

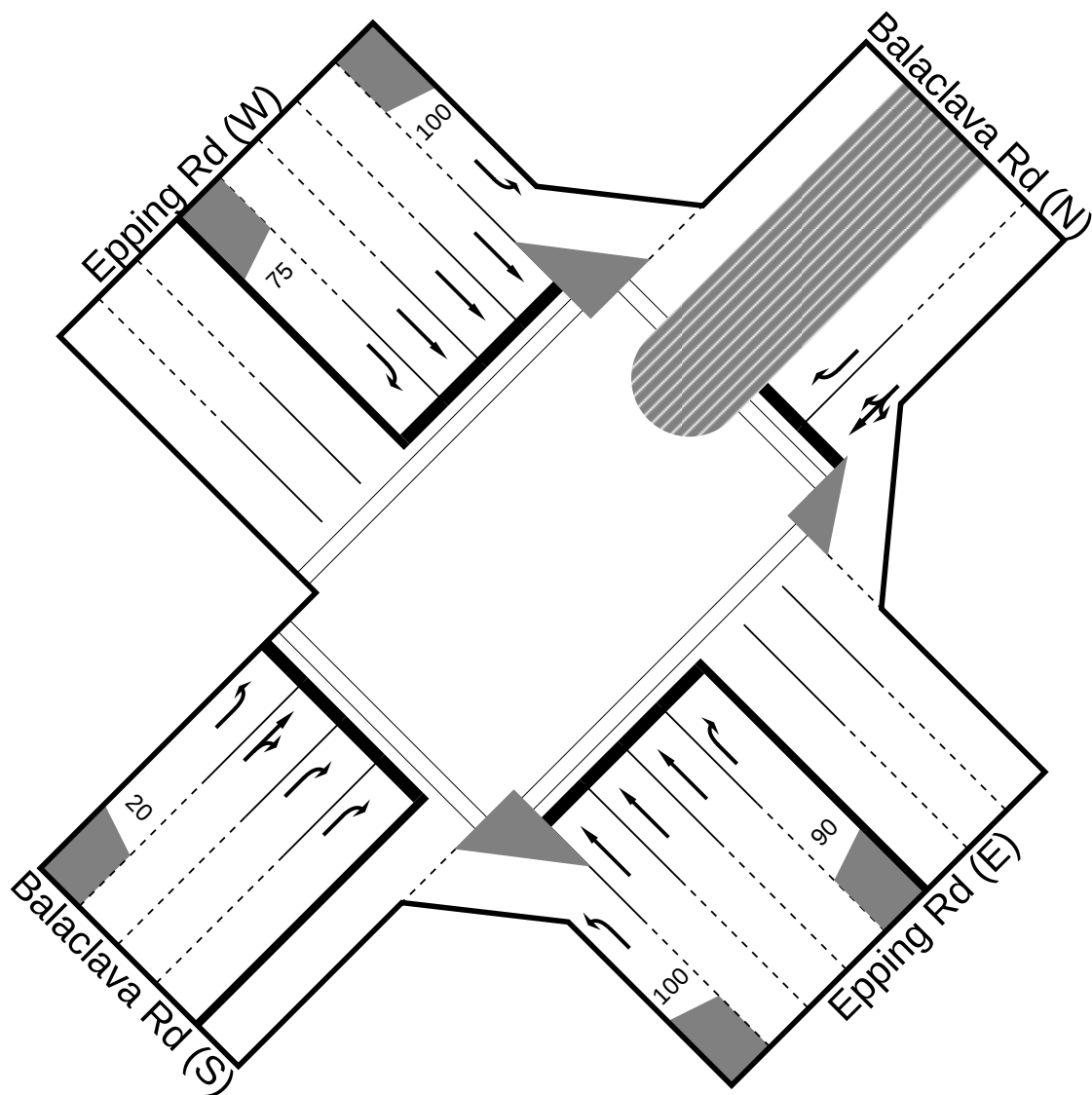
Appendix J

SIDRA Analysis

Existing Base plus Project

This page intentionally left blank

Intersection Layout – Epping Road / Balaclava Road



Movement Summary

Epping / Balaclava

2007_Base+Dev_AM

Signalised - Fixed time

Cycle Time = 148 seconds

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Epping Rd (E)										
21	L	50	4.0	0.034	7.9	LOS A	2	0.09	0.62	49.3
22	T	702	9.3	0.342	35.5	LOS C	102	0.77	0.65	30.4
23	R	147	3.4	0.923	99.7	LOS F	100	1.00	1.08	16.1
Approach		899	8.0	0.923	44.5	LOS D	102	0.77	0.72	27.0
Balaclava Rd (N)										
24	L	5	0.0	0.098	57.5	LOS E	23	0.87	0.73	23.3
25	T	10	20.0	0.098	49.6	LOS D	23	0.87	0.63	25.3
26	R	36	50.0	0.098	64.2	LOS E	23	0.88	0.72	22.1
Approach		51	39.2	0.098	60.7	LOS E	23	0.88	0.71	22.8
Epping Rd (W)										
27	L	301	6.3	0.209	8.1	LOS A	12	0.10	0.63	49.2
28	T	1965	1.9	0.915	63.4	LOS E	369	1.00	1.07	21.9
29	R	7	12.5	0.053	75.6	LOS F	6	0.94	0.67	19.6
Approach		2274	2.5	0.915	56.1	LOS D	369	0.88	1.01	23.6
Balaclava Rd (S)										
30	L	12	8.3	0.096	29.3	LOS C	5	0.72	0.68	33.4
31	T	154	3.9	0.900	75.2	LOS F	217	1.00	1.06	19.6
32	R	956	1.9	0.901	83.3	LOS F	217	1.00	1.06	18.3
Approach		1122	2.2	0.901	81.6	LOS F	217	1.00	1.06	18.6
All Vehicles		4346	4.0	0.923	60.4	LOS E	369	0.89	0.96	22.6

Phasing Summary

Epping / Balaclava

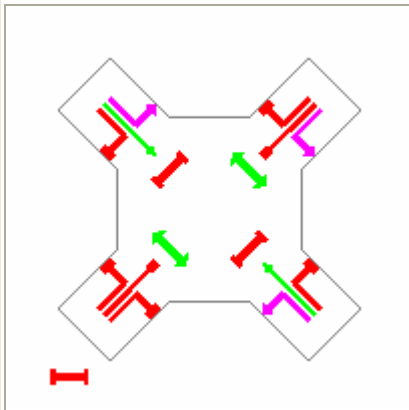
2007_Base+Dev_AM

C = 148 seconds

Cycle Time Option: User-specified cycle time

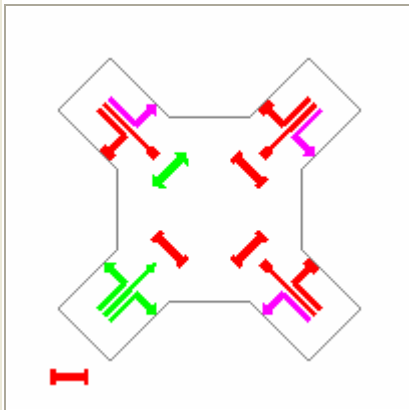
Phase times determined by the program.

Phase A



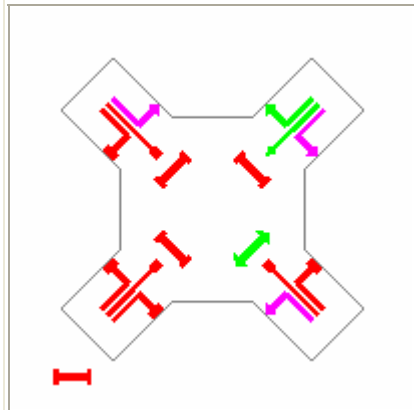
Green Time = 55 seconds
Phase Time = 61 seconds
Phase Split = 41 %

Phase B



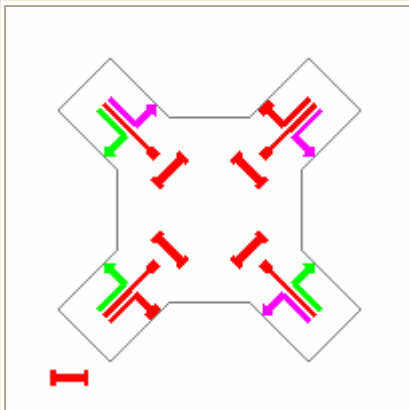
Green Time = 33 seconds
Phase Time = 39 seconds
Phase Split = 26 %

Phase C



Green Time = 23 seconds
Phase Time = 29 seconds
Phase Split = 20 %

Phase D



Green Time = 13 seconds
Phase Time = 19 seconds
Phase Split = 13 %

- | | |
|------------------|-------------------|
| Normal Movement | Permitted/Opposed |
| Slip-Lane | Opposed Slip-Lane |
| Stopped Movement | Continuous |
| Turn On Red | |

Movement Summary

Epping / Balaclava

2007_Base+Dev_PM

Signalised - Fixed time

Cycle Time = 148 seconds

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Epping Rd (E)										
21	L	774	1.7	0.521	8.1	LOS A	38	0.17	0.64	48.8
22	T	1433	1.5	0.963	96.4	LOS F	319	1.00	1.25	16.4
23	R	62	6.5	0.219	63.6	LOS E	38	0.89	0.76	21.9
Approach		2269	1.7	0.963	65.4	LOS E	319	0.71	1.03	21.5
Balaclava Rd (N)										
24	L	5	16.7	0.692	58.6	LOS E	117	0.95	0.82	23.0
25	T	44	2.3	0.674	50.8	LOS D	117	0.95	0.77	25.0
26	R	366	8.2	0.674	66.0	LOS E	117	0.97	0.83	21.4
Approach		416	7.7	0.674	64.3	LOS E	117	0.97	0.82	21.8
Epping Rd (W)										
27	L	100	23.0	0.078	8.5	LOS A	4	0.09	0.62	49.3
28	T	908	1.4	0.610	52.0	LOS D	141	0.94	0.80	24.7
29	R	158	0.6	0.626	66.5	LOS E	83	0.94	0.80	21.3
Approach		1166	3.2	0.626	50.3	LOS D	141	0.87	0.79	25.2
Balaclava Rd (S)										
30	L	183	2.3	0.999#	27.0	LOS B	44	0.84	0.78	34.4
31	T	55	7.5	0.355	40.9	LOS C	81	0.72	0.59	25.3
32	R	402	3.7	0.354	57.8	LOS E	81	0.88	0.80	23.3
Approach		640	3.8	1.000	47.8	LOS D	81	0.85	0.77	25.7
All Vehicles		4491	2.9	0.999	58.9	LOS E	319	0.80	0.91	22.9

Phasing Summary

Epping / Balaclava

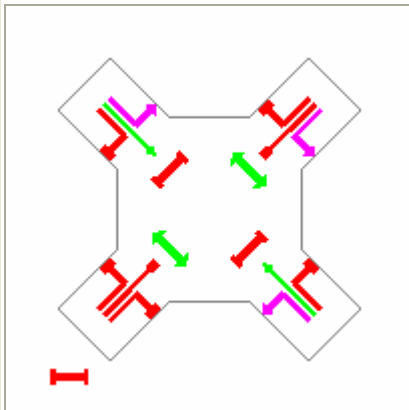
2007_Base+Dev_PM

C = 148 seconds

Cycle Time Option: User-specified cycle time

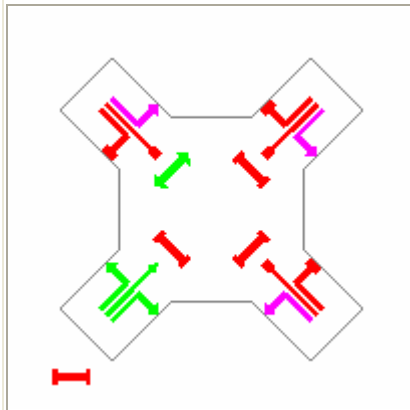
Phase times determined by the program.

Phase A



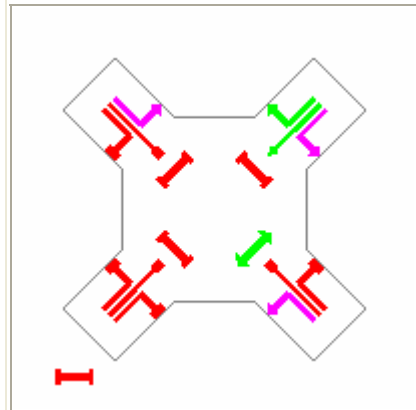
Green Time = 38 seconds
Phase Time = 44 seconds
Phase Split = 30 %

Phase B



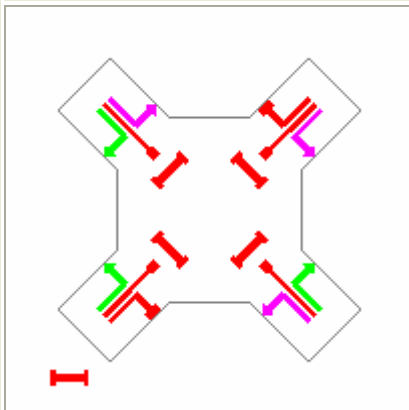
Green Time = 36 seconds
Phase Time = 42 seconds
Phase Split = 28 %

Phase C



Green Time = 23 seconds
Phase Time = 29 seconds
Phase Split = 20 %

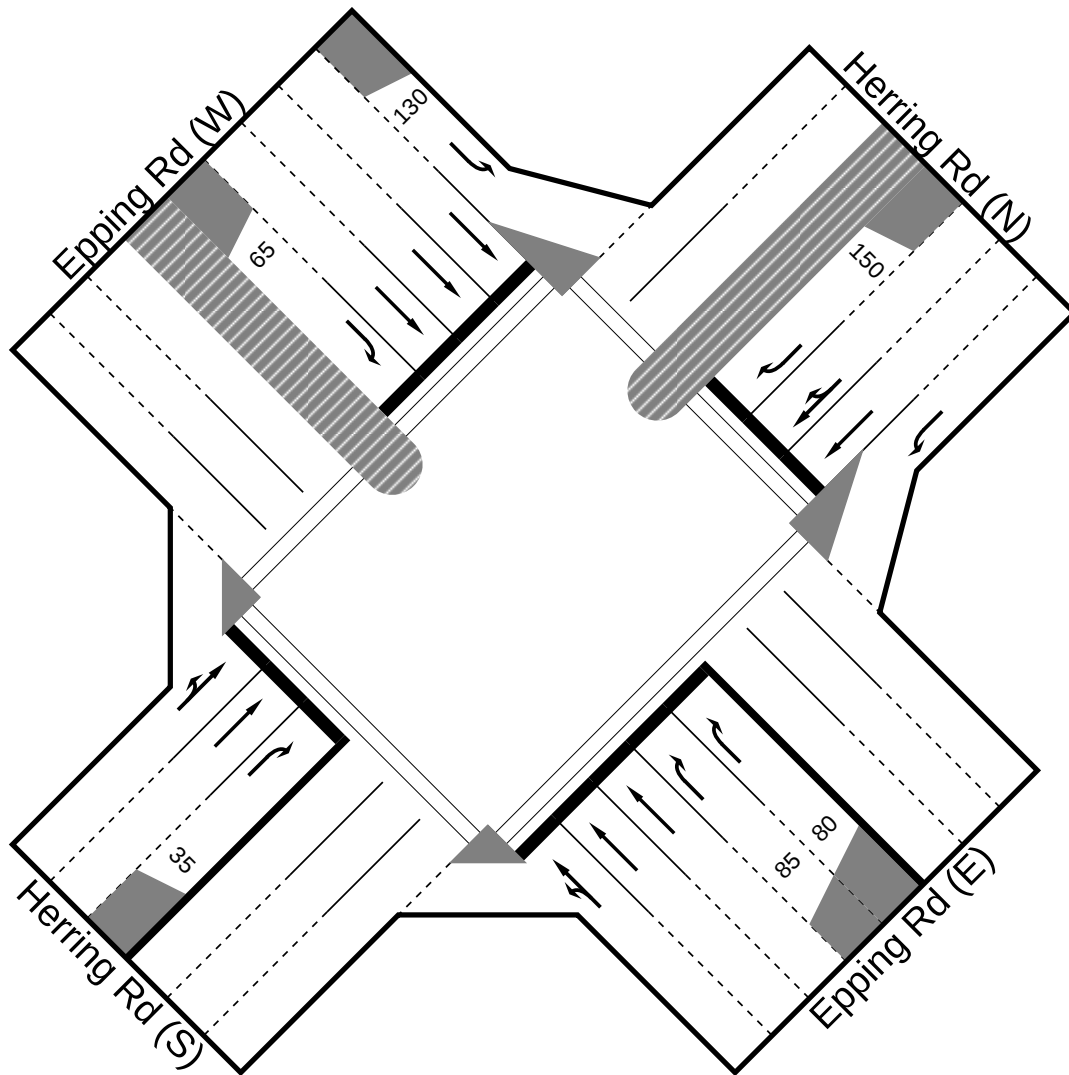
Phase D



Green Time = 27 seconds
Phase Time = 33 seconds
Phase Split = 22 %

- | | |
|------------------|-------------------|
| Normal Movement | Permitted/Opposed |
| Slip-Lane | Opposed Slip-Lane |
| Stopped Movement | Continuous |
| Turn On Red | |

Intersection Layout – Epping Road / Herring Road



Movement Summary

Epping / Herring

2007_Base+Dev_AM

Signalised - Fixed time Cycle Time = 148 seconds

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Epping Rd (E)										
21	L	104	1.0	0.557	43.5	LOS D	164	0.83	0.84	27.4
22	T	1007	7.4	0.556	37.2	LOS C	169	0.84	0.74	29.7
23	R	480	2.0	1.000#	120.8	LOS F	144	1.00	1.15	13.9
Approach		1591	5.7	1.000	58.5	LOS E	169	0.88	0.85	23.0
Herring Rd (N)										
24	L	172	5.2	0.105	8.0	LOS A	6	0.10	0.62	49.3
25	T	129	7.0	0.309	58.4	LOS E	58	0.92	0.73	23.0
26	R	155	6.5	0.309	66.5	LOS E	57	0.92	0.78	21.3
Approach		456	6.1	0.309	42.2	LOS C	58	0.61	0.71	27.9
Epping Rd (W)										
27	L	626	1.8	0.402	8.0	LOS A	28	0.13	0.63	49.0
28	T	2365	1.9	1.063	205.3	LOS F	810	1.00	1.94	9.0
29	R	5	0.0	0.025	71.5	LOS F	4	0.92	0.66	20.3
Approach		2996	1.9	1.063	163.9	LOS F	810	0.82	1.66	10.9
Herring Rd (S)										
30	L	27	7.4	1.013	164.3	LOS F	286	1.00	1.48	10.9
31	T	586	1.5	1.023	157.8	LOS F	289	1.00	1.49	11.2
32	R	203	0.8	1.000#	68.8	LOS E	69	0.97	0.79	20.9
Approach		816	1.6	1.023	144.2	LOS F	289	1.00	1.38	12.1
All Vehicles		5859	3.2	1.063	123.0	LOS F	810	0.84	1.33	13.7

Phasing Summary

Epping / Herring

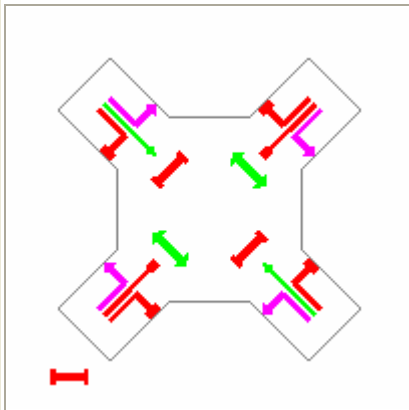
2007_Base+Dev_AM

C = 148 seconds

Cycle Time Option: **User-specified cycle time**

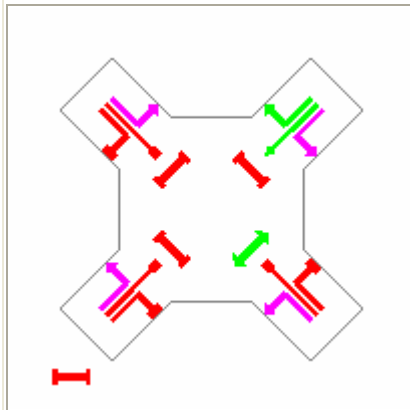
Phase times determined by the program.

Phase A



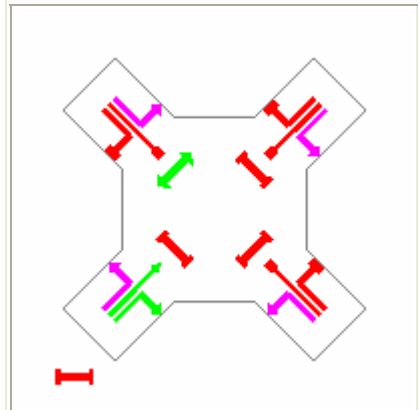
Green Time = 57 seconds
Phase Time = 63 seconds
Phase Split = 43 %

Phase B



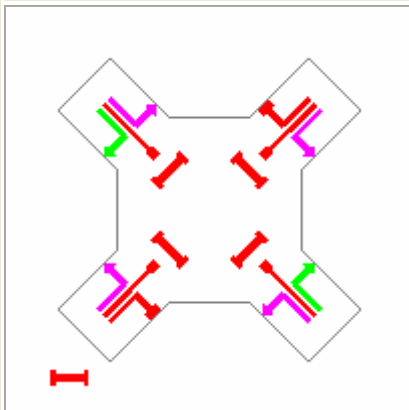
Green Time = 25 seconds
Phase Time = 31 seconds
Phase Split = 21 %

Phase C



Green Time = 26 seconds
Phase Time = 32 seconds
Phase Split = 22 %

Phase D



Green Time = 16 seconds
Phase Time = 22 seconds
Phase Split = 15 %

- | | |
|------------------|-------------------|
| Normal Movement | Permitted/Opposed |
| Slip-Lane | Opposed Slip-Lane |
| Stopped Movement | Continuous |
| Turn On Red | |

Movement Summary

Epping / Herring

2007_Base+Dev_PM

Signalised - Fixed time Cycle Time = 148 seconds

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Epping Rd (E)										
21	L	58	0.0	1.136	320.2	LOS F	1030	1.00	2.41	6.2
22	T	2245	2.0	1.129	314.6	LOS F	1048	1.00	2.45	6.2
23	R	421	2.3	1.041	184.2	LOS F	143	1.00	1.40	9.9
Approach		2724	2.0	1.129	300.0	LOS F	1048	1.00	2.33	6.5
Herring Rd (N)										
24	L	449	2.0	0.267	8.0	LOS A	18	0.12	0.63	49.1
25	T	330	1.5	0.744	57.9	LOS E	162	0.99	0.87	23.2
26	R	873	0.7	1.056	151.2	LOS F	437	1.00	1.38	11.7
Approach		1652	1.2	1.056	93.7	LOS F	437	0.76	1.07	16.9
Epping Rd (W)										
27	L	467	1.1	0.298	8.0	LOS A	19	0.12	0.63	49.1
28	T	1846	1.2	0.856	50.8	LOS D	301	0.99	0.96	25.0
29	R	67	1.5	0.450	80.4	LOS F	45	0.99	0.76	18.7
Approach		2380	1.2	0.856	43.2	LOS D	301	0.82	0.89	27.4
Herring Rd (S)										
30	L	64	0.0	0.425	62.2	LOS E	71	0.94	0.80	22.2
31	T	197	2.5	0.425	58.9	LOS E	72	0.95	0.76	22.9
32	R	120	0.8	0.979	72.1	LOS F	69	0.95	0.80	20.2
Approach		381	1.6	0.979	63.6	LOS E	72	0.95	0.78	21.9
All Vehicles		7137	1.5	1.136	154.0	LOS F	1048	0.88	1.48	11.5

Phasing Summary

Epping / Herring

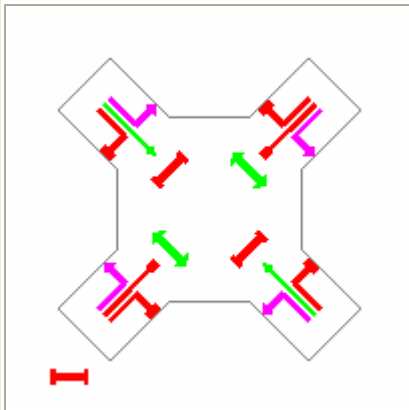
2007_Base+Dev_PM

C = 148 seconds

Cycle Time Option: **User-specified cycle time**

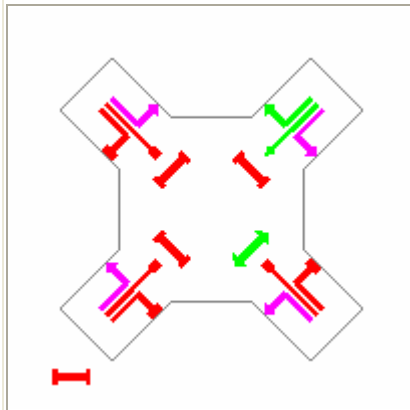
Phase times determined by the program.

Phase A



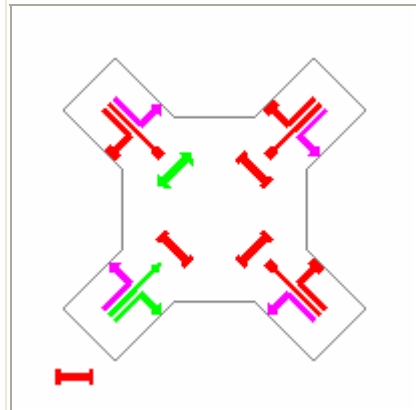
Green Time = 55 seconds
Phase Time = 61 seconds
Phase Split = 41 %

Phase B



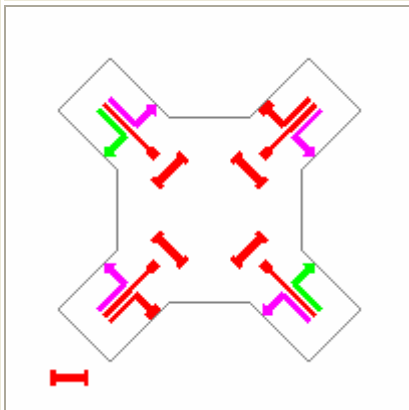
Green Time = 34 seconds
Phase Time = 40 seconds
Phase Split = 27 %

Phase C



Green Time = 23 seconds
Phase Time = 29 seconds
Phase Split = 20 %

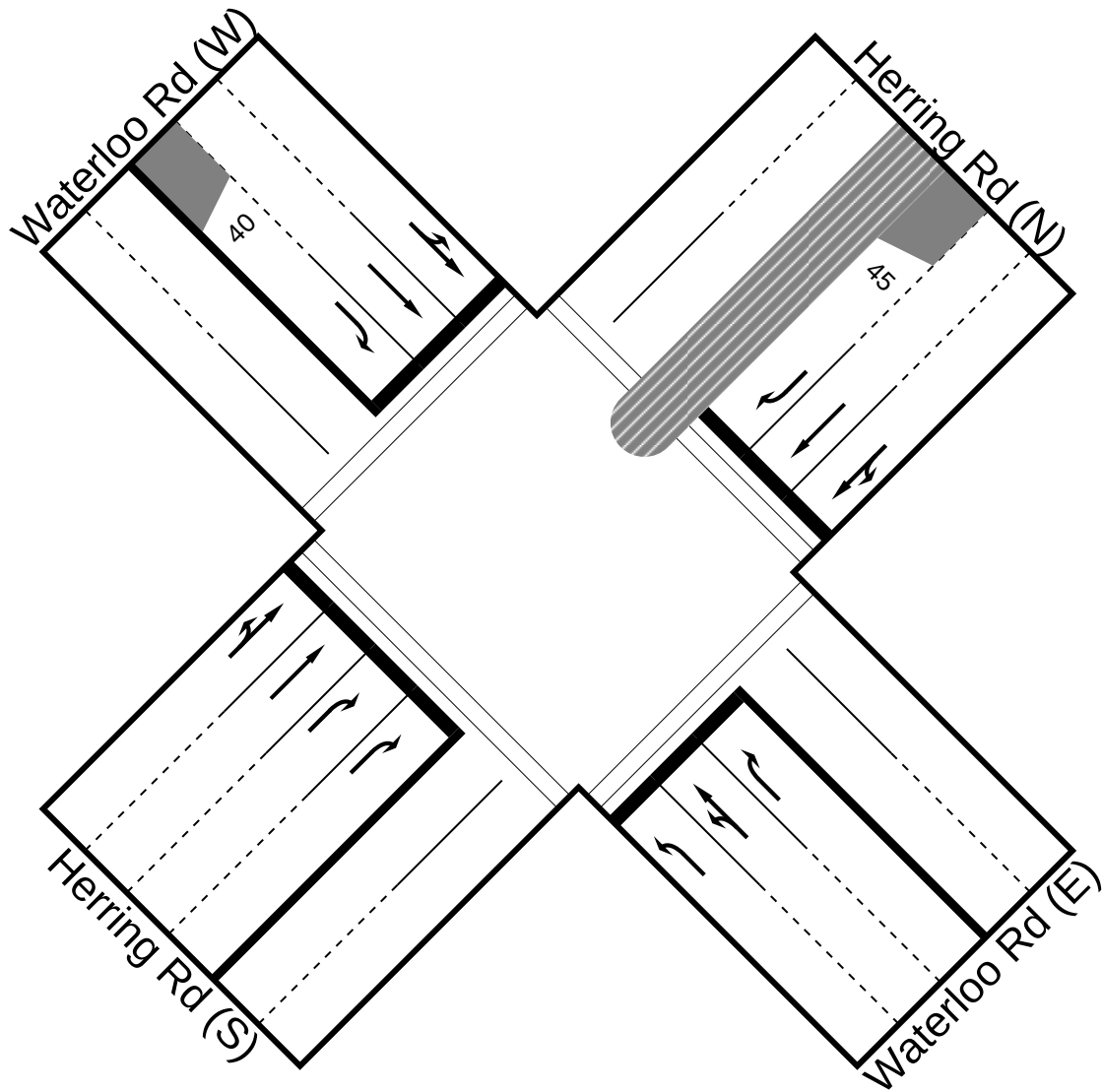
Phase D



Green Time = 12 seconds
Phase Time = 18 seconds
Phase Split = 12 %

- | | |
|------------------|-------------------|
| Normal Movement | Permitted/Opposed |
| Slip-Lane | Opposed Slip-Lane |
| Stopped Movement | Continuous |
| Turn On Red | |

Intersection Layout – Waterloo Road / Herring Road



Movement Summary

Waterloo / Herring

2007_Base+Dev_AM

Signalised - Fixed time Cycle Time = 133 seconds

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Waterloo Rd (E)										
21	L	12	7.7	0.017	21.7	LOS B	4	0.59	0.69	37.5
22	T	217	3.2	0.630	54.9	LOS D	105	0.98	0.81	23.9
23	R	68	22.1	0.626	78.6	LOS F	51	1.00	0.80	19.1
Approach		298	7.7	0.630	58.9	LOS E	105	0.97	0.80	23.0
Herring Rd (N)										
24	L	152	34.9	0.548	46.6	LOS D	129	0.87	0.90	26.7
25	T	438	19.4	0.548	39.4	LOS C	140	0.88	0.78	28.8
26	R	86	7.0	0.588	74.8	LOS F	54	1.00	0.79	19.7
Approach		676	21.3	0.588	45.5	LOS D	140	0.89	0.81	26.7
Waterloo Rd (W)										
27	L	67	44.8	0.199	32.8	LOS C	32	0.82	0.76	32.3
28	T	73	2.7	0.199	48.5	LOS D	37	0.89	0.69	25.7
29	R	39	25.6	0.367	76.4	LOS F	31	0.99	0.74	19.6
Approach		179	23.5	0.367	48.7	LOS D	37	0.88	0.73	25.9
Herring Rd (S)										
30	L	279	0.0	0.632	24.6	LOS B	135	0.81	0.84	35.7
31	T	809	1.6	0.631	17.4	LOS B	140	0.82	0.72	40.6
32	R	578	2.1	0.618	55.4	LOS D	126	0.94	0.84	23.8
Approach		1666	1.5	0.631	31.8	LOS C	140	0.86	0.78	32.0
All Vehicles		2819	8.3	0.632	39.0	LOS C	140	0.88	0.79	29.0

Phasing Summary

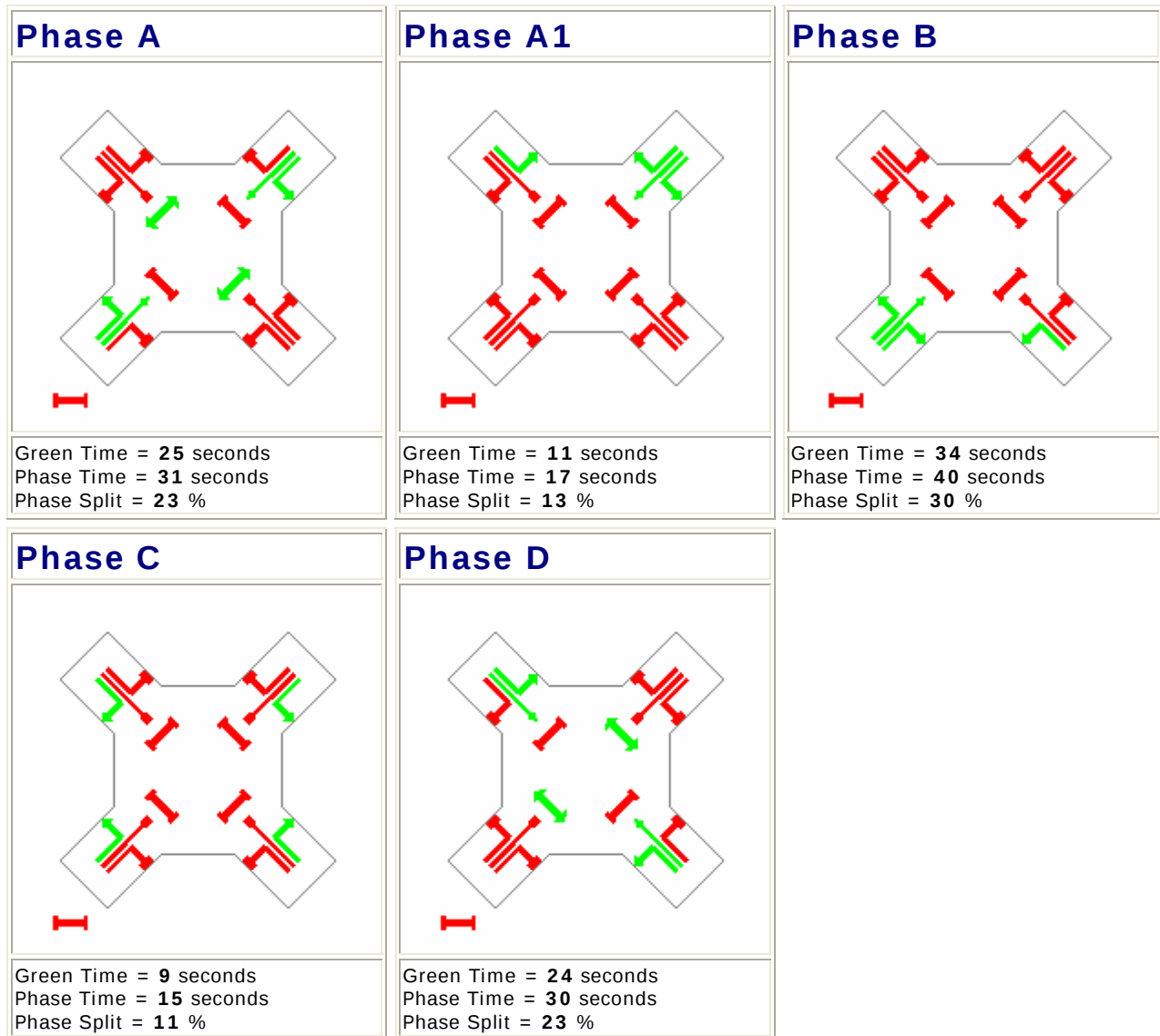
Waterloo / Herring

2007_Base+Dev_AM

C = 133 seconds

Cycle Time Option: User-specified cycle time

Phase times determined by the program.



Movement Summary

Waterloo / Herring

2007_Base+Dev_PM

Signalised - Fixed time Cycle Time = 158 seconds

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Waterloo Rd (E)										
21	L	856	0.9	0.980	106.0	LOS F	307	1.00	1.30	15.3
22	T	109	2.8	0.980	110.1	LOS F	274	1.00	1.34	14.9
23	R	285	6.3	0.724	70.3	LOS E	156	0.99	0.86	20.5
Approach		1250	2.3	0.980	98.2	LOS F	307	1.00	1.20	16.2
Herring Rd (N)										
24	L	108	21.3	0.643	57.5	LOS E	181	0.92	0.88	23.4
25	T	575	2.7	0.643	49.1	LOS D	185	0.92	0.81	25.5
26	R	184	46.3	1.001#	74.6	LOS F	88	0.97	0.79	19.8
Approach		867	11.0	1.000	53.6	LOS D	185	0.92	0.82	24.3
Waterloo Rd (W)										
27	L	5	20.0	0.136	62.7	LOS E	30	0.87	0.76	22.2
28	T	44	0.9	0.199	56.2	LOS D	42	0.88	0.26	24.2
29	R	213	0.7	0.999#	69.5	LOS E	77	0.98	0.80	20.7
Approach		262	1.1	1.000	63.6	LOS E	77	0.94	0.56	21.4
Herring Rd (S)										
30	L	92	2.2	0.877	76.6	LOS F	115	1.00	1.03	19.3
31	T	511	2.5	0.878	56.2	LOS D	163	1.00	1.02	23.6
32	R	430	0.5	0.966	119.9	LOS F	155	1.00	1.20	14.0
Approach		1033	1.6	0.966	84.5	LOS F	163	1.00	1.10	18.0
All Vehicles		3412	4.2	1.001	80.1	LOS F	307	0.97	1.02	18.7

Phasing Summary

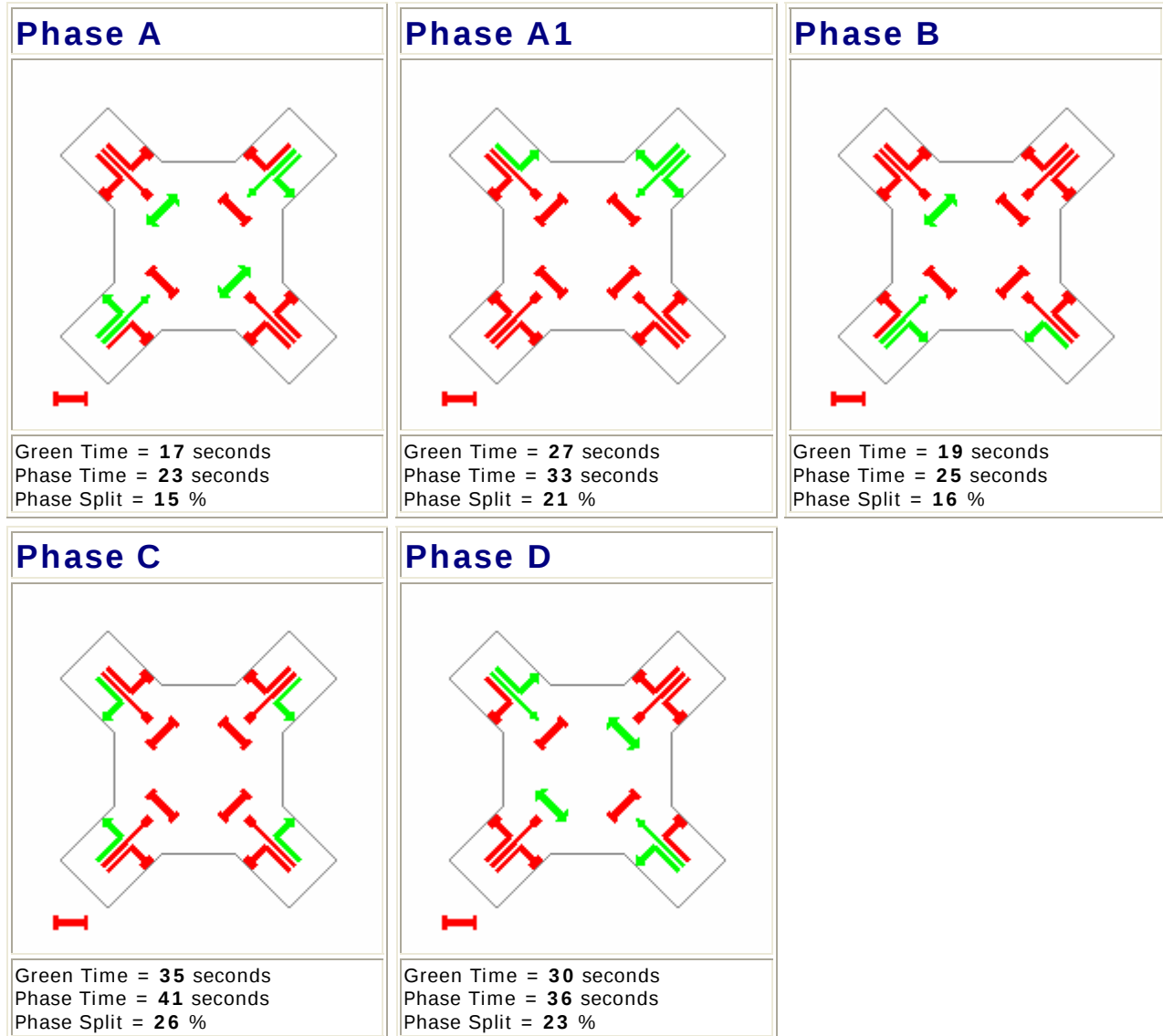
Waterloo / Herring

2007_Base+Dev_PM

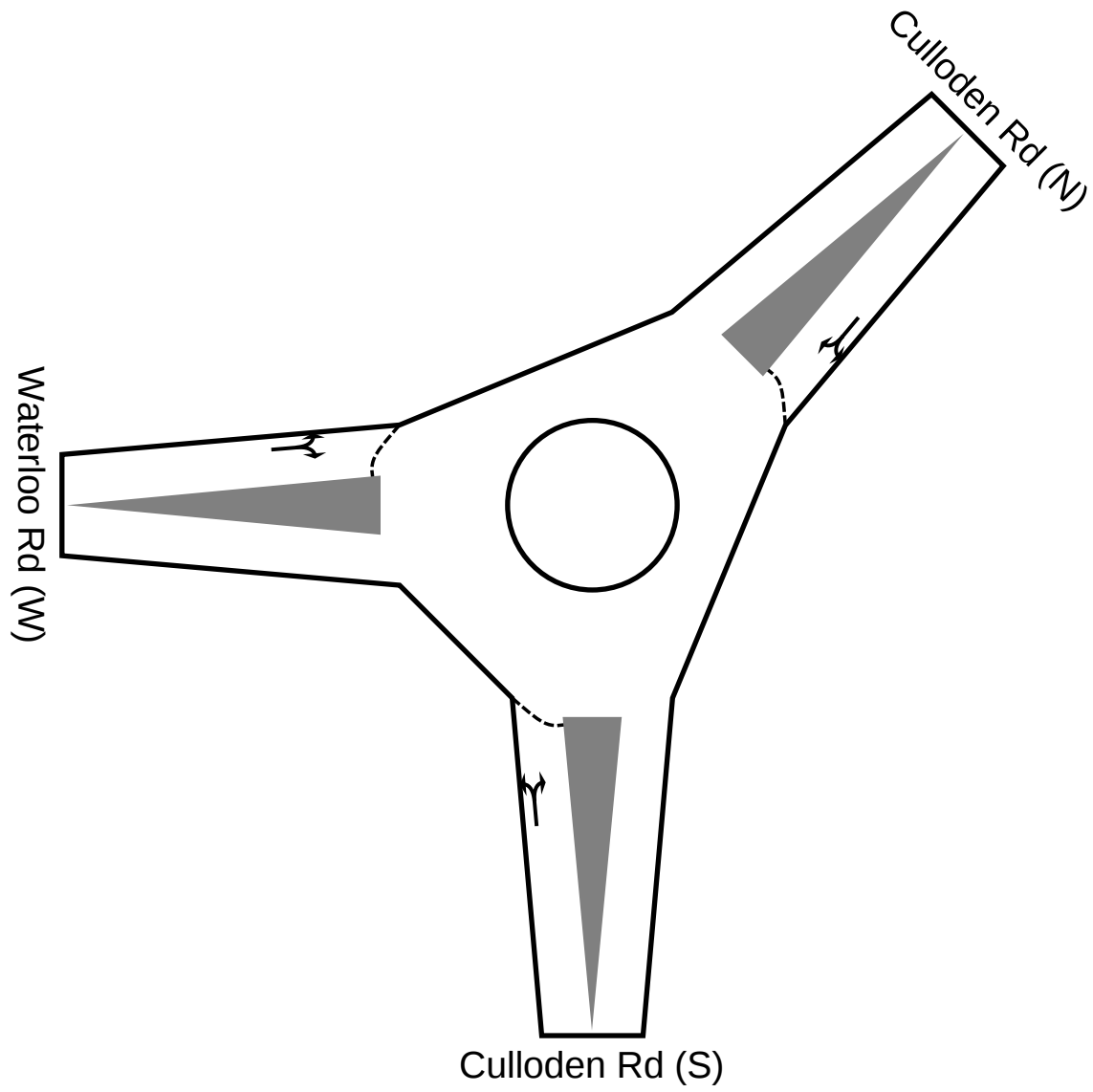
C = 158 seconds

Cycle Time Option: User-specified cycle time

Phase times determined by the program.



Intersection Layout – Waterloo Road / Culloden Road



Movement Summary

Waterloo / Culloden

2007_Base+Dev_AM

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Culloden Rd (S)										
1	L	30	3.3	0.103	8.1	LOS A	5	0.31	0.59	48.5
3	R	92	4.3	0.103	10.9	LOS A	5	0.31	0.66	46.0
Approach		122	4.1	0.103	10.2	LOS A	5	0.31	0.64	46.6
Culloden Rd (N)										
24	L	96	2.1	0.149	6.4	LOS A	8	0.05	0.53	50.8
26	R	146	6.8	0.149	10.3	LOS A	8	0.05	0.69	47.0
Approach		242	5.0	0.149	8.7	LOS A	8	0.05	0.62	48.5
Waterloo Rd (W)										
10	L	730	0.5	0.531	7.0	LOS A	39	0.38	0.53	48.8
12	R	5	0.0	0.556	11.6	LOS A	39	0.38	0.65	45.0
Approach		735	0.5	0.530	7.1	LOS A	39	0.38	0.53	48.8
All Vehicles		1099	1.9	0.556	7.8	LOS A	39	0.30	0.56	48.4

Movement Summary

Waterloo / Culloden

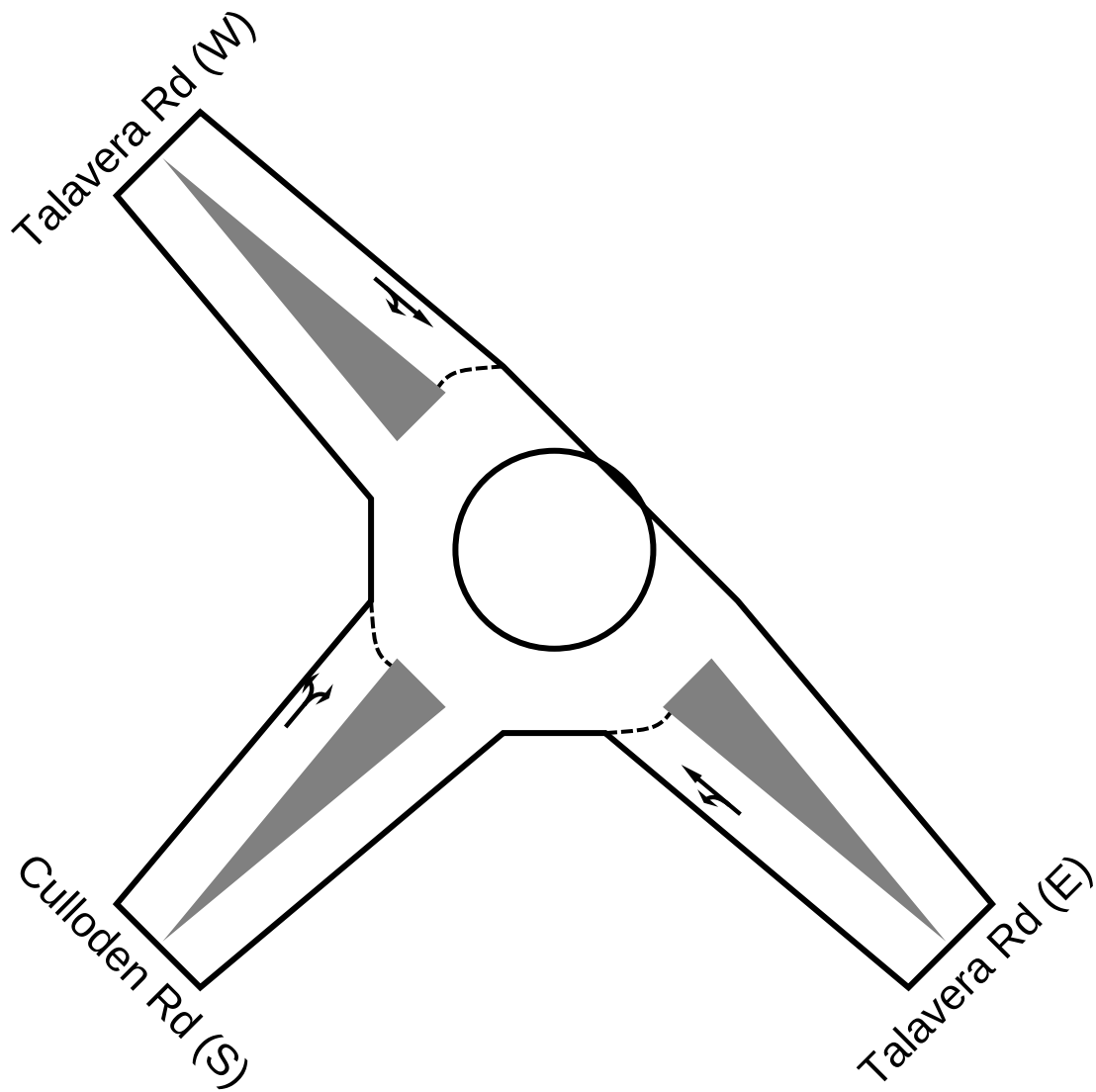
2007_Base+Dev_PM

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Culloden (S)										
1	L	81	1.2	0.269	11.7	LOS A	15	0.74	0.82	45.3
3	R	123	0.8	0.269	14.6	LOS B	15	0.74	0.85	43.1
Approach		204	1.0	0.269	13.4	LOS A	15	0.74	0.84	43.9
Culloden (N)										
24	L	200	1.5	0.590	6.8	LOS A	49	0.33	0.50	49.1
26	R	674	1.0	0.590	10.5	LOS A	49	0.33	0.62	45.9
Approach		874	1.1	0.590	9.7	LOS A	49	0.33	0.59	46.6
Waterloo (W)										
10	L	167	2.4	0.184	7.0	LOS A	10	0.34	0.54	49.0
12	R	58	0.0	0.184	11.6	LOS A	10	0.34	0.66	45.2
Approach		225	1.8	0.184	8.2	LOS A	10	0.34	0.57	48.0
All Vehicles		1303	1.2	0.590	10.0	LOS A	49	0.40	0.63	46.4

Intersection Layout – Talavera Road / Culloden Road



Movement Summary

Talavera / Culloden

2007_Base+Dev_AM

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Talavera Rd (E)										
21	L	107	3.7	0.111	7.7	LOS A	6	0.26	0.56	48.7
22	T	33	9.1	0.111	7.1	LOS A	6	0.26	0.52	49.4
Approach		140	5.0	0.111	7.6	LOS A	6	0.26	0.55	48.9
Talavera Rd (W)										
28	T	83	0.0	0.241	12.6	LOS A	14	0.78	0.83	44.6
29	R	73	12.3	0.240	17.5	LOS B	14	0.78	0.89	41.2
Approach		156	5.8	0.240	14.9	LOS B	14	0.78	0.86	42.9
Culloden Rd (S)										
30	L	22	36.4	0.550	8.9	LOS A	42	0.22	0.56	48.9
32	R	816	0.1	0.544	11.2	LOS A	42	0.22	0.65	45.6
Approach		838	1.1	0.544	11.1	LOS A	42	0.22	0.64	45.7
All Vehicles		1134	2.2	0.550	11.2	LOS A	42	0.30	0.66	45.6

Movement Summary

Talavera / Culloden

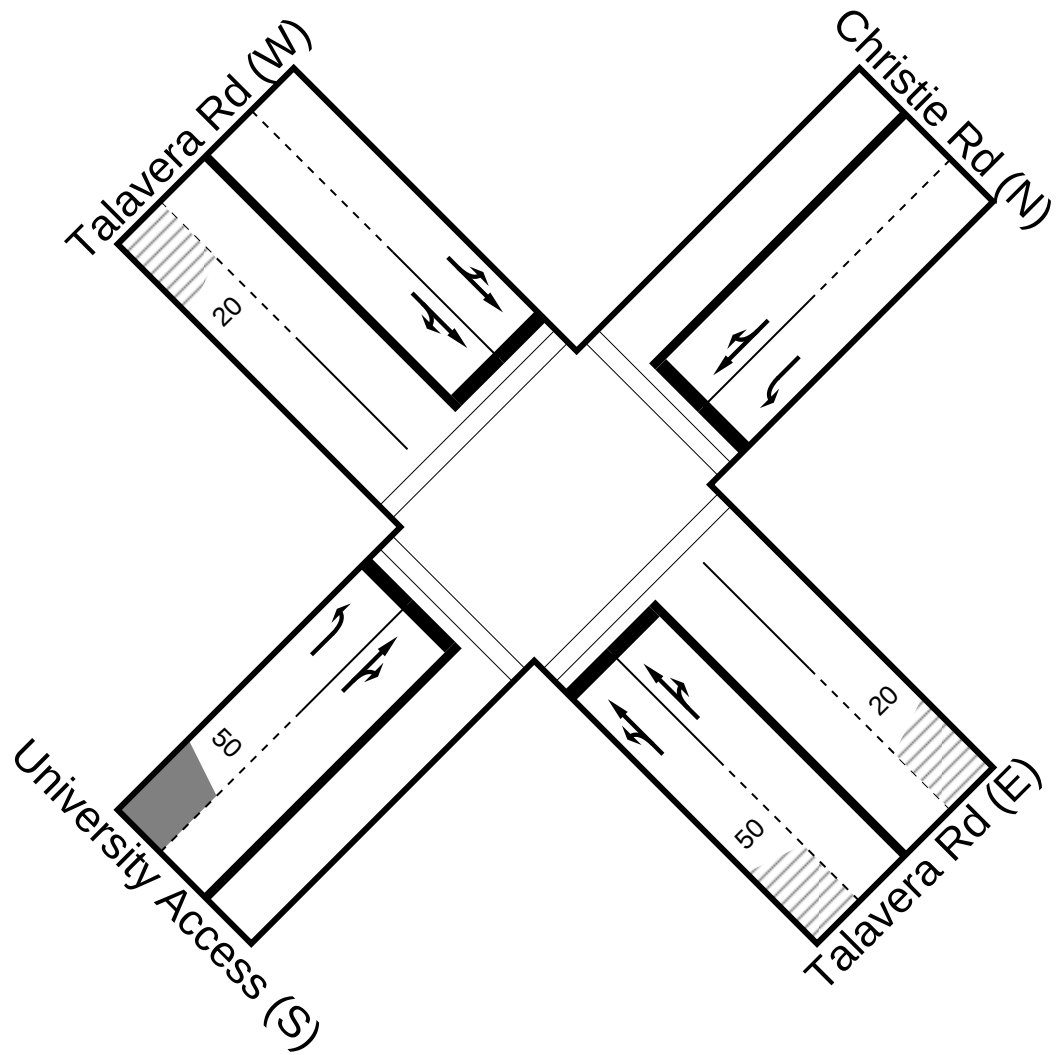
2007_Base+Dev_PM

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Talavera Rd (E)										
21	L	844	0.4	0.593	7.5	LOS A	51	0.26	0.54	48.7
22	T	78	0.0	0.595	6.7	LOS A	51	0.26	0.50	49.4
Approach		922	0.3	0.593	7.4	LOS A	51	0.26	0.54	48.8
Talavera Rd (W)										
28	T	24	12.5	0.056	8.0	LOS A	3	0.37	0.56	48.8
29	R	34	11.8	0.056	12.4	LOS A	3	0.37	0.67	45.1
Approach		58	12.1	0.056	10.6	LOS A	3	0.37	0.62	46.5
Culloden Rd (S)										
30	L	57	0.0	0.196	7.6	LOS A	10	0.24	0.57	48.8
32	R	205	1.0	0.196	11.3	LOS A	10	0.24	0.66	45.6
Approach		262	0.8	0.196	10.5	LOS A	10	0.24	0.64	46.2
All Vehicles		1242	1.0	0.595	8.2	LOS A	51	0.26	0.57	48.1

Intersection Layout – Talavera Road /Christie Road



Movement Summary

Talavera / Christie

2007_Base+Dev_AM

Signalised - Fixed time Cycle Time = 60 seconds

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Talavera Rd (E)										
21	L	120	1.7	0.198	14.7	LOS B	17	0.49	0.73	42.7
22	T	143	4.9	0.154	6.6	LOS A	24	0.50	0.41	50.7
23	R	22	0.0	0.155	14.8	LOS B	24	0.50	0.75	42.6
Approach		285	3.2	0.197	10.7	LOS A	24	0.50	0.57	46.4
Christie Rd (N)										
24	L	301	0.0	0.695	32.9	LOS C	73	0.97	0.88	31.5
25	T	163	0.0	0.397	21.7	LOS B	43	0.89	0.72	37.6
26	R	16	6.2	0.396	30.2	LOS C	43	0.89	0.80	32.8
Approach		480	0.2	0.695	29.0	LOS C	73	0.94	0.82	33.4
Talavera Rd (W)										
27	L	304	0.0	0.289	15.5	LOS B	43	0.55	0.77	42.1
28	T	736	0.0	0.671	9.9	LOS A	115	0.75	0.68	47.2
29	R	5	0.0	0.679	18.0	LOS B	115	0.75	0.84	40.1
Approach		1045	0.0	0.671	11.5	LOS A	115	0.69	0.71	45.6
University Access (S)										
30	L	5	0.0	0.012	27.3	LOS B	1	0.79	0.66	34.2
31	T	19	0.0	0.072	19.7	LOS B	8	0.81	0.59	38.9
32	R	13	0.0	0.072	28.0	LOS B	8	0.81	0.72	33.8
Approach		37	0.0	0.072	23.6	LOS B	8	0.81	0.65	36.3
All Vehicles		1847	0.5	0.695	16.2	LOS B	115	0.73	0.72	41.5

Phasing Summary

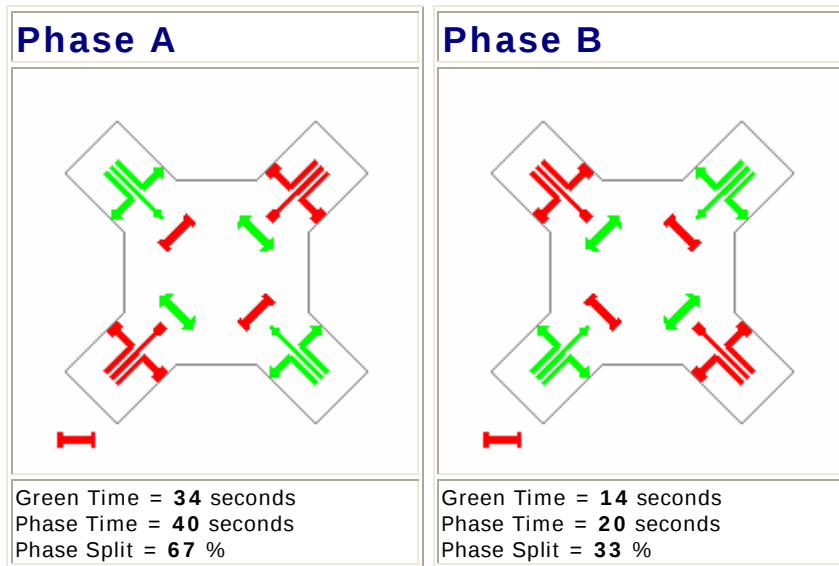
Talavera / Christie

2007_Base+Dev_AM

C = 60 seconds

Cycle Time Option: Optimum cycle time (Minimum Delay)

Phase times determined by the program.



Movement Summary

Talavera / Christie

2007_Base+Dev_PM

Signalised - Fixed time Cycle Time = 46 seconds

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Talavera Rd (E)										
21	L	63	0.0	0.158	16.6	LOS B	14	0.62	0.74	41.1
22	T	586	0.3	0.765	14.3	LOS A	107	0.89	0.86	43.1
23	R	91	0.0	0.767	22.8	LOS B	107	0.91	0.94	36.8
Approach		740	0.3	0.765	15.5	LOS B	107	0.87	0.86	42.0
Christie Rd (N)										
24	L	120	2.5	0.216	21.5	LOS B	22	0.78	0.77	37.7
25	T	40	2.5	0.238	13.4	LOS A	24	0.79	0.63	43.9
26	R	95	1.1	0.238	21.7	LOS B	24	0.79	0.77	37.5
Approach		255	2.0	0.238	20.3	LOS B	24	0.78	0.75	38.5
Talavera Rd (W)										
27	L	83	0.0	0.103	16.6	LOS B	12	0.62	0.74	41.2
28	T	319	0.0	0.383	9.7	LOS A	46	0.72	0.61	47.4
29	R	5	0.0	0.383	17.9	LOS B	46	0.72	0.80	40.2
Approach		407	0.0	0.382	11.2	LOS A	46	0.70	0.64	45.9
University Access (S)										
30	L	5	0.0	0.009	20.3	LOS B	1	0.72	0.66	38.5
31	T	5	0.0	0.017	12.2	LOS A	2	0.72	0.49	45.0
32	R	5	0.0	0.017	20.5	LOS B	2	0.72	0.68	38.3
Approach		15	0.0	0.017	17.6	LOS B	2	0.72	0.61	40.4
All Vehicles		1417	0.5	0.767	15.2	LOS B	107	0.80	0.77	42.3

Phasing Summary

Talavera / Christie

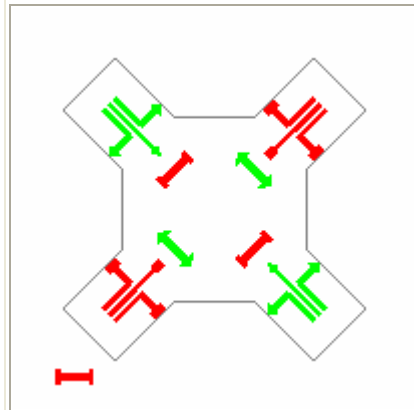
2007_Base+Dev_PM

C = 46 seconds

Cycle Time Option: User-specified cycle time

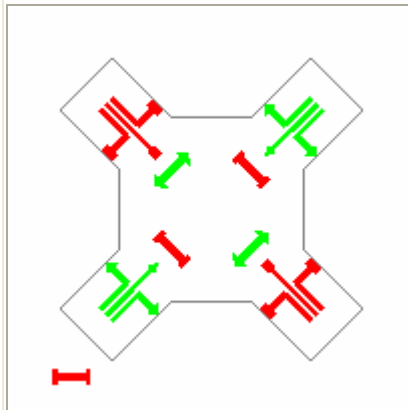
Phase times determined by the program.

Phase A



Green Time = 20 seconds
Phase Time = 26 seconds
Phase Split = 57 %

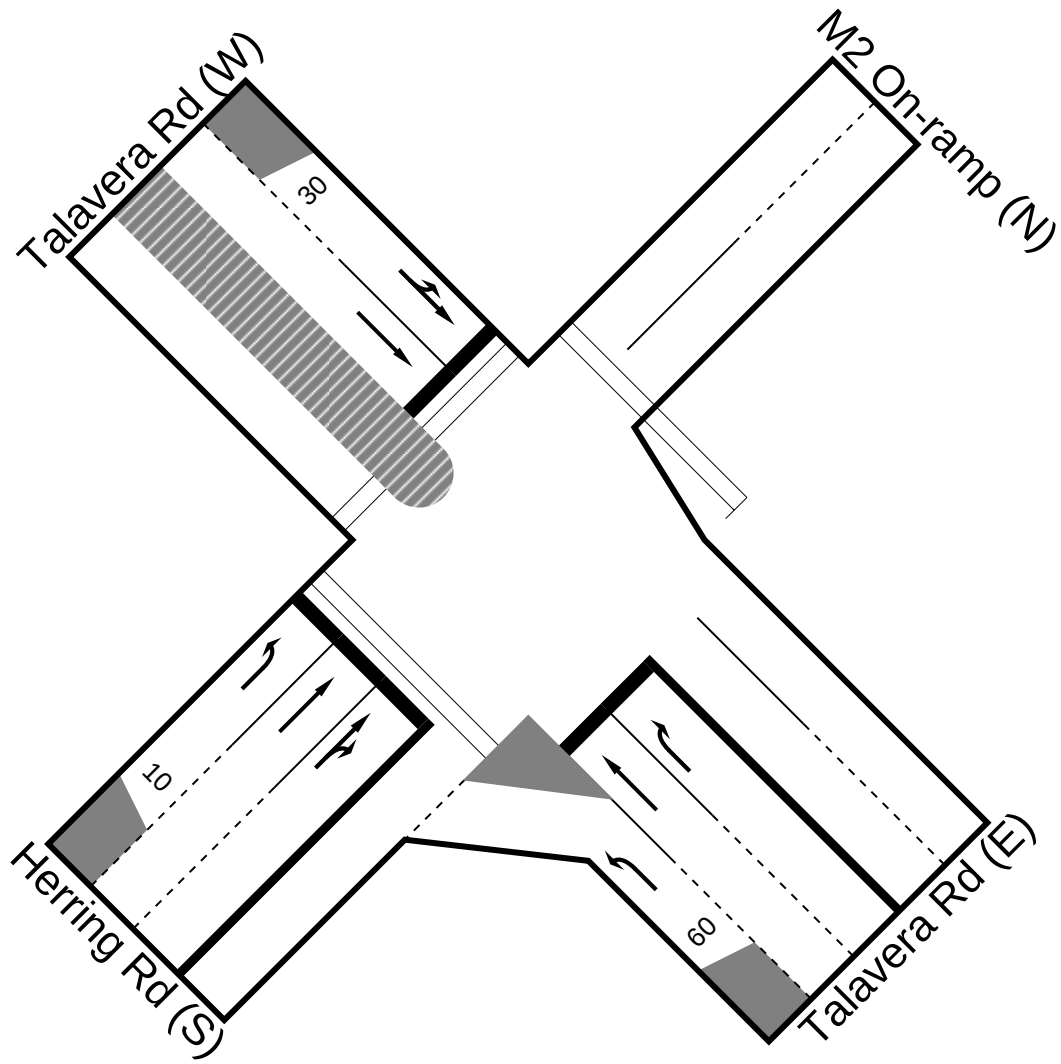
Phase B



Green Time = 14 seconds
Phase Time = 20 seconds
Phase Split = 43 %

- | | |
|------------------|-------------------|
| Normal Movement | Permitted/Opposed |
| Slip-Lane | Opposed Slip-Lane |
| Stopped Movement | Continuous |
| Turn On Red | |

Intersection Layout – Talavera Road / Herring Road



Movement Summary

Talavera / Herring

2007_Base+Dev_AM

Signalised - Fixed time Cycle Time = 76 seconds

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Talavera Rd (E)										
21	L	78	5.1	0.061	8.2	LOS A	3	0.17	0.63	48.8
22	T	465	2.4	0.484	13.5	LOS A	92	0.71	0.62	43.8
23	R	44	4.5	0.310	46.9	LOS D	18	0.98	0.74	26.2
Approach		587	2.9	0.484	15.3	LOS B	92	0.66	0.63	42.2
Talavera Rd (W)										
27	L	43	0.0	0.616	28.4	LOS B	40	0.75	0.79	33.6
28	T	520	0.0	0.615	22.2	LOS B	100	0.86	0.74	37.3
Approach		563	0.0	0.615	22.7	LOS B	100	0.85	0.74	37.0
Herring Rd (S)										
30	L	39	2.6	0.438	26.4	LOS B	11	0.70	0.71	34.8
31	T	35	5.7	0.054	18.0	LOS B	10	0.70	0.52	40.2
32	R	387	2.1	0.618	31.0	LOS C	97	0.89	0.84	32.4
Approach		461	2.4	0.618	29.7	LOS C	97	0.86	0.81	33.1
All Vehicles		1611	1.7	0.618	22.0	LOS B	100	0.78	0.72	37.4

Phasing Summary

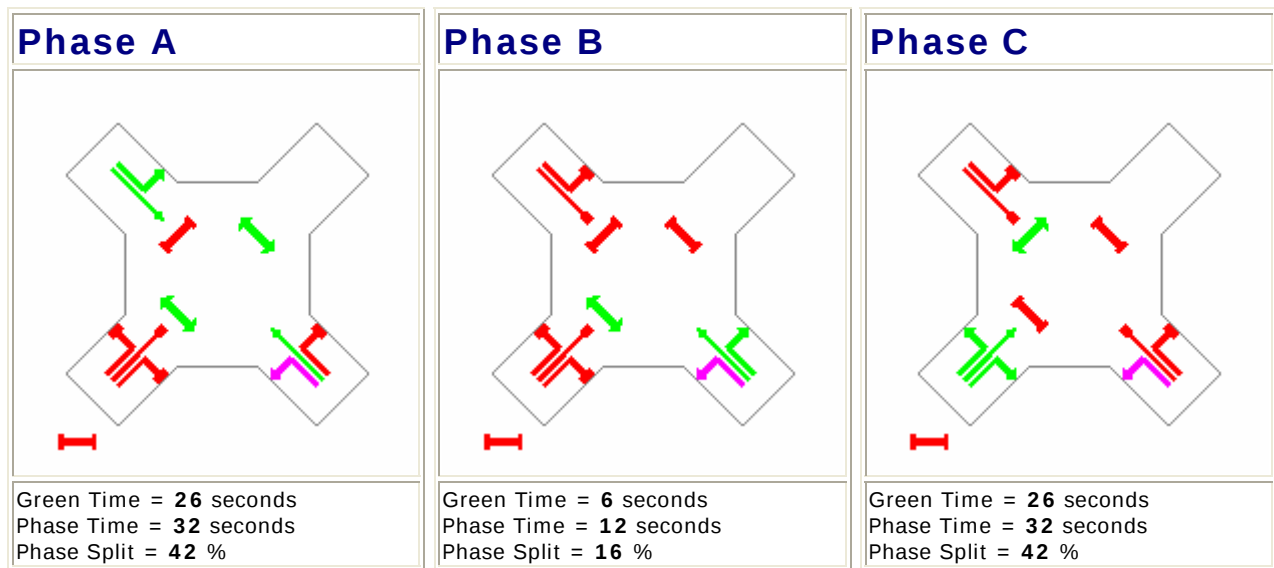
Talavera / Herring

2007_Base+Dev_AM

C = 76 seconds

Cycle Time Option: User-specified cycle time

Phase times determined by the program.



- | | |
|---|---|
| <div style="display: inline-block; width: 15px; height: 15px; background-color: green; margin-right: 5px;"></div> Normal Movement | <div style="display: inline-block; width: 15px; height: 15px; background-color: darkgreen; margin-right: 5px;"></div> Permitted/Opposed |
| <div style="display: inline-block; width: 15px; height: 15px; background-color: magenta; margin-right: 5px;"></div> Slip-Lane | <div style="display: inline-block; width: 15px; height: 15px; background-color: purple; margin-right: 5px;"></div> Opposed Slip-Lane |
| <div style="display: inline-block; width: 15px; height: 15px; background-color: red; margin-right: 5px;"></div> Stopped Movement | <div style="display: inline-block; width: 15px; height: 15px; background-color: cyan; margin-right: 5px;"></div> Continuous |
| <div style="display: inline-block; width: 15px; height: 15px; background-color: red; margin-right: 5px;"></div> Turn On Red | |

Movement Summary

Talavera / Herring

2007_Base+Dev_PM

Signalised - Fixed time Cycle Time = 81 seconds

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Talavera Rd (E)										
21	L	279	1.4	0.212	8.2	LOS A	11	0.19	0.65	48.8
22	T	426	0.9	0.712	27.8	LOS B	117	0.95	0.84	34.0
23	R	249	0.0	0.434	32.8	LOS C	68	0.85	0.82	31.4
Approach		954	0.8	0.712	23.4	LOS B	117	0.70	0.78	36.5
Talavera Rd (W)										
27	L	5	0.0	0.880	55.6	LOS D	60	1.00	1.04	23.7
28	T	355	1.1	0.874	47.3	LOS D	80	1.00	1.04	26.1
Approach		360	1.1	0.874	47.5	LOS D	80	1.00	1.04	26.0
Herring Rd (S)										
30	L	315	3.3	1.001	26.7	LOS B	24	0.99	0.78	34.6
31	T	134	0.3	0.321	4.5	LOS A	62	0.24	0.21	46.1
32	R	324	0.3	0.322	19.1	LOS B	61	0.59	0.78	39.3
Approach		773	0.8	1.000	14.1	LOS A	62	0.50	0.54	39.5
All Vehicles		2087	0.9	1.001	24.1	LOS B	117	0.68	0.73	34.7

Phasing Summary

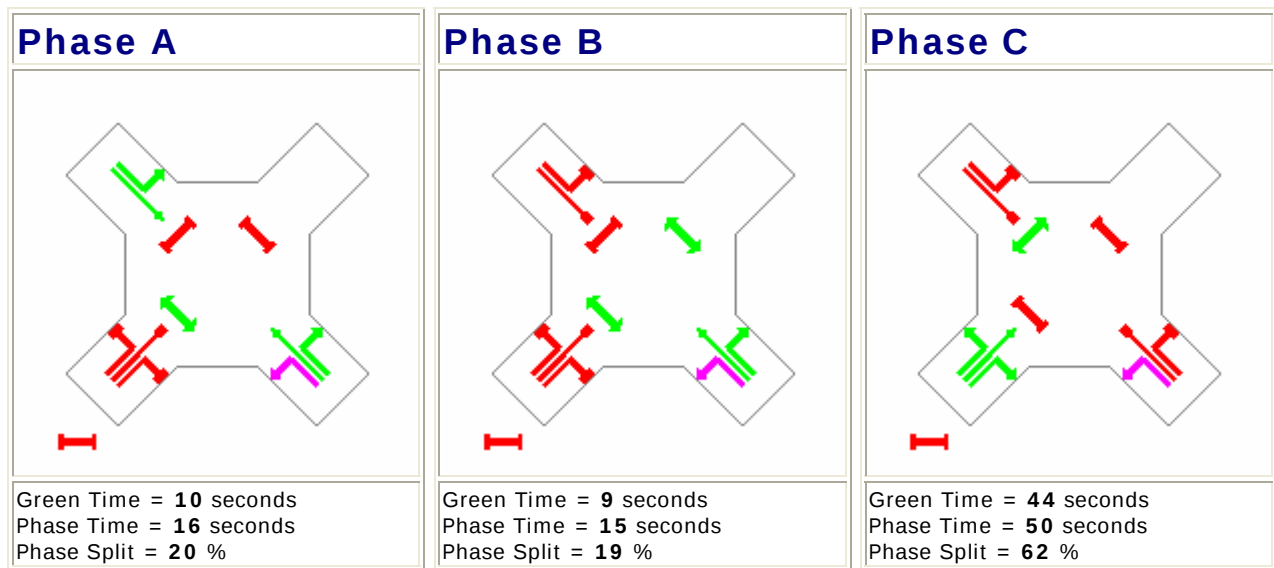
Talavera / Herring

2007_Base+Dev_PM

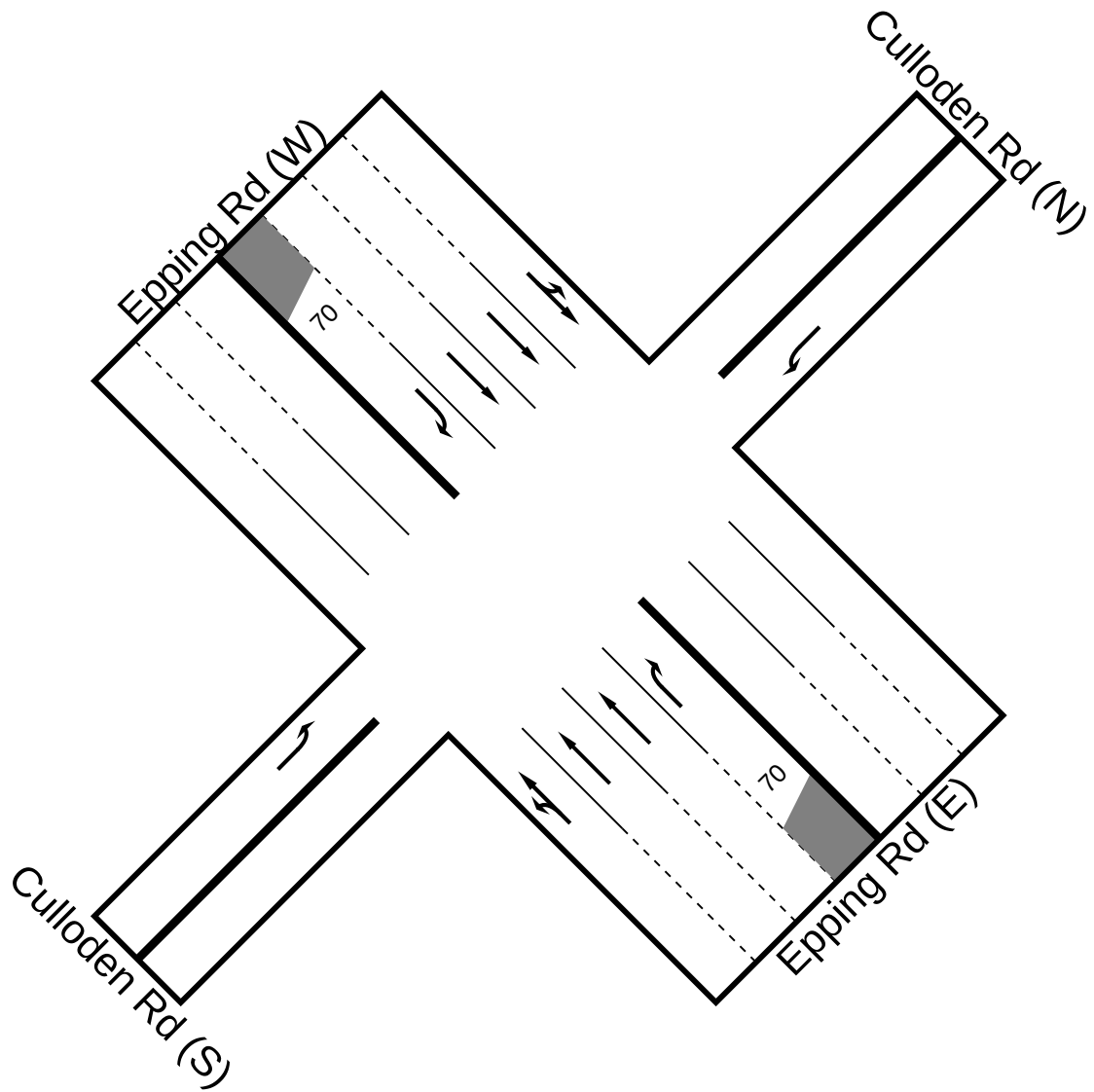
C = 81 seconds

Cycle Time Option: User-specified cycle time

Phase times determined by the program.



Intersection Layout – Epping Road / Culloden Road



Movement Summary

Epping / Culloden

2007_Base+Dev_AM

Give-way

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	%HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Epping Rd (E)										
21	L	5	0.0	0.135	8.2	LOS A	0	0.00	0.67	49.0
22	T	723	11.5	0.134	0.0	LOS A	0	0.00	0.00	60.0
23	R	26	26.9	0.017	9.2	LOS A	0	0.00	0.67	49.0
Approach		754	11.9	0.134	0.4	LOS A		0.00	0.03	59.5
Culloden Rd (N)										
24	L	21	4.5	0.012	8.2	LOS A	0	0.00	0.67	49.0
Approach		22	4.5	0.012	8.2	LOS A		0.00	0.67	49.0
Epping Rd (W)										
27	L	9	10.0	0.385	8.3	LOS A	0	0.00	0.67	49.0
28	T	2232	2.5	0.390	0.0	LOS A	0	0.00	0.00	60.0
29	R	5	0.0	0.003	8.2	LOS A	0	0.00	0.66	49.0
Approach		2247	2.5	0.390	0.1	LOS A		0.00	0.00	59.9
Culloden Rd (S)										
30	L	42	0.0	0.023	8.2	LOS A	0	0.00	0.67	49.0
Approach		42	0.0	0.023	8.2	LOS A		0.00	0.67	49.0
All Vehicles		3065	4.8	0.390	0.3	Not Applicable	0	0.00	0.02	59.5

Movement Summary

Epping / Culloden

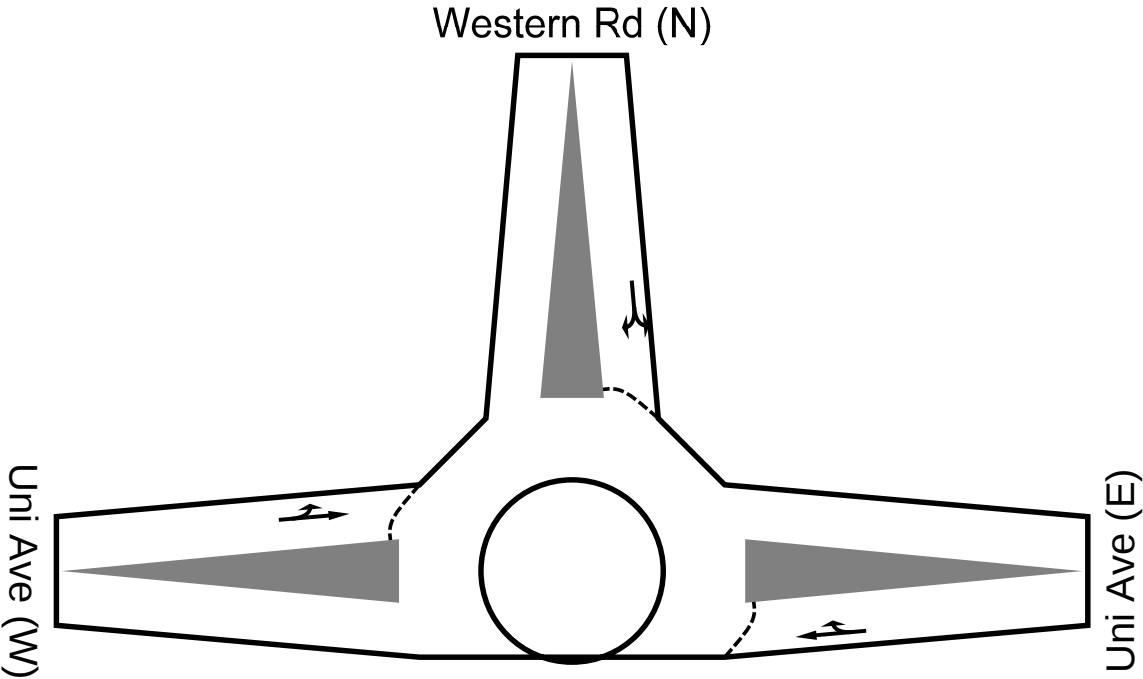
2007_Base+Dev_PM

Give-way

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Epping Rd (E)										
21	L	11	0.0	0.324	8.2	LOS A	0	0.00	0.67	49.0
22	T	1848	3.1	0.324	0.0	LOS A	0	0.00	0.00	60.0
23	R	119	0.8	0.064	8.2	LOS A	0	0.00	0.66	49.0
Approach		1978	2.9	0.324	0.5	LOS A		0.00	0.04	59.1
Culloden Rd (N)										
24	L	271	1.5	0.147	8.2	LOS A	0	0.00	0.67	49.0
Approach		271	1.5	0.147	8.2	LOS A		0.00	0.67	49.0
Epping Rd (W)										
27	L	23	4.3	0.161	8.4	LOS A	0	0.00	0.67	49.0
28	T	893	3.8	0.161	0.0	LOS A	0	0.00	0.00	60.0
29	R	5	0.0	0.003	8.2	LOS A	0	0.00	0.66	49.0
Approach		921	3.8	0.161	0.3	LOS A		0.00	0.02	59.6
Culloden Rd (S)										
30	L	11	0.0	0.006	8.2	LOS A	0	0.00	0.67	49.0
Approach		11	0.0	0.006	8.2	LOS A		0.00	0.67	49.0
All Vehicles		3181	3.0	0.324	1.1	Not Applicable	0	0.00	0.09	58.2

Intersection Layout – University Avenue / Western Road



Movement Summary

University Ave / Western Rd

2007_Base+Dev_AM

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Uni Ave (E)										
5	T	79	0.0	0.175	6.4	LOS A	9	0.20	0.50	50.1
6	R	161	0.0	0.175	11.4	LOS A	9	0.20	0.64	45.7
Approach		240	0.0	0.175	9.7	LOS A	9	0.20	0.60	47.0
Western Rd (N)										
7	L	5	0.0	0.050	6.7	LOS A	2	0.47	0.54	49.1
9	R	52	0.0	0.050	12.5	LOS A	2	0.47	0.67	44.6
Approach		57	0.0	0.050	12.0	LOS A	2	0.47	0.66	45.0
Uni Ave (W)										
10	L	208	0.0	0.401	6.2	LOS A	24	0.41	0.52	49.5
11	T	348	0.0	0.401	5.2	LOS A	24	0.41	0.48	50.4
Approach		556	0.0	0.401	5.6	LOS A	24	0.41	0.49	50.0
All Vehicles		853	0.0	0.401	7.2	LOS A	24	0.35	0.53	48.8

Movement Summary

University Ave / Western Rd

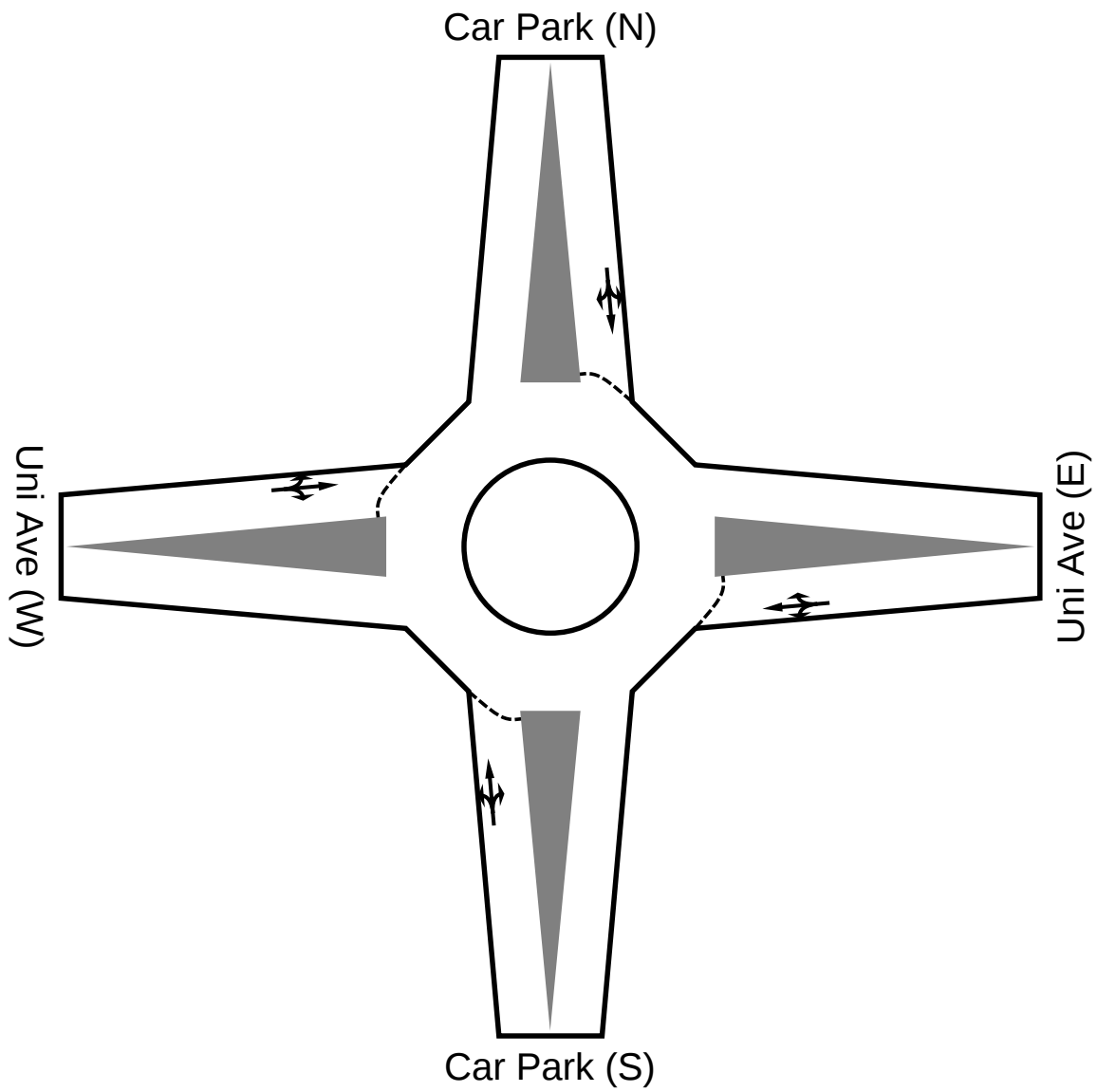
2007_Base+Dev_PM

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Uni Ave (E)										
5	T	354	0.0	0.414	7.9	LOS A	24	0.53	0.63	48.1
6	R	100	0.0	0.413	12.9	LOS A	24	0.53	0.72	44.4
Approach		454	0.0	0.414	9.0	LOS A	24	0.53	0.65	47.2
Western Rd (N)										
7	L	5	0.0	0.172	5.6	LOS A	9	0.22	0.46	50.7
9	R	251	0.0	0.174	11.4	LOS A	9	0.22	0.64	45.6
Approach		256	0.0	0.174	11.3	LOS A	9	0.22	0.64	45.7
Uni Ave (W)										
10	L	113	0.0	0.135	5.7	LOS A	7	0.27	0.47	50.4
11	T	77	0.0	0.135	4.8	LOS A	7	0.27	0.41	51.4
Approach		190	0.0	0.135	5.3	LOS A	7	0.27	0.44	50.8
All Vehicles		900	0.0	0.414	8.9	LOS A	24	0.39	0.60	47.4

Intersection Layout – University Avenue / Carpark



Movement Summary

Uni Ave / Car Park

2007_Base+Dev_AM

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Car Park (S)										
1	L	16	0.0	0.057	8.9	LOS A	3	0.50	0.63	47.7
2	T	5	0.0	0.057	7.1	LOS A	3	0.50	0.56	49.0
3	R	34	0.0	0.057	13.1	LOS A	3	0.50	0.66	44.5
Approach		55	0.0	0.057	11.3	LOS A	3	0.50	0.65	45.7
Uni Ave (E)										
4	L	279	0.0	0.433	5.9	LOS A	28	0.34	0.48	50.0
5	T	213	0.0	0.433	5.7	LOS A	28	0.34	0.47	50.1
6	R	152	0.0	0.433	11.7	LOS A	28	0.34	0.63	45.2
Approach		644	0.0	0.433	7.2	LOS A	28	0.34	0.51	48.7
Car Park (N)										
7	L	5	0.0	0.019	6.5	LOS A	1	0.44	0.51	49.3
8	T	5	0.0	0.019	5.6	LOS A	1	0.44	0.46	50.1
9	R	12	0.0	0.019	12.4	LOS A	1	0.44	0.62	44.8
Approach		22	0.0	0.019	9.5	LOS A	1	0.44	0.56	46.8
Uni Ave (W)										
10	L	55	0.0	0.263	6.2	LOS A	14	0.40	0.52	49.6
11	T	210	0.0	0.263	5.3	LOS A	14	0.40	0.48	50.4
12	R	82	0.0	0.264	12.1	LOS A	14	0.40	0.65	45.0
Approach		347	0.0	0.264	7.0	LOS A	14	0.40	0.53	48.8
All Vehicles		1068	0.0	0.433	7.4	LOS A	28	0.37	0.52	48.6

Movement Summary

Uni Ave / Parking

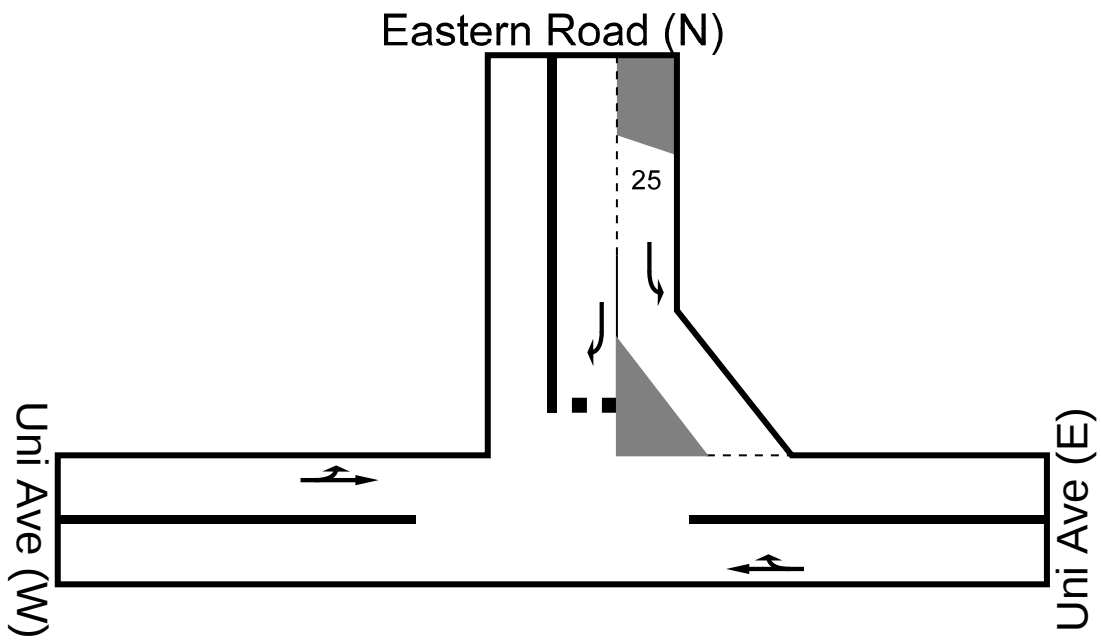
2007_Base+Dev_PM

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Car Park (S)										
1	L	128	0.0	0.448	10.1	LOS A	26	0.67	0.76	46.8
2	T	5	0.0	0.455	8.3	LOS A	26	0.67	0.72	47.9
3	R	287	0.0	0.448	14.3	LOS A	26	0.67	0.76	43.9
Approach		420	0.0	0.448	12.9	LOS A	26	0.67	0.76	44.7
Uni Ave (E)										
4	L	43	0.0	0.264	5.7	LOS A	15	0.26	0.46	50.5
5	T	255	0.0	0.263	5.5	LOS A	15	0.26	0.45	50.6
6	R	93	0.0	0.263	11.5	LOS A	15	0.26	0.63	45.5
Approach		391	0.0	0.263	7.0	LOS A	15	0.26	0.50	49.2
Car Park (N)										
7	L	30	0.0	0.092	6.6	LOS A	5	0.48	0.55	49.0
8	T	5	0.0	0.091	5.7	LOS A	5	0.48	0.52	49.8
9	R	70	0.0	0.092	12.5	LOS A	5	0.48	0.66	44.6
Approach		105	0.0	0.092	10.5	LOS A	5	0.48	0.62	45.9
Uni Ave (W)										
10	L	40	0.0	0.070	6.9	LOS A	4	0.51	0.57	48.8
11	T	30	0.0	0.070	5.9	LOS A	4	0.51	0.53	49.6
12	R	7	0.0	0.070	12.8	LOS A	4	0.51	0.66	44.5
Approach		77	0.0	0.070	7.1	LOS A	4	0.51	0.56	48.6
All Vehicles		993	0.0	0.455	9.9	LOS A	26	0.48	0.63	46.8

Intersection Layout – University Avenue / Eastern Road



Movement Summary

Uni Ave / Eastern Rd

2007_Base+Dev_AM

Give-way

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Uni Ave (E)										
5	T	742	0.0	0.469	1.7	LOS A	43	0.55	0.00	53.2
6	R	128	0.0	0.469	10.0	LOS A	43	0.55	0.71	46.6
Approach		870	0.0	0.469	3.0	LOS A	43	0.55	0.10	52.1
Eastern Road (N)										
7	L	40	0.0	0.050	8.7	LOS A	1	0.32	0.61	48.0
9	R	5	0.0	0.018	19.4	LOS B	1	0.77	0.91	39.0
Approach		45	0.0	0.050	9.9	LOS A	1	0.37	0.64	46.9
Uni Ave (W)										
10	L	41	0.0	0.127	8.2	LOS A	0	0.00	0.67	49.0
11	T	204	0.0	0.127	0.0	LOS A	0	0.00	0.00	60.0
Approach		245	0.0	0.127	1.4	LOS A		0.00	0.11	57.8
All Vehicles										
		1160	0.0	0.469	2.9	Not Applicable	43	0.42	0.13	53.0

Movement Summary

Uni Ave / Eastern Rd

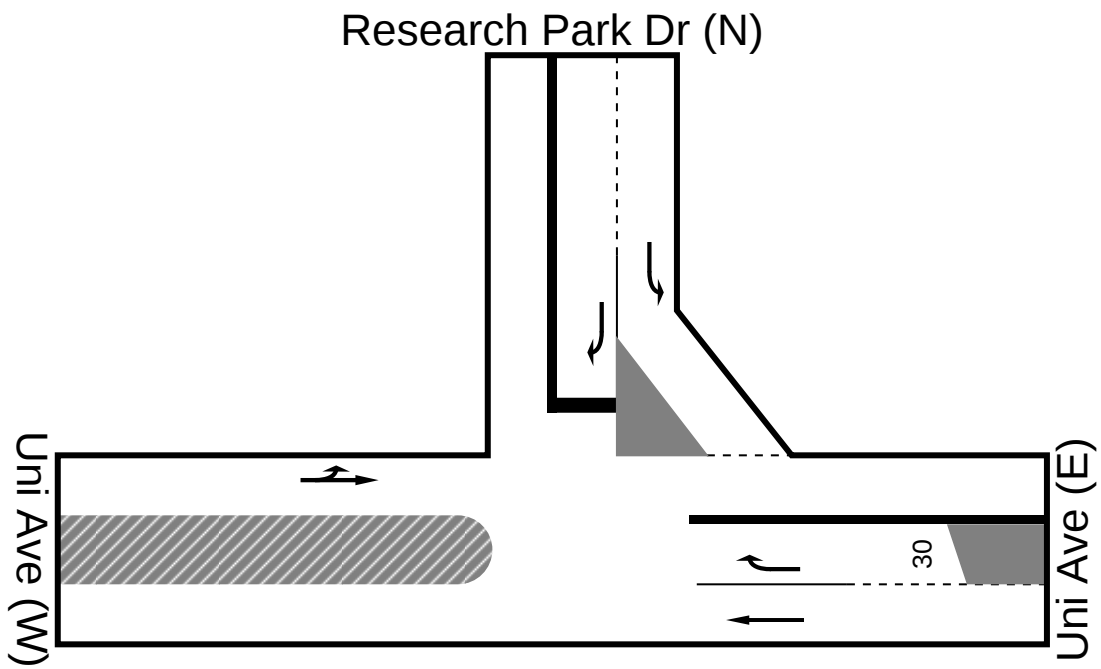
2007_Base+Dev_PM

Give-way

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Uni Ave (E)										
5	T	391	0.0	0.256	1.6	LOS A	17	0.51	0.00	53.6
6	R	72	0.0	0.256	9.9	LOS A	17	0.51	0.72	46.7
Approach		463	0.0	0.256	2.9	LOS A	17	0.51	0.11	52.4
Eastern Road (N)										
7	L	5	0.0	0.006	9.3	LOS A	0	0.39	0.60	47.7
9	R	5	0.0	0.011	14.2	LOS A	0	0.62	0.79	43.1
Approach		10	0.0	0.011	11.7	LOS A	0	0.51	0.69	45.3
Uni Ave (W)										
10	L	30	0.0	0.179	8.2	LOS A	0	0.00	0.67	49.0
11	T	317	0.0	0.179	0.0	LOS A	0	0.00	0.00	60.0
Approach		347	0.0	0.179	0.7	LOS A		0.00	0.06	58.9
All Vehicles		820	0.0	0.256	2.1	Not Applicable	17	0.29	0.10	54.8

Intersection Layout – University Avenue / Research Park Drive



Movement Summary

University Ave / Research Park Dr

2007_Base+Dev_AM

Two-way stop

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Uni Ave (E)										
5	T	559	0.0	0.287	0.0	LOS A	0	0.00	0.00	60.0
6	R	18	0.0	0.015	9.0	LOS A	0	0.33	0.62	47.4
Approach		577	0.0	0.287	0.3	LOS A	0	0.01	0.02	59.5
Research Park Dr (N)										
7	L	5	0.0	0.005	8.5	LOS A	0	0.31	0.57	48.1
9	R	312	0.0	0.637	22.0	LOS B	36	0.80	1.21	38.2
Approach		317	0.0	0.636	21.8	LOS B	36	0.79	1.20	38.3
Uni Ave (W)										
10	L	65	0.0	0.127	8.2	LOS A	0	0.00	0.67	49.0
11	T	180	0.0	0.127	0.0	LOS A	0	0.00	0.00	60.0
Approach		245	0.0	0.127	2.2	LOS A		0.00	0.18	56.6
All Vehicles										
		1139	0.0	0.637	6.7	Not Applicable	36	0.23	0.38	51.1

Movement Summary

University Ave / Research Park Dr

2007_Base+Dev_PM

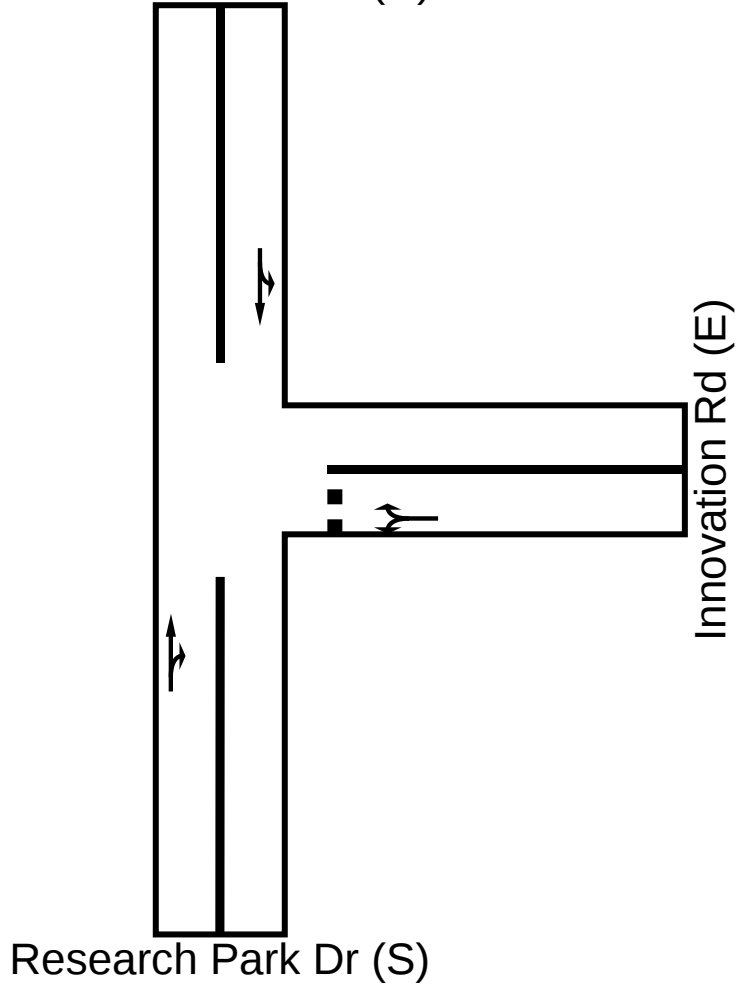
Two-way stop

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Uni Ave (E)										
5	T	375	0.0	0.192	0.0	LOS A	0	0.00	0.00	60.0
6	R	10	0.0	0.009	9.3	LOS A	0	0.38	0.62	47.2
Approach		385	0.0	0.192	0.2	LOS A	0	0.01	0.02	59.6
Research Park Dr (N)										
7	L	52	0.0	0.058	8.9	LOS A	2	0.36	0.63	47.9
9	R	88	0.0	0.149	14.8	LOS B	5	0.56	1.00	43.4
Approach		140	0.0	0.150	12.6	LOS A	5	0.49	0.86	45.0
Uni Ave (W)										
10	L	112	0.0	0.165	8.2	LOS A	0	0.00	0.67	49.0
11	T	205	0.0	0.165	0.0	LOS A	0	0.00	0.00	60.0
Approach		317	0.0	0.165	2.9	LOS A		0.00	0.24	55.6
All Vehicles		842	0.0	0.192	3.3	Not Applicable	5	0.09	0.24	55.1

Intersection Layout – Research Park Drive / Innovation Road

Research Park Dr (N)



Research Park Dr (S)

Movement Summary

Research Park Dr / Innovation Rd

2007_Base+Dev_AM

Two-way stop

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Uni Ave (E)										
5	T	375	0.0	0.192	0.0	LOS A	0	0.00	0.00	60.0
6	R	10	0.0	0.009	9.3	LOS A	0	0.38	0.62	47.2
Approach		385	0.0	0.192	0.2	LOS A	0	0.01	0.02	59.6
Research Park Dr (N)										
7	L	52	0.0	0.058	8.9	LOS A	2	0.36	0.63	47.9
9	R	88	0.0	0.149	14.8	LOS B	5	0.56	1.00	43.4
Approach		140	0.0	0.150	12.6	LOS A	5	0.49	0.86	45.0
Uni Ave (W)										
10	L	112	0.0	0.165	8.2	LOS A	0	0.00	0.67	49.0
11	T	205	0.0	0.165	0.0	LOS A	0	0.00	0.00	60.0
Approach		317	0.0	0.165	2.9	LOS A		0.00	0.24	55.6
All Vehicles		842	0.0	0.192	3.3	Not Applicable	5	0.09	0.24	55.1

Movement Summary

Research Park Dr/ Innovation Rd

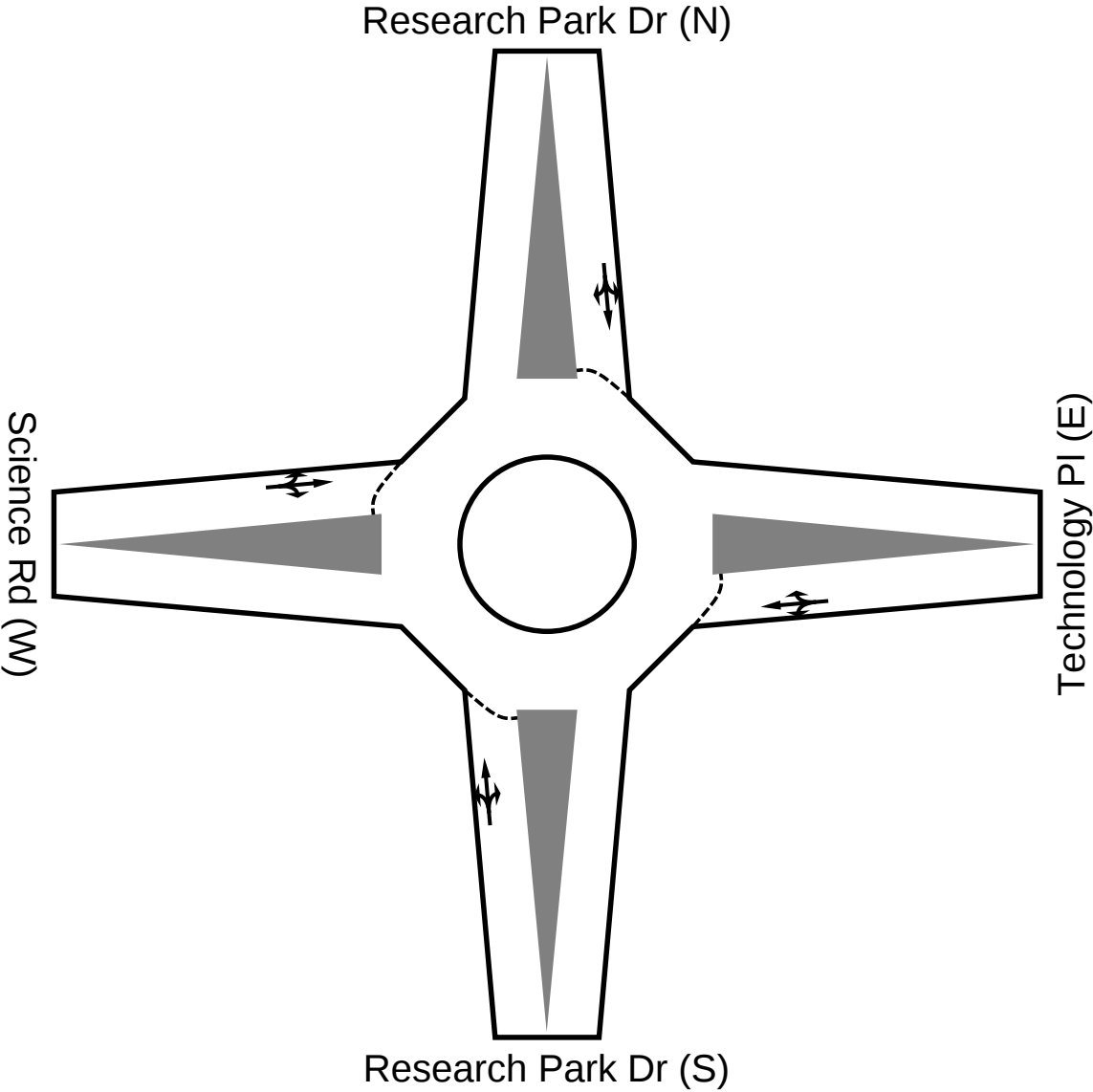
2007_Base+Dev_PM

Two-way stop

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Uni Ave (E)										
5	T	375	0.0	0.192	0.0	LOS A	0	0.00	0.00	60.0
6	R	10	0.0	0.009	9.3	LOS A	0	0.38	0.62	47.2
Approach		385	0.0	0.192	0.2	LOS A	0	0.01	0.02	59.6
Research Park Dr (N)										
7	L	52	0.0	0.058	8.9	LOS A	2	0.36	0.63	47.9
9	R	88	0.0	0.149	14.8	LOS B	5	0.56	1.00	43.4
Approach		140	0.0	0.150	12.6	LOS A	5	0.49	0.86	45.0
Uni Ave (W)										
10	L	112	0.0	0.165	8.2	LOS A	0	0.00	0.67	49.0
11	T	205	0.0	0.165	0.0	LOS A	0	0.00	0.00	60.0
Approach		317	0.0	0.165	2.9	LOS A		0.00	0.24	55.6
All Vehicles		842	0.0	0.192	3.3	Not Applicable	5	0.09	0.24	55.1

Intersection Layout – Research Park Drive / Science Road



Movement Summary

Research Park Dr / Science Rd

2007_Base+Dev_AM

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Research Park Dr (S)										
1	L	5	0.0	0.030	7.2	LOS A	1	0.14	0.55	49.5
2	T	12	0.0	0.030	5.4	LOS A	1	0.14	0.43	51.5
3	R	21	0.0	0.030	11.4	LOS A	1	0.14	0.64	46.0
Approach		38	0.0	0.030	8.9	LOS A	1	0.14	0.57	48.0
Technology Pl (E)										
4	L	280	0.0	0.199	5.7	LOS A	10	0.25	0.47	50.6
5	T	5	0.0	0.200	5.6	LOS A	10	0.25	0.46	50.7
6	R	5	0.0	0.200	11.6	LOS A	10	0.25	0.64	45.6
Approach		290	0.0	0.199	5.8	LOS A	10	0.25	0.47	50.5
Research Park Dr (N)										
7	L	5	0.0	0.062	5.4	LOS A	3	0.13	0.45	51.4
8	T	59	0.0	0.063	4.5	LOS A	3	0.13	0.38	52.6
9	R	31	0.0	0.063	11.3	LOS A	3	0.13	0.65	46.1
Approach		95	0.0	0.063	6.8	LOS A	3	0.13	0.47	50.1
Science Rd (W)										
10	L	5	0.0	0.014	5.4	LOS A	1	0.13	0.44	51.4
11	T	11	0.0	0.014	4.5	LOS A	1	0.13	0.38	52.6
12	R	5	0.0	0.014	11.3	LOS A	1	0.13	0.64	46.2
Approach		21	0.0	0.014	6.3	LOS A	1	0.13	0.46	50.5
All Vehicles		444	0.0	0.200	6.3	LOS A	10	0.21	0.48	50.2

Movement Summary

Research Park Dr / Science Rd

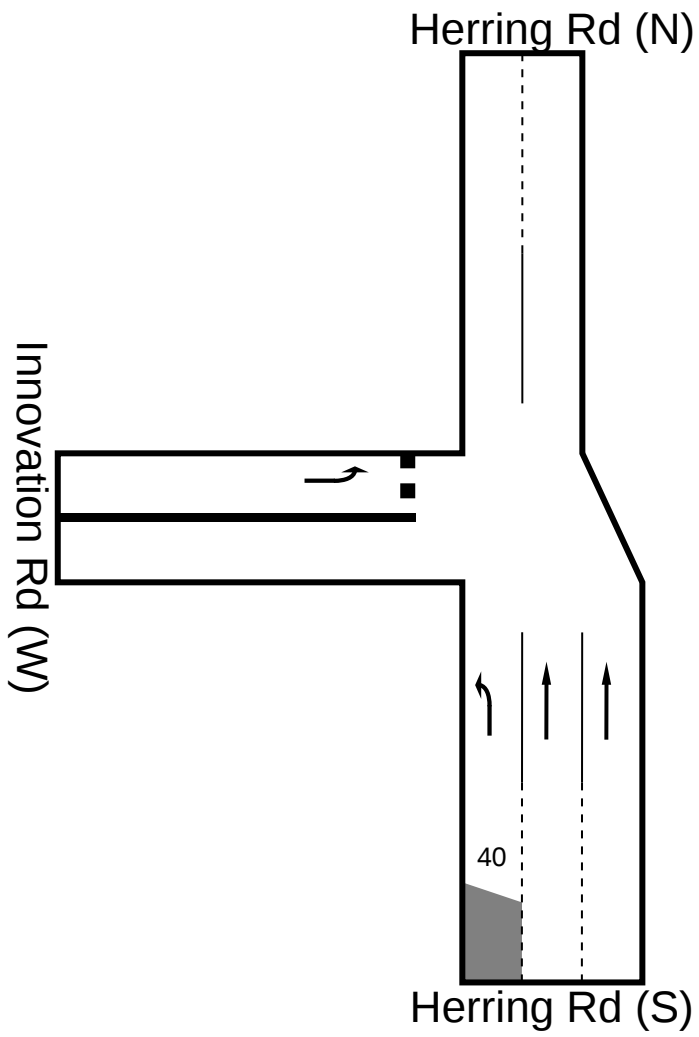
2007_Base+Dev_PM

Roundabout

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Research Park Dr (S)										
1	L	5	0.0	0.128	7.3	LOS A	6	0.21	0.56	49.2
2	T	157	0.0	0.128	5.5	LOS A	6	0.21	0.45	51.0
3	R	5	0.0	0.128	11.5	LOS A	6	0.21	0.64	45.7
Approach		167	0.0	0.128	5.7	LOS A	6	0.21	0.46	50.8
Technology Pl (E)										
4	L	50	0.0	0.072	5.4	LOS A	3	0.11	0.45	51.5
5	T	56	0.0	0.072	5.3	LOS A	3	0.11	0.44	51.7
6	R	5	0.0	0.071	11.3	LOS A	3	0.11	0.65	46.1
Approach		111	0.0	0.072	5.6	LOS A	3	0.11	0.45	51.3
Research Park Dr (N)										
7	L	5	0.0	0.017	5.4	LOS A	1	0.09	0.45	51.7
8	T	10	0.0	0.017	4.4	LOS A	1	0.09	0.38	52.9
9	R	10	0.0	0.017	11.2	LOS A	1	0.09	0.66	46.2
Approach		25	0.0	0.017	7.3	LOS A	1	0.09	0.50	49.7
Science Rd (W)										
10	L	5	0.0	0.015	5.9	LOS A	1	0.30	0.46	50.2
11	T	5	0.0	0.015	4.9	LOS A	1	0.30	0.41	51.2
12	R	10	0.0	0.015	11.8	LOS A	1	0.30	0.61	45.4
Approach		20	0.0	0.015	8.6	LOS A	1	0.30	0.52	47.8
All Vehicles		323	0.0	0.128	6.0	LOS A	6	0.17	0.46	50.7

Intersection Layout – Herring Road / Innovation Road



Movement Summary

Herring Rd / Innovation Rd

2007_Base+Dev_AM

Give-way

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Herring Rd (S)										
1	L	107	0.0	0.058	8.2	LOS A	0	0.00	0.67	49.0
2	T	409	0.0	0.105	0.0	LOS A	0	0.00	0.00	60.0
Approach		516	0.0	0.105	1.7	LOS A		0.00	0.14	57.3
Innovation Rd (W)										
10	L	52	0.0	0.071	10.8	LOS A	2	0.47	0.74	46.2
Approach		52	0.0	0.071	10.8	LOS A	2	0.47	0.74	46.2
All Vehicles		568	0.0	0.105	2.5	Not Applicable	2	0.04	0.19	56.1

Movement Summary

Herring Rd / Innovation Rd

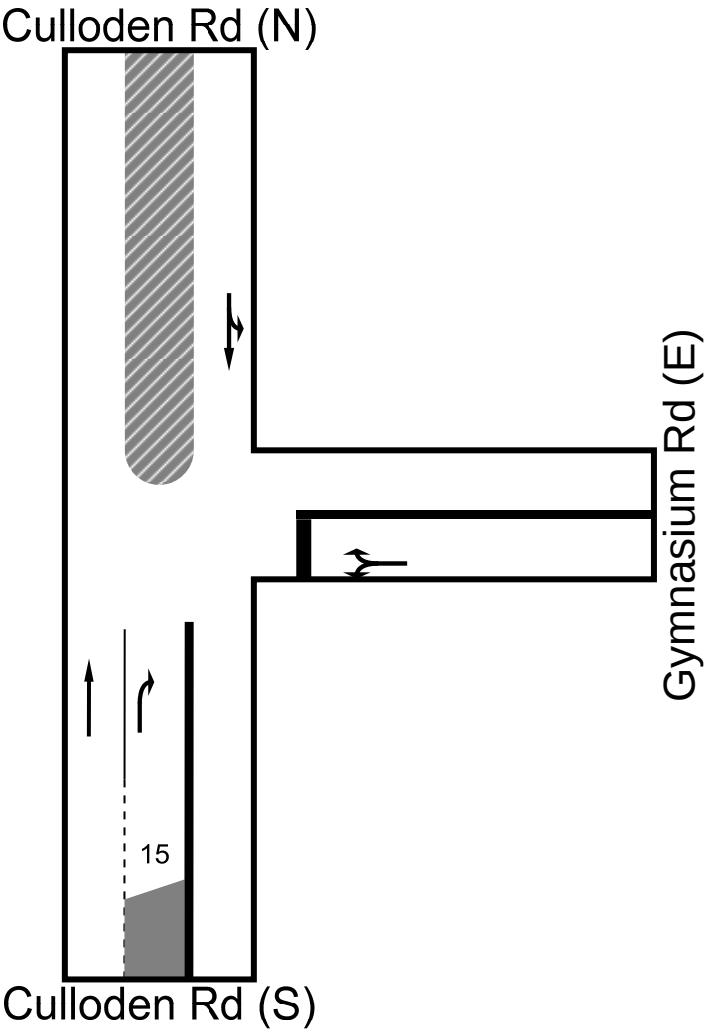
2007_Base+Dev_PM

Give-way

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Herring Rd (S)										
1	L	12	0.0	0.006	8.2	LOS A	0	0.00	0.67	49.0
2	T	687	0.0	0.176	0.0	LOS A	0	0.00	0.00	60.0
Approach		699	0.0	0.176	0.1	LOS A		0.00	0.01	59.8
Innovation Rd (W)										
10	L	86	0.0	0.155	13.0	LOS A	5	0.58	0.86	44.2
Approach		86	0.0	0.155	13.0	LOS A	5	0.58	0.86	44.2
All Vehicles		785	0.0	0.176	1.6	Not Applicable	5	0.06	0.10	57.5

Intersection Layout – Culloden Road /Gymnasium Road



Movement Summary

Culloden Rd / Gymnasium Rd

2007_Base+Dev_AM

Two-way stop

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Culloden Rd (S)										
2	T	122	0.0	0.063	0.0	LOS A	0	0.00	0.00	60.0
3	R	5	0.0	0.005	8.7	LOS A	0	0.19	0.62	47.9
Approach		127	0.0	0.063	0.3	LOS A	0	0.01	0.02	59.4
Gymnasium Rd (E)										
4	L	5	0.0	0.010	11.3	LOS A	0	0.20	0.87	46.2
6	R	5	0.0	0.010	11.1	LOS A	0	0.20	0.90	46.3
Approach		10	0.0	0.010	11.2	LOS A	0	0.20	0.88	46.2
Culloden Rd (N)										
7	L	35	0.0	0.050	8.2	LOS A	0	0.00	0.67	49.0
8	T	60	0.0	0.050	0.0	LOS A	0	0.00	0.00	60.0
Approach		95	0.0	0.050	3.0	LOS A		0.00	0.25	55.4
All Vehicles										
		232	0.0	0.063	1.9	Not Applicable	0	0.01	0.15	57.0

Movement Summary

Culloden Rd / Gymnasium Rd

Two-way stop

Vehicle Movements

Mov ID	Turn	Dem Flow (veh/h)	% HV	Deg of Satn (v/c)	Aver Delay (sec)	Level of Service	95 % Back of Queue (m)	Prop. Queued	Eff. Stop Rate	Aver Speed (km/h)
Culloden Rd (S)										
2	T	204	0.0	0.105	0.0	LOS A	0	0.00	0.00	60.0
3	R	30	0.0	0.034	9.3	LOS A	1	0.36	0.64	47.2
Approach		234	0.0	0.105	1.2	LOS A	1	0.05	0.08	58.0
Gymnasium Rd (E)										
4	L	5	0.0	0.013	12.7	LOS A	0	0.40	0.83	45.2
6	R	5	0.0	0.013	12.5	LOS A	0	0.40	0.88	45.3
Approach		10	0.0	0.013	12.6	LOS A	0	0.40	0.86	45.3
Culloden Rd (N)										
7	L	31	0.0	0.147	8.2	LOS A	0	0.00	0.67	49.0
8	T	254	0.0	0.147	0.0	LOS A	0	0.00	0.00	60.0
Approach		285	0.0	0.147	0.9	LOS A		0.00	0.07	58.6
All Vehicles		529	0.0	0.147	1.2	Not Applicable	1	0.03	0.09	58.0