Appendix B: Traffic Modelling

Sparks Road/Hendersons Road

PHASING SUMMARY

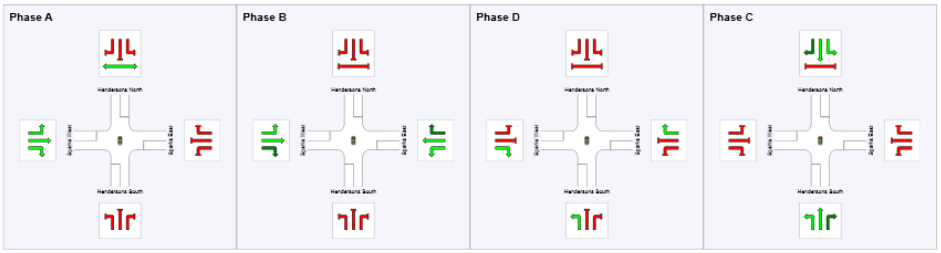
Site: Sparks - Hendersons Option 2015 AM

Sparks - Hendersons Option 2031 AM
Signals - Fixed Time Isolated Cycle Time = 55 seconds (Optimum Cycle Time - Minimum Delay)

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

Phase Timing Results

Phase	A	B	D	C
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	13	28	41
Green Time (sec)	7	9	7	8
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	13	15	13	14
Phase Split	24 %	27 %	24 %	25 %



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Project: X:\0200 Quarrymans Trail\Working\SIDRA\Sparks - Hendersons.sip6

MOVEMENT SUMMARY

Site: Sparks - Hendersons Option 2015 AM

Sparks - Hendersons Option 2031 AM
Signals - Fixed Time Isolated Cycle Time = 55 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	OD Mov	Total veh/h	Demand Flows 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: Hendersons South											
1	L2	192	4.0	0.285	19.4	LOS B	3.6	26.4	0.73	0.77	50.2
2	T1	139	4.0	0.511	25.0	LOS C	3.7	26.7	0.97	0.77	47.4
3	R2	11	4.0	0.081	35.1	LOS D	0.3	2.1	0.97	0.66	40.0
Approach		341	4.0	0.511	22.1	LOS C	3.7	26.7	0.84	0.76	48.6
East: Sparks East											
4	L2	21	4.0	0.704	32.6	LOS C	6.2	44.7	1.00	0.87	44.1
5	T1	199	4.0	0.704	26.2	LOS C	6.2	44.7	1.00	0.87	48.5
6	R2	72	4.0	0.152	18.7	LOS B	1.3	9.4	0.78	0.73	48.7
Approach		292	4.0	0.704	24.8	LOS C	6.2	44.7	0.94	0.84	48.2
North: Hendersons North											
7	L2	44	4.0	0.732	34.0	LOS C	5.8	42.2	1.00	0.89	43.0
8	T1	156	4.0	0.732	27.6	LOS C	5.8	42.2	1.00	0.89	45.0
9	R2	14	4.0	0.084	32.6	LOS C	0.4	2.6	0.94	0.66	42.4
Approach		216	4.0	0.732	29.3	LOS C	5.8	42.2	1.00	0.88	44.4
West: Sparks West											
10	L2	43	4.0	0.061	18.0	LOS B	0.7	5.2	0.64	0.71	51.7
11	T1	285	4.0	0.381	13.9	LOS B	5.5	40.0	0.75	0.66	58.3
12	R2	487	4.0	0.722	17.0	LOS B	7.8	56.4	0.86	0.87	52.4
Approach		816	4.0	0.722	16.0	LOS B	7.8	56.4	0.81	0.79	54.2
All Vehicles		1664	4.0	0.732	20.5	LOS C	7.8	56.4	0.86	0.81	50.5

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
P3	North Full Crossing	53	21.9	LOS C	0.1	0.1	0.89	0.89
All Pedestrians		53	21.9	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.

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PHASING SUMMARY

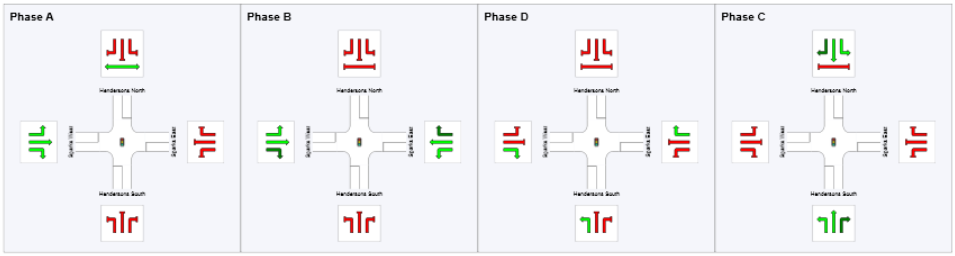
Site: Sparks - Hendersons Option 2015 PM

Sparks - Hendersons Option 2031 AM
Signals - Fixed Time Isolated Cycle Time = 70 seconds (Optimum Cycle Time - Minimum Delay)

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

Phase Timing Results

Phase	A	B	D	C
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	12	39	51
Green Time (sec)	6	21	6	13
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	12	27	12	19
Phase Split	17 %	39 %	17 %	27 %



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Project: X:\0200 Quarrymans Trail\Working\SIDRA\Sparks - Hendersons.sip6

MOVEMENT SUMMARY

Site: Sparks - Hendersons Option 2015 PM

Sparks - Hendersons Option 2031 AM
Signals - Fixed Time Isolated Cycle Time = 70 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Hendersons South											
1	L2	313	4.0	0.498	25.7	LOS C	8.5	61.6	0.83	0.81	46.2
2	T1	122	4.0	0.351	27.7	LOS C	3.8	27.3	0.91	0.73	45.7
3	R2	5	4.0	0.041	40.6	LOS D	0.2	1.3	0.95	0.64	37.6
Approach		440	4.0	0.498	26.4	LOS C	8.5	61.6	0.86	0.79	46.0
East: Sparks East											
4	L2	32	4.0	0.760	33.5	LOS C	12.5	90.6	0.93	0.88	43.7
5	T1	344	4.0	0.760	27.0	LOS C	12.5	90.6	0.93	0.88	48.0
6	R2	102	4.0	0.187	18.4	LOS B	2.1	14.9	0.70	0.75	48.9
Approach		478	4.0	0.760	25.6	LOS C	12.5	90.6	0.88	0.85	47.9
North: Hendersons North											
7	L2	64	4.0	0.754	38.9	LOS D	9.0	65.0	0.99	0.90	40.5
8	T1	169	4.0	0.754	32.5	LOS C	9.0	65.0	0.99	0.90	42.4
9	R2	27	4.0	0.148	36.4	LOS D	0.9	6.3	0.91	0.72	40.7
Approach		261	4.0	0.754	34.3	LOS C	9.0	65.0	0.99	0.88	41.8
West: Sparks West											
10	L2	23	4.0	0.028	17.6	LOS B	0.4	3.0	0.56	0.69	52.0
11	T1	182	4.0	0.206	12.7	LOS B	3.6	26.4	0.62	0.58	59.4
12	R2	345	4.0	0.615	17.0	LOS B	5.8	42.1	0.82	0.81	52.4
Approach		551	4.0	0.615	15.6	LOS B	5.8	42.1	0.74	0.73	54.5
All Vehicles		1749	4.0	0.760	24.1	LOS C	12.5	90.6	0.85	0.80	48.1

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
P3	North Full Crossing	53	29.3	LOS C	0.1	0.1	0.92	0.92
All Pedestrians		53	29.3	LOS C			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.

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Sparks Road midblock near Rydal Street

PHASING SUMMARY

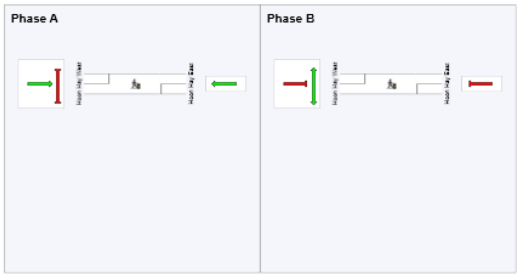
Site: Hoon Hay School Midblock AM

New Site
Pedestrian Crossing (Signals) - Fixed Time Isolated Cycle Time = 60 seconds (User-Given Phase Times)

Phase times specified by the user
Sequence: Two-Phase
Movement Class: All Movement Classes
Input Sequence: A, B
Output Sequence: A, B

Phase Timing Results

Phase	A	B
Reference Phase	Yes	No
Phase Change Time (sec)	0	40
Green Time (sec)	34	14
Yellow Time (sec)	4	4
All-Red Time (sec)	2	2
Phase Time (sec)	40	20
Phase Split	67 %	33 %



MOVEMENT SUMMARY

Site: Hoon Hay School Midblock AM

New Site
Pedestrian Crossing (Signals) - Fixed Time Isolated Cycle Time = 60 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
East: Hoon Hay East											
8	T1	319	5.0	0.287	7.3	LOS A	4.8	35.3	0.55	0.47	43.6
Approach		319	5.0	0.287	7.3	LOS A	4.8	35.3	0.55	0.47	43.6
West: Hoon Hay West											
2	T1	753	1.4	0.663	9.8	LOS A	15.4	109.1	0.75	0.67	41.7
Approach		753	1.4	0.663	9.8	LOS A	15.4	109.1	0.75	0.67	41.7
All Vehicles		1072	2.5	0.663	9.0	LOS A	15.4	109.1	0.69	0.61	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	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		53	24.4	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.

PHASING SUMMARY

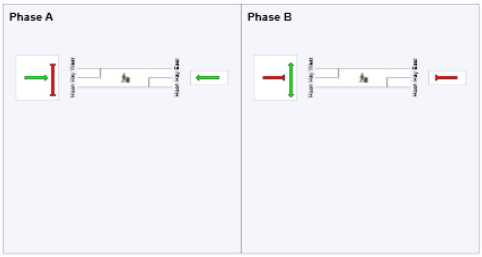
Site: Hoon Hay School Midblock PM

New Site
Pedestrian Crossing (Signals) - Fixed Time Isolated Cycle Time = 60 seconds (User-Given Phase Times)

Phase times specified by the user
Sequence: Two-Phase
Movement Class: All Movement Classes
Input Sequence: A, B
Output Sequence: A, B

Phase Timing Results

Phase	A	B
Reference Phase	Yes	No
Phase Change Time (sec)	0	40
Green Time (sec)	34	14
Yellow Time (sec)	4	4
All-Red Time (sec)	2	2
Phase Time (sec)	40	20
Phase Split	67 %	33 %



Organisation: BECA LIMITED | Processed: Monday, 3 October 2016 4:21:29 p.m.
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MOVEMENT SUMMARY

Site: Hoon Hay School Midblock PM

New Site
Pedestrian Crossing (Signals) - Fixed Time Isolated Cycle Time = 60 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
East: Hoon Hay East											
8	T1	622	1.0	0.547	8.8	LOS A	11.5	81.1	0.67	0.60	42.4
Approach		622	1.0	0.547	8.8	LOS A	11.5	81.1	0.67	0.60	42.4
West: Hoon Hay West											
2	T1	595	1.9	0.526	8.7	LOS A	10.8	76.9	0.66	0.59	42.5
Approach		595	1.9	0.526	8.7	LOS A	10.8	76.9	0.66	0.59	42.5
All Vehicles		1217	1.5	0.547	8.8	LOS A	11.5	81.1	0.67	0.59	42.5

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	West Full Crossing	53	24.4	LOS C	0.1	0.1	0.90	0.90
All Pedestrians		53	24.4	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.

Sparks Road/Hoon Hay Road

PHASING SUMMARY

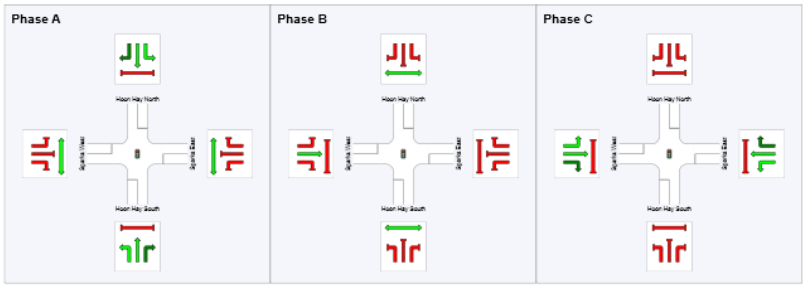
Site: Hoon Hay - Sparks - 2031 AM On road cycle protection - East Only Phase

Hoon Hay - Sparks - 2031 PM
Signals - Fixed Time Isolated Cycle Time = 50 seconds (Optimum Cycle Time - Minimum Delay)

Phase times determined by the program
Sequence: Split 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	20	31
Green Time (sec)	14	5	13
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	20	11	19
Phase Split	40 %	22 %	38 %



Organisation: BECA LIMITED | Processed: Monday, 3 October 2016 12:19:53 p.m.
Project: X:\0200 Quarrymans Trail\Working\SIDRA\Hoon Hay - Sparks Final.sip6

MOVEMENT SUMMARY

Site: Hoon Hay - Sparks - 2031 AM On road cycle protection - East Only Phase

Hoon Hay - Sparks - 2031 PM
Signals - Fixed Time Isolated Cycle Time = 50 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Hoon Hay South											
1	L2	2	0.0	0.866	31.4	LOS C	13.9	99.3	1.00	1.12	36.3
2	T1	467	2.7	0.866	26.8	LOS C	13.9	99.3	1.00	1.12	36.6
3	R2	17	0.0	0.079	27.0	LOS C	0.4	2.7	0.92	0.68	36.2
Approach		486	2.6	0.866	26.9	LOS C	13.9	99.3	1.00	1.10	36.5
East: Sparks East											
4	L2	12	9.1	0.638	23.5	LOS C	7.4	54.5	0.94	0.82	39.3
5	T1	312	5.4	0.638	18.9	LOS B	7.4	54.5	0.94	0.82	39.7
6	R2	89	3.5	0.411	25.2	LOS C	2.1	15.0	0.91	0.77	36.8
Approach		413	5.1	0.638	20.4	LOS C	7.4	54.5	0.93	0.81	39.0
North: Hoon Hay North											
7	L2	109	1.9	0.658	23.0	LOS C	8.0	58.3	0.94	0.84	39.0
8	T1	240	5.3	0.658	18.4	LOS B	8.0	58.3	0.94	0.84	39.3
9	R2	5	0.0	0.035	30.0	LOS C	0.1	0.9	0.96	0.63	35.1
Approach		355	4.2	0.658	20.0	LOS B	8.0	58.3	0.94	0.83	39.1
West: Sparks West											
10	L2	26	0.0	0.831	21.7	LOS C	18.8	133.3	0.88	0.94	40.1
11	T1	739	1.3	0.831	17.1	LOS B	18.8	133.3	0.88	0.94	40.4
12	R2	84	1.3	0.402	28.4	LOS C	2.1	14.7	0.96	0.76	35.6
Approach		849	1.2	0.831	18.4	LOS B	18.8	133.3	0.89	0.92	39.9
All Vehicles		2103	2.8	0.866	21.0	LOS C	18.8	133.3	0.93	0.93	38.8

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	53	19.4	LOS B	0.1	0.1	0.86	0.88
P2	East Full Crossing	53	19.4	LOS B	0.1	0.1	0.86	0.88
P3	North Full Crossing	53	19.4	LOS B	0.1	0.1	0.86	0.88
P4	West Full Crossing	53	19.4	LOS B	0.1	0.1	0.86	0.88
All Pedestrians		211	19.4	LOS B			0.86	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.

Organisation: BECA LIMITED | Processed: Monday, 3 October 2016 12:19:53 p.m.

PHASING SUMMARY

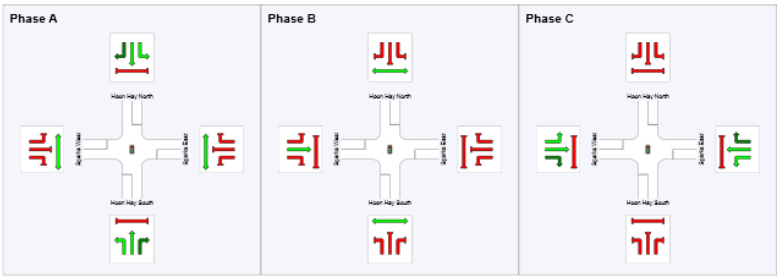
Site: Hoon Hay - Sparks - 2031 PM On road cycle protection - East Only Phase

Hoon Hay - Sparks - 2031 PM
Signals - Fixed Time Isolated Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Phase times determined by the program
Sequence: Split 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	50	69
Green Time (sec)	44	13	65
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	50	19	71
Phase Split	36 %	14 %	51 %



Organisation: BECA LIMITED | Processed: Monday, 3 October 2016 12:19:50 p.m.
Project: X:\0200 Quarrymans Trail\Working\SIDRA\Hoon Hay - Sparks Final.sip6

MOVEMENT SUMMARY

Site: Hoon Hay - Sparks - 2031 PM On road cycle protection - East Only Phase

Hoon Hay - Sparks - 2031 PM
Signals - Fixed Time Isolated Cycle Time = 140 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Hoon Hay South											
1	L2	9	0.0	0.537	46.7	LOS D	17.7	128.3	0.88	0.76	31.5
2	T1	308	4.1	0.537	42.2	LOS D	17.7	128.3	0.88	0.76	31.7
3	R2	13	0.0	0.231	82.8	LOS F	0.9	6.4	1.00	0.66	23.3
Approach		331	3.8	0.537	43.9	LOS D	17.7	128.3	0.88	0.75	31.2
East: Sparks East											
4	L2	22	0.0	1.014	123.6	LOS F	72.7	513.4	1.00	1.30	18.9
5	T1	678	1.1	1.014	119.0	LOS F	72.7	513.4	1.00	1.30	19.0
6	R2	144	0.7	0.383	31.2	LOS C	6.5	45.7	0.69	0.76	34.7
Approach		844	1.0	1.014	104.1	LOS F	72.7	513.4	0.95	1.20	20.6
North: Hoon Hay North											
7	L2	148	1.4	0.999	104.9	LOS F	55.5	394.8	1.00	1.23	20.8
8	T1	434	1.9	0.999	100.3	LOS F	55.5	394.8	1.00	1.23	20.9
9	R2	21	0.0	0.099	57.1	LOS E	1.2	8.5	0.87	0.71	27.9
Approach		603	1.7	0.999	99.9	LOS F	55.5	394.8	1.00	1.21	21.1
West: Sparks West											
10	L2	13	0.0	0.441	20.5	LOS C	19.8	140.9	0.58	0.53	40.7
11	T1	536	2.0	0.441	15.9	LOS B	19.8	140.9	0.58	0.53	41.0
12	R2	8	0.0	0.149	82.0	LOS F	0.6	4.2	1.00	0.65	23.4
Approach		557	1.9	0.441	17.0	LOS B	19.8	140.9	0.59	0.53	40.5
All Vehicles		2335	1.8	1.014	73.7	LOS E	72.7	513.4	0.87	0.98	24.8

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	53	64.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	40.2	LOS E	0.2	0.2	0.76	0.76
P3	North Full Crossing	53	64.3	LOS F	0.2	0.2	0.96	0.96
P4	West Full Crossing	53	40.2	LOS E	0.2	0.2	0.76	0.76
All Pedestrians		211	52.2	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.

Organisation: BECA LIMITED | Processed: Monday, 3 October 2016 12:19:50 p.m.

Sparks Road/Frankleigh Street/Lyttelton Street

PHASING SUMMARY

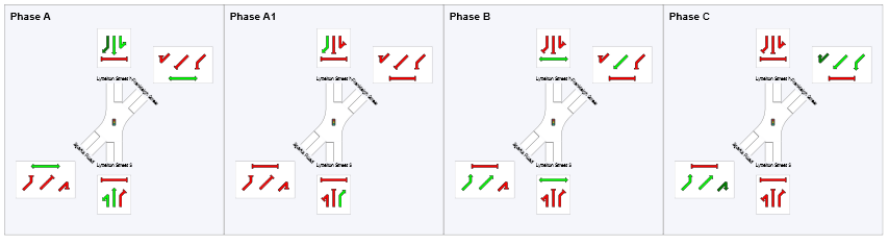
Site: Sparks-Lyttelton Base 2031 AM - off road with protected RT

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

Phase times determined by the program
Sequence: Two-Phase
Movement Class: All Movement Classes
Input Sequence: A, A1, B, C
Output Sequence: A, A1, B, C

Phase Timing Results

Phase	A	A1	B	C
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	34	46	71
Green Time (sec)	28	6	19	23
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	34	12	25	29
Phase Split	34 %	12 %	25 %	29 %



The results of iterative calculations indicate a somewhat unstable solution. See the Diagnostics section in the Detailed Output report.

Organisation: BECA LIMITED | Processed: Monday, 3 October 2016 12:15:19 p.m.
Project: X:\0200 Quarrymans Trail\Working\SIDRA\Sparks-Lyttelton - Final.sip6

MOVEMENT SUMMARY

Site: Sparks-Lyttelton Base 2031 AM - off road with protected RT

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

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Lyttelton Street South											
1b	L3	26	8.0	0.865	50.8	LOS D	23.0	163.0	0.99	1.03	30.6
2	T1	409	1.3	0.865	45.4	LOS D	23.0	163.0	0.99	1.03	30.7
3a	R1	48	2.2	0.440	55.9	LOS E	2.5	17.5	1.00	0.74	28.4
Approach		484	1.7	0.865	46.7	LOS D	23.0	163.0	0.99	1.00	30.5
NorthEast: Frankleigh Street											
24a	L1	12	9.1	0.389	21.5	LOS C	11.2	81.5	0.68	0.59	39.7
25	T1	355	4.7	0.389	17.5	LOS B	11.2	81.5	0.68	0.59	40.2
26b	R3	14	0.0	0.108	48.1	LOS D	0.6	4.3	0.90	0.71	29.9
Approach		380	4.7	0.389	18.7	LOS B	11.2	81.5	0.68	0.60	39.7
North: Lyttelton Street North											
7b	L3	1	0.0	0.212	35.1	LOS D	4.3	30.7	0.81	0.65	35.4
8	T1	114	2.8	0.212	29.7	LOS C	4.3	30.7	0.81	0.65	35.5
9a	R1	31	3.4	0.139	42.1	LOS D	1.3	9.5	0.92	0.70	31.7
Approach		145	2.9	0.212	32.4	LOS C	4.3	30.7	0.83	0.66	34.6
SouthWest: Sparks Road											
30a	L1	81	1.3	0.895	39.8	LOS D	42.2	298.4	0.94	0.98	33.0
31	T1	742	1.3	0.895	35.9	LOS D	42.2	298.4	0.94	0.98	33.4
32b	R3	43	2.4	0.164	39.4	LOS D	1.7	12.4	0.84	0.74	32.2
Approach		866	1.3	0.895	36.4	LOS D	42.2	298.4	0.93	0.97	33.3
All Vehicles		1876	2.2	0.895	35.2	LOS D	42.2	298.4	0.89	0.88	33.7

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.
The results of iterative calculations indicate a somewhat unstable solution. See the Diagnostics section in the Detailed Output report.

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	53	44.3	LOS E	0.1	0.1	0.94	0.94
P6	NorthEast Full Crossing	53	33.7	LOS D	0.1	0.1	0.82	0.82
P3	North Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
P8	SouthWest Full Crossing	53	37.1	LOS D	0.1	0.1	0.86	0.86
All Pedestrians		211	39.8	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

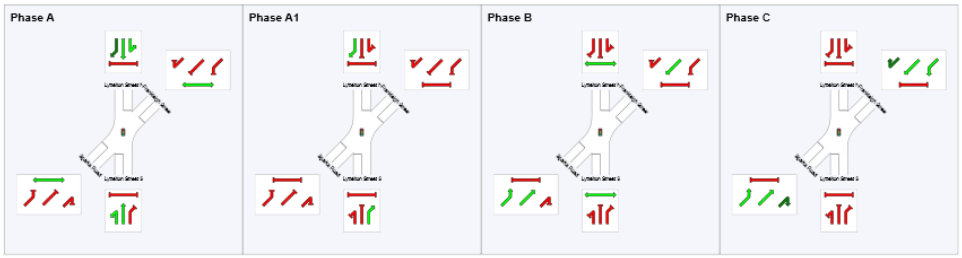
Site: Sparks-Lyttelton Base 2031 PM - off road with protected RT

New Site
Signals - Fixed Time Isolated Cycle Time = 120 seconds (Practical Cycle Time)

Phase times determined by the program
Sequence: Two-Phase
Movement Class: All Movement Classes
Input Sequence: A, A1, B, C
Output Sequence: A, A1, B, C

Phase Timing Results

Phase	A	A1	B	C
Reference Phase	Yes	No	No	No
Phase Change Time (sec)	0	47	59	85
Green Time (sec)	41	6	20	29
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	47	12	26	35
Phase Split	39 %	10 %	22 %	29 %



The results of iterative calculations indicate a somewhat unstable solution. See the Diagnostics section in the Detailed Output report.

Organisation: BECA LIMITED | Processed: Monday, 3 October 2016 12:15:21 p.m.
Project: X:\0200 Quarrymans Trail\Working\SIDRA\Sparks-Lyttelton - Final.sip6

MOVEMENT SUMMARY

Site: Sparks-Lyttelton Base 2031 PM - off road with protected RT

New Site
Signals - Fixed Time Isolated Cycle Time = 120 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Lyttelton Street South											
1b	L3	36	2.9	0.537	38.9	LOS D	14.8	104.4	0.84	0.73	34.0
2	T1	284	1.1	0.537	33.5	LOS C	14.8	104.4	0.84	0.73	34.1
3a	R1	41	2.6	0.449	67.4	LOS E	2.5	18.0	1.00	0.73	26.0
Approach		361	1.5	0.537	37.9	LOS D	14.8	104.4	0.86	0.73	32.9
NorthEast: Frankleigh Street											
24a	L1	57	1.9	0.815	34.6	LOS C	39.7	280.7	0.93	0.86	34.7
25	T1	727	1.0	0.815	30.6	LOS C	39.7	280.7	0.93	0.86	35.1
26b	R3	1	0.0	0.006	46.1	LOS D	0.0	0.3	0.81	0.62	30.4
Approach		785	1.1	0.815	30.9	LOS C	39.7	280.7	0.93	0.86	35.1
North: Lyttelton Street North											
7b	L3	36	0.0	0.879	54.4	LOS D	30.0	211.0	0.95	0.98	29.8
8	T1	460	0.7	0.879	49.0	LOS D	30.0	211.0	0.95	0.98	29.8
9a	R1	81	1.3	0.238	36.9	LOS D	3.6	25.4	0.83	0.73	33.2
Approach		577	0.7	0.879	47.6	LOS D	30.0	211.0	0.93	0.95	30.2
SouthWest: Sparks Road											
30a	L1	138	1.5	0.780	31.6	LOS C	30.4	216.4	0.86	0.79	35.5
31	T1	520	1.8	0.780	27.7	LOS C	30.4	216.4	0.86	0.79	35.9
32b	R3	38	2.8	0.316	58.4	LOS E	2.1	15.2	0.94	0.76	27.6
Approach		696	1.8	0.780	30.1	LOS C	30.4	216.4	0.87	0.79	35.3
All Vehicles		2419	1.3	0.879	35.7	LOS D	39.7	280.7	0.90	0.84	33.5

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.
The results of iterative calculations indicate a somewhat unstable solution. See the Diagnostics section in the Detailed Output report.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P6	NorthEast Full Crossing	53	33.1	LOS D	0.1	0.1	0.74	0.74
P3	North Full Crossing	53	54.3	LOS E	0.2	0.2	0.95	0.95
P8	SouthWest Full Crossing	53	36.1	LOS D	0.1	0.1	0.78	0.78
All Pedestrians		211	44.4	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.

Strickland Street at Roker Street

PHASING SUMMARY

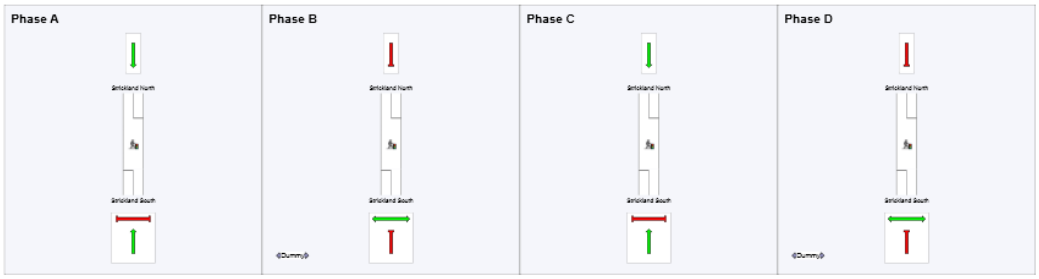
Site: Strickland Street Midblock 2031 AM

Strickland Street Midblock
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 100 seconds (Network Cycle Time)

Phase times determined by the program
Sequence: Two-Phase
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	32	42	88
Green Time (sec)	26	4	40	6
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	32	10	46	12
Phase Split	32 %	10 %	46 %	12 %



Organisation: BECA LIMITED | Processed: Wednesday, 28 September 2016 10:26:24 a.m.
Project: X:\0200 Quarrymans Trail\Working\SIDRA\Strickland - Milton Final.sip6

MOVEMENT SUMMARY

Site: Strickland Street Midblock 2031 AM

Network: Strickland and Milton 2031 AM

Strickland Street Midblock
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 100 seconds (Network Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Strickland South													
2	T1	572	1.8	572	1.8	0.899	31.7	LOS C	22.7	161.2	0.90	1.01	26.8
Approach		572	1.8	572	1.8	0.899	31.7	LOS C	22.7	161.2	0.90	1.01	26.8
North: Strickland North													
8	T1	148	2.8	148	2.8	0.117	1.9	LOS A	0.7	5.0	0.19	0.16	47.8
Approach		148	2.8	148	2.8	0.117	1.9	LOS A	0.7	5.0	0.19	0.16	47.8
All Vehicles		720	2.0	720	2.0	0.899	25.6	LOS C	22.7	161.2	0.75	0.83	29.7

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	53	20.0	LOS C	0.1	0.1	0.88	0.88
All Pedestrians		53	20.0	LOS C			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.

Organisation: BECA LIMITED | Processed: Wednesday, 28 September 2016 10:26:24 a.m.
Project: X:\0200 Quarrymans Trail\Working\SIDRA\Strickland - Milton Final.sip6

PHASING SUMMARY

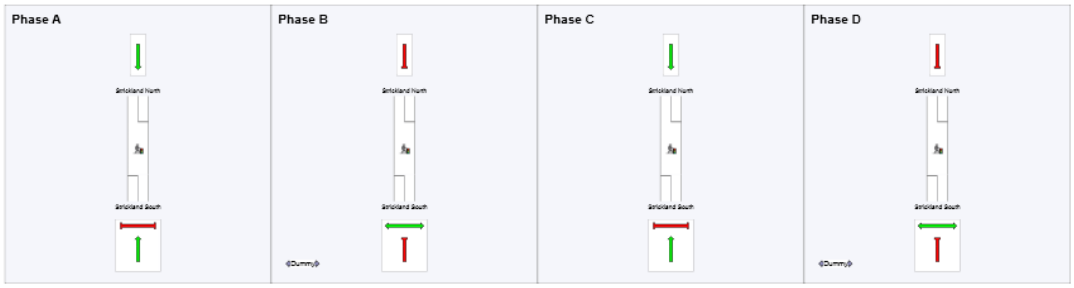
Site: Strickland Street Midblock 2031 PM

Strickland Street Midblock
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 100 seconds (Network Cycle Time)

Phase times determined by the program
Sequence: Two-Phase
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	32	43	89
Green Time (sec)	26	5	40	5
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	32	11	46	11
Phase Split	32 %	11 %	46 %	11 %



The results of iterative calculations indicate a somewhat unstable solution. See the Diagnostics section in the Detailed Output report.

Organisation: BECA LIMITED | Processed: Wednesday, 28 September 2016 10:23:41 a.m.
Project: X:\0200 Quarrymans Trail\Working\SIDRA\Strickland - Milton Final.sip6

MOVEMENT SUMMARY

Site: Strickland Street Midblock 2031 PM

Network: Strickland and Milton 2031 PM

Strickland Street Midblock
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 100 seconds (Network Cycle Time)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Strickland South													
2	T1	263	1.2	263	1.2	0.217	3.6	LOS A	2.6	18.3	0.42	0.36	45.5
Approach		263	1.2	263	1.2	0.217	3.6	LOS A	2.6	18.3	0.42	0.36	45.5
North: Strickland North													
8	T1	519	1.0	519	1.0	0.406	4.3	LOS A	6.0	42.2	0.50	0.44	45.2
Approach		519	1.0	519	1.0	0.406	4.3	LOS A	6.0	42.2	0.50	0.44	45.2
All Vehicles		782	1.1	782	1.1	0.406	4.1	LOS A	6.0	42.2	0.47	0.41	45.3

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.
The results of iterative calculations indicate a somewhat unstable solution. See the Diagnostics section in the Detailed Output report.

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	53	19.9	LOS B	0.1	0.1	0.88	0.88
All Pedestrians		53	19.9	LOS B			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.

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Strickland Street/Milton Street

PHASING SUMMARY

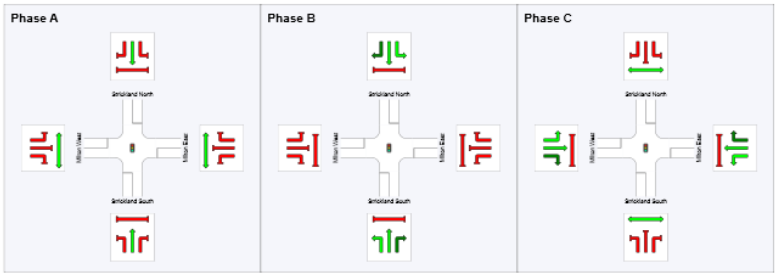
Site: Strickland and Milton 2031 AM

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

Phase times determined by the program
Sequence: Two-Phase
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	17	52
Green Time (sec)	11	29	42
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	17	35	48
Phase Split	17 %	35 %	48 %



Organisation: BECA LIMITED | Processed: Wednesday, 28 September 2016 10:26:24 a.m.
Project: X:\0200 Quarrymans Trail\Working\SIDRA\Strickland - Milton Final.sip6

MOVEMENT SUMMARY

Site: Strickland and Milton 2031 AM

Network: Strickland and Milton 2031 AM

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

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Strickland South													
1	L2	1	0.0	1	0.0	0.616	23.7	LOS C	11.5	81.6	0.75	0.66	33.2
2	T1	502	1.7	502	1.7	0.616	19.9	LOS B	11.5	81.6	0.75	0.66	33.6
3	R2	68	1.5	68	1.5	0.173	32.8	LOS C	2.6	18.7	0.82	0.74	27.4
Approach		572	1.7	572	1.7	0.616	21.4	LOS C	11.5	81.6	0.76	0.67	32.7
East: Milton East													
4	L2	25	4.2	25	4.2	0.605	28.8	LOS C	19.1	136.4	0.83	0.74	30.1
5	T1	480	4.2	480	4.2	0.605	24.2	LOS C	19.1	136.4	0.83	0.74	37.5
6	R2	1	0.0	1	0.0	0.011	53.0	LOS D	0.0	0.3	0.95	0.59	28.9
Approach		506	4.2	506	4.2	0.605	24.5	LOS C	19.1	136.4	0.83	0.74	37.2
North: Strickland North													
7	L2	4	25.0	4	25.0	0.136	21.3	LOS C	3.5	25.4	0.61	0.50	40.2
8	T1	123	2.6	123	2.6	0.136	16.5	LOS B	3.5	25.4	0.61	0.50	34.6
9	R2	28	7.4	28	7.4	0.106	33.3	LOS C	1.0	7.7	0.76	0.71	34.0
Approach		156	4.1	156	4.1	0.136	19.7	LOS B	3.5	25.4	0.64	0.54	34.6
West: Milton West													
10	L2	18	0.0	18	0.0	0.906	47.2	LOS D	42.7	302.5	1.00	1.07	31.4
11	T1	749	1.4	749	1.4	0.906	42.6	LOS D	42.7	302.5	1.00	1.07	31.5
12	R2	1	0.0	1	0.0	0.005	36.6	LOS D	0.0	0.3	0.79	0.60	25.1
Approach		768	1.4	768	1.4	0.906	42.7	LOS D	42.7	302.5	1.00	1.07	31.5
All Vehicles		2002	2.4	2002	2.4	0.906	30.2	LOS C	42.7	302.5	0.86	0.83	33.4

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
P1	South Full Crossing	53	23.2	LOS C	0.1	0.1	0.68	0.68
P2	East Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
P3	North Full Crossing	53	23.2	LOS C	0.1	0.1	0.68	0.68
P4	West Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
All Pedestrians		211	33.7	LOS D			0.81	0.81

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

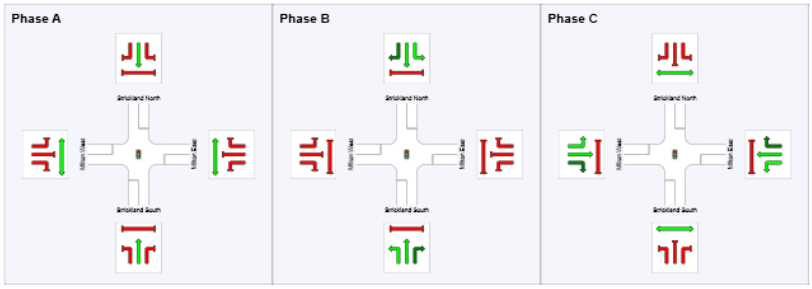
Site: Strickland and Milton 2031 PM

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

Phase times determined by the program
Sequence: Two-Phase
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	17	46
Green Time (sec)	11	23	48
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	17	29	54
Phase Split	17 %	29 %	54 %



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MOVEMENT SUMMARY

Site: Strickland and Milton 2031 PM

Network: Strickland and Milton 2031 PM

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

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Strickland South													
1	L2	1	0.0	1	0.0	0.311	25.6	LOS C	7.1	50.0	0.66	0.56	32.2
2	T1	234	1.4	234	1.4	0.311	21.7	LOS C	7.1	50.0	0.66	0.56	32.6
3	R2	29	0.0	29	0.0	0.122	37.6	LOS D	1.2	8.7	0.87	0.72	25.7
Approach		264	1.2	264	1.2	0.311	23.5	LOS C	7.1	50.0	0.68	0.57	31.7
East: Milton East													
4	L2	64	1.6	64	1.6	0.832	31.9	LOS C	36.2	255.6	0.93	0.89	28.6
5	T1	743	1.1	743	1.1	0.832	27.3	LOS C	36.2	255.6	0.93	0.89	36.3
6	R2	1	0.0	1	0.0	0.007	42.5	LOS D	0.0	0.3	0.85	0.60	31.5
Approach		808	1.2	808	1.2	0.832	27.7	LOS C	36.2	255.6	0.93	0.89	35.8
North: Strickland North													
7	L2	11	10.0	11	10.0	0.797	33.7	LOS C	19.2	135.5	0.83	0.80	35.4
8	T1	455	0.9	455	0.9	0.797	29.1	LOS C	19.2	135.5	0.83	0.80	28.0
9	R2	174	0.6	174	0.6	0.601	42.7	LOS D	7.8	54.9	0.94	0.81	31.3
Approach		639	1.0	639	1.0	0.797	32.9	LOS C	19.2	135.5	0.86	0.80	29.4
West: Milton West													
10	L2	63	1.7	63	1.7	0.787	28.5	LOS C	31.2	221.2	0.90	0.83	37.2
11	T1	695	1.7	695	1.7	0.787	23.9	LOS C	31.2	221.2	0.90	0.83	37.5
12	R2	1	0.0	1	0.0	0.008	45.5	LOS D	0.0	0.3	0.88	0.60	22.4
Approach		759	1.7	759	1.7	0.787	24.3	LOS C	31.2	221.2	0.90	0.83	37.5
All Vehicles		2471	1.3	2471	1.3	0.832	27.5	LOS C	36.2	255.6	0.88	0.82	34.6

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	53	19.3	LOS B	0.1	0.1	0.62	0.62
P2	East Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
P3	North Full Crossing	53	19.3	LOS B	0.1	0.1	0.62	0.62
P4	West Full Crossing	53	44.3	LOS E	0.1	0.1	0.94	0.94
All Pedestrians		211	31.8	LOS D			0.78	0.78

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Brougham Street/Strickland Street/Antigua Street base case – no cycleway

PHASING SUMMARY

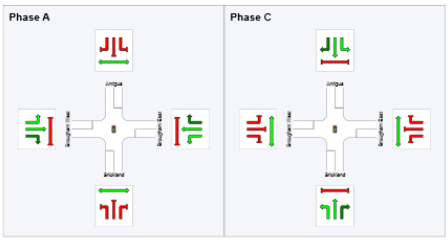
Site: Antigue-Brougham-Strickland BASE 2031 AM

New Site
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Optimum Cycle Time - Minimum Delay)

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

Phase Timing Results

Phase	A	C
Reference Phase	Yes	No
Phase Change Time (sec)	0	86
Green Time (sec)	80	58
Yellow Time (sec)	4	4
All-Red Time (sec)	2	2
Phase Time (sec)	86	64
Phase Split	57 %	43 %



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MOVEMENT SUMMARY

Site: Antigue-Brougham-Strickland BASE 2031 AM

New Site
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Strickland											
1	L2	144	4.0	1.263	333.4	LOS F	132.3	957.8	1.00	1.96	9.2
2	T1	617	4.0	1.263	328.8	LOS F	132.3	957.8	1.00	1.96	9.1
3	R2	142	4.0	0.794	60.9	LOS E	9.5	69.1	0.85	0.89	28.3
Approach		903	4.0	1.263	287.4	LOS F	132.3	957.8	0.98	1.79	10.2
East: Brougham East											
4	L2	99	8.0	0.107	23.8	LOS C	3.5	26.1	0.52	0.70	39.9
5	T1	2200	8.0	1.153	209.8	LOS F	166.0	1242.0	1.00	1.72	13.5
6	R2	1	8.0	0.020	86.7	LOS F	0.1	0.6	1.00	0.57	23.7
Approach		2300	8.0	1.153	201.7	LOS F	166.0	1242.0	0.98	1.67	13.9
North: Antigua											
7	L2	1	4.0	0.361	38.7	LOS D	12.8	92.3	0.75	0.64	35.5
8	T1	252	4.0	0.361	34.1	LOS C	12.8	92.3	0.75	0.64	34.2
9	R2	40	4.0	0.768	92.2	LOS F	3.2	23.4	1.00	0.82	22.8
Approach		293	4.0	0.768	42.1	LOS D	12.8	92.3	0.78	0.66	32.0
West: Brougham West											
10	L2	347	8.0	0.513	27.3	LOS C	14.6	109.2	0.63	0.76	38.5
11	T1	2125	8.0	1.246	297.9	LOS F	205.0	1533.4	1.00	2.01	10.2
12	R2	51	8.0	0.983	111.3	LOS F	4.5	33.9	1.00	0.97	20.5
Approach		2523	8.0	1.246	256.9	LOS F	205.0	1533.4	0.95	1.82	11.5
All Vehicles		6019	7.2	1.263	230.0	LOS F	205.0	1533.4	0.96	1.70	12.5

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	53	25.9	LOS C	0.1	0.1	0.59	0.59
P2	East Full Crossing	53	47.3	LOS E	0.2	0.2	0.80	0.80
P3	North Full Crossing	53	25.9	LOS C	0.1	0.1	0.59	0.59
P4	West Full Crossing	53	47.3	LOS E	0.2	0.2	0.80	0.80
All Pedestrians		211	36.6	LOS D			0.69	0.69

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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PHASING SUMMARY

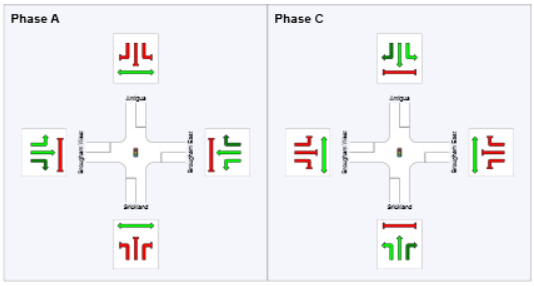
Site: Antigue-Brougham-Strickland BASE 2031 PM

New Site
Signals - Fixed Time Isolated Cycle Time = 100 seconds (Optimum Cycle Time - Minimum Delay)

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

Phase Timing Results

Phase	A	C
Reference Phase	Yes	No
Phase Change Time (sec)	0	59
Green Time (sec)	53	35
Yellow Time (sec)	4	4
All-Red Time (sec)	2	2
Phase Time (sec)	59	41
Phase Split	59 %	41 %



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MOVEMENT SUMMARY

Site: Antigue-Brougham-Strickland BASE 2031 PM

New Site
Signals - Fixed Time Isolated Cycle Time = 100 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Strickland											
1	L2	132	4.0	0.828	41.3	LOS D	27.6	200.0	0.98	0.94	34.3
2	T1	437	4.0	0.828	36.7	LOS D	27.6	200.0	0.98	0.94	33.1
3	R2	7	4.0	0.094	58.9	LOS E	0.4	2.7	1.00	0.64	28.8
Approach		576	4.0	0.828	38.0	LOS D	27.6	200.0	0.98	0.94	33.3
East: Brougham East											
4	L2	214	8.0	0.233	19.0	LOS B	5.5	41.4	0.57	0.73	42.1
5	T1	2115	8.0	1.152	194.6	LOS F	135.2	1010.9	1.00	2.08	14.3
6	R2	1	8.0	0.014	58.6	LOS E	0.1	0.4	0.99	0.57	29.0
Approach		2329	8.0	1.152	178.5	LOS F	135.2	1010.9	0.96	1.96	15.2
North: Antigua											
7	L2	1	4.0	1.204	256.6	LOS F	90.3	653.9	1.00	2.33	11.5
8	T1	684	4.0	1.204	252.0	LOS F	90.3	653.9	1.00	2.33	11.3
9	R2	139	4.0	1.183	237.1	LOS F	17.1	123.6	1.00	1.66	12.0
Approach		824	4.0	1.204	249.5	LOS F	90.3	653.9	1.00	2.22	11.4
West: Brougham West											
10	L2	140	8.0	0.154	18.4	LOS B	3.5	25.8	0.54	0.71	42.4
11	T1	2178	8.0	1.182	219.5	LOS F	146.9	1098.6	1.00	2.22	13.0
12	R2	17	8.0	0.219	60.8	LOS E	0.9	6.5	1.00	0.68	28.5
Approach		2335	8.0	1.182	206.3	LOS F	146.9	1098.6	0.97	2.12	13.7
All Vehicles		6064	7.1	1.204	185.5	LOS F	146.9	1098.6	0.97	1.96	14.7

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	53	21.2	LOS C	0.1	0.1	0.65	0.65
P2	East Full Crossing	53	42.4	LOS E	0.1	0.1	0.92	0.92
P3	North Full Crossing	53	21.2	LOS C	0.1	0.1	0.65	0.65
P4	West Full Crossing	53	42.4	LOS E	0.1	0.1	0.92	0.92
All Pedestrians		211	31.8	LOS D			0.79	0.79

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Brougham Street/Strickland Street/Antigua Street

PHASING SUMMARY

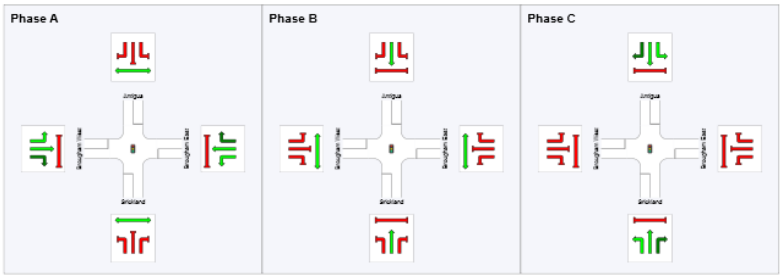
Site: Antigue-Brougham-Strickland 2 lane 2031 AM

New Site
Signals - Fixed Time Isolated Cycle Time = 105 seconds (Optimum Cycle Time - Minimum Delay)

Phase times determined by the program
Sequence: Two-Phase
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	61	91
Green Time (sec)	55	24	8
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	61	30	14
Phase Split	58 %	29 %	13 %



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MOVEMENT SUMMARY

Site: Antigue-Brougham-Strickland 2 lane 2031 AM

New Site
Signals - Fixed Time Isolated Cycle Time = 105 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	OD Mov	Total veh/h	Demand Flows 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: Strickland											
1	L2	144	4.0	1.253	298.9	LOS F	111.4	806.2	1.00	2.35	10.1
2	T1	617	4.0	1.253	294.3	LOS F	111.4	806.2	1.00	2.35	10.0
3	R2	142	4.0	1.144	204.8	LOS F	16.1	116.7	1.00	1.56	13.4
Approach		903	4.0	1.253	281.0	LOS F	111.4	806.2	1.00	2.22	10.4
East: Brougham East											
4	L2	99	8.0	0.109	19.0	LOS B	2.5	18.8	0.53	0.70	42.1
5	T1	2200	8.0	1.169	209.6	LOS F	143.7	1074.8	1.00	2.11	13.5
6	R2	1	8.0	0.014	61.4	LOS E	0.1	0.4	0.99	0.57	28.4
Approach		2300	8.0	1.169	201.3	LOS F	143.7	1074.8	0.98	2.04	13.9
North: Antigua											
7	L2	1	4.0	0.377	30.7	LOS C	9.4	67.9	0.77	0.65	38.5
8	T1	252	4.0	0.377	26.1	LOS C	9.4	67.9	0.77	0.65	36.9
9	R2	40	4.0	0.538	64.0	LOS E	2.2	16.1	1.00	0.73	27.6
Approach		293	4.0	0.538	31.3	LOS C	9.4	67.9	0.81	0.66	35.3
West: Brougham West											
10	L2	347	8.0	0.388	21.6	LOS C	10.5	78.8	0.64	0.77	40.9
11	T1	2125	8.0	1.247	282.0	LOS F	174.0	1301.5	1.00	2.45	10.7
12	R2	51	8.0	0.688	66.2	LOS E	2.8	21.3	1.00	0.79	27.3
Approach		2523	8.0	1.247	241.8	LOS F	174.0	1301.5	0.95	2.18	12.0
All Vehicles		6019	7.2	1.253	222.0	LOS F	174.0	1301.5	0.96	2.06	12.8

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	53	22.1	LOS C	0.1	0.1	0.65	0.65
P2	East Full Crossing	53	46.8	LOS E	0.1	0.1	0.94	0.94
P3	North Full Crossing	53	22.1	LOS C	0.1	0.1	0.65	0.65
P4	West Full Crossing	53	46.8	LOS E	0.1	0.1	0.94	0.94
All Pedestrians		211	34.4	LOS D			0.80	0.80

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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PHASING SUMMARY

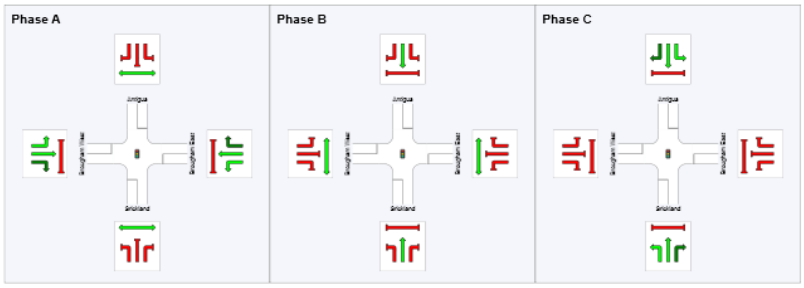
Site: Antigue-Brougham-Strickland 2 lane 2031 PM

New Site
Signals - Fixed Time Isolated Cycle Time = 115 seconds (Optimum Cycle Time - Minimum Delay)

Phase times determined by the program
Sequence: Two-Phase
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	69	101
Green Time (sec)	63	26	8
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	69	32	14
Phase Split	60 %	28 %	12 %



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MOVEMENT SUMMARY

Site: Antigue-Brougham-Strickland 2 lane 2031 PM

New Site
Signals - Fixed Time Isolated Cycle Time = 115 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Strickland											
1	L2	132	4.0	0.943	69.9	LOS E	39.8	288.2	1.00	1.13	27.1
2	T1	437	4.0	0.943	65.3	LOS E	39.8	288.2	1.00	1.13	26.3
3	R2	7	4.0	0.108	67.5	LOS E	0.4	3.1	1.00	0.64	26.9
Approach		576	4.0	0.943	66.4	LOS E	39.8	288.2	1.00	1.12	26.5
East: Brougham East											
4	L2	214	8.0	0.226	19.8	LOS B	6.1	45.5	0.55	0.73	41.7
5	T1	2115	8.0	1.120	172.3	LOS F	135.1	1010.6	1.00	1.80	15.7
6	R2	1	8.0	0.016	67.1	LOS E	0.1	0.5	0.99	0.57	27.2
Approach		2329	8.0	1.120	158.3	LOS F	135.1	1010.6	0.96	1.70	16.6
North: Antigua											
7	L2	1	4.0	1.093	165.9	LOS F	75.1	543.5	1.00	1.70	16.0
8	T1	684	4.0	1.093	161.3	LOS F	75.1	543.5	1.00	1.70	15.7
9	R2	139	4.0	2.052	1022.3	LOS F	37.8	273.8	1.00	2.33	3.4
Approach		824	4.0	2.052	306.4	LOS F	75.1	543.5	1.00	1.81	9.7
West: Brougham West											
10	L2	140	8.0	0.149	19.2	LOS B	3.8	28.4	0.52	0.71	42.1
11	T1	2178	8.0	1.147	194.4	LOS F	146.1	1092.8	1.00	1.92	14.3
12	R2	17	8.0	0.251	69.6	LOS E	1.0	7.5	1.00	0.68	26.7
Approach		2335	8.0	1.147	183.0	LOS F	146.1	1092.8	0.97	1.84	15.0
All Vehicles		6064	7.1	2.052	179.2	LOS F	146.1	1092.8	0.97	1.71	15.0

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	53	21.4	LOS C	0.1	0.1	0.61	0.61
P2	East Full Crossing	53	51.8	LOS E	0.2	0.2	0.95	0.95
P3	North Full Crossing	53	21.4	LOS C	0.1	0.1	0.61	0.61
P4	West Full Crossing	53	51.8	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		211	36.6	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.

Antigua Street/Disraeli Street

PHASING SUMMARY

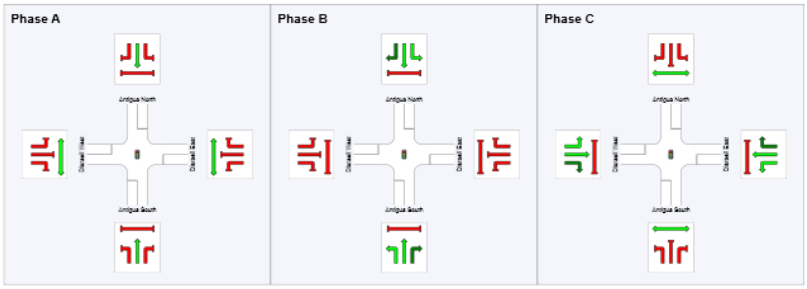
Site: Antigua-Disraeli Option 2031 AM

New Site
Signals - Fixed Time Isolated Cycle Time = 50 seconds (Optimum Cycle Time - Minimum Delay)

Phase times determined by the program
Sequence: Opposed Turns
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	11	23
Green Time (sec)	5	6	21
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	11	12	27
Phase Split	22 %	24 %	54 %



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MOVEMENT SUMMARY

Site: Antigua-Disraeli Option 2031 AM

New Site
Signals - Fixed Time Isolated Cycle Time = 50 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Antigua South											
1	L2	26	12.0	0.577	19.7	LOS B	8.2	59.3	0.87	0.75	40.9
2	T1	371	3.4	0.577	15.0	LOS B	8.2	59.3	0.87	0.75	41.3
3	R2	4	25.0	0.021	26.7	LOS C	0.1	0.8	0.90	0.63	36.1
Approach		401	4.2	0.577	15.4	LOS B	8.2	59.3	0.87	0.75	41.2
East: Disraeli East											
4	L2	48	6.5	0.244	14.9	LOS B	3.1	22.4	0.68	0.61	42.8
5	T1	143	4.4	0.244	10.3	LOS B	3.1	22.4	0.68	0.61	43.2
6	R2	12	27.3	0.051	23.3	LOS C	0.2	2.1	0.83	0.67	37.4
Approach		203	6.2	0.244	12.1	LOS B	3.1	22.4	0.69	0.61	42.8
North: Antigua North											
7	L2	31	10.3	0.293	18.0	LOS B	3.6	27.0	0.77	0.65	41.5
8	T1	166	7.6	0.293	13.4	LOS B	3.6	27.0	0.77	0.65	41.9
9	R2	46	9.1	0.227	27.6	LOS C	1.1	8.4	0.94	0.73	35.8
Approach		243	8.2	0.293	16.7	LOS B	3.6	27.0	0.80	0.67	40.5
West: Disraeli West											
10	L2	403	3.1	0.790	21.6	LOS C	12.2	87.4	0.86	0.91	36.7
11	T1	115	2.8	0.790	17.0	LOS B	12.2	87.4	0.86	0.91	39.0
12	R2	118	8.9	0.249	17.3	LOS B	2.1	15.9	0.74	0.74	40.0
Approach		636	4.1	0.790	20.0	LOS B	12.2	87.4	0.84	0.86	39.0
All Vehicles		1463	5.1	0.790	17.1	LOS B	12.2	87.4	0.82	0.77	40.3

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	53	15.2	LOS B	0.1	0.1	0.76	0.78
P2	East Full Crossing	53	19.4	LOS B	0.1	0.1	0.86	0.88
P3	North Full Crossing	53	15.2	LOS B	0.1	0.1	0.76	0.78
P4	West Full Crossing	53	19.4	LOS B	0.1	0.1	0.86	0.88
All Pedestrians		211	17.3	LOS B			0.83	0.83

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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PHASING SUMMARY

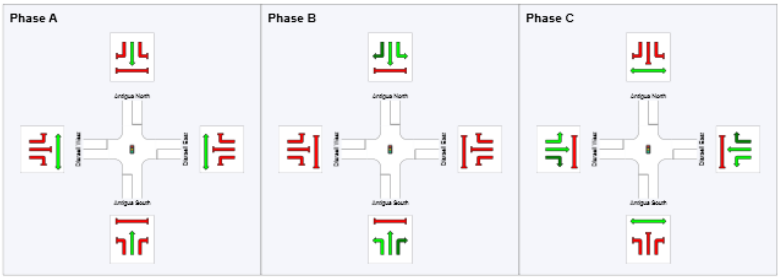
Site: Antigua-Disraeli Option 2031 PM

New Site
Signals - Fixed Time Isolated Cycle Time = 40 seconds (Optimum Cycle Time - Minimum Delay)

Phase times determined by the program
Sequence: Opposed Turns
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	9	21
Green Time (sec)	3	6	13
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	9	12	19
Phase Split	23 %	30 %	48 %



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MOVEMENT SUMMARY

Site: Antigua-Disraeli Option 2031 PM

New Site
Signals - Fixed Time Isolated Cycle Time = 40 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Antigua South											
1	L2	52	4.1	0.289	14.3	LOS B	3.1	22.4	0.74	0.64	43.1
2	T1	169	2.5	0.289	9.7	LOS A	3.1	22.4	0.74	0.64	43.6
3	R2	34	6.3	0.134	21.8	LOS C	0.6	4.5	0.90	0.71	38.1
Approach		255	3.3	0.289	12.2	LOS B	3.1	22.4	0.76	0.65	42.7
East: Disraeli East											
4	L2	21	10.0	0.413	16.5	LOS B	4.1	29.3	0.82	0.69	42.4
5	T1	237	1.6	0.413	11.6	LOS B	4.1	29.3	0.82	0.69	42.9
6	R2	49	6.4	0.223	23.2	LOS C	1.0	7.0	0.93	0.73	37.6
Approach		307	3.1	0.413	14.0	LOS B	4.1	29.3	0.84	0.70	41.9
North: Antigua North											
7	L2	82	6.4	0.636	16.2	LOS B	7.9	56.7	0.87	0.77	42.3
8	T1	392	1.9	0.636	11.6	LOS B	7.9	56.7	0.87	0.77	42.8
9	R2	132	2.4	0.472	22.9	LOS C	2.6	18.3	0.96	0.77	37.7
Approach		605	2.6	0.636	14.7	LOS B	7.9	56.7	0.89	0.77	41.5
West: Disraeli West											
10	L2	159	2.6	0.851	25.2	LOS C	10.6	75.5	0.95	1.08	38.1
11	T1	299	2.5	0.851	20.6	LOS C	10.6	75.5	0.95	1.08	38.4
12	R2	112	4.7	0.323	19.6	LOS B	2.0	14.2	0.88	0.76	39.0
Approach		569	3.0	0.851	21.7	LOS C	10.6	75.5	0.93	1.02	38.4
All Vehicles		1737	2.9	0.851	16.5	LOS B	10.6	75.5	0.88	0.82	40.6

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	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	South Full Crossing	53	14.5	LOS B	0.1	0.1	0.85	0.85
P2	East Full Crossing	53	14.5	LOS B	0.1	0.1	0.85	0.85
P3	North Full Crossing	53	14.5	LOS B	0.1	0.1	0.85	0.85
P4	West Full Crossing	53	14.5	LOS B	0.1	0.1	0.85	0.85
All Pedestrians		211	14.5	LOS B			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.

Antigua Street/Moorhouse Avenue base case – no cycleway

PHASING SUMMARY

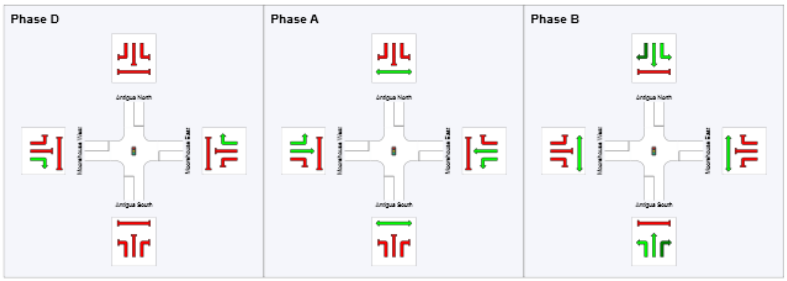
Site: Antigua - Moorehouse BASE 2031 AM

New Site
Signals - Fixed Time Isolated Cycle Time = 115 seconds (Optimum Cycle Time - Minimum Delay)

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

Phase Timing Results

Phase	D	A	B
Reference Phase	No	No	Yes
Phase Change Time (sec)	58	70	0
Green Time (sec)	6	39	52
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	12	45	58
Phase Split	10 %	39 %	50 %



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MOVEMENT SUMMARY

Site: Antigua - Moorehouse BASE 2031 AM

New Site
Signals - Fixed Time Isolated Cycle Time = 115 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Antigua South											
4	L2	168	13.1	0.993	87.1	LOS F	43.3	321.2	0.86	1.19	23.3
5	T1	399	4.2	0.993	82.4	LOS F	43.3	321.2	0.86	1.19	23.4
6	R2	224	7.0	1.219	296.4	LOS F	32.2	239.2	1.00	1.81	9.9
Approach		792	6.9	1.219	144.0	LOS F	43.3	321.2	0.90	1.36	16.9
East: Moorehouse East											
7	L2	5	0.0	0.009	31.0	LOS C	0.2	1.3	0.68	0.63	34.9
8	T1	1952	7.3	1.038	115.5	LOS F	62.6	465.4	1.00	1.46	19.3
9	R2	14	0.0	0.141	63.8	LOS E	0.8	5.4	0.98	0.68	26.7
Approach		1971	7.2	1.038	114.9	LOS F	62.6	465.4	1.00	1.47	19.4
North: Antigua North											
10	L2	37	8.6	0.048	23.2	LOS C	1.1	8.5	0.59	0.66	37.6
11	T1	185	13.6	0.563	38.7	LOS D	11.2	87.0	0.91	0.78	32.6
12	R2	45	9.3	0.563	43.3	LOS D	11.2	87.0	0.91	0.78	32.5
Approach		267	12.2	0.563	37.3	LOS D	11.2	87.0	0.86	0.76	33.2
West: Moorehouse West											
1	L2	134	4.7	0.225	33.7	LOS C	5.3	38.9	0.76	0.75	34.0
2	T1	2242	4.0	1.231	275.7	LOS F	115.3	834.4	1.00	2.25	10.5
3	R2	27	7.7	0.303	65.3	LOS E	1.6	11.8	1.00	0.72	26.4
Approach		2403	4.1	1.231	259.9	LOS F	115.3	834.4	0.99	2.15	11.0
All Vehicles		5433	6.0	1.231	179.5	LOS F	115.3	834.4	0.97	1.72	14.5

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
P2	South Full Crossing	53	35.3	LOS D	0.1	0.1	0.78	0.78
P3	East Full Crossing	53	35.3	LOS D	0.1	0.1	0.78	0.78
P4	North Full Crossing	53	35.3	LOS D	0.1	0.1	0.78	0.78
P1	West Full Crossing	53	35.3	LOS D	0.1	0.1	0.78	0.78
All Pedestrians		211	35.3	LOS D			0.78	0.78

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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PHASING SUMMARY

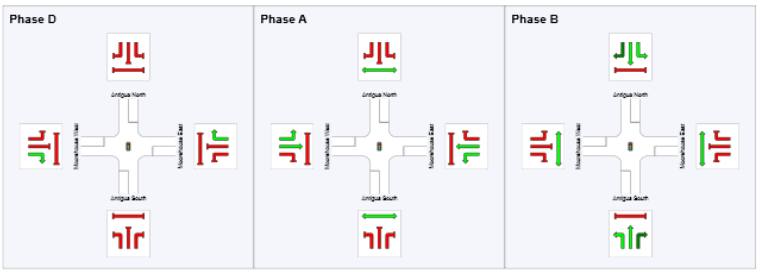
Site: Antigua - Moorehouse BASE 2031 PM

New Site
Signals - Fixed Time Isolated Cycle Time = 145 seconds (Optimum Cycle Time - Minimum Delay)

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

Phase Timing Results

Phase	D	A	B
Reference Phase	No	No	Yes
Phase Change Time (sec)	65	77	0
Green Time (sec)	6	62	59
Yellow Time (sec)	4	4	4
All-Red Time (sec)	2	2	2
Phase Time (sec)	12	68	65
Phase Split	8 %	47 %	45 %



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MOVEMENT SUMMARY

Site: Antigua - Moorehouse BASE 2031 PM

New Site
Signals - Fixed Time Isolated Cycle Time = 145 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Antigua South											
4	L2	122	6.9	0.500	37.3	LOS D	15.4	114.9	0.77	0.71	33.8
5	T1	186	7.9	0.500	32.7	LOS C	15.4	114.9	0.77	0.71	34.1
6	R2	52	8.2	0.320	65.8	LOS E	3.4	25.3	0.93	0.76	26.4
Approach		360	7.6	0.500	39.0	LOS D	15.4	114.9	0.79	0.72	32.6
East: Moorehouse East											
7	L2	32	3.3	0.042	30.0	LOS C	1.3	9.1	0.61	0.67	35.2
8	T1	2372	3.2	0.981	63.0	LOS F	76.3	548.4	1.00	1.17	23.4
9	R2	4	0.0	0.055	79.6	LOS E	0.3	2.1	0.98	0.64	23.9
Approach		2407	3.1	0.981	62.3	LOS F	76.3	548.4	0.99	1.17	23.5
North: Antigua North											
10	L2	42	5.0	0.059	32.1	LOS C	1.8	12.9	0.64	0.68	34.5
11	T1	364	4.9	1.126	203.0	LOS F	71.6	519.0	1.00	1.61	13.3
12	R2	161	2.6	1.126	207.5	LOS F	71.6	519.0	1.00	1.61	13.3
Approach		567	4.3	1.126	191.6	LOS F	71.6	519.0	0.97	1.54	13.9
West: Moorehouse West											
1	L2	81	3.9	0.108	30.8	LOS C	3.4	24.4	0.63	0.70	34.9
2	T1	2612	2.4	1.118	185.6	LOS F	121.2	865.6	1.00	1.62	14.1
3	R2	62	5.1	0.851	90.1	LOS F	4.9	36.0	1.00	0.93	22.4
Approach		2755	2.5	1.118	178.9	LOS F	121.2	865.6	0.99	1.58	14.5
All Vehicles		6089	3.2	1.126	133.6	LOS F	121.2	865.6	0.98	1.36	17.7

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
P2	South Full Crossing	53	32.5	LOS D	0.1	0.1	0.67	0.67
P3	East Full Crossing	53	44.1	LOS E	0.2	0.2	0.78	0.78
P4	North Full Crossing	53	32.5	LOS D	0.1	0.1	0.67	0.67
P1	West Full Crossing	53	44.1	LOS E	0.2	0.2	0.78	0.78
All Pedestrians		211	38.3	LOS D			0.73	0.73

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.

Organisation: BECA LIMITED | Processed: Wednesday, 28 September 2016 11:07:54 a.m.

Antigua Street/Moorhouse Avenue

PHASING SUMMARY

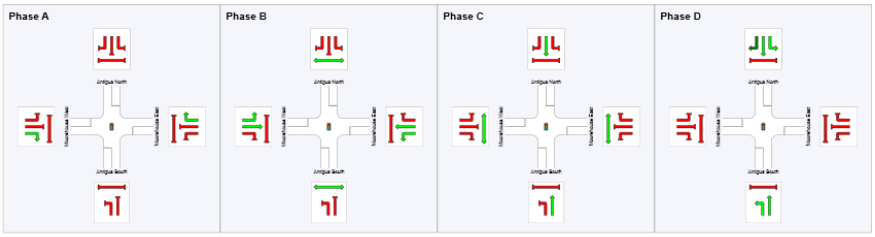
Site: Antigua - Moorehouse 2 lane OPTION 2031 AM

New Site
Signals - Fixed Time Isolated Cycle Time = 145 seconds (Optimum Cycle Time - Minimum Delay)

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	No	Yes	No	No
Phase Change Time (sec)	133	0	71	105
Green Time (sec)	6	65	28	22
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	12	71	34	28
Phase Split	8 %	49 %	23 %	19 %



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MOVEMENT SUMMARY

Site: Antigua - Moorehouse 2 lane OPTION 2031 AM

New Site
Signals - Fixed Time Isolated Cycle Time = 145 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	OD Mov	Total veh/h	Demand Flows 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: Antigua South											
4	L2	168	13.1	0.943	96.2	LOS F	14.3	111.2	1.00	1.06	21.5
5	T1	399	4.2	0.731	36.7	LOS D	21.6	156.9	0.83	0.73	33.4
Approach		567	6.9	0.943	54.4	LOS D	21.6	156.9	0.88	0.82	28.7
East: Moorehouse East											
7	L2	5	0.0	0.006	27.6	LOS C	0.2	1.4	0.57	0.61	36.1
8	T1	1952	7.3	0.787	36.1	LOS D	39.1	290.5	0.92	0.83	33.5
9	R2	14	0.0	0.178	81.0	LOS F	1.0	6.9	0.99	0.68	23.7
Approach		1971	7.2	0.787	36.4	LOS D	39.1	290.5	0.92	0.83	33.4
North: Antigua North											
10	L2	37	8.6	0.409	41.3	LOS D	11.4	86.6	0.78	0.68	32.9
11	T1	185	13.6	0.409	36.7	LOS D	11.4	86.6	0.78	0.68	33.2
12	R2	45	9.3	0.589	82.1	LOS F	3.4	25.6	1.00	0.79	23.6
Approach		267	12.2	0.589	45.0	LOS D	11.4	86.6	0.82	0.70	31.0
West: Moorehouse West											
1	L2	134	4.7	0.170	29.8	LOS C	5.5	40.3	0.63	0.72	35.2
2	T1	2242	4.0	0.938	61.0	LOS E	64.7	468.4	0.98	1.05	27.2
3	R2	27	7.7	0.382	82.8	LOS F	2.0	15.1	1.00	0.72	23.4
Approach		2403	4.1	0.938	59.5	LOS E	64.7	468.4	0.96	1.03	27.5
All Vehicles		5208	6.0	0.943	49.5	LOS D	64.7	468.4	0.93	0.91	29.8

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
P2	South Full Crossing	53	30.5	LOS D	0.1	0.1	0.65	0.65
P3	East Full Crossing	53	66.8	LOS F	0.2	0.2	0.96	0.96
P4	North Full Crossing	53	30.5	LOS D	0.1	0.1	0.65	0.65
P1	West Full Crossing	53	66.8	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		211	48.7	LOS E			0.81	0.81

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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PHASING SUMMARY

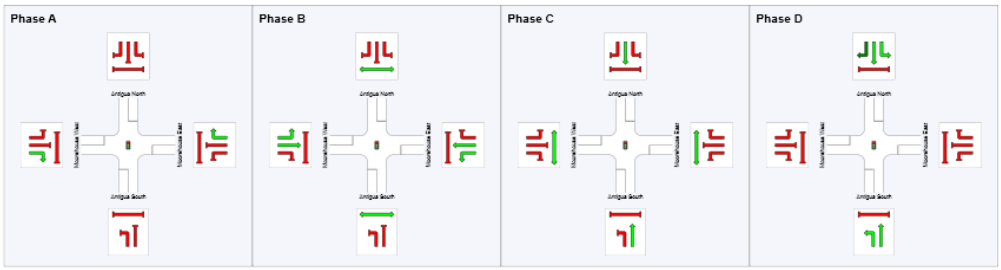
Site: Antigua - Moorehouse 2 lane OPTION 2031 PM

New Site
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Optimum Cycle Time - Minimum Delay)

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	No	Yes	No	No
Phase Change Time (sec)	138	0	71	106
Green Time (sec)	6	65	29	26
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	12	71	35	32
Phase Split	8 %	47 %	23 %	21 %



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MOVEMENT SUMMARY

Site: Antigua - Moorehouse 2 lane OPTION 2031 PM

New Site
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Antigua South											
4	L2	122	6.9	0.409	64.6	LOS E	8.0	59.5	0.94	0.79	26.4
5	T1	186	7.9	0.246	31.0	LOS C	8.8	66.0	0.70	0.59	35.3
Approach		308	7.5	0.409	44.3	LOS D	8.8	66.0	0.79	0.67	31.2
East: Moorehouse East											
7	L2	32	3.3	0.041	30.3	LOS C	1.3	9.3	0.60	0.67	35.1
8	T1	2372	3.2	0.968	76.9	LOS E	74.9	538.7	1.00	1.13	24.4
9	R2	4	0.0	0.057	82.4	LOS F	0.3	2.2	0.98	0.64	23.5
Approach		2407	3.1	0.968	76.3	LOS E	74.9	538.7	0.99	1.12	24.5
North: Antigua North											
10	L2	42	5.0	0.752	41.5	LOS D	22.4	163.2	0.82	0.72	33.0
11	T1	364	4.9	0.752	36.9	LOS D	22.4	163.2	0.82	0.72	33.2
12	R2	161	2.6	1.131	222.1	LOS F	22.0	157.3	1.00	1.43	12.4
Approach		567	4.3	1.131	89.8	LOS F	22.4	163.2	0.87	0.92	22.6
West: Moorehouse West											
1	L2	81	3.9	0.106	31.2	LOS C	3.4	24.9	0.63	0.70	34.8
2	T1	2612	2.4	1.103	175.1	LOS F	119.9	856.2	1.00	1.55	14.7
3	R2	62	5.1	0.880	94.9	LOS F	5.2	37.6	1.00	0.95	21.7
Approach		2755	2.5	1.103	169.1	LOS F	119.9	856.2	0.99	1.51	15.1
All Vehicles		6036	3.2	1.131	118.2	LOS F	119.9	856.2	0.97	1.26	19.1

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
P2	South Full Crossing	53	32.7	LOS D	0.1	0.1	0.66	0.66
P3	East Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P4	North Full Crossing	53	32.7	LOS D	0.1	0.1	0.66	0.66
P1	West Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		211	51.0	LOS E			0.81	0.81

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Antigua Street/Moorhouse Avenue – allowing full movements (not recommended option)

PHASING SUMMARY

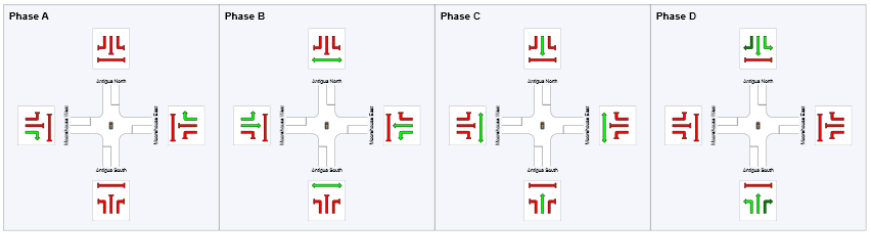
Site: Antigua - Moorehouse 2 lane OPTION 2031 AM - with RT

New Site
Signals - Fixed Time Isolated Cycle Time = 145 seconds (Optimum Cycle Time - Minimum Delay)

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	No	Yes	No	No
Phase Change Time (sec)	133	0	49	83
Green Time (sec)	6	43	28	44
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	12	49	34	50
Phase Split	8 %	34 %	23 %	34 %



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MOVEMENT SUMMARY

Site: Antigua - Moorehouse 2 lane OPTION 2031 AM - with RT

New Site
Signals - Fixed Time Isolated Cycle Time = 145 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Antigua South											
4	L2	168	13.1	0.336	46.6	LOS D	9.2	71.6	0.82	0.78	30.3
5	T1	399	4.2	1.442	487.6	LOS F	130.5	954.5	1.00	2.34	6.6
6	R2	224	7.0	1.442	492.3	LOS F	130.5	954.5	1.00	2.34	6.6
Approach		792	6.9	1.442	395.2	LOS F	130.5	954.5	0.96	2.01	7.9
East: Moorehouse East											
7	L2	5	0.0	0.010	42.3	LOS D	0.3	1.8	0.73	0.63	31.5
8	T1	1952	7.3	1.188	250.9	LOS F	99.7	741.4	1.00	1.86	11.3
9	R2	14	0.0	0.178	81.0	LOS F	1.0	6.9	0.99	0.68	23.7
Approach		1971	7.2	1.188	249.2	LOS F	99.7	741.4	1.00	1.85	11.3
North: Antigua North											
10	L2	37	8.6	0.234	26.0	LOS C	8.6	67.1	0.60	0.55	38.1
11	T1	185	13.6	0.234	21.3	LOS C	8.6	67.1	0.60	0.55	38.5
12	R2	45	9.3	0.300	64.1	LOS E	2.9	22.1	0.92	0.76	26.7
Approach		267	12.2	0.300	29.2	LOS C	8.6	67.1	0.65	0.58	35.8
West: Moorehouse West											
1	L2	134	4.7	0.258	46.1	LOS D	7.1	52.0	0.80	0.76	30.5
2	T1	2242	4.0	1.410	451.0	LOS F	158.8	1149.9	1.00	2.46	7.0
3	R2	27	7.7	0.382	82.8	LOS F	2.0	15.1	1.00	0.72	23.4
Approach		2403	4.1	1.410	424.2	LOS F	158.8	1149.9	0.99	2.35	7.3
All Vehicles		5433	6.0	1.442	337.1	LOS F	158.8	1149.9	0.97	2.03	8.9

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	South Full Crossing	53	46.5	LOS E	0.2	0.2	0.80	0.80
P3	East Full Crossing	53	66.8	LOS F	0.2	0.2	0.96	0.96
P4	North Full Crossing	53	46.5	LOS E	0.2	0.2	0.80	0.80
P1	West Full Crossing	53	66.8	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		211	56.6	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.

Organisation: BECA LIMITED | Processed: Monday, 3 October 2016 9:57:29 a.m.

PHASING SUMMARY

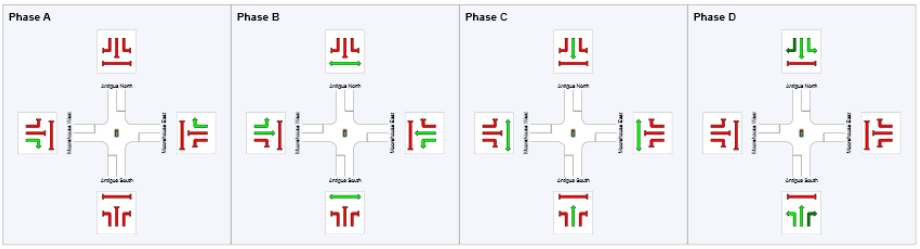
Site: Antigua - Moorehouse 2 lane OPTION 2031 PM - with RT

New Site
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Optimum Cycle Time - Minimum Delay)

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	No	Yes	No	No
Phase Change Time (sec)	138	0	71	106
Green Time (sec)	6	65	29	26
Yellow Time (sec)	4	4	4	4
All-Red Time (sec)	2	2	2	2
Phase Time (sec)	12	71	35	32
Phase Split	6 %	47 %	23 %	21 %



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MOVEMENT SUMMARY

Site: Antigua - Moorehouse 2 lane OPTION 2031 PM - with RT

New Site
Signals - Fixed Time Isolated Cycle Time = 150 seconds (Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	OD Mov	Demand Flows Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Antigua South											
4	L2	122	6.9	0.409	64.6	LOS E	8.0	59.5	0.94	0.79	26.4
5	T1	186	7.9	0.803	64.0	LOS E	17.2	126.4	0.97	0.92	26.9
6	R2	52	8.2	0.803	68.6	LOS E	17.2	126.4	0.97	0.92	27.9
Approach		360	7.6	0.803	64.9	LOS E	17.2	126.4	0.96	0.88	26.9
East: Moorehouse East											
7	L2	32	3.3	0.041	30.3	LOS C	1.3	9.3	0.60	0.67	35.1
8	T1	2372	3.2	0.968	76.9	LOS E	74.9	538.7	1.00	1.13	24.4
9	R2	4	0.0	0.057	82.4	LOS F	0.3	2.2	0.98	0.64	23.5
Approach		2407	3.1	0.968	76.3	LOS E	74.9	538.7	0.99	1.12	24.5
North: Antigua North											
10	L2	42	5.0	0.752	41.5	LOS D	22.4	163.2	0.82	0.72	33.0
11	T1	364	4.9	0.752	36.9	LOS D	22.4	163.2	0.82	0.72	33.2
12	R2	161	2.6	1.131	222.1	LOS F	22.0	157.3	1.00	1.43	12.4
Approach		567	4.3	1.131	89.8	LOS F	22.4	163.2	0.87	0.92	22.6
West: Moorehouse West											
1	L2	81	3.9	0.106	31.2	LOS C	3.4	24.9	0.63	0.70	34.8
2	T1	2612	2.4	1.103	175.1	LOS F	119.9	856.2	1.00	1.55	14.7
3	R2	62	5.1	0.880	94.9	LOS F	5.2	37.6	1.00	0.95	21.7
Approach		2755	2.5	1.103	169.1	LOS F	119.9	856.2	0.99	1.51	15.1
All Vehicles		6089	3.2	1.131	118.6	LOS F	119.9	856.2	0.98	1.27	19.1

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
P2	South Full Crossing	53	32.7	LOS D	0.1	0.1	0.66	0.66
P3	East Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P4	North Full Crossing	53	32.7	LOS D	0.1	0.1	0.66	0.66
P1	West Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		211	51.0	LOS E			0.81	0.81

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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