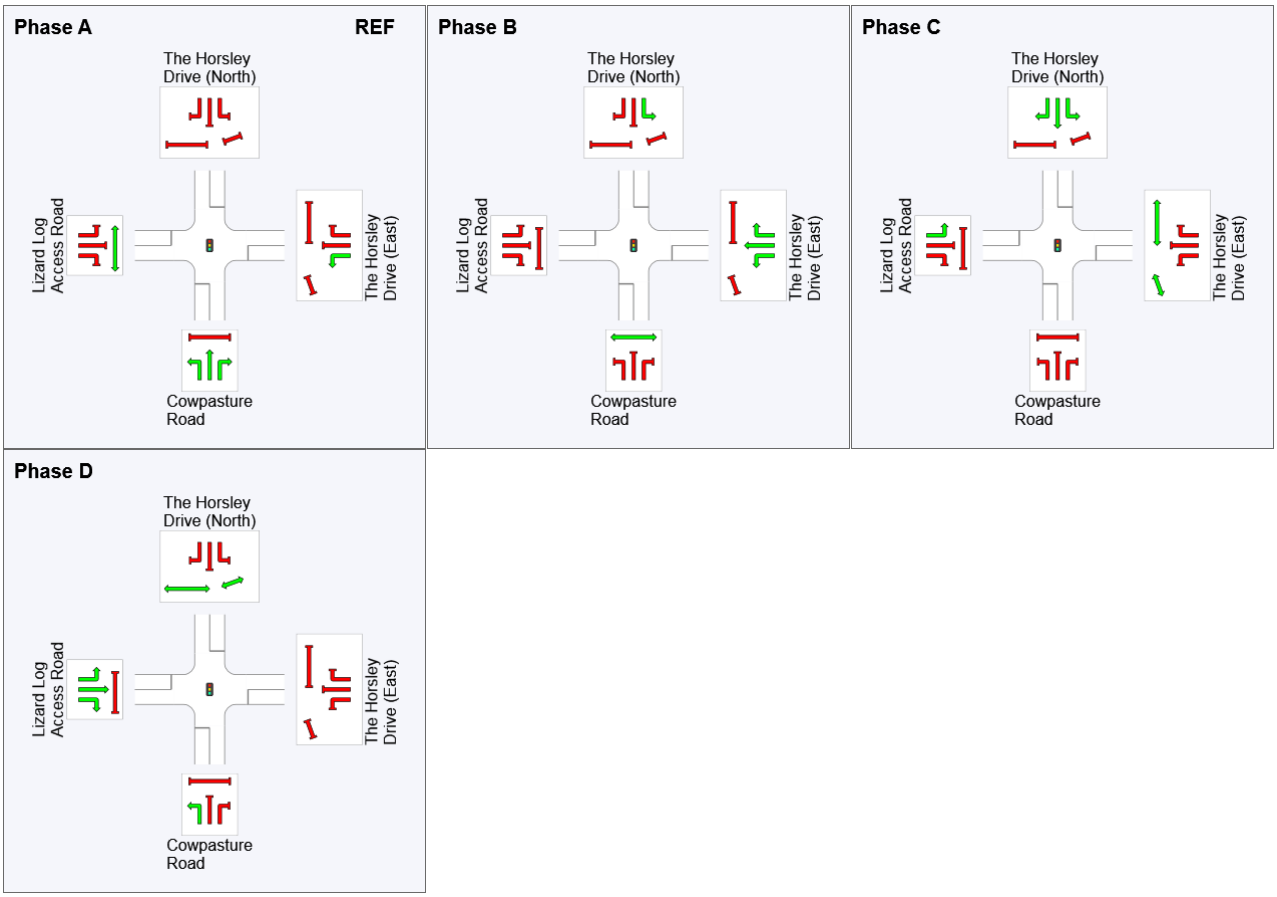
The Horsley Drive / Cowpasture Rd Roundabout: (2026 AM Base + Stage 2-Upgraded) & (2026 PM Base + Stage 2- Upgraded)

- Similar Issues as above (dot Point 1 & 2).

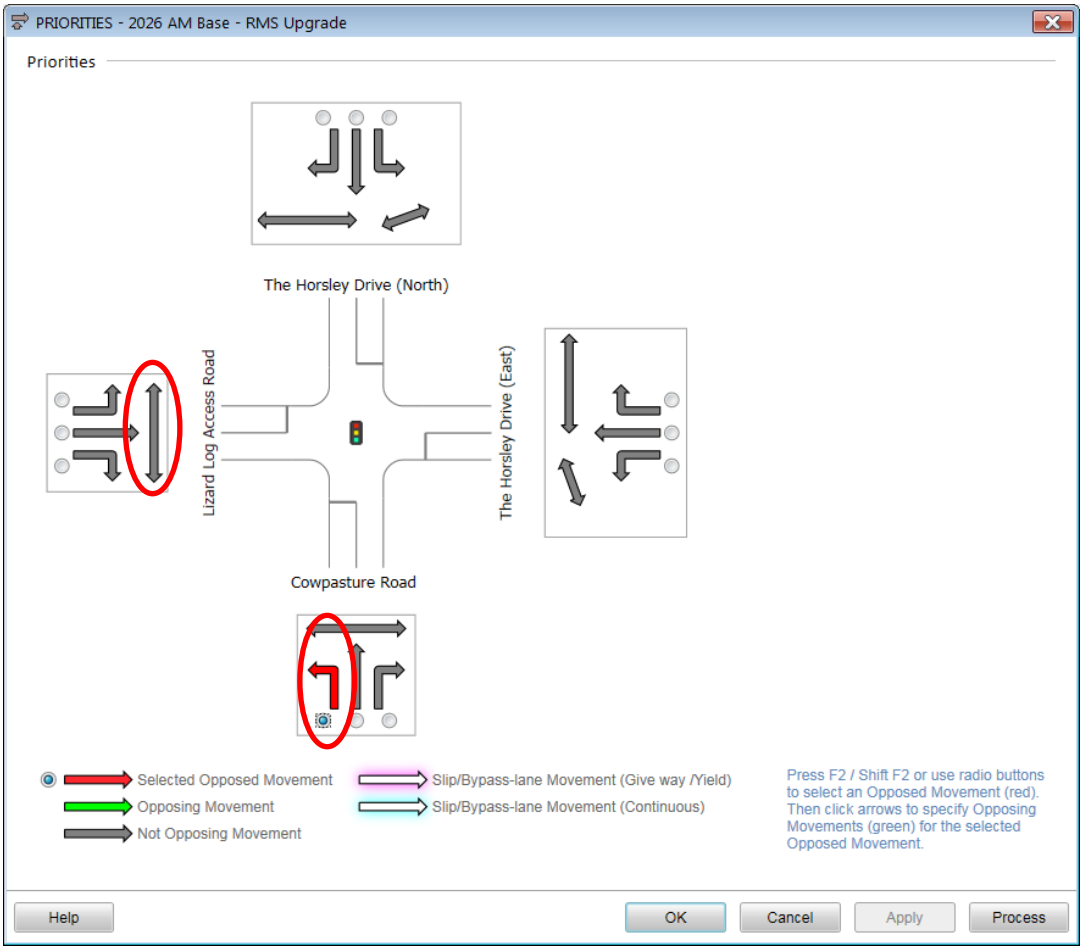
The Horsley Drive / Cowpasture Rd RMS Upgrade: (2026 AM Base) & (2026 PM Base)

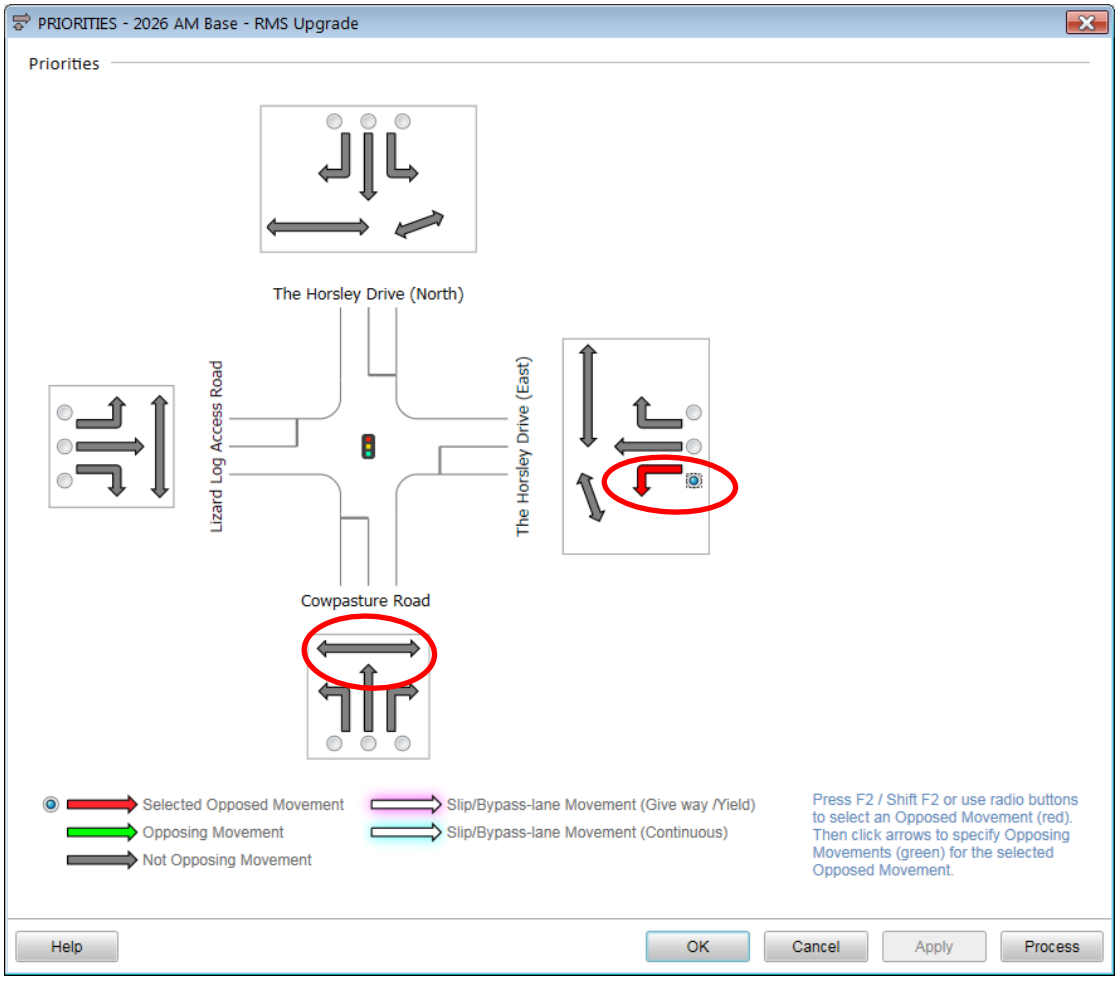


- Lane lengths could not be verified due to absence of data.
- Phasing adopted in the model seems to be unusual. Needs to be verified with Network ops team to confirm phasing and cycle time adopted in the model is accurate.



- It is noted that ped volume adopted for this scenario in the model is 1. It is accepted that no ped volume are currently available to use in the model. it is however recommended to use more realistic volume of peds in the model.
- Current phasing adopted in the model has error under priorities. Pedestrian movements have not been specified as opposing movements for left turning movements. See below:


PRIORITIES - 2026 AM Base - RMS Upgrade
Priorities
The Horsley Drive (North)
Lizard Log Access Road
The Horsley Drive (East)
Cowpasture Road
Selected Opposed Movement
Opposing Movement
Not Opposing Movement
Slip/Bypass-lane Movement (Give way /Yield)
Slip/Bypass-lane Movement (Continuous)
Press F2 / Shift F2 or use radio buttons to select an Opposed Movement (red). Then click arrows to specify Opposing Movements (green) for the selected Opposed Movement.
Help
OK
Cancel
Apply
Process

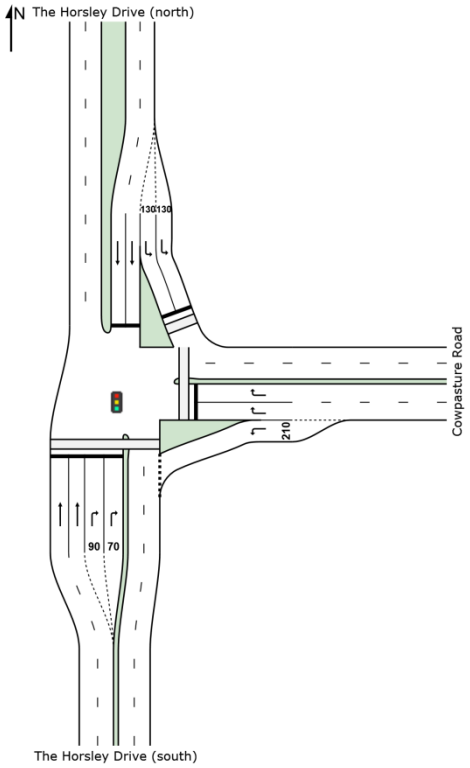

PRIORITIES - 2026 AM Base - RMS Upgrade
Priorities
The Horsley Drive (North)
Lizard Log Access Road
The Horsley Drive (East)
Cowpasture Road
Selected Opposed Movement
Opposing Movement
Not Opposing Movement
Slip/Bypass-lane Movement (Give way /Yield)
Slip/Bypass-lane Movement (Continuous)
Press F2 / Shift F2 or use radio buttons to select an Opposed Movement (red). Then click arrows to specify Opposing Movements (green) for the selected Opposed Movement.
Help
OK
Cancel
Apply
Process

The Horsley Drive / Cowpasture Rd RMS Upgrade + Stage 2: (2026 AM Base) & (2026 PM Base)

- Similar Issues as above.

The Horsley Drive / Cowpasture Rd Signals: (2016 AM Base) & (2016 PM Base)

- Lane length on Southern approach should be approx.160m instead of 180m.
- Lane length on Eastern approach should be approx.200m instead of 300m.
- Lane 4 on Southern approach should be approx. 90m and lane no 3 should 70m.
- Lane no 4 on Northern approach should be approx. 100m instead of 130m.



- More conservative pedestrian volume should have been adopted in the model for this assessment instead of just 1.
- It is noted that Optimum cycle time option has been adopted this scenario. Justification should be given to use this option. User given cycle time option should have been used for the intersection analysis.
- Need to verify the cycle time for this intersection with Network Ops. SIDRA has adopted 105sec cycle time.
- SCATS seem to indicate the yellow phase time of 2 sec and red phase time of 2 sec for all phases. Yellow and red phase times of 3 sec for all phases seem to have been used in the model. This is incorrect. See below

3217 - Local Times

Indicates RAM value | Set RAM | Clear All RAM | Show ROM | Refresh | Save | Close

Phase Times | Approaches | Detectors | Walks | Special Times

	A	B	C	D
Late start	0	0	0	0
Minimum green	5.0	5.0	5.0	5.0
Early cut-off green	0	0	0	0
Yellow	4.0	4.0	4.0	4.0
All-red	2.0	2.0	2.0	2.0
Maximum green	70	35	40	25
Increment	0	0	0	0
Maximum initial green	0	0	0	0
Special red	0	0	0	0
Special time	0	0	0	0

PHASING & TIMING - 2016 AM Existing

Sequences | Sequence Editor | Phase & Sequence Data | Timing Options | Advanced

Quick Input

Sequence **3 Phase EX**

Phase Data

Phase:	A	B	C	D
Variable Phase	☐	☐	☐	☑
Reference Phase	◉	○	○	○
Phase Time (optional)	45 sec	28 sec	29 sec	28 sec
Phase Frequency	Program	Program	Program	Program
Yellow Time	3 sec	3 sec	3 sec	3 sec
All-Red Time	3 sec	3 sec	3 sec	3 sec
Dummy Movement Data:				
Dummy Movement Exists	☐	☐	☐	☐
Minimum Green Time				
Maximum Green Time				

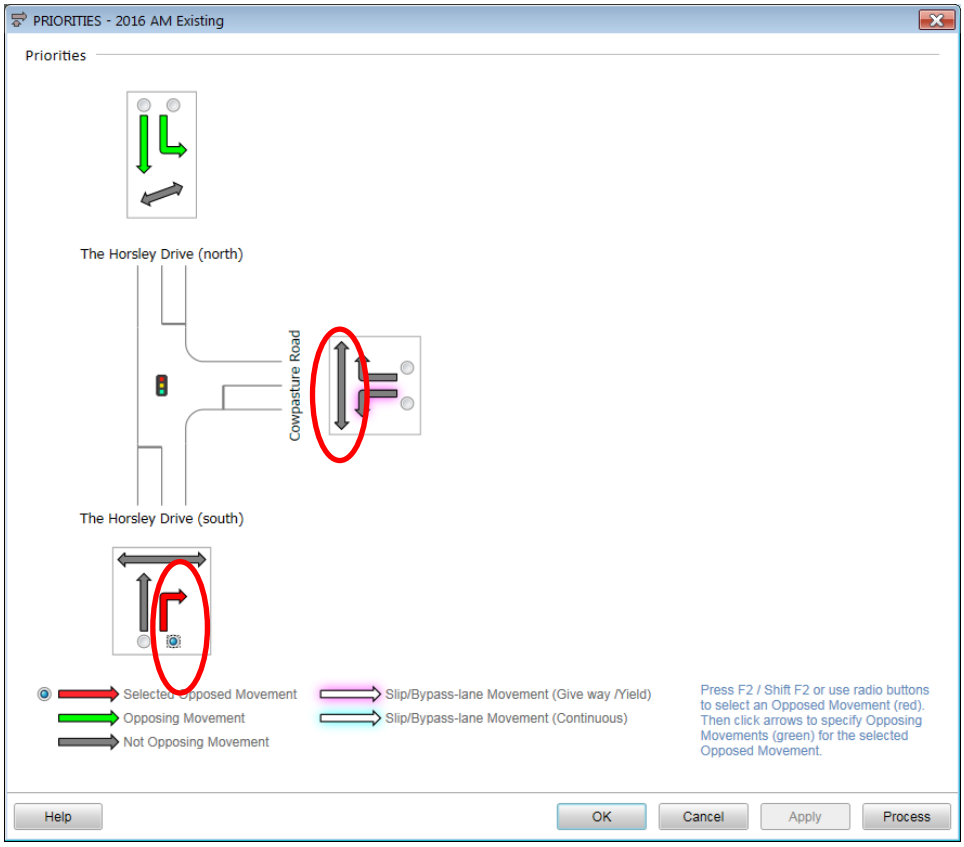
There must always be a phase (and only one phase) checked as the Reference Phase.
The first phase will be used as the default Reference Phase.

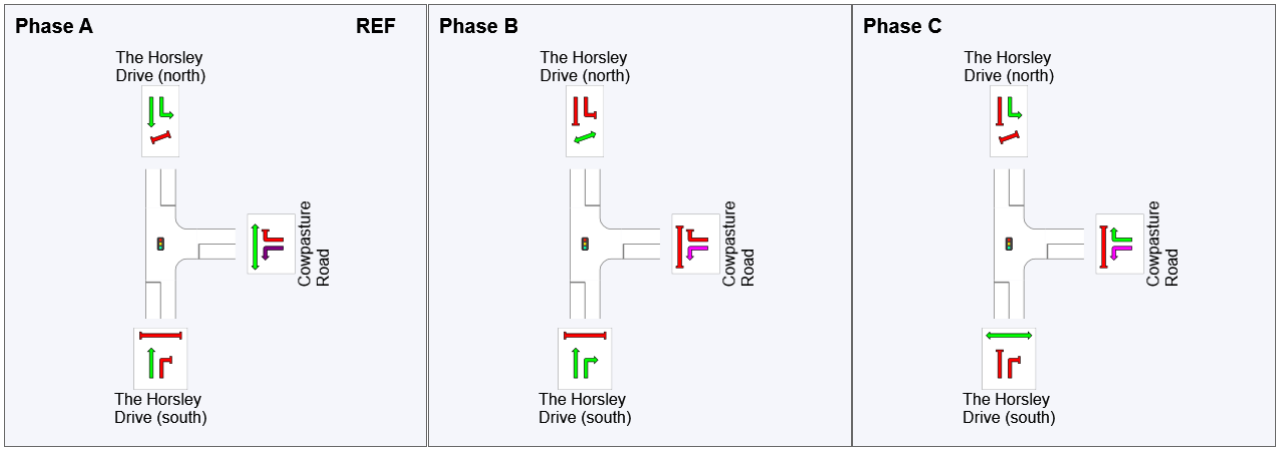
Detection Data

	Major Movement	Minor Movement
Effective Detection Zone Length	4.5 m	4.5 m

Help | OK | Cancel | Apply | Process

- Current phasing adopted in the model has error under priorities. Pedestrian movements have not been specified as opposing movements for left turning movements. See below:

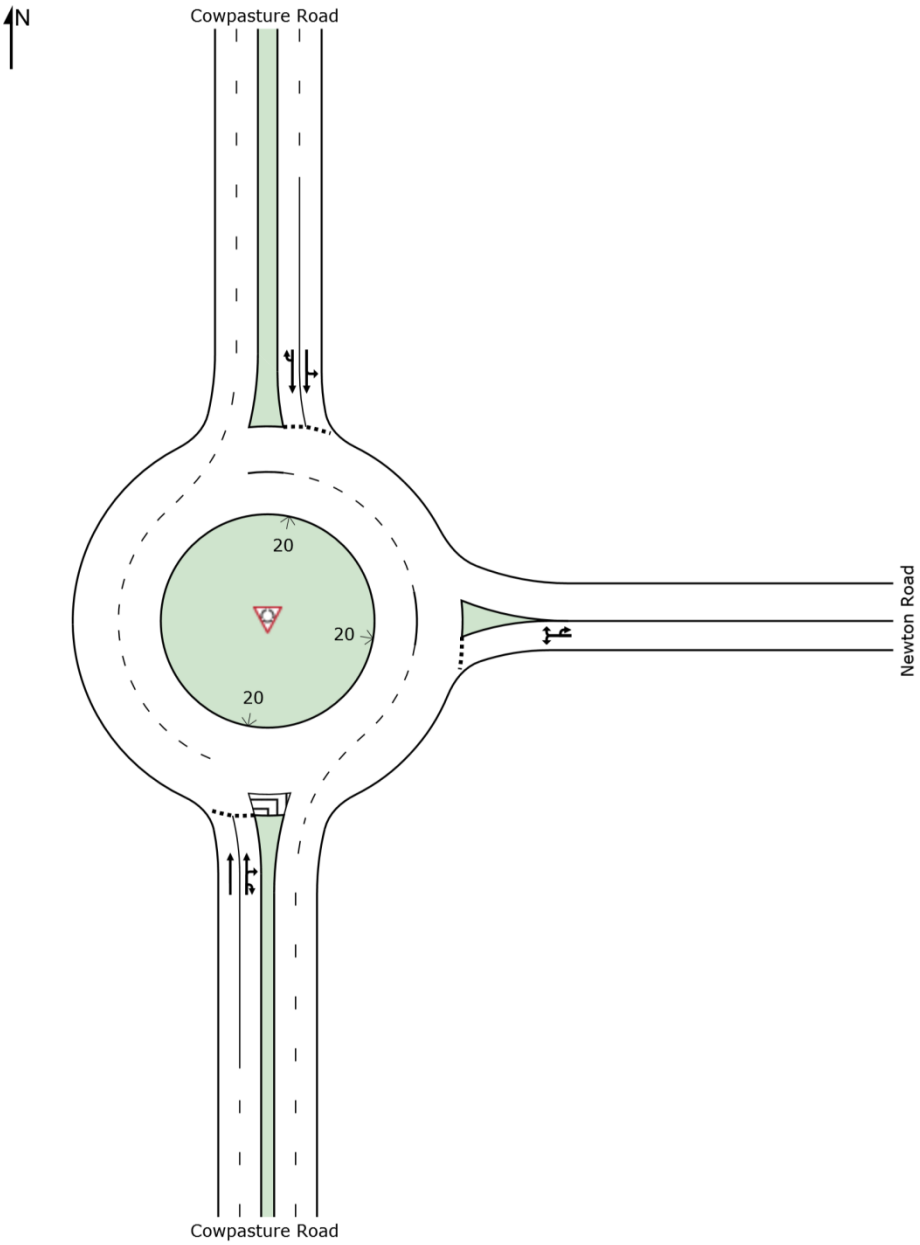




General Comment:

All other 2016 and 2026 AM and PM peak scenarios for this intersection should be reviewed for similar issues stated above.

Cowpasture Rd / Newton Rd Roundabout: (2016 AM Base) & (2016 PM Base)

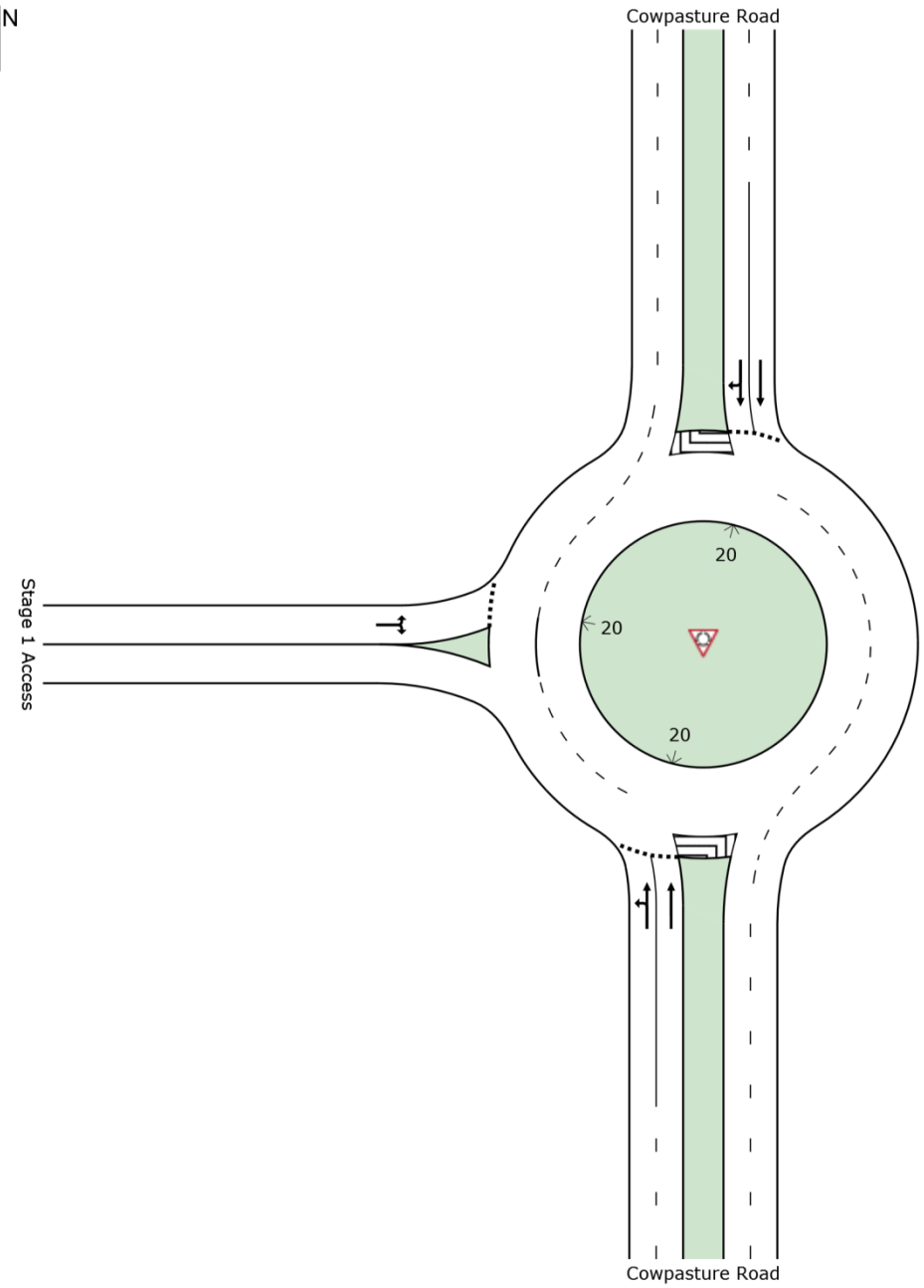


- Lane length on Southern approach should be approx.200m instead of 500m.
- There should be three exit lanes on southern approach instead of two.

General Comment:

- All other scenarios for this intersection should be reviewed for similar issues stated above.

Cowpasture Rd / Stage 1 Access Rd Roundabout: (2016 AM Base) & (2016 PM Base)

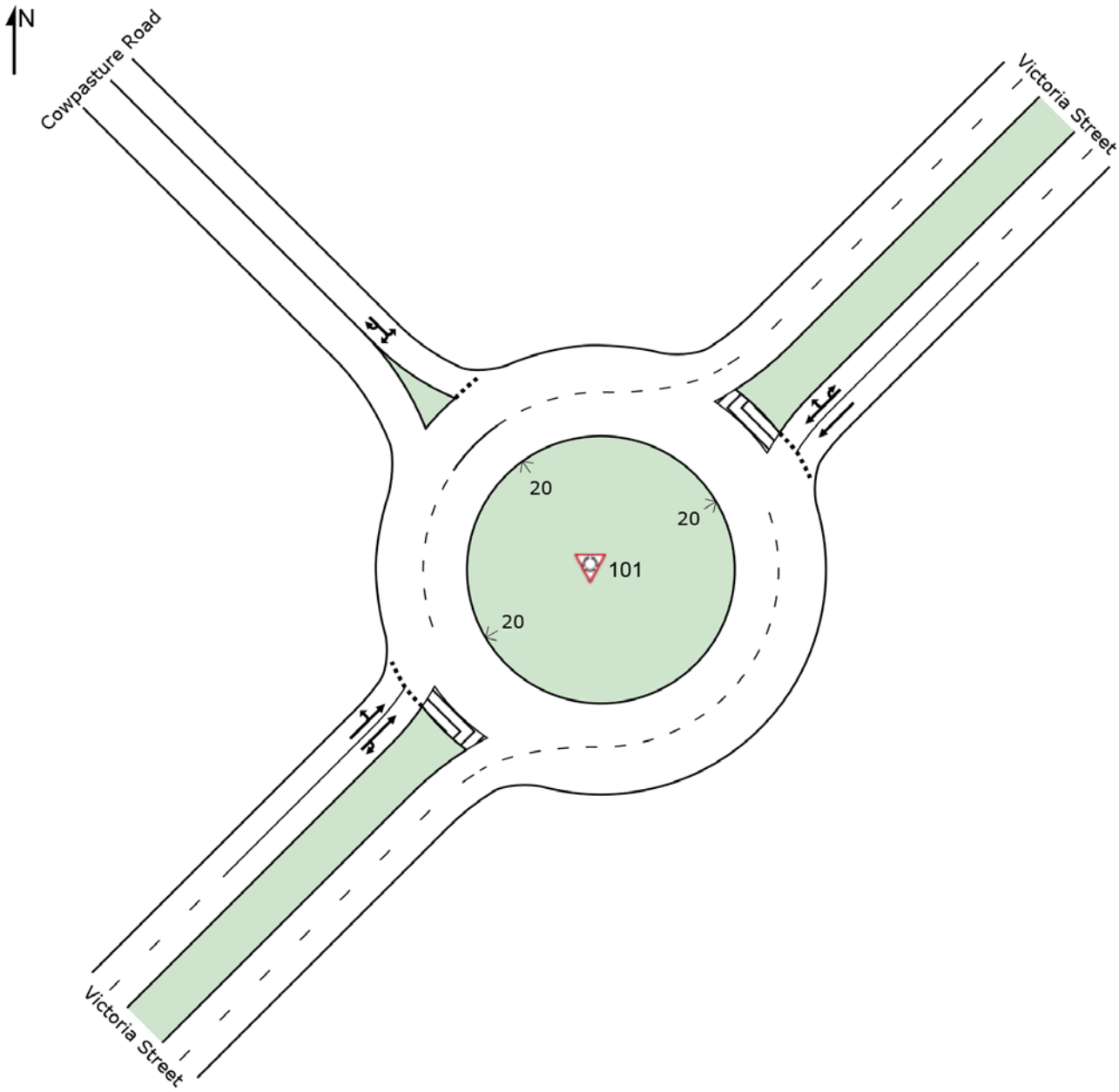


- Lane length on Southern approach should be approx.130m instead of 500m.
- Lane length on Northern approach should be approx.330m instead of 500m.
- Lane length on Western approach should be approx.260m instead of 500m.
- Approach and exit cruise speed on Western Approach should be less than 60km/h.

General Comment:

- All other scenarios for this intersection should be reviewed for similar issues stated above.

Cowpasture Rd / Victoria St Roundabout: (2016 AM Base) & (2016 PM Base)

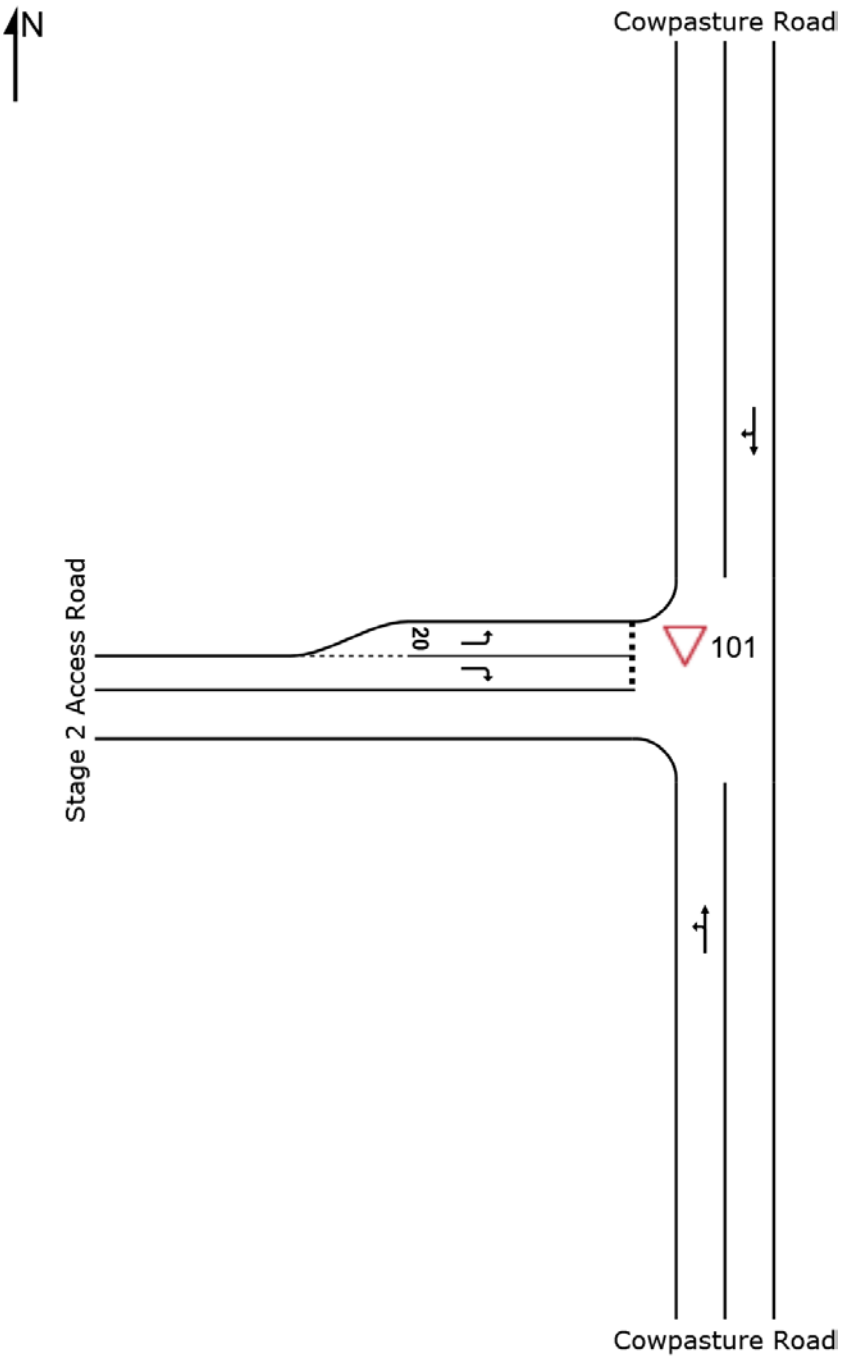


- Lane length on Southern approach should be approx.330m instead of 500m.

General Comment:

- All other scenarios for this intersection should be reviewed for similar issues stated above.

Cowpasture Rd / Stage 2 Access Rd Roundabout: (2016 AM Base) & (2016 PM Base)

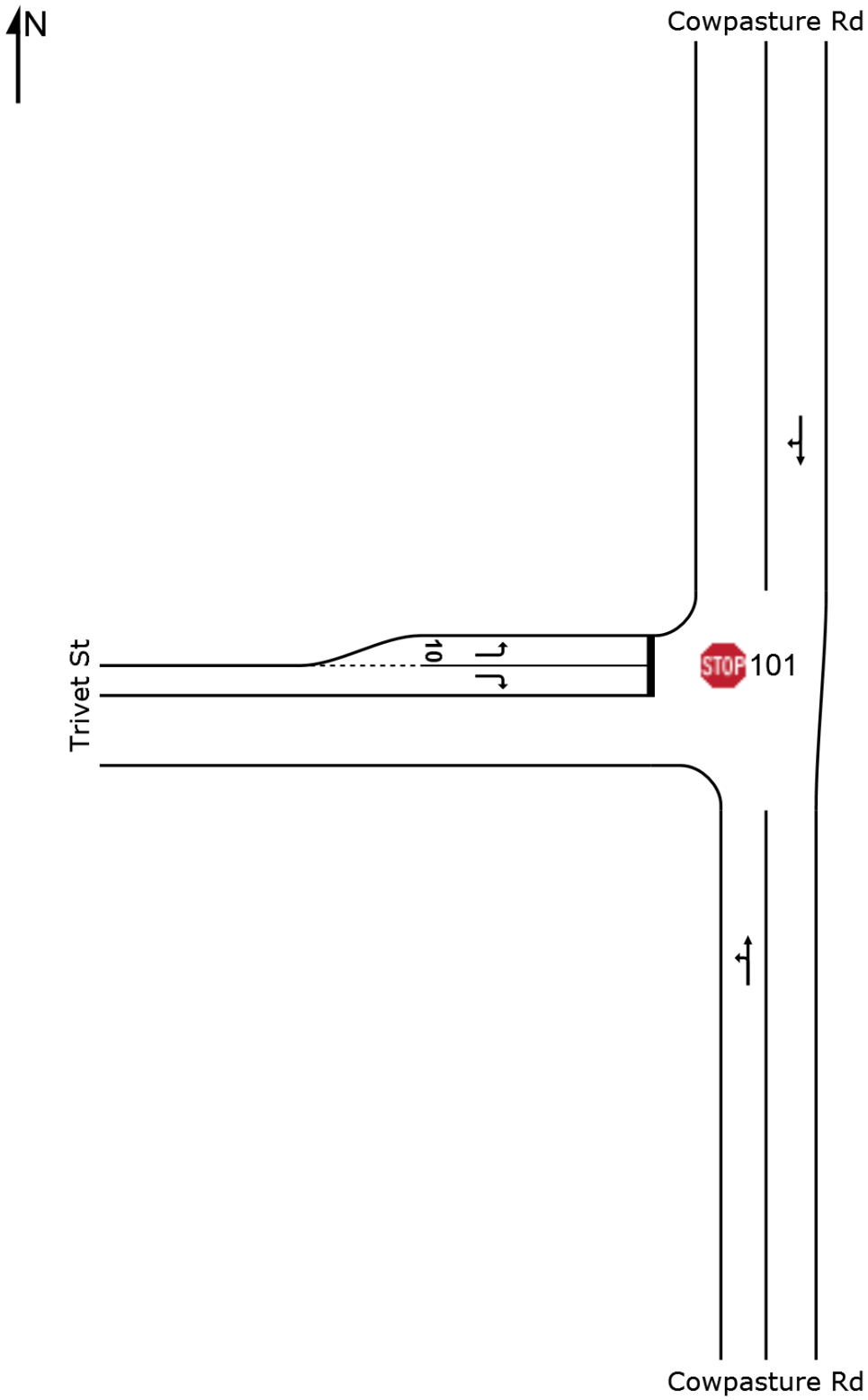


- Lane length on Southern approach should be less than 500m. Couldn't verify exact length due to lack of data.
- Lane length on Northern approach should be less than 500m. Couldn't verify exact length due to lack of data.
- Consideration should be given to construct either separate right turning bay of appropriate length or BAR type passing lane on Northern approach.
- Through lane length on Western approach should be less than 500m. Couldn't verify exact length due to lack of data.
- Approach and exit cruise speed on Western Approach should be less than 60km/h.

General Comment:

- All other scenarios for this intersection should be reviewed for similar issues stated above.

Cowpasture Rd / Trivet St: (2016 AM Base) & (2016 PM Base)

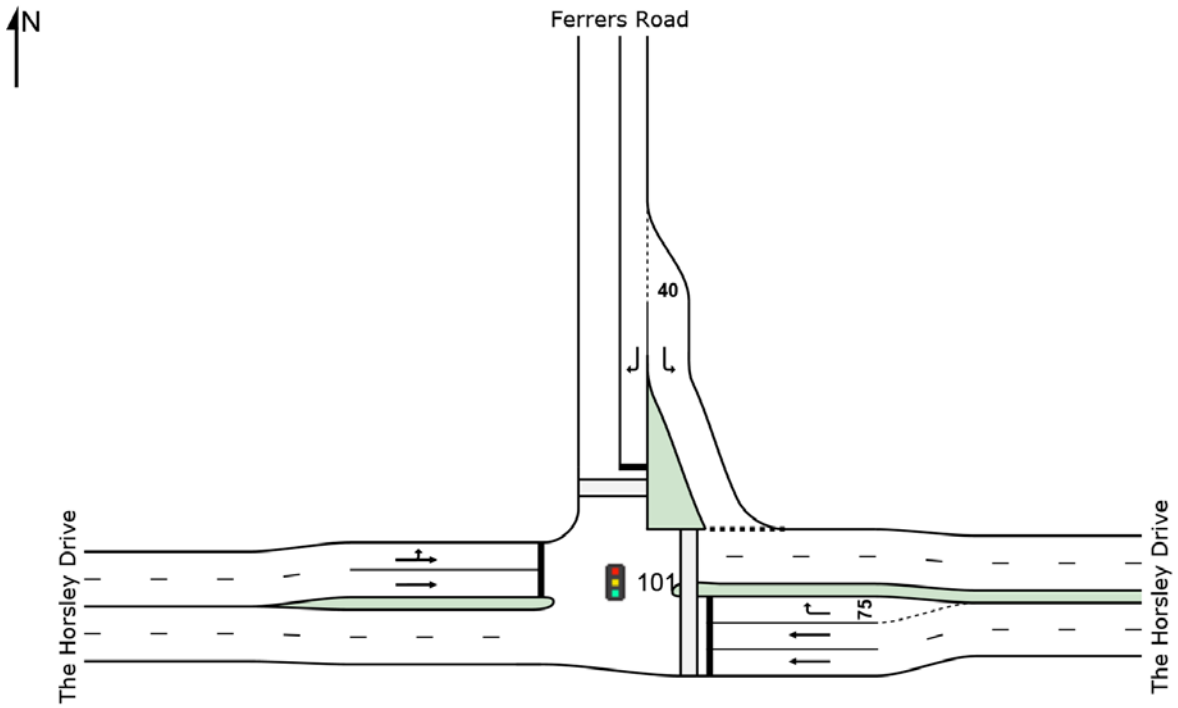


- Lane length on Southern approach should be approx.276m instead of 500m.

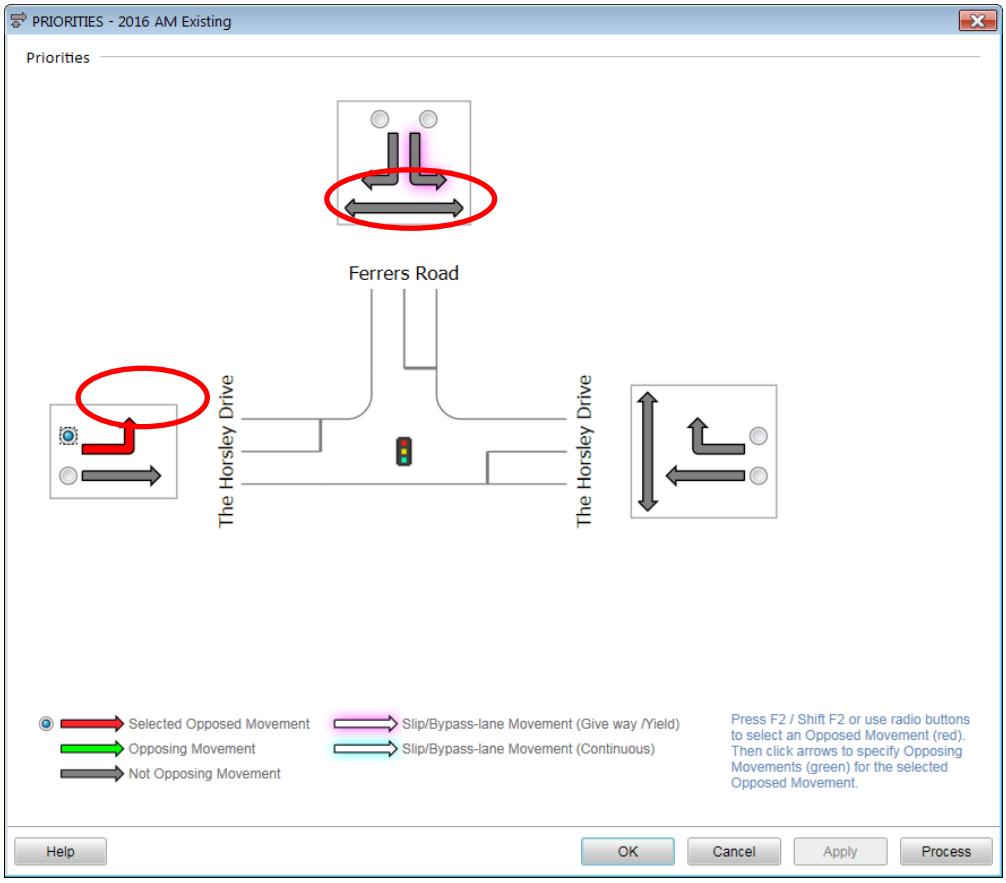
General Comment:

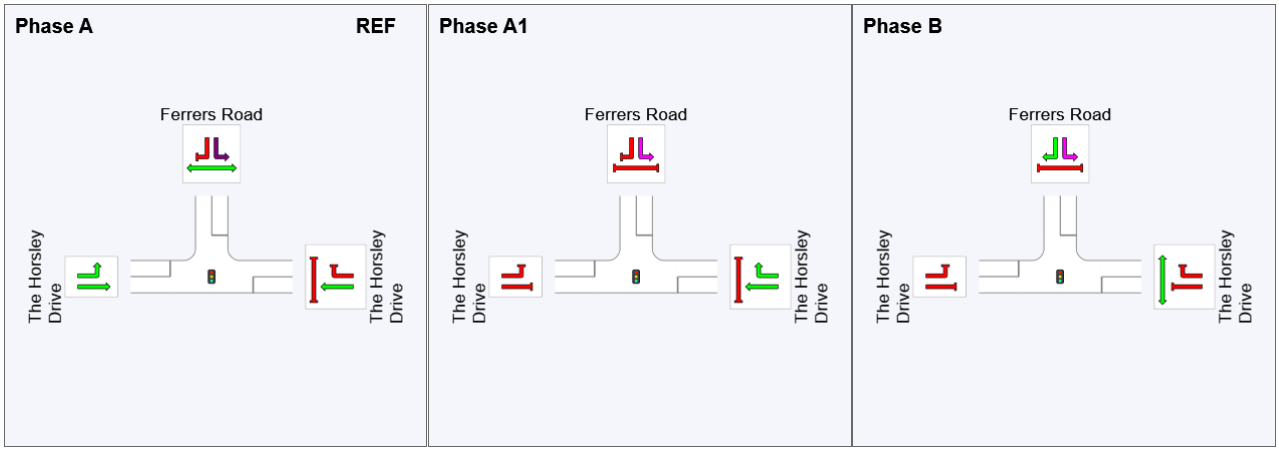
All other scenarios for this intersection should be reviewed for similar issues stated above.

The Horsley Dr / Ferrers Rd Signals : (2016 AM Base) & (2016 PM Base)

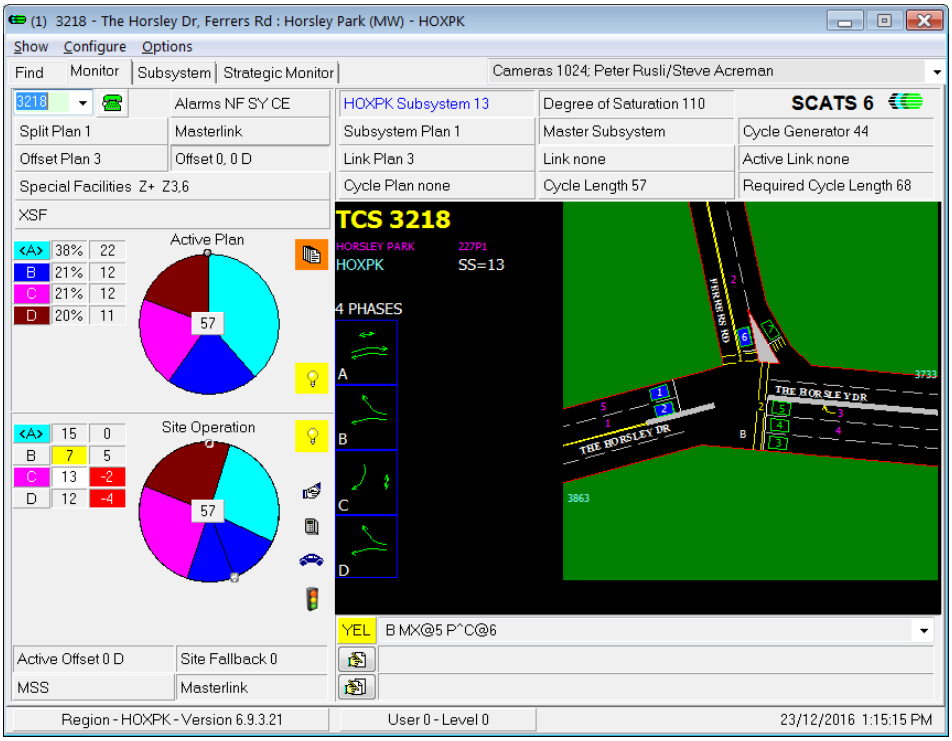


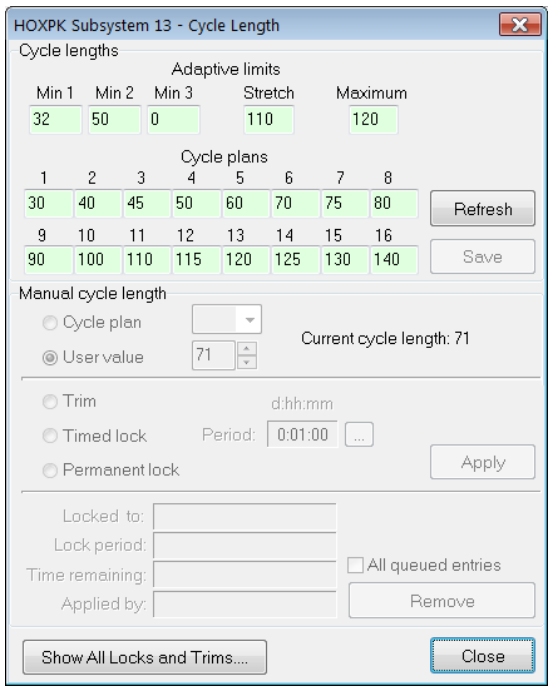
- More conservative pedestrian volume should have been adopted in the model for this assessment instead of just 2.
- It is noted that Optimum cycle time option has been adopted this scenario. Justification should be given to use this option. User given cycle time option should have been used for the intersection analysis.
- Need to verify the cycle time for this intersection with Network Ops. SIDRA has adopted 80sec cycle time.
- Current phasing adopted in the model has error under priorities. Pedestrian movements have not been specified as opposing movements for left turning movements. See below:





- Phasing adopted in the model appears to be different than what shown by SCATS. TCS at this site operates with four phases and max cycle time of 120 sec. See below:





Summary:

- SIDRA output summarised in the tables in the report doesn't seems to match with the output summary in SIDRA model.
- TCS signal phasing and cycle time adopted in the RMS upgrade option scenario needs to be verified.
- Signal timing and cycle time for existing signalised intersections in the study area should be justified. SCATS IDM data should be used to model existing TCS's in the study area.
- Issues identified above in the SIDRA model submitted should be reviewed and corrected.
- Consideration should be given network all the intersections in the study area to assess the impact of the proposed stage 2 development on the road network rather than assessing individual intersection performance.

****