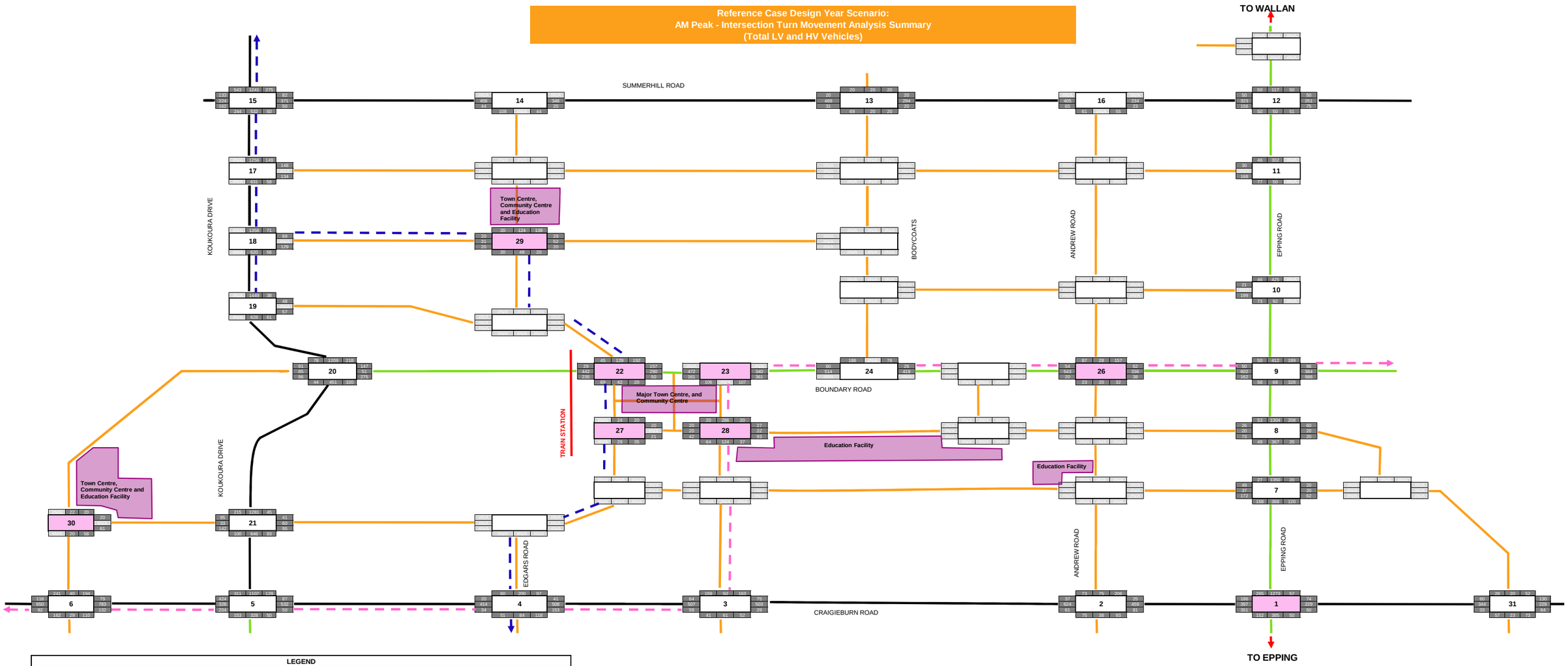
DRAFT

Appendix B

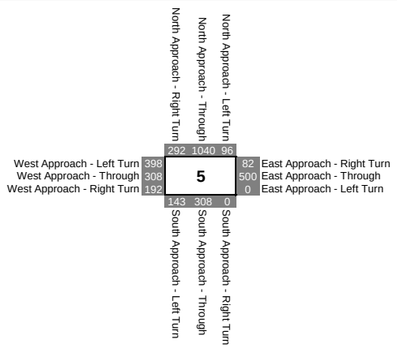
Intersection Results – Ultimate Scenario – Reference Case

Reference Case Design Year Scenario:
AM Peak - Intersection Turn Movement Analysis Summary
(Total LV and HV Vehicles)

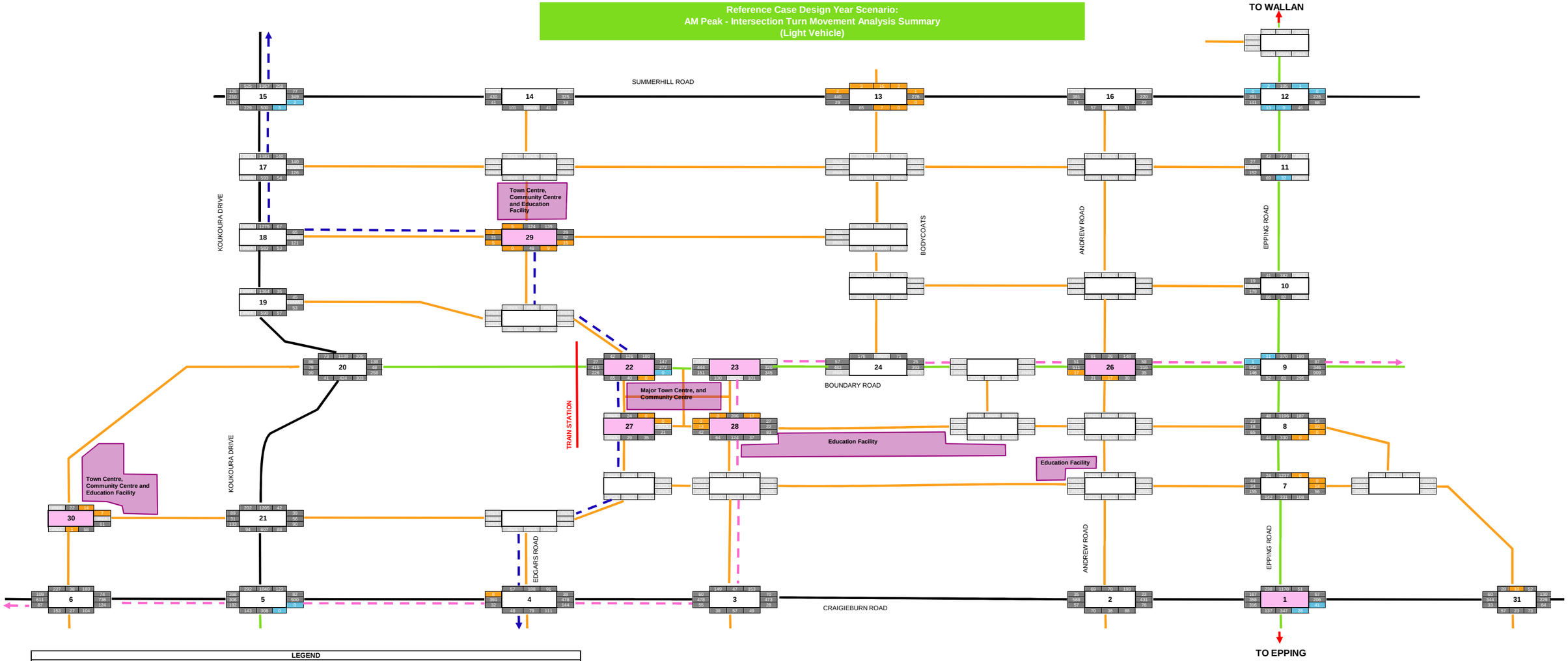


LEGEND

- Intersection with 50 pedestrians at each approach
- Intersection with 20 pedestrians at each approach
- Six traffic lane Arterial Road (three lanes in each direction)
- Four traffic lane Arterial Road (two lanes in each direction)
- Two traffic lane Arterial Road (one lane in each direction)
- Two traffic lane Collector Road (one lane in each direction)
- Bus Priority Routes (different colour represent different bus services)



Reference Case Design Year Scenario:
AM Peak - Intersection Turn Movement Analysis Summary
(Light Vehicle)



LEGEND

A minimum total vehicle of 20 vehicles (LV + HV). If the total volumes less than 20 vehicles, an additional LV of up to 20 will be added to the turn movement to meet the minimum total vehicles.
eg. 3 input = 20 total volumes (LV & HV)

A minimum total vehicle of 50 vehicles (LV + HV). If the total volumes less than 50 vehicles, an additional LV of up to 50 will be added to the turn movement to meet the minimum total vehicles.
eg. 3 input = 50 total volumes (LV & HV)

Intersection with 50 pedestrians at each approach

Intersection with 20 pedestrians at each approach

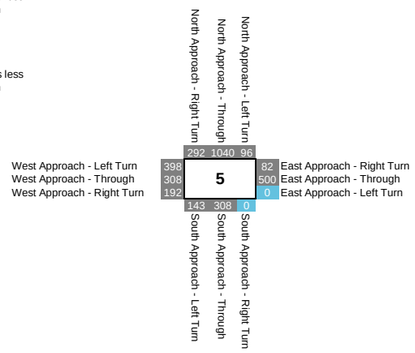
Six traffic lane Arterial Road (three lanes in each direction)

Four traffic lane Arterial Road (two lanes in each direction)

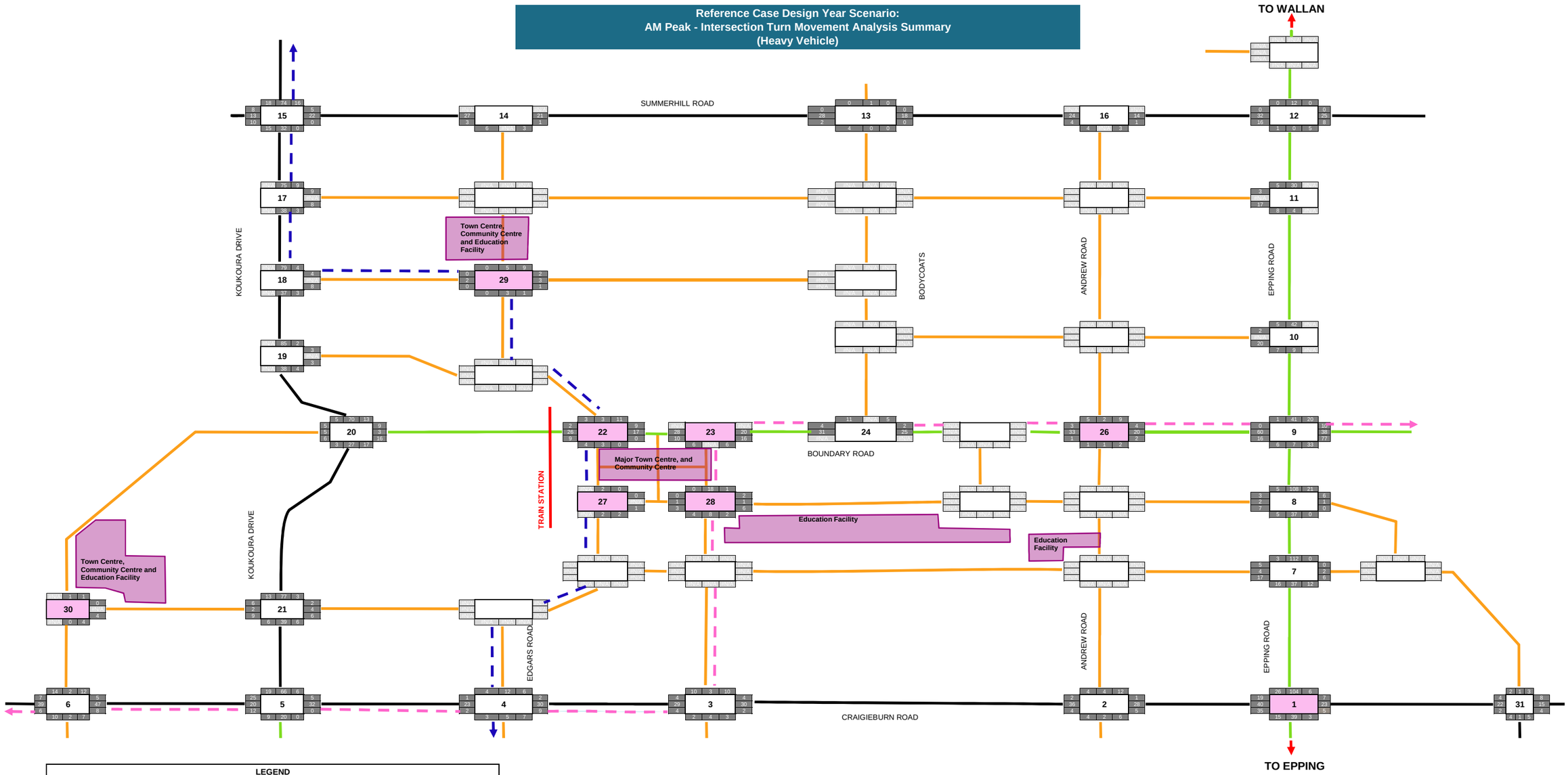
Two traffic lane Arterial Road (one lane in each direction)

Two traffic lane Collector Road (one lane in each direction)

Bus Priority Routes (different colour represent different bus services)



Reference Case Design Year Scenario:
AM Peak - Intersection Turn Movement Analysis Summary
(Heavy Vehicle)



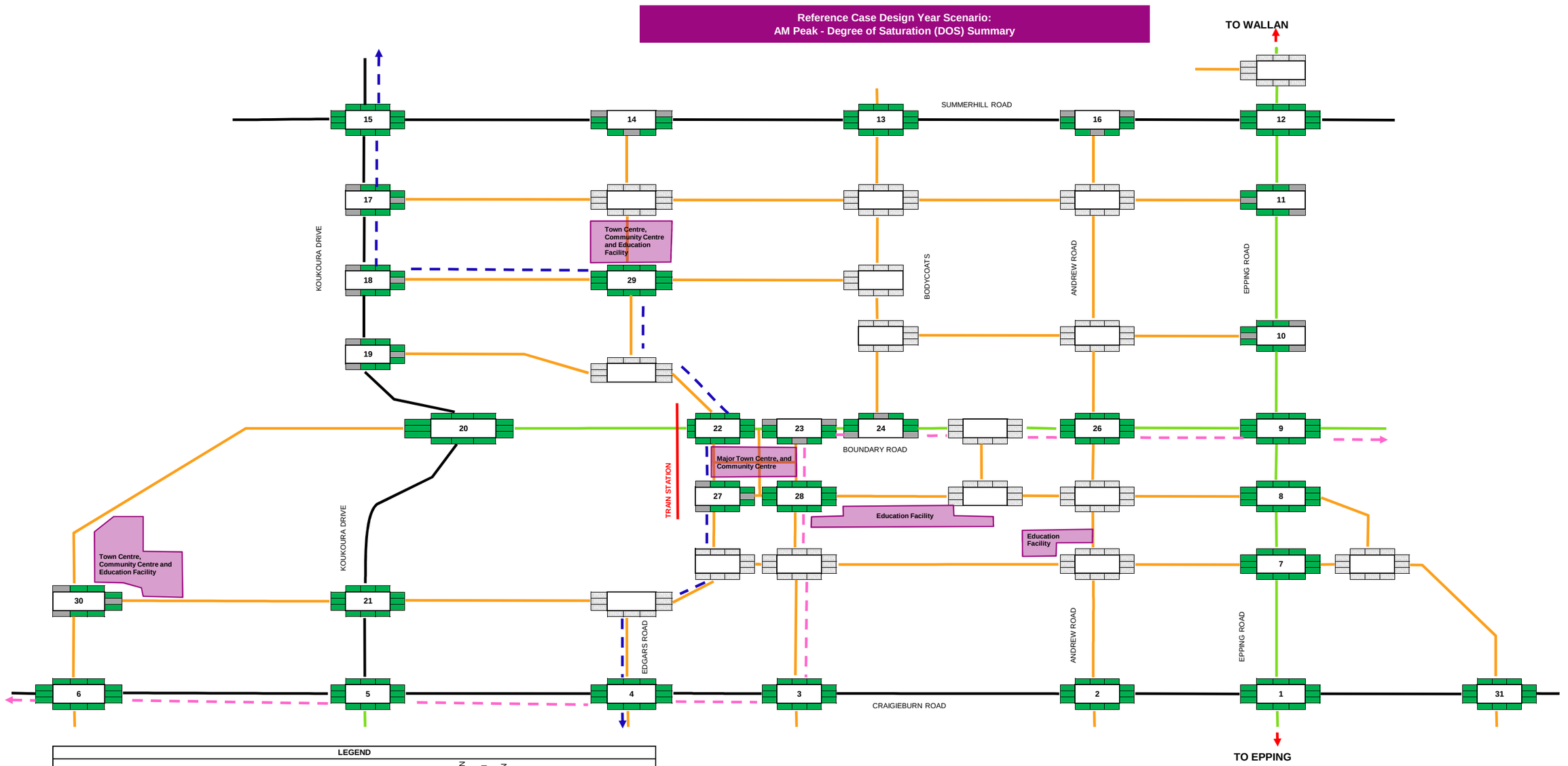
LEGEND

- Intersection with 50 pedestrians at each approach
- Intersection with 20 pedestrians at each approach
- Six traffic lane Arterial Road (three lanes in each direction)
- Four traffic lane Arterial Road (two lanes in each direction)
- Two traffic lane Arterial Road (one lane in each direction)
- Two traffic lane Collector Road (one lane in each direction)
- Bus Priority Routes (different colour represent different bus services)

	North Approach - Right Turn	North Approach - Through	North Approach - Left Turn	
West Approach - Left Turn	25	19	66	6	East Approach - Right Turn
West Approach - Through	20	5		32	East Approach - Through
West Approach - Right Turn	12	9	20	0	East Approach - Left Turn
		South Approach - Left Turn	South Approach - Through	South Approach - Right Turn	

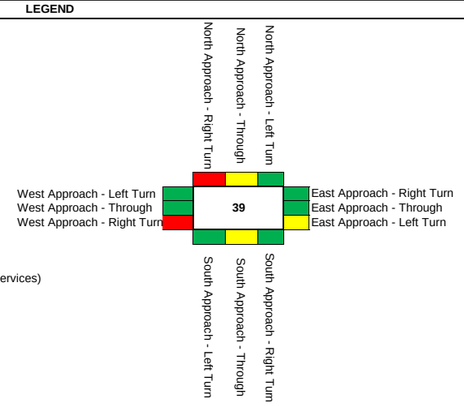
Heavy Vehicle Assumptions:
10% of LV are HV on Epping Road applied on all approaches
6% of LV are HV on all other roads applied on all approaches

Reference Case Design Year Scenario:
AM Peak - Degree of Saturation (DOS) Summary



LEGEND

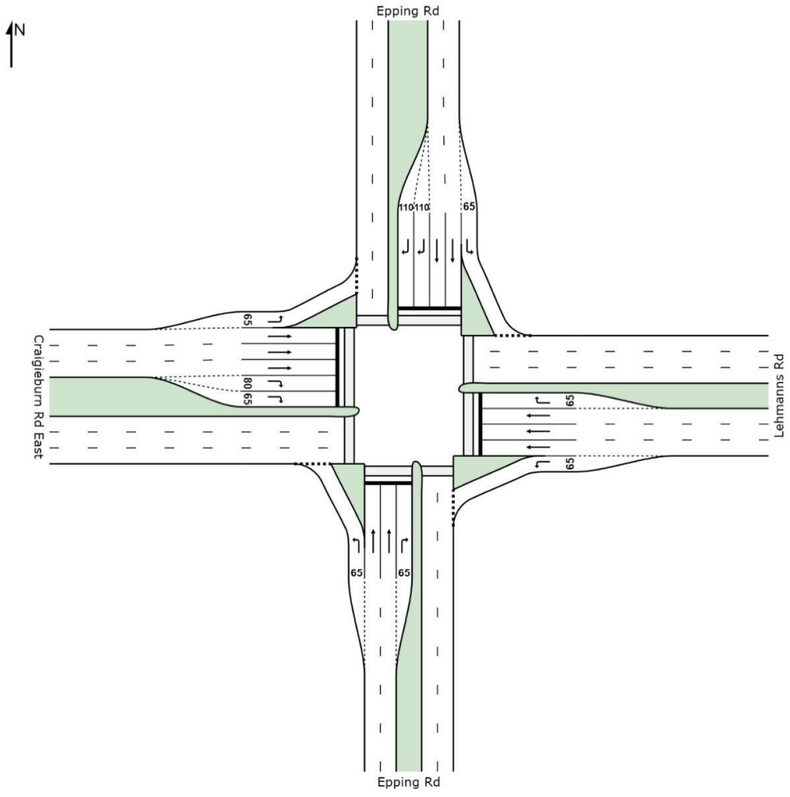
- Degree of Saturation greater than 1.00
- Degree of Saturation between 0.95 and 1.00
- Degree of Saturation between 0.85 and 0.95
- Degree of Saturation less than 0.85
- Intersection not analysed
- Six traffic lane Arterial Road (three lanes in each direction)
- Four traffic lane Arterial Road (two lanes in each direction)
- Two traffic lane Arterial Road (one lane in each direction)
- Two traffic lane Collector Road (one lane in each direction)
- Bus Priority Routes (different colour represent different bus services)



SITE LAYOUT

Site: Intersection 1 AM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 1 AM Reference

New Site
Signals - Fixed Time Cycle Time = 110 seconds (User-Given Cycle Time)

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: Epping Rd											
1	L2	152	9.9	0.134	8.9	LOS A	1.2	9.4	0.23	0.66	61.0
2	T1	386	10.1	0.645	47.8	LOS D	10.0	76.0	0.99	0.82	39.5
3	R2	53	5.7	0.304	53.8	LOS D	2.6	19.4	0.95	0.74	35.4
Approach		591	9.6	0.645	38.3	LOS D	10.0	76.0	0.79	0.77	42.9
East: Lehmanns Rd											
4	L2	55	9.1	0.088	19.7	LOS B	1.4	10.6	0.54	0.71	51.9
5	T1	229	10.0	0.353	49.7	LOS D	3.9	29.6	0.96	0.74	38.5
6	R2	74	9.5	0.360	57.4	LOS E	3.8	28.7	0.96	0.77	34.0
Approach		358	9.8	0.360	46.7	LOS D	3.9	29.6	0.90	0.74	39.0
North: Epping Rd											
7	L2	57	10.5	0.046	8.9	LOS A	0.5	3.5	0.22	0.65	60.8
8	T1	1274	8.2	0.754	24.9	LOS C	27.9	208.9	0.87	0.78	52.1
9	R2	264	9.8	0.209	33.4	LOS C	4.9	36.8	0.73	0.76	43.7
Approach		1595	8.5	0.754	25.8	LOS C	27.9	208.9	0.82	0.77	50.7
West: Craigieburn Rd East											
10	L2	186	10.2	0.184	10.2	LOS B	2.2	16.9	0.30	0.68	59.7
11	T1	398	10.1	0.532	49.2	LOS D	6.8	52.1	0.98	0.78	38.8
12	R2	351	10.0	0.742	60.6	LOS E	9.7	73.8	1.00	0.86	32.9
Approach		935	10.1	0.742	45.7	LOS D	9.7	73.8	0.85	0.79	38.9
All Vehicles		3479	9.3	0.754	35.4	LOS D	27.9	208.9	0.83	0.77	44.4

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P11	South Stage 1	50	49.3	LOS E	0.1	0.1	0.95	0.95
P12	South Stage 2	50	46.5	LOS E	0.1	0.1	0.92	0.92
P21	East Stage 1	50	28.4	LOS C	0.1	0.1	0.72	0.72
P22	East Stage 2	50	27.0	LOS C	0.1	0.1	0.70	0.70
P31	North Stage 1	50	49.3	LOS E	0.1	0.1	0.95	0.95
P32	North Stage 2	50	44.6	LOS E	0.1	0.1	0.90	0.90
P41	West Stage 1	50	49.3	LOS E	0.1	0.1	0.95	0.95
P42	West Stage 2	50	44.6	LOS E	0.1	0.1	0.90	0.90
All Pedestrians		400	42.4	LOS E			0.87	0.87

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

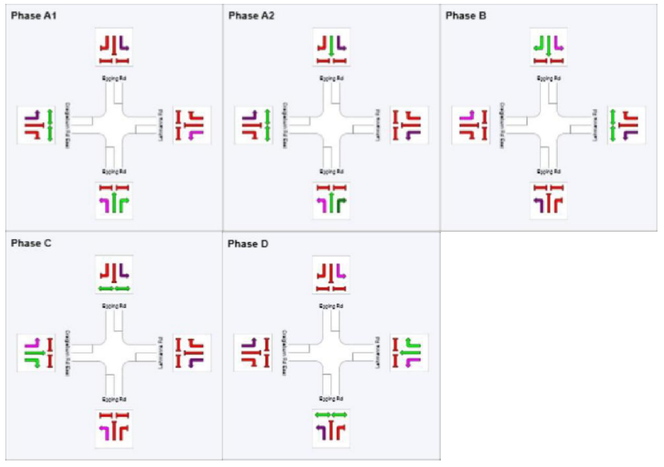
Site: Intersection 1 AM Reference

New Site
Signals - Fixed Time Cycle Time = 110 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A1, A2, B, C, D
Output Sequence: A1, A2, B, C, D

Phase Timing Results

Phase	A1	A2	B	C	D
Reference Phase	Yes	No	No	No	No
Phase Change Time (sec)	0	12	24	70	91
Green Time (sec)	6	6	40	15	13
Yellow Time (sec)	4	4	4	4	4
All-Red Time (sec)	2	2	2	2	2
Phase Time (sec)	12	12	46	21	19
Phase Split	11 %	11 %	42 %	19 %	17 %

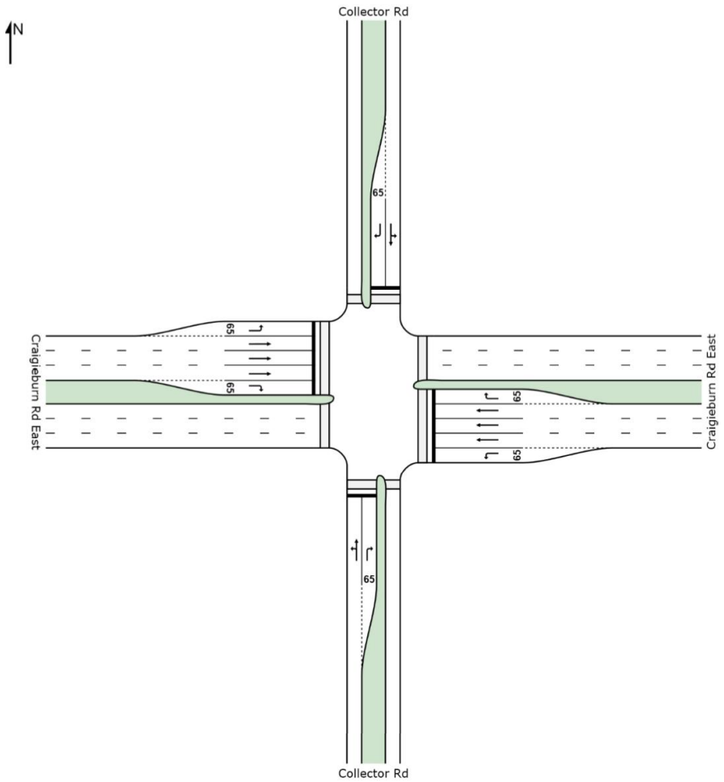


SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 2 AM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 2 AM Reference

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

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: Collector Rd											
1	L2	74	5.4	0.170	25.3	LOS C	3.3	24.3	0.71	0.68	41.5
2	T1	38	5.3	0.170	20.7	LOS C	3.3	24.3	0.71	0.68	37.8
3	R2	94	6.4	0.476	47.1	LOS D	4.1	30.1	0.98	0.77	32.9
Approach		206	5.8	0.476	34.4	LOS C	4.1	30.1	0.83	0.72	36.5
East: Craigieburn Rd East											
4	L2	81	6.2	0.114	25.2	LOS C	2.2	16.4	0.66	0.74	42.9
5	T1	459	6.1	0.367	32.5	LOS C	5.8	42.7	0.89	0.72	46.7
6	R2	24	4.2	0.171	51.3	LOS D	1.0	7.6	0.97	0.71	33.0
Approach		564	6.0	0.367	32.3	LOS C	5.8	42.7	0.86	0.73	45.3
North: Collector Rd											
7	L2	205	5.9	0.411	26.9	LOS C	9.1	66.6	0.78	0.75	40.5
8	T1	74	5.4	0.411	22.3	LOS C	9.1	66.6	0.78	0.75	37.1
9	R2	73	5.5	0.368	46.5	LOS D	3.1	22.9	0.97	0.76	33.2
Approach		352	5.7	0.411	30.0	LOS C	9.1	66.6	0.82	0.75	38.0
West: Craigieburn Rd East											
10	L2	37	5.4	0.052	24.6	LOS C	1.0	7.2	0.64	0.71	43.2
11	T1	624	5.8	0.498	33.7	LOS C	8.2	59.9	0.92	0.76	46.0
12	R2	61	6.6	0.442	52.9	LOS D	2.7	20.3	0.99	0.75	32.5
Approach		722	5.8	0.498	34.8	LOS C	8.2	59.9	0.92	0.76	44.3
All Vehicles		1844	5.9	0.498	33.1	LOS C	9.1	66.6	0.87	0.74	42.3

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	20	34.7	LOS D	0.0	0.0	0.88	0.88
P2	East Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
P3	North Full Crossing	20	34.7	LOS D	0.0	0.0	0.88	0.88
P4	West Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
All Pedestrians		80	37.0	LOS D			0.91	0.91

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

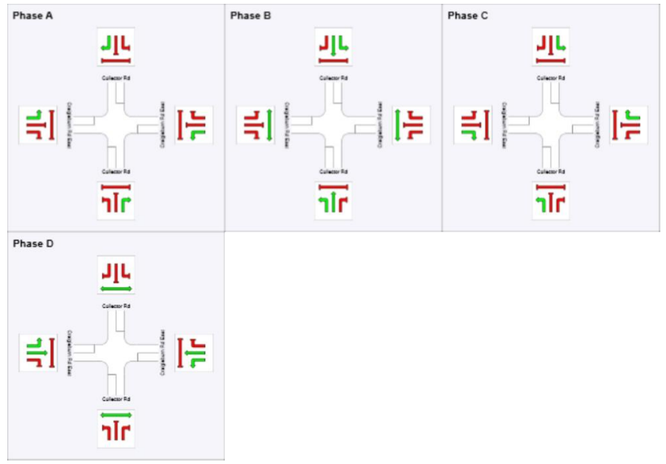
Site: Intersection 2 AM Reference

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Split Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	16	51	64
Green Time (sec)	10	29	7	20
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	16	35	13	26
Phase Split	18 %	39 %	14 %	29 %

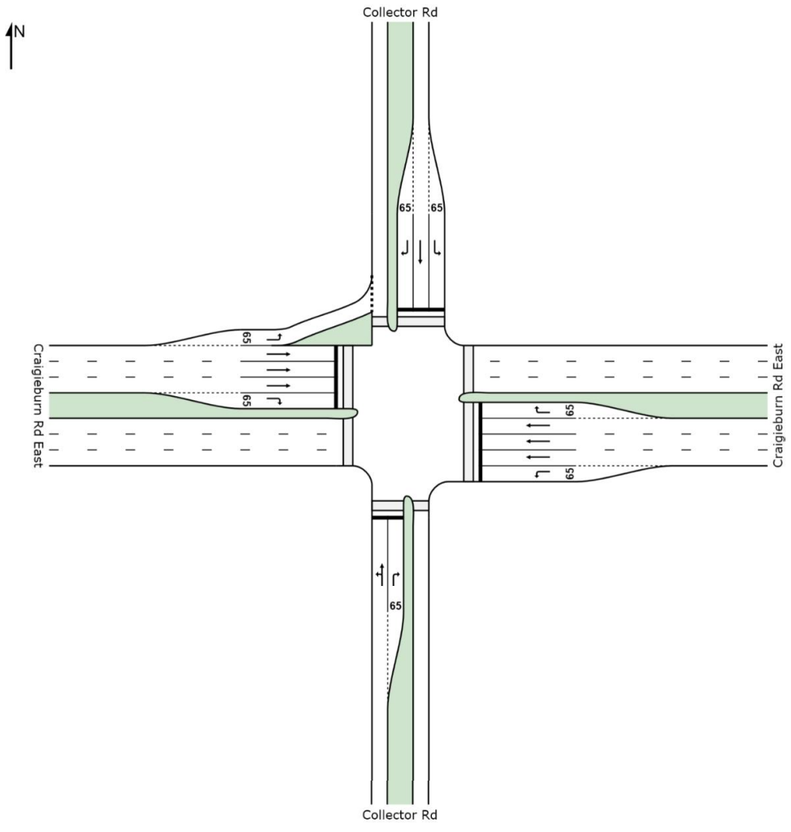


SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 3 AM Reference

New Site
Signals - Fixed Time



MOVEMENT SUMMARY

Site: Intersection 3 AM Reference

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

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: Collector Rd											
1	L2	40	5.0	0.163	26.7	LOS C	3.1	22.7	0.73	0.64	41.5
2	T1	61	6.6	0.163	22.1	LOS C	3.1	22.7	0.73	0.64	37.8
3	R2	52	5.8	0.202	42.2	LOS D	2.1	15.3	0.92	0.73	34.5
Approach		153	5.9	0.202	30.1	LOS C	3.1	22.7	0.79	0.67	37.4
East: Craigieburn Rd East											
4	L2	30	6.7	0.041	23.9	LOS C	0.8	5.8	0.62	0.70	43.6
5	T1	503	6.0	0.447	34.9	LOS C	6.6	48.7	0.93	0.75	45.4
6	R2	74	5.4	0.621	55.6	LOS E	3.5	25.4	1.00	0.79	31.9
Approach		607	5.9	0.621	36.9	LOS D	6.6	48.7	0.92	0.76	43.1
North: Collector Rd											
7	L2	163	6.1	0.201	20.3	LOS C	4.3	31.4	0.63	0.72	43.0
8	T1	50	6.0	0.083	22.8	LOS C	1.5	11.2	0.73	0.56	38.3
9	R2	159	6.3	0.619	45.5	LOS D	6.9	50.9	0.99	0.82	33.4
Approach		372	6.2	0.619	31.4	LOS C	6.9	50.9	0.80	0.74	37.8
West: Craigieburn Rd East											
10	L2	64	6.3	0.049	8.4	LOS A	0.4	2.6	0.21	0.65	54.3
11	T1	507	5.7	0.449	34.9	LOS C	6.7	49.1	0.93	0.75	45.4
12	R2	59	6.8	0.500	54.5	LOS D	2.7	20.1	1.00	0.75	32.1
Approach		630	5.9	0.500	34.0	LOS C	6.7	49.1	0.86	0.74	44.4
All Vehicles		1762	6.0	0.621	34.1	LOS C	6.9	50.9	0.86	0.74	41.7

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	20	36.5	LOS D	0.0	0.0	0.90	0.90
P2	East Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
P3	North Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
P4	West Full Crossing	20	36.5	LOS D	0.0	0.0	0.90	0.90
All Pedestrians		80	37.9	LOS D			0.92	0.92

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

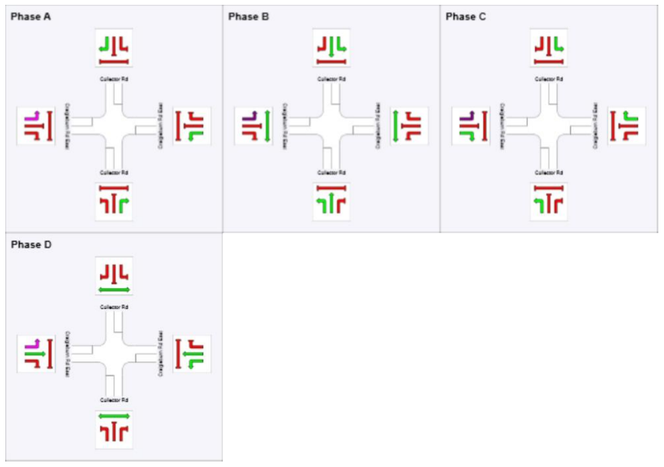
Site: Intersection 3 AM Reference

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Leading Right Turn
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

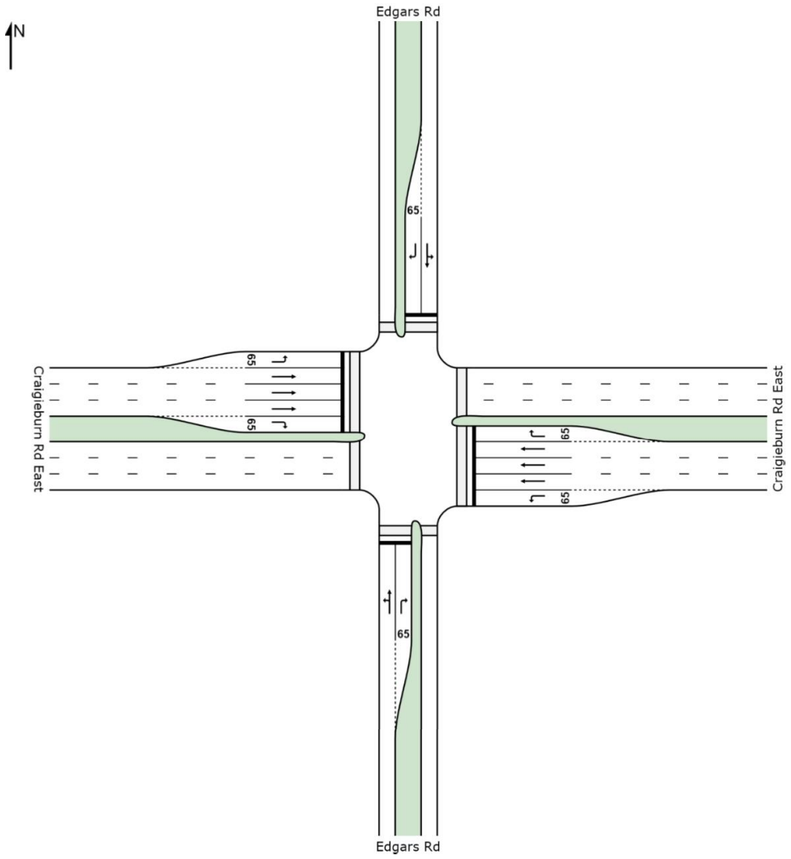
Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	19	54	66
Green Time (sec)	13	29	6	18
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	19	35	12	24
Phase Split	21 %	39 %	13 %	27 %



SITE LAYOUT

Site: Intersection 4 AM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 4 AM Reference

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

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: Edgars Rd											
1	L2	51	5.9	0.185	25.0	LOS C	3.7	27.4	0.69	0.67	45.3
2	T1	78	6.4	0.185	20.8	LOS C	3.7	27.4	0.69	0.67	41.0
3	R2	27	25.9	0.194	49.3	LOS D	1.2	10.0	0.96	0.72	32.6
Approach		156	9.6	0.194	27.1	LOS C	3.7	27.4	0.74	0.68	40.5
East: Craigieburn Rd East											
4	L2	153	5.9	0.234	28.3	LOS C	4.7	34.3	0.73	0.77	43.8
5	T1	508	5.9	0.427	33.9	LOS C	6.6	48.5	0.91	0.75	45.9
6	R2	40	5.0	0.335	53.6	LOS D	1.8	13.2	0.99	0.73	32.3
Approach		701	5.8	0.427	33.8	LOS C	6.6	48.5	0.88	0.75	44.4
North: Edgars Rd											
7	L2	97	6.2	0.427	27.1	LOS C	9.7	71.5	0.79	0.73	41.4
8	T1	200	6.0	0.427	23.2	LOS C	9.7	71.5	0.79	0.73	40.3
9	R2	61	6.6	0.387	48.8	LOS D	2.7	19.9	0.98	0.75	32.5
Approach		358	6.1	0.427	28.6	LOS C	9.7	71.5	0.82	0.74	39.0
West: Craigieburn Rd East											
10	L2	21	4.8	0.032	26.4	LOS C	0.6	4.3	0.67	0.70	42.3
11	T1	414	5.6	0.347	33.2	LOS C	5.3	38.6	0.90	0.72	46.3
12	R2	34	5.9	0.286	53.4	LOS D	1.5	11.2	0.99	0.72	33.8
Approach		469	5.5	0.347	34.3	LOS C	5.3	38.6	0.89	0.72	44.9
All Vehicles		1684	6.2	0.427	32.2	LOS C	9.7	71.5	0.86	0.73	42.9

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	20	35.6	LOS D	0.0	0.0	0.89	0.89
P2	East Full Crossing	20	35.6	LOS D	0.0	0.0	0.89	0.89
P3	North Full Crossing	20	35.6	LOS D	0.0	0.0	0.89	0.89
P4	West Full Crossing	20	35.6	LOS D	0.0	0.0	0.89	0.89
All Pedestrians		80	35.6	LOS D			0.89	0.89

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

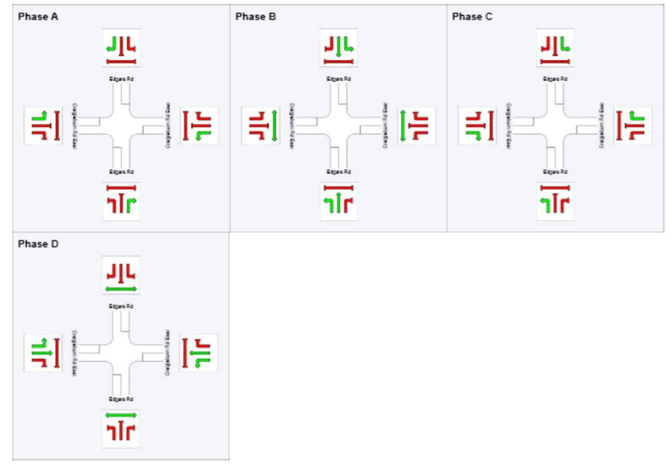
Site: Intersection 4 AM Reference

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Leading Right Turn
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	14	53	65
Green Time (sec)	8	33	6	19
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	14	39	12	25
Phase Split	16 %	43 %	13 %	28 %

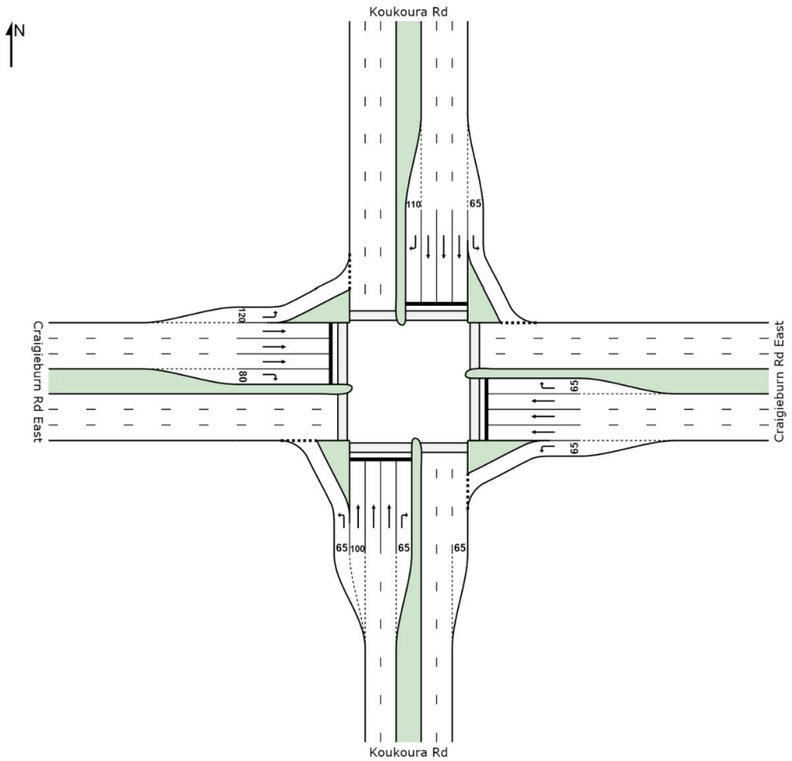


SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 5 AM Reference

New Site
Signals - Fixed Time



MOVEMENT SUMMARY

Site: Intersection 5 AM Reference

New Site
Signals - Fixed Time Cycle Time = 100 seconds (User-Given Cycle Time)

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: Koukoura Rd											
1	L2	152	5.9	0.159	11.0	LOS B	2.4	17.7	0.41	0.67	50.1
2	T1	328	6.1	0.389	42.5	LOS D	5.0	36.5	0.95	0.75	35.5
3	R2	50	0.0	0.179	46.5	LOS D	2.2	15.2	0.91	0.74	34.0
Approach		530	5.5	0.389	33.8	LOS C	5.0	36.5	0.79	0.72	38.6
East: Craigieburn Rd East											
4	L2	51	2.0	0.056	14.2	LOS B	1.0	7.2	0.48	0.66	48.1
5	T1	532	6.0	0.630	44.6	LOS D	8.4	62.1	0.99	0.82	34.8
6	R2	87	5.7	0.325	47.8	LOS D	3.9	28.7	0.94	0.77	33.6
Approach		670	5.7	0.630	42.7	LOS D	8.4	62.1	0.94	0.80	35.4
North: Koukoura Rd											
7	L2	129	4.7	0.094	6.8	LOS A	0.9	6.4	0.22	0.61	53.1
8	T1	1106	6.0	0.775	34.9	LOS C	21.1	155.2	0.94	0.86	38.3
9	R2	311	6.1	0.564	37.0	LOS D	12.8	94.3	0.89	0.82	37.2
Approach		1546	5.9	0.775	33.0	LOS C	21.1	155.2	0.87	0.83	39.0
West: Craigieburn Rd East											
10	L2	423	5.9	0.360	7.7	LOS A	4.4	32.3	0.31	0.65	52.4
11	T1	328	6.1	0.389	42.5	LOS D	5.0	36.5	0.95	0.75	35.5
12	R2	204	5.9	0.763	53.9	LOS D	10.4	76.2	1.00	0.90	31.8
Approach		955	6.0	0.763	29.5	LOS C	10.4	76.2	0.68	0.74	40.3
All Vehicles		3701	5.8	0.775	34.0	LOS C	21.1	155.2	0.82	0.78	38.5

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P11	South Stage 1	20	44.2	LOS E	0.1	0.1	0.94	0.94
P12	South Stage 2	20	42.4	LOS E	0.1	0.1	0.92	0.92
P21	East Stage 1	20	30.4	LOS D	0.0	0.0	0.78	0.78
P22	East Stage 2	20	28.9	LOS C	0.0	0.0	0.76	0.76
P31	North Stage 1	20	44.2	LOS E	0.1	0.1	0.94	0.94
P32	North Stage 2	20	42.4	LOS E	0.1	0.1	0.92	0.92
P41	West Stage 1	20	44.2	LOS E	0.1	0.1	0.94	0.94
P42	West Stage 2	20	42.4	LOS E	0.1	0.1	0.92	0.92
All Pedestrians		160	39.9	LOS D			0.89	0.89

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

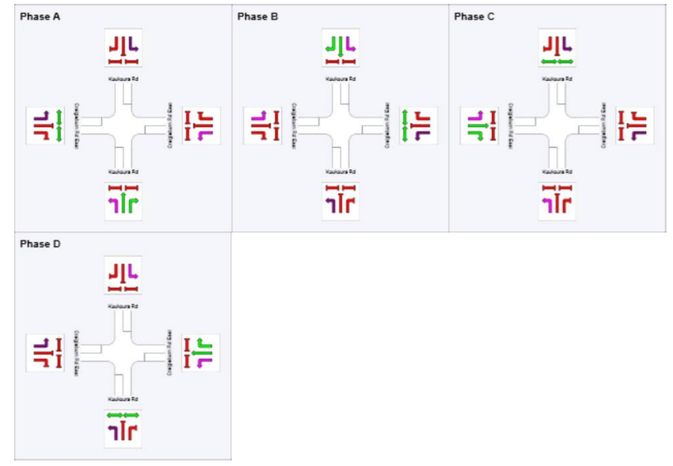
Site: Intersection 5 AM Reference

New Site
Signals - Fixed Time Cycle Time = 100 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: Split Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

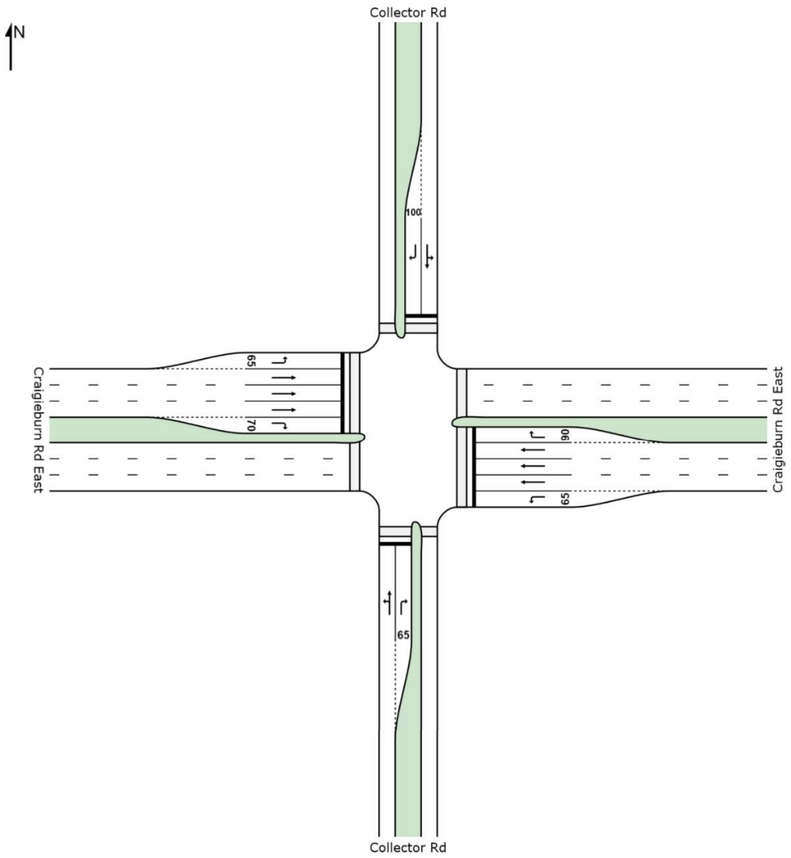
Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	21	58	79
Green Time (sec)	15	31	15	15
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	21	37	21	21
Phase Split	21 %	37 %	21 %	21 %



SITE LAYOUT

Site: Intersection 6 AM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 6 AM Reference

New Site
Signals - Fixed Time Cycle Time = 100 seconds (User-Given Phase Times)

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: Collector Rd											
1	L2	163	6.1	0.286	27.8	LOS C	6.5	48.0	0.74	0.73	39.9
2	T1	29	6.9	0.286	23.2	LOS C	6.5	48.0	0.74	0.73	36.5
3	R2	111	6.3	0.329	43.0	LOS D	4.8	35.3	0.91	0.77	34.2
Approach		303	6.3	0.329	32.9	LOS C	6.5	48.0	0.80	0.75	37.3
East: Craigieburn Rd East											
4	L2	132	6.1	0.177	26.5	LOS C	4.0	29.5	0.66	0.75	42.3
5	T1	783	6.0	0.818	49.2	LOS D	13.6	100.2	1.00	0.94	38.5
6	R2	79	6.3	0.404	53.8	LOS D	3.8	27.7	0.97	0.77	32.3
Approach		994	6.0	0.818	46.6	LOS D	13.6	100.2	0.95	0.90	38.3
North: Collector Rd											
7	L2	195	6.2	0.356	29.2	LOS C	8.3	61.2	0.77	0.75	39.3
8	T1	40	5.0	0.356	24.6	LOS C	8.3	61.2	0.77	0.75	36.0
9	R2	241	5.8	0.711	47.8	LOS D	11.6	85.2	0.99	0.87	32.8
Approach		476	5.9	0.711	38.2	LOS D	11.6	85.2	0.88	0.81	35.5
West: Craigieburn Rd East											
10	L2	116	6.0	0.155	26.2	LOS C	3.5	25.6	0.65	0.75	42.4
11	T1	650	6.0	0.679	43.8	LOS D	10.4	76.2	0.99	0.84	40.8
12	R2	93	6.5	0.476	54.3	LOS D	4.5	33.0	0.98	0.78	32.1
Approach		859	6.1	0.679	42.6	LOS D	10.4	76.2	0.94	0.82	39.8
All Vehicles		2632	6.0	0.818	42.2	LOS D	13.6	100.2	0.92	0.84	38.1

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	20	42.4	LOS E	0.1	0.1	0.92	0.92
P2	East Full Crossing	20	44.2	LOS E	0.1	0.1	0.94	0.94
P3	North Full Crossing	20	42.4	LOS E	0.1	0.1	0.92	0.92
P4	West Full Crossing	20	44.2	LOS E	0.1	0.1	0.94	0.94
All Pedestrians		80	43.3	LOS E			0.93	0.93

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

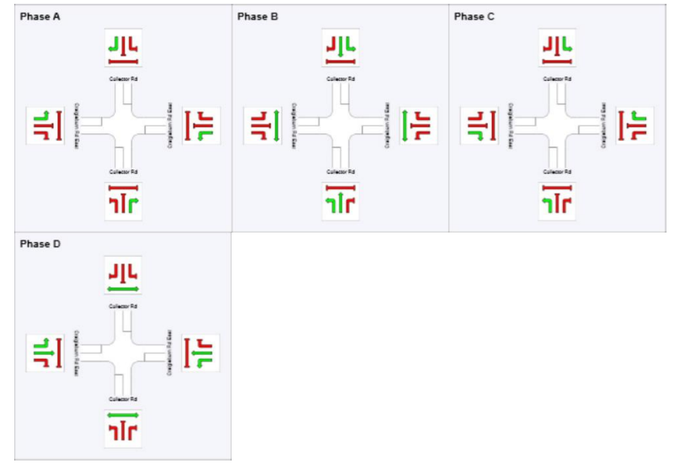
Site: Intersection 6 AM Reference

New Site
Signals - Fixed Time Cycle Time = 100 seconds (User-Given Phase Times)

Phase times specified by the user
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	25	60	77
Green Time (sec)	19	29	11	17
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	25	35	17	23
Phase Split	25 %	35 %	17 %	23 %



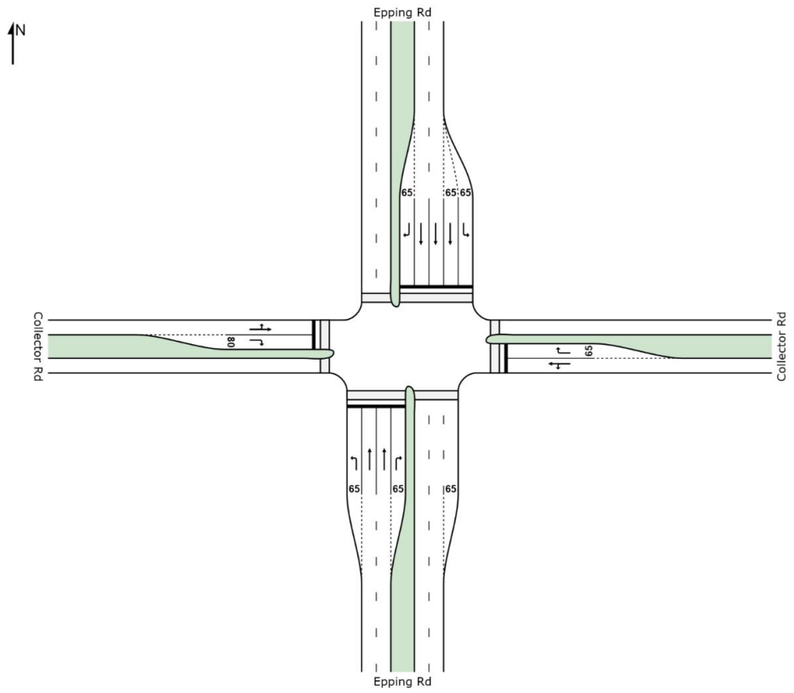
SIDRA INTERSECTION 6

SITE LAYOUT

19

Site: Intersection 7 AM Reference

New Site
Signals - Fixed Time



Created: Thursday, 24 July 2014 10:25:53 AM
SIDRA INTERSECTION 6.0.22.4722
Project: E:\SIDRA MODEL\Reference Case\MODELS\Reference\Intersection 7 2046.sip6
8000945, VICROADS, NETWORK / Enterprise

SIDRA INTERSECTION 6

MOVEMENT SUMMARY

20

Site: Intersection 7 AM Reference

New Site
Signals - Fixed Time Cycle Time = 110 seconds (User-Given Cycle Time)

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: Epping Rd											
1	L2	158	10.1	0.157	16.8	LOS B	3.8	29.1	0.49	0.70	43.2
2	T1	368	10.1	0.251	23.5	LOS C	6.5	49.7	0.71	0.59	43.3
3	R2	120	10.0	0.761	63.9	LOS E	6.9	52.3	1.00	0.88	27.9
Approach		646	10.1	0.761	29.4	LOS C	6.9	52.3	0.71	0.67	39.2
East: Collector Rd											
4	L2	62	9.7	0.217	43.0	LOS D	3.6	27.7	0.86	0.73	32.9
5	T1	20	10.0	0.217	38.4	LOS D	3.6	27.7	0.86	0.73	31.8
6	R2	21	4.8	0.046	33.7	LOS C	0.8	5.9	0.77	0.67	35.9
Approach		103	8.7	0.217	40.2	LOS D	3.6	27.7	0.84	0.72	33.3
North: Epping Rd											
7	L2	21	4.8	0.020	15.8	LOS B	0.5	3.4	0.44	0.65	43.8
8	T1	1349	8.3	0.829	33.8	LOS C	30.6	229.8	0.89	0.85	38.6
9	R2	27	11.1	0.173	57.4	LOS E	1.4	10.7	0.96	0.72	29.2
Approach		1397	8.3	0.829	34.0	LOS C	30.6	229.8	0.89	0.85	38.4
West: Collector Rd											
10	L2	49	10.2	0.328	31.3	LOS C	2.9	22.2	0.93	0.74	37.1
11	T1	38	10.5	0.328	26.6	LOS C	2.9	22.2	0.93	0.74	35.8
12	R2	172	9.9	0.779	60.0	LOS E	9.8	74.1	1.00	0.91	28.4
Approach		259	10.0	0.779	49.7	LOS D	9.8	74.1	0.98	0.85	30.7
All Vehicles		2405	9.0	0.829	34.7	LOS C	30.6	229.8	0.85	0.79	37.4

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P11	South Stage 1	20	46.4	LOS E	0.1	0.1	0.92	0.92
P12	South Stage 2	20	44.6	LOS E	0.1	0.1	0.90	0.90
P21	East Stage 1	20	22.3	LOS C	0.0	0.0	0.64	0.64
P22	East Stage 2	20	21.0	LOS C	0.0	0.0	0.62	0.62
P31	North Stage 1	20	49.2	LOS E	0.1	0.1	0.95	0.95
P32	North Stage 2	20	41.9	LOS E	0.1	0.1	0.87	0.87
P41	West Stage 1	20	22.3	LOS C	0.0	0.0	0.64	0.64
P42	West Stage 2	20	21.0	LOS C	0.0	0.0	0.62	0.62
All Pedestrians		160	33.6	LOS D			0.77	0.77

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.

Processed: Thursday, 24 July 2014 10:25:56 AM
SIDRA INTERSECTION 6.0.22.4722
Project: E:\SIDRA MODEL\Reference Case\MODELS\Reference\Intersection 7 2046.sip6
8000945, VICROADS, NETWORK / Enterprise

SIDRA INTERSECTION 6

PHASING SUMMARY

21

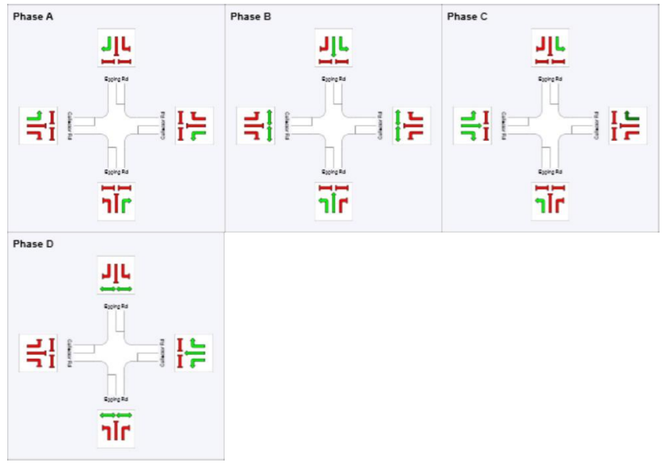
Site: Intersection 7 AM Reference

New Site
Signals - Fixed Time Cycle Time = 110 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: Leading Right Turn (phase reduction applied)
Movement Class: All Movement Classes
Input Sequence: A, ?, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	16	66	86
Green Time (sec)	10	44	14	18
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	16	50	20	24
Phase Split	15 %	45 %	18 %	22 %



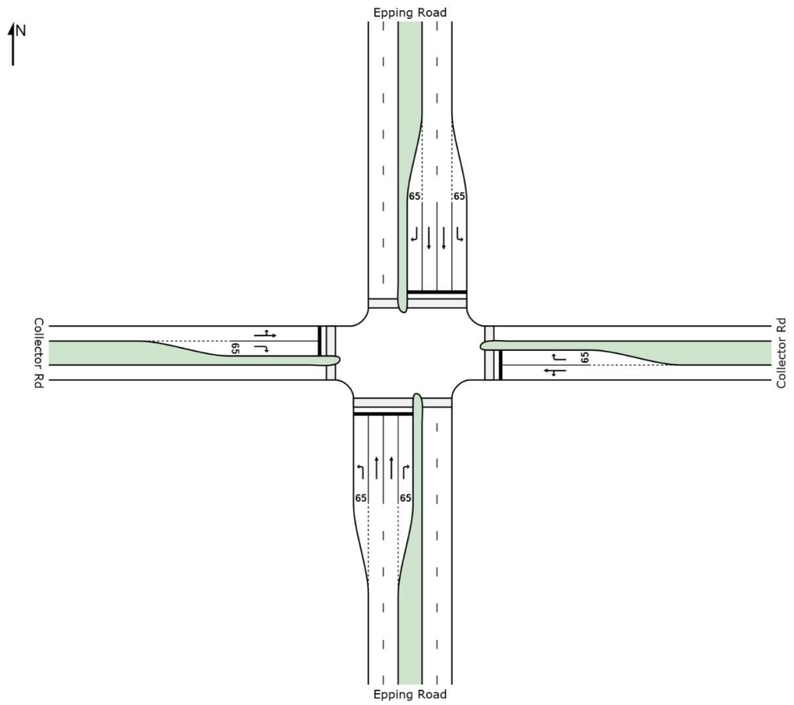
Processed: Thursday, 24 July 2014 10:25:56 AM
SIDRA INTERSECTION 6.0.22.4722
Project: E:\SIDRA MODEL\Reference Case\MODELS\Reference\Intersection 7 2046.sip6
8000945, VICROADS, NETWORK / Enterprise

SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 8 AM Referencee

New Site
Signals - Fixed Time



Created: Wednesday, 20 August 2014 2:58:24 PM
SIDRA INTERSECTION 6.0.22.4722
Project: P:\60313908\4. Tech work area\4.5 Planning\SIDRA MODEL\Reference Case\MODELS\Reference \Intersection 8 2046.sip6
8000907, AECOM, NETWORK / Enterprise

SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 8 AM Referencee

New Site
Signals - Fixed Time Cycle Time = 110 seconds (Practical Cycle Time)

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: Epping Road											
1	L2	49	10.2	0.049	16.5	LOS B	1.1	8.6	0.46	0.67	43.4
2	T1	367	10.1	0.216	18.7	LOS B	5.8	44.1	0.63	0.53	45.9
3	R2	21	4.8	0.214	62.7	LOS E	1.2	8.4	0.99	0.70	28.0
Approach		437	9.8	0.216	20.6	LOS C	5.8	44.1	0.63	0.55	44.2
East: Collector Rd											
4	L2	21	4.8	0.098	40.0	LOS D	1.7	12.6	0.81	0.67	34.3
5	T1	20	5.0	0.098	35.4	LOS D	1.7	12.6	0.81	0.67	33.0
6	R2	60	10.0	0.635	64.7	LOS E	3.5	26.2	1.00	0.80	27.4
Approach		101	7.9	0.635	53.8	LOS D	3.5	26.2	0.92	0.75	29.7
North: Epping Road											
7	L2	208	10.1	0.210	17.7	LOS B	5.3	40.6	0.52	0.72	42.7
8	T1	1304	8.3	0.847	32.7	LOS C	34.9	261.7	0.90	0.89	39.0
9	R2	53	9.4	0.558	65.0	LOS E	3.0	22.8	1.00	0.76	27.5
Approach		1565	8.6	0.847	31.8	LOS C	34.9	261.7	0.85	0.86	38.9
West: Collector Rd											
10	L2	26	11.5	0.112	40.2	LOS D	1.9	14.9	0.82	0.68	34.0
11	T1	20	10.0	0.112	35.5	LOS D	1.9	14.9	0.82	0.68	32.9
12	R2	72	9.7	0.760	66.8	LOS E	4.3	32.3	1.00	0.88	27.0
Approach		118	10.2	0.760	55.6	LOS E	4.3	32.3	0.93	0.80	29.2
All Vehicles		2221	8.9	0.847	31.8	LOS C	34.9	261.7	0.81	0.79	38.6

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	20	49.2	LOS E	0.1	0.1	0.95	0.95
P2	East Full Crossing	20	21.0	LOS C	0.0	0.0	0.62	0.62
P3	North Full Crossing	20	49.2	LOS E	0.1	0.1	0.95	0.95
P4	West Full Crossing	20	21.0	LOS C	0.0	0.0	0.62	0.62
All Pedestrians		80	35.1	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.

Processed: Wednesday, 20 August 2014 2:58:26 PM
SIDRA INTERSECTION 6.0.22.4722
Project: P:\60313908\4. Tech work area\4.5 Planning\SIDRA MODEL\Reference Case\MODELS\Reference \Intersection 8 2046.sip6
8000907, AECOM, NETWORK / Enterprise

SIDRA INTERSECTION 6

PHASING SUMMARY

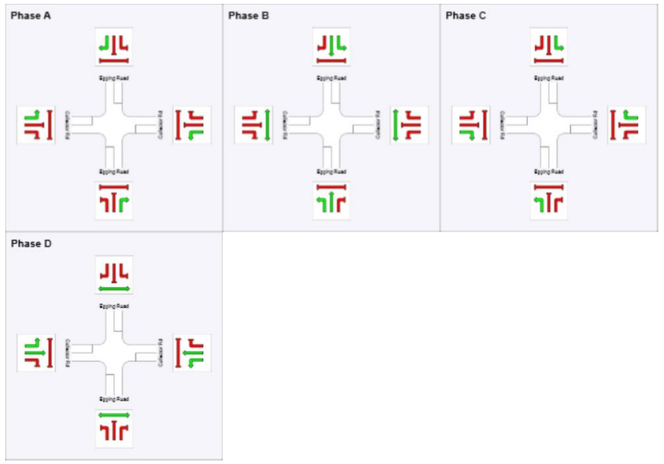
Site: Intersection 8 AM Referencee

New Site
Signals - Fixed Time Cycle Time = 110 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	12	69	81
Green Time (sec)	6	51	6	23
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	12	57	12	29
Phase Split	11 %	52 %	11 %	26 %



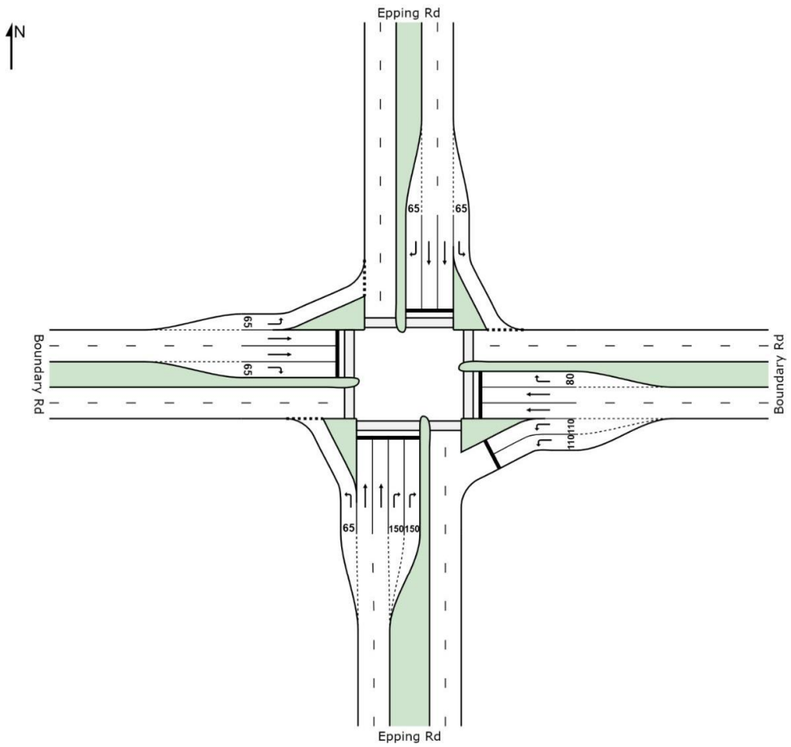
Processed: Wednesday, 20 August 2014 2:58:26 PM
SIDRA INTERSECTION 6.0.22.4722
Project: P:\60313908\4. Tech work area\4.5 Planning\SIDRA MODEL\Reference Case\MODELS\Reference \Intersection 8 2046.sip6
8000907, AECOM, NETWORK / Enterprise

SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 9 AM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 9 AM Reference

New Site
Signals - Fixed Time Cycle Time = 80 seconds (Practical Cycle Time)

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: Epping Rd											
1	L2	58	10.3	0.053	7.3	LOS A	0.4	3.1	0.27	0.61	52.6
2	T1	68	10.3	0.047	15.7	LOS B	0.8	6.1	0.64	0.48	47.8
3	R2	328	10.1	0.582	40.7	LOS D	6.2	47.2	0.97	0.81	36.9
Approach		454	10.1	0.582	32.6	LOS C	6.2	47.2	0.83	0.73	39.8
East: Boundary Rd											
4	L2	986	7.8	0.590	24.0	LOS C	14.1	105.4	0.78	0.82	46.8
5	T1	384	9.9	0.441	31.0	LOS C	6.5	49.7	0.90	0.77	43.7
6	R2	97	10.3	0.408	43.0	LOS D	3.6	27.7	0.96	0.78	37.6
Approach		1467	8.5	0.590	27.1	LOS C	14.1	105.4	0.82	0.81	45.2
North: Epping Rd											
7	L2	200	10.0	0.205	11.1	LOS B	3.0	22.7	0.48	0.68	52.2
8	T1	411	10.0	0.691	36.6	LOS D	8.1	61.5	0.99	0.86	37.6
9	R2	50	2.0	0.091	21.8	LOS C	1.2	8.7	0.65	0.70	43.7
Approach		661	9.4	0.691	27.8	LOS C	8.1	61.5	0.81	0.80	41.6
West: Boundary Rd											
10	L2	50	2.0	0.040	6.7	LOS A	0.3	2.0	0.23	0.60	53.3
11	T1	602	10.0	0.692	36.4	LOS D	11.3	85.6	0.97	0.88	43.2
12	R2	162	9.9	0.679	44.1	LOS D	6.5	49.3	1.00	0.86	34.6
Approach		814	9.5	0.692	36.1	LOS D	11.3	85.6	0.93	0.86	41.7
All Vehicles		3396	9.1	0.692	30.1	LOS C	14.1	105.4	0.85	0.81	42.8

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P11	South Stage 1	20	30.7	LOS D	0.0	0.0	0.88	0.88
P12	South Stage 2	20	26.4	LOS C	0.0	0.0	0.81	0.81
P21	East Stage 1	20	34.3	LOS D	0.0	0.0	0.93	0.93
P22	East Stage 2	20	31.5	LOS D	0.0	0.0	0.89	0.89
P31	North Stage 1	20	28.9	LOS C	0.0	0.0	0.85	0.85
P32	North Stage 2	20	26.4	LOS C	0.0	0.0	0.81	0.81
P41	West Stage 1	20	34.3	LOS D	0.0	0.0	0.93	0.93
P42	West Stage 2	20	31.5	LOS D	0.0	0.0	0.89	0.89
All Pedestrians		160	30.5	LOS D			0.87	0.87

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

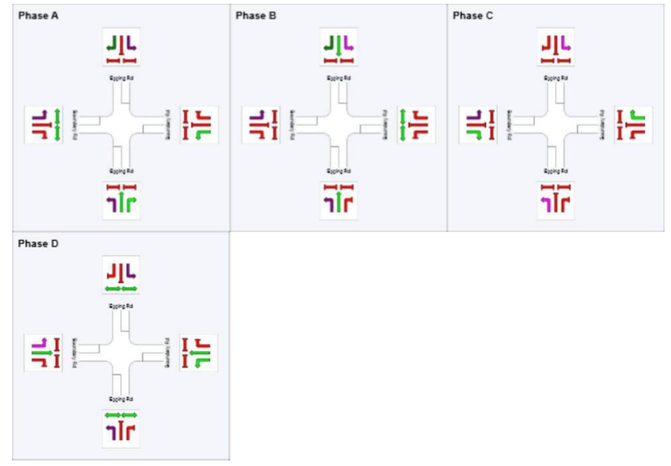
Site: Intersection 9 AM Reference

New Site
Signals - Fixed Time Cycle Time = 80 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Leading Right Turn (phase reduction applied)
Movement Class: All Movement Classes
Input Sequence: A, B, C, ?, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	19	38	55
Green Time (sec)	13	13	11	19
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	19	19	17	25
Phase Split	24 %	24 %	21 %	31 %



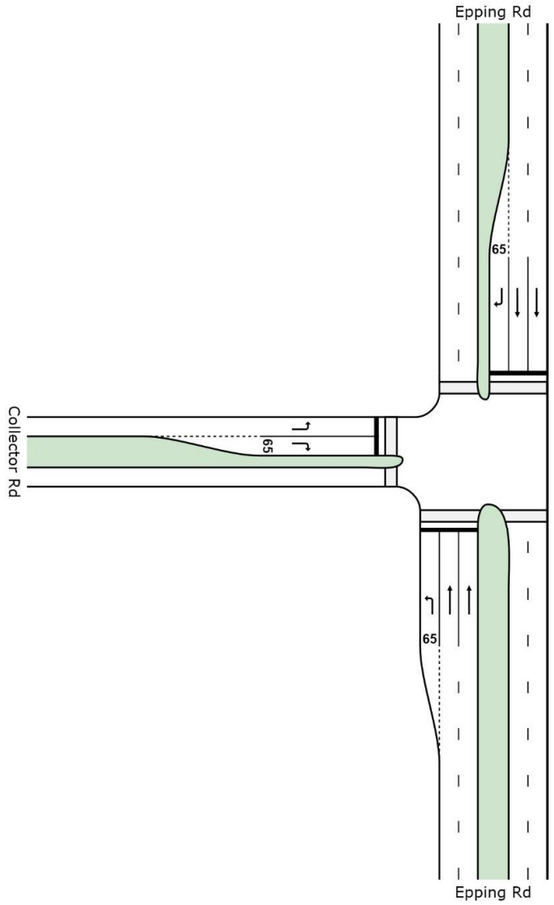
Normal Movement
Slip/Bypass-Lane Movement
Stopped Movement
Other Movement Class Running
Mixed Running & Stopped Movement Classes
Undetected Movement
Permitted/Opposed
Opposed Slip/Bypass-Lane
Turn On Red
Other Movement Class Stopped
Phase Transition Applied

SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 10 AM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 10 AM Reference

New Site
Signals - Fixed Time Cycle Time = 80 seconds (User-Given Cycle Time)

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: Epping Rd											
1	L2	73	9.6	0.075	16.2	LOS B	1.3	9.7	0.48	0.67	40.4
2	T1	91	9.9	0.110	26.9	LOS C	1.4	10.9	0.83	0.62	33.3
Approach		164	9.8	0.110	22.1	LOS C	1.4	10.9	0.67	0.64	36.0
North: Epping Rd											
8	T1	423	9.7	0.512	30.0	LOS C	7.4	56.4	0.93	0.77	31.6
9	R2	47	10.6	0.095	30.3	LOS C	1.4	10.3	0.76	0.71	31.8
Approach		470	9.8	0.512	30.1	LOS C	7.4	56.4	0.91	0.76	31.6
West: Collector Rd											
10	L2	21	9.5	0.019	14.1	LOS B	6.6	50.1	0.39	0.62	39.1
12	R2	199	10.1	0.437	35.1	LOS D	6.6	50.3	0.88	0.79	28.8
Approach		220	10.0	0.437	33.1	LOS C	6.6	50.3	0.83	0.78	29.6
All Vehicles		854	9.8	0.512	29.3	LOS C	7.4	56.4	0.84	0.74	31.8

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	20	34.3	LOS D	0.0	0.0	0.93	0.93
P3	North Full Crossing	20	34.3	LOS D	0.0	0.0	0.93	0.93
P4	West Full Crossing	20	31.5	LOS D	0.0	0.0	0.89	0.89
All Pedestrians		60	33.3	LOS D			0.91	0.91

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

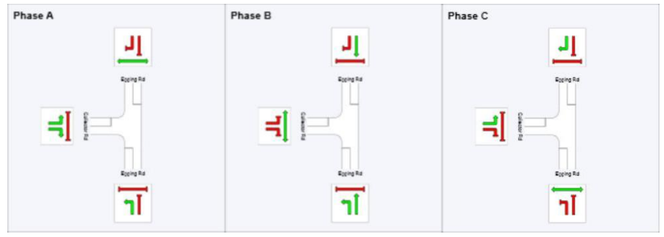
Site: Intersection 10 AM Reference

New Site
Signals - Fixed Time Cycle Time = 80 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: Leading Right Turn
Movement Class: All Movement Classes
Input Sequence: A, B, C
Output Sequence: A, B, C

Phase Timing Results

Phase	A	B	C
Reference Phase	Yes	No	No
Phase Change Time (sec)	0	27	51
Green Time (sec)	21	18	23
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	27	24	29
Phase Split	34 %	30 %	36 %



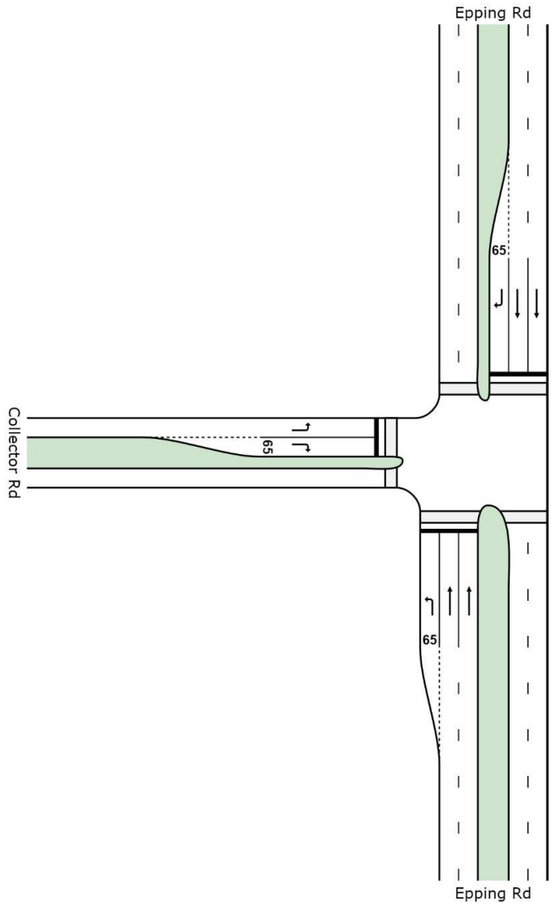
SIDRA INTERSECTION 6

SITE LAYOUT

31

Site: Intersection 11 AM Reference

New Site
Signals - Fixed Time



MOVEMENT SUMMARY

32

Site: Intersection 11 AM Reference

New Site
Signals - Fixed Time Cycle Time = 80 seconds (Practical Cycle Time)
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: Epping Rd											
1	L2	77	10.4	0.079	16.2	LOS B	1.4	10.4	0.48	0.67	40.4
2	T1	36	11.1	0.044	26.3	LOS C	1.4	10.4	0.81	0.58	33.6
Approach		113	10.6	0.079	19.4	LOS B	1.4	10.4	0.59	0.64	37.8
North: Epping Rd											
8	T1	302	9.9	0.366	28.9	LOS C	5.1	38.8	0.89	0.72	32.2
9	R2	47	10.6	0.095	30.3	LOS C	1.4	10.3	0.76	0.71	31.8
Approach		349	10.0	0.366	29.1	LOS C	5.1	38.8	0.87	0.72	32.2
West: Collector Rd											
10	L2	30	10.0	0.028	14.1	LOS B	5.5	41.9	0.40	0.62	39.1
12	R2	169	10.1	0.372	34.6	LOS C	5.5	41.9	0.86	0.78	29.0
Approach		199	10.1	0.372	31.5	LOS C	5.5	41.9	0.79	0.76	30.2
All Vehicles		661	10.1	0.372	28.1	LOS C	5.5	41.9	0.80	0.72	32.3

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	20	34.3	LOS D	0.0	0.0	0.93	0.93
P3	North Full Crossing	20	34.3	LOS D	0.0	0.0	0.93	0.93
P4	West Full Crossing	20	31.5	LOS D	0.0	0.0	0.89	0.89
All Pedestrians		60	33.3	LOS D			0.91	0.91

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

33

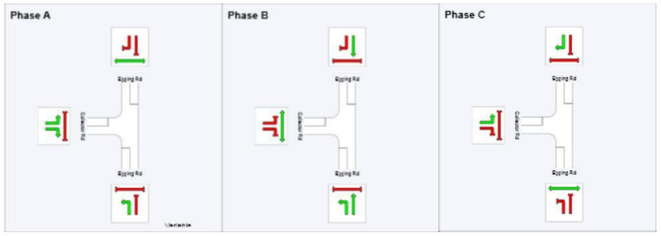
Site: Intersection 11 AM Reference

New Site
Signals - Fixed Time Cycle Time = 80 seconds (Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C
Output Sequence: A, B, C

Phase Timing Results

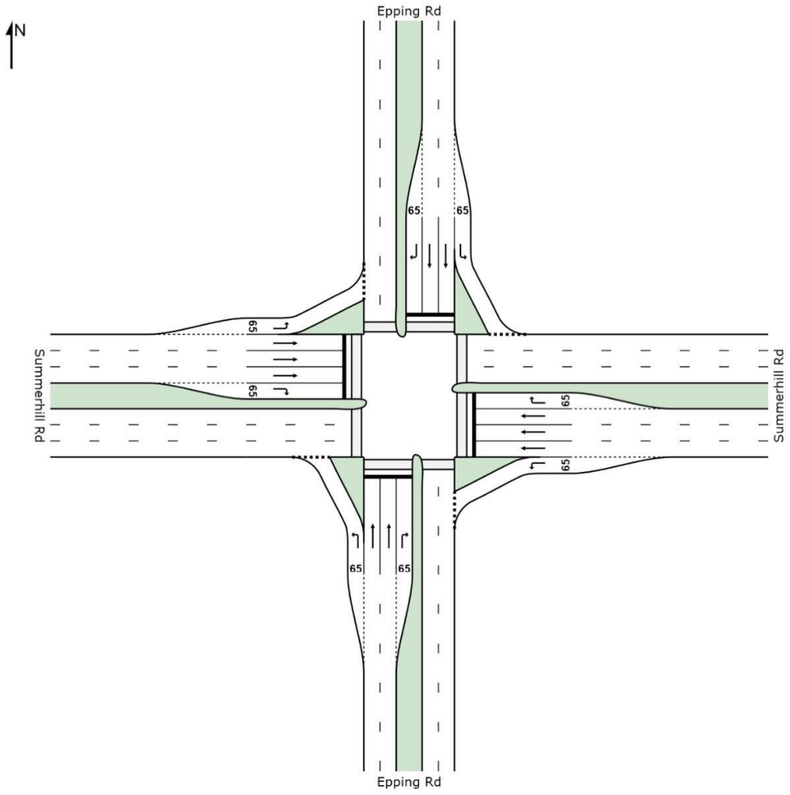
Phase	A	B	C
Reference Phase	No	Yes	No
Phase Change Time (sec)	0	27	51
Green Time (sec)	21	18	23
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	27	24	29
Phase Split	34 %	30 %	36 %



SITE LAYOUT

Site: Intersection 12 AM Reference

New Site
Signals - Fixed Time



MOVEMENT SUMMARY

Site: Intersection 12 AM Reference

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

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: Epping Rd											
1	L2	51	2.0	0.039	10.3	LOS B	0.4	2.8	0.25	0.66	47.2
2	T1	51	2.0	0.046	24.7	LOS C	2.5	17.9	0.75	0.55	34.6
3	R2	55	9.1	0.473	55.9	LOS E	2.5	19.0	1.00	0.75	24.5
Approach		157	4.5	0.473	30.9	LOS C	2.5	19.0	0.68	0.65	32.7
East: Summerhill Rd											
4	L2	76	10.5	0.065	10.4	LOS B	0.6	4.5	0.26	0.59	47.2
5	T1	251	10.0	0.196	30.2	LOS C	3.0	22.7	0.84	0.66	31.7
6	R2	51	2.0	0.193	46.3	LOS D	2.0	14.5	0.92	0.74	27.3
Approach		378	9.0	0.196	28.4	LOS C	3.0	22.7	0.73	0.66	33.2
North: Epping Rd											
7	L2	51	2.0	0.039	10.5	LOS B	0.4	3.0	0.26	0.66	47.0
8	T1	117	10.3	0.111	25.3	LOS C	2.3	17.6	0.77	0.59	34.2
9	R2	51	2.0	0.418	55.4	LOS E	2.3	16.5	1.00	0.74	24.6
Approach		219	6.4	0.418	28.9	LOS C	2.3	17.6	0.70	0.64	33.3
West: Summerhill Rd											
10	L2	51	2.0	0.037	9.4	LOS A	0.2	1.6	0.18	0.65	48.1
11	T1	323	9.9	0.252	30.7	LOS C	6.8	52.0	0.86	0.68	31.5
12	R2	157	10.2	0.628	49.9	LOS D	6.8	52.1	0.99	0.82	26.1
Approach		531	9.2	0.628	34.3	LOS C	6.8	52.1	0.83	0.72	30.6
All Vehicles		1285	8.1	0.628	31.2	LOS C	6.8	52.1	0.76	0.68	32.0

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
P2	East Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
P3	North Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
P4	West Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
All Pedestrians		80	39.2	LOS D			0.93	0.93

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

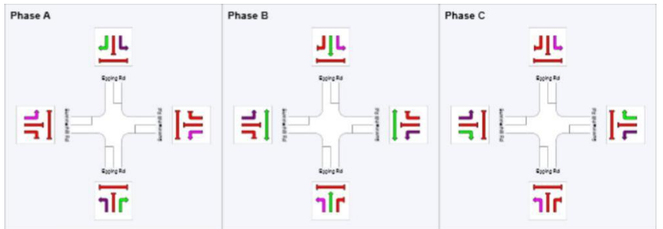
Site: Intersection 12 AM Reference

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

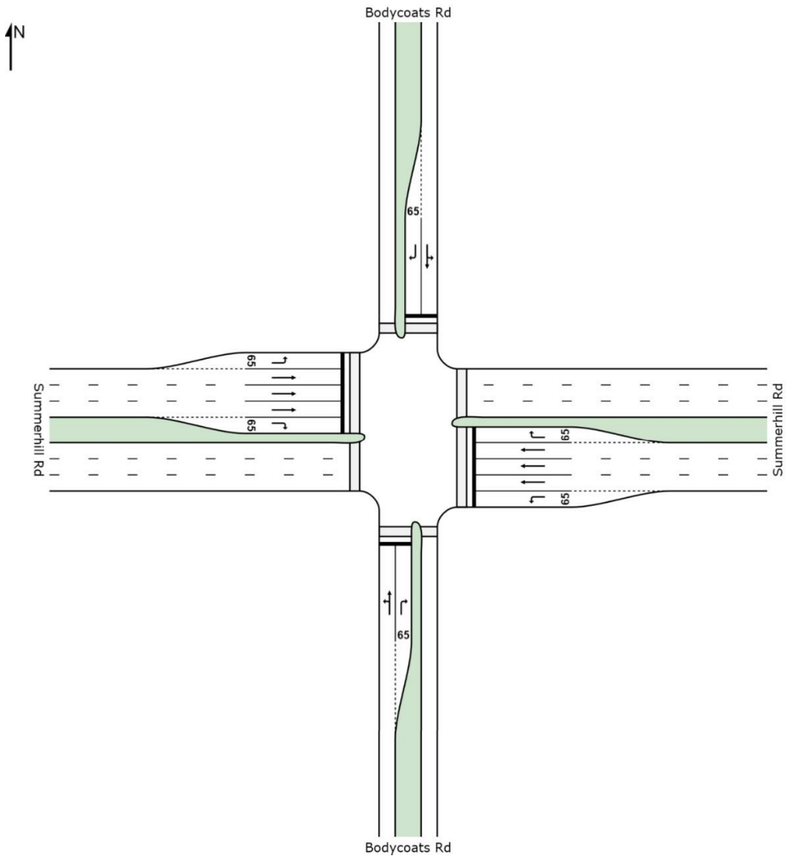
Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	12	44	63
Green Time (sec)	6	26	13	21
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	12	32	19	27
Phase Split	13 %	36 %	21 %	30 %



SITE LAYOUT

Site: Intersection 13 AM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 13 AM Reference

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

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: Bodycoats Rd											
1	L2	69	5.8	0.128	23.6	LOS C	2.5	18.2	0.68	0.72	42.0
2	T1	20	0.0	0.128	21.4	LOS C	2.5	18.2	0.68	0.72	42.8
3	R2	20	0.0	0.162	49.9	LOS D	0.9	6.2	0.97	0.70	32.7
Approach		109	3.7	0.162	28.0	LOS C	2.5	18.2	0.73	0.71	40.0
East: Summerhill Rd											
4	L2	20	5.0	0.027	23.8	LOS C	0.5	3.8	0.62	0.69	43.7
5	T1	294	6.1	0.188	26.8	LOS C	3.3	24.3	0.80	0.64	50.4
6	R2	20	0.0	0.162	52.4	LOS D	0.9	6.2	0.97	0.70	35.3
Approach		334	5.7	0.188	28.2	LOS C	3.3	24.3	0.80	0.64	48.7
North: Bodycoats Rd											
7	L2	20	0.0	0.062	27.5	LOS C	1.2	8.3	0.70	0.67	47.1
8	T1	20	5.0	0.062	23.6	LOS C	1.2	8.3	0.70	0.67	41.6
9	R2	20	0.0	0.162	51.9	LOS D	0.9	6.2	0.97	0.70	35.4
Approach		60	1.7	0.162	34.3	LOS C	1.2	8.3	0.79	0.68	40.8
West: Summerhill Rd											
10	L2	20	0.0	0.026	23.6	LOS C	0.5	3.6	0.62	0.69	48.6
11	T1	468	6.0	0.299	27.8	LOS C	5.4	40.1	0.83	0.68	49.7
12	R2	31	6.5	0.262	53.3	LOS D	1.4	10.3	0.98	0.72	32.4
Approach		519	5.8	0.299	29.2	LOS C	5.4	40.1	0.83	0.68	48.1
All Vehicles		1022	5.3	0.299	29.0	LOS C	5.4	40.1	0.81	0.67	46.8

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	20	30.4	LOS D	0.0	0.0	0.82	0.82
P2	East Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
P3	North Full Crossing	20	30.4	LOS D	0.0	0.0	0.82	0.82
P4	West Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
All Pedestrians		80	34.8	LOS D			0.88	0.88

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

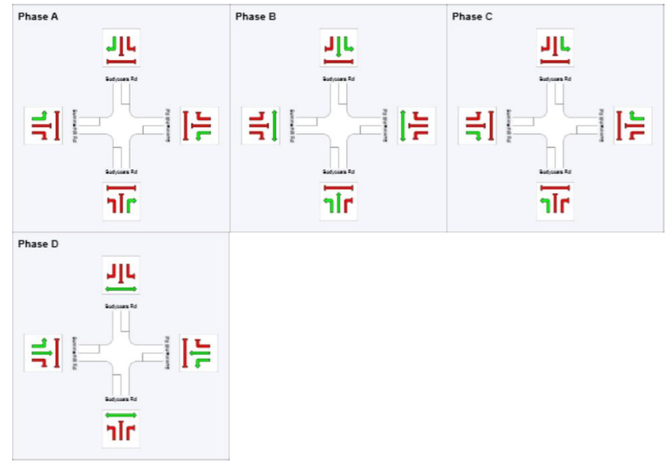
Site: Intersection 13 AM Reference

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	12	47	59
Green Time (sec)	6	29	6	25
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	12	35	12	31
Phase Split	13 %	39 %	13 %	34 %

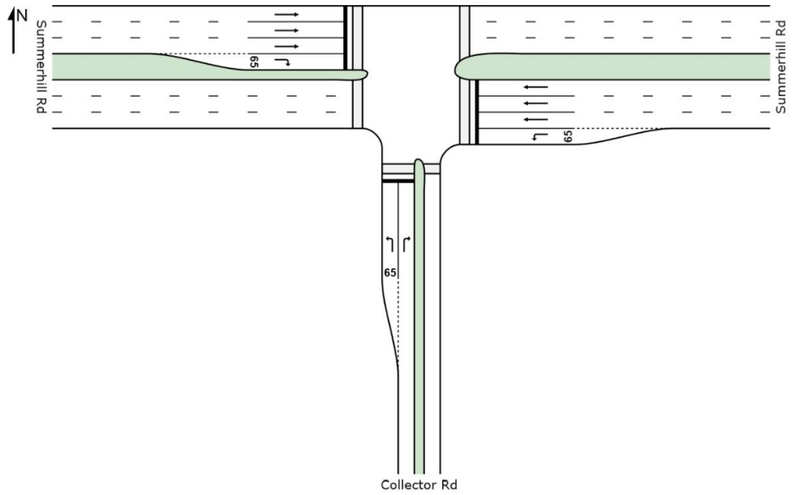


SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 14 AM 2046

New Site
Signals - Fixed Time



MOVEMENT SUMMARY

Site: Intersection 14 AM 2046

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

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: Collector Rd											
1	L2	107	5.6	0.088	9.9	LOS A	1.6	11.6	0.36	0.63	49.2
3	R2	44	6.8	0.086	29.7	LOS C	1.4	10.4	0.76	0.70	38.8
Approach		151	6.0	0.088	15.6	LOS B	1.6	11.6	0.48	0.65	45.6
East: Summerhill Rd											
4	L2	21	4.8	0.021	17.0	LOS B	0.4	3.0	0.48	0.68	47.5
5	T1	346	6.1	0.325	34.8	LOS C	4.5	33.0	0.91	0.72	45.4
Approach		367	6.0	0.325	33.7	LOS C	4.5	33.0	0.88	0.72	45.5
West: Summerhill Rd											
11	T1	457	5.9	0.429	35.6	LOS D	6.1	44.6	0.93	0.75	44.9
12	R2	44	6.8	0.077	29.9	LOS C	1.3	9.9	0.73	0.72	40.9
Approach		501	6.0	0.429	35.1	LOS D	6.1	44.6	0.91	0.75	44.5
All Vehicles		1019	6.0	0.429	31.7	LOS C	6.1	44.6	0.84	0.72	45.0

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	20	37.4	LOS D	0.0	0.0	0.91	0.91
P2	East Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
P4	West Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
All Pedestrians		60	38.6	LOS D			0.93	0.93

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

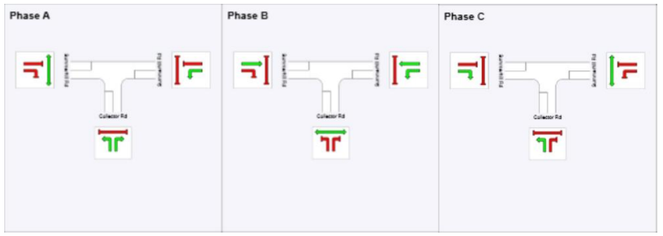
Site: Intersection 14 AM 2046

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C
Output Sequence: A, B, C

Phase Timing Results

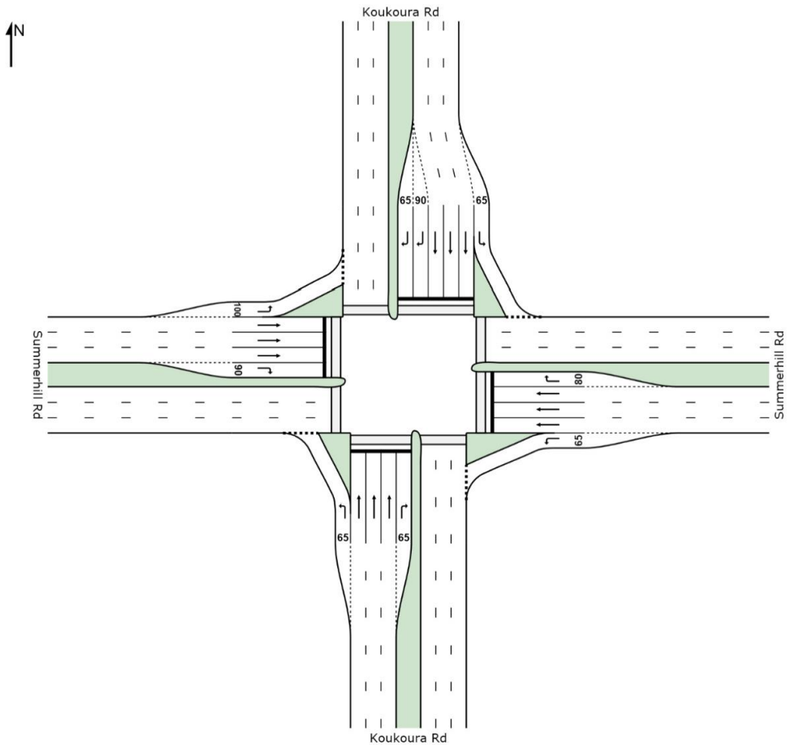
Phase	A	B	C
Reference Phase	Yes	No	No
Phase Change Time (sec)	0	32	55
Green Time (sec)	26	17	29
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	32	23	35
Phase Split	36 %	26 %	39 %



SITE LAYOUT

Site: Intersection 15 AM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 15 AM Reference

New Site
Signals - Fixed Time Cycle Time = 100 seconds (Practical Cycle Time)

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: Koukoura Rd											
1	L2	244	6.1	0.235	11.4	LOS B	3.4	25.4	0.38	0.71	59.5
2	T1	532	6.0	0.630	44.6	LOS D	8.4	62.1	0.99	0.81	40.8
3	R2	50	0.0	0.179	48.3	LOS D	2.2	15.2	0.91	0.74	38.1
Approach		826	5.7	0.630	35.0	LOS D	8.4	62.1	0.81	0.78	44.7
East: Summerhill Rd											
4	L2	50	0.0	0.051	14.5	LOS B	0.9	6.3	0.44	0.68	58.2
5	T1	371	5.9	0.439	42.9	LOS D	5.7	41.6	0.96	0.76	41.6
6	R2	82	6.1	0.307	49.6	LOS D	3.7	27.0	0.93	0.77	37.2
Approach		503	5.4	0.439	41.1	LOS D	5.7	41.6	0.90	0.75	42.0
North: Koukoura Rd											
7	L2	274	5.8	0.200	8.4	LOS A	1.8	13.0	0.22	0.67	62.6
8	T1	1241	6.0	0.810	40.6	LOS D	21.1	155.2	0.99	0.93	42.6
9	R2	543	3.3	0.534	40.6	LOS D	11.3	81.6	0.90	0.82	41.0
Approach		2058	5.2	0.810	36.3	LOS D	21.1	155.2	0.86	0.87	44.0
West: Summerhill Rd											
10	L2	133	6.0	0.119	9.5	LOS A	1.3	9.4	0.28	0.67	61.4
11	T1	223	5.8	0.220	38.3	LOS D	3.1	23.1	0.89	0.69	43.9
12	R2	162	6.2	0.506	48.4	LOS D	7.3	54.0	0.95	0.80	37.4
Approach		518	6.0	0.506	34.1	LOS C	7.3	54.0	0.75	0.72	44.7
All Vehicles		3905	5.5	0.810	36.4	LOS D	21.1	155.2	0.84	0.81	44.0

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P11	South Stage 1	20	44.2	LOS E	0.1	0.1	0.94	0.94
P12	South Stage 2	20	42.4	LOS E	0.1	0.1	0.92	0.92
P21	East Stage 1	20	32.8	LOS D	0.0	0.0	0.81	0.81
P22	East Stage 2	20	31.2	LOS D	0.0	0.0	0.79	0.79
P31	North Stage 1	20	44.2	LOS E	0.1	0.1	0.94	0.94
P32	North Stage 2	20	39.6	LOS D	0.1	0.1	0.89	0.89
P41	West Stage 1	20	44.2	LOS E	0.1	0.1	0.94	0.94
P42	West Stage 2	20	42.4	LOS E	0.1	0.1	0.92	0.92
All Pedestrians		160	40.1	LOS E			0.89	0.89

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

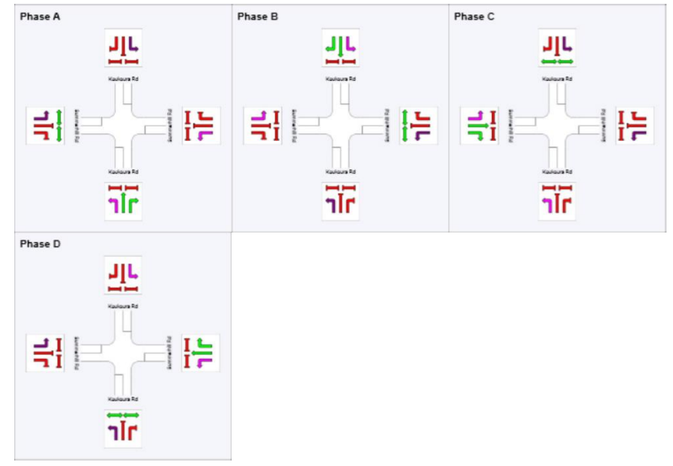
Site: Intersection 15 AM Reference

New Site
Signals - Fixed Time Cycle Time = 100 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Split Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	21	55	79
Green Time (sec)	15	28	18	15
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	21	34	24	21
Phase Split	21 %	34 %	24 %	21 %

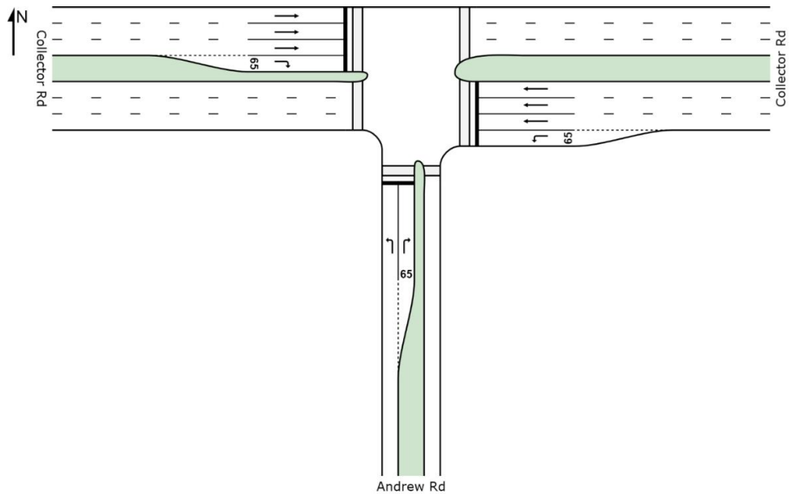


SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 16 AM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 16 AM Reference

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

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: Andrew Rd											
1	L2	61	6.6	0.051	9.7	LOS A	0.9	6.5	0.35	0.62	49.1
3	R2	54	5.6	0.105	29.9	LOS C	1.7	12.8	0.77	0.71	38.9
Approach		115	6.1	0.105	19.2	LOS B	1.7	12.8	0.55	0.66	43.7
East: Collector Rd											
4	L2	23	4.3	0.023	17.0	LOS B	0.5	3.3	0.48	0.68	47.5
5	T1	234	6.0	0.220	33.9	LOS C	3.0	21.8	0.89	0.69	45.9
Approach		257	5.8	0.220	32.4	LOS C	3.0	21.8	0.85	0.69	46.0
West: Collector Rd											
11	T1	405	5.9	0.381	35.2	LOS D	5.3	39.1	0.92	0.74	45.2
12	R2	65	6.2	0.113	30.3	LOS C	2.0	14.8	0.74	0.74	40.7
Approach		470	6.0	0.381	34.5	LOS C	5.3	39.1	0.89	0.74	44.5
All Vehicles		842	5.9	0.381	31.8	LOS C	5.3	39.1	0.83	0.71	44.8

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	20	37.4	LOS D	0.0	0.0	0.91	0.91
P2	East Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
P4	West Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
All Pedestrians		60	38.6	LOS D			0.93	0.93

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

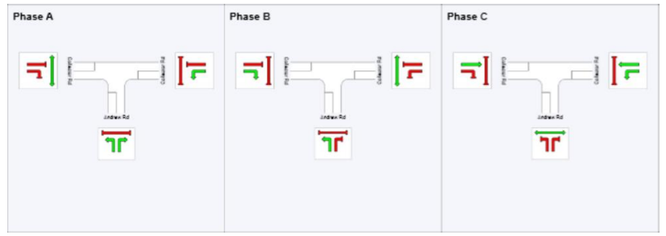
Site: Intersection 16 AM Reference

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C
Output Sequence: A, B, C

Phase Timing Results

Phase	A	B	C
Reference Phase	Yes	No	No
Phase Change Time (sec)	0	32	67
Green Time (sec)	26	29	17
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	32	35	23
Phase Split	36 %	39 %	26 %



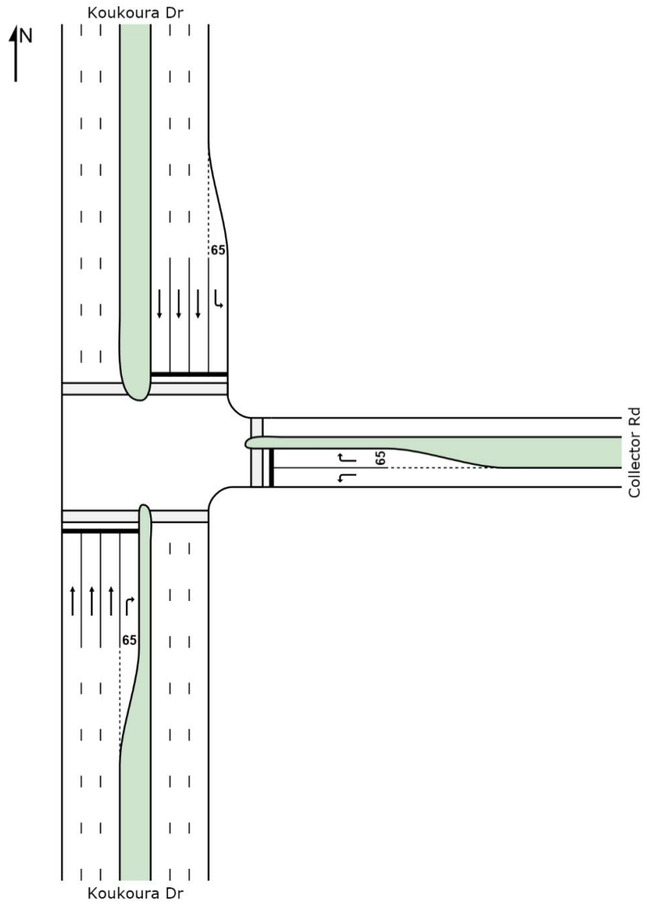
Normal Movement
Permitted/Opposed
Slip/Bypass-Lane Movement
Opposed Slip/Bypass-Lane
Stopped Movement
Turn On Red
Other Movement Class Running
Other Movement Class Stopped
Mixed Running & Stopped Movement Classes
Undetected Movement
Phase Transition Applied

SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 17 AM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 17 AM Reference

New Site
Signals - Fixed Time Cycle Time = 110 seconds (User-Given Cycle Time)

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: Koukoura Dr											
2	T1	631	6.0	0.333	29.3	LOS C	8.4	61.9	0.79	0.66	48.7
3	R2	57	5.3	0.121	40.3	LOS D	2.3	17.0	0.80	0.74	36.7
Approach		688	6.0	0.333	30.2	LOS C	8.4	61.9	0.79	0.67	47.4
East: Collector Rd											
4	L2	134	6.0	0.136	17.1	LOS B	3.4	25.0	0.51	0.68	44.8
6	R2	149	6.0	0.354	42.6	LOS D	6.7	49.6	0.88	0.78	34.2
Approach		283	6.0	0.354	30.5	LOS C	6.7	49.6	0.70	0.73	38.5
North: Koukoura Dr											
7	L2	149	6.0	0.133	15.8	LOS B	3.2	23.4	0.43	0.72	48.2
8	T1	1256	6.0	0.680	33.6	LOS C	19.9	146.1	0.91	0.80	46.0
Approach		1405	6.0	0.680	31.7	LOS C	19.9	146.1	0.86	0.79	46.3
All Vehicles		2376	6.0	0.680	31.2	LOS C	19.9	146.1	0.82	0.75	45.5

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	20	49.2	LOS E	0.1	0.1	0.95	0.95
P2	East Full Crossing	20	30.6	LOS D	0.0	0.0	0.75	0.75
P3	North Full Crossing	20	49.2	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		60	43.0	LOS E			0.88	0.88

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

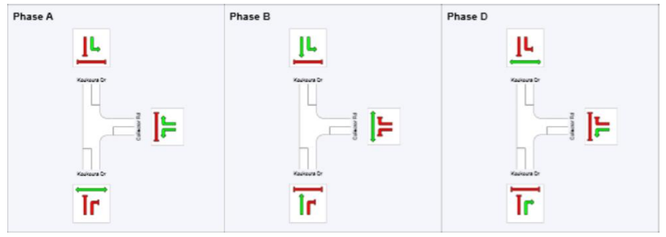
Site: Intersection 17 AM Reference

New Site
Signals - Fixed Time Cycle Time = 110 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, D
Output Sequence: A, B, D

Phase Timing Results

Phase	A	B	D
Reference Phase	Yes	No	No
Phase Change Time (sec)	0	32	75
Green Time (sec)	26	37	29
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	32	43	35
Phase Split	29 %	39 %	32 %

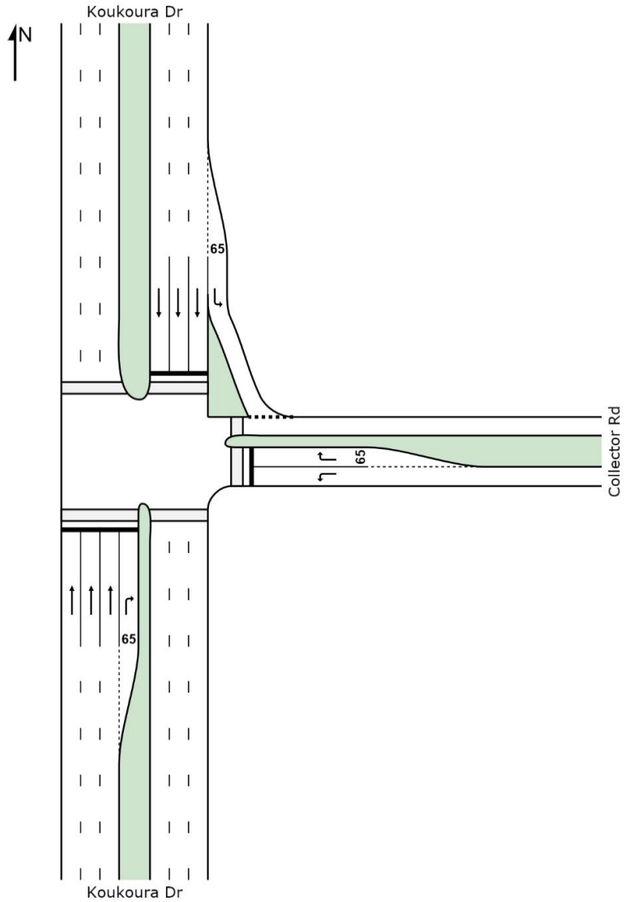


SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 18 AM Reference

New Site
Signals - Fixed Time



MOVEMENT SUMMARY

Site: Intersection 18 AM Reference

New Site
Signals - Fixed Time Cycle Time = 100 seconds (Practical Cycle Time)

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: Koukoura Dr											
2	T1	620	6.0	0.367	29.8	LOS C	8.0	58.6	0.83	0.69	48.4
3	R2	56	5.4	0.120	37.7	LOS D	2.1	15.3	0.80	0.74	37.6
Approach		676	5.9	0.367	30.4	LOS C	8.0	58.6	0.83	0.70	47.3
East: Collector Rd											
4	L2	129	6.2	0.125	14.7	LOS B	2.8	20.6	0.48	0.67	46.1
6	R2	69	5.8	0.149	35.4	LOS D	2.6	19.1	0.81	0.73	36.8
Approach		198	6.1	0.149	21.9	LOS C	2.8	20.6	0.59	0.69	42.3
North: Koukoura Dr											
7	L2	188	64.4	0.181	9.0	LOS A	0.9	9.5	0.18	0.64	53.6
8	T1	1344	4.8	0.817	39.6	LOS D	22.9	166.9	0.98	0.93	42.8
Approach		1532	12.1	0.817	35.8	LOS D	22.9	166.9	0.88	0.89	43.9
All Vehicles		2406	9.9	0.817	33.2	LOS C	22.9	166.9	0.84	0.82	44.7

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	20	44.2	LOS E	0.1	0.1	0.94	0.94
P2	East Full Crossing	20	31.2	LOS D	0.0	0.0	0.79	0.79
P3	North Full Crossing	20	44.2	LOS E	0.1	0.1	0.94	0.94
All Pedestrians		60	39.9	LOS D			0.89	0.89

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

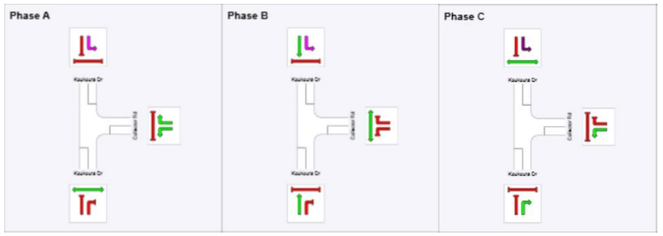
Site: Intersection 18 AM Reference

New Site
Signals - Fixed Time Cycle Time = 100 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C
Output Sequence: A, B, C

Phase Timing Results

Phase	A	B	C
Reference Phase	Yes	No	No
Phase Change Time (sec)	0	32	68
Green Time (sec)	26	30	26
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	32	36	32
Phase Split	32 %	36 %	32 %

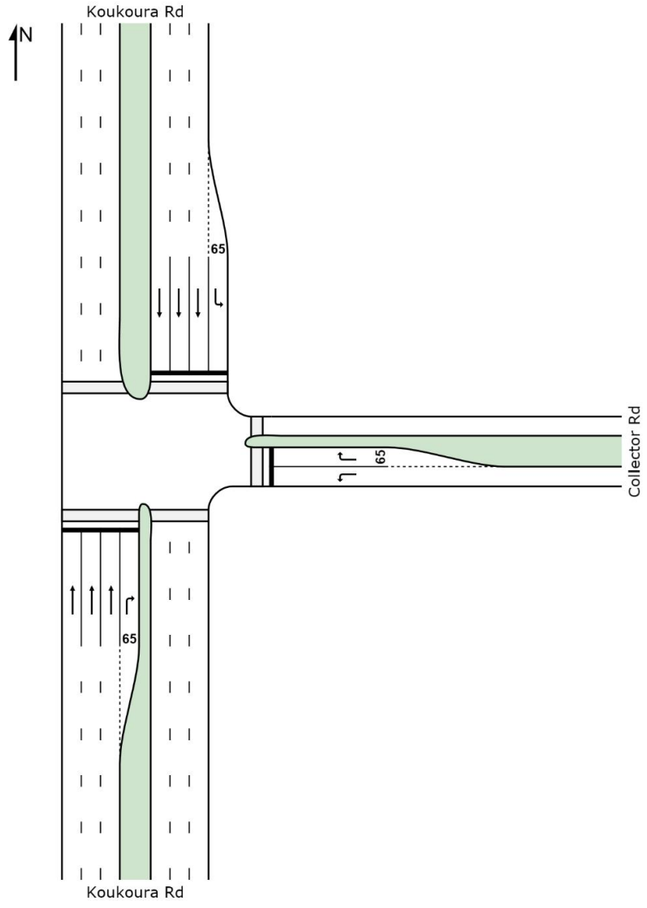


SITE LAYOUT

55

Site: Intersection 19 AM Reference

New Site
Signals - Fixed Time



MOVEMENT SUMMARY

56

Site: Intersection 19 AM Reference

New Site
Signals - Fixed Time Cycle Time = 105 seconds (User-Given Cycle Time)

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: Koukoura Rd											
2	T1	628	6.1	0.366	30.8	LOS C	8.4	61.9	0.83	0.69	47.7
3	R2	61	6.6	0.124	37.8	LOS D	2.3	17.3	0.78	0.74	37.6
Approach		689	6.1	0.366	31.4	LOS C	8.4	61.9	0.83	0.70	46.6
East: Collector Rd											
4	L2	56	5.4	0.054	14.6	LOS B	1.2	8.9	0.45	0.64	46.3
6	R2	48	6.3	0.109	37.5	LOS D	1.9	14.0	0.81	0.71	35.9
Approach		104	5.8	0.109	25.2	LOS C	1.9	14.0	0.62	0.68	40.8
North: Koukoura Rd											
7	L2	37	5.4	0.034	15.6	LOS B	0.7	5.4	0.42	0.69	48.4
8	T1	1449	5.9	0.851	44.4	LOS D	26.5	194.5	1.00	0.98	40.5
Approach		1486	5.9	0.851	43.7	LOS D	26.5	194.5	0.98	0.97	40.7
All Vehicles		2279	5.9	0.851	39.1	LOS D	26.5	194.5	0.92	0.87	42.3

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	20	46.7	LOS E	0.1	0.1	0.94	0.94
P2	East Full Crossing	20	32.0	LOS D	0.0	0.0	0.78	0.78
P3	North Full Crossing	20	46.7	LOS E	0.1	0.1	0.94	0.94
All Pedestrians		60	41.8	LOS E			0.89	0.89

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

57

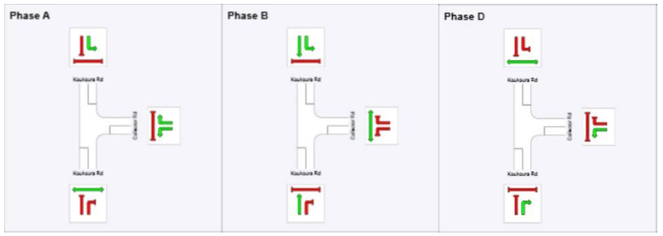
Site: Intersection 19 AM Reference

New Site
Signals - Fixed Time Cycle Time = 105 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, D
Output Sequence: A, B, D

Phase Timing Results

Phase	A	B	D
Reference Phase	Yes	No	No
Phase Change Time (sec)	0	32	70
Green Time (sec)	26	32	29
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	32	38	35
Phase Split	30 %	36 %	33 %

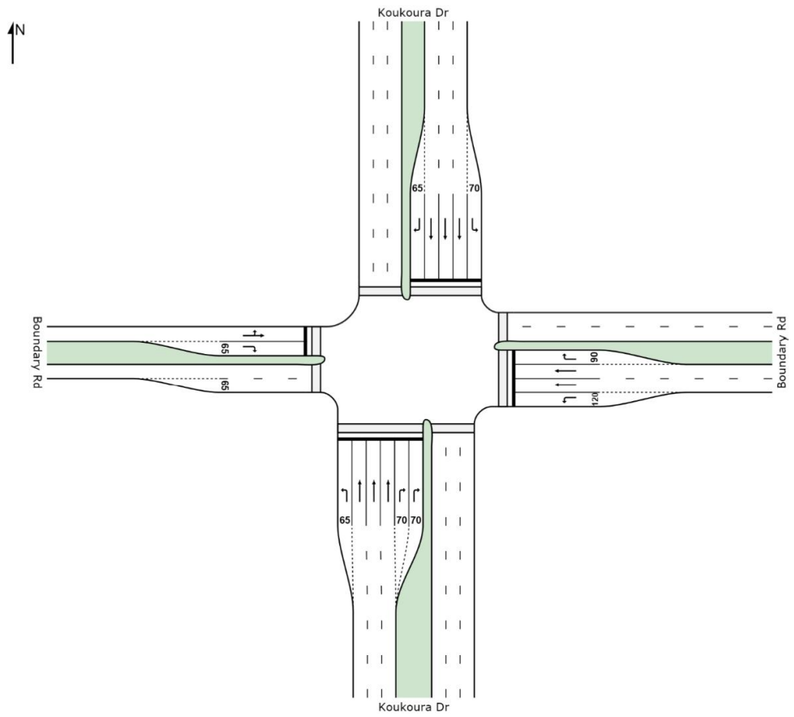


Normal Movement
Permitted/Opposed
Slip/Bypass-Lane Movement
Opposed Slip/Bypass-Lane
Stopped Movement
Turn On Red
Other Movement Class Running
Other Movement Class Stopped
Mixed Running & Stopped Movement Classes
Undetected Movement
Phase Transition Applied

SITE LAYOUT

Site: Intersection 20 AM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 20 AM Reference

New Site
Signals - Fixed Time Cycle Time = 110 seconds (User-Given Cycle Time)

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: Koukoura Dr											
1	L2	44	6.8	0.088	23.3	LOS C	1.0	7.3	0.77	0.72	43.9
2	T1	451	6.0	0.678	52.9	LOS D	8.2	60.0	1.00	0.83	37.2
3	R2	320	5.3	0.757	62.6	LOS E	9.0	65.8	1.00	0.87	31.4
Approach		815	5.8	0.757	55.1	LOS E	9.0	65.8	0.99	0.84	35.0
East: Boundary Rd											
4	L2	274	5.8	0.735	51.9	LOS D	14.4	105.9	0.99	0.87	33.2
5	T1	51	5.9	0.089	39.0	LOS D	1.5	11.1	0.83	0.64	34.8
6	R2	147	6.1	0.395	46.6	LOS D	6.9	50.9	0.91	0.79	35.2
Approach		472	5.9	0.735	48.8	LOS D	14.4	105.9	0.95	0.82	33.9
North: Koukoura Dr											
7	L2	218	6.0	0.421	41.1	LOS D	9.5	69.9	0.86	0.81	38.0
8	T1	1209	5.8	0.762	40.0	LOS D	21.2	155.4	0.96	0.87	42.8
9	R2	78	6.4	0.151	38.2	LOS D	3.1	22.9	0.78	0.75	37.4
Approach		1505	5.8	0.762	40.0	LOS D	21.2	155.4	0.94	0.85	41.7
West: Boundary Rd											
10	L2	91	5.5	0.523	48.6	LOS D	8.6	63.3	0.95	0.80	33.1
11	T1	84	6.0	0.523	44.5	LOS D	8.6	63.3	0.95	0.80	32.4
12	R2	96	6.3	0.330	49.2	LOS D	4.7	34.3	0.93	0.77	32.5
Approach		271	5.9	0.523	47.5	LOS D	8.6	63.3	0.94	0.79	32.7
All Vehicles		3063	5.8	0.762	46.1	LOS D	21.2	155.4	0.95	0.84	37.6

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P11	South Stage 1	20	47.3	LOS E	0.1	0.1	0.93	0.93
P12	South Stage 2	20	40.2	LOS E	0.1	0.1	0.86	0.86
P21	East Stage 1	20	34.4	LOS D	0.0	0.0	0.79	0.79
P22	East Stage 2	20	30.6	LOS D	0.0	0.0	0.75	0.75
P31	North Stage 1	20	49.2	LOS E	0.1	0.1	0.95	0.95
P32	North Stage 2	20	44.6	LOS E	0.1	0.1	0.90	0.90
P41	West Stage 1	20	46.4	LOS E	0.1	0.1	0.92	0.92
P42	West Stage 2	20	46.4	LOS E	0.1	0.1	0.92	0.92
All Pedestrians		160	42.4	LOS E			0.88	0.88

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

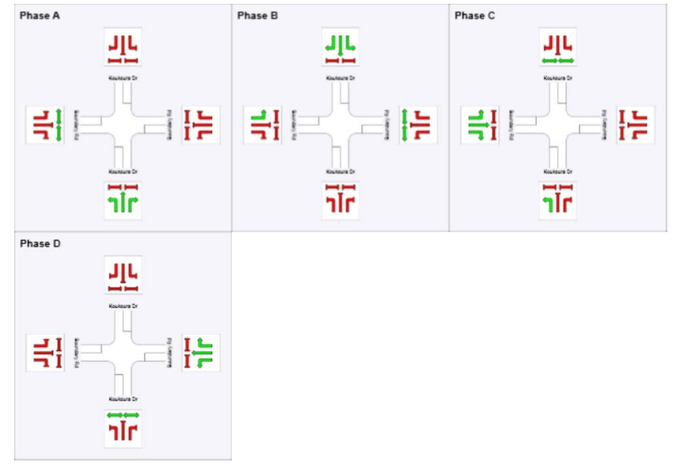
Site: Intersection 20 AM Reference

New Site
Signals - Fixed Time Cycle Time = 110 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: Split Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	19	57	81
Green Time (sec)	13	32	18	23
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	19	38	24	29
Phase Split	17 %	35 %	22 %	26 %

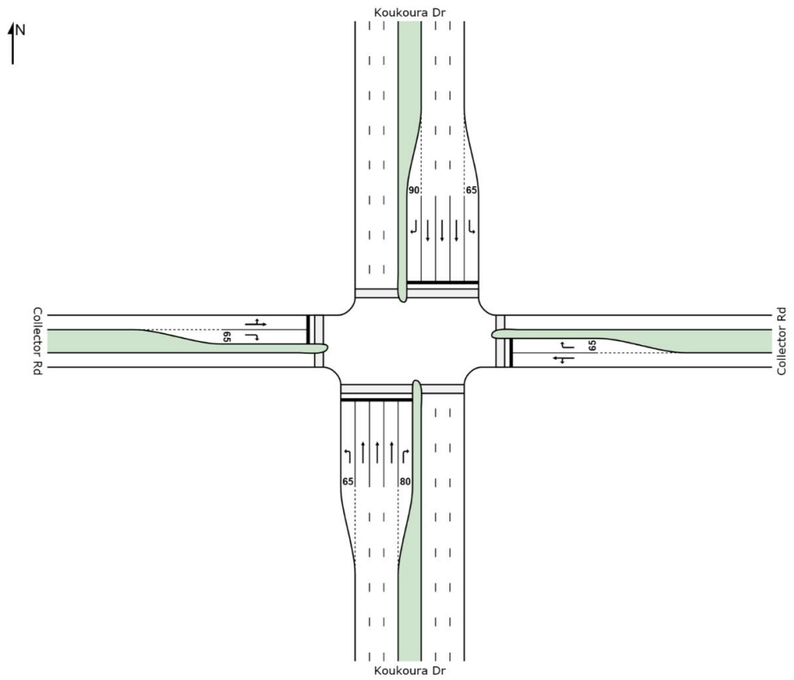


SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 21 AM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 21 AM Reference

New Site
Signals - Fixed Time Cycle Time = 110 seconds (User-Given Cycle Time)

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: Koukoura Dr											
1	L2	100	6.0	0.137	28.7	LOS C	3.3	24.4	0.66	0.75	41.2
2	T1	646	6.0	0.383	32.8	LOS C	9.2	67.4	0.84	0.70	46.5
3	R2	94	6.4	0.323	51.9	LOS D	4.6	33.6	0.93	0.78	32.8
Approach		840	6.1	0.383	34.5	LOS C	9.2	67.4	0.83	0.72	43.8
East: Collector Rd											
4	L2	96	6.3	0.327	39.9	LOS D	6.8	50.1	0.85	0.75	35.6
5	T1	60	6.7	0.327	35.3	LOS D	6.8	50.1	0.85	0.75	32.9
6	R2	41	4.9	0.105	24.0	LOS C	1.0	7.2	0.83	0.70	41.7
Approach		197	6.1	0.327	35.2	LOS D	6.8	50.1	0.85	0.74	35.8
North: Koukoura Dr											
7	L2	45	6.7	0.062	27.9	LOS C	1.4	10.7	0.63	0.72	41.6
8	T1	1282	6.0	0.766	39.6	LOS D	21.8	160.8	0.97	0.87	42.8
9	R2	215	6.0	0.738	57.6	LOS E	11.7	85.8	1.00	0.86	31.2
Approach		1542	6.0	0.766	41.7	LOS D	21.8	160.8	0.96	0.87	40.7
West: Collector Rd											
10	L2	95	6.3	0.269	39.3	LOS D	5.5	40.3	0.84	0.74	35.6
11	T1	33	6.1	0.269	34.7	LOS C	5.5	40.3	0.84	0.74	32.9
12	R2	142	6.3	0.366	25.5	LOS C	3.7	27.4	0.89	0.77	40.8
Approach		270	6.3	0.366	31.5	LOS C	5.5	40.3	0.87	0.75	37.8
All Vehicles		2849	6.1	0.766	38.2	LOS D	21.8	160.8	0.91	0.80	40.9

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	20	49.2	LOS E	0.1	0.1	0.95	0.95
P2	East Full Crossing	20	33.6	LOS D	0.0	0.0	0.78	0.78
P3	North Full Crossing	20	49.2	LOS E	0.1	0.1	0.95	0.95
P4	West Full Crossing	20	33.6	LOS D	0.0	0.0	0.78	0.78
All Pedestrians		80	41.4	LOS E			0.86	0.86

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

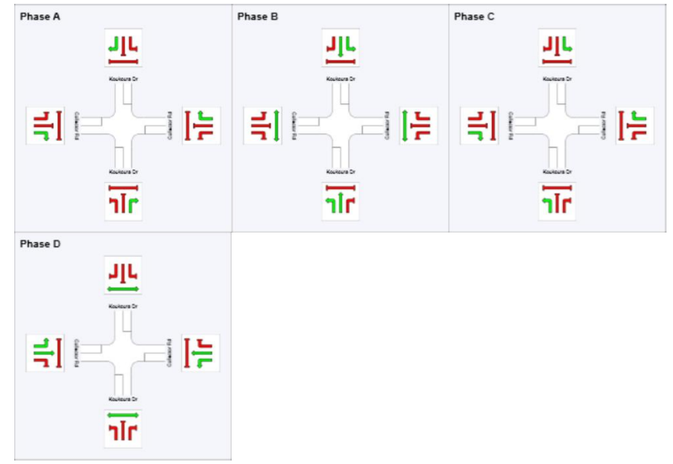
Site: Intersection 21 AM Reference

New Site
Signals - Fixed Time Cycle Time = 110 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	24	63	75
Green Time (sec)	18	33	6	29
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	24	39	12	35
Phase Split	22 %	35 %	11 %	32 %



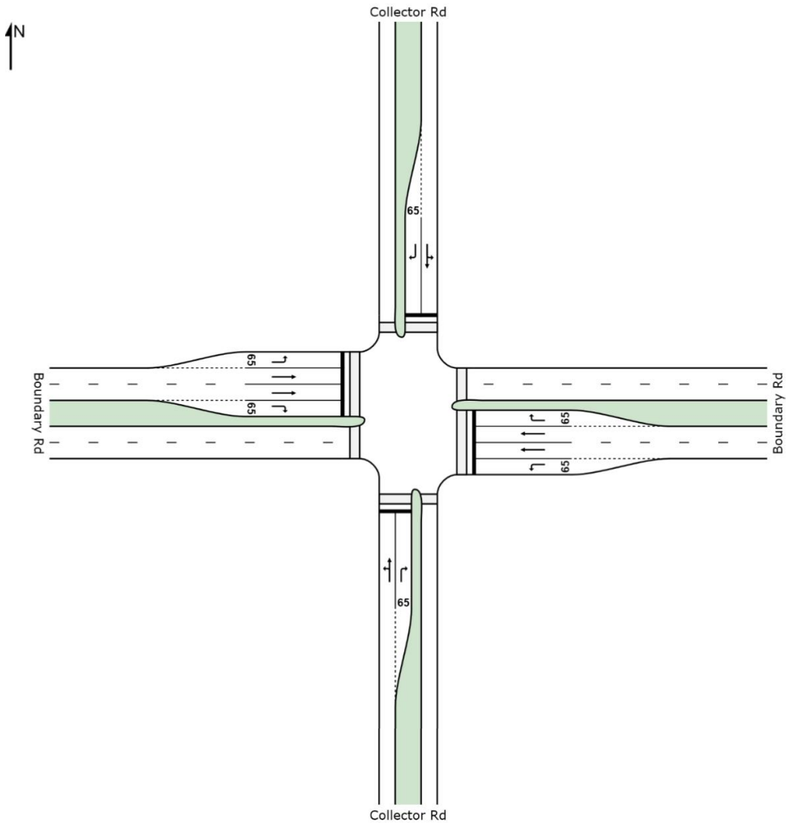
SIDRA INTERSECTION 6

SITE LAYOUT

64

Site: Intersection 22 AM Reference

New Site
Signals - Fixed Time



Created: Thursday, 24 July 2014 9:12:57 AM
SIDRA INTERSECTION 6.0.22.4722
Project: E:\SIDRA MODEL\Reference Case\MODELS\Reference\Intersection 22 2046.sip6
8000945, VICROADS, NETWORK / Enterprise

SIDRA INTERSECTION 6

MOVEMENT SUMMARY

65

Site: Intersection 22 AM Reference

New Site
Signals - Fixed Time Cycle Time = 80 seconds (Practical Cycle Time)

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: Collector Rd											
1	L2	69	5.8	0.197	24.6	LOS C	3.2	23.4	0.76	0.69	36.0
2	T1	43	7.0	0.197	21.7	LOS C	3.2	23.4	0.76	0.69	34.6
3	R2	21	4.8	0.117	40.3	LOS D	0.8	5.7	0.94	0.69	31.0
Approach		133	6.0	0.197	26.1	LOS C	3.2	23.4	0.79	0.69	34.7
East: Boundary Rd											
4	L2	51	2.0	0.139	34.5	LOS C	1.7	11.9	0.86	0.73	33.2
5	T1	289	5.9	0.385	30.7	LOS C	5.0	37.0	0.91	0.73	39.9
6	R2	156	5.8	0.389	20.9	LOS C	3.0	22.1	0.89	0.78	41.3
Approach		496	5.4	0.389	28.0	LOS C	5.0	37.0	0.90	0.75	39.5
North: Collector Rd											
7	L2	191	5.8	0.561	29.7	LOS C	10.6	76.9	0.89	0.80	37.5
8	T1	129	2.3	0.561	26.5	LOS C	10.6	76.9	0.89	0.80	33.1
9	R2	45	6.7	0.254	42.5	LOS D	1.7	12.7	0.96	0.73	32.9
Approach		365	4.7	0.561	30.1	LOS C	10.6	76.9	0.90	0.79	35.3
West: Boundary Rd											
10	L2	29	6.9	0.082	34.1	LOS C	0.9	6.9	0.84	0.71	35.9
11	T1	441	5.9	0.587	32.2	LOS C	8.1	59.3	0.96	0.79	39.2
12	R2	235	3.8	0.578	21.6	LOS C	4.8	34.5	0.94	0.81	37.6
Approach		705	5.2	0.587	28.8	LOS C	8.1	59.3	0.95	0.79	38.5
All Vehicles		1699	5.2	0.587	28.6	LOS C	10.6	76.9	0.91	0.77	37.7

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	50	33.4	LOS D	0.1	0.1	0.91	0.91
P2	East Full Crossing	50	35.2	LOS D	0.1	0.1	0.94	0.94
P3	North Full Crossing	50	33.4	LOS D	0.1	0.1	0.91	0.91
P4	West Full Crossing	50	35.2	LOS D	0.1	0.1	0.94	0.94
All Pedestrians		200	34.3	LOS D			0.93	0.93

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.

Processed: Wednesday, 27 August 2014 1:00:13 PM
SIDRA INTERSECTION 6.0.22.4722
Project: P:\60313908\4. Tech work area\4.5 Planning\SIDRA MODEL\Reference Case\MODELS\Reference \Intersection 22 2046.sip6
8000907, AECOM, NETWORK / Enterprise

SIDRA INTERSECTION 6

PHASING SUMMARY

66

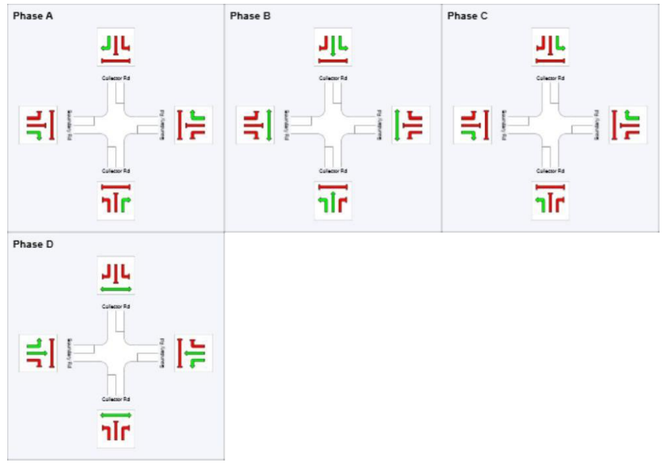
Site: Intersection 22 AM Reference

New Site
Signals - Fixed Time Cycle Time = 80 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	14	42	58
Green Time (sec)	8	22	10	16
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	14	28	16	22
Phase Split	18 %	35 %	20 %	28 %



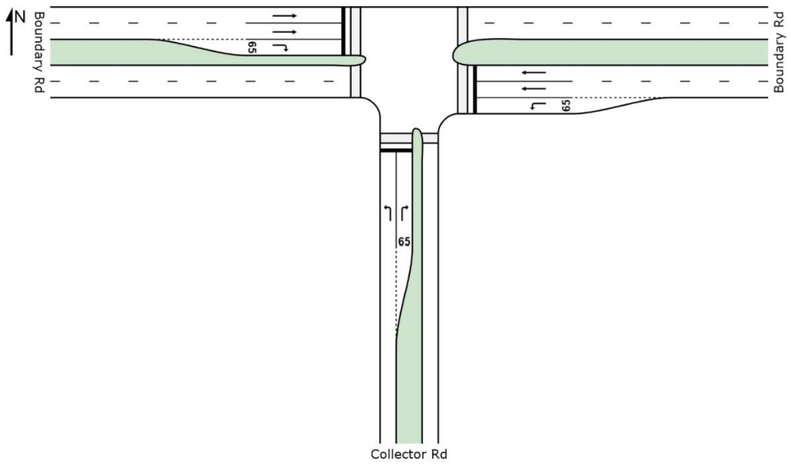
Processed: Wednesday, 27 August 2014 1:00:13 PM
SIDRA INTERSECTION 6.0.22.4722
Project: P:\60313908\4. Tech work area\4.5 Planning\SIDRA MODEL\Reference Case\MODELS\Reference \Intersection 22 2046.sip6
8000907, AECOM, NETWORK / Enterprise

SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 23 AM Reference

New Site
Signals - Fixed Time



MOVEMENT SUMMARY

Site: Intersection 23 AM Reference

New Site
Signals - Fixed Time Cycle Time = 80 seconds (Practical Cycle Time)

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: Collector Rd											
1	L2	106	5.7	0.095	11.0	LOS B	1.6	11.9	0.42	0.65	45.7
3	R2	107	5.6	0.228	29.9	LOS C	3.3	24.4	0.82	0.75	37.0
Approach		213	5.6	0.228	20.5	LOS C	3.3	24.4	0.62	0.70	40.8
East: Boundary Rd											
4	L2	361	4.4	0.356	15.9	LOS B	7.7	55.8	0.59	0.75	43.8
5	T1	340	5.9	0.402	29.1	LOS C	5.8	42.6	0.90	0.73	40.6
Approach		701	5.1	0.402	22.3	LOS C	7.7	55.8	0.74	0.74	42.1
West: Boundary Rd											
11	T1	472	5.9	0.559	30.4	LOS C	8.4	61.7	0.94	0.78	40.0
12	R2	161	6.2	0.315	30.0	LOS C	5.0	36.9	0.83	0.78	37.4
Approach		633	6.0	0.559	30.3	LOS C	8.4	61.7	0.91	0.78	39.3
All Vehicles		1547	5.6	0.559	25.3	LOS C	8.4	61.7	0.79	0.75	40.8

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	50	31.6	LOS D	0.1	0.1	0.89	0.89
P2	East Full Crossing	50	34.3	LOS D	0.1	0.1	0.93	0.93
P4	West Full Crossing	50	34.3	LOS D	0.1	0.1	0.93	0.93
All Pedestrians		150	33.4	LOS D			0.91	0.91

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

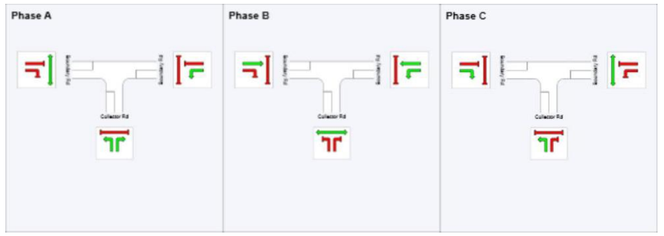
Site: Intersection 23 AM Reference

New Site
Signals - Fixed Time Cycle Time = 80 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C
Output Sequence: A, B, C

Phase Timing Results

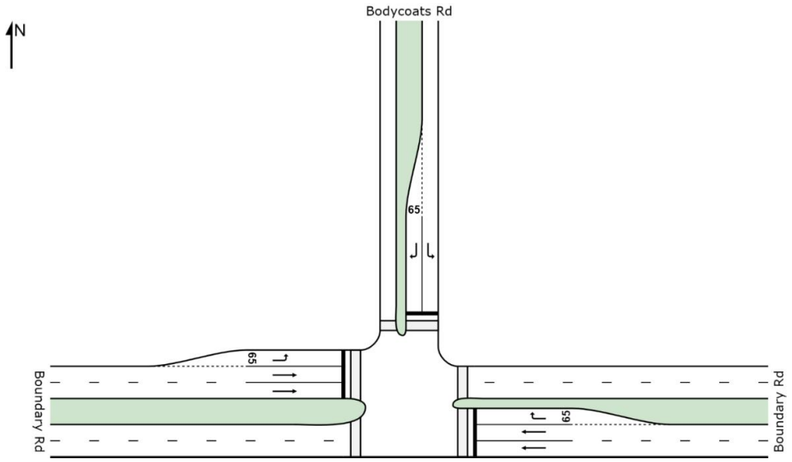
Phase	A	B	C
Reference Phase	Yes	No	No
Phase Change Time (sec)	0	27	51
Green Time (sec)	21	18	23
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	27	24	29
Phase Split	34 %	30 %	36 %



SITE LAYOUT

Site: Intersection 24 AM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 24 AM Reference

New Site
Signals - Fixed Time Cycle Time = 80 seconds (Practical Cycle Time)

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
East: Boundary Rd											
5	T1	418	6.0	0.495	29.9	LOS C	7.3	53.7	0.92	0.76	40.2
6	R2	27	7.4	0.053	27.9	LOS C	0.8	5.7	0.75	0.70	38.2
Approach		445	6.1	0.495	29.7	LOS C	7.3	53.7	0.91	0.76	40.1
North: Bodycoats Rd											
7	L2	76	6.6	0.069	10.8	LOS B	1.1	8.5	0.41	0.64	45.7
9	R2	187	5.9	0.400	31.3	LOS C	6.1	45.2	0.87	0.78	36.4
Approach		263	6.1	0.400	25.4	LOS C	6.1	45.2	0.74	0.74	38.7
West: Boundary Rd											
10	L2	61	6.6	0.061	14.0	LOS B	1.1	7.9	0.48	0.67	44.7
11	T1	514	6.0	0.609	30.8	LOS C	9.3	68.2	0.95	0.79	39.8
Approach		575	6.1	0.609	29.0	LOS C	9.3	68.2	0.90	0.78	40.3
All Vehicles		1283	6.1	0.609	28.5	LOS C	9.3	68.2	0.87	0.76	39.9

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P2	East Full Crossing	20	34.3	LOS D	0.0	0.0	0.93	0.93
P3	North Full Crossing	20	31.5	LOS D	0.0	0.0	0.89	0.89
P4	West Full Crossing	20	34.3	LOS D	0.0	0.0	0.93	0.93
All Pedestrians		60	33.3	LOS D			0.91	0.91

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

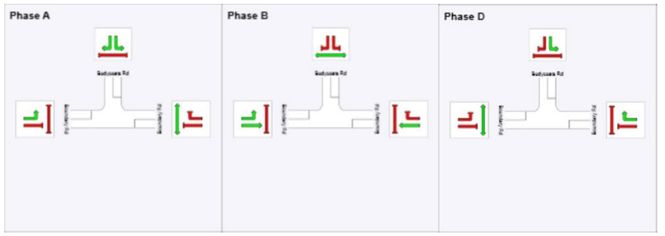
Site: Intersection 24 AM Reference

New Site
Signals - Fixed Time Cycle Time = 80 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, D
Output Sequence: A, B, D

Phase Timing Results

Phase	A	B	D
Reference Phase	Yes	No	No
Phase Change Time (sec)	0	27	51
Green Time (sec)	21	18	23
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	27	24	29
Phase Split	34 %	30 %	36 %



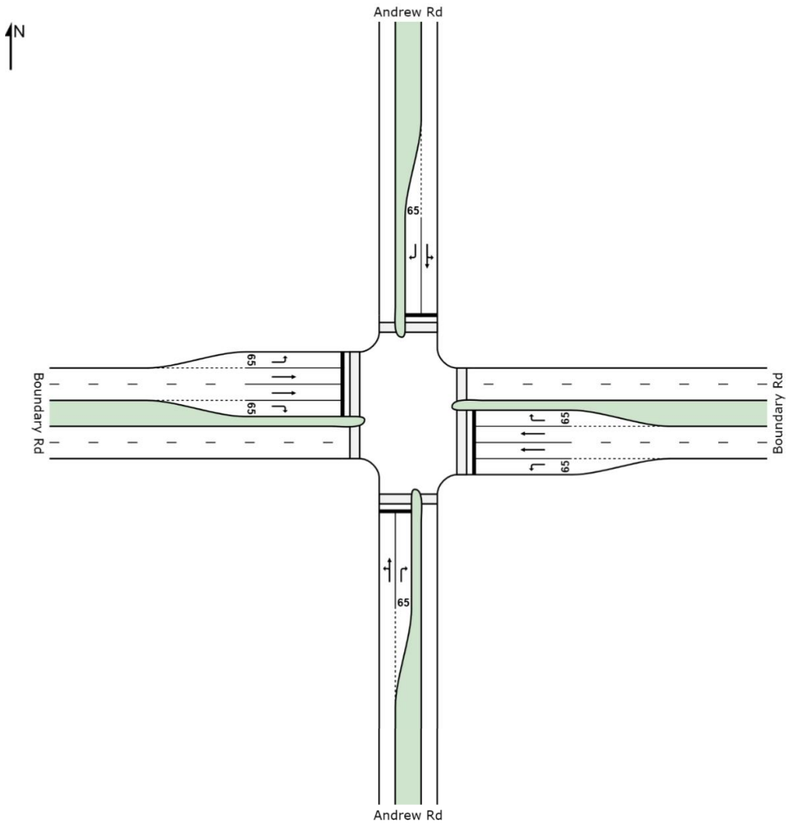
Normal Movement
Permitted/Opposed
Slip/Bypass-Lane Movement
Opposed Slip/Bypass-Lane
Stopped Movement
Turn On Red
Other Movement Class Running
Other Movement Class Stopped
Mixed Running & Stopped Movement Classes
Undetected Movement
Phase Transition Applied

SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 26 AM Reference

New Site
Signals - Fixed Time



MOVEMENT SUMMARY

Site: Intersection 26 AM Reference

New Site
Signals - Fixed Time Cycle Time = 80 seconds (Practical Cycle Time)

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: Andrew Rd											
1	L2	22	4.5	0.073	24.7	LOS C	1.1	8.3	0.72	0.62	40.0
2	T1	20	5.0	0.073	20.1	LOS C	1.1	8.3	0.72	0.62	38.3
3	R2	32	6.3	0.206	43.4	LOS D	1.2	9.1	0.96	0.72	32.7
Approach		74	5.4	0.206	31.5	LOS C	1.2	9.1	0.83	0.66	36.1
East: Boundary Rd											
4	L2	37	5.4	0.050	20.6	LOS C	0.9	6.3	0.63	0.69	41.4
5	T1	156	12.8	0.173	25.7	LOS C	2.4	18.8	0.82	0.64	42.2
6	R2	62	6.5	0.466	47.0	LOS D	2.5	18.6	1.00	0.75	31.9
Approach		255	10.2	0.466	30.1	LOS C	2.5	18.8	0.84	0.67	39.0
North: Andrew Rd											
7	L2	157	5.7	0.275	22.8	LOS C	5.0	36.6	0.73	0.73	40.1
8	T1	28	7.1	0.275	18.2	LOS B	5.0	36.6	0.73	0.73	38.4
9	R2	86	5.8	0.551	45.3	LOS D	3.5	25.5	1.00	0.78	32.2
Approach		271	5.9	0.551	29.4	LOS C	5.0	36.6	0.81	0.74	37.0
West: Boundary Rd											
10	L2	54	5.6	0.073	20.8	LOS C	1.3	9.3	0.63	0.70	41.3
11	T1	544	6.1	0.580	29.0	LOS C	9.5	70.2	0.93	0.78	40.6
12	R2	21	4.8	0.156	45.4	LOS D	0.8	6.0	0.97	0.70	32.3
Approach		619	6.0	0.580	28.8	LOS C	9.5	70.2	0.91	0.77	40.3
All Vehicles		1219	6.8	0.580	29.4	LOS C	9.5	70.2	0.87	0.74	39.0

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	50	29.8	LOS C	0.1	0.1	0.86	0.86
P2	East Full Crossing	50	34.3	LOS D	0.1	0.1	0.93	0.93
P3	North Full Crossing	50	29.8	LOS C	0.1	0.1	0.86	0.86
P4	West Full Crossing	50	34.3	LOS D	0.1	0.1	0.93	0.93
All Pedestrians		200	32.1	LOS D			0.90	0.90

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

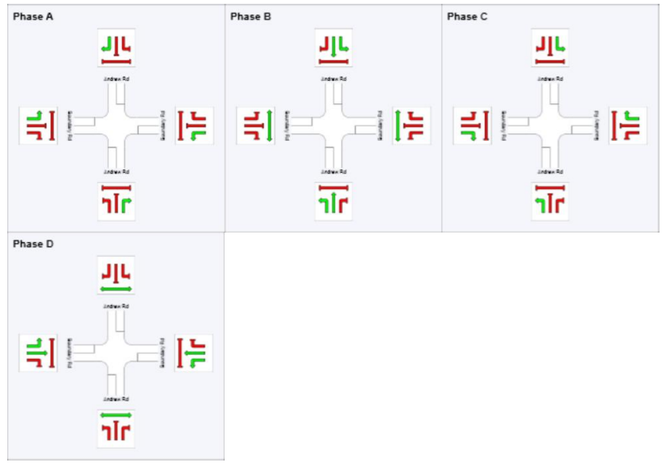
Site: Intersection 26 AM Reference

New Site
Signals - Fixed Time Cycle Time = 80 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

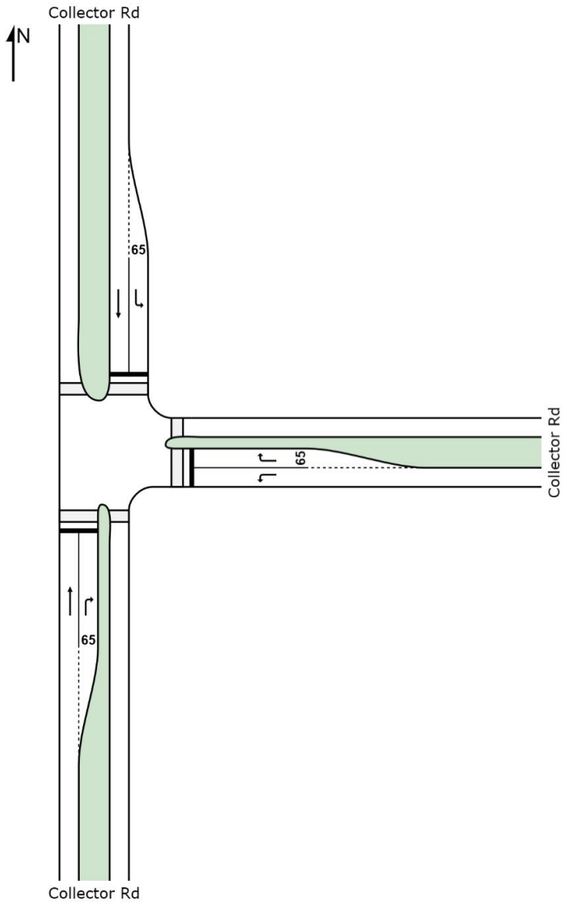
Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	13	42	54
Green Time (sec)	7	23	6	20
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	13	29	12	26
Phase Split	16 %	36 %	15 %	33 %



SITE LAYOUT

Site: Intersection 27 AM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 27 AM Reference

New Site
Signals - Fixed Time Cycle Time = 70 seconds (Practical Cycle Time)

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: Collector Rd											
2	T1	26	0.0	0.062	25.1	LOS C	0.7	5.0	0.83	0.64	34.1
3	R2	35	0.0	0.060	22.7	LOS C	0.8	5.9	0.73	0.69	34.9
Approach		61	0.0	0.062	23.7	LOS C	0.8	5.9	0.77	0.67	34.5
East: Collector Rd											
4	L2	21	0.0	0.018	9.0	LOS A	0.3	1.9	0.41	0.57	39.7
6	R2	20	0.0	0.050	27.3	LOS C	0.6	3.9	0.82	0.67	33.0
Approach		41	0.0	0.050	17.9	LOS B	0.6	3.9	0.61	0.62	36.1
North: Collector Rd											
7	L2	20	0.0	0.021	12.2	LOS B	0.3	2.3	0.51	0.59	35.4
8	T1	24	0.0	0.057	25.1	LOS C	0.7	4.6	0.82	0.65	34.4
Approach		44	0.0	0.057	19.3	LOS B	0.7	4.6	0.68	0.63	34.8
All Vehicles		146	0.0	0.062	20.7	LOS C	0.8	5.9	0.70	0.64	35.1

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	50	29.3	LOS C	0.1	0.1	0.92	0.92
P2	East Full Crossing	50	29.3	LOS C	0.1	0.1	0.92	0.92
P3	North Full Crossing	50	25.8	LOS C	0.1	0.1	0.86	0.86
All Pedestrians		150	28.1	LOS C			0.90	0.90

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

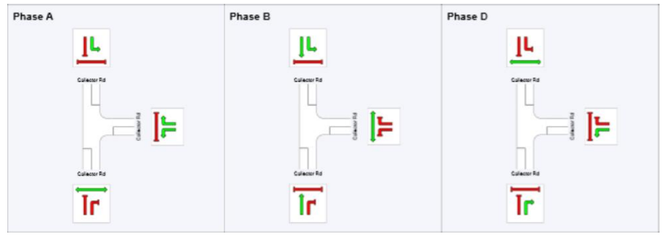
Site: Intersection 27 AM Reference

New Site
Signals - Fixed Time Cycle Time = 70 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing (phase reduction applied)
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, D

Phase Timing Results

Phase	A	B	D
Reference Phase	Yes	No	No
Phase Change Time (sec)	0	21	42
Green Time (sec)	15	15	22
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	21	21	28
Phase Split	30 %	30 %	40 %

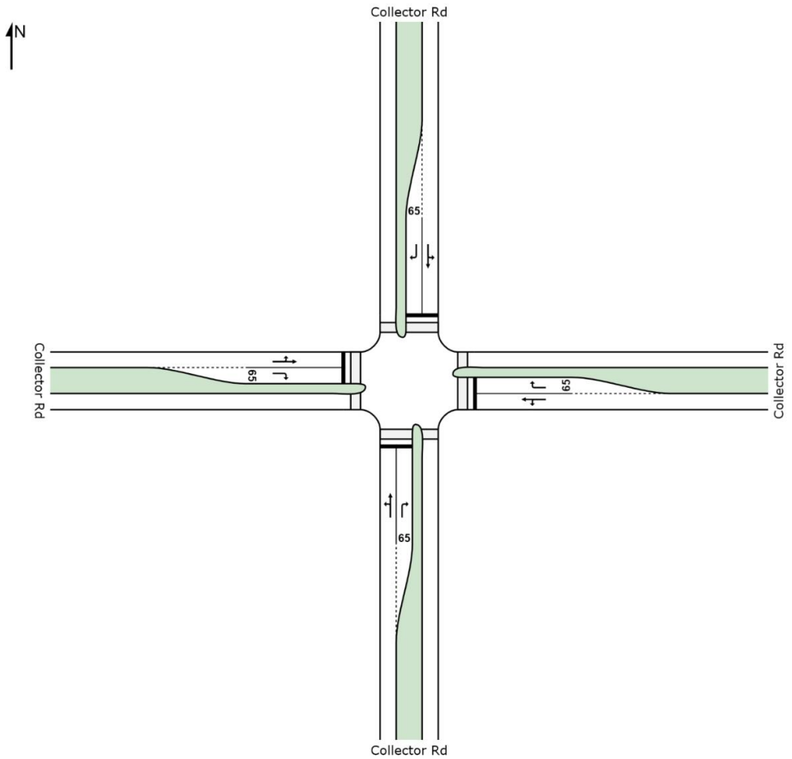


SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 28 AM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 28 AM Reference

New Site
Signals - Fixed Time Cycle Time = 70 seconds (Practical Cycle Time)

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: Collector Rd											
1	L2	64	0.0	0.344	26.3	LOS C	5.2	36.3	0.84	0.72	34.8
2	T1	124	0.0	0.344	21.7	LOS C	5.2	36.3	0.84	0.72	37.9
3	R2	37	0.0	0.232	39.0	LOS D	1.3	8.8	0.97	0.72	30.2
Approach		225	0.0	0.344	25.9	LOS C	5.2	36.3	0.86	0.72	35.5
East: Collector Rd											
4	L2	93	0.0	0.205	23.4	LOS C	3.0	20.8	0.78	0.71	34.5
5	T1	22	0.0	0.205	19.9	LOS B	3.0	20.8	0.78	0.71	32.0
6	R2	27	0.0	0.170	37.6	LOS D	0.9	6.4	0.96	0.70	30.2
Approach		142	0.0	0.205	25.5	LOS C	3.0	20.8	0.82	0.71	33.2
North: Collector Rd											
7	L2	20	0.0	0.576	28.2	LOS C	9.2	64.2	0.91	0.77	34.6
8	T1	286	0.0	0.576	23.6	LOS C	9.2	64.2	0.91	0.77	37.7
9	R2	20	0.0	0.126	38.4	LOS D	0.7	4.7	0.95	0.69	30.3
Approach		326	0.0	0.576	24.8	LOS C	9.2	64.2	0.91	0.77	36.9
West: Collector Rd											
10	L2	20	0.0	0.087	25.8	LOS C	1.1	7.5	0.80	0.65	34.1
11	T1	20	0.0	0.087	22.4	LOS C	1.1	7.5	0.80	0.65	31.7
12	R2	42	0.0	0.264	38.1	LOS D	1.4	10.1	0.97	0.73	30.1
Approach		82	0.0	0.264	31.2	LOS C	1.4	10.1	0.89	0.69	31.4
All Vehicles		775	0.0	0.576	25.9	LOS C	9.2	64.2	0.88	0.73	35.1

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	50	29.3	LOS C	0.1	0.1	0.92	0.92
P2	East Full Crossing	50	25.8	LOS C	0.1	0.1	0.86	0.86
P3	North Full Crossing	50	29.3	LOS C	0.1	0.1	0.92	0.92
P4	West Full Crossing	50	25.8	LOS C	0.1	0.1	0.86	0.86
All Pedestrians		200	27.5	LOS C			0.89	0.89

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

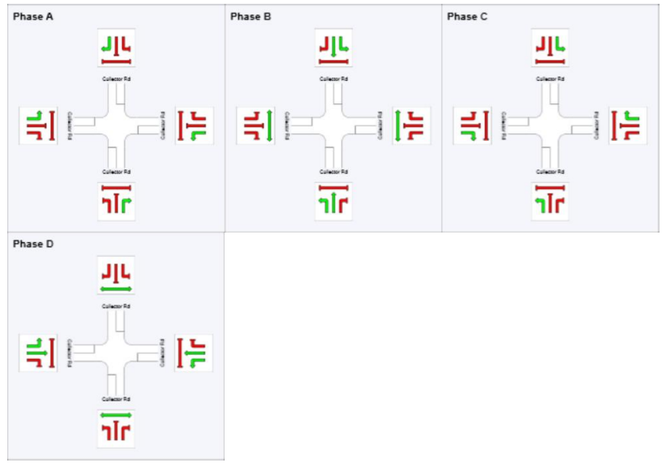
Site: Intersection 28 AM Reference

New Site
Signals - Fixed Time Cycle Time = 70 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	12	37	49
Green Time (sec)	6	19	6	15
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	12	25	12	21
Phase Split	17 %	36 %	17 %	30 %



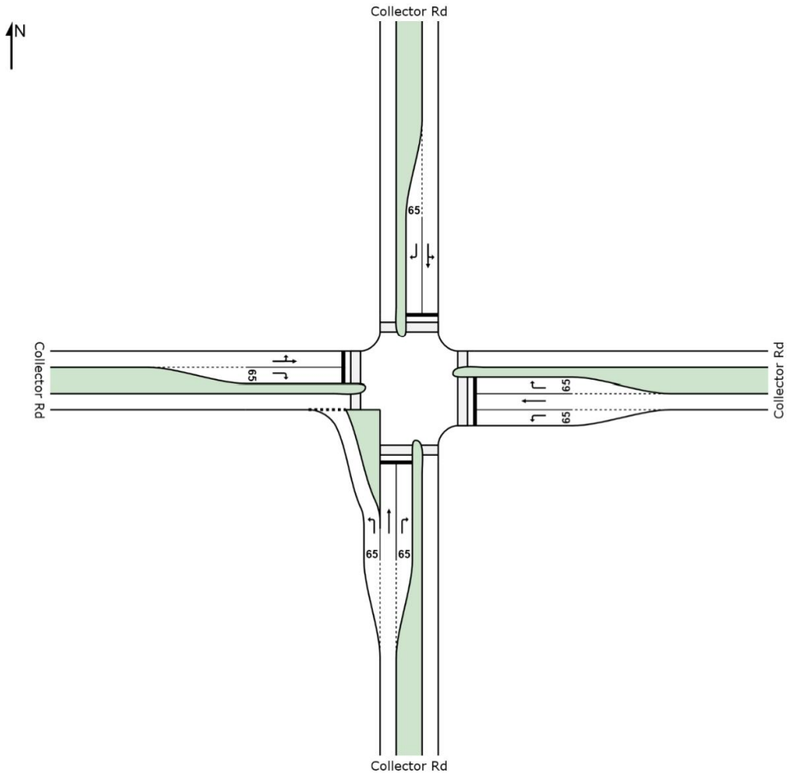
SIDRA INTERSECTION 6

SITE LAYOUT

82

Site: Intersection 29 AM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

83

Site: Intersection 29 AM Reference

New Site
Signals - Fixed Time Cycle Time = 70 seconds (Practical Cycle Time)

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: Collector Rd											
1	L2	20	0.0	0.014	3.9	LOS A	0.1	0.6	0.21	0.47	42.3
2	T1	48	0.0	0.091	21.6	LOS C	1.2	8.6	0.78	0.64	35.5
3	R2	20	0.0	0.126	37.2	LOS D	0.7	4.7	0.95	0.69	30.4
Approach		88	0.0	0.126	21.2	LOS C	1.2	8.6	0.69	0.62	35.4
East: Collector Rd											
4	L2	20	0.0	0.028	18.8	LOS B	0.4	2.9	0.64	0.65	36.3
5	T1	52	0.0	0.124	24.4	LOS C	1.5	10.2	0.84	0.64	37.5
6	R2	29	0.0	0.182	38.7	LOS D	1.0	6.9	0.96	0.71	32.4
Approach		101	0.0	0.182	27.4	LOS C	1.5	10.2	0.84	0.66	35.7
North: Collector Rd											
7	L2	139	0.0	0.460	25.7	LOS C	7.4	51.5	0.85	0.77	37.3
8	T1	124	0.0	0.460	22.4	LOS C	7.4	51.5	0.85	0.77	34.4
9	R2	20	0.0	0.126	38.4	LOS D	0.7	4.7	0.95	0.69	32.4
Approach		283	0.0	0.460	25.2	LOS C	7.4	51.5	0.86	0.77	35.6
West: Collector Rd											
10	L2	20	0.0	0.115	27.2	LOS C	1.4	9.7	0.81	0.66	37.2
11	T1	31	0.0	0.115	22.6	LOS C	1.4	9.7	0.81	0.66	37.5
12	R2	20	0.0	0.126	38.4	LOS D	0.7	4.7	0.95	0.69	30.5
Approach		71	0.0	0.126	28.3	LOS C	1.4	9.7	0.85	0.67	35.1
All Vehicles		543	0.0	0.460	25.3	LOS C	7.4	51.5	0.83	0.71	35.5

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	50	29.3	LOS C	0.1	0.1	0.92	0.92
P2	East Full Crossing	50	28.4	LOS C	0.1	0.1	0.90	0.90
P3	North Full Crossing	50	29.3	LOS C	0.1	0.1	0.92	0.92
P4	West Full Crossing	50	25.8	LOS C	0.1	0.1	0.86	0.86
All Pedestrians		200	28.2	LOS C			0.90	0.90

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

84

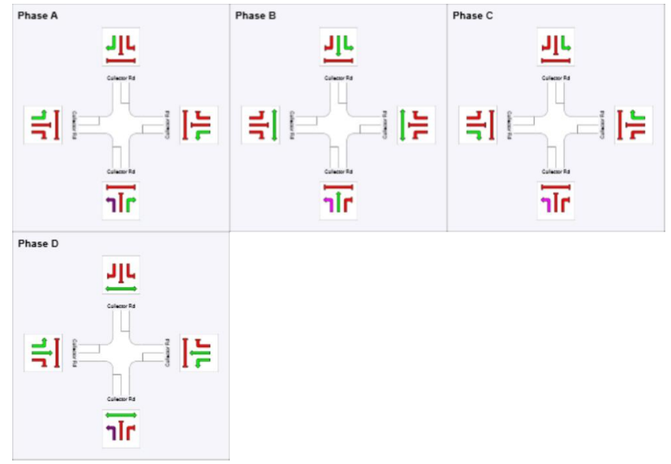
Site: Intersection 29 AM Reference

New Site
Signals - Fixed Time Cycle Time = 70 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	12	37	49
Green Time (sec)	6	19	6	15
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	12	25	12	21
Phase Split	17 %	36 %	17 %	30 %



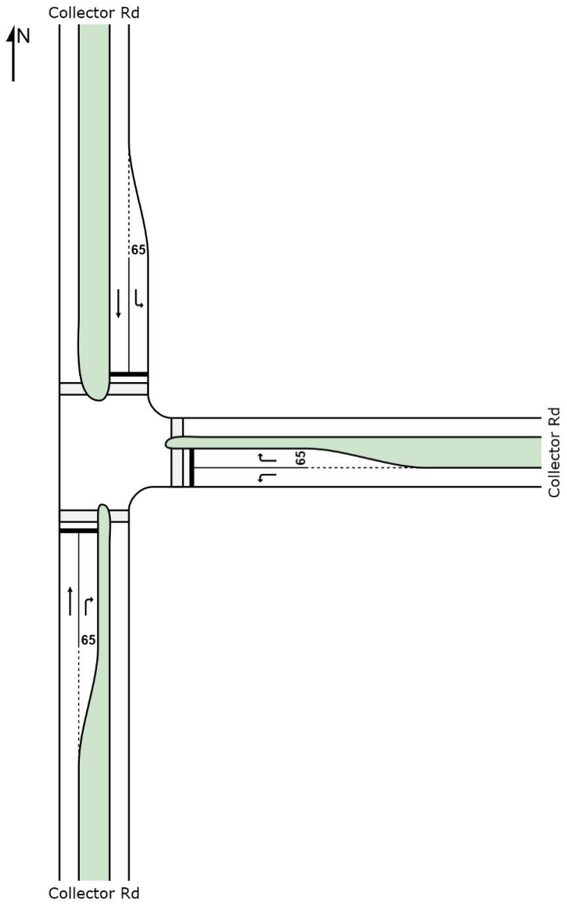
SIDRA INTERSECTION 6

SITE LAYOUT

85

Site: Intersection 30 AM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

86

Site: Intersection 30 AM Reference

New Site
Signals - Fixed Time Cycle Time = 70 seconds (Practical Cycle Time)

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: Collector Rd											
2	T1	20	0.0	0.048	25.0	LOS C	0.5	3.8	0.82	0.63	34.1
3	R2	58	0.0	0.099	23.0	LOS C	1.4	9.9	0.74	0.71	34.8
Approach		78	0.0	0.099	23.5	LOS C	1.4	9.9	0.76	0.69	34.6
East: Collector Rd											
4	L2	61	0.0	0.053	9.1	LOS A	0.8	5.7	0.42	0.59	39.6
6	R2	20	0.0	0.050	27.3	LOS C	0.6	3.9	0.82	0.67	30.8
Approach		81	0.0	0.053	13.6	LOS B	0.8	5.7	0.52	0.61	37.0
North: Collector Rd											
7	L2	20	0.0	0.021	12.2	LOS B	0.3	2.3	0.51	0.59	35.4
8	T1	22	0.0	0.053	25.1	LOS C	0.6	4.2	0.82	0.65	34.4
Approach		42	0.0	0.053	19.0	LOS B	0.6	4.2	0.67	0.62	34.9
All Vehicles		201	0.0	0.099	18.6	LOS B	1.4	9.9	0.64	0.64	35.6

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	50	29.3	LOS C	0.1	0.1	0.92	0.92
P2	East Full Crossing	50	29.3	LOS C	0.1	0.1	0.92	0.92
P3	North Full Crossing	50	25.8	LOS C	0.1	0.1	0.86	0.86
All Pedestrians		150	28.1	LOS C			0.90	0.90

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

87

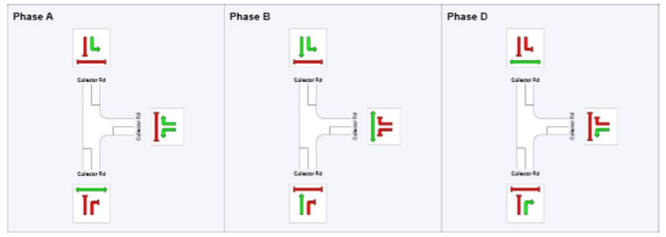
Site: Intersection 30 AM Reference

New Site
Signals - Fixed Time Cycle Time = 70 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing (phase reduction applied)
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, D

Phase Timing Results

Phase	A	B	D
Reference Phase	Yes	No	No
Phase Change Time (sec)	0	21	42
Green Time (sec)	15	15	22
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	21	21	28
Phase Split	30 %	30 %	40 %



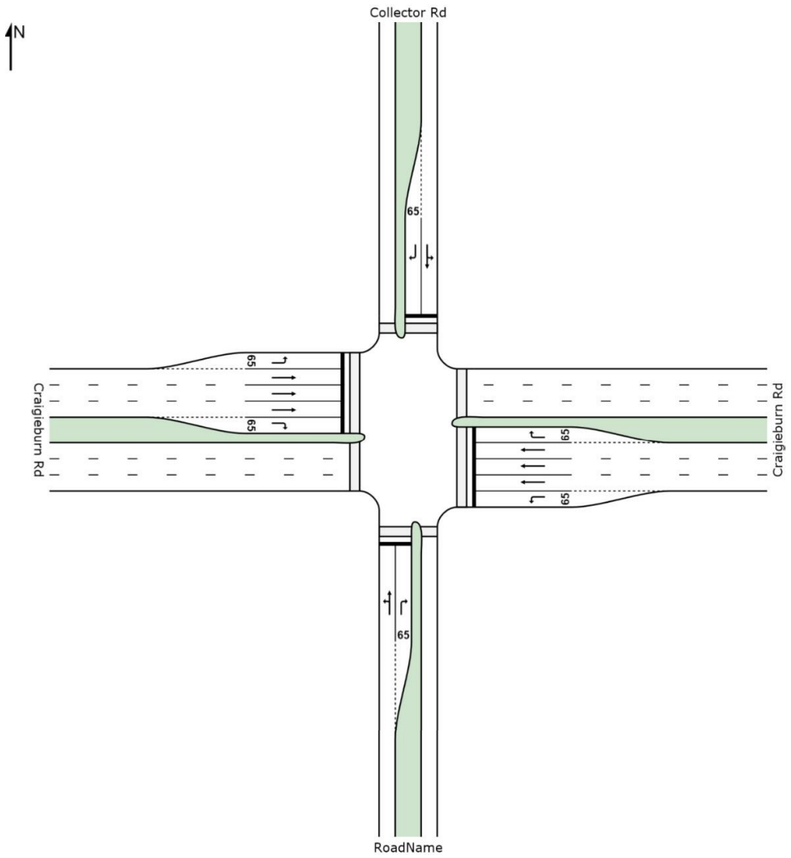
SIDRA INTERSECTION 6

SITE LAYOUT

88

Site: Intersection 31 AM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

89

Site: Intersection 31 AM Reference

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

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: RoadName											
1	L2	61	6.6	0.125	24.2	LOS C	2.4	17.8	0.69	0.66	41.7
2	T1	24	4.2	0.125	19.6	LOS B	2.4	17.8	0.69	0.66	38.1
3	R2	78	6.4	0.494	49.4	LOS D	3.5	25.7	0.99	0.77	32.3
Approach		163	6.1	0.494	35.6	LOS D	3.5	25.7	0.83	0.71	36.2
East: Craigieburn Rd											
4	L2	68	5.9	0.118	30.2	LOS C	2.1	15.5	0.74	0.74	40.6
5	T1	244	6.1	0.260	36.1	LOS D	3.2	23.5	0.91	0.71	44.7
6	R2	138	5.8	0.497	46.1	LOS D	5.8	42.3	0.96	0.80	34.6
Approach		450	6.0	0.497	38.2	LOS D	5.8	42.3	0.90	0.74	40.4
North: Collector Rd											
7	L2	55	5.5	0.109	23.4	LOS C	2.1	15.3	0.67	0.66	42.2
8	T1	20	5.0	0.109	18.8	LOS B	2.1	15.3	0.67	0.66	38.4
9	R2	30	6.7	0.190	47.6	LOS D	1.3	9.5	0.96	0.71	32.8
Approach		105	5.7	0.190	29.4	LOS C	2.1	15.3	0.75	0.67	38.3
West: Craigieburn Rd											
10	L2	64	6.3	0.112	30.1	LOS C	2.0	14.6	0.74	0.74	40.6
11	T1	366	6.0	0.390	37.1	LOS D	4.9	36.2	0.94	0.74	44.1
12	R2	35	5.7	0.126	43.3	LOS D	1.4	10.0	0.89	0.73	35.6
Approach		465	6.0	0.390	36.6	LOS D	4.9	36.2	0.91	0.74	42.8
All Vehicles		1183	6.0	0.497	36.4	LOS D	5.8	42.3	0.88	0.73	40.5

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
P2	East Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
P3	North Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
P4	West Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
All Pedestrians		80	39.2	LOS D			0.93	0.93

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

90

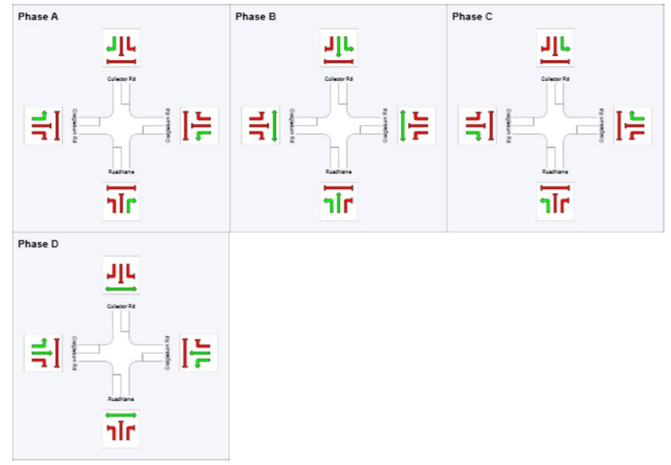
Site: Intersection 31 AM Reference

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	14	49	69
Green Time (sec)	8	29	14	15
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	14	35	20	21
Phase Split	16 %	39 %	22 %	23 %



SIDRA INTERSECTION 6

Reference Case Design Year Scenario:
PM Peak - Intersection Turn Movement Analysis Summary
(Total LV and HV Vehicles)

TO WALLAN

SUMMERHILL ROAD

KOUKOURA DRIVE

Town Centre, Community Centre and Education Facility

BODYCOATS ROAD

ANDREW ROAD

EPPING ROAD

TRAIN STATION

Major Town Centre, and Community Centre

BOUNDARY ROAD

Education Facility

Education Facility

Town Centre, Community Centre and Education Facility

KOUKOURA DRIVE

EDGARS ROAD

ANDREW ROAD

EPPING ROAD

CRAIGIEBURN ROAD

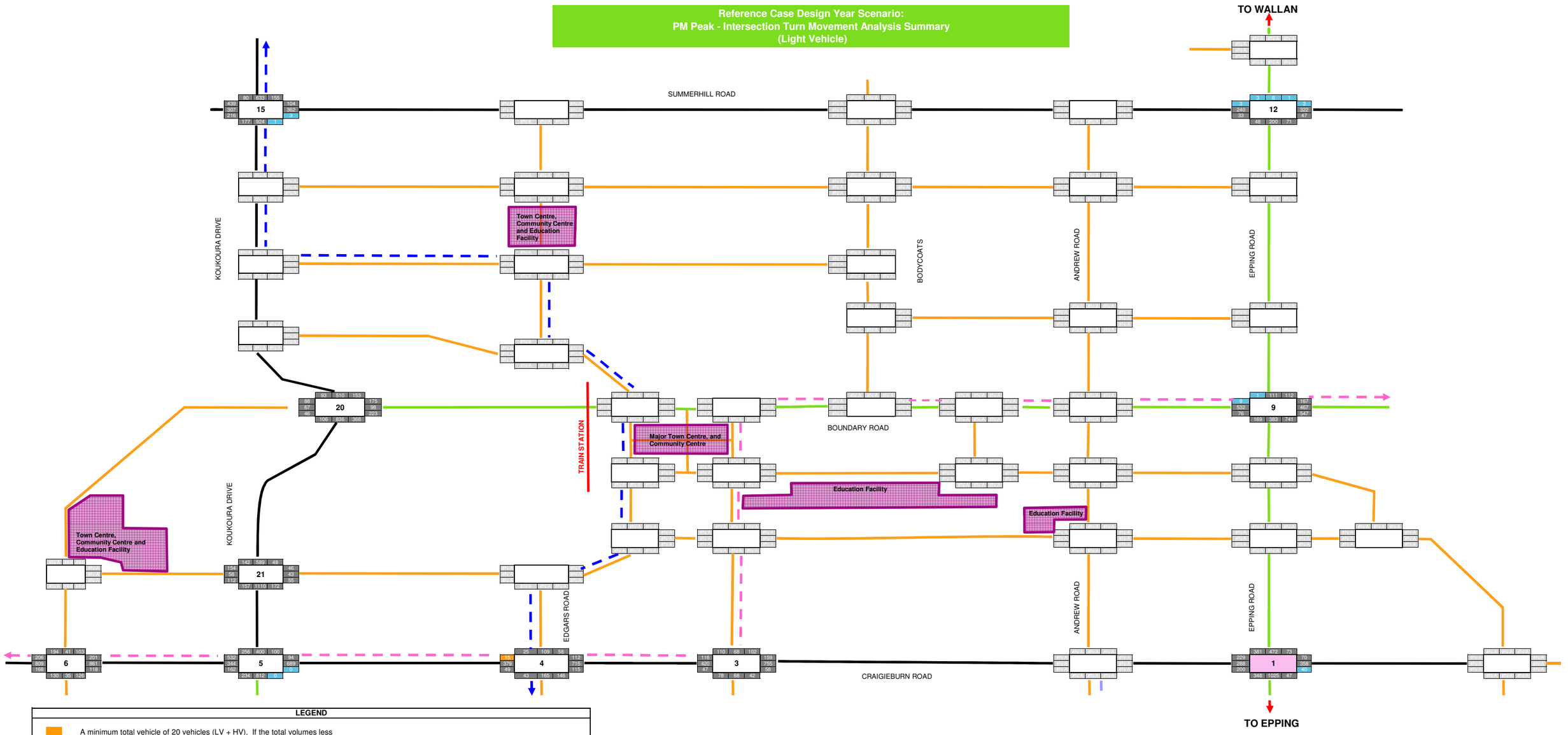
TO EPPING

LEGEND

- Intersection with 50 pedestrians at each approach
- Intersection with 20 pedestrians at each approach
- Six traffic lane Arterial Road (three lanes in each direction)
- Four traffic lane Arterial Road (two lanes in each direction)
- Two traffic lane Arterial Road (one lane in each direction)
- Two traffic lane Collector Road (one lane in each direction)
- Bus Priority Routes (different colour represent different bus services)

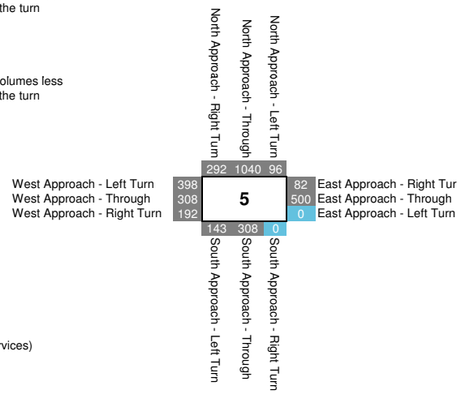
	North Approach - Right Turn	North Approach - Through	North Approach - Left Turn	
	292	1040	96	
West Approach - Left Turn	398	5	82	East Approach - Right Turn
West Approach - Through	308		500	East Approach - Through
West Approach - Right Turn	192		0	East Approach - Left Turn
	143	308	0	
	South Approach - Left Turn	South Approach - Through	South Approach - Right Turn	

Reference Case Design Year Scenario:
PM Peak - Intersection Turn Movement Analysis Summary
(Light Vehicle)

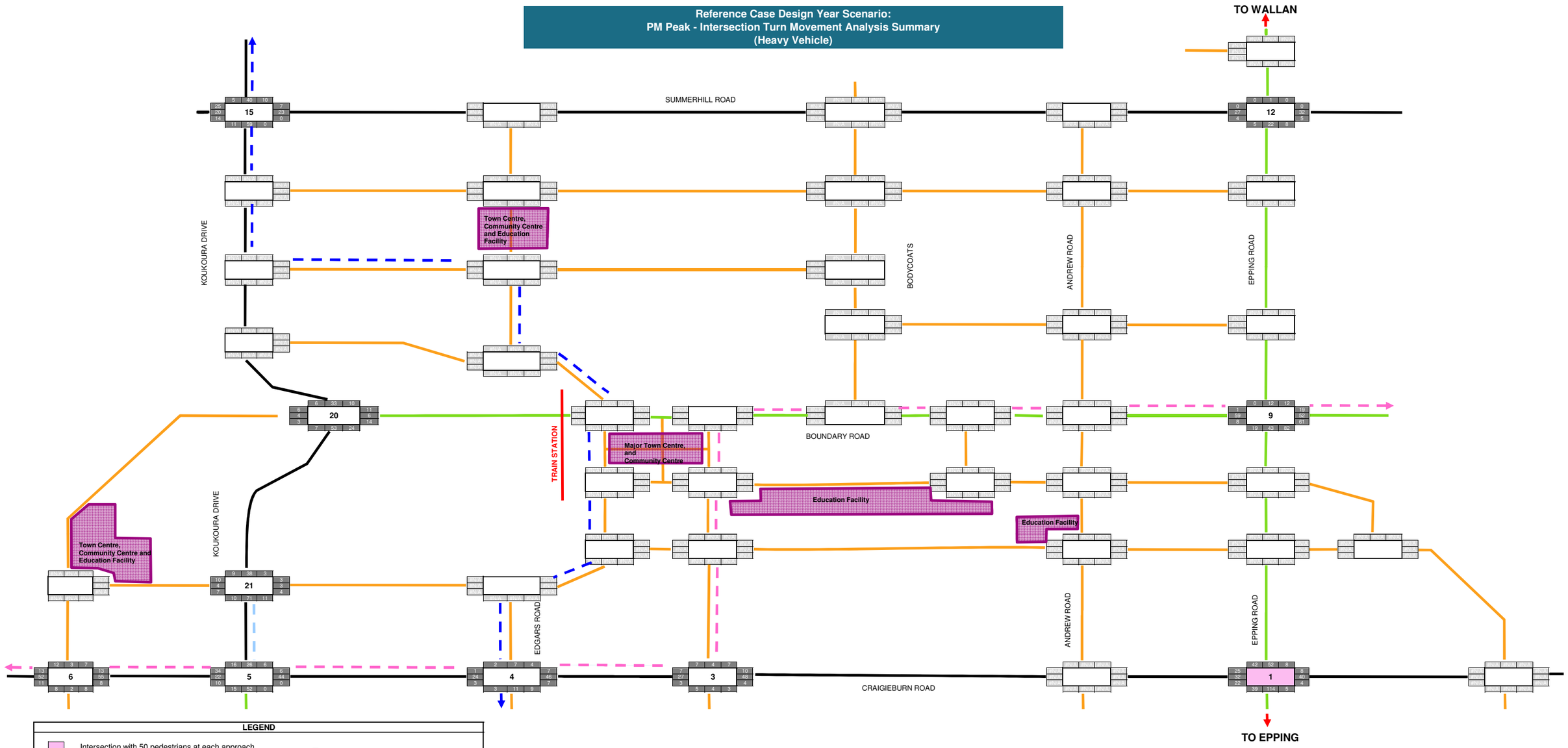


LEGEND

- A minimum total vehicle of 20 vehicles (LV + HV). If the total volumes less than 20 vehicles, an additional LV of up to 20 will be added to the turn movement to meet the minimum total vehicles.
  eg. 3 input = 20 total volumes (LV & HV)
- A minimum total vehicle of 50 vehicles (LV + HV). If the total volumes less than 50 vehicles, an additional LV of up to 50 will be added to the turn movement to meet the minimum total vehicles.
  eg. 3 input = 50 total volumes (LV & HV)
- Intersection with 50 pedestrians at each approach
- Intersection with 20 pedestrians at each approach
- Six traffic lane Arterial Road (three lanes in each direction)
- Four traffic lane Arterial Road (two lanes in each direction)
- Two traffic lane Arterial Road (one lane in each direction)
- Two traffic lane Collector Road (one lane in each direction)
- Bus Priority Routes (different colour represent different bus services)



Reference Case Design Year Scenario:
PM Peak - Intersection Turn Movement Analysis Summary
(Heavy Vehicle)



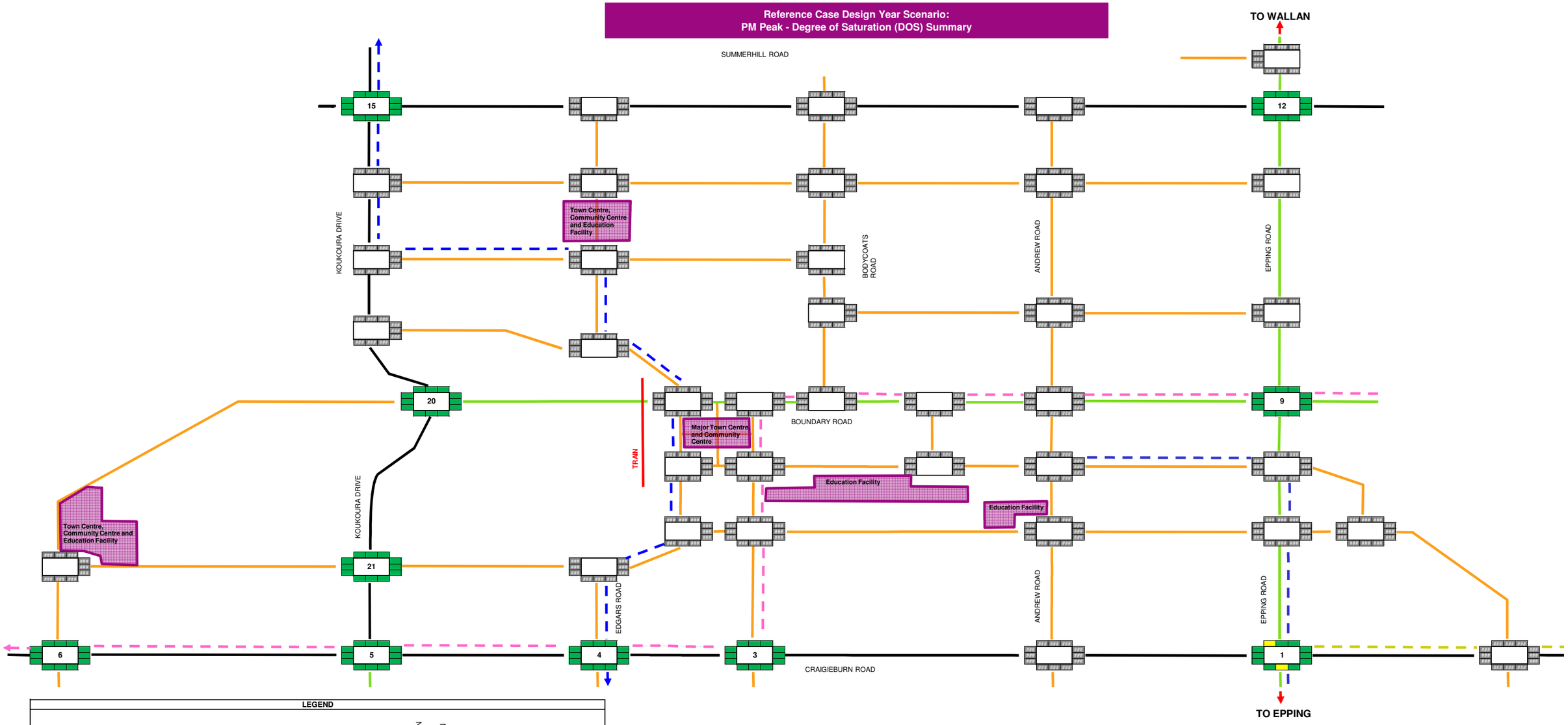
LEGEND

- Intersection with 50 pedestrians at each approach
- Intersection with 20 pedestrians at each approach
- Six traffic lane Arterial Road (three lanes in each direction)
- Four traffic lane Arterial Road (two lanes in each direction)
- Two traffic lane Arterial Road (one lane in each direction)
- Two traffic lane Collector Road (one lane in each direction)
- Bus Priority Routes (different colour represent different bus servi

North Approach - Right Turn	North Approach - Through	North Approach - Left Turn
19	66	6
West Approach - Left Turn 25	5	East Approach - Right Turn 5
West Approach - Through 20		East Approach - Through 32
West Approach - Right Turn 12		East Approach - Left Turn 0
9	20	0
South Approach - Left Turn	South Approach - Through	South Approach - Right Turn

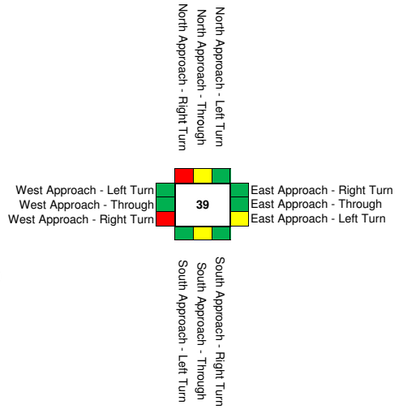
Heavy Vehicle Assumptions:
10% of LV are HV on Epping Road applied on all approaches
6% of LV are HV on all other roads applied on all approaches

Reference Case Design Year Scenario:
PM Peak - Degree of Saturation (DOS) Summary



LEGEND

- Degree of Saturation greater than 1.00
- Degree of Saturation between 0.95 and 1.00
- Degree of Saturation between 0.85 and 0.95
- Degree of Saturation less than 0.85
- Intersection not analysed
- Six traffic lane Arterial Road (three lanes in each direction)
- Four traffic lane Arterial Road (two lanes in each direction)
- Two traffic lane Arterial Road (one lane in each direction)
- Two traffic lane Collector Road (one lane in each direction)
- Bus Priority Routes (different colour represent different bus services)

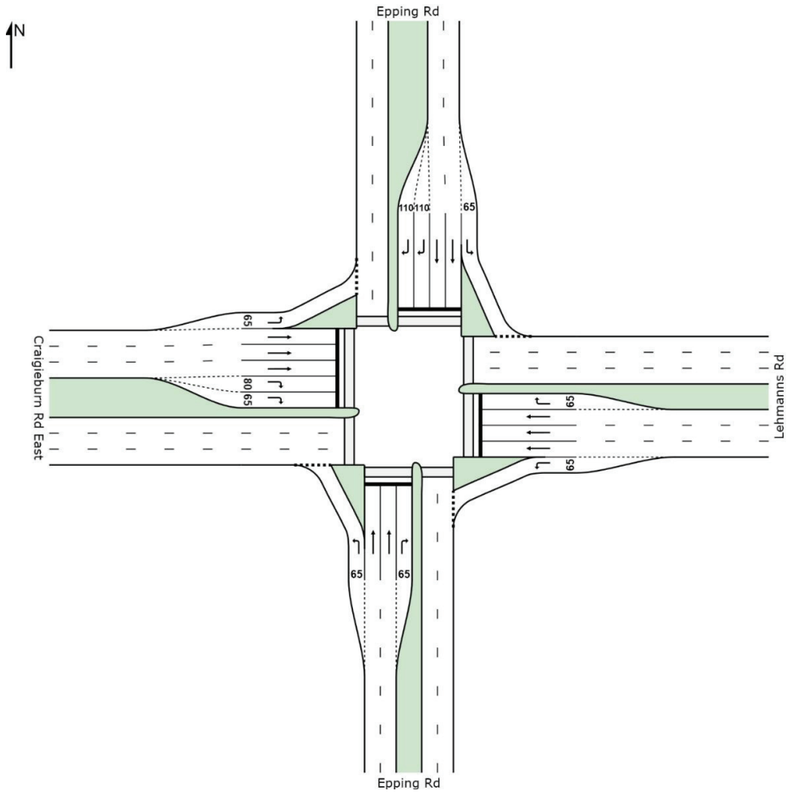


P

SITE LAYOUT

Site: Intersection 1 PM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 1 PM Reference

New Site
Signals - Fixed Time Cycle Time = 120 seconds (User-Given Cycle Time)

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: Epping Rd											
1	L2	387	10.1	0.319	12.3	LOS B	7.0	53.1	0.40	0.71	57.7
2	T1	1139	10.0	0.873	42.3	LOS D	38.7	293.9	0.91	0.92	41.9
3	R2	52	9.6	0.080	29.5	LOS C	1.8	13.5	0.67	0.72	45.6
Approach		1578	10.0	0.873	34.5	LOS C	38.7	293.9	0.78	0.86	45.0
East: Lehmanns Rd											
4	L2	44	9.1	0.039	11.3	LOS B	0.6	4.8	0.31	0.66	58.9
5	T1	398	10.1	0.669	58.4	LOS E	7.9	59.8	1.00	0.83	35.3
6	R2	78	10.3	0.416	63.4	LOS E	4.4	33.7	0.98	0.77	32.2
Approach		520	10.0	0.669	55.1	LOS E	7.9	59.8	0.94	0.80	36.0
North: Epping Rd											
7	L2	81	9.9	0.064	8.5	LOS A	0.6	4.3	0.19	0.65	61.4
8	T1	524	9.9	0.592	43.7	LOS D	13.7	104.0	0.94	0.79	41.2
9	R2	423	9.9	0.861	72.0	LOS E	13.8	104.6	1.00	0.95	30.0
Approach		1028	9.9	0.861	52.6	LOS D	13.8	104.6	0.91	0.85	36.6
West: Craigieburn Rd East											
10	L2	254	9.8	0.387	21.5	LOS C	8.0	60.7	0.63	0.77	50.5
11	T1	320	10.0	0.466	54.1	LOS D	6.0	45.4	0.97	0.77	36.8
12	R2	222	9.9	0.512	62.1	LOS E	6.3	47.7	0.98	0.79	32.5
Approach		796	9.9	0.512	45.9	LOS D	8.0	60.7	0.87	0.78	38.7
All Vehicles		3922	10.0	0.873	44.3	LOS D	38.7	293.9	0.85	0.83	40.0

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P11	South Stage 1	50	54.3	LOS E	0.2	0.2	0.95	0.95
P12	South Stage 2	50	51.4	LOS E	0.2	0.2	0.93	0.93
P21	East Stage 1	50	52.4	LOS E	0.2	0.2	0.94	0.94
P22	East Stage 2	50	50.5	LOS E	0.2	0.2	0.92	0.92
P31	North Stage 1	50	54.3	LOS E	0.2	0.2	0.95	0.95
P32	North Stage 2	50	49.6	LOS E	0.2	0.2	0.91	0.91
P41	West Stage 1	50	27.4	LOS C	0.1	0.1	0.68	0.68
P42	West Stage 2	50	24.1	LOS C	0.1	0.1	0.63	0.63
All Pedestrians		400	45.5	LOS E			0.86	0.86

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

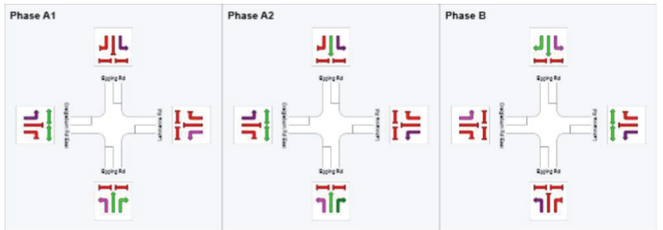
Site: Intersection 1 PM Reference

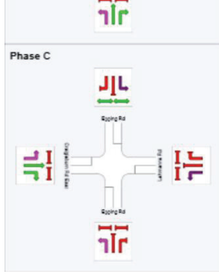
New Site
Signals - Fixed Time Cycle Time = 120 seconds (User-Given Cycle Time)

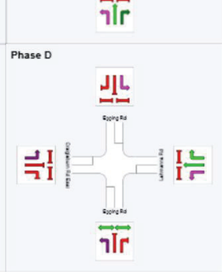
Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A1, A2, B, C, D
Output Sequence: A1, A2, B, C, D

Phase Timing Results

Phase	A1	A2	B	C	D
Reference Phase	Yes	No	No	No	No
Phase Change Time (sec)	0	45	57	80	101
Green Time (sec)	39	6	17	15	13
Yellow Time (sec)	4	4	4	4	4
All-Red Time (sec)	2	2	2	2	2
Phase Time (sec)	45	12	23	21	19
Phase Split	38 %	10 %	19 %	18 %	16 %





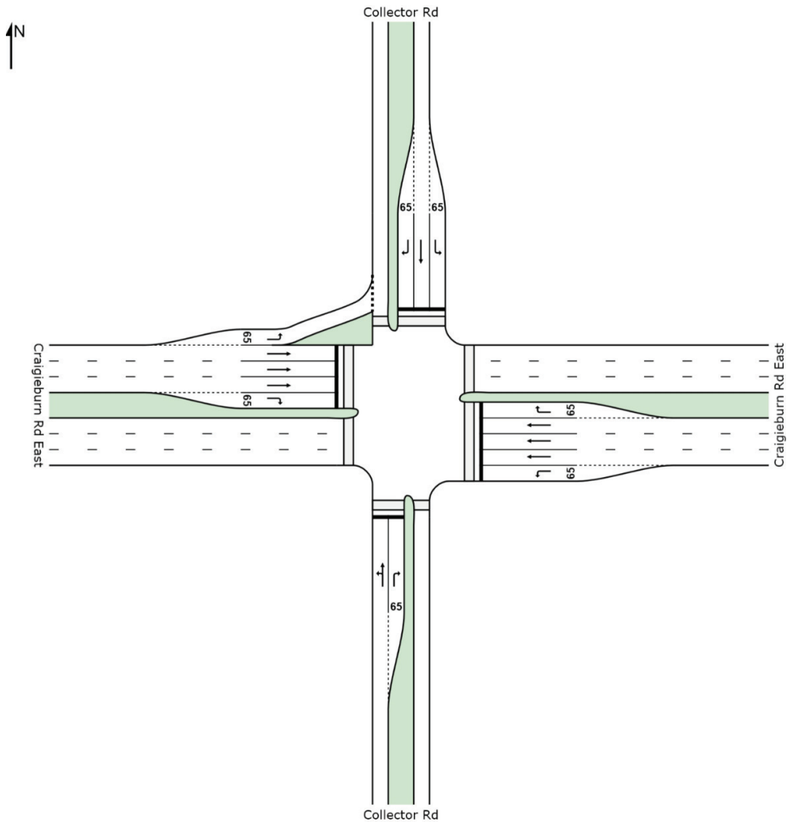


SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 3 PM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 3 PM Reference

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

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: Collector Rd											
1	L2	83	6.0	0.244	26.7	LOS C	4.8	35.4	0.75	0.69	41.0
2	T1	72	5.6	0.244	22.1	LOS C	4.8	35.4	0.75	0.69	37.5
3	R2	45	6.7	0.286	48.2	LOS D	2.0	14.5	0.97	0.73	32.6
Approach		200	6.0	0.286	29.9	LOS C	4.8	35.4	0.80	0.70	37.6
East: Craigieburn Rd East											
4	L2	62	6.5	0.098	27.8	LOS C	1.8	13.4	0.70	0.73	41.7
5	T1	803	6.0	0.713	38.4	LOS D	11.6	85.2	0.99	0.86	43.5
6	R2	169	5.9	0.776	53.7	LOS D	8.0	58.6	1.00	0.89	32.4
Approach		1034	6.0	0.776	40.3	LOS D	11.6	85.2	0.97	0.86	41.1
North: Collector Rd											
7	L2	109	6.4	0.120	16.8	LOS B	2.5	18.2	0.55	0.68	44.8
8	T1	72	5.6	0.119	23.1	LOS C	2.2	16.3	0.74	0.58	38.1
9	R2	117	6.0	0.739	52.5	LOS D	5.5	40.7	1.00	0.89	31.5
Approach		298	6.0	0.739	32.3	LOS C	5.5	40.7	0.77	0.74	37.1
West: Craigieburn Rd East											
10	L2	123	5.7	0.105	9.3	LOS A	1.1	7.8	0.28	0.67	53.5
11	T1	447	6.0	0.397	34.5	LOS C	5.8	42.8	0.91	0.74	45.6
12	R2	50	6.0	0.230	47.1	LOS D	2.1	15.2	0.94	0.74	34.3
Approach		620	6.0	0.397	30.5	LOS C	5.8	42.8	0.79	0.73	45.8
All Vehicles		2152	6.0	0.776	35.4	LOS D	11.6	85.2	0.88	0.79	41.3

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	20	36.5	LOS D	0.0	0.0	0.90	0.90
P2	East Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
P3	North Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
P4	West Full Crossing	20	36.5	LOS D	0.0	0.0	0.90	0.90
All Pedestrians		80	37.9	LOS D			0.92	0.92

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

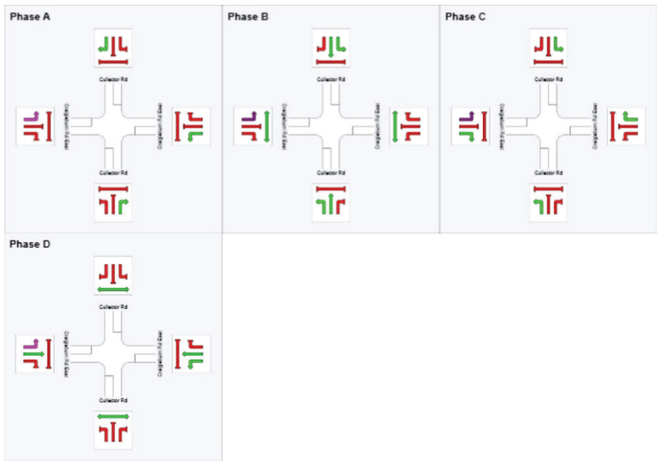
Site: Intersection 3 PM Reference

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Leading Right Turn
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	14	49	66
Green Time (sec)	8	29	11	18
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	14	35	17	24
Phase Split	16 %	39 %	19 %	27 %

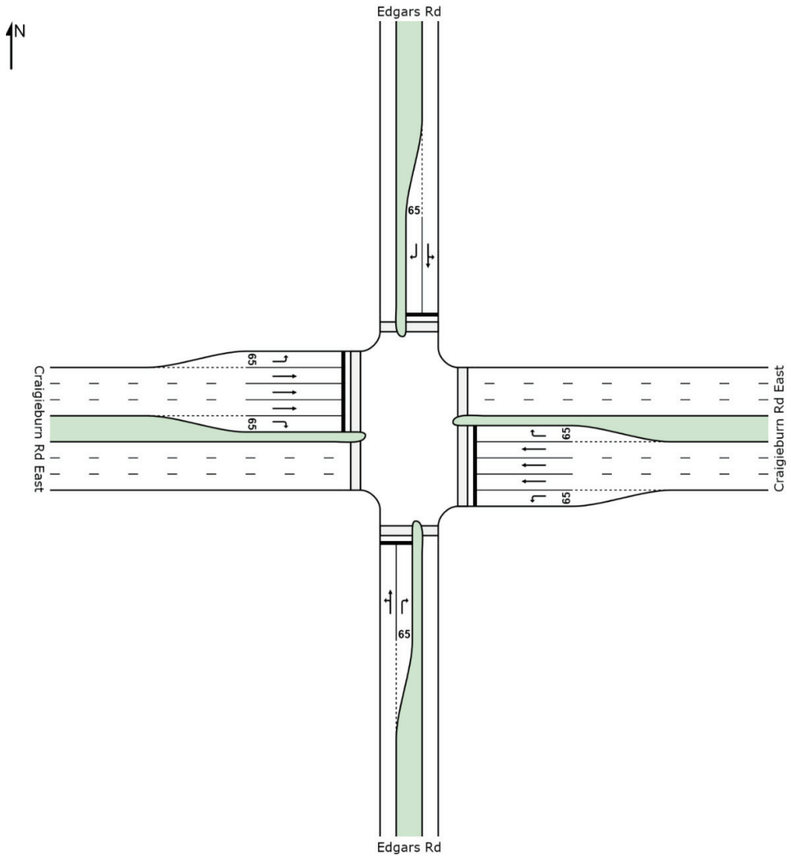


SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 4 PM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 4 PM Reference

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

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: Edgars Rd											
1	L2	46	6.5	0.366	30.3	LOS C	7.4	55.0	0.80	0.73	42.9
2	T1	176	6.3	0.366	26.0	LOS C	7.4	55.0	0.80	0.73	39.1
3	R2	155	5.8	0.711	50.2	LOS D	7.1	52.0	1.00	0.87	34.0
Approach		377	6.1	0.711	36.5	LOS D	7.4	55.0	0.89	0.79	37.2
East: Craigieburn Rd East											
4	L2	122	5.7	0.181	27.1	LOS C	3.6	26.2	0.70	0.76	44.5
5	T1	761	6.0	0.716	39.3	LOS D	11.1	81.5	0.99	0.86	43.0
6	R2	119	5.9	0.668	52.8	LOS D	5.4	40.1	1.00	0.83	32.6
Approach		1002	6.0	0.716	39.4	LOS D	11.1	81.5	0.96	0.85	41.5
North: Edgars Rd											
7	L2	62	6.5	0.290	27.8	LOS C	5.7	42.1	0.77	0.70	40.9
8	T1	116	6.0	0.290	24.0	LOS C	5.7	42.1	0.77	0.70	39.9
9	R2	27	7.4	0.125	43.8	LOS D	1.1	8.1	0.92	0.71	33.9
Approach		205	6.3	0.290	27.8	LOS C	5.7	42.1	0.79	0.71	39.3
West: Craigieburn Rd East											
10	L2	20	5.0	0.030	25.7	LOS C	0.5	4.0	0.65	0.69	42.7
11	T1	403	6.0	0.379	35.2	LOS D	5.3	38.9	0.92	0.74	45.2
12	R2	52	5.8	0.292	49.7	LOS D	2.2	16.4	0.96	0.75	35.0
Approach		475	5.9	0.379	36.4	LOS D	5.3	38.9	0.91	0.74	43.7
All Vehicles		2059	6.0	0.716	37.0	LOS D	11.1	81.5	0.92	0.80	40.9

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	20	37.4	LOS D	0.0	0.0	0.91	0.91
P2	East Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
P3	North Full Crossing	20	37.4	LOS D	0.0	0.0	0.91	0.91
P4	West Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
All Pedestrians		80	38.3	LOS D			0.92	0.92

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

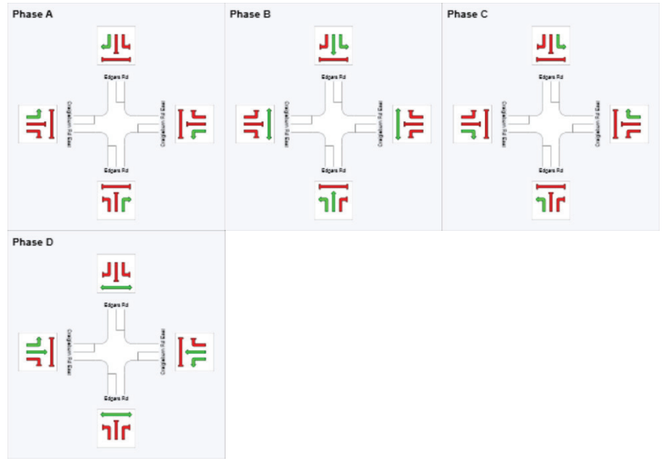
Site: Intersection 4 PM Reference

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Leading Right Turn
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	17	52	67
Green Time (sec)	11	29	9	17
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	17	35	15	23
Phase Split	19 %	39 %	17 %	26 %

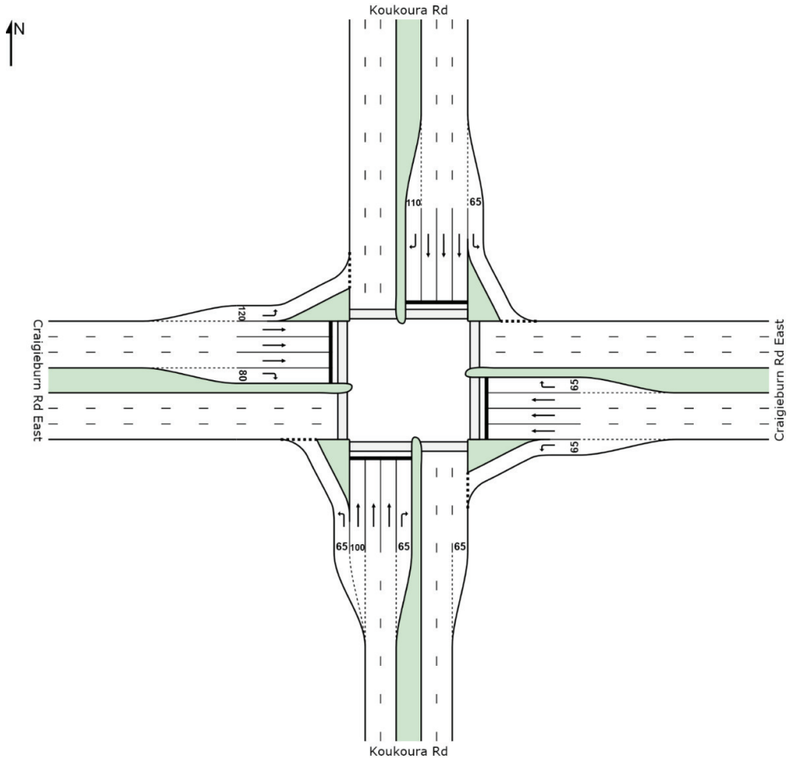


SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 5 PM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 5 PM Reference

New Site
Signals - Fixed Time Cycle Time = 100 seconds (User-Given Cycle Time)

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: Koukoura Rd											
1	L2	249	6.0	0.250	12.5	LOS B	4.7	34.4	0.48	0.69	49.0
2	T1	864	6.0	0.698	40.2	LOS D	13.4	98.6	0.98	0.85	36.4
3	R2	50	0.0	0.122	39.5	LOS D	2.0	13.8	0.84	0.72	36.4
Approach		1163	5.8	0.698	34.2	LOS C	13.4	98.6	0.87	0.81	38.5
East: Craigieburn Rd East											
4	L2	50	0.0	0.041	8.8	LOS A	0.6	4.1	0.31	0.62	51.8
5	T1	733	6.0	0.723	44.2	LOS D	11.9	87.3	1.00	0.88	35.0
6	R2	100	6.0	0.312	44.9	LOS D	4.3	31.9	0.91	0.77	34.5
Approach		883	5.7	0.723	42.3	LOS D	11.9	87.3	0.95	0.85	35.6
North: Koukoura Rd											
7	L2	106	5.7	0.080	7.0	LOS A	0.8	5.6	0.23	0.61	53.0
8	T1	426	6.1	0.441	37.3	LOS D	7.5	55.4	0.91	0.74	37.4
9	R2	272	5.9	0.727	47.8	LOS D	13.0	95.9	0.99	0.87	33.5
Approach		804	6.0	0.727	36.8	LOS D	13.0	95.9	0.85	0.77	37.4
West: Craigieburn Rd East											
10	L2	566	6.0	0.590	12.0	LOS B	12.5	91.6	0.58	0.75	49.4
11	T1	366	6.0	0.433	42.8	LOS D	5.6	41.0	0.95	0.76	35.4
12	R2	172	5.8	0.643	50.7	LOS D	8.3	60.7	0.99	0.83	32.7
Approach		1104	6.0	0.643	28.3	LOS C	12.5	91.6	0.77	0.77	40.8
All Vehicles		3954	5.8	0.727	34.9	LOS C	13.4	98.6	0.85	0.80	38.2

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P11	South Stage 1	20	41.4	LOS E	0.1	0.1	0.91	0.91
P12	South Stage 2	20	39.6	LOS D	0.1	0.1	0.89	0.89
P21	East Stage 1	20	38.8	LOS D	0.1	0.1	0.88	0.88
P22	East Stage 2	20	37.0	LOS D	0.0	0.0	0.86	0.86
P31	North Stage 1	20	44.2	LOS E	0.1	0.1	0.94	0.94
P32	North Stage 2	20	42.4	LOS E	0.1	0.1	0.92	0.92
P41	West Stage 1	20	37.9	LOS D	0.0	0.0	0.87	0.87
P42	West Stage 2	20	36.2	LOS D	0.0	0.0	0.85	0.85
All Pedestrians		160	39.7	LOS D			0.89	0.89

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

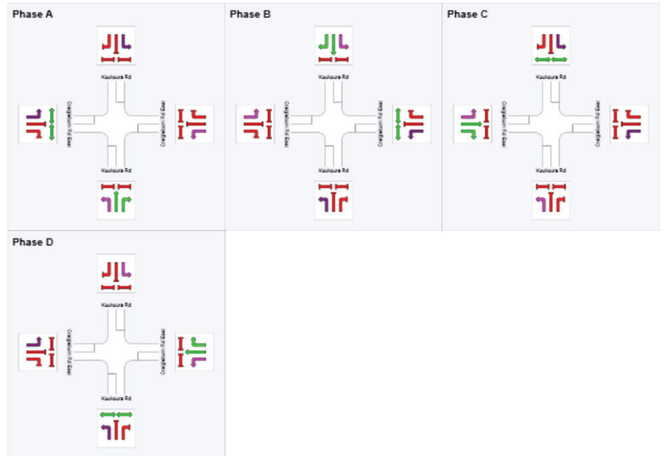
Site: Intersection 5 PM Reference

New Site
Signals - Fixed Time Cycle Time = 100 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: Split Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	28	55	76
Green Time (sec)	22	21	15	18
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	28	27	21	24
Phase Split	28 %	27 %	21 %	24 %

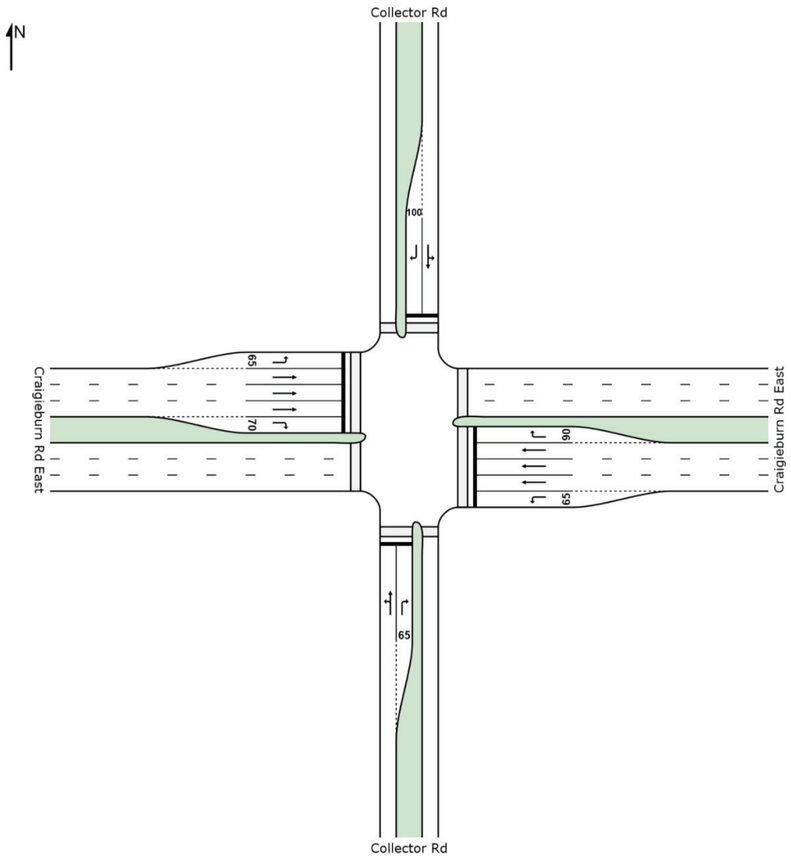


SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 6 PM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 6 PM Reference

New Site
Signals - Fixed Time Cycle Time = 110 seconds (User-Given Cycle Time)

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: Collector Rd											
1	L2	138	5.8	0.297	33.5	LOS C	6.9	50.8	0.78	0.74	37.7
2	T1	37	5.4	0.297	28.9	LOS C	6.9	50.8	0.78	0.74	34.6
3	R2	134	6.0	0.487	51.6	LOS D	6.8	49.7	0.96	0.79	31.7
Approach		309	5.8	0.487	40.8	LOS D	6.9	50.8	0.86	0.76	34.5
East: Craigieburn Rd East											
4	L2	126	6.3	0.170	28.4	LOS C	4.2	30.9	0.66	0.75	41.4
5	T1	916	6.0	0.778	47.9	LOS D	16.5	121.5	1.00	0.90	39.0
6	R2	214	6.1	0.778	60.0	LOS E	11.9	87.9	1.00	0.88	30.6
Approach		1256	6.1	0.778	48.0	LOS D	16.5	121.5	0.97	0.89	37.5
North: Collector Rd											
7	L2	110	6.4	0.277	35.5	LOS D	6.2	46.1	0.80	0.73	37.0
8	T1	44	6.8	0.277	30.9	LOS C	6.2	46.1	0.80	0.73	34.1
9	R2	206	5.8	0.748	56.1	LOS E	11.3	82.9	1.00	0.89	30.5
Approach		360	6.1	0.748	46.7	LOS D	11.3	82.9	0.91	0.82	32.7
West: Craigieburn Rd East											
10	L2	219	5.9	0.294	29.7	LOS C	7.7	56.9	0.71	0.78	40.8
11	T1	861	6.0	0.732	45.9	LOS D	15.0	110.4	0.99	0.87	39.9
12	R2	179	6.1	0.651	56.1	LOS E	9.4	69.1	0.99	0.83	31.6
Approach		1259	6.0	0.732	44.5	LOS D	15.0	110.4	0.94	0.85	38.6
All Vehicles		3184	6.0	0.778	45.8	LOS D	16.5	121.5	0.94	0.85	37.0

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	20	41.9	LOS E	0.1	0.1	0.87	0.87
P2	East Full Crossing	20	49.2	LOS E	0.1	0.1	0.95	0.95
P3	North Full Crossing	20	41.9	LOS E	0.1	0.1	0.87	0.87
P4	West Full Crossing	20	49.2	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		80	45.6	LOS E			0.91	0.91

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

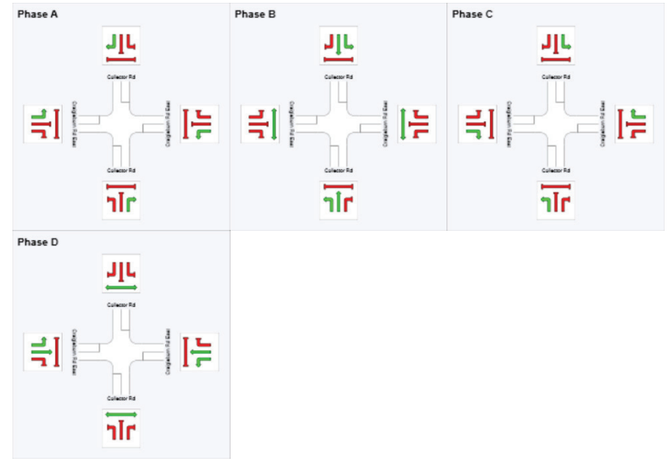
Site: Intersection 6 PM Reference

New Site
Signals - Fixed Time Cycle Time = 110 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	23	58	81
Green Time (sec)	17	29	17	23
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	23	35	23	29
Phase Split	21 %	32 %	21 %	26 %

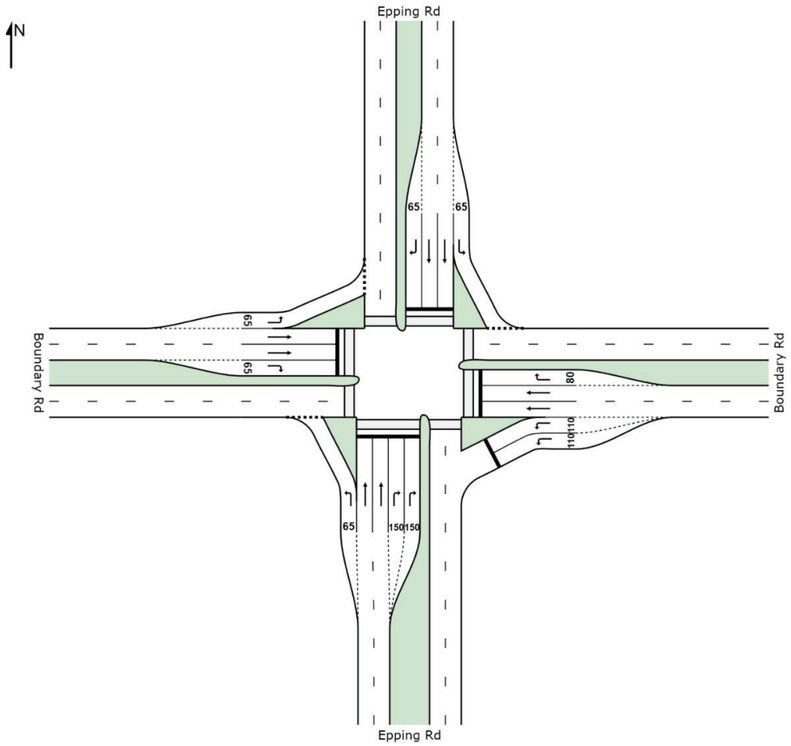


SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 9 PM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 9 PM Reference

New Site
Signals - Fixed Time Cycle Time = 100 seconds (User-Given Cycle Time)

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: Epping Rd											
1	L2	188	10.1	0.164	8.7	LOS A	2.2	16.8	0.33	0.64	51.6
2	T1	426	10.1	0.388	30.0	LOS C	8.3	63.0	0.84	0.70	40.3
3	R2	823	10.0	0.791	44.2	LOS D	19.9	151.1	0.98	0.91	35.6
Approach		1437	10.0	0.791	35.4	LOS D	19.9	151.1	0.85	0.81	38.5
East: Boundary Rd											
4	L2	608	10.0	0.313	20.0	LOS B	7.8	59.5	0.57	0.76	49.3
5	T1	519	10.0	0.709	44.5	LOS D	12.4	93.9	0.99	0.86	37.6
6	R2	186	10.2	0.827	60.5	LOS E	10.0	76.0	1.00	0.92	31.9
Approach		1313	10.1	0.827	35.4	LOS D	12.4	93.9	0.80	0.82	41.1
North: Epping Rd											
7	L2	124	9.7	0.160	17.6	LOS B	3.1	23.2	0.58	0.70	47.9
8	T1	123	9.8	0.258	43.5	LOS D	2.8	21.1	0.94	0.72	35.2
9	R2	50	0.0	0.207	48.7	LOS D	2.2	15.7	0.93	0.74	33.1
Approach		297	8.1	0.258	33.6	LOS C	3.1	23.2	0.79	0.71	39.1
West: Boundary Rd											
10	L2	50	2.0	0.047	9.3	LOS A	0.6	4.4	0.34	0.63	51.4
11	T1	591	10.0	0.807	51.2	LOS D	15.1	115.0	1.00	0.95	36.9
12	R2	84	9.5	0.372	50.2	LOS D	3.9	29.5	0.96	0.77	32.7
Approach		725	9.4	0.807	48.2	LOS D	15.1	115.0	0.95	0.91	37.1
All Vehicles		3772	9.8	0.827	37.7	LOS D	19.9	151.1	0.85	0.83	39.1

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P11	South Stage 1	20	39.6	LOS D	0.1	0.1	0.89	0.89
P12	South Stage 2	20	35.3	LOS D	0.0	0.0	0.84	0.84
P21	East Stage 1	20	44.2	LOS E	0.1	0.1	0.94	0.94
P22	East Stage 2	20	41.4	LOS E	0.1	0.1	0.91	0.91
P31	North Stage 1	20	37.9	LOS D	0.0	0.0	0.87	0.87
P32	North Stage 2	20	35.3	LOS D	0.0	0.0	0.84	0.84
P41	West Stage 1	20	29.7	LOS C	0.0	0.0	0.77	0.77
P42	West Stage 2	20	27.4	LOS C	0.0	0.0	0.74	0.74
All Pedestrians		160	36.4	LOS D			0.85	0.85

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

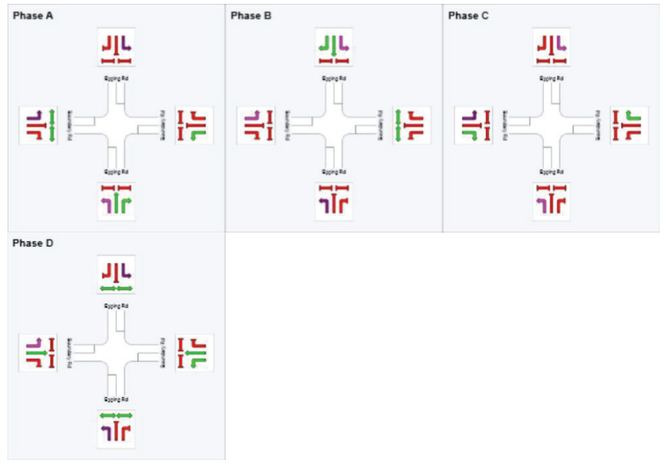
Site: Intersection 9 PM Reference

New Site
Signals - Fixed Time Cycle Time = 100 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: Split Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	36	55	74
Green Time (sec)	30	13	13	20
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	36	19	19	26
Phase Split	36 %	19 %	19 %	26 %

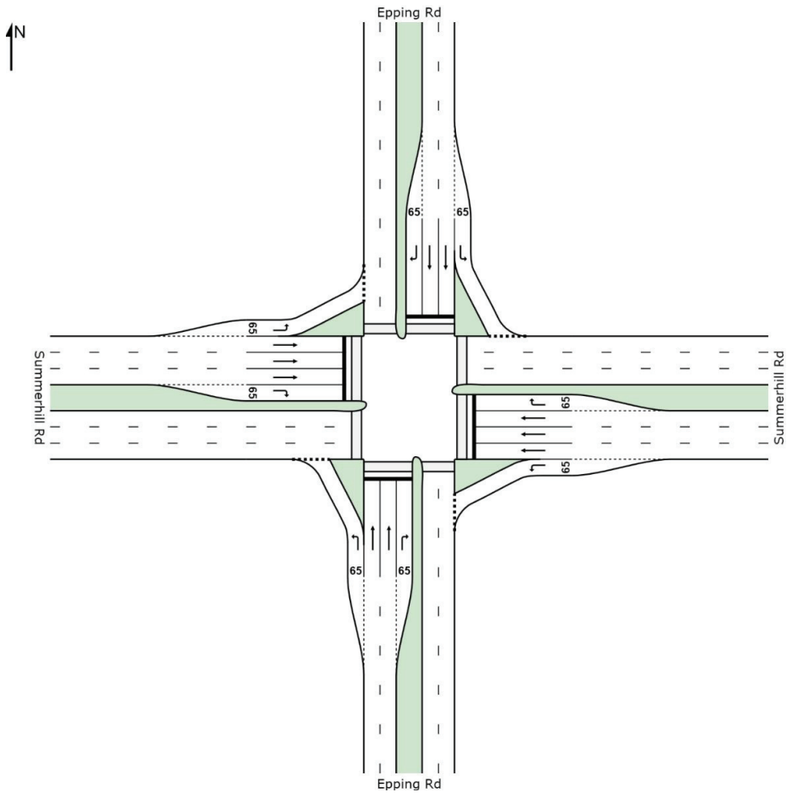


SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 12 PM Reference

New Site
Signals - Fixed Time



MOVEMENT SUMMARY

Site: Intersection 12 PM Reference

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

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: Epping Rd											
1	L2	53	9.4	0.048	12.0	LOS B	0.6	4.6	0.34	0.61	45.6
2	T1	222	9.9	0.210	26.2	LOS C	3.7	28.2	0.80	0.64	33.7
3	R2	79	10.1	0.342	48.4	LOS D	3.3	25.0	0.95	0.76	26.6
Approach		354	9.9	0.342	29.1	LOS C	3.7	28.2	0.76	0.66	33.0
East: Summerhill Rd											
4	L2	52	9.6	0.038	9.4	LOS A	0.2	1.8	0.18	0.57	48.1
5	T1	354	9.0	0.275	30.9	LOS C	4.3	32.5	0.86	0.69	31.4
6	R2	50	0.0	0.346	53.0	LOS D	2.2	15.5	0.98	0.74	24.5
Approach		456	8.1	0.346	30.9	LOS C	4.3	32.5	0.80	0.68	31.7
North: Epping Rd											
7	L2	50	0.0	0.042	10.8	LOS B	0.5	3.8	0.32	0.68	46.2
8	T1	50	2.0	0.045	24.7	LOS C	2.0	14.4	0.75	0.55	34.6
9	R2	50	0.0	0.202	46.4	LOS D	2.0	14.1	0.93	0.74	26.5
Approach		150	0.7	0.202	27.3	LOS C	2.0	14.4	0.67	0.65	33.9
West: Summerhill Rd											
10	L2	50	0.0	0.037	9.0	LOS A	0.3	2.1	0.22	0.66	48.1
11	T1	267	10.1	0.208	30.3	LOS C	3.2	24.3	0.84	0.67	31.7
12	R2	50	8.0	0.366	54.1	LOS D	2.2	16.7	0.99	0.74	25.0
Approach		367	8.4	0.366	30.6	LOS C	3.2	24.3	0.78	0.68	31.9
All Vehicles		1327	7.8	0.366	29.9	LOS C	4.3	32.5	0.77	0.67	32.3

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
P2	East Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
P3	North Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
P4	West Full Crossing	20	39.2	LOS D	0.0	0.0	0.93	0.93
All Pedestrians		80	39.2	LOS D			0.93	0.93

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

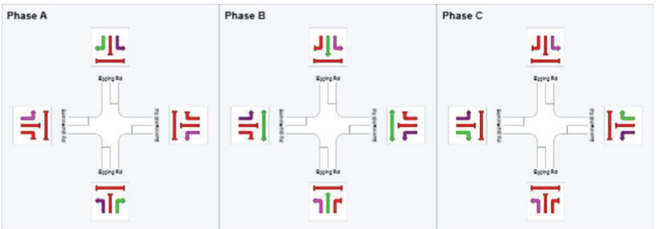
Site: Intersection 12 PM Reference

New Site
Signals - Fixed Time Cycle Time = 90 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

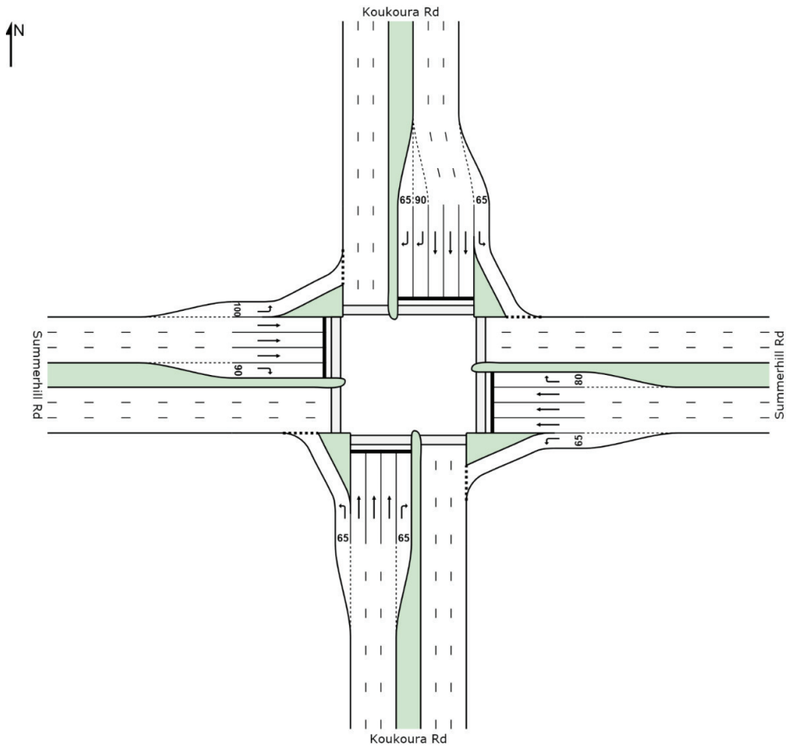
Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	18	50	63
Green Time (sec)	12	26	7	21
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	18	32	13	27
Phase Split	20 %	36 %	14 %	30 %



SITE LAYOUT

Site: Intersection 15 PM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 15 PM Reference

New Site
Signals - Fixed Time Cycle Time = 100 seconds (User-Given Cycle Time)

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: Koukoura Rd											
1	L2	188	5.9	0.147	8.8	LOS A	1.5	10.7	0.24	0.67	62.2
2	T1	983	6.0	0.698	37.7	LOS D	14.9	109.7	0.97	0.84	44.1
3	R2	50	0.0	0.108	38.6	LOS D	1.9	13.2	0.80	0.73	42.4
Approach		1221	5.7	0.698	33.3	LOS C	14.9	109.7	0.85	0.81	46.1
East: Summerhill Rd											
4	L2	50	0.0	0.044	12.3	LOS B	0.7	5.2	0.38	0.67	60.2
5	T1	385	6.0	0.456	43.0	LOS D	5.9	43.3	0.96	0.77	41.5
6	R2	111	6.3	0.416	50.4	LOS D	5.1	37.4	0.95	0.78	36.8
Approach		546	5.5	0.456	41.7	LOS D	5.9	43.3	0.90	0.76	41.6
North: Koukoura Rd											
7	L2	165	6.1	0.127	8.6	LOS A	1.2	8.5	0.22	0.66	62.3
8	T1	673	5.9	0.703	44.4	LOS D	10.8	79.8	1.00	0.86	40.8
9	R2	85	5.9	0.140	46.1	LOS D	1.8	13.2	0.89	0.73	38.3
Approach		923	6.0	0.703	38.2	LOS D	10.8	79.8	0.85	0.81	43.2
West: Summerhill Rd											
10	L2	464	5.4	0.502	14.1	LOS B	10.0	73.3	0.56	0.77	57.2
11	T1	327	6.1	0.306	38.2	LOS D	4.7	34.3	0.90	0.72	43.9
12	R2	230	6.1	0.680	49.9	LOS D	10.9	80.1	0.98	0.84	36.9
Approach		1021	5.8	0.680	29.9	LOS C	10.9	80.1	0.76	0.77	46.8
All Vehicles		3711	5.8	0.703	34.8	LOS C	14.9	109.7	0.83	0.79	44.8

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P11	South Stage 1	20	44.2	LOS E	0.1	0.1	0.94	0.94
P12	South Stage 2	20	42.4	LOS E	0.1	0.1	0.92	0.92
P21	East Stage 1	20	42.4	LOS E	0.1	0.1	0.92	0.92
P22	East Stage 2	20	40.5	LOS E	0.1	0.1	0.90	0.90
P31	North Stage 1	20	43.3	LOS E	0.1	0.1	0.93	0.93
P32	North Stage 2	20	38.8	LOS D	0.1	0.1	0.88	0.88
P41	West Stage 1	20	35.3	LOS D	0.0	0.0	0.84	0.84
P42	West Stage 2	20	33.6	LOS D	0.0	0.0	0.82	0.82
All Pedestrians		160	40.1	LOS E			0.89	0.89

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

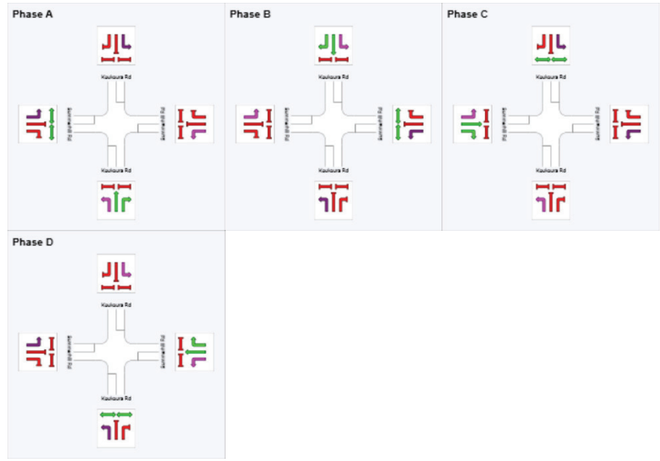
Site: Intersection 15 PM Reference

New Site
Signals - Fixed Time Cycle Time = 100 seconds (User-Given Cycle Time)

Phase times determined by the program
Sequence: Split Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	31	54	79
Green Time (sec)	25	17	19	15
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	31	23	25	21
Phase Split	31 %	23 %	25 %	21 %

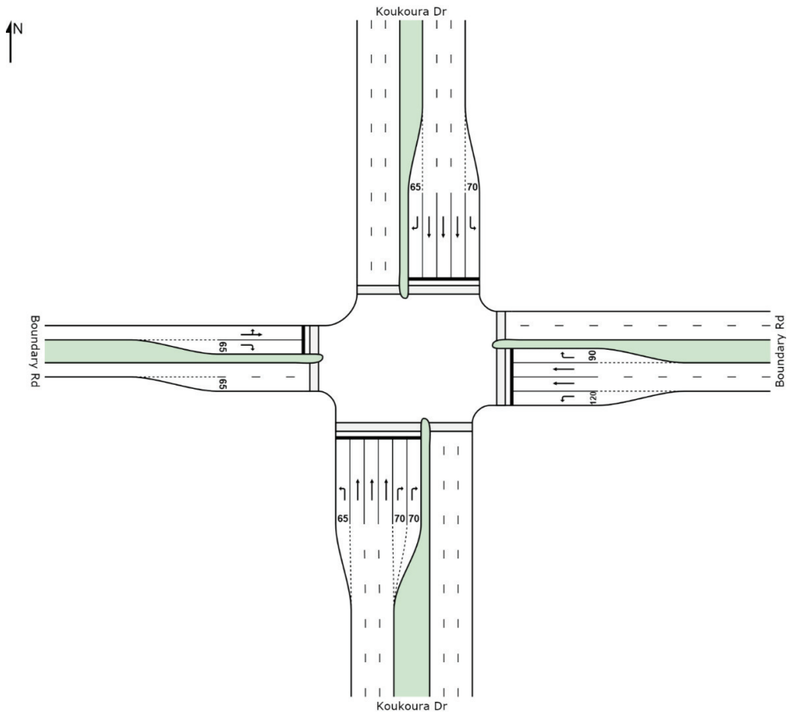


SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 20 PM Reference

New Site
Signals - Fixed Time



Created: Wednesday, 20 August 2014 3:34:26 PM
SIDRA INTERSECTION 6.0.22.4722
Project: P:\60313908\4. Tech work area\4.5 Planning\SIDRA MODEL\Reference Case\MODELS\Reference \Intersection 20 2046.sip6
8000907, AECOM, NETWORK / Enterprise

SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 20 PM Reference

New Site
Signals - Fixed Time Cycle Time = 100 seconds (Practical Cycle Time)

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: Koukoura Dr											
1	L2	113	6.2	0.159	17.7	LOS B	2.0	14.5	0.67	0.74	47.1
2	T1	889	6.0	0.718	40.8	LOS D	14.0	102.7	0.98	0.86	42.4
3	R2	392	6.1	0.501	44.9	LOS D	8.5	63.0	0.93	0.81	37.0
Approach		1394	6.0	0.718	40.1	LOS D	14.0	102.7	0.94	0.84	41.1
East: Boundary Rd											
4	L2	237	5.9	0.633	45.3	LOS D	10.8	79.3	0.97	0.83	35.3
5	T1	104	5.8	0.180	36.3	LOS D	2.9	21.1	0.85	0.68	35.7
6	R2	186	5.9	0.497	44.0	LOS D	8.2	60.1	0.93	0.80	36.1
Approach		527	5.9	0.633	43.0	LOS D	10.8	79.3	0.93	0.79	35.6
North: Koukoura Dr											
7	L2	163	6.1	0.611	51.5	LOS D	7.7	57.0	0.99	0.81	34.3
8	T1	543	6.1	0.643	44.9	LOS D	8.7	63.7	0.99	0.82	40.5
9	R2	99	6.1	0.371	49.6	LOS D	4.5	33.0	0.94	0.78	33.5
Approach		805	6.1	0.643	46.8	LOS D	8.7	63.7	0.98	0.81	38.1
West: Boundary Rd											
10	L2	92	4.3	0.428	42.2	LOS D	7.0	50.8	0.92	0.78	35.2
11	T1	70	4.3	0.428	38.0	LOS D	7.0	50.8	0.92	0.78	34.2
12	R2	56	17.9	0.189	42.8	LOS D	2.4	19.1	0.89	0.73	33.5
Approach		218	7.8	0.428	41.0	LOS D	7.0	50.8	0.91	0.76	34.4
All Vehicles		2944	6.1	0.718	42.5	LOS D	14.0	102.7	0.95	0.82	38.6

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P11	South Stage 1	20	44.2	LOS E	0.1	0.1	0.94	0.94
P12	South Stage 2	20	37.0	LOS D	0.0	0.0	0.86	0.86
P21	East Stage 1	20	44.2	LOS E	0.1	0.1	0.94	0.94
P22	East Stage 2	20	39.6	LOS D	0.1	0.1	0.89	0.89
P31	North Stage 1	20	44.2	LOS E	0.1	0.1	0.94	0.94
P32	North Stage 2	20	39.6	LOS D	0.1	0.1	0.89	0.89
P41	West Stage 1	20	33.6	LOS D	0.0	0.0	0.82	0.82
P42	West Stage 2	20	33.6	LOS D	0.0	0.0	0.82	0.82
All Pedestrians		160	39.5	LOS D			0.89	0.89

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.

Processed: Wednesday, 20 August 2014 3:30:19 PM
SIDRA INTERSECTION 6.0.22.4722
Project: P:\60313908\4. Tech work area\4.5 Planning\SIDRA MODEL\Reference Case\MODELS\Reference \Intersection 20 2046.sip6
8000907, AECOM, NETWORK / Enterprise

SIDRA INTERSECTION 6

PHASING SUMMARY

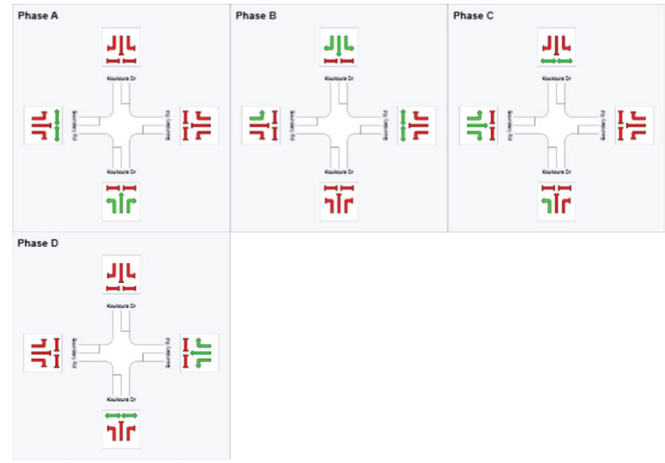
Site: Intersection 20 PM Reference

New Site
Signals - Fixed Time Cycle Time = 100 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Split Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	28	49	73
Green Time (sec)	22	15	18	21
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	28	21	24	27
Phase Split	28 %	21 %	24 %	27 %



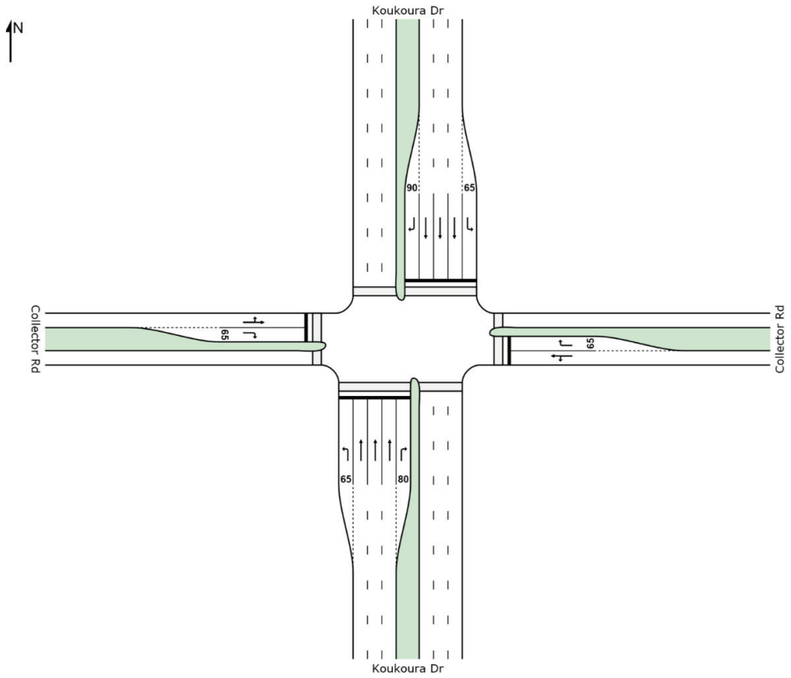
Processed: Wednesday, 20 August 2014 3:30:19 PM
SIDRA INTERSECTION 6.0.22.4722
Project: P:\60313908\4. Tech work area\4.5 Planning\SIDRA MODEL\Reference Case\MODELS\Reference \Intersection 20 2046.sip6
8000907, AECOM, NETWORK / Enterprise

SIDRA INTERSECTION 6

SITE LAYOUT

Site: Intersection 21 PM Reference

New Site
Signals - Fixed Time



SIDRA INTERSECTION 6

MOVEMENT SUMMARY

Site: Intersection 21 PM Reference

New Site
Signals - Fixed Time Cycle Time = 100 seconds (Practical Cycle Time)

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: Koukoura Dr											
1	L2	167	6.0	0.234	28.3	LOS C	5.4	39.5	0.70	0.77	41.4
2	T1	1181	6.0	0.763	37.8	LOS D	18.8	138.6	0.97	0.88	43.7
3	R2	183	6.0	0.790	58.2	LOS E	9.5	70.2	1.00	0.89	31.1
Approach		1531	6.0	0.790	39.2	LOS D	18.8	138.6	0.95	0.87	41.5
East: Collector Rd											
4	L2	59	6.8	0.200	33.5	LOS C	3.9	28.6	0.79	0.70	38.0
5	T1	46	6.5	0.200	28.9	LOS C	3.9	28.6	0.79	0.70	35.0
6	R2	49	6.1	0.145	23.7	LOS C	1.1	7.8	0.87	0.71	41.7
Approach		154	6.5	0.200	29.0	LOS C	3.9	28.6	0.82	0.70	38.1
North: Koukoura Dr											
7	L2	51	5.9	0.072	26.8	LOS C	1.5	11.2	0.65	0.72	42.2
8	T1	627	6.1	0.398	31.6	LOS C	8.3	61.3	0.86	0.71	47.2
9	R2	151	6.0	0.652	54.2	LOS D	7.4	54.4	1.00	0.82	32.2
Approach		829	6.0	0.652	35.4	LOS D	8.3	61.3	0.87	0.73	43.2
West: Collector Rd											
10	L2	164	6.1	0.527	36.9	LOS D	11.6	84.4	0.89	0.79	36.7
11	T1	116	3.4	0.527	32.3	LOS C	11.6	84.4	0.89	0.79	33.9
12	R2	55	12.7	0.170	23.9	LOS C	1.2	9.3	0.87	0.72	40.8
Approach		335	6.3	0.527	33.2	LOS C	11.6	84.4	0.89	0.78	36.3
All Vehicles		2849	6.1	0.790	36.9	LOS D	18.8	138.6	0.91	0.81	41.1

Level of Service (LOS) Method: Delay (HCM 2000).
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	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	20	44.2	LOS E	0.1	0.1	0.94	0.94
P2	East Full Crossing	20	32.8	LOS D	0.0	0.0	0.81	0.81
P3	North Full Crossing	20	44.2	LOS E	0.1	0.1	0.94	0.94
P4	West Full Crossing	20	32.8	LOS D	0.0	0.0	0.81	0.81
All Pedestrians		80	38.5	LOS D			0.88	0.88

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.

SIDRA INTERSECTION 6

PHASING SUMMARY

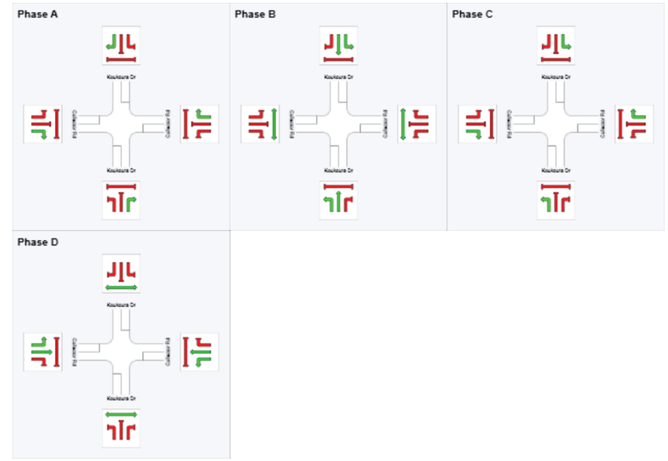
Site: Intersection 21 PM Reference

New Site
Signals - Fixed Time Cycle Time = 100 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Variable Phasing
Movement Class: All Movement Classes
Input Sequence: A, B, C, D
Output Sequence: A, B, C, D

Phase Timing Results

Phase	A	B	C	D
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	19	53	65
Green Time (sec)	13	28	6	29
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	19	34	12	35
Phase Split	19 %	34 %	12 %	35 %



SIDRA INTERSECTION 6