Appendix D
SIDRA Analysis Existing

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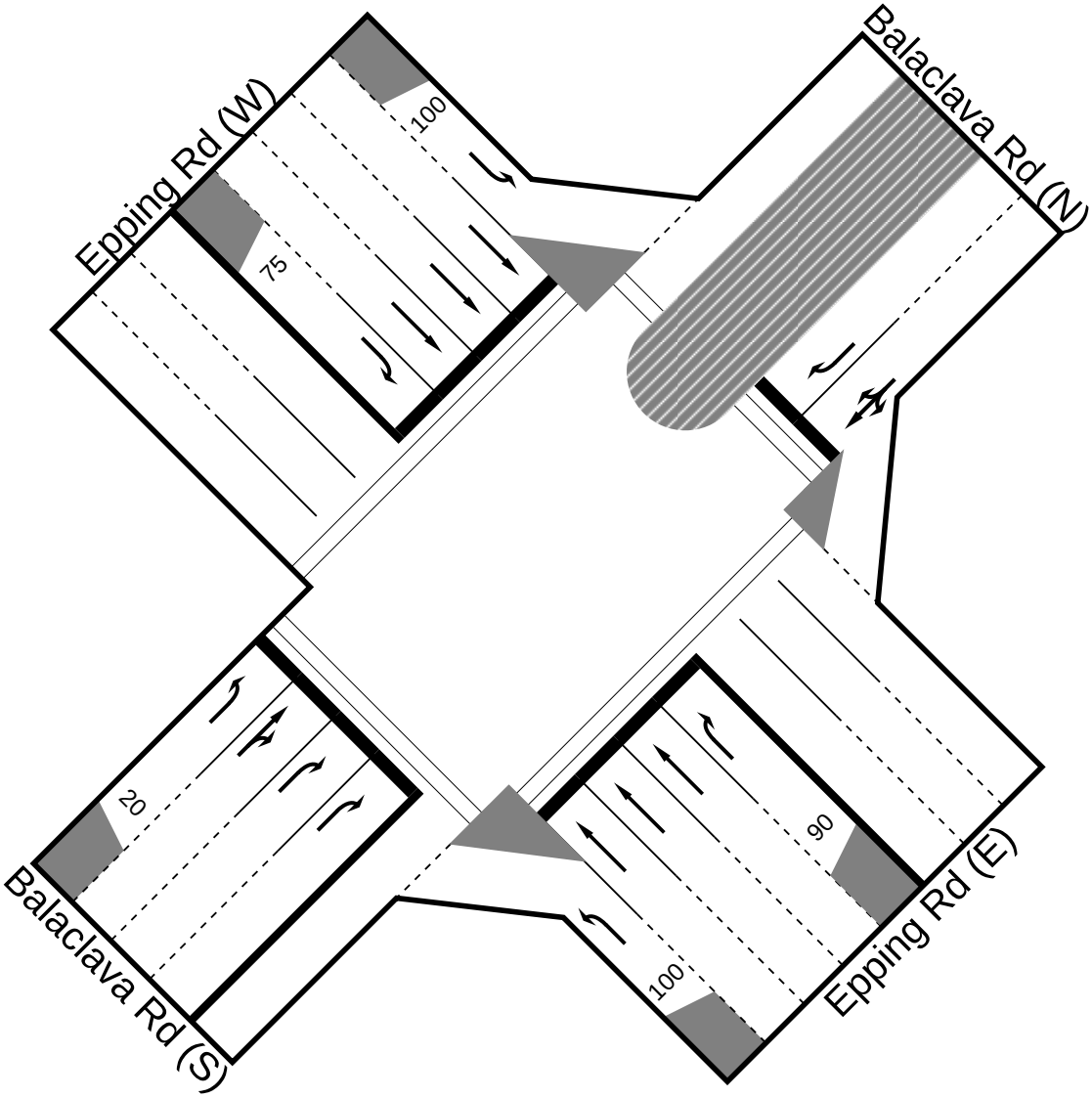
Intersection Layout – Epping Road / Balaclava Road



SIDRA INTERSECTION

Movement Summary

Epping / Balaclava

2007_Base_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	706	9.2	0.338	34.8	LOS C	101	0.76	0.65	30.7
23	R	127	3.9	0.867	91.6	LOS F	85	1.00	0.98	17.1
Approach		**883**	**8.2**	**0.867**	**41.4**	**LOS C**	**101**	**0.76**	**0.69**	**28.1**
Balaclava Rd (N)										
24	L	5	0.0	0.074	53.2	LOS D	20	0.83	0.72	24.4
25	T	5	20.0	0.074	45.3	LOS D	20	0.83	0.60	26.6
26	R	31	50.0	0.074	61.1	LOS E	20	0.86	0.71	22.8
Approach		**42**	**40.5**	**0.074**	**58.3**	**LOS E**	**20**	**0.85**	**0.70**	**23.4**
Epping Rd (W)										
27	L	252	6.3	0.175	8.0	LOS A	10	0.10	0.63	49.2
28	T	1963	1.9	0.898	57.9	LOS E	351	1.00	1.03	23.2
29	R	15	6.2	0.111	77.5	LOS F	12	0.96	0.70	19.3
Approach		**2231**	**2.4**	**0.898**	**52.4**	**LOS D**	**351**	**0.90**	**0.98**	**24.6**
Balaclava Rd (S)										
30	L	12	8.3	0.097	29.8	LOS C	5	0.72	0.68	33.1
31	T	151	4.0	0.897	74.3	LOS F	215	1.00	1.05	19.7
32	R	954	1.9	0.897	82.4	LOS F	215	1.00	1.05	18.4
Approach		**1117**	**2.2**	**0.897**	**80.8**	**LOS F**	**215**	**1.00**	**1.05**	**18.7**
All Vehicles		**4273**	**3.9**	**0.898**	**57.6**	**LOS E**	**351**	**0.89**	**0.94**	**23.3**

SIDRA INTERSECTION

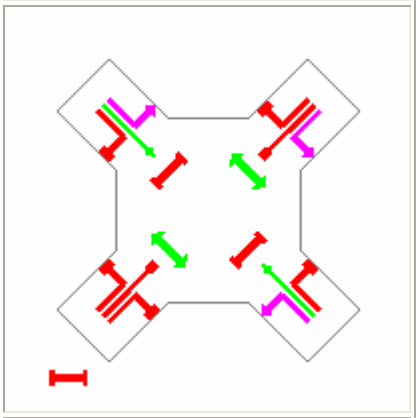
Phasing Summary

Epping / Balaclava

2007_Base_AM

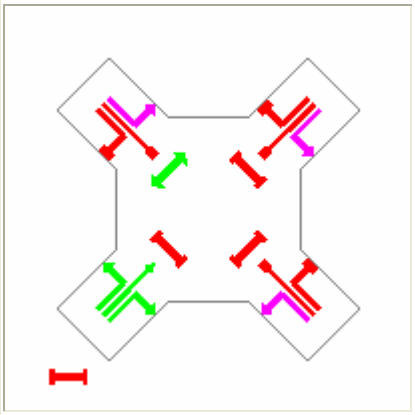
C = **148** seconds
Cycle Time Option: **User-specified cycle time**
Phase times determined by the program.

Phase A



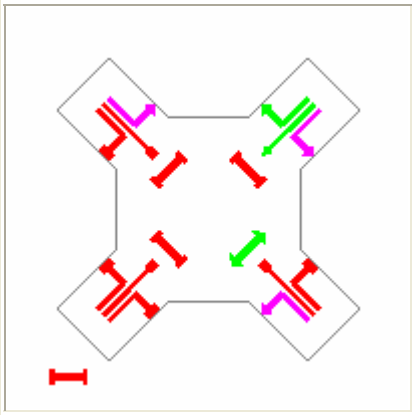
Green Time = **56** seconds
Phase Time = **62** seconds
Phase Split = **42** %

Phase B



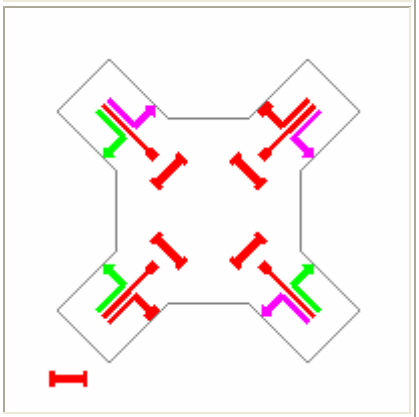
Green Time = **33** seconds
Phase Time = **39** seconds
Phase Split = **26** %

Phase C



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

Phase D



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

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

SIDRA INTERSECTION

Movement Summary

Epping / Balaclava

2007_Base_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	775	1.7	0.521	8.1	LOS A	38	0.17	0.64	48.8
22	T	1388	1.5	0.958	94.0	LOS F	304	1.00	1.23	16.7
23	R	60	6.7	0.211	62.5	LOS E	37	0.88	0.76	22.1
Approach		**2223**	**1.7**	**0.958**	**63.2**	**LOS E**	**304**	**0.71**	**1.01**	**22.0**
Balaclava Rd (N)										
24	L	5	16.7	0.554	25.0	LOS B	64	0.56	0.74	35.6
25	T	5	16.7	0.560	17.2	LOS B	64	0.56	0.44	40.6
26	R	331	8.2	0.560	46.6	LOS D	89	0.75	0.77	26.5
Approach		**343**	**8.5**	**0.560**	**45.7**	**LOS D**	**89**	**0.75**	**0.77**	**26.7**
Epping Rd (W)										
27	L	97	22.7	0.075	8.5	LOS A	4	0.09	0.62	49.3
28	T	907	1.4	0.626	53.0	LOS D	142	0.95	0.81	24.4
29	R	157	0.6	0.617	65.4	LOS E	82	0.94	0.80	21.5
Approach		**1161**	**3.1**	**0.626**	**51.0**	**LOS D**	**142**	**0.87**	**0.79**	**25.0**
Balaclava Rd (S)										
30	L	183	2.3	1.001#	26.9	LOS B	44	0.85	0.78	34.5
31	T	55	7.8	0.348	42.9	LOS D	79	0.75	0.62	25.4
32	R	397	3.8	0.348	57.7	LOS E	79	0.87	0.80	23.3
Approach		**635**	**3.8**	**1.000**	**47.8**	**LOS D**	**79**	**0.85**	**0.78**	**25.8**
All Vehicles		**4362**	**2.9**	**1.001**	**56.3**	**LOS D**	**304**	**0.78**	**0.90**	**23.6**

SIDRA INTERSECTION

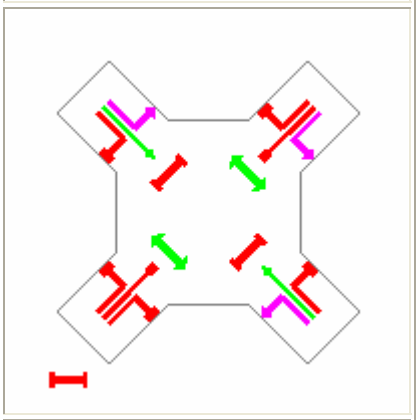
Phasing Summary

Epping / Balaclava

2007_Base_PM

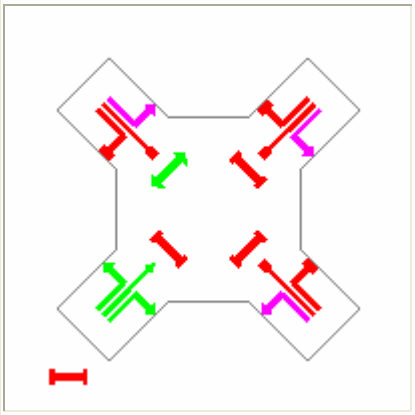
C = **148** seconds
Cycle Time Option: **User-specified cycle time**
Phase times determined by the program.

Phase A



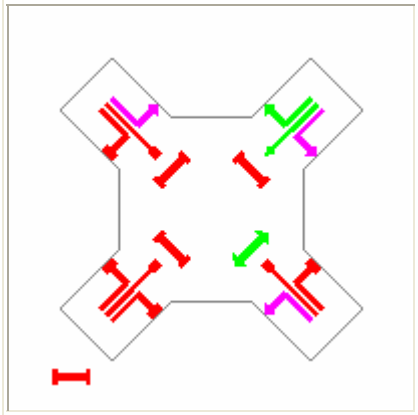
Green Time = **37** seconds
Phase Time = **43** seconds
Phase Split = **29** %

Phase B



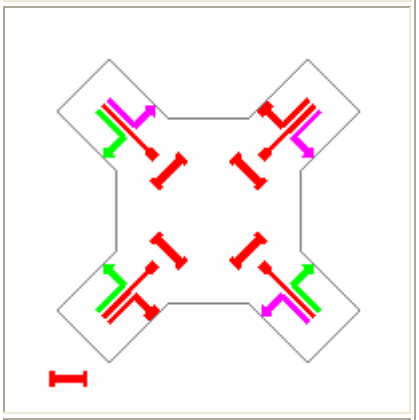
Green Time = **36** seconds
Phase Time = **42** seconds
Phase Split = **28** %

Phase C



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

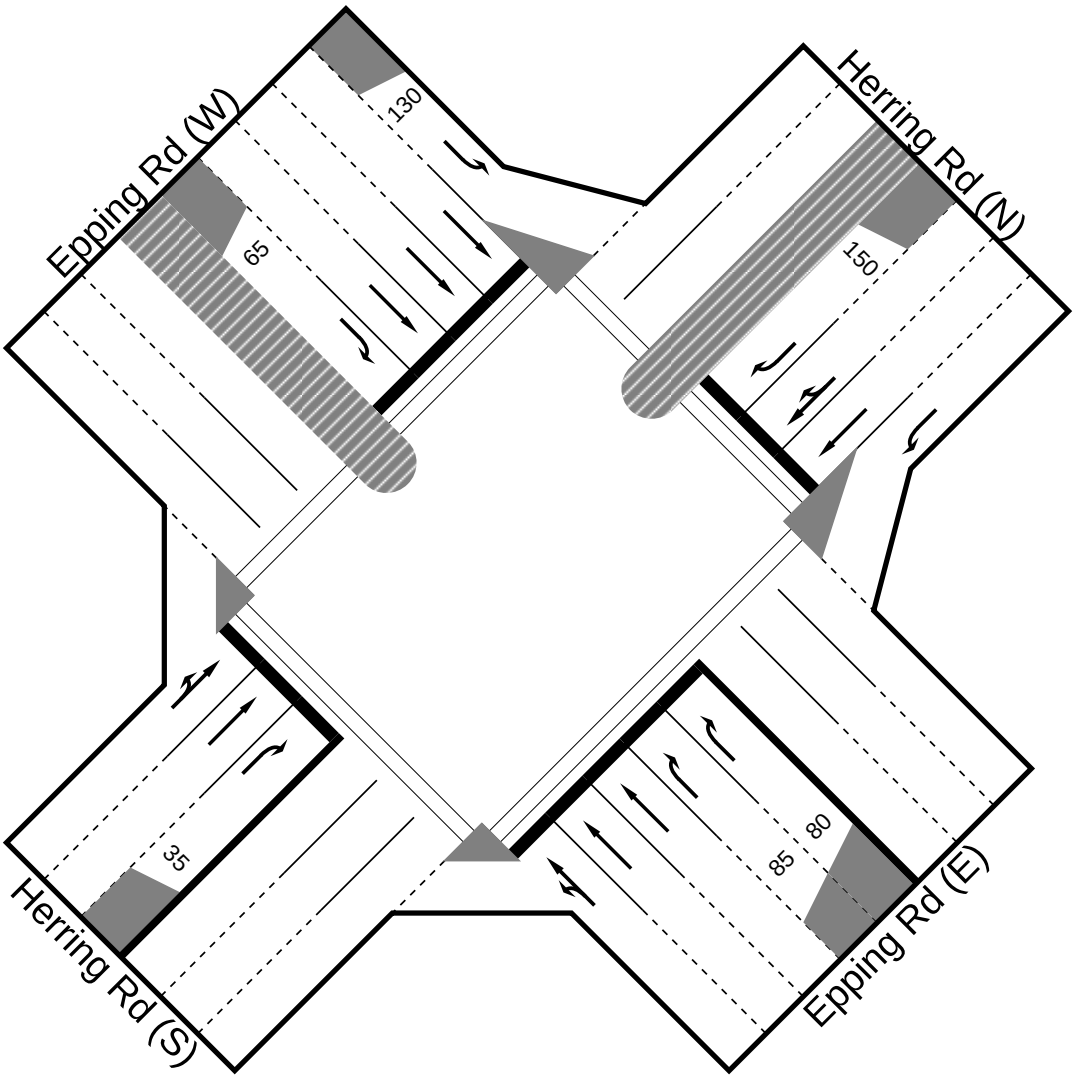
Phase D



Green Time = **28** seconds
Phase Time = **34** seconds
Phase Split = **23** %

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

Intersection Layout – Epping Road / Herring Road



SIDRA INTERSECTION

Movement Summary

Epping / Herring

2007_Base_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	91	1.1	0.542	42.4	LOS C	163	0.82	0.84	27.8
22	T	990	7.1	0.543	35.8	LOS C	168	0.82	0.72	30.3
23	R	473	2.3	1.011	147.7	LOS F	143	1.00	1.32	11.9
Approach		**1554**	**5.7**	**1.011**	**61.3**	**LOS E**	**168**	**0.86**	**0.86**	**22.4**
Herring Rd (N)										
24	L	157	5.7	0.096	8.0	LOS A	6	0.09	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		**441**	**6.3**	**0.309**	**43.3**	**LOS D**	**58**	**0.63**	**0.71**	**27.5**
Epping Rd (W)										
27	L	601	1.8	0.386	8.0	LOS A	26	0.13	0.63	49.1
28	T	2391	1.9	1.038	166.8	LOS F	740	1.00	1.74	10.7
29	R	5	0.0	0.028	73.8	LOS F	4	0.93	0.66	19.8
Approach		**2997**	**1.9**	**1.038**	**134.8**	**LOS F**	**740**	**0.83**	**1.52**	**12.8**
Herring Rd (S)										
30	L	26	7.7	1.109	277.4	LOS F	416	1.00	1.87	7.0
31	T	555	1.3	1.098	271.1	LOS F	414	1.00	1.89	7.1
32	R	282	1.6	1.000#	68.8	LOS E	69	0.97	0.79	20.9
Approach		**863**	**1.5**	**1.098**	**241.7**	**LOS F**	**416**	**1.00**	**1.73**	**7.9**
All Vehicles		**5855**	**3.2**	**1.109**	**124.2**	**LOS F**	**740**	**0.85**	**1.31**	**13.6**

SIDRA INTERSECTION

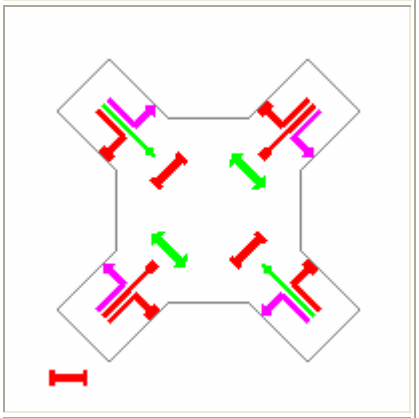
Phasing Summary

Epping / Herring

2007_Base_AM

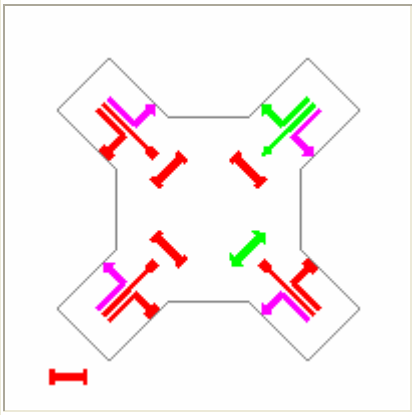
C = **148** seconds
Cycle Time Option: **User-specified cycle time**
Phase times determined by the program.

Phase A



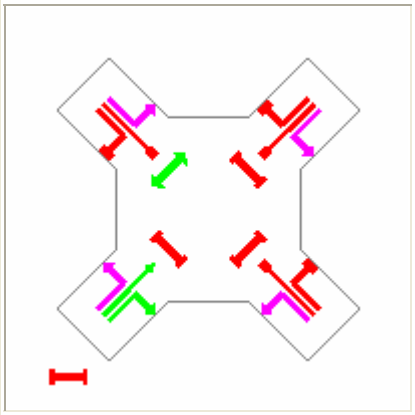
Green Time = **59** seconds
Phase Time = **65** seconds
Phase Split = **44** %

Phase B



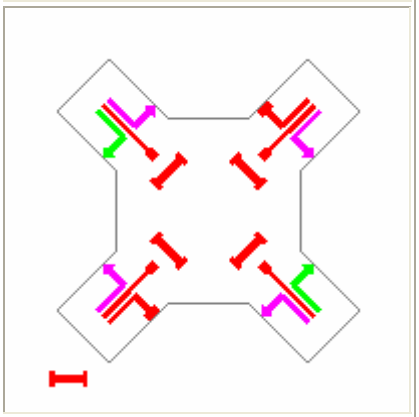
Green Time = **25** seconds
Phase Time = **31** seconds
Phase Split = **21** %

Phase C



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

Phase D



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

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

SIDRA INTERSECTION

Movement Summary

Epping / Herring

2007_Base_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	82	0.0	1.105	282.9	LOS F	958	1.00	2.25	6.9
22	T	2251	2.0	1.107	277.4	LOS F	976	1.00	2.29	7.0
23	R	410	2.1	1.026	164.5	LOS F	144	1.00	1.36	10.9
Approach		**2743**	**2.0**	**1.107**	**264.0**	**LOS F**	**976**	**1.00**	**2.17**	**7.3**
Herring Rd (N)										
24	L	377	1.9	0.224	8.0	LOS A	15	0.11	0.63	49.2
25	T	251	1.6	0.601	56.4	LOS D	123	0.96	0.81	23.5
26	R	820	0.7	1.053	153.7	LOS F	403	1.00	1.39	11.5
Approach		**1448**	**1.2**	**1.053**	**98.9**	**LOS F**	**403**	**0.76**	**1.09**	**16.2**
Epping Rd (W)										
27	L	462	1.1	0.295	8.0	LOS A	19	0.12	0.63	49.1
28	T	1846	1.2	0.840	48.1	LOS D	292	0.98	0.93	25.8
29	R	67	1.5	0.415	79.0	LOS F	44	0.99	0.76	18.9
Approach		**2375**	**1.2**	**0.840**	**41.2**	**LOS C**	**292**	**0.81**	**0.86**	**28.2**
Herring Rd (S)										
30	L	64	0.0	0.447	62.4	LOS E	74	0.95	0.80	22.2
31	T	210	2.4	0.447	59.1	LOS E	75	0.95	0.76	22.8
32	R	120	0.8	0.979	72.1	LOS F	69	0.95	0.80	20.2
Approach		**394**	**1.5**	**0.979**	**63.6**	**LOS E**	**75**	**0.95**	**0.78**	**21.9**
All Vehicles		**6960**	**1.5**	**1.107**	**142.3**	**LOS F**	**976**	**0.88**	**1.42**	**12.2**

SIDRA INTERSECTION

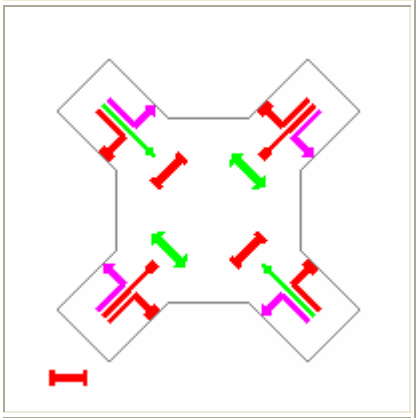
Phasing Summary

Epping / Herring

2007_Base_PM

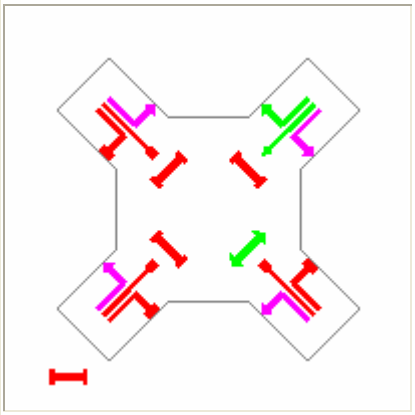
C = **148** seconds
Cycle Time Option: **User-specified cycle time**
Phase times determined by the program.

Phase A



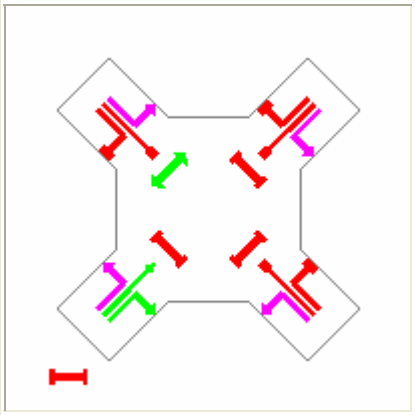
Green Time = **56** seconds
Phase Time = **62** seconds
Phase Split = **42** %

Phase B



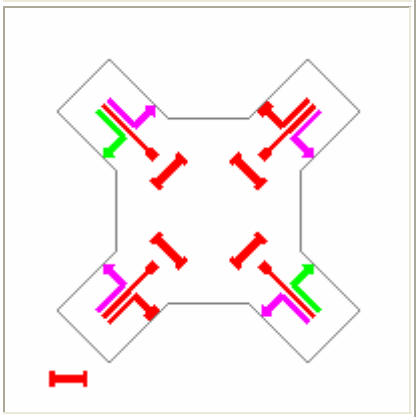
Green Time = **32** seconds
Phase Time = **38** seconds
Phase Split = **26** %

Phase C



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

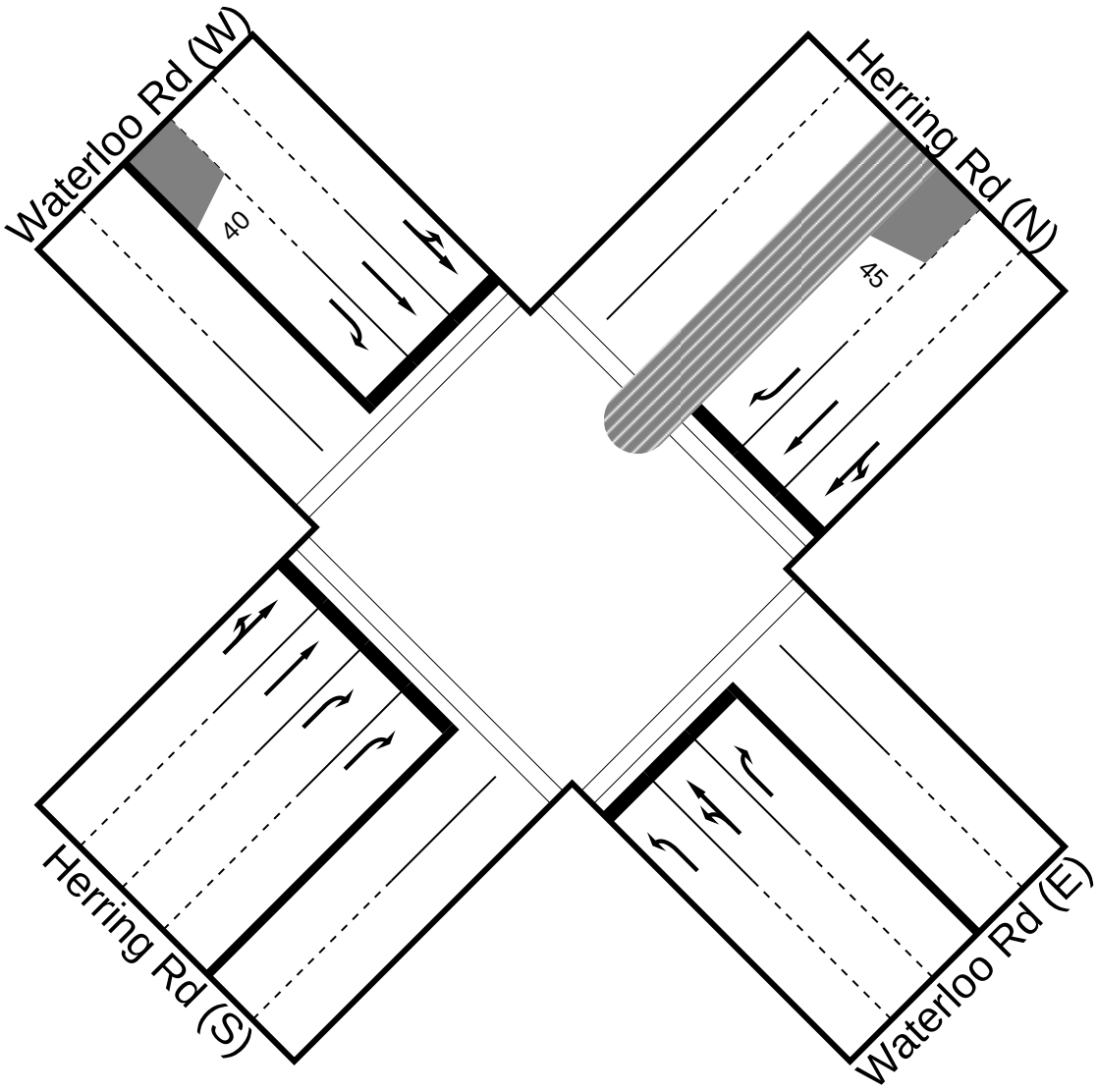
Phase D



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

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

Intersection Layout – Waterloo Road / Herring Road



SIDRA INTERSECTION

Movement Summary

Waterloo / Herring

2007_Base_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	0.016	20.4	LOS B	4	0.56	0.69	38.4
22	T	217	3.2	0.630	54.9	LOS D	105	0.98	0.81	23.9
23	R	69	21.7	0.634	78.7	LOS F	52	1.00	0.80	19.1
Approach		**299**	**7.7**	**0.634**	**58.9**	**LOS E**	**105**	**0.97**	**0.81**	**22.9**
Herring Rd (N)										
24	L	154	34.4	0.589	49.6	LOS D	134	0.90	0.91	25.7
25	T	437	19.5	0.589	42.3	LOS C	144	0.91	0.80	27.7
26	R	86	7.0	0.588	74.8	LOS F	54	1.00	0.79	19.7
Approach		**677**	**21.3**	**0.589**	**48.1**	**LOS D**	**144**	**0.92**	**0.82**	**25.9**
Waterloo Rd (W)										
27	L	67	44.8	0.199	33.4	LOS C	33	0.82	0.76	32.0
28	T	73	2.7	0.199	48.5	LOS D	37	0.89	0.69	25.7
29	R	26	26.9	0.247	75.5	LOS F	21	0.98	0.72	19.7
Approach		**166**	**23.5**	**0.247**	**46.7**	**LOS D**	**37**	**0.87**	**0.72**	**26.5**
Herring Rd (S)										
30	L	148	0.0	0.560	24.9	LOS B	121	0.78	0.83	35.6
31	T	811	1.6	0.559	17.0	LOS B	123	0.79	0.69	40.9
32	R	651	2.2	0.640	53.6	LOS D	138	0.94	0.85	24.3
Approach		**1610**	**1.7**	**0.640**	**32.5**	**LOS C**	**138**	**0.85**	**0.77**	**31.7**
All Vehicles		**2752**	**8.5**	**0.640**	**40.1**	**LOS C**	**144**	**0.88**	**0.78**	**28.6**

SIDRA INTERSECTION

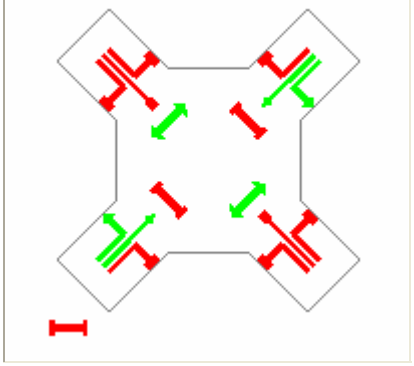
Phasing Summary

Waterloo / Herring

2007_Base_AM

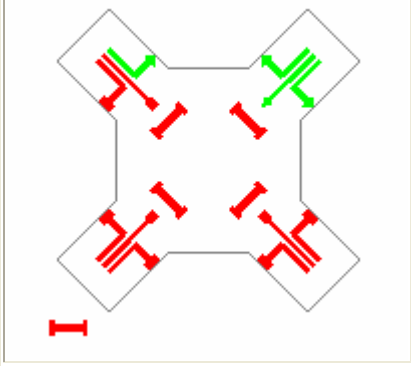
C = **133** seconds
Cycle Time Option: **User-specified cycle time**
Phase times determined by the program.

Phase A



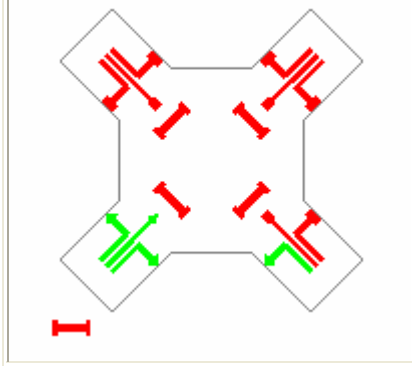
Green Time = **22** seconds
Phase Time = **28** seconds
Phase Split = **21** %

Phase A1



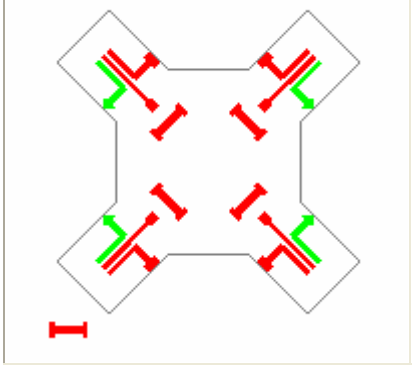
Green Time = **11** seconds
Phase Time = **17** seconds
Phase Split = **13** %

Phase B



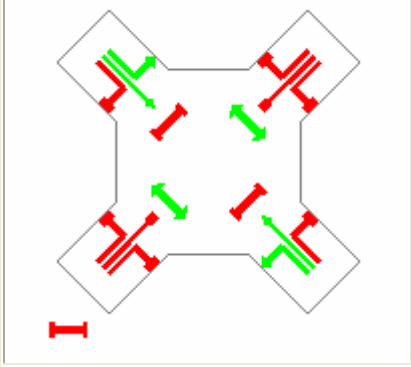
Green Time = **37** seconds
Phase Time = **43** seconds
Phase Split = **32** %

Phase C



Green Time = **9** seconds
Phase Time = **15** seconds
Phase Split = **11** %

Phase D



Green Time = **24** seconds
Phase Time = **30** seconds
Phase Split = **23** %

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

SIDRA INTERSECTION

Movement Summary

Waterloo / Herring

2007_Base_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	842	1.0	0.912	69.7	LOS E	220	1.00	1.11	20.5
22	T	109	2.8	0.912	74.8	LOS F	216	1.00	1.15	19.6
23	R	285	6.3	0.939	104.6	LOS F	199	1.00	1.15	15.5
Approach		**1236**	**2.3**	**0.939**	**78.2**	**LOS F**	**220**	**1.00**	**1.12**	**19.0**
Herring Rd (N)										
24	L	108	21.3	0.519	51.1	LOS D	150	0.85	0.87	25.1
25	T	499	2.5	0.519	43.0	LOS D	155	0.85	0.75	27.5
26	R	181	43.6	1.000#	72.1	LOS F	88	0.97	0.80	20.3
Approach		**788**	**11.5**	**1.000**	**48.7**	**LOS D**	**155**	**0.87**	**0.77**	**25.7**
Waterloo Rd (W)										
27	L	5	20.0	0.014	37.4	LOS C	3	0.76	0.67	29.9
28	T	5	16.7	0.014	48.9	LOS D	4	0.81	0.54	25.6
29	R	94	1.1	0.711	73.1	LOS F	59	0.92	0.83	20.0
Approach		**106**	**2.8**	**0.711**	**70.0**	**LOS E**	**59**	**0.90**	**0.81**	**20.6**
Herring Rd (S)										
30	L	90	2.2	0.855	75.2	LOS F	110	1.00	1.01	19.5
31	T	508	2.6	0.855	50.5	LOS D	151	1.00	0.98	25.1
32	R	425	0.5	0.907	97.8	LOS F	137	1.00	1.06	16.3
Approach		**1023**	**1.7**	**0.907**	**72.4**	**LOS F**	**151**	**1.00**	**1.01**	**20.1**
All Vehicles		**3153**	**4.4**	**1.000**	**68.7**	**LOS E**	**220**	**0.96**	**0.99**	**20.8**

SIDRA INTERSECTION

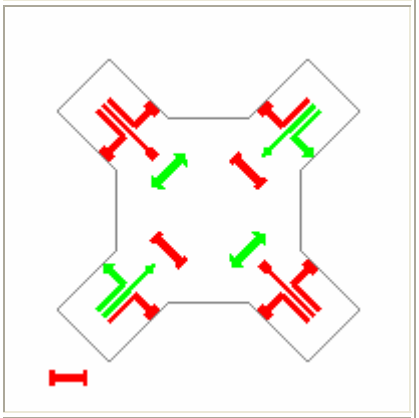
Phasing Summary

Waterloo / Herring

2007_Base_PM

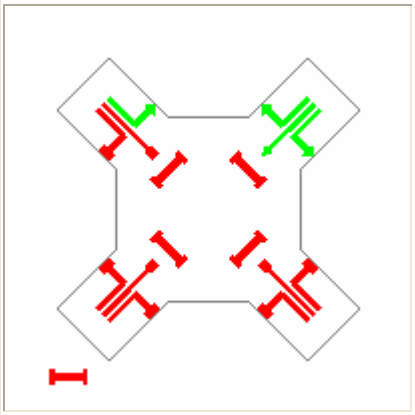
C = **158** seconds
Cycle Time Option: **User-specified cycle time**
Phase times determined by the program.

Phase A



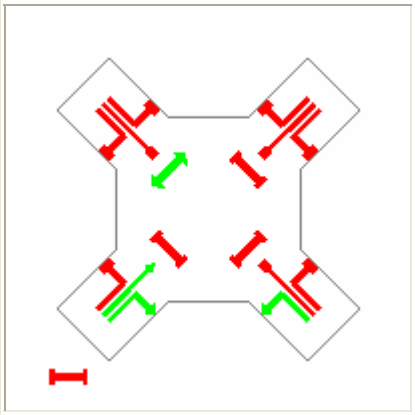
Green Time = **17** seconds
Phase Time = **23** seconds
Phase Split = **15** %

Phase A1



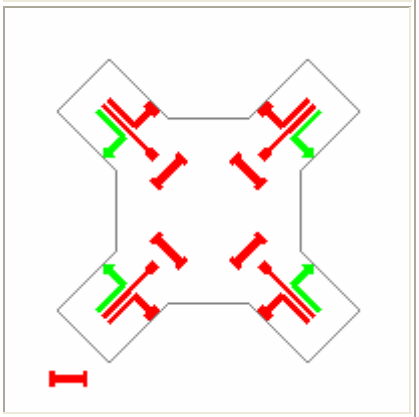
Green Time = **32** seconds
Phase Time = **38** seconds
Phase Split = **24** %

Phase B



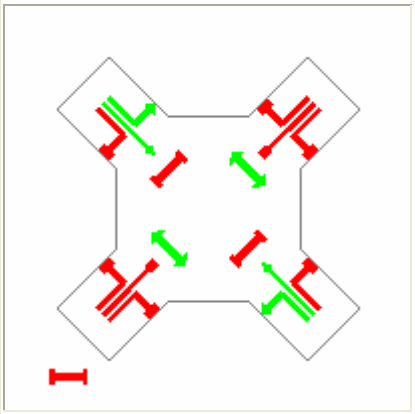
Green Time = **20** seconds
Phase Time = **26** seconds
Phase Split = **16** %

Phase C



Green Time = **27** seconds
Phase Time = **33** seconds
Phase Split = **21** %

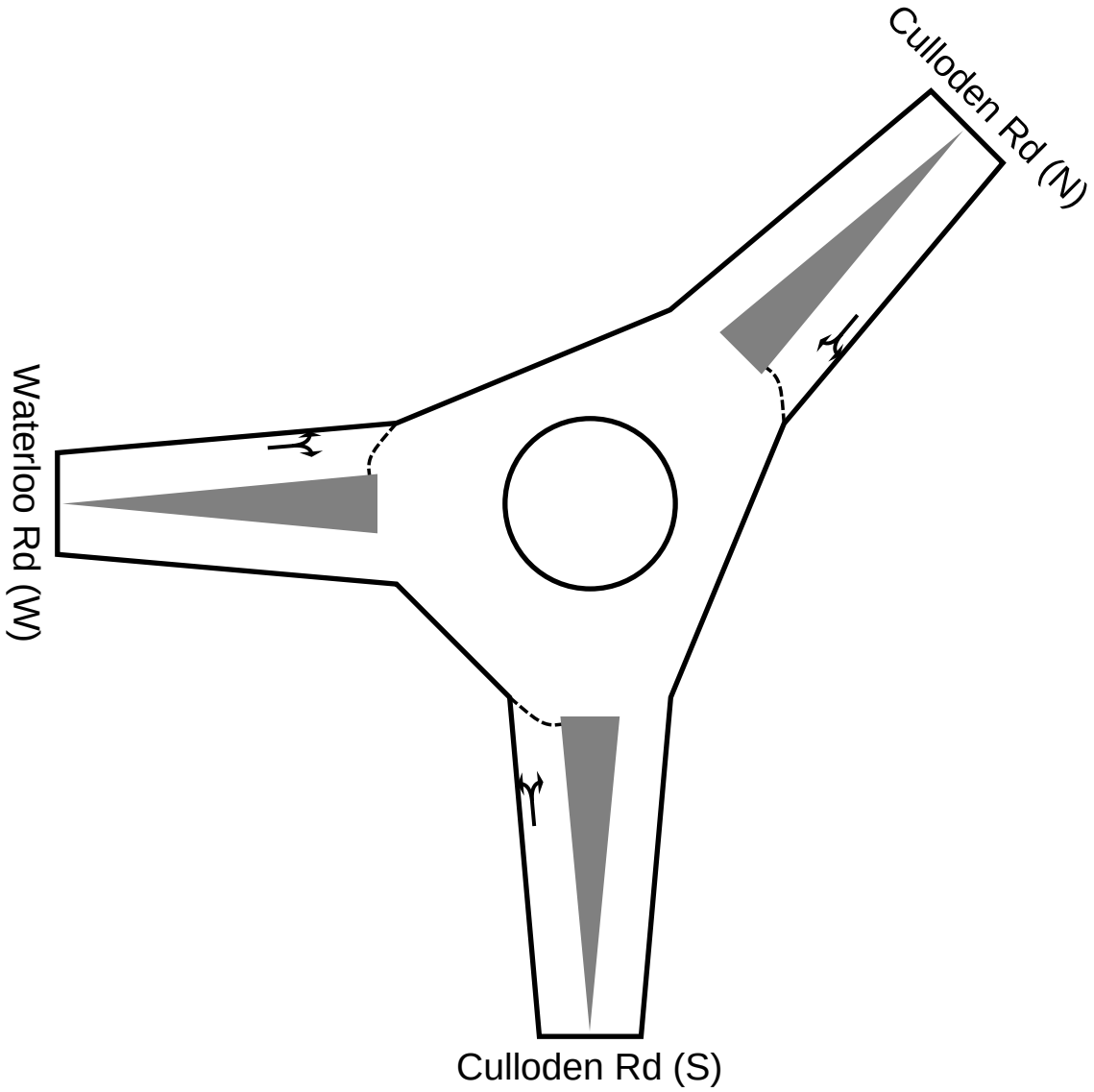
Phase D



Green Time = **32** seconds
Phase Time = **38** seconds
Phase Split = **24** %

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

Intersection Layout – Waterloo Road / Culloden Road



SIDRA INTERSECTION

Movement Summary

Waterloo / Culloden

2007_Base_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	0.099	8.0	LOS A	4	0.30	0.58	48.5
3	R	88	4.5	0.099	10.9	LOS A	4	0.30	0.66	46.1
Approach		**118**	**4.2**	**0.099**	**10.2**	**LOS A**	**4**	**0.30**	**0.64**	**46.7**
Culloden Rd (N)										
24	L	101	2.0	0.147	6.4	LOS A	8	0.05	0.53	50.8
26	R	138	7.2	0.147	10.3	LOS A	8	0.05	0.69	47.0
Approach		**239**	**5.0**	**0.147**	**8.6**	**LOS A**	**8**	**0.05**	**0.62**	**48.5**
Waterloo Rd (W)										
10	L	730	0.5	0.527	7.0	LOS A	39	0.37	0.53	48.9
12	R	5	0.0	0.556	11.6	LOS A	39	0.37	0.65	45.1
Approach		**735**	**0.5**	**0.527**	**7.0**	**LOS A**	**39**	**0.37**	**0.53**	**48.8**
All Vehicles		**1092**	**1.9**	**0.556**	**7.7**	**LOS A**	**39**	**0.29**	**0.56**	**48.5**

SIDRA INTERSECTION

Movement Summary

Waterloo / Culloden

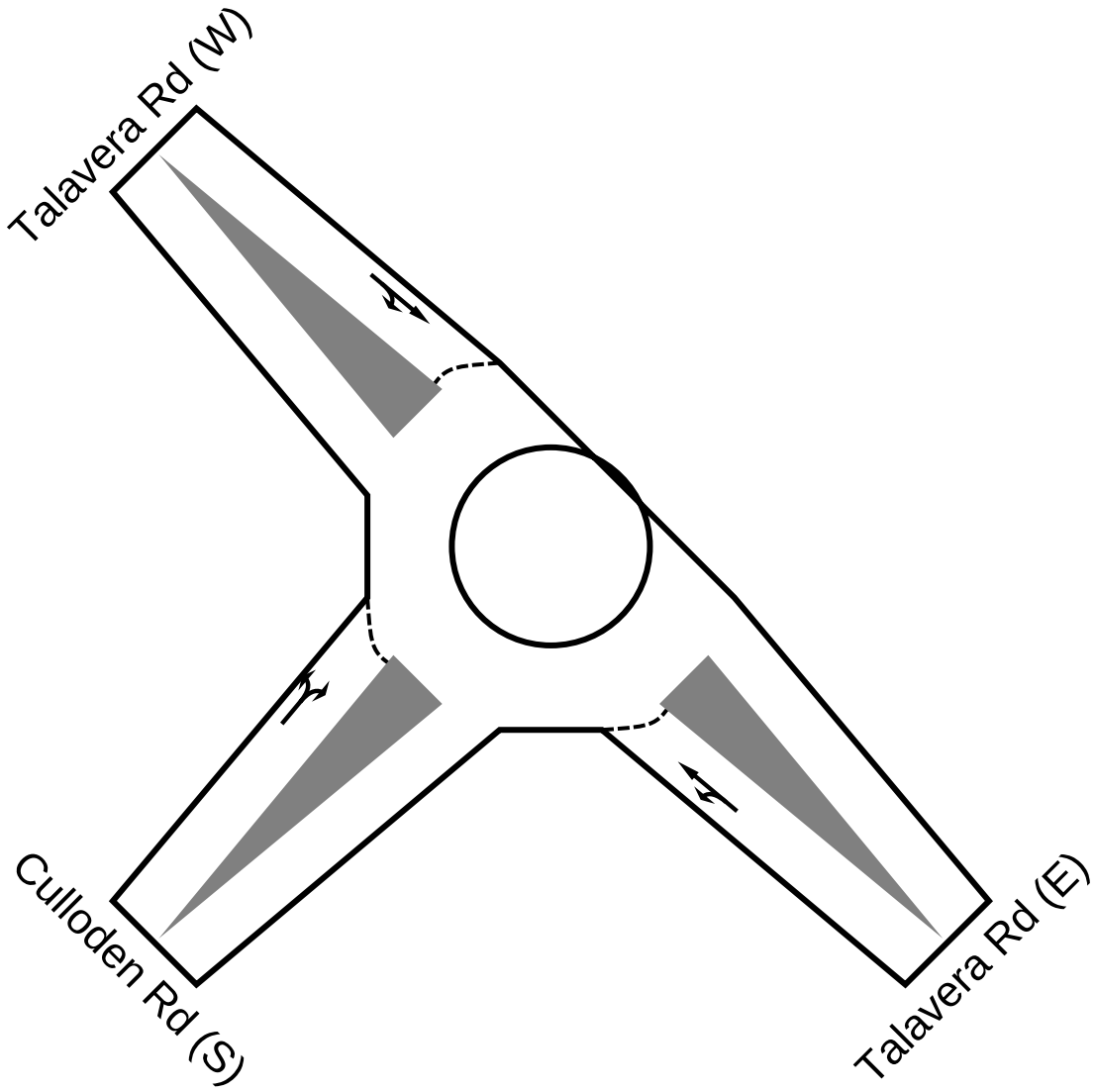
2007_Base_PM

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	0.273	11.7	LOS A	15	0.75	0.82	45.4
3	R	122	0.8	0.272	14.5	LOS B	15	0.75	0.85	43.1
Approach		**203**	**1.0**	**0.273**	**13.4**	**LOS A**	**15**	**0.75**	**0.84**	**44.0**
Culloden (N)										
24	L	199	1.5	0.614	7.1	LOS A	52	0.42	0.52	48.6
26	R	670	1.0	0.615	10.8	LOS A	52	0.42	0.62	45.6
Approach		**869**	**1.2**	**0.615**	**10.0**	**LOS A**	**52**	**0.42**	**0.60**	**46.2**
Waterloo (W)										
10	L	167	2.4	0.205	7.0	LOS A	11	0.35	0.54	49.0
12	R	85	0.0	0.205	11.6	LOS A	11	0.35	0.66	45.2
Approach		**252**	**1.6**	**0.205**	**8.6**	**LOS A**	**11**	**0.35**	**0.58**	**47.6**
All Vehicles		**1324**	**1.2**	**0.615**	**10.2**	**LOS A**	**52**	**0.46**	**0.63**	**46.1**

Intersection Layout – Talavera Road / Culloden Road



SIDRA INTERSECTION

Movement Summary

Talavera / Culloden

2007_Base_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	104	3.8	0.109	7.7	LOS A	6	0.26	0.56	48.7
22	T	33	9.1	0.109	7.1	LOS A	6	0.26	0.52	49.4
Approach		**137**	**5.1**	**0.109**	**7.6**	**LOS A**	**6**	**0.26**	**0.55**	**48.9**
Talavera Rd (W)										
28	T	83	0.0	0.239	12.5	LOS A	14	0.77	0.83	44.6
29	R	73	12.3	0.239	17.4	LOS B	14	0.77	0.89	41.3
Approach		**156**	**5.8**	**0.239**	**14.8**	**LOS B**	**14**	**0.77**	**0.86**	**43.0**
Culloden Rd (S)										
30	L	22	36.4	0.537	8.9	LOS A	42	0.22	0.56	48.9
32	R	812	0.1	0.541	11.2	LOS A	42	0.22	0.65	45.6
Approach		**834**	**1.1**	**0.541**	**11.1**	**LOS A**	**42**	**0.22**	**0.64**	**45.7**
All Vehicles		**1127**	**2.2**	**0.541**	**11.2**	**LOS A**	**42**	**0.30**	**0.66**	**45.7**

SIDRA INTERSECTION

Movement Summary

Talavera / Culloden

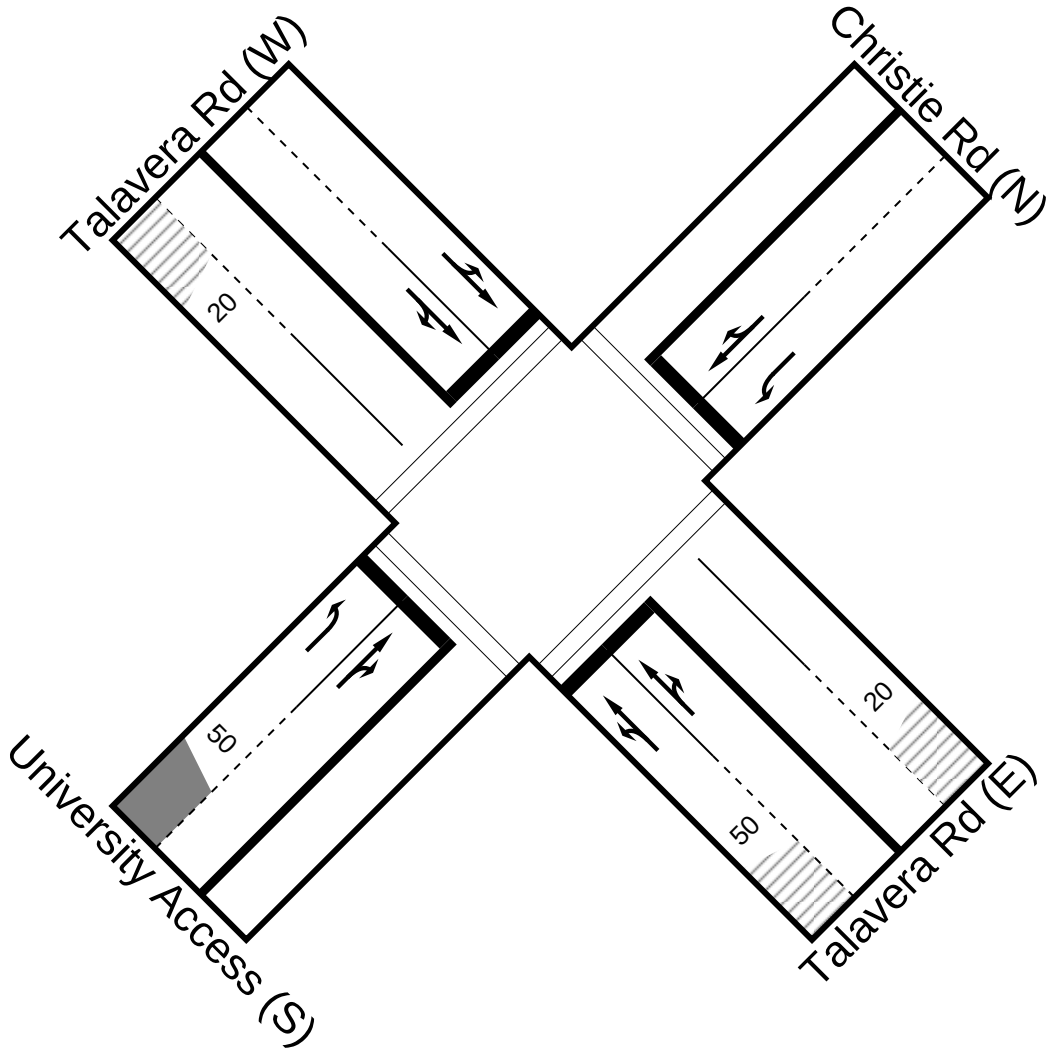
2007_Base_PM

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	838	0.4	0.590	7.5	LOS A	51	0.26	0.54	48.7
22	T	78	0.0	0.591	6.7	LOS A	51	0.26	0.50	49.4
Approach		**916**	**0.3**	**0.590**	**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	0.195	7.6	LOS A	10	0.24	0.57	48.8
32	R	204	1.0	0.195	11.3	LOS A	10	0.24	0.66	45.6
Approach		**261**	**0.8**	**0.195**	**10.5**	**LOS A**	**10**	**0.24**	**0.64**	**46.2**
All Vehicles		**1235**	**1.0**	**0.591**	**8.2**	**LOS A**	**51**	**0.26**	**0.57**	**48.1**

Intersection Layout – Talavera Road / Christie Road



SIDRA INTERSECTION

Movement Summary

Talavera / Christie

2007_Base_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	54	1.9	0.091	14.9	LOS B	8	0.48	0.71	42.5
22	T	140	5.0	0.156	7.1	LOS A	24	0.52	0.43	50.1
23	R	22	0.0	0.156	15.3	LOS B	24	0.52	0.75	42.2
Approach		**216**	**3.7**	**0.156**	**9.9**	**LOS A**	**24**	**0.51**	**0.53**	**47.1**
Christie Rd (N)										
24	L	304	0.0	0.655	31.3	LOS C	71	0.95	0.86	32.2
25	T	103	0.0	0.247	19.9	LOS B	29	0.84	0.67	38.8
26	R	16	6.2	0.247	28.5	LOS B	29	0.84	0.78	33.7
Approach		**423**	**0.2**	**0.655**	**28.4**	**LOS B**	**71**	**0.92**	**0.81**	**33.7**
Talavera Rd (W)										
27	L	304	0.0	0.298	16.0	LOS B	44	0.57	0.77	41.6
28	T	732	0.0	0.687	10.6	LOS A	118	0.78	0.70	46.5
29	R	5	0.0	0.699	18.8	LOS B	118	0.78	0.85	39.5
Approach		**1041**	**0.0**	**0.687**	**12.2**	**LOS A**	**118**	**0.72**	**0.72**	**44.9**
University Access (S)										
30	L	5	0.0	0.012	26.5	LOS B	1	0.77	0.66	34.7
31	T	19	0.0	0.056	18.7	LOS B	7	0.79	0.57	39.6
32	R	8	0.0	0.056	27.0	LOS B	7	0.79	0.72	34.4
Approach		**32**	**0.0**	**0.056**	**22.0**	**LOS B**	**7**	**0.79**	**0.62**	**37.4**
All Vehicles		**1712**	**0.5**	**0.699**	**16.1**	**LOS B**	**118**	**0.74**	**0.72**	**41.6**

SIDRA INTERSECTION

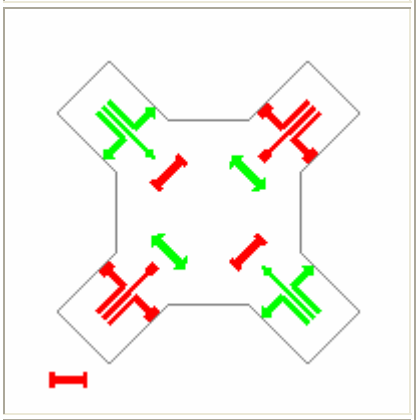
Phasing Summary

Talavera / Christie

2007_Base_AM

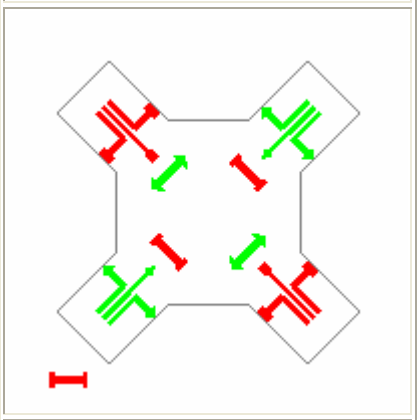
C = **60** seconds
Cycle Time Option: **Optimum cycle time (Minimum Delay)**
Phase times determined by the program.

Phase A



Green Time = **33** seconds
Phase Time = **39** seconds
Phase Split = **65** %

Phase B



Green Time = **15** seconds
Phase Time = **21** seconds
Phase Split = **35** %

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

SIDRA INTERSECTION

Movement Summary

Talavera / Christie

2007_Base_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	43	0.0	0.154	16.6	LOS B	13	0.62	0.74	41.1
22	T	585	0.3	0.743	13.3	LOS A	101	0.87	0.82	43.9
23	R	91	0.0	0.745	22.0	LOS B	101	0.89	0.92	37.3
Approach		**719**	**0.3**	**0.744**	**14.6**	**LOS B**	**101**	**0.86**	**0.83**	**42.8**
Christie Rd (N)										
24	L	119	2.5	0.214	21.5	LOS B	21	0.78	0.77	37.7
25	T	34	2.9	0.228	13.3	LOS A	23	0.78	0.63	43.9
26	R	95	1.1	0.228	21.7	LOS B	23	0.78	0.77	37.5
Approach		**248**	**2.0**	**0.228**	**20.5**	**LOS B**	**23**	**0.78**	**0.75**	**38.4**
Talavera Rd (W)										
27	L	83	0.0	0.103	16.6	LOS B	12	0.62	0.74	41.2
28	T	234	0.0	0.299	9.3	LOS A	36	0.69	0.57	47.8
29	R	19	0.0	0.299	17.5	LOS B	36	0.69	0.78	40.5
Approach		**336**	**0.0**	**0.300**	**11.6**	**LOS A**	**36**	**0.67**	**0.63**	**45.5**
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		**1318**	**0.5**	**0.745**	**15.0**	**LOS B**	**101**	**0.80**	**0.76**	**42.5**

SIDRA INTERSECTION

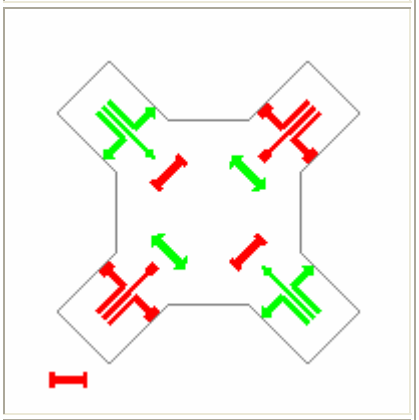
Phasing Summary

Talavera / Christie

2007_Base_PM

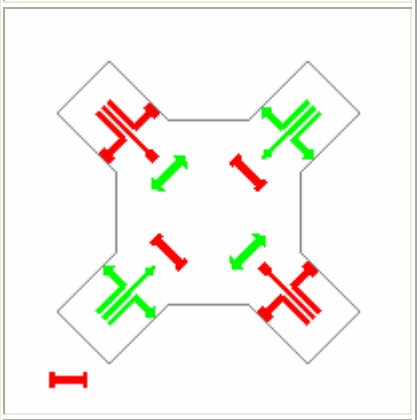
C = **46** seconds
Cycle Time Option: **User-specified cycle time**
Phase times determined by the program.

Phase A



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

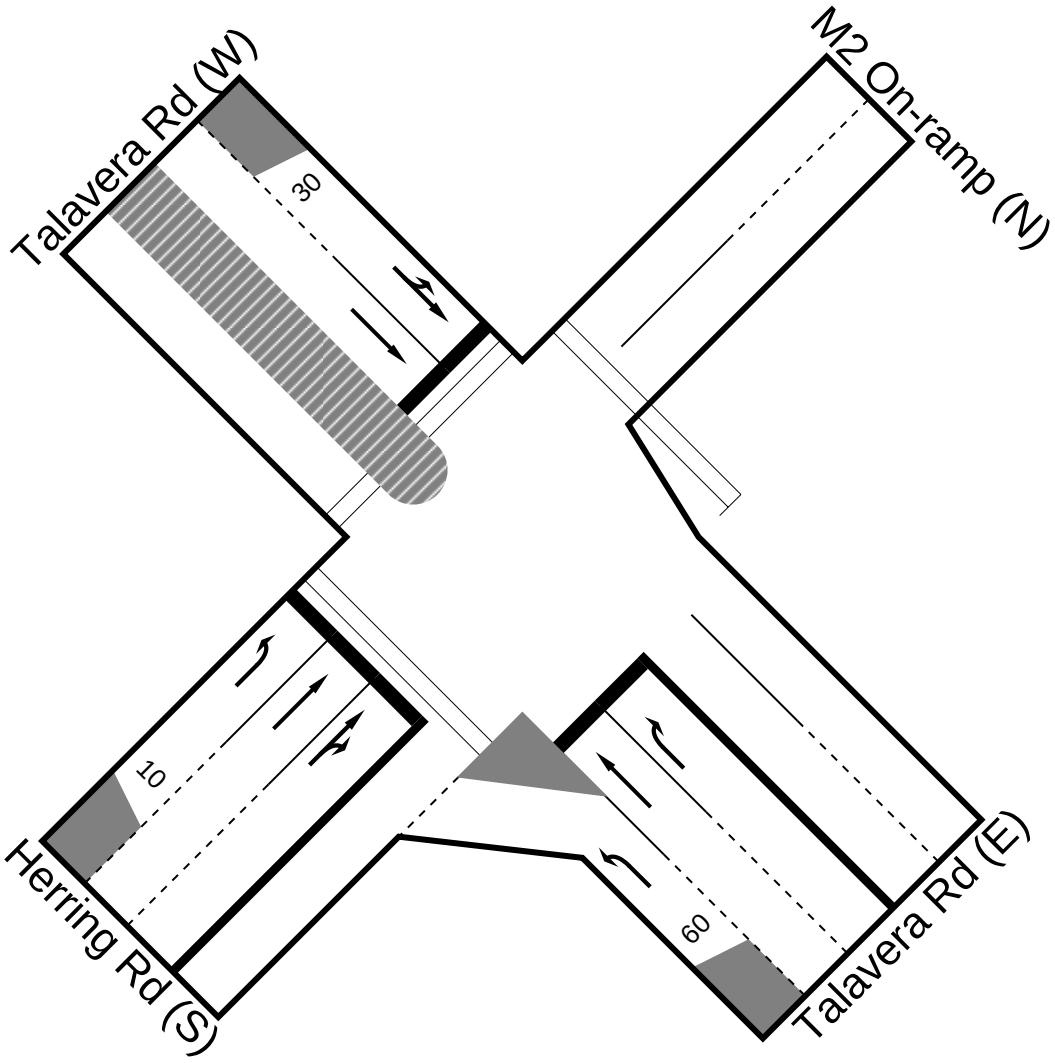
Phase B



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

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

Intersection Layout – Talavera Road / Herring Road



SIDRA INTERSECTION

Movement Summary

Talavera / Herring

2007_Base_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	79	5.1	0.061	8.2	LOS A	3	0.17	0.63	48.8
22	T	393	2.3	0.399	12.2	LOS A	75	0.65	0.57	45.0
23	R	44	4.5	0.310	46.9	LOS D	18	0.98	0.74	26.2
Approach		**516**	**2.9**	**0.399**	**14.5**	**LOS B**	**75**	**0.61**	**0.59**	**42.9**
Talavera Rd (W)										
27	L	43	0.0	0.599	27.3	LOS B	38	0.74	0.78	34.2
28	T	523	0.0	0.599	21.3	LOS B	99	0.85	0.73	37.9
Approach		**566**	**0.0**	**0.599**	**21.7**	**LOS B**	**99**	**0.84**	**0.73**	**37.5**
Herring Rd (S)										
30	L	43	2.3	0.491	27.6	LOS B	12	0.72	0.73	34.1
31	T	39	5.1	0.063	18.8	LOS B	11	0.71	0.54	39.6
32	R	366	1.9	0.607	31.7	LOS C	93	0.89	0.84	32.1
Approach		**448**	**2.2**	**0.607**	**30.1**	**LOS C**	**93**	**0.86**	**0.80**	**32.8**
All Vehicles		**1530**	**1.6**	**0.607**	**21.8**	**LOS B**	**99**	**0.77**	**0.70**	**37.5**

SIDRA INTERSECTION

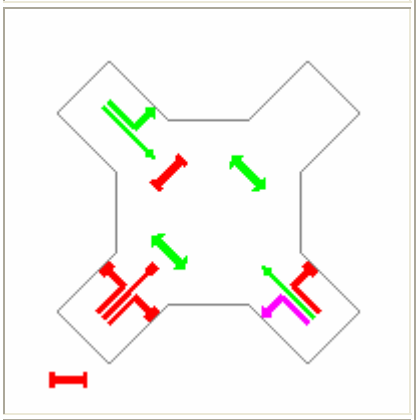
Phasing Summary

Talavera / Herring

2007_Base_AM

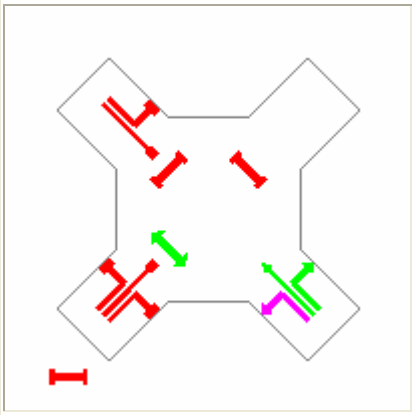
C = **76** seconds
Cycle Time Option: **User-specified cycle time**
Phase times determined by the program.

Phase A



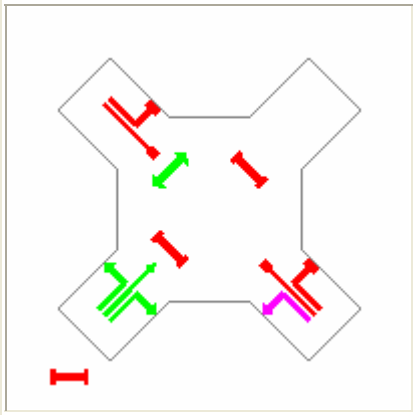
Green Time = **27** seconds
Phase Time = **33** seconds
Phase Split = **43** %

Phase B



Green Time = **6** seconds
Phase Time = **12** seconds
Phase Split = **16** %

Phase C



Green Time = **25** seconds
Phase Time = **31** seconds
Phase Split = **41** %

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

SIDRA INTERSECTION

Movement Summary

Talavera / Herring

2007_Base_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	283	1.4	0.215	8.2	LOS A	11	0.19	0.65	48.8
22	T	404	1.0	0.675	26.8	LOS B	109	0.93	0.81	34.6
23	R	252	0.0	0.440	32.8	LOS C	68	0.85	0.82	31.4
Approach		**939**	**0.9**	**0.676**	**22.8**	**LOS B**	**109**	**0.68**	**0.76**	**36.9**
Talavera Rd (W)										
27	L	5	0.0	0.880	55.8	LOS D	61	1.00	1.04	23.6
28	T	356	1.1	0.876	47.6	LOS D	80	1.00	1.05	26.0
Approach		**361**	**1.1**	**0.876**	**47.7**	**LOS D**	**80**	**1.00**	**1.05**	**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	130	0.3	0.292	4.3	LOS A	57	0.23	0.20	46.3
32	R	268	0.4	0.292	18.9	LOS B	56	0.58	0.78	39.5
Approach		**713**	**0.8**	**1.000**	**13.6**	**LOS A**	**57**	**0.49**	**0.51**	**39.6**
All Vehicles		**2013**	**0.9**	**1.001**	**24.0**	**LOS B**	**109**	**0.67**	**0.72**	**34.7**

SIDRA INTERSECTION

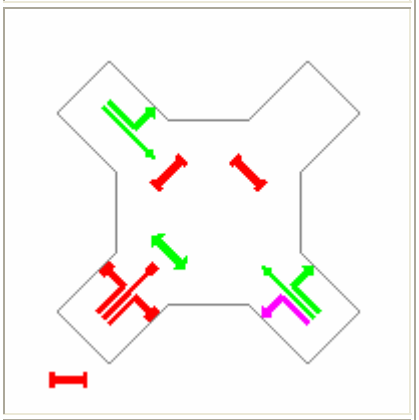
Phasing Summary

Talavera / Herring

2007_Base_PM

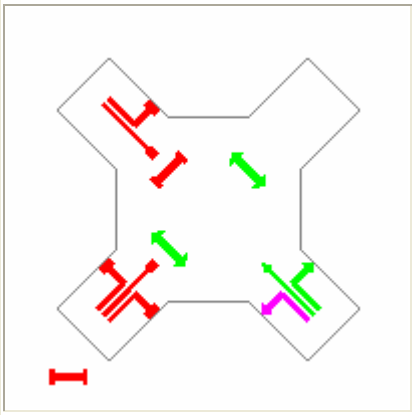
C = **81** seconds
Cycle Time Option: **User-specified cycle time**
Phase times determined by the program.

Phase A



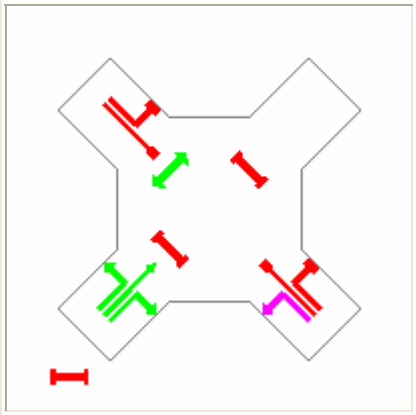
Green Time = **10** seconds
Phase Time = **16** seconds
Phase Split = **20** %

Phase B



Green Time = **9** seconds
Phase Time = **15** seconds
Phase Split = **19** %

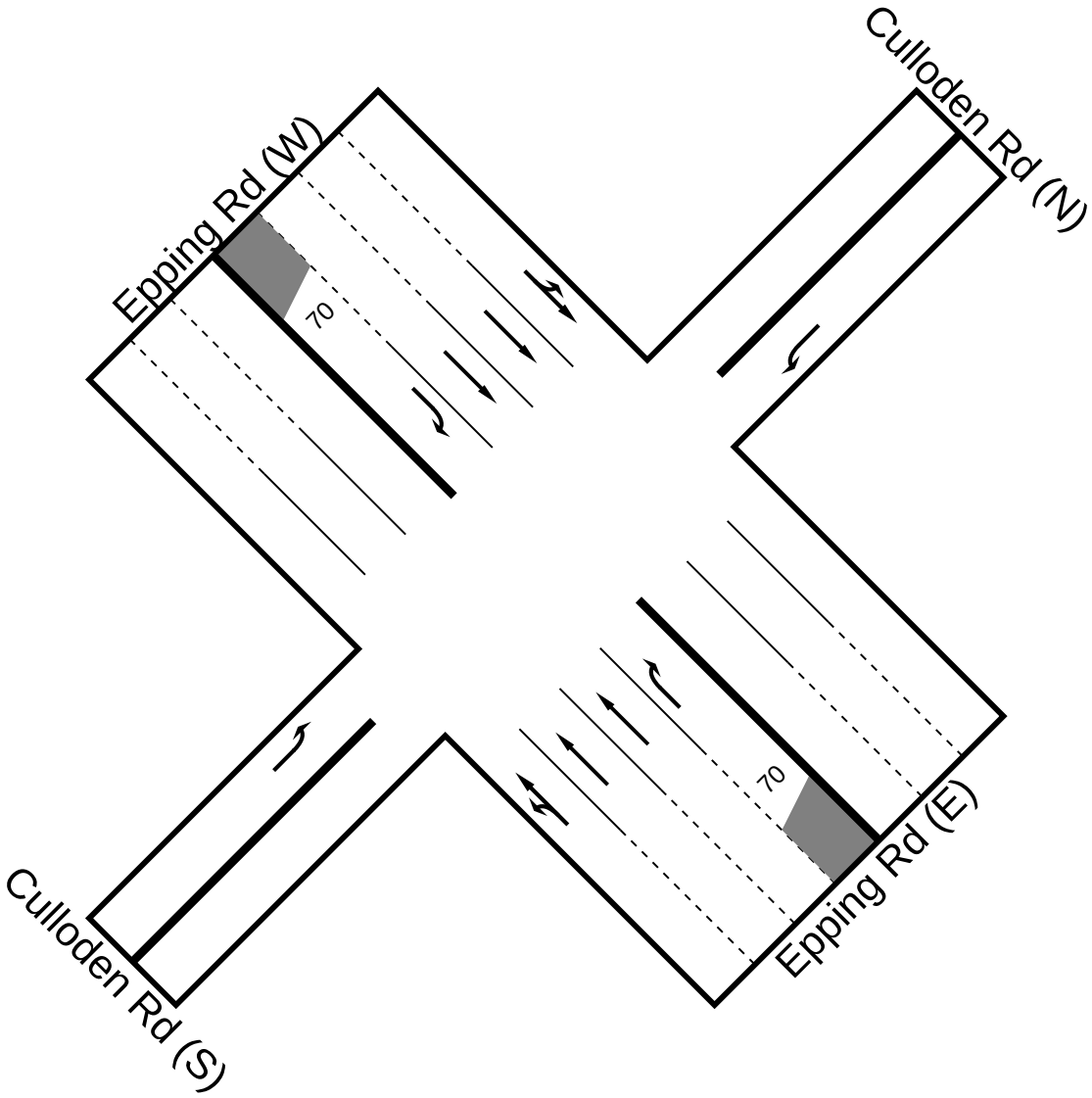
Phase C



Green Time = **44** seconds
Phase Time = **50** seconds
Phase Split = **62** %

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

Intersection Layout – Epping Road / Culloden Road



Movement Summary

Epping / Culloden

2007_Base_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	0.132	8.2	LOS A	0	0.00	0.67	49.0
22	T	719	11.5	0.133	0.0	LOS A	0	0.00	0.00	60.0
23	R	29	27.6	0.019	9.2	LOS A	0	0.00	0.67	49.0
Approach		**753**	**12.1**	**0.133**	**0.4**	**LOS A**		**0.00**	**0.03**	**59.4**
Culloden Rd (N)										
24	L	31	3.1	0.018	8.2	LOS A	0	0.00	0.67	49.0
Approach		**32**	**3.1**	**0.018**	**8.2**	**LOS A**		**0.00**	**0.67**	**49.0**
Epping Rd (W)										
27	L	7	12.5	0.381	8.3	LOS A	0	0.00	0.67	49.0
28	T	2199	2.5	0.384	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		**2212**	**2.5**	**0.384**	**0.0**	**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		**3039**	**4.9**	**0.384**	**0.3**	**Not Applicable**	**0**	**0.00**	**0.03**	**59.5**

SIDRA INTERSECTION

Movement Summary

Epping / Culloden

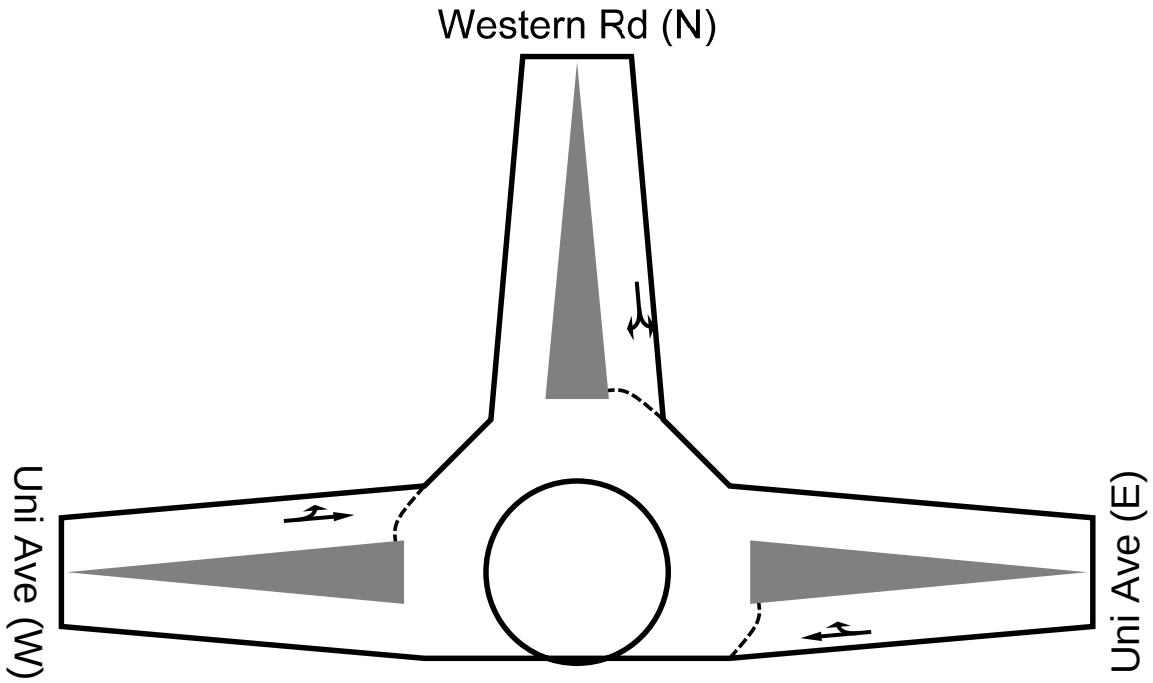
2007_Base_PM

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	0.314	8.2	LOS A	0	0.00	0.67	49.0
22	T	1767	3.1	0.310	0.0	LOS A	0	0.00	0.00	60.0
23	R	120	0.8	0.065	8.2	LOS A	0	0.00	0.66	49.0
Approach		**1898**	**3.0**	**0.310**	**0.6**	**LOS A**		**0.00**	**0.05**	**59.1**
Culloden Rd (N)										
24	L	268	1.5	0.146	8.2	LOS A	0	0.00	0.67	49.0
Approach		**268**	**1.5**	**0.146**	**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	892	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		**920**	**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		**3097**	**3.1**	**0.314**	**1.2**	**Not Applicable**	**0**	**0.00**	**0.09**	**58.2**

Intersection Layout – University Avenue / Western Road



SIDRA INTERSECTION

Movement Summary

University Ave / Western Rd

2007_Base_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	66	0.0	0.166	6.4	LOS A	8	0.19	0.50	50.1
6	R	161	0.0	0.166	11.4	LOS A	8	0.19	0.64	45.7
Approach		**227**	**0.0**	**0.166**	**9.9**	**LOS A**	**8**	**0.19**	**0.60**	**46.9**
Western Rd (N)										
7	L	5	0.0	0.047	6.4	LOS A	2	0.42	0.51	49.4
9	R	52	0.0	0.047	12.2	LOS A	2	0.42	0.65	44.9
Approach		**57**	**0.0**	**0.047**	**11.7**	**LOS A**	**2**	**0.42**	**0.64**	**45.2**
Uni Ave (W)										
10	L	207	0.0	0.351	6.1	LOS A	20	0.39	0.51	49.6
11	T	278	0.0	0.351	5.2	LOS A	20	0.39	0.47	50.5
Approach		**485**	**0.0**	**0.352**	**5.6**	**LOS A**	**20**	**0.39**	**0.49**	**50.1**
All Vehicles		**769**	**0.0**	**0.351**	**7.3**	**LOS A**	**20**	**0.33**	**0.53**	**48.7**

SIDRA INTERSECTION

Movement Summary

University Ave / Western Rd

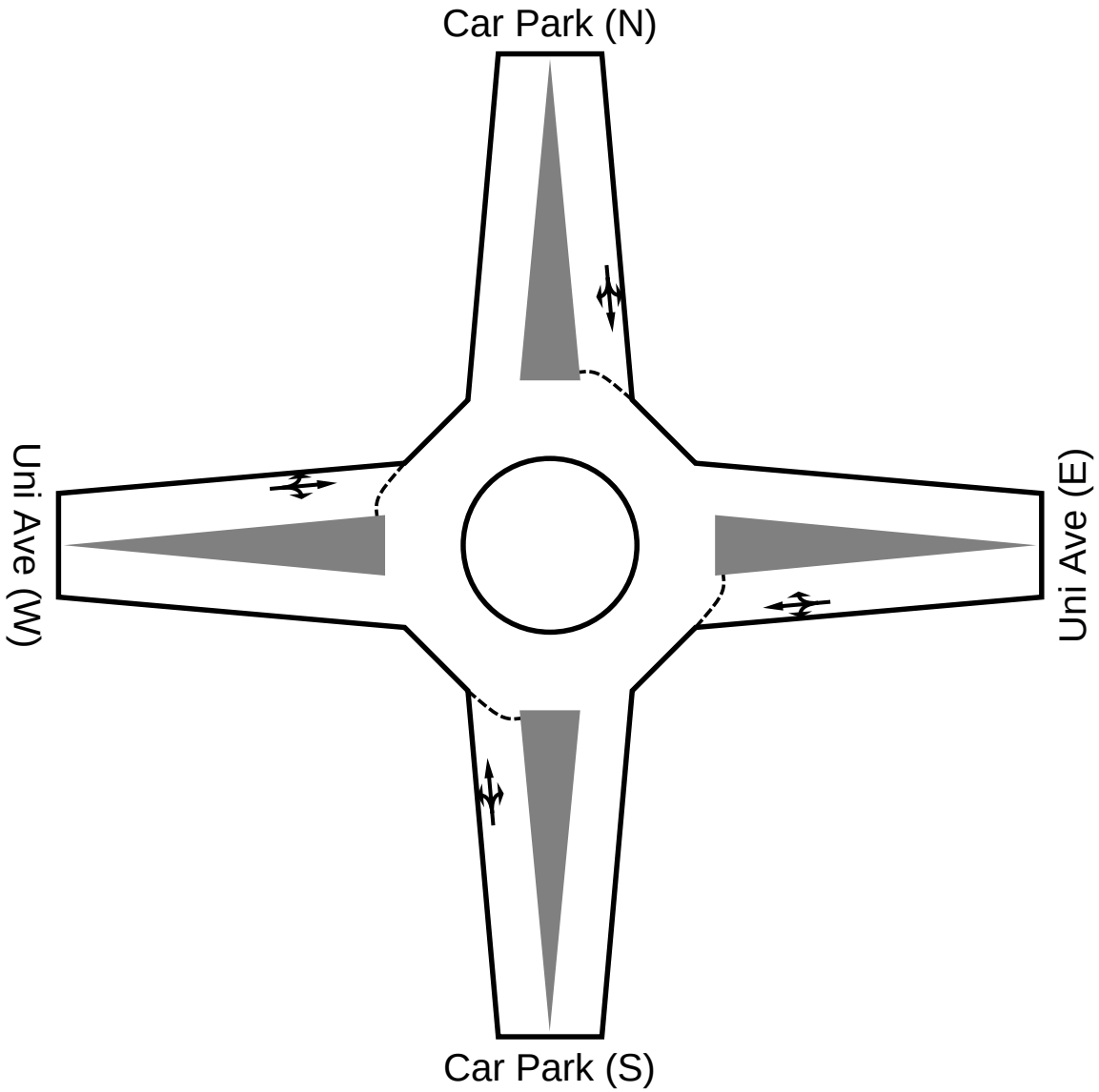
2007_Base_PM

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	272	0.0	0.340	7.8	LOS A	19	0.50	0.62	48.3
6	R	96	0.0	0.340	12.8	LOS A	19	0.50	0.71	44.5
Approach		**368**	**0.0**	**0.340**	**9.1**	**LOS A**	**19**	**0.50**	**0.64**	**47.2**
Western Rd (N)										
7	L	5	0.0	0.172	5.6	LOS A	9	0.22	0.46	50.8
9	R	251	0.0	0.173	11.4	LOS A	9	0.22	0.65	45.6
Approach		**256**	**0.0**	**0.173**	**11.3**	**LOS A**	**9**	**0.22**	**0.64**	**45.7**
Uni Ave (W)										
10	L	110	0.0	0.131	5.7	LOS A	7	0.26	0.46	50.5
11	T	75	0.0	0.131	4.7	LOS A	7	0.26	0.41	51.5
Approach		**185**	**0.0**	**0.131**	**5.3**	**LOS A**	**7**	**0.26**	**0.44**	**50.9**
All Vehicles		**809**	**0.0**	**0.340**	**8.9**	**LOS A**	**19**	**0.36**	**0.60**	**47.5**

Intersection Layout – University Avenue / Carpark



SIDRA INTERSECTION

Movement Summary

Uni Ave / Car Park

2007_Base_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	5	0.0	0.017	8.8	LOS A	1	0.47	0.59	47.8
2	T	5	0.0	0.017	7.0	LOS A	1	0.47	0.52	49.2
3	R	6	0.0	0.016	13.0	LOS A	1	0.47	0.63	44.6
Approach		**16**	**0.0**	**0.016**	**9.8**	**LOS A**	**1**	**0.47**	**0.59**	**46.9**
Uni Ave (E)										
4	L	115	0.0	0.296	5.4	LOS A	16	0.15	0.45	51.3
5	T	215	0.0	0.296	5.3	LOS A	16	0.15	0.44	51.5
6	R	154	0.0	0.296	11.3	LOS A	16	0.15	0.65	46.0
Approach		**484**	**0.0**	**0.296**	**7.2**	**LOS A**	**16**	**0.15**	**0.51**	**49.5**
Car Park (N)										
7	L	5	0.0	0.018	6.1	LOS A	1	0.37	0.48	49.8
8	T	5	0.0	0.018	5.2	LOS A	1	0.37	0.43	50.7
9	R	12	0.0	0.018	12.0	LOS A	1	0.37	0.62	45.1
Approach		**22**	**0.0**	**0.018**	**9.1**	**LOS A**	**1**	**0.37**	**0.54**	**47.2**
Uni Ave (W)										
10	L	55	0.0	0.207	6.0	LOS A	10	0.34	0.50	49.9
11	T	208	0.0	0.207	5.1	LOS A	10	0.34	0.45	50.9
12	R	15	0.0	0.205	11.9	LOS A	10	0.34	0.64	45.3
Approach		**278**	**0.0**	**0.207**	**5.6**	**LOS A**	**10**	**0.34**	**0.47**	**50.3**
All Vehicles		**800**	**0.0**	**0.296**	**6.8**	**LOS A**	**16**	**0.23**	**0.50**	**49.6**

SIDRA INTERSECTION

Movement Summary

Uni Ave / Parking

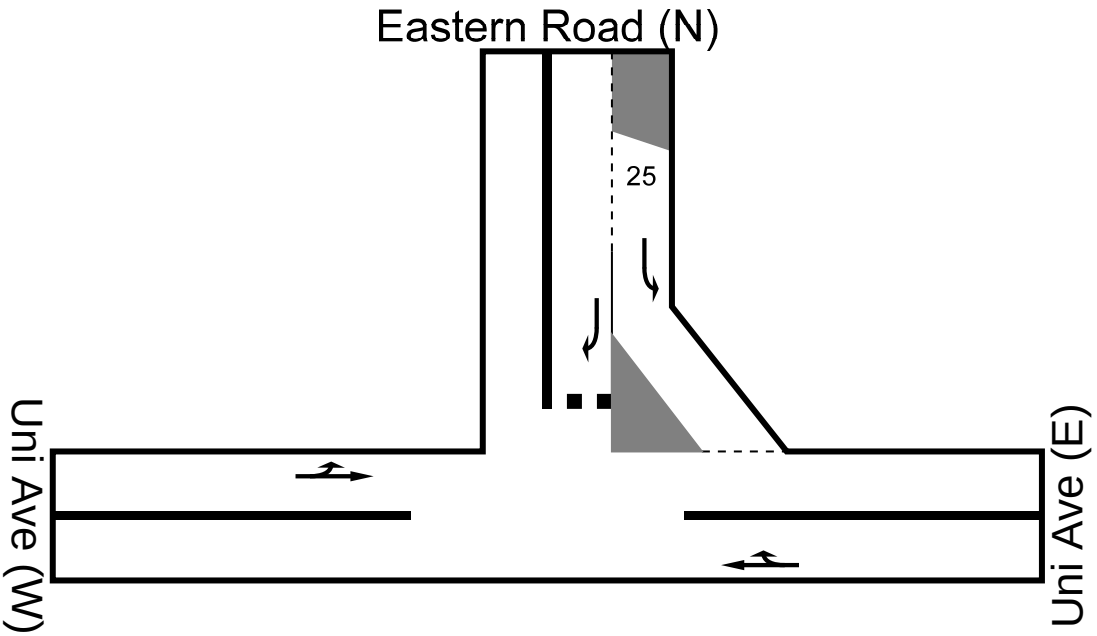
2007_Base_PM

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	5	0.0	0.039	9.3	LOS A	2	0.54	0.64	47.5
2	T	5	0.0	0.039	7.5	LOS A	2	0.54	0.58	48.7
3	R	25	0.0	0.039	13.5	LOS A	2	0.54	0.66	44.4
Approach		**35**	**0.0**	**0.039**	**12.1**	**LOS A**	**2**	**0.54**	**0.65**	**45.3**
Uni Ave (E)										
4	L	10	0.0	0.270	5.7	LOS A	14	0.24	0.46	50.6
5	T	298	0.0	0.270	5.5	LOS A	14	0.24	0.45	50.8
6	R	98	0.0	0.271	11.5	LOS A	14	0.24	0.64	45.6
Approach		**406**	**0.0**	**0.270**	**7.0**	**LOS A**	**14**	**0.24**	**0.50**	**49.3**
Car Park (N)										
7	L	30	0.0	0.072	5.5	LOS A	3	0.18	0.45	51.1
8	T	5	0.0	0.072	4.6	LOS A	3	0.18	0.39	52.1
9	R	70	0.0	0.072	11.4	LOS A	3	0.18	0.64	45.8
Approach		**105**	**0.0**	**0.072**	**9.4**	**LOS A**	**3**	**0.18**	**0.57**	**47.4**
Uni Ave (W)										
10	L	40	0.0	0.055	5.8	LOS A	2	0.27	0.47	50.4
11	T	30	0.0	0.055	4.8	LOS A	2	0.27	0.41	51.4
12	R	5	0.0	0.055	11.7	LOS A	2	0.27	0.63	45.6
Approach		**75**	**0.0**	**0.055**	**5.8**	**LOS A**	**2**	**0.27**	**0.46**	**50.4**
All Vehicles		**621**	**0.0**	**0.271**	**7.5**	**LOS A**	**14**	**0.25**	**0.51**	**48.9**

Intersection Layout – University Avenue / Eastern Road



SIDRA INTERSECTION

Movement Summary

Uni Ave / Eastern Rd

2007_Base_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	484	0.0	0.334	1.0	LOS A	22	0.42	0.00	54.5
6	R	128	0.0	0.334	9.3	LOS A	22	0.42	0.66	47.1
Approach		**612**	**0.0**	**0.334**	**2.8**	**LOS A**	**22**	**0.42**	**0.14**	**52.8**
Eastern Road (N)										
7	L	43	0.0	0.053	8.5	LOS A	1	0.30	0.60	48.2
9	R	5	0.0	0.011	14.3	LOS A	0	0.63	0.79	42.9
Approach		**48**	**0.0**	**0.053**	**9.1**	**LOS A**	**1**	**0.33**	**0.62**	**47.6**
Uni Ave (W)										
10	L	41	0.0	0.111	8.2	LOS A	0	0.00	0.67	49.0
11	T	173	0.0	0.111	0.0	LOS A	0	0.00	0.00	60.0
Approach		**214**	**0.0**	**0.111**	**1.6**	**LOS A**		**0.00**	**0.13**	**57.5**
All Vehicles		**874**	**0.0**	**0.334**	**2.8**	**Not Applicable**	**22**	**0.32**	**0.16**	**53.5**

SIDRA INTERSECTION

Movement Summary

Uni Ave / Eastern Rd

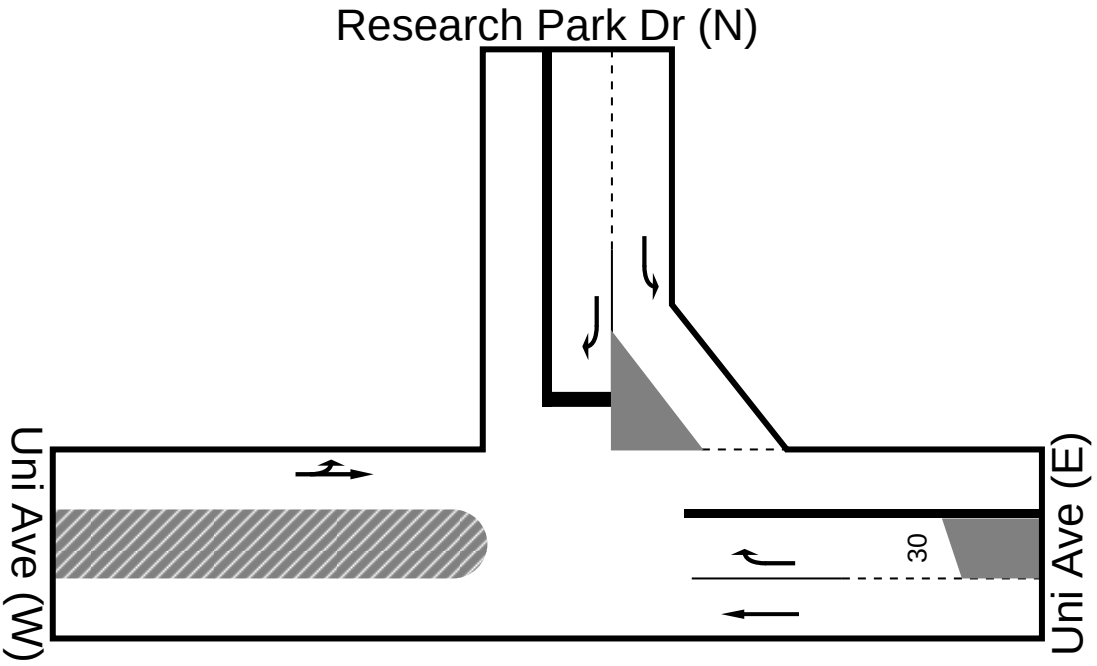
2007_Base_PM

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	407	0.0	0.260	0.3	LOS A	15	0.23	0.00	56.9
6	R	85	0.0	0.259	8.6	LOS A	15	0.23	0.62	47.8
Approach		**492**	**0.0**	**0.260**	**1.8**	**LOS A**	**15**	**0.23**	**0.11**	**55.1**
Eastern Road (N)										
7	L	5	0.0	0.006	7.9	LOS A	0	0.16	0.56	48.9
9	R	5	0.0	0.008	11.7	LOS A	0	0.50	0.71	45.3
Approach		**10**	**0.0**	**0.008**	**9.8**	**LOS A**	**0**	**0.33**	**0.63**	**47.0**
Uni Ave (W)										
10	L	30	0.0	0.044	8.2	LOS A	0	0.00	0.67	49.0
11	T	55	0.0	0.044	0.0	LOS A	0	0.00	0.00	60.0
Approach		**85**	**0.0**	**0.044**	**2.9**	**LOS A**		**0.00**	**0.24**	**55.6**
All Vehicles		**587**	**0.0**	**0.260**	**2.1**	**Not Applicable**	**15**	**0.20**	**0.14**	**55.0**

Intersection Layout – University Avenue / Research Park Drive



SIDRA INTERSECTION

Movement Summary

University Ave / Research Park Dr

2007_Base_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	428	0.0	0.219	0.0	LOS A	0	0.00	0.00	60.0
6	R	19	0.0	0.016	8.9	LOS A	0	0.30	0.61	47.5
Approach		**447**	**0.0**	**0.219**	**0.4**	**LOS A**	**0**	**0.01**	**0.03**	**59.3**
Research Park Dr (N)										
7	L	5	0.0	0.005	8.4	LOS A	0	0.28	0.56	48.3
9	R	185	0.0	0.309	15.6	LOS B	12	0.60	1.03	42.7
Approach		**190**	**0.0**	**0.309**	**15.5**	**LOS B**	**12**	**0.59**	**1.02**	**42.9**
Uni Ave (W)										
10	L	48	0.0	0.108	8.2	LOS A	0	0.00	0.67	49.0
11	T	161	0.0	0.108	0.0	LOS A	0	0.00	0.00	60.0
Approach		**209**	**0.0**	**0.108**	**1.9**	**LOS A**		**0.00**	**0.15**	**57.1**
All Vehicles		**846**	**0.0**	**0.309**	**4.1**	**Not Applicable**	**12**	**0.14**	**0.28**	**54.2**

SIDRA INTERSECTION

Movement Summary

University Ave / Research Park Dr

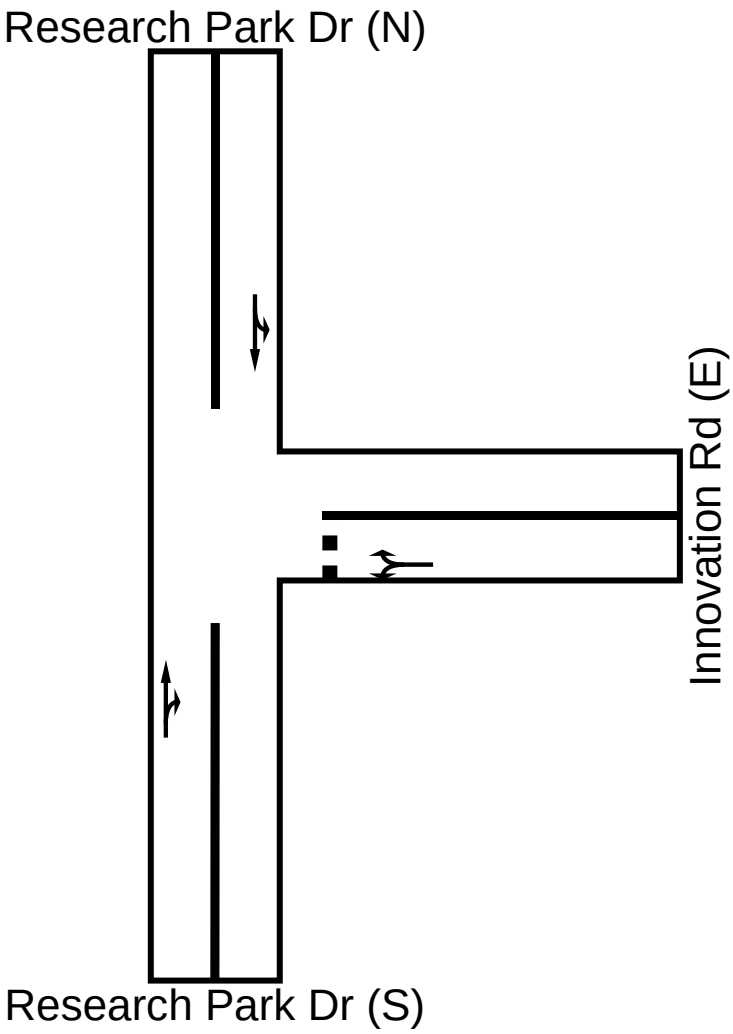
2007_Base_PM

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	370	0.0	0.190	0.0	LOS A	0	0.00	0.00	60.0
6	R	10	0.0	0.008	8.5	LOS A	0	0.15	0.62	48.2
Approach		**380**	**0.0**	**0.190**	**0.2**	**LOS A**	**0**	**0.00**	**0.02**	**59.6**
Research Park Dr (N)										
7	L	94	0.0	0.081	7.7	LOS A	3	0.11	0.57	49.2
9	R	121	0.0	0.156	12.9	LOS A	5	0.47	0.93	45.0
Approach		**215**	**0.0**	**0.156**	**10.6**	**LOS A**	**5**	**0.31**	**0.77**	**46.7**
Uni Ave (W)										
10	L	56	0.0	0.033	8.2	LOS A	0	0.00	0.67	49.0
11	T	5	0.0	0.033	0.0	LOS A	0	0.00	0.00	60.0
Approach		**61**	**0.0**	**0.033**	**7.5**	**LOS A**		**0.00**	**0.61**	**49.7**
All Vehicles		**656**	**0.0**	**0.190**	**4.3**	**Not Applicable**	**5**	**0.10**	**0.32**	**53.8**

Intersection Layout – Research Park Drive / Innovation Road



SIDRA INTERSECTION

Movement Summary

Research Park Dr / Innovation Rd

2007_Base_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)
Research Park Dr (S)										
2	T	26	0.0	0.042	0.7	LOS A	2	0.31	0.00	55.9
3	R	42	0.0	0.042	9.1	LOS A	2	0.31	0.64	47.4
Approach		**68**	**0.0**	**0.042**	**5.9**	**LOS A**	**2**	**0.31**	**0.40**	**50.4**
Innovation Rd (E)										
4	L	31	0.0	0.037	9.1	LOS A	1	0.29	0.64	47.7
6	R	5	0.0	0.037	9.4	LOS A	1	0.29	0.68	47.5
Approach		**36**	**0.0**	**0.037**	**9.1**	**LOS A**	**1**	**0.29**	**0.64**	**47.6**
Research Park Dr (N)										
7	L	59	0.0	0.110	8.2	LOS A	0	0.00	0.67	49.0
8	T	153	0.0	0.110	0.0	LOS A	0	0.00	0.00	60.0
Approach		**212**	**0.0**	**0.110**	**2.3**	**LOS A**		**0.00**	**0.19**	**56.5**
All Vehicles		**316**	**0.0**	**0.110**	**3.8**	**Not Applicable**	**2**	**0.10**	**0.28**	**53.9**

SIDRA INTERSECTION

Movement Summary

Research Park Dr/ Innovation Rd

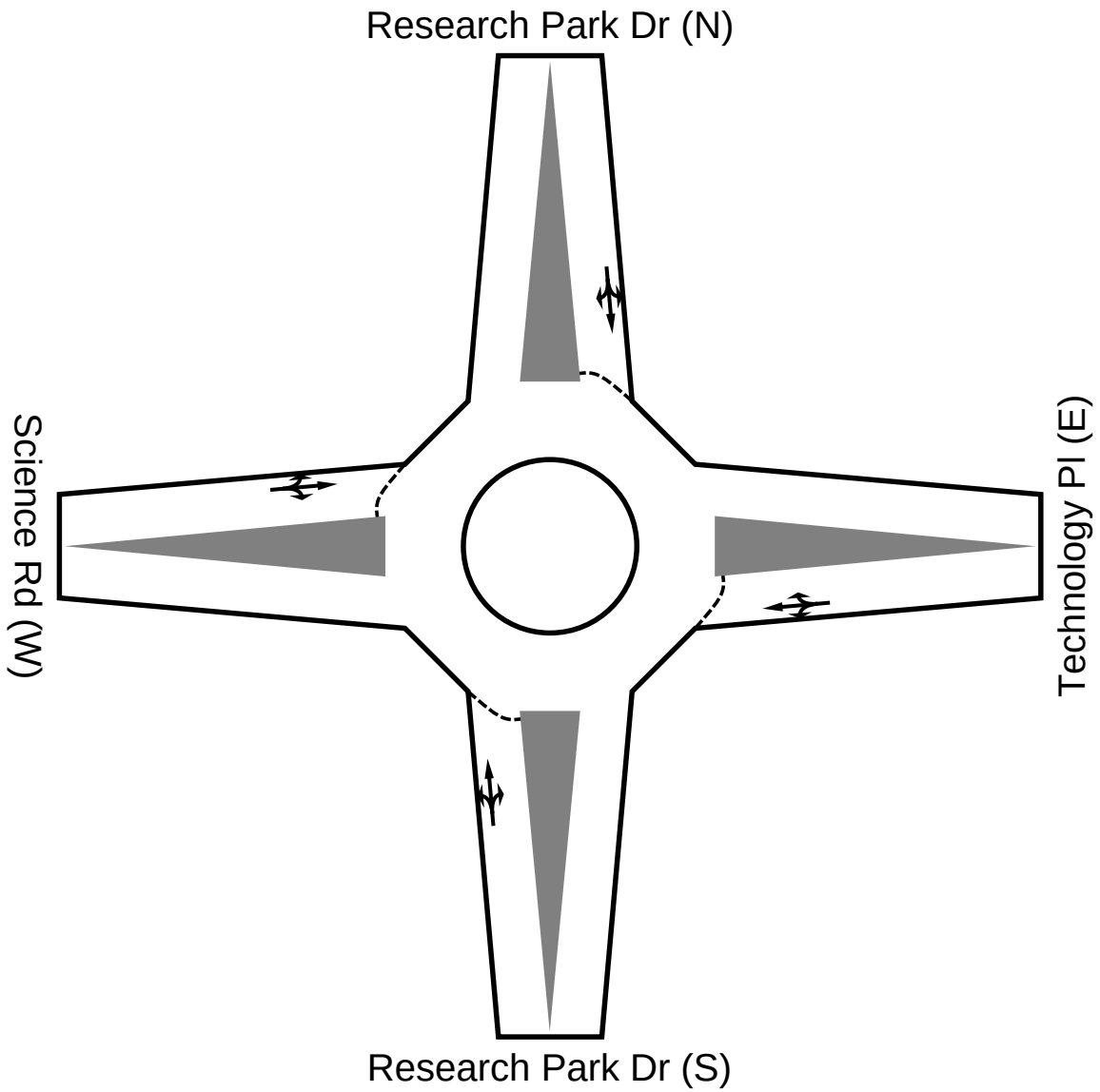
2007_Base_PM

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)
Research Park Dr (S)										
2	T	36	0.0	0.037	0.4	LOS A	2	0.25	0.00	56.7
3	R	30	0.0	0.037	8.9	LOS A	2	0.25	0.63	47.6
Approach		**66**	**0.0**	**0.037**	**4.3**	**LOS A**	**2**	**0.25**	**0.29**	**52.2**
Innovation Rd (E)										
4	L	79	0.0	0.201	9.2	LOS A	7	0.31	0.64	47.6
6	R	121	0.0	0.201	9.5	LOS A	7	0.31	0.70	47.4
Approach		**200**	**0.0**	**0.201**	**9.4**	**LOS A**	**7**	**0.31**	**0.68**	**47.5**
Research Park Dr (N)										
7	L	10	0.0	0.075	8.2	LOS A	0	0.00	0.67	49.0
8	T	135	0.0	0.075	0.0	LOS A	0	0.00	0.00	60.0
Approach		**145**	**0.0**	**0.075**	**0.6**	**LOS A**		**0.00**	**0.05**	**59.1**
All Vehicles		**411**	**0.0**	**0.201**	**5.4**	**Not Applicable**	**7**	**0.19**	**0.39**	**51.8**

Intersection Layout – Research Park Drive / Science Road



SIDRA INTERSECTION

Movement Summary

Research Park Dr / Science Rd

2007_Base_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	0.027	7.2	LOS A	1	0.14	0.55	49.5
2	T	12	0.0	0.027	5.4	LOS A	1	0.14	0.43	51.5
3	R	18	0.0	0.027	11.4	LOS A	1	0.14	0.64	46.0
Approach		**35**	**0.0**	**0.027**	**8.7**	**LOS A**	**1**	**0.14**	**0.56**	**48.2**
Technology Pl (E)										
4	L	153	0.0	0.115	5.7	LOS A	5	0.23	0.46	50.7
5	T	5	0.0	0.114	5.5	LOS A	5	0.23	0.45	50.8
6	R	5	0.0	0.114	11.5	LOS A	5	0.23	0.64	45.6
Approach		**163**	**0.0**	**0.115**	**5.9**	**LOS A**	**5**	**0.23**	**0.47**	**50.5**
Research Park Dr (N)										
7	L	5	0.0	0.062	5.4	LOS A	3	0.12	0.45	51.5
8	T	59	0.0	0.062	4.5	LOS A	3	0.12	0.38	52.7
9	R	31	0.0	0.062	11.3	LOS A	3	0.12	0.65	46.1
Approach		**95**	**0.0**	**0.062**	**6.7**	**LOS A**	**3**	**0.12**	**0.47**	**50.2**
Science Rd (W)										
10	L	5	0.0	0.013	5.4	LOS A	1	0.12	0.44	51.5
11	T	9	0.0	0.013	4.5	LOS A	1	0.12	0.38	52.6
12	R	5	0.0	0.013	11.3	LOS A	1	0.12	0.64	46.2
Approach		**19**	**0.0**	**0.013**	**6.5**	**LOS A**	**1**	**0.12**	**0.46**	**50.4**
All Vehicles		**312**	**0.0**	**0.115**	**6.5**	**LOS A**	**5**	**0.18**	**0.48**	**50.1**

SIDRA INTERSECTION

Movement Summary

Research Park Dr / Science Rd

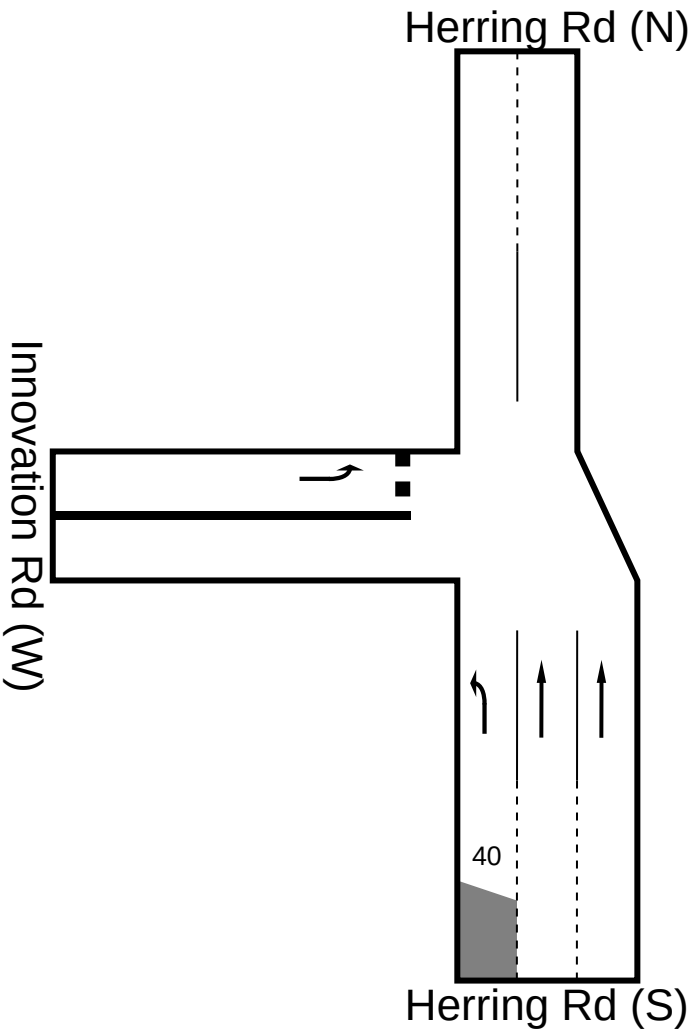
2007_Base_PM

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	0.125	7.3	LOS A	6	0.19	0.55	49.2
2	T	157	0.0	0.125	5.4	LOS A	6	0.19	0.44	51.1
3	R	5	0.0	0.125	11.4	LOS A	6	0.19	0.64	45.8
Approach		**167**	**0.0**	**0.126**	**5.7**	**LOS A**	**6**	**0.19**	**0.45**	**50.9**
Technology Pl (E)										
4	L	51	0.0	0.072	5.7	LOS A	3	0.24	0.46	50.7
5	T	44	0.0	0.072	5.6	LOS A	3	0.24	0.45	50.8
6	R	5	0.0	0.072	11.6	LOS A	3	0.24	0.64	45.6
Approach		**100**	**0.0**	**0.072**	**5.9**	**LOS A**	**3**	**0.24**	**0.47**	**50.4**
Research Park Dr (N)										
7	L	5	0.0	0.063	5.4	LOS A	3	0.09	0.45	51.7
8	T	84	0.0	0.063	4.4	LOS A	3	0.09	0.38	52.9
9	R	10	0.0	0.063	11.2	LOS A	3	0.09	0.66	46.2
Approach		**99**	**0.0**	**0.063**	**5.2**	**LOS A**	**3**	**0.09**	**0.41**	**52.0**
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		**386**	**0.0**	**0.125**	**5.8**	**LOS A**	**6**	**0.18**	**0.45**	**50.9**

Intersection Layout – Herring Road / Innovation Road



SIDRA INTERSECTION

Movement Summary

Herring Rd / Innovation Rd

2007_Base_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	110	0.0	0.059	8.2	LOS A	0	0.00	0.67	49.0
2	T	407	0.0	0.104	0.0	LOS A	0	0.00	0.00	60.0
Approach		**517**	**0.0**	**0.104**	**1.7**	**LOS A**		**0.00**	**0.14**	**57.3**
Innovation Rd (W)										
10	L	42	0.0	0.057	10.7	LOS A	2	0.46	0.73	46.3
Approach		**42**	**0.0**	**0.057**	**10.7**	**LOS A**	**2**	**0.46**	**0.73**	**46.3**
All Vehicles		**559**	**0.0**	**0.104**	**2.4**	**Not Applicable**	**2**	**0.03**	**0.19**	**56.3**

SIDRA INTERSECTION

Movement Summary

Herring Rd / Innovation Rd

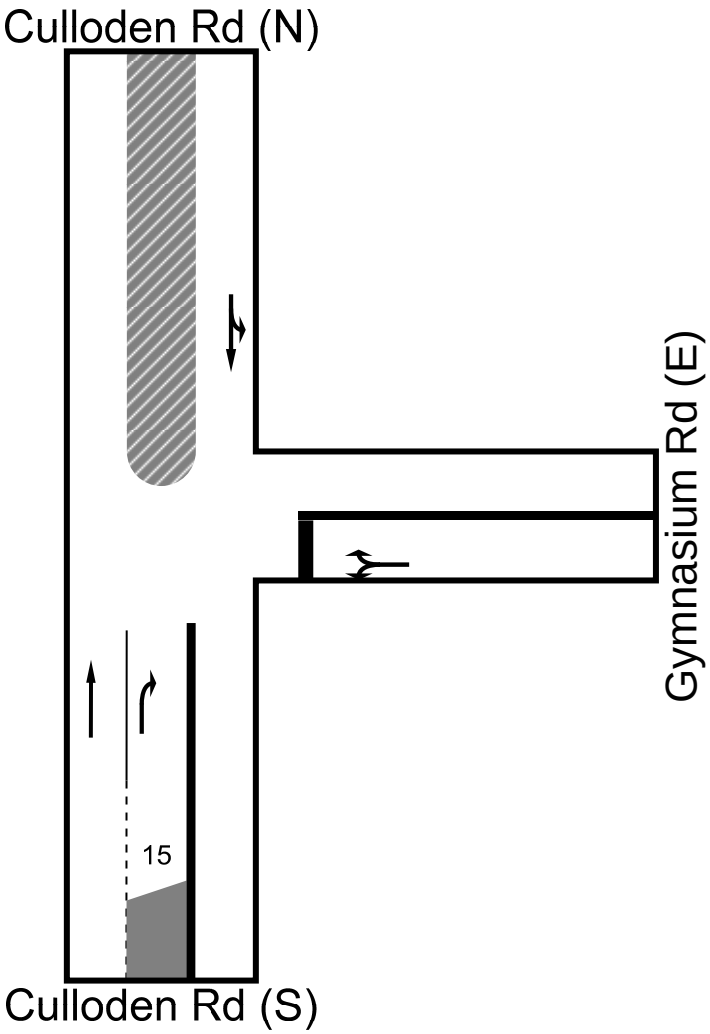
2007_Base_PM

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	683	0.0	0.175	0.0	LOS A	0	0.00	0.00	60.0
Approach		**695**	**0.0**	**0.175**	**0.1**	**LOS A**		**0.00**	**0.01**	**59.8**
Innovation Rd (W)										
10	L	30	0.0	0.054	12.6	LOS A	2	0.55	0.80	44.5
Approach		**30**	**0.0**	**0.054**	**12.6**	**LOS A**	**2**	**0.55**	**0.80**	**44.5**
All Vehicles		**725**	**0.0**	**0.175**	**0.7**	**Not Applicable**	**2**	**0.02**	**0.04**	**58.9**

Intersection Layout – Culloden Road / Gymnasium Road



SIDRA INTERSECTION

Movement Summary

Culloden Rd / Gymnasium Rd

2007_Base_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	118	0.0	0.061	0.0	LOS A	0	0.00	0.00	60.0
3	R	5	0.0	0.005	8.7	LOS A	0	0.20	0.62	47.8
Approach		**123**	**0.0**	**0.061**	**0.4**	**LOS A**	**0**	**0.01**	**0.03**	**59.4**
Gymnasium Rd (E)										
4	L	5	0.0	0.010	11.3	LOS A	0	0.21	0.87	46.2
6	R	5	0.0	0.010	11.1	LOS A	0	0.21	0.90	46.3
Approach		**10**	**0.0**	**0.010**	**11.2**	**LOS A**	**0**	**0.21**	**0.88**	**46.2**
Culloden Rd (N)										
7	L	35	0.0	0.053	8.2	LOS A	0	0.00	0.67	49.0
8	T	66	0.0	0.053	0.0	LOS A	0	0.00	0.00	60.0
Approach		**101**	**0.0**	**0.053**	**2.8**	**LOS A**		**0.00**	**0.23**	**55.7**
All Vehicles		**234**	**0.0**	**0.061**	**1.9**	**Not Applicable**	**0**	**0.01**	**0.15**	**57.0**

SIDRA INTERSECTION

Movement Summary

Culloden Rd / Gymnasium Rd

2007_Base_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)
Culloden Rd (S)										
2	T	203	0.0	0.104	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		**233**	**0.0**	**0.104**	**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	12.4	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	0.146	8.2	LOS A	0	0.00	0.67	49.0
8	T	253	0.0	0.146	0.0	LOS A	0	0.00	0.00	60.0
Approach		**284**	**0.0**	**0.146**	**0.9**	**LOS A**		**0.00**	**0.07**	**58.6**
All Vehicles		**527**	**0.0**	**0.146**	**1.3**	**Not Applicable**	**1**	**0.03**	**0.09**	**58.0**