1.0 Introduction and Context

1.1 Medway Council has been approached regarding the highway and transport aspects of the scheme since a first pre-application meeting in November 2018. A comprehensive scoping report was issued to Medway on the 20th November 2018. No response was received on that.

1.2 The first formal response was received from the Council only after the application was submitted (on 28th August 2019). This raised issues of access design, requesting a Road Safety Audit, accessibility, requesting a Non-Motorised User Audit, education related trips, bus service improvements and comments on the Travel Plan.

1.3 DTA prepared a suitable response to all of the issues raised by way of Technical Note 1 (issued 7th October 2019) which included requested details on accessibility and highway safety (including a Road Safety Audit and Walking, Cycling and Horse Riding Assessment) further information on trip numbers, bus service improvements and a revised Travel Plan.

1.4 At the meeting on 28th October 2019 it was specifically agreed (and minuted) that other than traffic generation and impact, which is the subject of this note, all other matters were agreed by the Council.

1.5 There have been numerous requests made to the Highway Authority throughout this process for further information by both DTA and Rapleys. A copy of the dates and events is included in **Appendix A**.

1.6 It is therefore unequivocally the case that the Council has raised no outstanding concerns relating to the first two tests of NPPF Para 108/109 regarding the safety of the access proposals or the accessibility of the site generally.

1.7 Since then, further approaches (continually led by DTA) have been made by the Council in relation to modelling and traffic generation. DTA has again issued a full response to all outstanding questions on traffic generation, as adopted in the TA (see Section 2 below). The Council has been clear in not raising any other issues.

1.8 Despite requests for further information in respect of the methodology of the modelling, the Council confirmed on 18 February 2020 that in their view no further information needed to be provided.

1.9 Modelling and traffic generation is therefore also shown to be agreed. The inputs to the TA are found to be robust. Technical notes 1 and 2 are attached at **Appendix B** for completeness.

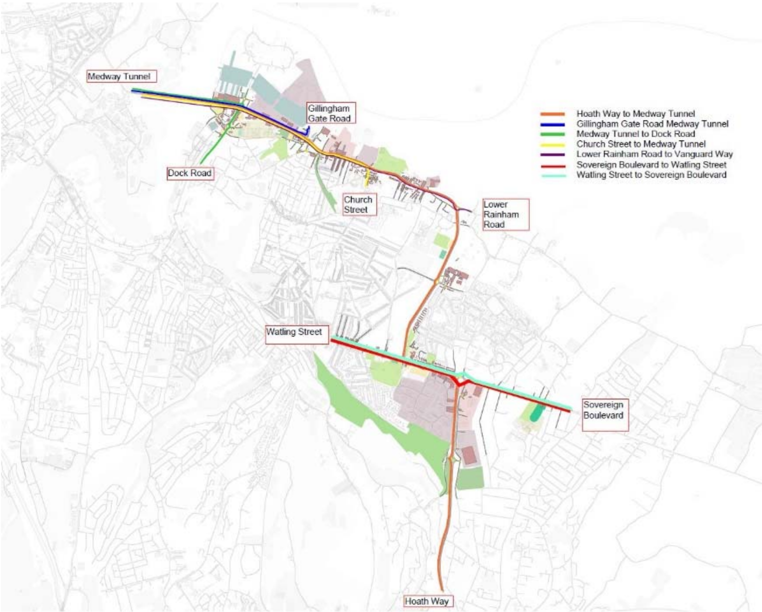
1.10 This note has been prepared, principally, as a helpful response to the Sensitivity Test 1, 2 and 3 provided by the Council. This has been conveyed to the applicant in the form of a power point presentation with an accompanying spreadsheet.

1.11 The Power Point is titled "*Sensitivity Test 1, 2 and 3*" but appears from page 2 to only consider one scenario – 1,250 houses.

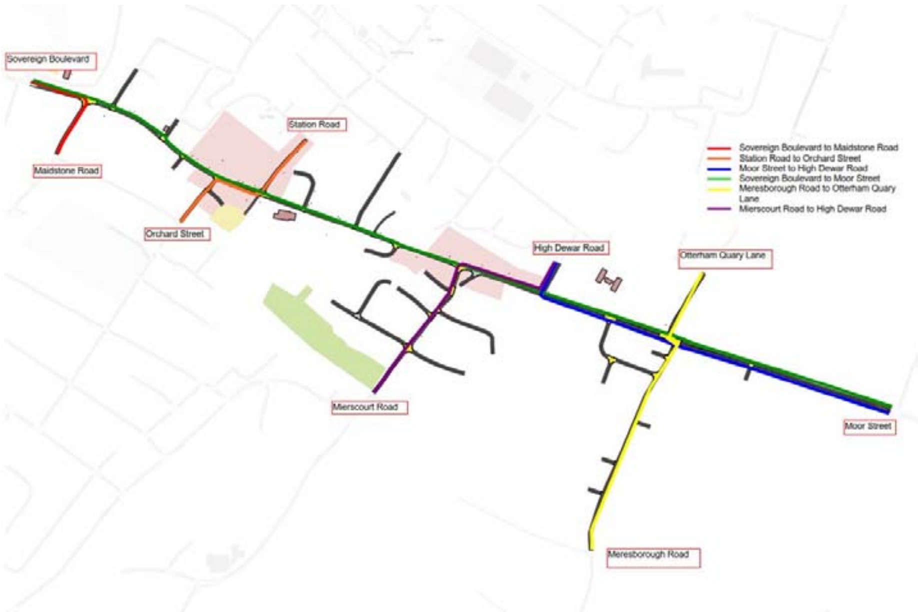
1.12 The summary presents the change in network characteristics on three "*subnetworks*" as shown below. It is concluded from this that the modelling confirms no wider impact (including the SRN).

1.13 The Council also confirmed at a meeting on 22nd January 2020 that it does not require any assessment on the wider network.

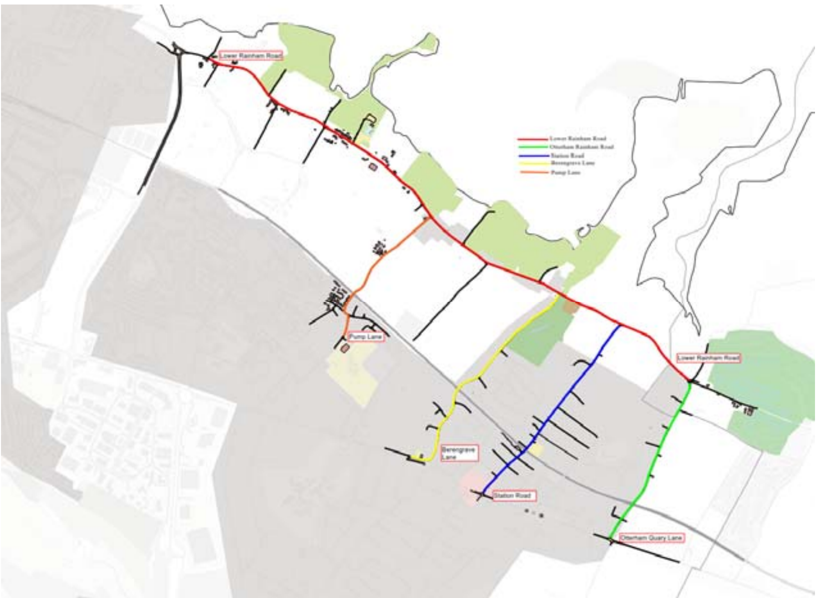
Subnetwork 2



Subnetwork 3



Subnetwork 7



2.0 Modelling Inputs

2.1 The trip rates input in the model have been provided in the form of a spreadsheet and shows that a total of 1,250 houses are tested in a future year of 2035. This differs from the agreed scope of the TA which is 2029. However, as concluded in this note, this has no or no material bearing on the overall conclusions of the TA which are shown to be robust.

2.2 Overall, person trip assumptions are comparable and the rates adopted by Sweco for most of the development are consistent with the DTA tests:

Table 1 – Person Trip Generation Comparison

	AM Peak			Pm Peak		
	In	Out	Total	In	Out	Total
DTA	0.194	0.767	0.961	0.581	0.266	0.847
Sweco (600 units)	0.193	0.694	0.887	0.555	0.344	0.899
Sweco (50 units)	0.312	0.954	1.266	0.696	0.395	1.091

2.3 However, it can be seen that SWECO adopts a (notably) significantly higher vehicle trip rates for one portion of the site - which is as much as 60% higher per house. That represents an illogical position. The assessment should properly be adjusted in order to reflect a consistent trip rate.

2.4 The trip rates adopted in the TA and the Sweco Modelling are significantly different. **Table 2** below summarises the differences for vehicles.

Table 2 – Vehicle Trip Generation Comparison

	AM Peak			Pm Peak		
	In	Out	Total	In	Out	Total
DTA	187	398	585	365	193	558
Sweco	175	624	799	497	307	803
Difference	-12	+ 226	+ 214	+ 132	+ 114	+ 245

2.5 The DTA flows are taken from Technical Note 2 (31st October 2019) which were submitted to the Council following two meetings to discuss the input assumptions. That report was issued to pick up the outstanding issues discussed at the meeting on the 28th October which were the inclusion of all external primary school trips by car.

2.6 The Council has been clear not to raise any other issues in respect of the methodology.

2.7 That assessment includes for the fact that different purposes of travel will have different distributions and also that an element of movements will be internalised within the site. These do not appear to have been taken into account in the Sweco assessment and as a result of this, the assessment forecasts significantly higher trip rates.

2.8 The assessment presented in the TA has been scrutinised by the Council, in particular the trip rates, and DTA have provided all of the further information in detail as requested.

2.9 At a meeting with the Council on 22nd January 2020, it raised concern with the inclusion of bungalows within the TRICS data. These were removed and issued to the Council on 31st January 2020. This showed no material difference compared with the rates in the

TA. The methodology in the TA is therefore robust. It is understood to be agreed, and the Council has been clear not to raise any further issues in respect of methodology, following on from recent approaches diligently made by DTA.

2.10 On a similar basis, DTA has been keen to request all further information in respect of the Sweco modelling. It has however received no further detail relating to how the trip rates have been derived, trip purposes and the overall distribution or assignment of traffic. No justification has been advanced by on behalf of the Council for adopting this position.

2.11 It is considered that the inputs to the model are overly pessimistic and unjustified.

3.0 Growth

3.1 It is not clear from the modelling what growth has been applied to the traffic flows to derive future reference case flows. It is assumed however that it is consistent with Section 7.3 of TAG Unit M4 states the following in respect of the Reference Forecast:

> "The Reference Forecast should take into account the impact of both national changes (e.g. population growth and GDP) and local changes (e.g. housing developments) on travel demand. **Overall demand in the forecast should be constrained to the Department's projections to ensure that different schemes are being compared on consistent assumptions about total demands. Local changes influence the spatial distribution.**

3.2 That is consistent with the approach adopted in TA, albeit the Council has requested some additional development be added. **Table 3** compares some of the key mainline flows on the network between the base line flows adopted by DTA for 2029 with those forecast by the model for 2035.

Table 3 – Comparison of Key Link Flows

		AM Peak			PM Peak		
		EB	WB	Total	EB	WB	Total
A289 West of Yokosuka Way	DTA 2029	1,059	2,060	3,119	2,031	1,278	3,309
	SWECO 2035	1,109	2,045	3,154	1,801	1,171	2,972
	Difference	-50	15	-35	230	107	337
A2 West of Ito Way	DTA 2029	1,411	1,413	2,824	1,338	1,508	2,846
	SWECO 2035	1,076	1,246	2,322	1,139	1,511	2,650
	Difference	335	167	502	199	-3	196
Lower Rainham Road East of Yokosuka Way	DTA 2029	290	784	1,074	721	363	1,083
	SWECO 2035	281	614	895	929	385	1,314
	Difference	9	170	179	-208	-22	-231
A2 West of Bloors Lane	DTA 2029	803	1,114	1,917	988	1,036	2,024
	SWECO 2035	633	978	1,611	746	904	1,650
	Difference	170	136	306	242	132	374

3.3 It can be seen from the above that the assessments in the TA currently over-estimate demand on the network in the future year, and the findings are robust in this respect.

4.0 Overall Conclusions

4.1 Notwithstanding the fact that it tests a higher level of traffic than the TA, the overall the modelled outputs are consistent with the TA in concluding that there are no material impacts on the Lower Rainham Road corridor, within the roads to the south of railway or on the strategic road network.

4.2 This was agreed at the meeting on 22nd January 2020 and reconfirmed by email on 27th January 2020.

4.3 In terms of the local areas highlighted, the modelling appears to show a degree of degradation in level of service on link road speeds as a result of the development. However, it is not at all clear to what extent these relate to junction capacity or link capacity.

4.4 As above, the model significantly over-estimates demand on those links and / or there are already at or approaching capacity. On that basis alone, the results should be treated with much caution. A considerably more detailed review of how the modelling is treating those links would need to be forthcoming before any conclusions could possibly be drawn from it.

4.5 Alternatively, given that these areas of stress exist in the reference case, these are presumably being dealt with by the IDP. The applicant continues to be willing to discuss a reasonable contribution towards wider improvements.

4.6 In terms of junction impacts, the results are comparable with the findings of the TA. It plainly shows that there is no material impact, in either the AM or PM peaks, on the junctions on Lower Rainham Road.

4.7 Impacts defined by a change in LoS to E or F are shown at a number of junctions and these are shown on **Figures 1** and **2** attached and discussed below:

A289 / Lower Rainham Road

This is shown to be operating above capacity in the future year with or without the development. There is no modelled change in junction performance. The TA proposes mitigation at this location.

A2 / Woodlands Drive

This is showing a worsening of operation in the morning peak despite a reduction in flows. This was not assessed in the TA, but DTA have been provided with the model traffic flows and the results are reported below.

Bowater Roundabout

This is showing a worsening of operation in the evening peak which is not consistent with the TA (despite testing a higher flow). DTA have been provided with the model traffic flows and the results are reported below.

A2 / Bloors Lane

This is showing a worsening of operation in the morning peak which is consistent with the TA and mitigation is already proposed at that location.

Sovereign Boulevard / Station Road

This is showing a worsening of operation in the morning peak. This was not assessed in the TA, but DTA have been provided with the model traffic flows. The results are reported below.

5.0 Next Steps

5.1 At the most recent meeting on 22nd January 2020, the Council confirmed they would be relying on the use of their model to determine overall impact and it was agreed that the model traffic flows at the key junctions would be provided to DTA for further review. It was also agreed that if necessary, mitigation would be provided on a no nil detriment basis.

5.2 Where DTA have been provided with information this is covered in section 6 below. DTA are still awaited turning counts at two additional junctions and no further data has been provided for the various links. No reasoned justification has been given for the delay despite the Council stating that the turning count data would be available shortly in their email of 18 February 2020.

6.0 Further Assessment

6.1 Following the meeting held in January 2020 with the Council it was agreed the junctions showing the any significant impact would be reviewed by DTA. Traffic flows at the key 5 junctions considered by the Council to show a significant impact (not agreed by DTA) have been provided for the following locations:

1. Bowaters roundabout;
2. High Street/Station Road;
3. A2/ Bloors Lane;
4. A2/ Woodlands Road/ Rotary Gardens; and
5. Piers Road/ Maritime Way

6.2 The flows were provided for the 2035 reference case (RC) and the 2035 reference case + development (RC+Dev). The flows are total vehicles, therefore % HGVs were assumed using DfT data for nearby link flows. The assessment flows are included in **Appendix C**.

6.3 The junctions have been tested with the model flows. The junction outputs are included in **Appendix D** and a summary of junction operation is included below.

Bowaters Roundabout

6.4 This junction was tested in the TA and did not require mitigation. The junction has been tested with the model flows and will continue to operate within capacity, therefore no requirement for mitigation. The results are summarised in **Table 4**.

Table 4 – Bowaters Roundabout Junction Results

Scenario	Cycle Time	Practical Reserve Capacity (%)	Delay (pcuHr)
2035 RC AM Peak	120	31.8	41
2035 RC PM Peak	120	16.5	50
2035 RC+Dev AM Peak	120	10.2	57
2035 RC+Dev PM Peak	120	6.9	56

High Street/ Station Road

6.5 The junction results are summarised in **Table 5**. The results show the junction will be operating in capacity in a future year of 2035 with no requirement for mitigation.

Table 5 – High Street/ Station Road Junction Results

Scenario	Cycle Time	Practical Reserve Capacity (%)	Delay (pcuHr)
2035 RC AM Peak	90	24.5	13
2035 RC PM Peak	90	5.4	15
2035 RC+Dev AM Peak	90	16.2	14
2035 RC+Dev PM Peak	90	4.3	16

A2/ Bloors Lane

6.6 This junction was assessed in the TA and the results showed that mitigation would be required to accommodate the development traffic. The mitigation involved the introduction of an additional ahead lane on the eastbound approach.

6.7 The existing arrangement has been modelled with the 2035 flows and the results are summarised in **Table 6**. This shows the junction will be over capacity in PM peak baseline scenario and during both peak periods in the future scenario.

Table 6 – A2/ Bloors Lane Junction Results Existing Arrangement

Scenario	Cycle Time	Practical Reserve Capacity (%)	Delay (pcuHr)
2035 RC AM Peak	90	2.6	28
2035 RC PM Peak	90	-3.0	29
2035 RC+Dev AM Peak	90	-50.0	314
2035 RC+Dev PM Peak	90	-51.3	311

6.8 A summary of the results with the mitigation are shown in **Table 7** below. This shows the improvement works will provide a significant improvement, with nil overall detriment. In the morning peak, the junction will effectively be operating at capacity. However, the AIMSUN forecast increase in traffic in the development scenario on the A2 westbound is effectively doubled (585 to 1139 PCUs per hour). This will not be all development traffic related.

Table 7 – A2/ Bloors Lane Junction Results with Mitigation

Scenario	Cycle Time	Practical Reserve Capacity (%)	Delay (pcuHr)
2035 RC+Dev AM Peak	90	-1.9	46
2035 RC+Dev PM Peak	90	4.3	31

A2/ Woodlands Road/ Rotary Gardens

6.9 The results of the junction model are summarised in **Table 8**. This shows the junction to be operating within capacity in all scenarios. No mitigation is required.

Table 8 – A2/ Woodlands Road/ Rotary Gardens Junction Results

Scenario	Cycle Time	Practical Reserve Capacity (%)	Delay (pcuHr)
2035 RC AM Peak	120	28.7	26
2035 RC PM Peak	120	43.3	18
2035 RC+Dev AM Peak	120	8.8	37
2035 RC+Dev PM Peak	120	15.6	30

Piers Road/ Maritime Way

6.10 The junction results are summarised in **Table 9** and show the junction will operate within capacity during 2025 with the development. No mitigation measures are therefore required.

Table 9 – Piers Road/ Maritime Way Junction Results

Scenario	Cycle Time	Practical Reserve Capacity (%)	Delay (pcuHr)
2035 RC AM Peak	120	16.7	49
2035 RC PM Peak	120	5.9	67
2035 RC+Dev AM Peak	120	4.4	43
2035 RC+Dev PM Peak	120	2.5	48

7.0 Link Corridors

7.1 Although not requested at the meeting on 22nd January 2020, the Council has subsequently requested a review of link corridors. These are set out below:

<u>Network 2</u>

Lower Rainham Road to Medway Tunnel (west bound)

A2 corridor EB (Watling Street to Sovereign Boulevard) (East Bound)

Medway Tunnel to Gillingham Gate Road (East Bound)

Medway Tunnel to Dock Road (East Bound)

Medway Tunnel to Hoath Way (East Bound)

<u>Network 3</u>

Otterham Quary Lane to Meresborough Road

Moor Street to High Dewar Road

Moor Street to Sovereign Boulevard

Sovereign Boulevard to Maidstone road

Orchard Road to Station Road

Maidstone road to Sovereign Boulevard

High Dewar Road to Moor Street

High Dewar Road to Mierscourt Road

Network 7

Lower Rainham Road WB

7.2 This was not discussed or agreed at the meeting and no information has been provided in respect of traffic flow on the various links. Furthermore, the list of links above do not correlate with the identified list of links showing impacts in the model outputs (it was agreed at the meeting with the Council on 22 January 2020, that the junctions which reached a level of service F as a result of the development would need mitigation).

7.3 The change in flows have been extracted from the model outputs. These are summarised in the tables below.

Table 10 – Link Flows from SWECO Model (Subnetwork 2)

Route	AM Peak		PM Peak	
	Level of Service	Change in Flow	Level of Service	Change in Flow
Lower Rainham Road to Medway Tunnel (WB)	D to F		No change	
East of Dock Road		63		28
West of Dock Road		54		25
A2 Corridor EB (Watling Street to Soverign Boulevard)	E to F	42	No change	51
Medway Tunnel to Gillingham Gate Road (EB)	C to F	-23	No change	25
Medway Tunnel to Dock Road (East Bound)	E to F	12	D to E	-23
Medway Tunnel to Hoath Way (East Bound)	C to F		C to D	
North of Watling Street		74		16
South of Watling Street		-9		-22

Table 11– Link Flows from SWECO Model (Subnetwork 3)

Route	AM Peak		PM Peak	
	Level of Service	Change in Flow	Level of Service	Change in Flow
Otterham Quary Lane to Meresborough Road	E to F		No change	
North of Moor Street		29		-4
South of Moor Street		-11		15
Moor Street to High Dewar Road	D to F		No change	
East of Otterham Quay Lane		21		13
West of Otterham Quay Lane		-18		-58
Moor Street to Sovereign Boulevard	E to F		No change	
East of Station Road		20		-12
West of Station Road		24		-11
Sovereign Boulevard to Maidstone road	No change	35	D to E	13
Orchard Road to Station Road	No change		No change	
Orchard Street		-47		-54
Station Road		-25		-10
Maidstone road to Sovereign Boulevard	No change	-52	No change	-22
High Dewar Road to Moor Street	No change		No change	
East of Otterham Quay Lane		157		8
West of Otterham Quay Lane		75		-2
High Dewar Road to Mierscourt Road	No change	-11	No change	15

Table 12 - Link Flows from SWECO Model (Subnetwork 7)

Route	AM Peak		PM Peak	
	Level of Service	Change in Flow	Level of Service	Change in Flow
Lower Rainham Road WB	B to F		No change	
East of Pump Lane		169		-32
West of Pump Lane		559		99

7.4 As shown in the above tables, the change in flow on the various links is minimal and insignificant, particularly during the PM peaks. It is noted that many of the links also have a negative impact as a result of the development.

7.5 DTA questioned the level of increase on the Lower Rainham Road link (westbound) which appears to be incorrect. This is considerably higher than that forecast in the TA for the AM peak period.

7.6 It is assumed the figures are incorrect (559 compared to 140 vehicles per hour as per the TA). No further information from the Council offering any clarification on this has been forthcoming.

7.7 Mitigation is proposed where it may be appropriate at the junctions which may be impacted. However, it is not understood how mitigation could feasibly be proposed on individual links. In any event, the change in flows on the individual links are notably modest. In a number of instances there is no change. In others, there is clear net benefit.

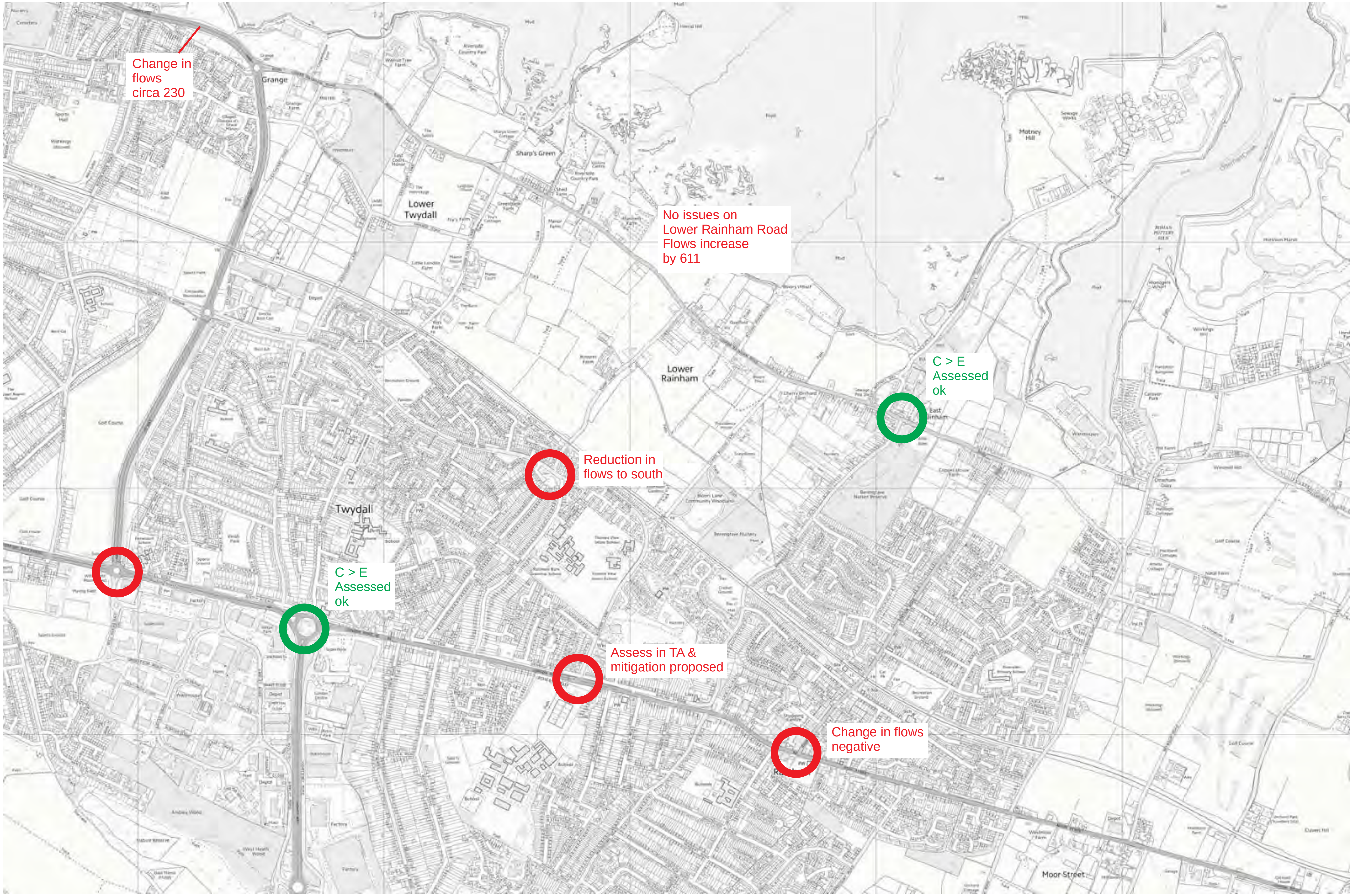
7.8 The majority of the links are strategic corridors and may be impacted as a result of substantial development in the surrounding area, i.e. wider Local Plan growth.

8.0 Overall Conclusions

8.1 A detailed review of the Medway modelling has been undertaken which has demonstrated the methodology and assessment as set out in the TA is shown to be robust. No further assessment is necessary. The scheme of mitigation, as proposed, is demonstrably sufficient. Indeed, it will exceed what is required in so far as it will clearly give rise to net improvement.

SJT/JLA/20230-10f Technical Note 3
27th March 2020

Figure 1



David Tucker Associates
Transport Planning Consultancy
Forester House, Doctors Lane, Henley-in-Arden
Warwickshire, B95 5AW
Tel: +44(0) 1564 793598 Fax: +44(0) 1564 793983
www.dtatransportation.co.uk

Notes:

Green turns to E
Red turns to F

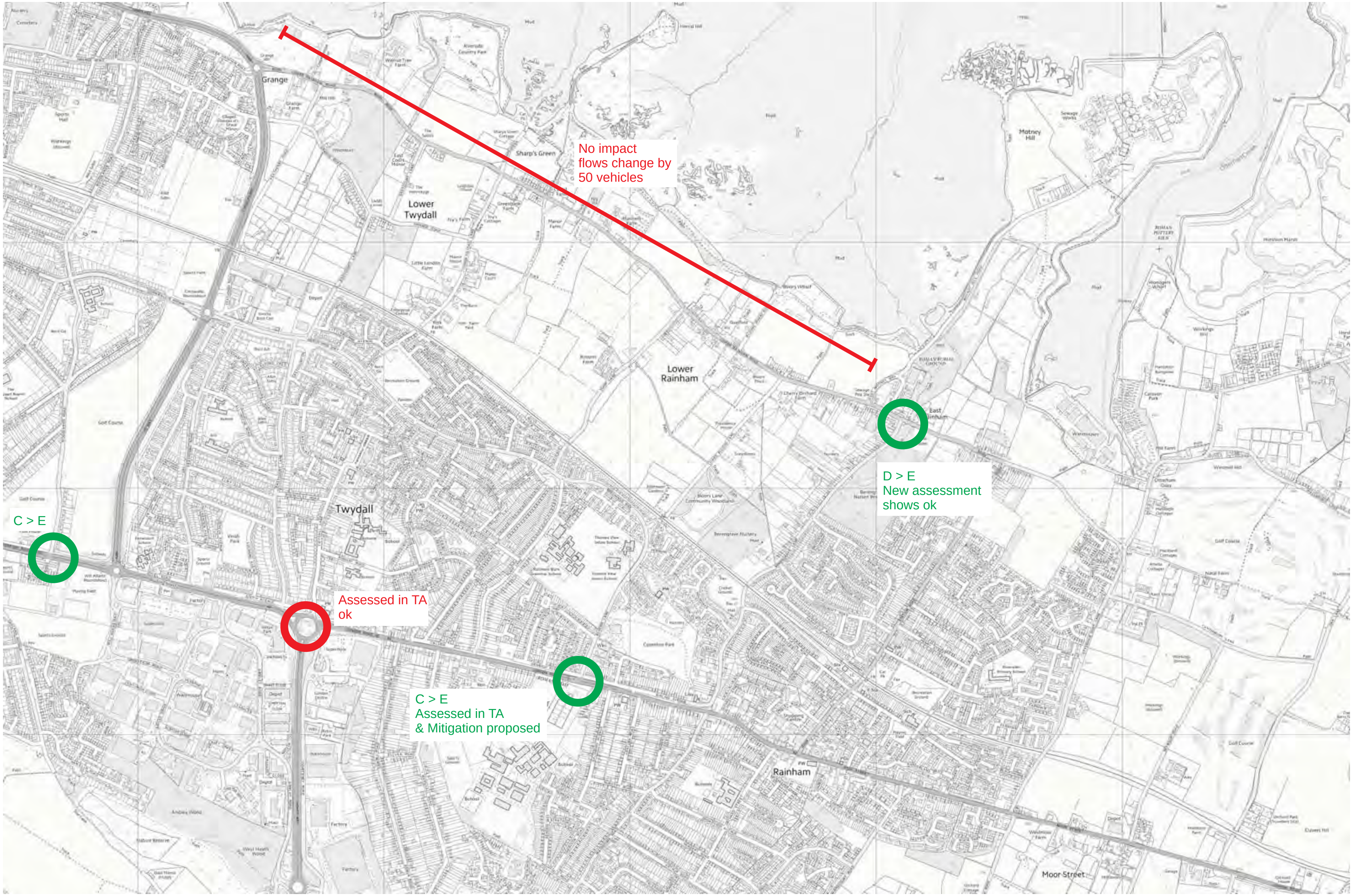
Drawing No : 20230-13

Scale : NTS

Drawing Title: Sweco Assessment AM PEAK
Job Title: Bloor & Pump Farm
Client: ACG

NORTH

Figure 2



David Tucker Associates
Transport Planning Consultancy
Forester House, Doctors Lane, Henley-in-Arden
Warwickshire, B95 5AW
Tel: +44(0) 1564 793598 Fax: +44(0) 1564 793983
www.dtatransportation.co.uk

Notes:

Green turns to E
Red turns to F

Drawing No : 20230-13-2

Scale : NTS

Drawing Title	Sweco Assessment PM PEAK
Job Title	Bloor & Pump Farm
Client	ACG

NORTH

Appendix A

Timetable of Events - Pump Farm, Lower Rainham

As of 25th March 2020

1. Transport Scoping Note issued to Medway 20th November 2018
2. Transport Assessment (TA) submitted with application in May 2019
3. Draft response from Medway on TA received 28th August 2019
4. On 26th September 2019 Medway confirmed their own modelling assessment would be available mid November 2019
5. Technical Note 1 prepared and issued 7th October 2019
6. Meeting with Medway to discuss outstanding points 28th October 2019
7. Meeting notes and Technical Note 2 circulated 31st October 2019
8. Modelling results received December 2019
9. Technical Note 3 issued 9th January 2020
10. Several requests for additional highways information from Rapleys to Medway (dates 22/01, 23/01, 31/01, 07/02, 12/02, 14,02 and 16/02)
11. Meeting with Medway to discuss 22nd January 2020
12. Meeting notes and actions issued 27th January 2020
13. Additional TRICS information issued 31st January 2020
14. Turning counts provided at 5 key junctions 14th February 2020
15. Request for further info on 18th February 2020 re. modelling brief, inputs and traffic flows at 2 additional junctions. No further meaningful information received to date.

Appendix B

1.0 Introduction

1.1 This Note considers the draft response prepared by Medway Council on the application for 1,250 houses with primary school, local centre and care facilities on land at Pump Farm and Bloors Farm, Lower Rainham. A copy of the response is included in **Appendix A**.

1.2 A meeting was held with Highway Officers on 17th September 2019 to discuss the points raised. This Note has been provided in response to the queries following the meeting.

1.3 The response provided by Medway had a number of areas still under review. It was also agreed at the meeting that consideration of the wider impacts would be reviewed once the Aimsun modelling is available. These points will be covered in a subsequent note.

2.0 Care Home Trip Rates

2.1 There was a query in respect of the care home trip rates as it is not considered that the site is on the edge of town centre location or suburban area. It was requested the assessment be re-run.

2.2 A re-run of the trip rates has been undertaken to include edge of town sites and the revised rates are included in **Appendix B**. The AM and PM peak period rates per resident are summarised in **Table 1**. The trip rates used within the Transport Assessment (TA) are also included for comparison.

Table 1 – Care Home Trip Rates

Time Period	Revised Trip Rates			Trip Rates in TA		
	Arrivals	Departures	Totals	Arrivals	Departures	Totals
AM Peak	0.038	0.032	0.070	0.085	0.062	0.147
PM Peak	0.038	0.051	0.089	0.041	0.087	0.128

2.3 As set out above the revised trip rates are lower than those used within the TA and therefore it is not proposed to update these as they are a worst case.

3.0 Education Trips

3.1 It was requested the Education Department at Medway were contacted to establish the likely catchment area for the proposed 2FE primary school. The assumptions in the TA have been reviewed and a number of suggestions were made in respect of catchment size and staff numbers. A copy of the correspondence is included in **Appendix C**.

3.2 Medway suggest that a 1FE school typically serves 775 dwellings rather than 750 as assessed in the TA. The figures have been revised accordingly. It was also suggested staff numbers should be nearer 50 than 42 and this has been amended accordingly.

3.3 In terms of the comments regarding how the school will be filled, it is likely there will be a phased arrangement, however a future year assessment has been undertaken in 2029 when it is assumed the site will be built out and therefore fully operational.

3.4 The NTS data identifies that 41% of primary school education trips were undertaken by car. The Council have queried whether this is too low given the location of the site to existing residential areas. The education department have confirmed the catchment for a primary school is generally less than 2km. A 2km walking catchment from the existing local primary schools and the proposed primary school have been plotted as shown in **Appendix D**. This shows the existing local catchment is extremely well served by existing primary schools.

3.5 Travel Plans are available for a number of the existing primary schools within the vicinity. The mode share for journeys to school are shown in **Table 2** below.

Table 2 – Primary School Travel Plan Mode Share Data

School	Mode share to car
Riverside Primary	25%
Byron Primary	9%

3.6 The existing travel patterns show comparatively low proportions of pupils arriving by car. The majority of pupils walk. The NTS proportion of 41% of pupils arriving by car is therefore likely to be an overestimate rather than underestimate. The walk routes to the south (where external catchment would come from) is good, as are existing and proposed links to the north and east. The proportion adopted in the TA is therefore considered robust.

3.7 Staff numbers are revised from 42 to 50 on a pro-rata basis. Using the NTS assumptions for mode share and on/off-site staff trips, this equates to 16 inbound AM peak trips and 16 outbound PM peak trips.

3.8 Based on the revised numbers, there will be a draw of 81 external pupils. Based on a proportion of 41% this equates to 33 inbound and 33 outbound trips in the morning peak. This would equate to 49 external pupil car trips. The overall external vehicular trip generation associated with primary education is shown in **Table 3** below.

Table 3 – Primary School External Pupil and Staff Trips

Primary School Staff	In	Out	Total
AM peak	16	0	16
PM peak	0	16	16
Primary School Pupils	In	Out	Total
AM peak	33	33	66
PM peak	0	0	0
Totals	In	Out	Total
AM peak	49	33	82
PM peak	0	16	16

4.0 Local Centre Trips

4.1 The application includes an area for a Local Centre comprising 1,000 sqm. The use classes are not defined, but it is likely to include a local shop together with a number of similar uses which could include health or hot food takeaway type use. Based on similar sites within the TRICS database, the proposed floor space could provide up to 6 or 8 units and therefore a range of amenities for residents. The greater the range of amenities on site the reduced need for journeys to be made off-site for shopping purposes. Similar sites are set out in **Table 4**. The site selection is included in **Appendix E**.

Table 4 – TRICS Sites for Local Centre (up to 1,800 sqm)

Site Reference	Type of Use	GFA	Population within 1.6km (2017)	AM Peak		PM Peak	
				In	Out	In	Out
LE-01-I-02/01	Tesco Express Pie Shop Pizza outlet Chinese takeaway	550	10,750	72	74	77	77
SH-01-I-02/01	Pharmacy Co-op Flooring outlet Opticians Bakery Coral Fish bar Indian takeaway Chinese takeaway	900	11,983	43	42	81	84
CH-01-I-02	Farm shop Post Office Wine shop	260	17,691	13	11	11	11
TV-01-I-03/01	Bakers Acklam Financial Your Move Butchers Dance Studio Dressing Room Finlays Newsagents Pizza Pan The Sandwich Bar Fish Bar The Regent Cleopatra Post Office Barbers Chemist Spar Stores Hairdressers Cleaners	1840	18,454	55	48	129	147
CH-01-I-03	Post Office Bargain Booze Fish bar Bakery Hair and beauty	365	14,303	20	19	27	26
TV-01-I-04	Hair Salon Sandwich bar Newsagents Convenience store Fish bar Flower shop	585	16,603	55	55	24	28
TW-01-I-02	Butchers Convenience store Chinese takeaway Indian takeaway Newsagent Hair salon Fish bar	540	21,312	22	19	18	32

4.2 The site will provide a similar set of uses within the local centre. The Applicant is content in a condition to limit the local centre to these types of use.

4.3 There is little need for external residents to use the local centre as they are already well served with existing local centres in Gillingham, Twydall and Rainham. A 1.6km walking catchment for each of the existing local centres are shown in **Appendix F**. The same catchment for the proposed local centre is also shown. This shows there is an overlap between the catchment areas which confirms the local area is well served. The local centres at Twydall and Rainham provide a range of uses including card shops, home stores, hairdressers, coffee shops, pharmacy, bakeries and banks and more.

4.4 In the event external trips did occur, these are likely to be in low numbers and will be a local trip diverted from a similar use elsewhere and therefore already on the network. It is therefore reasonable to assume that the local centre will not generate external new trips.

5.0 Shopping and Personal Business Trips

5.1 It has been assumed in the TA that 25% of shopping and personal business related trips will be internal. The Council have asked for further justification of this proportion. 10% of external shopping related trips have been assigned to the Co-op/McDonalds on Beechings Way, with the majority of other external trips assigned further afield to Gillingham Business Park, Tesco Extra, and Asda Gillingham.

5.2 Given the location and range of uses at the Rainham High Street and at the local centre in Twydall it is likely that external trips will be made to these locations. On this basis, the internal trip proportions have been amended to assign 10% to each of the local shopping centres at Twydall and Rainham. 5% of trips are assumed to be internal. The revised distribution of shopping and personal business trips is set out below:

- Asda Gillingham – 20%;
- Gillingham Business Park – 20%

- Tesco Extra Gillingham – 25%;
- McDonalds/Co-op Beechings Way – 10%;
- Twydall Local Centre – 10%;
- Rainham Local Centre – 10%; and
- Internalised trips – 5%

6.0 Leisure Trips

6.1 The TA assumed that 30% of leisure trips will be internal to the site. The NTS defines a leisure trips as visiting friends either at someone's home or elsewhere, or 'other' leisure trips which include entertainments, sport, holidays and day trips. Based on the definitions, it is likely that the majority of trips could be external, however there will be a small proportion of internalisation relating to visiting friends or entertainment and therefore 5% of trips have assumed to be internal to the site. Based on these assumptions, the total external leisure trips are set out in **Table 5**.

Table 5 – External Leisure Vehicular Trips

Leisure/other	In	Out	Total
AM peak	6	23	29
PM peak	67	31	98

7.0 Total External Trips

7.1 Based on the revised assumptions above, the total external residential trip generation is set out in **Table 6** below. This is a revised version of Table 31 of the TA.

Table 6 – Total External Trips

Vehicle Trips by purpose			
Commuting	In	Out	Total
AM peak	34	134	168
PM peak	160	73	234
Business	In	Out	Total
AM peak	5	21	27
PM peak	19	9	28
Education/escort education	In	Out	Total
AM peak	14	54	67
PM peak	8	4	12
Shopping	In	Out	Total
AM peak	4	16	20
PM peak	39	18	57
Personal business	In	Out	Total
AM peak	15	60	75
PM peak	66	30	96
Leisure/other	In	Out	Total
AM peak	6	23	29
PM peak	67	31	98
Primary School Staff and Pupils	In	Out	Total
AM peak	49	33	82
PM peak	0	16	16
Total External Vehicle Trips			
Total	In	Out	Total
AM peak	127	341	469
PM peak	360	181	541
Total External Vehicle (including Care Home)			
Total	In	Out	Total
AM peak	139	350	489
PM peak	365	193	558

7.2 The total trip generations for the residential, care home and combined total are included in **Appendix G**.

8.0 Road Safety Audit

8.1 It was requested that the proposed access junctions were subject to a Stage 1 Road Safety Audit (RSA). A copy of the RSA is included in **Appendix H**. The Audit raised a number of queries. These have been reviewed and taken into account within a

Designer's Response with revised plans where appropriate. The Designers Response is included in **Appendix I.**

9.0 Walking, Cycling and Horse Riding Assessment

9.1 It was requested that a review of cycling routes to the Secondary Schools and key facilities. As such a Walking, Cycling and Horse Riding Assessment has been prepared which focuses on these routes. The scope of the assessment was agreed at the meeting and a copy of the assessment is included in **Appendix J**.

10.0 Travel Plan

10.1 Comments from the Travel Plan team were provided on the Travel Plan included with the application. The Travel Plan has been updated accordingly and a copy is included in **Appendix K**.

11.0 Junction Improvements

11.1 The Council have queried the mitigation strategy at the Lower Rainham Road/ Yokosuka Way roundabout junction and whether it will provide additional benefit to traffic on the ground.

11.2 The existing arrangement include a single lane approach with hatching on the nearside lane. The queue surveys show a queue of more than 15 vehicles for a prolonged period in the morning peak on this approach. This is reflected in the JUNCTIONS model which shows a queue of 17 PCUs in the 2018 base, 82 PCUs in the 2029 base scenario and around in the 2029 + development scenario.

11.3 The improvements include the removal of the hatching and a section of the central island with widening on the off-side to provide two lanes on approach for a distance of around 35m from the entry point to the junction. The mitigation scheme is included in **Appendix L** of this note. This will allow up to 6 vehicles to use each lane on approach to the junction at any one time. All other arms on the roundabout benefit from a two-lane approach. The improvements will also provide a further benefit to the roundabout as a whole, by providing a consistent design across all arms.

11.4 The improvement scheme will reduce the queue on the approach to around 5 vehicles in the with development scenario which is a significant improvement over the existing situation.

11.5 Overall, therefore it is considered the improvements are beneficial and provide a holistic solution to the junction.

12.0 Lower Rainham Road

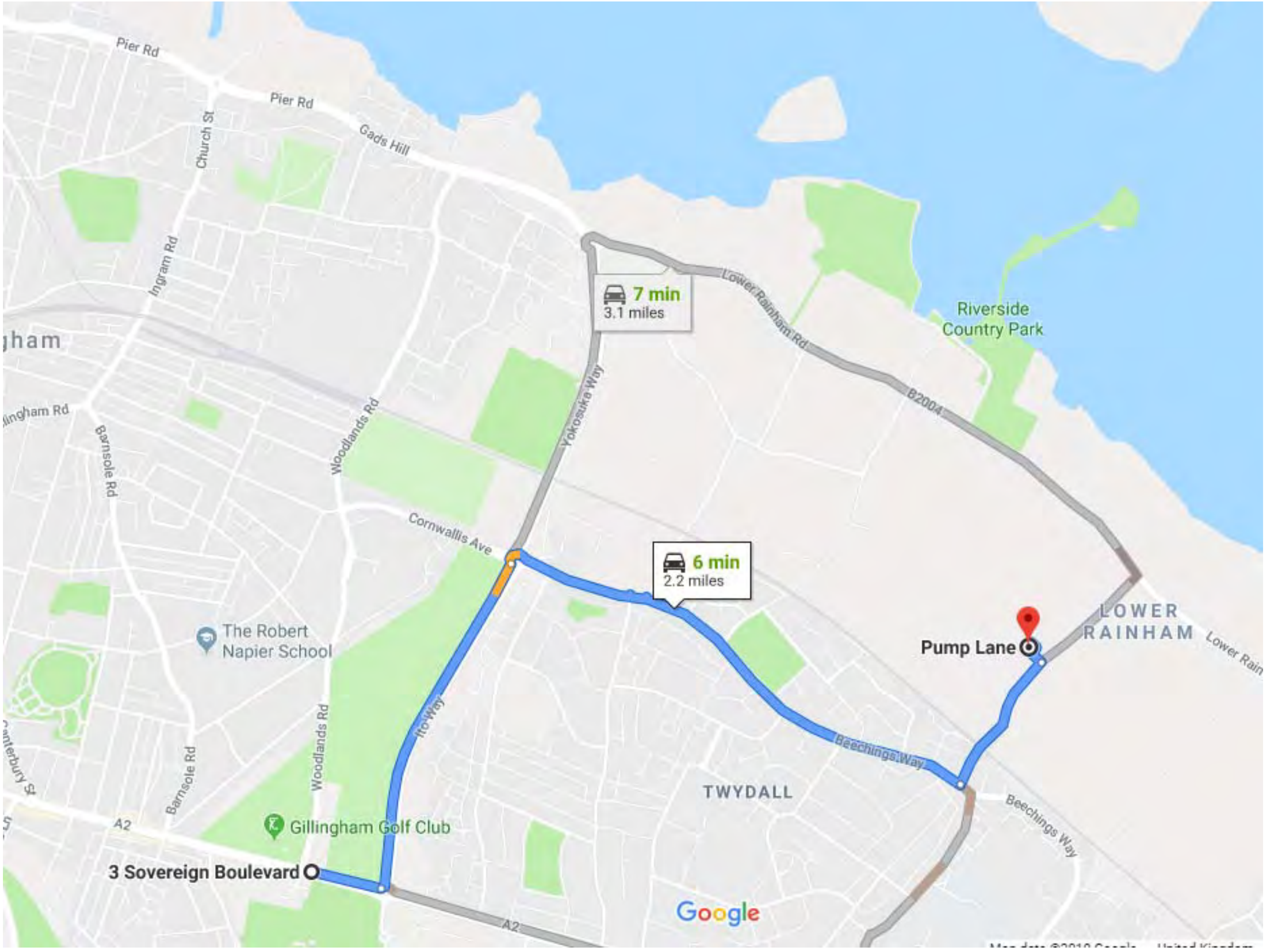
12.1 The Council have raised concern in respect of Lower Rainham Road and congestion through the signal controlled shuttle working section to the east of the Pump Lane junction.

12.2 The location of the accesses and draw of traffic to the wider network mean the majority of which will be to/from the west and south of the site and therefore very little additional traffic will route through this junction. The total traffic generation is set out in Appendix J of the TA and included in **Appendix G** of this note. This shows a total of 15 and 21 trips will use this link in the AM and PM peak periods respectively. This equates to one additional vehicle every 3 minutes and therefore the impact on the junction will be negligible.

13.0 Local Assignment

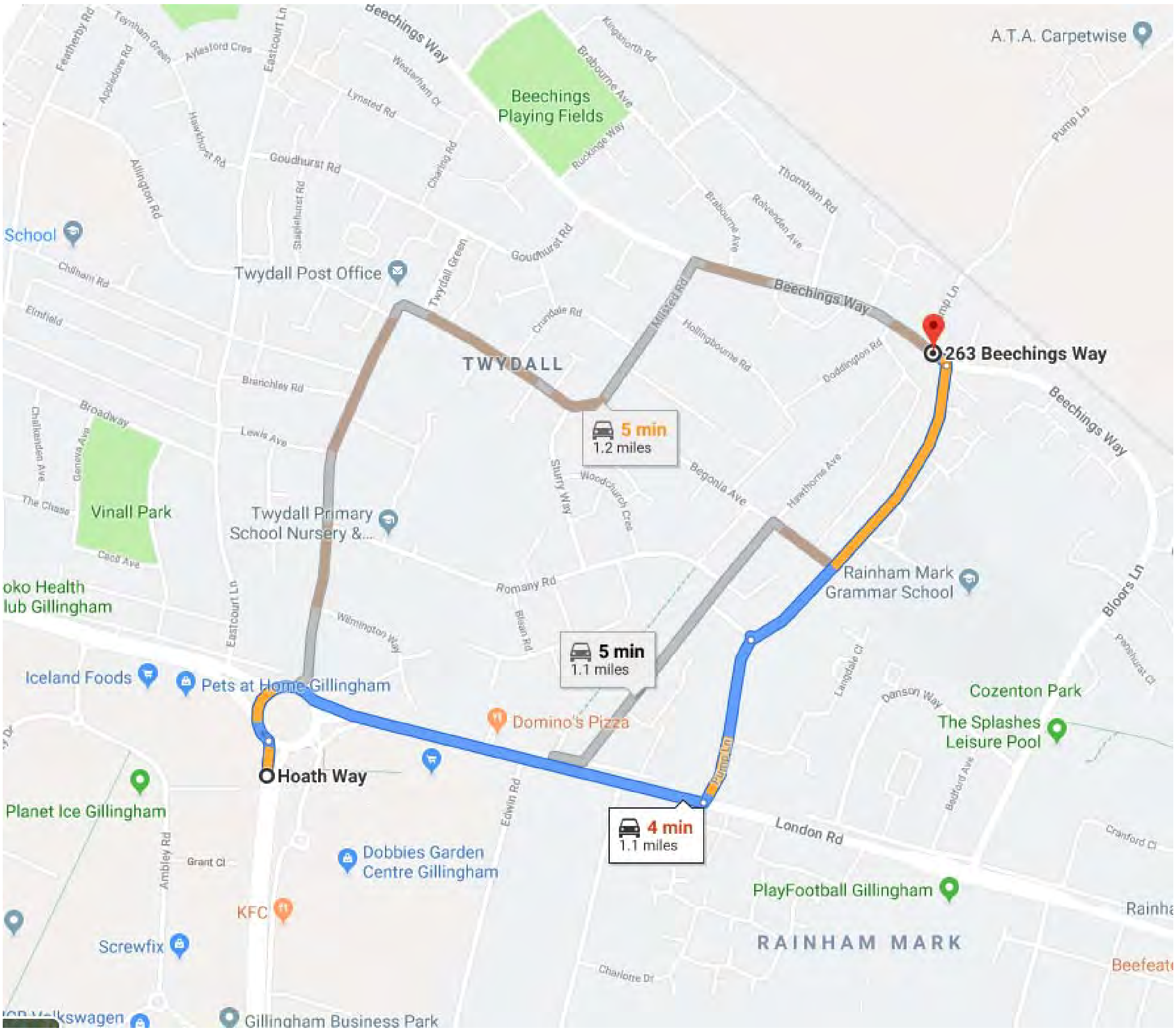
13.1 The Council requested further clarification on the local assignment of trips from Beechings Way to the wider network on Hoath Way and A2 west of Ito Way. All trips to /from A2 west of Ito Way are assigned to route 50/50 via Lower Rainham Road and Beechings Way with traffic from both routes continuing south on Ito Way. This is shown in Appendix J of the TA and set out in **Image 1.**

Image 1 – Routes to A2 West



13.2 There are also several routes to reach Hoath Way from Beechings Way and as such a 50/50 split of traffic via Twydall Lane and Pump Lane has been applied. The routes both have a similar distance and travel time and therefore it is appropriate to provide a split of traffic to each. The journey times are set out in **Image 2**.

Image 2 – Routes to Hoath Way



14.0 Public Transport Letter

14.1 Initial discussions have been undertaken with Arriva potentially extending the existing services or bringing services into the site. A letter of support is included in **Appendix M**.

Appendix A

Development Proposals

This revised application for the land seeks for the permission for the following scale of development:

- Up to 1250 new homes
- 60 Bed extra care facility
- 80 Bed care home
- Land for a new 2 form entry primary school
- A local centre incorporating retail and community facilities

The site is located to the north of Rainham and east of the Yokoskua Way and is divided into two main parcels situated both sides of Pump Lane.

Accessibility

The existing pedestrian and cycling provisions in the vicinity of the site is limited due to the nature of the existing land use and current demand and need for pedestrian and cyclist connections to agricultural farm land.

A Non-Motorised User (NMU) audit should be undertaken by the applicant to establish suitable walking and cycling routes from the site to key facilities.

This should include routes to the nearest secondary schools. The NMU audit should also consider routes by external pupils travelling to the proposed on-site 2FE primary school. The applicant should contact Medway Councils Education department to establish where the catchment area for the school is forecast to be.

The proposed development is not considered to be easily accessible by public transport based on the proposals submitted within the Transport Assessment. The nearest bus stop is circa 10-minute walk from the commercial element of the site. The majority of the residential areas of the site are at least 15 minutes from bus stops with regular services. Existing bus services based on their current routeing are not considered to be agreeable without further assessment work.

The nearest railway station is Rainham and is approx 2.5km from the centre of the application site. The rail station provides services to London Waterloo to the east and Dover to the west. The station provides cycle and car parking, 64 and 233 spaces respectively, however no assessment has been provided to whether there is any spare capacity to accommodate any additional demand from the development. The applicant has suggested that rail could be used as a multi-modal journey with cycling. The applicant should provide more information on a suitable cycle route/improvements from the site to the rail station and may need to provide additional cycle parking for the highway authority to consider this as a realistic travel choice. This should be covered within the NMU audit.

Baseline Conditions

The applicant has undertaken ATC surveys to obtain the baseline conditions on the local road network. The surveys collected data over a 7 day period from the 4th September 2019 to the 10th September 2019.

The applicant has stated that the ATC surveys identified peak hours of 08:00 – 09:00 and 17:00 – 18:00. It is noted however that traffic spikes occur around 11am.

Regarding Manuel Classified Counts, the applicant undertook assessments at the following junctions,

- A289/lower Rainham Road/Yoksouka Way
- Yokosuka Way/Beechings Way/Ito/Conrwallis Avenue
- Bloors Lane/ A2 london Road/ Playfootball Gillingham
- Bedchings Way/Pump Lane
- Pump Lane/ Beechings Way
- Lower Rainham Road/ Pump Lane
- Pump Lane/A2 London Road
- A2/ Will Adams/ITO Way
- A2/Sovereign Boulevard/Hoath Way/Twydall Lane/ Courteney Road

For clarity, a map should be provided outlining the location of the ATC and the locations of the junction assessments

PIA

The applicant has included five years of recorded Personal Injury Accident data from June 2013 to May 2018 and this is considered acceptable to the Highway Authority, however the survey area is too narrow and due to the large scale nature of the development would need to cover the routes connecting to the main carriageways i.e A2 and Ito Way.

Trip Generation

The applicant has calculated trip using TRICS online database with a person trip rate for the residential and employment elements of this application. The highway authority is satisfied that these trip rates for the residential units are robust, however the trips for the commercial or care home facilities and the methodology to calculate the level of trips on the external highway is not agreed.

<u>Residential</u>

The applicant has outlined that some trips would be internalised between the different land uses on the site and would not route via the external highway network. For example, children living in the residential component of the development would attend the on-site primary school, and residents would use the on-site commercial units for shopping and leisure. However given that the commercial units are generic (i.e no class has been provided) it is not considered that the level of reduction is acceptable.

Care Home

Concerns would be raised to the outputs selected, it is not considered that the application is on the edge of a town centre location or suburban area and therefore the assessment needs to be redone.

Education

This application proposes a 2FE school site, meaning external education trips will occur as set out in the Transport Assessment. TRICS has been used to establish a trip rate for the generation of trips from outside of the site to the school. The applicants have identified that 41% of these children would be driven, however this figure is considered too low given the location of the site to the existing residential areas. The proposed vehicle trip generation for the schools is therefore not agreed at this stage.

Commercial

Additionally, the Transport Assessment does not include any trip generation for the proposed commercial area, it is noted that within the TA, no indication to the class use has been provided. Further information should be provided by the applicant and evidence why all trips associated with these land uses will be internal or pass by trips to the site. It is noted that these land uses could range from independent take-aways/restaurants to large national companies which could contribute to external vehicular trips.

Trip Assignment

The distribution of residential and employment trips generated by the proposed development has been forecast using Census 2011 Location of Usual Residence and Place of Work data and has used the Middle Super Output Area (MSOA) Medway 018. Vehicular trips were then assigned to the various routes connecting the site to the identified workplace destinations. Assignment was based on the most likely or direct route.

The highway authority does not agree that the methodology used to calculate the internal trips as well as the trips resulting from the education use. The applicant should contact Medway's Council's Education department to establish the likely catchment area for the proposed 2FE primary and update trip rates travelling by car accordingly.

Future Year Scenario

The applicant has suggested that a future year scenario of 2029 will be used due to the scale and build out time of the development. The Highway Authority is not satisfied that a future year scenario of 2029 will capture the full impact of the proposals.

TEMPRO, an industry standard software tool, has been used to forecast the increase in the baseline vehicular trips on the local road network and the MSOA Medway 018 has been used. The below growth factors have been derived.

2018-2029 AM Peak	
2018-2029 PM Peak	

Waiting to review these rates

The applicant should provide commentary on Medways Council's Draft Local Plan 2035 which proposes a considerable development within the Medway Towns. Confirmation is therefore required that this and any other relevant emerging allocation is appropriately accounted for within the TEMPRO growth factors or propose alternative methods for how these emerging allocations are suitably accounted for and tested within the TA.

Committed Development
The applicant has included the following committed development traffic;

- Site 1 – Land at Station Road, Rainham, Kent ME8 7QZ – 90 Units. (Allowed)
- Site 3 – Land North of Moor Street, Rainham – 190 Units. (Refused, but identified in the Council's supply in SLAA)
- Site 4 – Land At Otterham Quay Lane Rainham Kent – 300 Units. (Approved)
- Site 6 – Berengrave Nursery, Berengrave Lane, Rainham, Gillingham ME8 7NL – 121 Units. (Approved)
- Site C - Land South Of Lower Rainham Road Rainham Gillingham Medway ME8 7UD – 202 Units. (Currently Live)

The applicant has mentioned TEMPRO has taken into account existing developments as outlined above and therefore does not need to provide a further up lift. The highway authority is not satisfied that this is the case and the applicant should provide a separate assessment with committed development and the proposed development.

Further developments the applicant need to take into account are

MC/18/3160 - Land off Lower Rainham Road (Approved)

Junction Assessment

The junctions were assessed against a number of scenarios which include:
- 2018 Surveyed base
- 2029 Surveyed base
- 2029 Base + Committed Developments; and Proposed Development

As set out in the committed development section, an additional scenario should be include
- 2029 Base + Committed Developments

The following junctions were assessed

- Site 1: A289/Lower Rainham Road/ Yokosuka Way (4-arm roundabout) –
- Site 2: Yokosuka Way/ Beechings Way/ Ito Way/ Cornwallis Avenue (4-arm roundabout) –
- Site 3: Bloors Lane/ A2 London Road/ Playfootball Gillingham (4-way cross roads) –
- Site 4: Beechings Way/ Pump Lane (3-arm roundabout) –
- Site 5: Pump Lane/ Beechings Way (T-junction) –
- Site 6: Lower Rainham Road/ Pump Lane (T-junction) –
- Site 7: Pump Lane/ A2 London Road (T-junction) –
- Site 8: A2/ Will Adams Way/ Ito Way (4-arm roundabout) –
- Site 9: A2/ Sovereign Boulevard/ Hoath Way/ Twydall Lane/ Courteney Road (5-arm signalised roundabout)

The junction modelling cannot be assessed by the Highway Authority until the vehicle trip generation and distribution for the site has been agreed. However it is noted that further junctions that need to be included are

Three Mariners Signalise shuttle corridor
Pump Lane/Lower Rainham Road (T Junction)
Eastcourt Lane/Lower Rainham Road (T Junction)
Lower Featherby Road/Lower Rainham Road (T Junction)
Hoath Way (RBT)
Berengrave Lane/Lower Rainham Road (RBT)
Station Road/ Lower Rainham Road (RBT)
Otterham Quay Lane/A2 (Junction)

Whilst it is noted that no assessment on the Strategic Road network has been done, this matter will be covered by Highways England.

Medway Own Modelling assessment (AIRSUM) to be added when available

Proposed Vehicular Accesses

Drawing 20230-05-02 shows an overview of the proposed vehicular access to the site from Lower Rainham Road with drawing 20230-05-Rev A demonstrating the proposed Pump Lane Railway Bridge Improvements to form the secondary access point.

Drawing 20230-05-02 shows a new priority junction onto Lower Rainham Road. Speed surveys have been undertaken in the vicinity of the access with 85th%ile speeds recorded as 35.1mph, Therefore appears the visibility splays would be acceptable. It is noted that it would be beneficial to move the 30mph further eastwards to reduce speeds near the access point.

Drawing 20230-05-Rev A - A shuttle working scheme through the bridge which would provide a 2.5m wide combined footway/ cycleway and a 3m wide running carriageway

An independent Stage One Road Safety Audit should be provided for the proposed highway works.

The Highway Authority would require the applicant to commit to providing additional traffic calming measures as required to ensure that speeds are in accordance with the revised speed limit proposals. This could be covered by condition.

It is noted that application only provides details with regards to the access of Lower Rainham Road and not access arrangements along Pump Lane. These will need to provided as this is not a matter that is reserved.

Bus Service Improvements

The applicant has proposed sustainable transport mitigation by way of providing an extended provisions

a) Extend the existing 191 to and through the site. This would provide a 20 minute service to serve to supplement the 191.

b) Consider connections between 191 and 182 to provide inter-working and potentially a clockwise and anti-clockwise combined service running through the site.

c) Diversions to Nos 120 / 121 to route through the site and provide a connection to Rainham High Street and Station.

Should the bus service providers be open to this, a patronage test should be provided by the applicant to ensure that the bus service would be self-sufficient without the need for bus subsidy from Medway Council.

The internal layout will need to reflect the above aspiration, however this will be dealt with during the reserved matters stage if granted approval.

Travel Plan

This Framework Travel Plan (FTP) has been assessed. Whilst the quality of this FTP is generally good, it still requires some amendments before it can be approved.

<u>Background</u>

A policy section should be added to the FTP which includes summaries of relevant national and local policy including, but not limited to: the National Planning Policy Framework (2018), Medway's Car parking Standards and Manual for Streets 2.

<u>Consultation and Partnerships</u>

The FTP should contain evidence of preliminary liaisons with local cycle shops and public transport operators to scope the possibility of arranging for discounts on equipment and services respectively. These communications can then form the basis for further negotiations between these companies and the Site-Wide Travel Plan Manager (SWTPM).

Site Audit

The travel plan has not provided any isotopes diagrams to demonstrate walking/cycling destinations within the vicinity, these should be provided to allow potential targets improvements to be provided.

Targets

The table of targets needs amending to provide clarification on what the objectives. A table of targets should be included in section 5 under "Indicative Targets"; please see the example table below. A percentage decrease or increase should be given to each travel mode. The baseline for these targets can be arrived at by using the MSOA data from the 2011 census or existing survey results for similar developments in the area.

	1st Year (Baseline)	3rd Year	5th Year
Car Driver Car Passenger			
Bus			
Train			
Foot			
Cycle			
Powered Two-Wheeler (PTW)			

Table 1 - Example table for displaying modal split targets

An explanation of how these targets have been developed should be included as well.

Measures

It is noted that the travel plan provides no financial incentives for residents to change their mode of transport. The price and nature of the voucher will be agreed via a Section 106 Agreement. However, we would anticipate that a cost estimate is included in the FTP; residential travel vouchers are typically estimated to cost around £50 per household and have an uptake rate of around 50%.

There are a number of additional measures for the residential portion of the development which should be considered for inclusion in the FTP:

- Promotion of free health/exercise apps for mobile phone,
- Formation of a Bicycle Users Group (BUG),
- Use of social media to promote the Travel Plan and disseminate sustainable travel information.

There are also a number of additional measures for the employment portions of the development which should be considered for inclusion in the FTP:

- Showers and lockers on site,

- Umbrella loan schemes for pedestrians,
- Including the FTP as an item on team meeting agendas,
- Use of social media to promote the Travel Plan and disseminate sustainable travel information.

An action plan should be included in the appendix which details each measure to be conducted as part of the site-wide Travel Plan (including resources to be allocated to the SWTPM role). The action plan should be similar in layout to the example table below.

Objective	Action	Start Date	Due Date	Responsibility	Mode affected	Cost Estimate

Table 2 - Example Action Plan

Monitoring

Monitoring should continue for a minimum of 5 years after full occupation; section 10 should be updated to include this commitment. Section 6 should also commit the monitoring reports to contain a summary of measures enacted over the previous year, and the resources expended on the Travel Plan over the same period.

A minimum 35% response rate must be attained in order for travel questionnaire surveys to be considered statistically significant. If this cannot be achieved, then discussions should be had with Integrated Transport regarding carrying out TRICS SAM or ATC surveys.

There are currently no measures in place to encourage members of staff or residents to complete a questionnaire survey. Entry into a prize draw could be offered to those who complete a survey, although it should be noted that the prize should not be travel-related (e.g., bus tickets, cycle vouchers, etc). Businesses could mandate that staff complete the survey, rather than offer entry into a prize draw.

A sample questionnaire survey should be provided in the appendices. An example residential questionnaire survey has been attached which could also be adapted to serve a commercial site.

Delivery and Enforcement

There should be a reference in the document to a means for enforcing the FTP. Typically, this is accomplished through a Section 106 agreement. Sanctions should be in place in the event of non-compliance with the terms of the FTP.

Others Matters

No reference within the travel plan has been provided with regards to the primary school or commercial aspect of the proposal. There should be a commitment for the School Travel Plan Champion to liaise with Medways school travel plan team.

Conclusion

The FTP will require further amendments as set out above before it can be considered acceptable for submission in conjunction with the proposed site.

Recommendation

Additional information is required in order to fully assess the impact of the proposed development. This information should address the following matters as set out in detail within our response:

- Trip distribution
- NMU Audit
- Trip generation
- PIA study area and further commentary
- Access arrangements Pump Lane
- Background traffic growth (TEMPRO)
- Sensitivity testing taking into consideration emerging local plans
- Updated junction assessment
- Road Safety Audit Stage 1
- Further information for improved bus services
- Updates to the Framework Travel Plan

If the Planning Authority are minded to determine this application prior to the submission of the requested additional information please contact the highway authority for my recommendation.

It should be noted that even with the above information provided, serious concerns would be raised regarding the level of vehicles on the local network with may not be able to be overcome.

Appendix B

Calculation Reference: AUDIT-623801-190913-0941

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 05 - HEALTH
Category : F - CARE HOME (ELDERLY RESIDENTIAL)

VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	HC	HAMPSHIRE	1 days
04	EAST ANGLIA		
	SF	SUFFOLK	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	1 days
08	NORTH WEST		
	GM	GREATER MANCHESTER	1 days
	LC	LANCASHIRE	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of residents
Actual Range: 17 to 42 (units:)
Range Selected by User: 17 to 180 (units:)

Parking Spaces Range: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/11 to 02/05/19

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	1 days
Tuesday	2 days
Wednesday	1 days
Friday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Edge of Town	5

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	4
No Sub Category	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

C2	5 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

1,000 or Less	1 days
5,001 to 10,000	1 days
10,001 to 15,000	1 days
15,001 to 20,000	1 days
25,001 to 50,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

25,001 to 50,000	1 days
125,001 to 250,000	2 days
250,001 to 500,000	2 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	4 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	5 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	5 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 GM-05-F-03 NURSING HOME GREATER MANCHESTER
HALIFAX ROAD
ROCHDALE

Edge of Town
Residential Zone
Total Number of residents: 30
Survey date: WEDNESDAY 29/05/13 Survey Type: MANUAL

2 HC-05-F-01 CARE HOME HAMPSHIRE
BOTLEY ROAD
SOUTHAMPTON

Edge of Town
No Sub Category
Total Number of residents: 42
Survey date: TUESDAY 24/11/15 Survey Type: MANUAL

3 LC-05-F-02 NURSING HOME LANCASHIRE
LYTHAM ROAD
BLACKPOOL
SQUIRES GATE
Edge of Town
Residential Zone
Total Number of residents: 31
Survey date: TUESDAY 27/09/16 Survey Type: MANUAL

4 NY-05-F-05 NURSING HOME NORTH YORKSHIRE
SEAGRIM CRESCENT
RICHMOND

Edge of Town
Residential Zone
Total Number of residents: 37
Survey date: MONDAY 04/03/19 Survey Type: MANUAL

5 SF-05-F-01 CARE HOME SUFFOLK
COLCHESTER ROAD
IPSWICH

Edge of Town
Residential Zone
Total Number of residents: 17
Survey date: FRIDAY 18/09/15 Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 05 - HEALTH/F - CARE HOME (ELDERLY RESIDENTIAL)
VEHICLES
Calculation factor: 1 RESIDE
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	31	0.108	5	31	0.045	5	31	0.153
08:00 - 09:00	5	31	0.038	5	31	0.032	5	31	0.070
09:00 - 10:00	5	31	0.089	5	31	0.045	5	31	0.134
10:00 - 11:00	5	31	0.108	5	31	0.064	5	31	0.172
11:00 - 12:00	5	31	0.083	5	31	0.115	5	31	0.198
12:00 - 13:00	5	31	0.096	5	31	0.115	5	31	0.211
13:00 - 14:00	5	31	**0.146**	5	31	0.070	5	31	0.216
14:00 - 15:00	5	31	0.134	5	31	**0.204**	5	31	**0.338**
15:00 - 16:00	5	31	0.140	5	31	0.197	5	31	0.337
16:00 - 17:00	5	31	0.064	5	31	0.140	5	31	0.204
17:00 - 18:00	5	31	0.038	5	31	0.051	5	31	0.089
18:00 - 19:00	5	31	0.051	5	31	0.038	5	31	0.089
19:00 - 20:00	5	31	0.025	5	31	0.038	5	31	0.063
20:00 - 21:00	5	31	0.076	5	31	0.064	5	31	0.140
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.196			1.218			2.414

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	17 - 42 (units:)
Survey date date range:	01/01/11 - 02/05/19
Number of weekdays (Monday-Friday):	5
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 05 - HEALTH/F - CARE HOME (ELDERLY RESIDENTIAL)
TAXIS
Calculation factor: 1 RESIDE
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	31	0.000	5	31	0.000	5	31	0.000
08:00 - 09:00	5	31	0.000	5	31	0.000	5	31	0.000
09:00 - 10:00	5	31	0.000	5	31	0.000	5	31	0.000
10:00 - 11:00	5	31	0.006	5	31	0.000	5	31	0.006
11:00 - 12:00	5	31	0.006	5	31	**0.013**	5	31	0.019
12:00 - 13:00	5	31	0.000	5	31	0.000	5	31	0.000
13:00 - 14:00	5	31	0.000	5	31	0.000	5	31	0.000
14:00 - 15:00	5	31	**0.013**	5	31	0.013	5	31	**0.026**
15:00 - 16:00	5	31	0.006	5	31	0.006	5	31	0.012
16:00 - 17:00	5	31	0.013	5	31	0.013	5	31	0.026
17:00 - 18:00	5	31	0.000	5	31	0.000	5	31	0.000
18:00 - 19:00	5	31	0.000	5	31	0.000	5	31	0.000
19:00 - 20:00	5	31	0.000	5	31	0.000	5	31	0.000
20:00 - 21:00	5	31	0.000	5	31	0.000	5	31	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.044			0.045			0.089

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 05 - HEALTH/F - CARE HOME (ELDERLY RESIDENTIAL)
OGVS
Calculation factor: 1 RESIDE
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	31	0.006	5	31	0.000	5	31	0.006
08:00 - 09:00	5	31	0.000	5	31	0.006	5	31	0.006
09:00 - 10:00	5	31	0.000	5	31	0.000	5	31	0.000
10:00 - 11:00	5	31	0.000	5	31	0.000	5	31	0.000
11:00 - 12:00	5	31	0.006	5	31	0.006	5	31	0.012
12:00 - 13:00	5	31	0.006	5	31	0.006	5	31	0.012
13:00 - 14:00	5	31	0.000	5	31	0.000	5	31	0.000
14:00 - 15:00	5	31	0.000	5	31	0.000	5	31	0.000
15:00 - 16:00	5	31	0.006	5	31	0.006	5	31	0.012
16:00 - 17:00	5	31	0.000	5	31	0.000	5	31	0.000
17:00 - 18:00	5	31	0.000	5	31	0.000	5	31	0.000
18:00 - 19:00	5	31	0.000	5	31	0.000	5	31	0.000
19:00 - 20:00	5	31	0.000	5	31	0.000	5	31	0.000
20:00 - 21:00	5	31	0.000	5	31	0.000	5	31	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.024			0.024			0.048

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 05 - HEALTH/F - CARE HOME (ELDERLY RESIDENTIAL)
PSVS
Calculation factor: 1 RESIDE
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	31	0.000	5	31	0.000	5	31	0.000
08:00 - 09:00	**5**	**31**	**0.006**	**5**	**31**	**0.006**	**5**	**31**	**0.012**
09:00 - 10:00	5	31	0.000	5	31	0.000	5	31	0.000
10:00 - 11:00	5	31	0.000	5	31	0.000	5	31	0.000
11:00 - 12:00	5	31	0.000	5	31	0.000	5	31	0.000
12:00 - 13:00	5	31	0.006	5	31	0.000	5	31	0.006
13:00 - 14:00	5	31	0.000	5	31	0.006	5	31	0.006
14:00 - 15:00	5	31	0.000	5	31	0.000	5	31	0.000
15:00 - 16:00	5	31	0.000	5	31	0.000	5	31	0.000
16:00 - 17:00	5	31	0.000	5	31	0.000	5	31	0.000
17:00 - 18:00	5	31	0.000	5	31	0.000	5	31	0.000
18:00 - 19:00	5	31	0.000	5	31	0.000	5	31	0.000
19:00 - 20:00	5	31	0.000	5	31	0.000	5	31	0.000
20:00 - 21:00	5	31	0.000	5	31	0.000	5	31	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.012			0.012			0.024

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 05 - HEALTH/F - CARE HOME (ELDERLY RESIDENTIAL)
CYCLISTS
Calculation factor: 1 RESIDE
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	31	0.000	5	31	0.006	5	31	0.006
08:00 - 09:00	5	31	0.000	5	31	0.000	5	31	0.000
09:00 - 10:00	5	31	0.000	5	31	0.000	5	31	0.000
10:00 - 11:00	5	31	0.000	5	31	0.000	5	31	0.000
11:00 - 12:00	5	31	0.000	5	31	0.000	5	31	0.000
12:00 - 13:00	5	31	0.000	5	31	0.000	5	31	0.000
13:00 - 14:00	5	31	0.000	5	31	0.000	5	31	0.000
14:00 - 15:00	5	31	0.000	5	31	0.000	5	31	0.000
15:00 - 16:00	5	31	0.006	5	31	0.006	5	31	0.012
16:00 - 17:00	5	31	0.000	5	31	0.000	5	31	0.000
17:00 - 18:00	5	31	0.000	5	31	0.006	5	31	0.006
18:00 - 19:00	5	31	0.000	5	31	0.000	5	31	0.000
19:00 - 20:00	5	31	0.000	5	31	0.000	5	31	0.000
20:00 - 21:00	5	31	0.000	5	31	0.000	5	31	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.006			0.018			0.024

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 05 - HEALTH/F - CARE HOME (ELDERLY RESIDENTIAL)
CARS
Calculation factor: 1 RESIDE
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	31	0.064	5	31	0.025	5	31	0.089
08:00 - 09:00	5	31	0.025	5	31	0.013	5	31	0.038
09:00 - 10:00	5	31	0.064	5	31	0.025	5	31	0.089
10:00 - 11:00	5	31	0.064	5	31	0.045	5	31	0.109
11:00 - 12:00	5	31	0.057	5	31	0.064	5	31	0.121
12:00 - 13:00	5	31	0.076	5	31	0.096	5	31	0.172
13:00 - 14:00	5	31	**0.102**	5	31	0.038	5	31	0.140
14:00 - 15:00	5	31	0.076	5	31	**0.140**	5	31	0.216
15:00 - 16:00	5	31	0.096	5	31	0.134	5	31	**0.230**
16:00 - 17:00	5	31	0.045	5	31	0.121	5	31	0.166
17:00 - 18:00	5	31	0.038	5	31	0.045	5	31	0.083
18:00 - 19:00	5	31	0.032	5	31	0.025	5	31	0.057
19:00 - 20:00	5	31	0.025	5	31	0.038	5	31	0.063
20:00 - 21:00	5	31	0.064	5	31	0.045	5	31	0.109
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.828			0.854			1.682

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 05 - HEALTH/F - CARE HOME (ELDERLY RESIDENTIAL)
LGVS
Calculation factor: 1 RESIDE
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	31	0.006	5	31	0.000	5	31	0.006
08:00 - 09:00	5	31	0.000	5	31	0.000	5	31	0.000
09:00 - 10:00	5	31	0.019	5	31	0.019	5	31	0.038
10:00 - 11:00	5	31	0.013	5	31	0.013	5	31	0.026
11:00 - 12:00	5	31	0.013	5	31	0.006	5	31	0.019
12:00 - 13:00	5	31	0.006	5	31	0.006	5	31	0.012
13:00 - 14:00	5	31	**0.032**	5	31	0.019	5	31	0.051
14:00 - 15:00	5	31	0.019	5	31	0.019	5	31	0.038
15:00 - 16:00	5	31	0.025	5	31	**0.032**	5	31	**0.057**
16:00 - 17:00	5	31	0.006	5	31	0.006	5	31	0.012
17:00 - 18:00	5	31	0.000	5	31	0.006	5	31	0.006
18:00 - 19:00	5	31	0.019	5	31	0.006	5	31	0.025
19:00 - 20:00	5	31	0.000	5	31	0.000	5	31	0.000
20:00 - 21:00	5	31	0.000	5	31	0.006	5	31	0.006
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.158			0.138			0.296

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

dta

Appendix C

Jacqueline Aggiss

From: clarke, paul <paul.clarke@medway.gov.uk>
Sent: 18 September 2019 12:40
To: Jacqueline Aggiss
Subject: RE: Pump Farm, Lower Rainham - Education assumptions

Dear Jacqueline,

In response to your email below; Whilst I totally understand your rationale for the findings, here are a few thoughts;

We usually work to 775 dwellings for 1FE rather than 750. Not a huge difference but will reduce the number of external draw in your calculations.

Medway does not operate formal catchment areas and all parents are able to state a preference for any school they choose. However, with primary schools the distance parents are prepared to travel is less than secondary. We would usually not expect parents to choose a school more than 2 miles from their home, so perhaps using a radius may assist.

The other consideration is how the school will open, will it be all year groups which is very difficult to plan for as we will not know how many and how old children will be when they move into the development, or will it be from reception upwards, the usual and easier way of doing it…that will produce some unhappy parents of slightly older children. That route would mean a gradual filling of the school so a build of traffic patterns over time.

Also, until it happens we won't know how many of the families moving in are from Medway and may choose to keep their children at the current schools rather than moving to the new school, which will create more spaces for external children.

42 is quite low for the staff number , I would have thought 50 more realistic, but again over time starting from a small number and increasing as the school fills.

Hope this helps,

Happy to discuss

Kind regards

Paul

Paul Clarke
Programme Lead
School Organisation and Capital Services
Medway Council
Gun Wharf
Dock Road
Chatham
ME4 4TR

01634 331031
Paul.clarke@medway.gov.uk

From: Jacqueline Aggiss <JA@dtatransportation.co.uk>
Sent: 18 September 2019 11:41
To: clarke, paul <paul.clarke@medway.gov.uk>
Subject: RE: Pump Farm, Lower Rainham - Education assumptions

Hi Paul,

Please find attached the TA.

Please confirm safe receipt. Thanks.

Regards,

Jacqueline Aggiss
David Tucker Associates
Transport Planning Consultants

Forester House, Doctors Lane, Henley in Arden, Warwickshire B95 5AW
Tel: +44(0)1564 793598
Fax: +44(0)1564 793983
http://www.dtatransportation.co.uk

From: clarke, paul [mailto:paul.clarke@medway.gov.uk]
Sent: 18 September 2019 11:07
To: Jacqueline Aggiss <JA@dtatransportation.co.uk>
Subject: RE: Pump Farm, Lower Rainham - Education assumptions

Hi Jacqueline,

Should be.

Give it a try.

Thanks

Paul

Paul Clarke
Programme Lead
School Organisation and Capital Services
Medway Council
Gun Wharf
Dock Road
Chatham
ME4 4TR

01634 331031

Paul.clarke@medway.gov.uk

From: Jacqueline Aggiss <JA@dtatransportation.co.uk>
Sent: 18 September 2019 10:40
To: clarke, paul <paul.clarke@medway.gov.uk>
Subject: RE: Pump Farm, Lower Rainham - Education assumptions

Hi Paul,

The report is around 17mb – are you able to receive it by email?

Regards,

Jacqueline Aggiss
David Tucker Associates
Transport Planning Consultants

Forester House, Doctors Lane, Henley in Arden, Warwickshire B95 5AW
Tel: +44(0)1564 793598
Fax: +44(0)1564 793983
http://www.dtatransportation.co.uk

From: clarke, paul [mailto:paul.clarke@medway.gov.uk]
Sent: 16 September 2019 11:41
To: Jacqueline Aggiss <JA@dtatransportation.co.uk>
Subject: RE: Pump Farm, Lower Rainham - Education assumptions

Dear Jacqueline,

Unfortunately, our system does not allow access to the dropbox link. Is there another way it can be sent please?

Thanks

Paul

Paul Clarke
Programme Lead
School Organisation and Capital Services
Medway Council
Gun Wharf
Dock Road
Chatham
ME4 4TR

01634 331031
Paul.clarke@medway.gov.uk

From: Jacqueline Aggiss <JA@dtatransportation.co.uk>
Sent: 13 September 2019 11:19

To: clarke, paul <paul.clarke@medway.gov.uk>
Cc: Simon Tucker <sjt@dtatransportation.co.uk>; neave, robert <robert.neave@medway.gov.uk>
Subject: Pump Farm, Lower Rainham - Education assumptions

Dear Paul,

I have been provided your details by Robert Neave in Highways. We prepared the Transport Assessment for the proposed development at Pump Farm, Lower Rainham and are working through comments from the LHA. The proposals are for 1250 dwellings with a 2FE primary school on site.

It is requested that we contacted the education department to establish where the catchment area for the proposed school is forecast to be. I attach a copy of our report in the link below which sets out the assumptions for education related trips at section 5.5 which are based on NTS data and similar sites elsewhere.

https://www.dropbox.com/s/61p14ipgz1pdgi2/20230-03_Final%20TA_R%20%28280519%29.pdf?dl=0

We've assumed that all primary school education related trips will be internal, however we've made assumptions on the number of pupil places for a 2FE primary school which will result in an external draw of 70 pupils. The assumptions are set out in paragraph 5.6 of our report and based on information at similar sites elsewhere. The NTS data shows that 41% of education trips are made by car. The LHA have stated this seems too low given the location of the site to the existing residential areas. Given the majority of all primary school trips will be internal this would only apply to a small proportion of trips relating to external draw.

We've assumed 42 staff are needed per day for a 2FE primary school, of which 50% could be arriving off-site.

I'd be grateful for your review and any comments you may have in relation to primary school education trips.

Regards,

Jacqueline Aggiss
David Tucker Associates
Transport Planning Consultants

dta

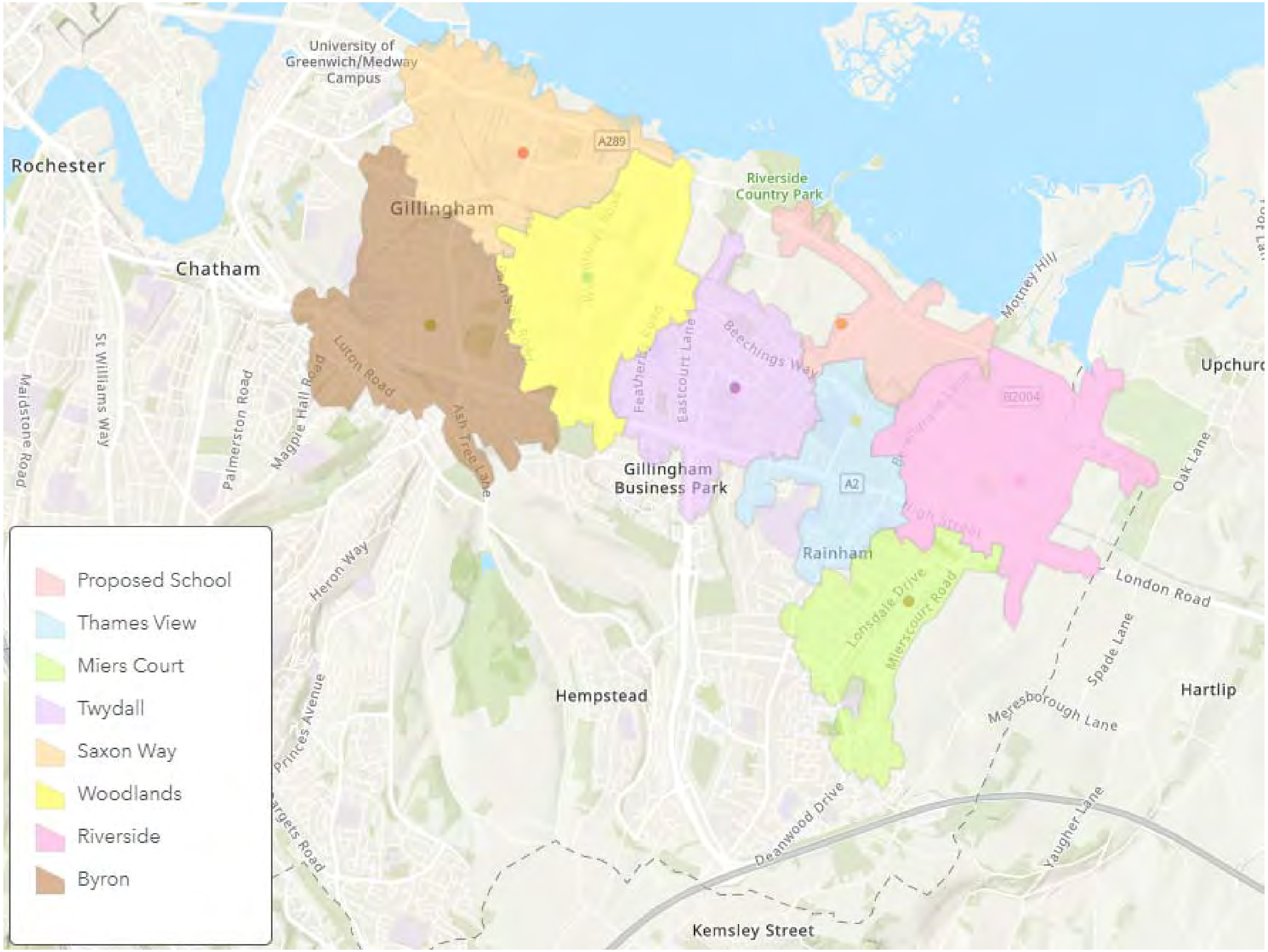
Forester House, Doctors Lane, Henley in Arden, Warwickshire B95 5AW
Tel: +44(0)1564 793598
Fax: +44(0)1564 793983
http://www.dtatransportation.co.uk

This transmission is intended for the named addressee (s) only and may contain sensitive or protectively marked material up to RESTRICTED and should be handled accordingly. Unless you are the named addressee (or authorised to receive it for the addressee) you may not copy or use it, or disclose it to anyone else. If you have received this transmission in error please notify the sender immediately.

This email has been scanned for viruses and all reasonable precautions have been taken to ensure that none are present. Medway Council cannot accept responsibility for any loss or damage arising from the use of his email or attachments. Any views expressed in this email are those of the individual sender and not necessarily those of Medway Council unless explicitly stated.

Please be aware that emails sent to or received from Medway Council may be subject to recording and/or monitoring in accordance with relevant legislation.

Appendix D



1.6km walking catchment from existing and proposed primary schools

Appendix E

Calculation Reference: AUDIT-623801-191007-1055

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
Category : I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL VEHICLES

<u>Selected regions and areas:</u>

05	EAST MIDLANDS		
	LE	LEICESTERSHIRE	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
08	NORTH WEST		
	CH	CHESHIRE	2 days
09	NORTH		
	TV	TEES VALLEY	2 days
	TW	TYNE & WEAR	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area
Actual Range: 260 to 1840 (units: sqm)
Range Selected by User: 240 to 1890 (units: sqm)

Parking Spaces Range: All Surveys Included

<u>Public Transport Provision:</u>
Selection by: Include all surveys

Date Range: 01/01/11 to 28/10/14

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

<u>Selected survey days:</u>

Monday	1 days
Tuesday	2 days
Wednesday	1 days
Thursday	2 days
Friday	1 days

This data displays the number of selected surveys by day of the week.

<u>Selected survey types:</u>

Manual count	7 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

<u>Selected Locations:</u>

Edge of Town	2
Neighbourhood Centre (PPS6 Local Centre)	5

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

<u>Selected Location Sub Categories:</u>

Residential Zone	7

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

A1	1 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

5,001 to 10,000	1 days
10,001 to 15,000	1 days
20,001 to 25,000	2 days
25,001 to 50,000	3 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

100,001 to 125,000	3 days
125,001 to 250,000	1 days
250,001 to 500,000	3 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	2 days
1.1 to 1.5	5 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Petrol filling station:

Included in the survey count	0 days
Excluded from count or no filling station	7 days

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

Travel Plan:

No	7 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	7 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 CH-01-I-02 LOCAL SHOPS CHESHIRE
CHRISTLETON ROAD
CHESTER
BOUGHTON HEATH
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 260 sqm
Survey date: TUESDAY 15/05/12 Survey Type: MANUAL

2 CH-01-I-03 LOCAL SHOPS CHESHIRE
MILL LANE
CHESTER
BACHE
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 365 sqm
Survey date: THURSDAY 17/05/12 Survey Type: MANUAL

3 LE-01-I-02 LOCAL SHOPS LEICESTERSHIRE
RYDER ROAD
LEICESTER

Edge of Town
Residential Zone
Total Gross floor area: 550 sqm
Survey date: TUESDAY 28/10/14 Survey Type: MANUAL

4 SH-01-I-02 LOCAL SHOPS SHROPSHIRE
WREKIN DRIVE
TELFORD
DONNINGTON
Edge of Town
Residential Zone
Total Gross floor area: 900 sqm
Survey date: THURSDAY 24/10/13 Survey Type: MANUAL

5 TV-01-I-03 LOCAL SHOPS TEES VALLEY
ACKLAM ROAD
MIDDLESBROUGH
ACKLAM
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 1840 sqm
Survey date: FRIDAY 04/10/13 Survey Type: MANUAL

6 TV-01-I-04 LOCAL SHOPS TEES VALLEY
CARGO FLEET LANE
MIDDLESBROUGH
ORMESBY
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 585 sqm
Survey date: MONDAY 07/10/13 Survey Type: MANUAL

7 TW-01-I-02 LOCAL SHOPS TYNE & WEAR
DURHAM ROAD
SUNDERLAND
BARNES PARK
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Gross floor area: 540 sqm
Survey date: WEDNESDAY 21/11/12 Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	540	1.296	1	540	1.296	1	540	2.592
07:00 - 08:00	7	720	5.040	7	720	4.286	7	720	9.326
08:00 - 09:00	7	720	5.556	7	720	5.317	7	720	10.873
09:00 - 10:00	7	720	6.726	7	720	6.032	7	720	12.758
10:00 - 11:00	7	720	6.528	7	720	5.913	7	720	12.441
11:00 - 12:00	7	720	7.698	7	720	7.976	7	720	15.674
12:00 - 13:00	7	**720**	**9.623**	7	**720**	**8.968**	7	**720**	**18.591**
13:00 - 14:00	7	720	7.976	7	720	7.758	7	720	15.734
14:00 - 15:00	7	720	6.964	7	720	7.321	7	720	14.285
15:00 - 16:00	7	720	6.389	7	720	6.825	7	720	13.214
16:00 - 17:00	7	720	6.845	7	720	6.706	7	720	13.551
17:00 - 18:00	7	720	7.282	7	720	8.036	7	720	15.318
18:00 - 19:00	7	720	7.857	7	720	8.393	7	720	16.250
19:00 - 20:00	5	883	7.633	5	883	7.384	5	883	15.017
20:00 - 21:00	5	883	5.436	5	883	5.844	5	883	11.280
21:00 - 22:00	5	883	3.851	5	883	4.507	5	883	8.358
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			102.700			102.562			205.262

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	260 - 1840 (units: sqm)
Survey date date range:	01/01/11 - 28/10/14
Number of weekdays (Monday-Friday):	7
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL TAXIS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	540	0.000	1	540	0.000	1	540	0.000
07:00 - 08:00	7	720	0.000	7	720	0.000	7	720	0.000
08:00 - 09:00	7	720	0.099	7	720	0.099	7	720	0.198
09:00 - 10:00	7	720	0.099	7	720	0.079	7	720	0.178
10:00 - 11:00	7	720	0.079	7	720	0.099	7	720	0.178
11:00 - 12:00	7	720	**0.139**	7	720	**0.139**	7	720	**0.278**
12:00 - 13:00	7	720	0.079	7	720	0.060	7	720	0.139
13:00 - 14:00	7	720	0.060	7	720	0.060	7	720	0.120
14:00 - 15:00	7	720	0.060	7	720	0.060	7	720	0.120
15:00 - 16:00	7	720	0.079	7	720	0.079	7	720	0.158
16:00 - 17:00	7	720	0.060	7	720	0.040	7	720	0.100
17:00 - 18:00	7	720	0.040	7	720	0.060	7	720	0.100
18:00 - 19:00	7	720	0.060	7	720	0.079	7	720	0.139
19:00 - 20:00	5	883	0.000	5	883	0.000	5	883	0.000
20:00 - 21:00	5	883	0.023	5	883	0.023	5	883	0.046
21:00 - 22:00	5	883	0.023	5	883	0.000	5	883	0.023
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.900			0.877			1.777

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL OGVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	540	0.000	1	540	0.000	1	540	0.000
07:00 - 08:00	7	720	0.159	7	720	0.119	7	720	0.278
08:00 - 09:00	7	720	0.099	7	720	0.060	7	720	0.159
09:00 - 10:00	7	720	0.298	7	720	0.278	7	720	0.576
10:00 - 11:00	7	720	0.119	7	720	0.099	7	720	0.218
11:00 - 12:00	7	720	0.159	7	720	0.179	7	720	0.338
12:00 - 13:00	7	720	0.159	7	720	0.238	7	720	0.397
13:00 - 14:00	7	720	0.139	7	720	0.159	7	720	0.298
14:00 - 15:00	7	720	0.139	7	720	0.099	7	720	0.238
15:00 - 16:00	7	720	0.079	7	720	0.060	7	720	0.139
16:00 - 17:00	7	720	0.099	7	720	0.079	7	720	0.178
17:00 - 18:00	7	720	0.040	7	720	0.040	7	720	0.080
18:00 - 19:00	7	720	0.000	7	720	0.060	7	720	0.060
19:00 - 20:00	5	883	0.000	5	883	0.023	5	883	0.023
20:00 - 21:00	5	883	0.000	5	883	0.000	5	883	0.000
21:00 - 22:00	5	883	0.023	5	883	0.023	5	883	0.046
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.512			1.516			3.028

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL PSVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	540	0.000	1	540	0.000	1	540	0.000
07:00 - 08:00	7	720	0.020	7	720	0.020	7	720	0.040
08:00 - 09:00	7	720	0.000	7	720	0.000	7	720	0.000
09:00 - 10:00	7	720	0.000	7	720	0.000	7	720	0.000
10:00 - 11:00	7	720	0.000	7	720	0.000	7	720	0.000
11:00 - 12:00	7	720	0.020	7	720	0.020	7	720	0.040
12:00 - 13:00	7	720	0.000	7	720	0.000	7	720	0.000
13:00 - 14:00	7	720	0.020	7	720	0.020	7	720	0.040
14:00 - 15:00	7	720	0.020	7	720	0.000	7	720	0.020
15:00 - 16:00	7	720	0.000	7	720	0.020	7	720	0.020
16:00 - 17:00	7	720	0.040	7	720	0.040	7	720	0.080
17:00 - 18:00	7	720	0.000	7	720	0.000	7	720	0.000
18:00 - 19:00	7	720	0.000	7	720	0.000	7	720	0.000
19:00 - 20:00	5	883	0.000	5	883	0.000	5	883	0.000
20:00 - 21:00	5	883	0.000	5	883	0.000	5	883	0.000
21:00 - 22:00	5	**883**	**0.045**	5	**883**	**0.045**	5	**883**	**0.090**
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.165			0.165			0.330

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL CYCLISTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	540	0.185	1	540	0.000	1	540	0.185
07:00 - 08:00	7	720	0.198	7	720	0.119	7	720	0.317
08:00 - 09:00	7	720	0.238	7	720	0.258	7	720	0.496
09:00 - 10:00	7	720	0.198	7	720	0.179	7	720	0.377
10:00 - 11:00	7	720	0.179	7	720	0.159	7	720	0.338
11:00 - 12:00	7	720	0.139	7	720	0.139	7	720	0.278
12:00 - 13:00	7	720	0.119	7	720	0.139	7	720	0.258
13:00 - 14:00	7	720	0.159	7	720	0.179	7	720	0.338
14:00 - 15:00	7	720	0.179	7	720	0.238	7	720	0.417
15:00 - 16:00	7	720	0.437	7	720	0.337	7	720	0.774
16:00 - 17:00	7	720	0.337	7	720	0.298	7	720	0.635
17:00 - 18:00	7	720	0.099	7	720	0.179	7	720	0.278
18:00 - 19:00	7	720	0.377	7	720	0.317	7	720	0.694
19:00 - 20:00	5	883	0.227	5	883	0.249	5	883	0.476
20:00 - 21:00	5	883	0.023	5	883	0.091	5	883	0.114
21:00 - 22:00	5	883	0.227	5	883	0.181	5	883	0.408
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.321			3.062			6.383

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	540	1.481	1	540	1.481	1	540	2.962
07:00 - 08:00	7	720	6.151	7	720	5.119	7	720	11.270
08:00 - 09:00	7	720	7.540	7	720	6.964	7	720	14.504
09:00 - 10:00	7	720	8.393	7	720	7.361	7	720	15.754
10:00 - 11:00	7	720	8.571	7	720	7.698	7	720	16.269
11:00 - 12:00	7	720	9.921	7	720	10.278	7	720	20.199
12:00 - 13:00	7	**720**	**12.262**	7	720	11.647	7	**720**	**23.909**
13:00 - 14:00	7	720	9.881	7	720	10.079	7	720	19.960
14:00 - 15:00	7	720	9.187	7	720	9.722	7	720	18.909
15:00 - 16:00	7	720	8.611	7	720	9.226	7	720	17.837
16:00 - 17:00	7	720	9.187	7	720	8.869	7	720	18.056
17:00 - 18:00	7	720	9.861	7	720	11.210	7	720	21.071
18:00 - 19:00	7	720	11.448	7	**720**	**12.004**	7	720	23.452
19:00 - 20:00	5	883	10.917	5	883	10.759	5	883	21.676
20:00 - 21:00	5	883	7.429	5	883	7.678	5	883	15.107
21:00 - 22:00	5	883	5.119	5	883	5.436	5	883	10.555
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			135.959			135.531			271.490

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL PEDESTRIANS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	540	4.259	1	540	3.333	1	540	7.592
07:00 - 08:00	7	720	3.234	7	720	2.361	7	720	5.595
08:00 - 09:00	7	720	8.512	7	720	9.127	7	720	17.639
09:00 - 10:00	7	720	6.528	7	720	5.556	7	720	12.084
10:00 - 11:00	7	720	6.468	7	720	6.429	7	720	12.897
11:00 - 12:00	7	720	6.528	7	720	6.250	7	720	12.778
12:00 - 13:00	7	720	8.155	7	720	7.937	7	720	16.092
13:00 - 14:00	7	720	7.460	7	720	7.480	7	720	14.940
14:00 - 15:00	7	720	6.944	7	720	7.004	7	720	13.948
15:00 - 16:00	7	720	10.139	7	720	10.754	7	720	20.893
16:00 - 17:00	7	720	5.813	7	720	5.933	7	720	11.746
17:00 - 18:00	7	720	4.325	7	720	5.119	7	720	9.444
18:00 - 19:00	7	720	4.722	7	720	4.921	7	720	9.643
19:00 - 20:00	5	883	3.941	5	883	4.168	5	883	8.109
20:00 - 21:00	5	883	2.854	5	883	3.262	5	883	6.116
21:00 - 22:00	5	883	2.446	5	883	2.854	5	883	5.300
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			92.328			92.488			184.816

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL BUS/TRAM PASSENGERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	540	0.741	1	540	1.111	1	540	1.852
07:00 - 08:00	7	720	0.139	7	720	0.179	7	720	0.318
08:00 - 09:00	7	720	0.198	7	720	0.397	7	720	0.595
09:00 - 10:00	7	720	0.119	7	720	0.060	7	720	0.179
10:00 - 11:00	7	720	0.198	7	720	0.218	7	720	0.416
11:00 - 12:00	7	720	0.397	7	720	0.575	7	720	0.972
12:00 - 13:00	7	720	0.417	7	720	0.337	7	720	0.754
13:00 - 14:00	7	720	0.496	7	720	0.198	7	720	0.694
14:00 - 15:00	7	720	0.317	7	720	0.159	7	720	0.476
15:00 - 16:00	7	720	0.516	7	720	0.179	7	720	0.695
16:00 - 17:00	7	720	0.317	7	720	0.258	7	720	0.575
17:00 - 18:00	7	720	0.278	7	720	0.198	7	720	0.476
18:00 - 19:00	7	720	0.159	7	720	0.198	7	720	0.357
19:00 - 20:00	5	883	0.317	5	883	0.204	5	883	0.521
20:00 - 21:00	5	883	0.136	5	883	0.159	5	883	0.295
21:00 - 22:00	5	883	0.249	5	883	0.181	5	883	0.430
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			4.994			4.611			9.605

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL TOTAL RAIL PASSENGERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	540	0.000	1	540	0.000	1	540	0.000
07:00 - 08:00	7	720	0.040	7	720	0.020	7	720	0.060
08:00 - 09:00	7	720	0.020	7	720	0.020	7	720	0.040
09:00 - 10:00	7	720	0.020	7	720	0.020	7	720	0.040
10:00 - 11:00	7	720	0.000	7	720	0.000	7	720	0.000
11:00 - 12:00	7	720	0.000	7	720	0.000	7	720	0.000
12:00 - 13:00	7	720	0.020	7	720	0.020	7	720	0.040
13:00 - 14:00	7	720	0.079	7	720	0.060	7	720	0.139
14:00 - 15:00	7	720	0.000	7	720	0.000	7	720	0.000
15:00 - 16:00	7	720	0.000	7	720	0.040	7	720	0.040
16:00 - 17:00	7	720	0.000	7	720	0.000	7	720	0.000
17:00 - 18:00	7	720	0.000	7	720	0.000	7	720	0.000
18:00 - 19:00	7	720	0.040	7	720	0.040	7	720	0.080
19:00 - 20:00	5	883	0.000	5	883	0.000	5	883	0.000
20:00 - 21:00	5	883	0.000	5	883	0.000	5	883	0.000
21:00 - 22:00	5	883	0.000	5	883	0.000	5	883	0.000
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.219			0.220			0.439

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL COACH PASSENGERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	540	0.000	1	540	0.000	1	540	0.000
07:00 - 08:00	7	720	0.020	7	720	0.020	7	720	0.040
08:00 - 09:00	7	720	0.000	7	720	0.000	7	720	0.000
09:00 - 10:00	7	720	0.000	7	720	0.000	7	720	0.000
10:00 - 11:00	7	720	0.000	7	720	0.000	7	720	0.000
11:00 - 12:00	7	720	0.020	7	720	0.020	7	720	0.040
12:00 - 13:00	7	720	0.000	7	720	0.000	7	720	0.000
13:00 - 14:00	7	720	0.020	7	720	0.020	7	720	0.040
14:00 - 15:00	7	720	0.000	7	720	0.000	7	720	0.000
15:00 - 16:00	7	720	0.000	7	720	0.000	7	720	0.000
16:00 - 17:00	7	720	0.020	7	720	0.020	7	720	0.040
17:00 - 18:00	7	720	0.000	7	720	0.000	7	720	0.000
18:00 - 19:00	7	720	0.000	7	720	0.000	7	720	0.000
19:00 - 20:00	5	883	0.000	5	883	0.000	5	883	0.000
20:00 - 21:00	5	883	0.000	5	883	0.000	5	883	0.000
21:00 - 22:00	5	**883**	**0.045**	5	**883**	**0.136**	5	**883**	**0.181**
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.125			0.216			0.341

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	540	0.741	1	540	1.111	1	540	1.852
07:00 - 08:00	7	720	0.198	7	720	0.218	7	720	0.416
08:00 - 09:00	7	720	0.218	7	720	0.417	7	720	0.635
09:00 - 10:00	7	720	0.139	7	720	0.079	7	720	0.218
10:00 - 11:00	7	720	0.198	7	720	0.218	7	720	0.416
11:00 - 12:00	7	720	0.417	7	720	0.595	7	720	1.012
12:00 - 13:00	7	720	0.437	7	720	0.357	7	720	0.794
13:00 - 14:00	7	720	0.595	7	720	0.278	7	720	0.873
14:00 - 15:00	7	720	0.317	7	720	0.159	7	720	0.476
15:00 - 16:00	7	720	0.516	7	720	0.218	7	720	0.734
16:00 - 17:00	7	720	0.337	7	720	0.278	7	720	0.615
17:00 - 18:00	7	720	0.278	7	720	0.198	7	720	0.476
18:00 - 19:00	7	720	0.198	7	720	0.238	7	720	0.436
19:00 - 20:00	5	883	0.317	5	883	0.204	5	883	0.521
20:00 - 21:00	5	883	0.136	5	883	0.159	5	883	0.295
21:00 - 22:00	5	883	0.294	5	883	0.317	5	883	0.611
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			5.336			5.044			10.380

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

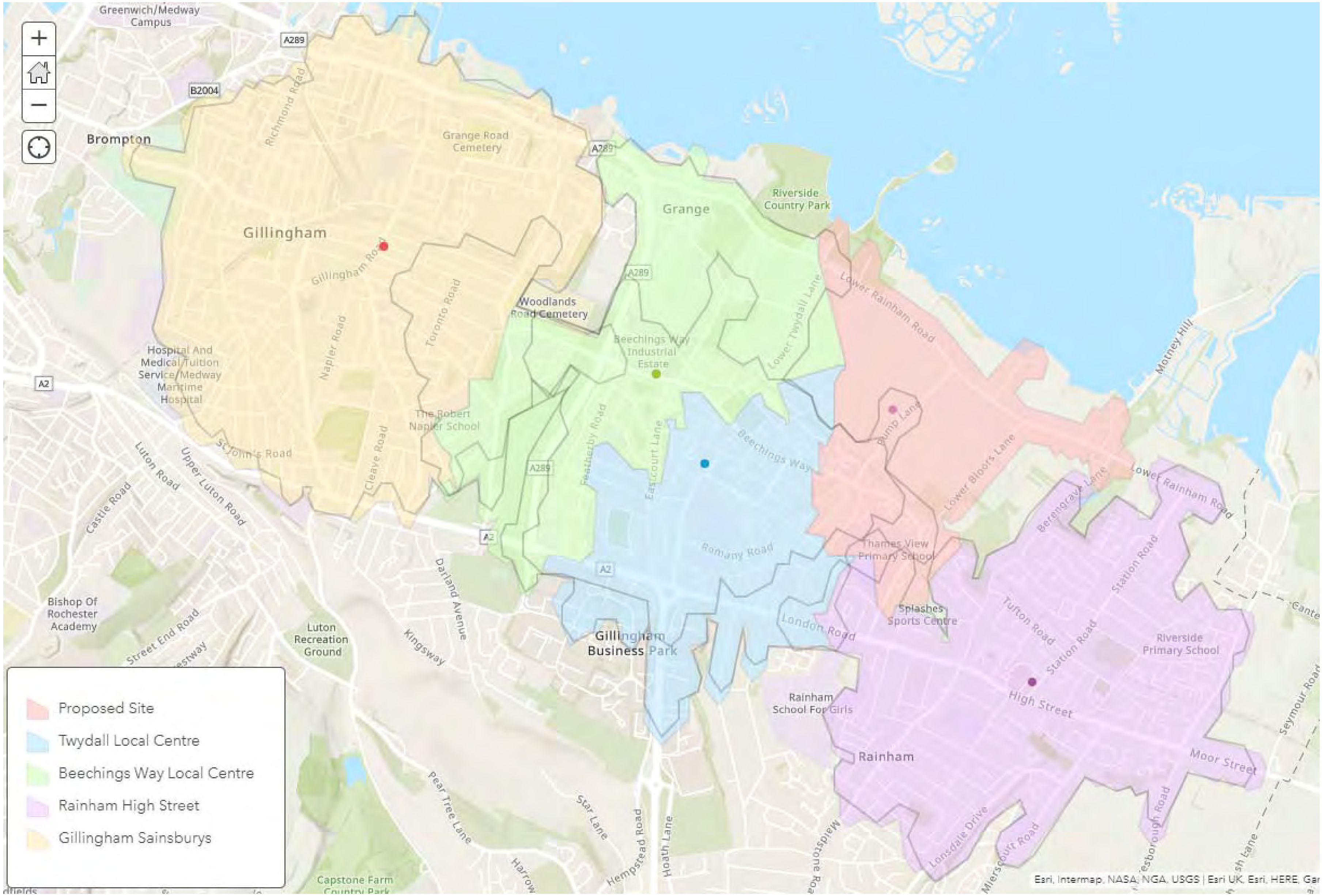
TRIP RATE for Land Use 01 - RETAIL/I - SHOPPING CENTRE - LOCAL SHOPS
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00	1	540	6.667	1	540	5.926	1	540	12.593
07:00 - 08:00	7	720	9.782	7	720	7.817	7	720	17.599
08:00 - 09:00	7	720	16.508	7	720	16.766	7	720	33.274
09:00 - 10:00	7	720	15.258	7	720	13.175	7	720	28.433
10:00 - 11:00	7	720	15.417	7	720	14.504	7	720	29.921
11:00 - 12:00	7	720	17.004	7	720	17.262	7	720	34.266
12:00 - 13:00	7	**720**	**20.972**	7	720	20.079	7	**720**	**41.051**
13:00 - 14:00	7	720	18.095	7	720	18.016	7	720	36.111
14:00 - 15:00	7	720	16.627	7	720	17.123	7	720	33.750
15:00 - 16:00	7	720	19.702	7	**720**	**20.536**	7	720	40.238
16:00 - 17:00	7	720	15.675	7	720	15.377	7	720	31.052
17:00 - 18:00	7	720	14.563	7	720	16.706	7	720	31.269
18:00 - 19:00	7	720	16.746	7	720	17.480	7	720	34.226
19:00 - 20:00	5	883	15.402	5	883	15.379	5	883	30.781
20:00 - 21:00	5	883	10.442	5	883	11.189	5	883	21.631
21:00 - 22:00	5	883	8.086	5	883	8.788	5	883	16.874
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			236.946			236.123			473.069

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Appendix F

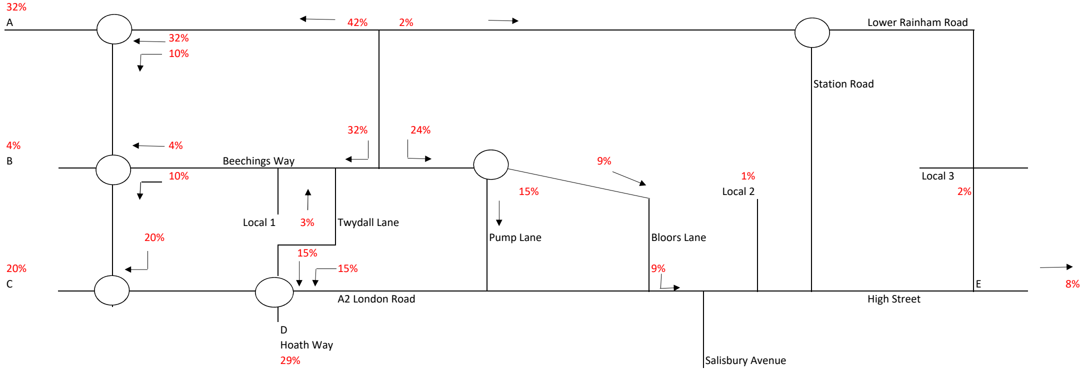


1.6km walking catchment from existing and proposed local centres

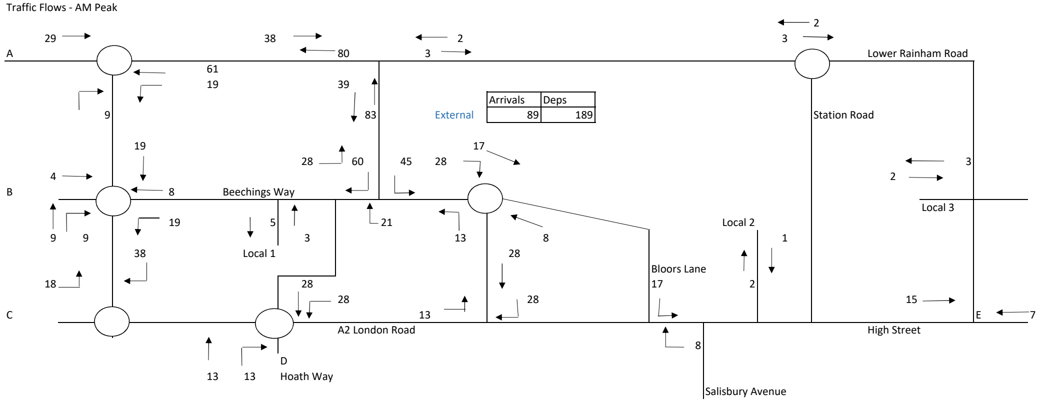
Appendix G

Commuting and Business and Primary School Pupils/StaffTrips

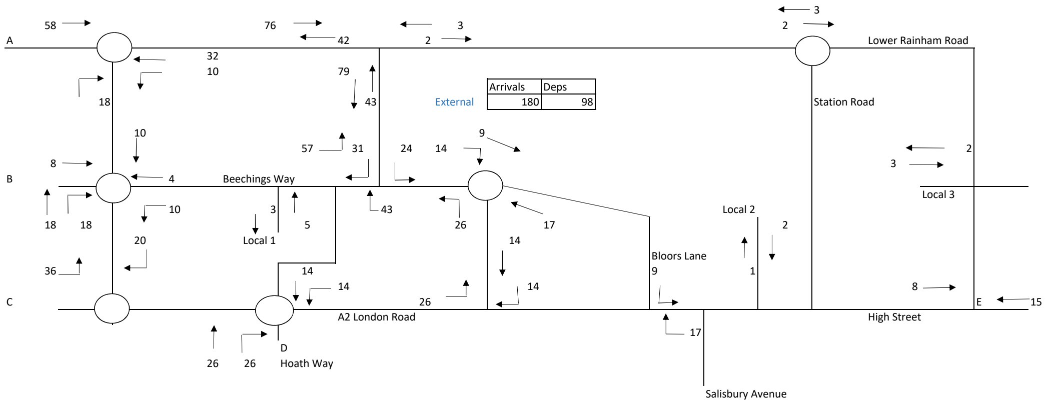
Distribution



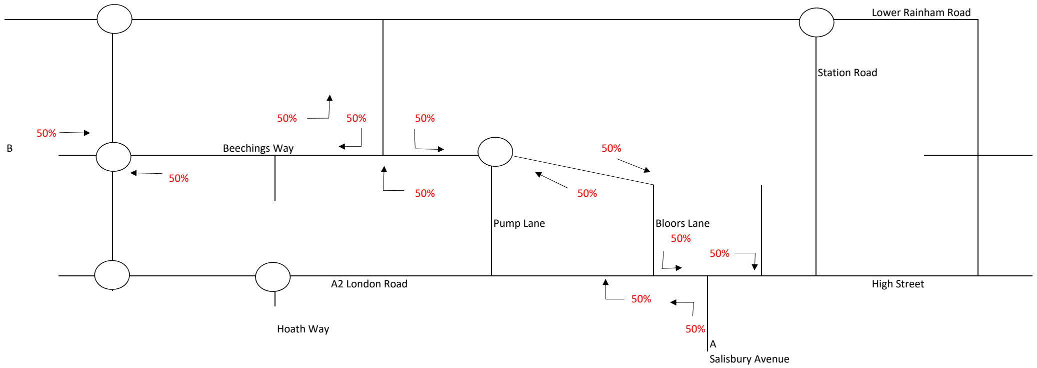
Traffic Flows - AM Peak



Traffic Flows - PM Peak

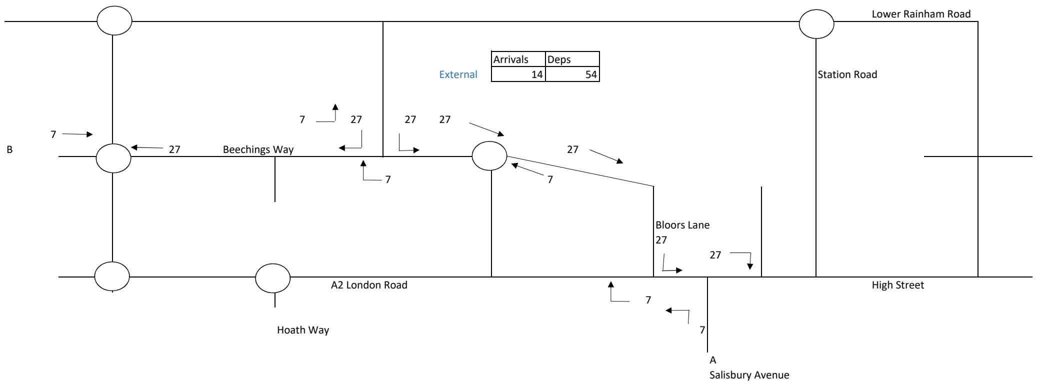


Secondary School Trips
Distribution

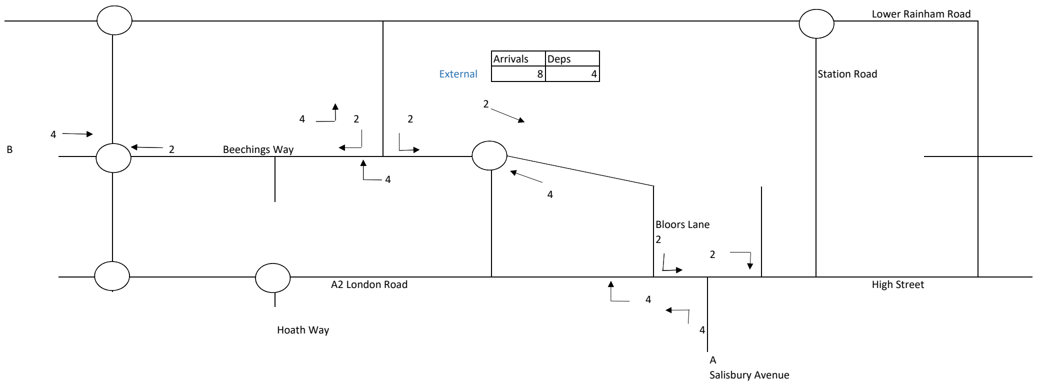


A	Howard School/Rainham Girls School	50%
B	Robert Napier School	50%

Traffic Flows - AM Peak

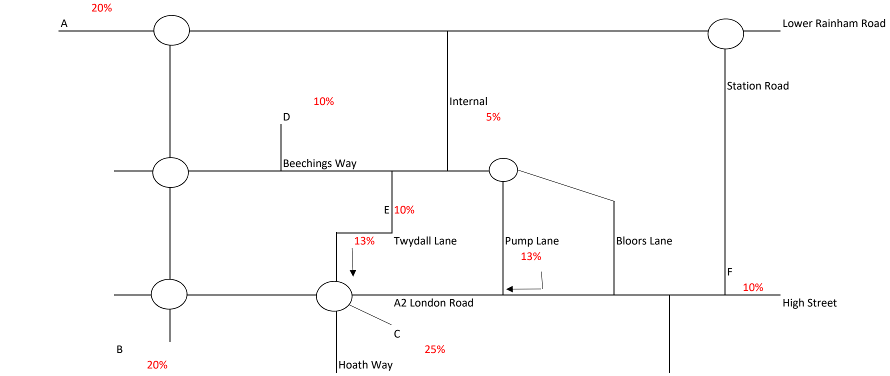


Traffic Flows - PM Peak



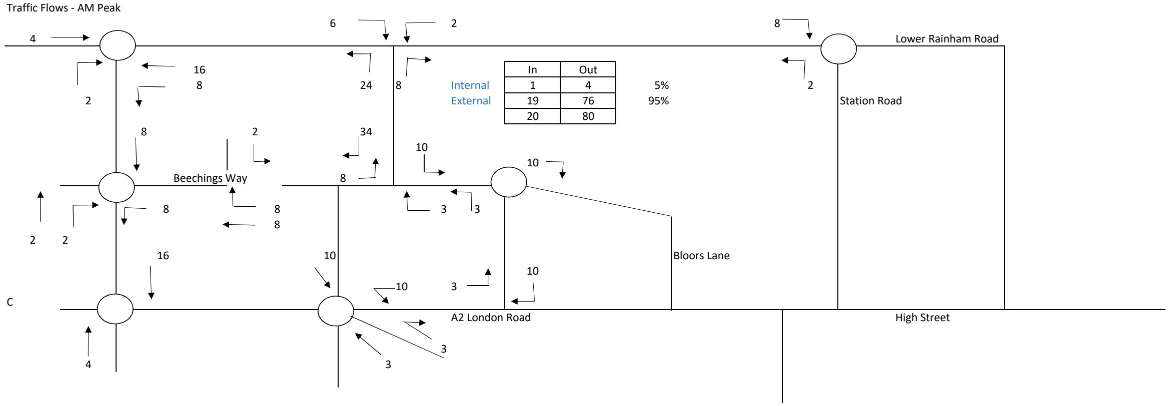
Shopping and Personal Business Trips

Distribution



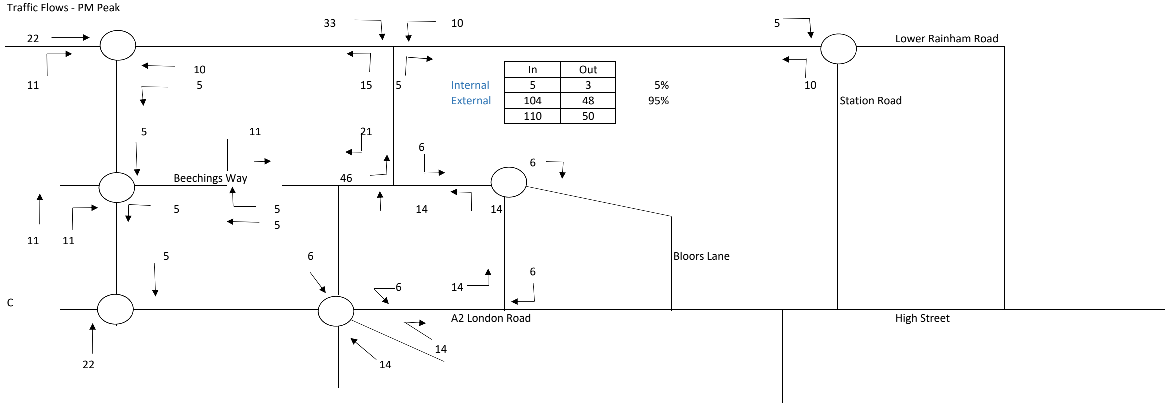
		%
A	Asda Gillingham	20%
B	Gillingham Business Park	20%
C	Tesco Extra Gillingham	25%
D	Mcdonalds/co op	10%
E	Twydall local centre	10%
F	Rainham High Street	10%
	Internal	5%

Traffic Flows - AM Peak



	In	Out	
Internal	1	4	5%
External	19	76	95%
	20	80	

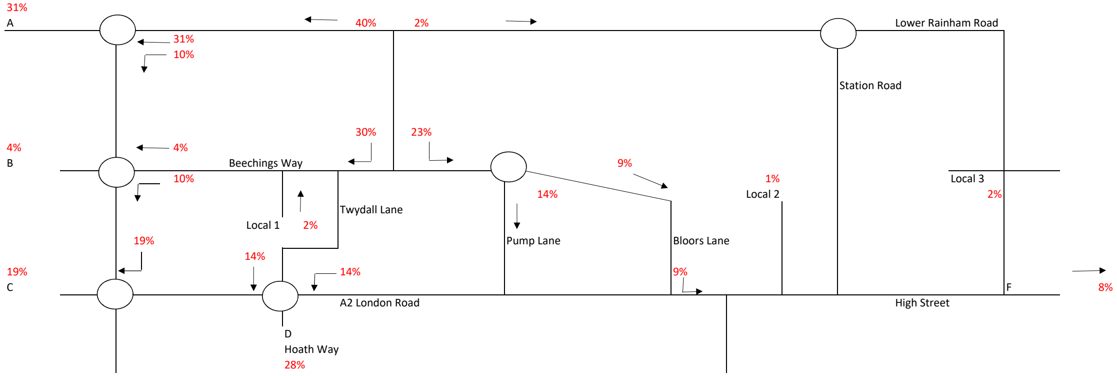
Traffic Flows - PM Peak



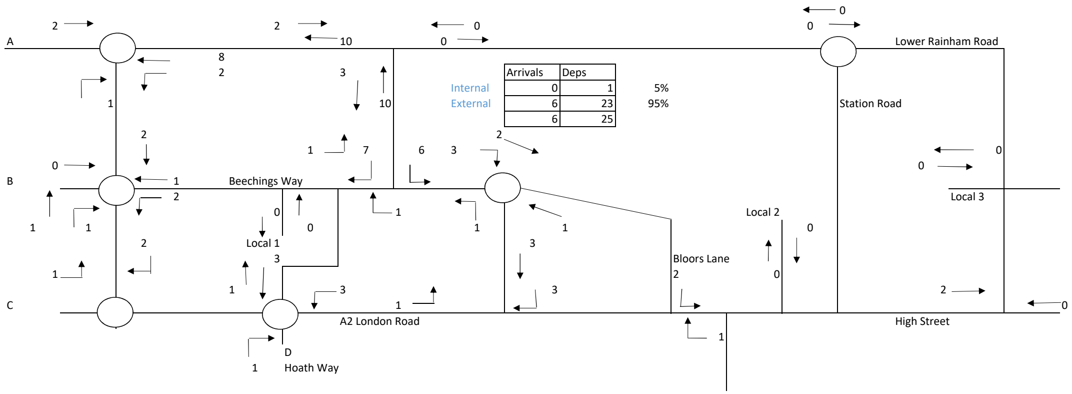
	In	Out	
Internal	5	3	5%
External	104	48	95%
	110	50	

Leisure Trips

Distribution

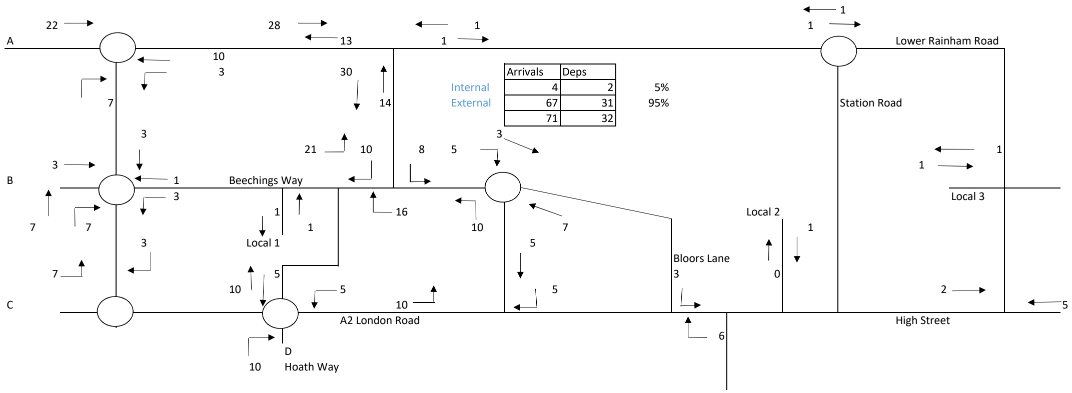


Traffic Flows - AM Peak



	Arrivals	Deps	
Internal	0	1	5%
External	6	23	95%
	6	25	

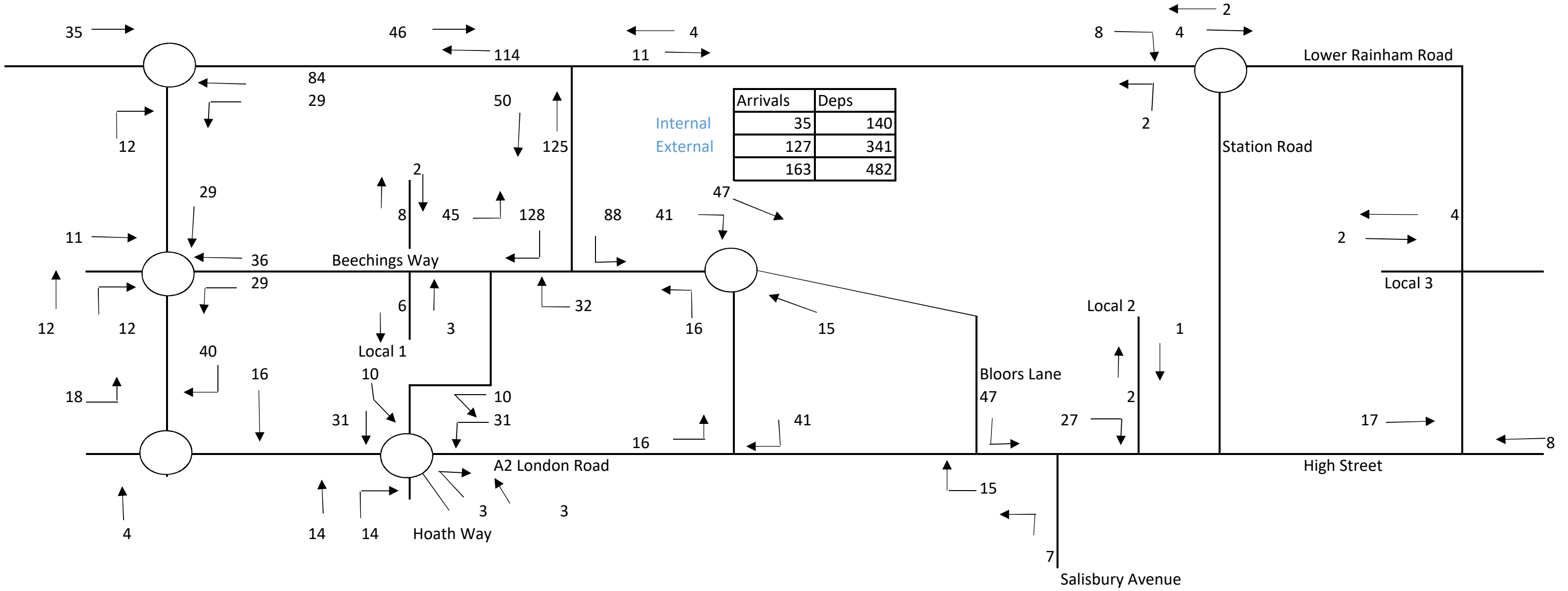
Traffic Flows - PM Peak



	Arrivals	Deps	
Internal	4	2	5%
External	67	31	95%
	71	32	

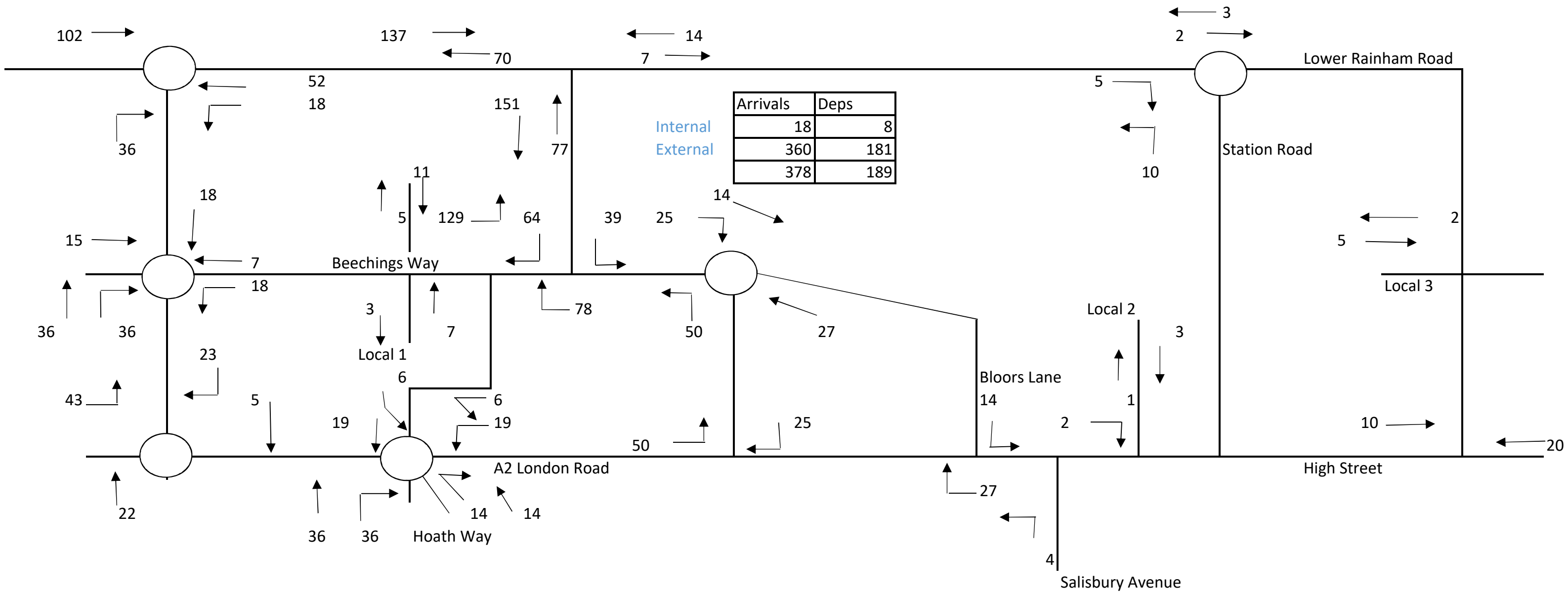
Total Residential Trips

Traffic Flows - AM Peak



	Arrivals	Deps
Internal	35	140
External	127	341
	163	482

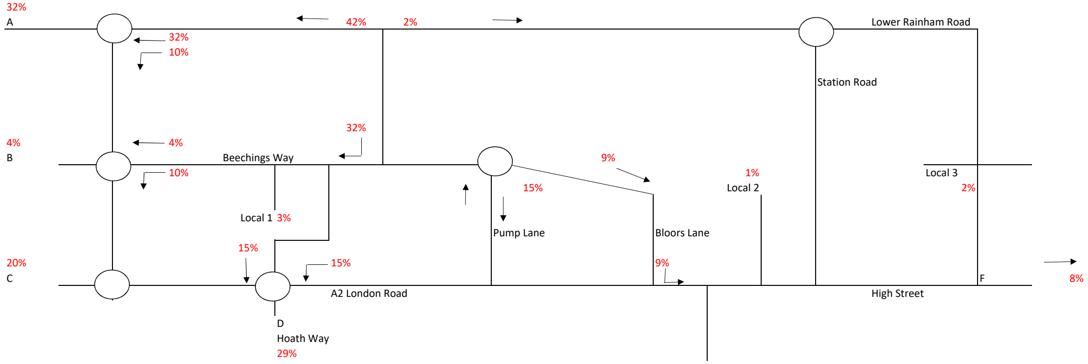
Traffic Flows - PM Peak



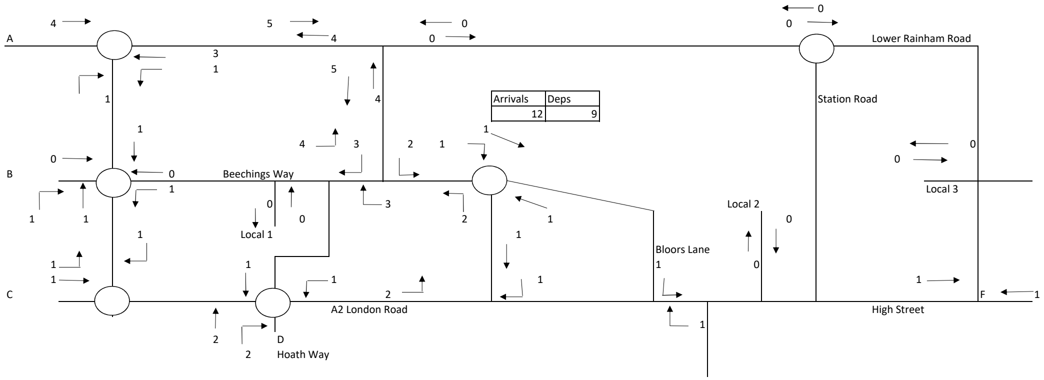
	Arrivals	Deps
Internal	18	8
External	360	181
	378	189

Care Home Trips

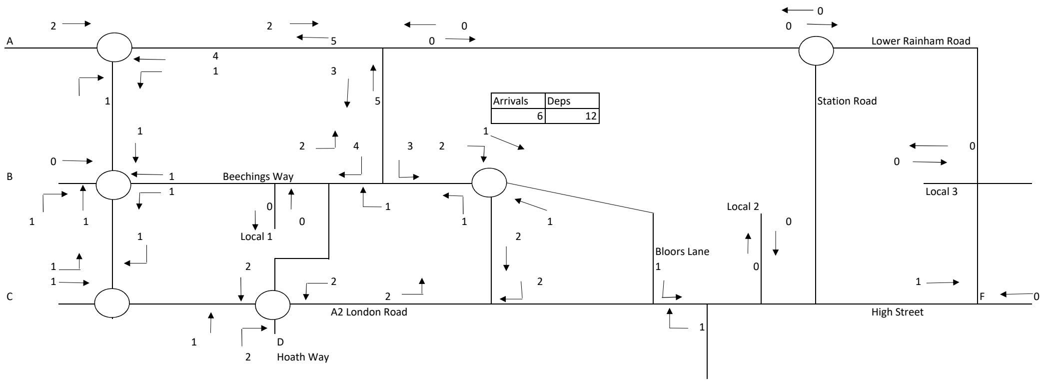
Distribution



Traffic Flows - AM Peak

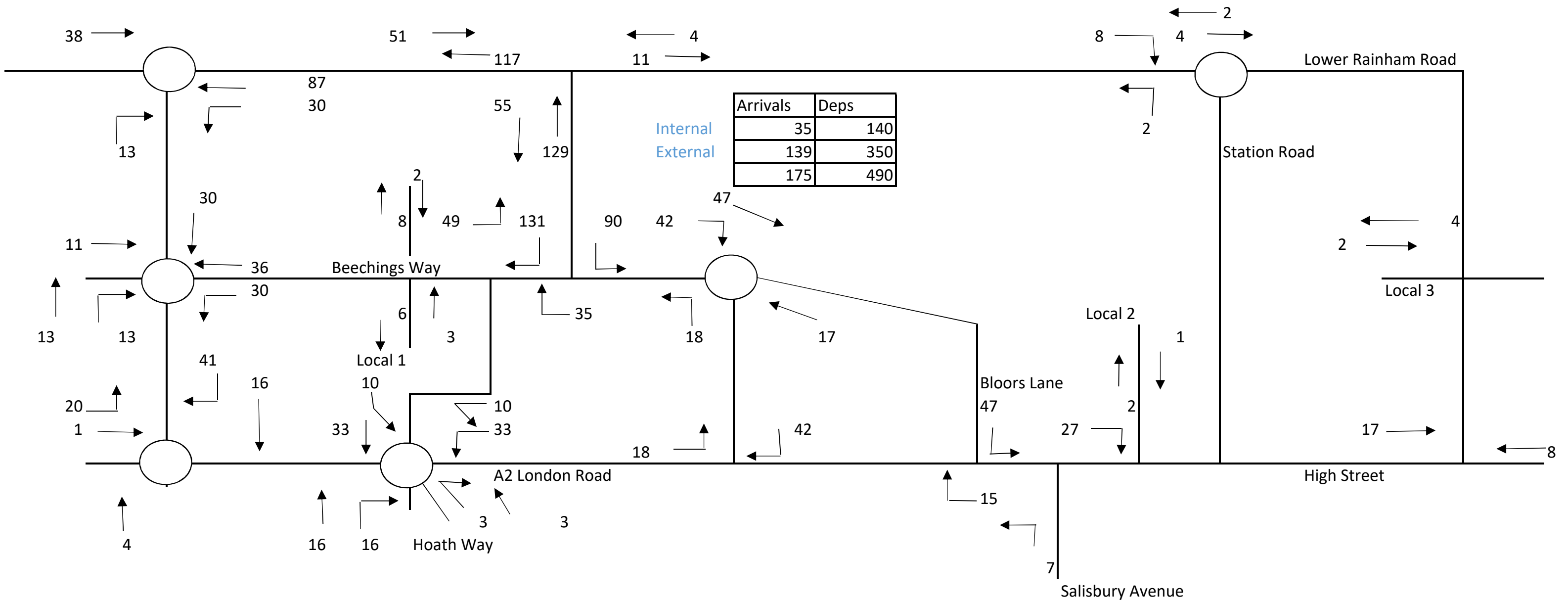


Traffic Flows - PM Peak



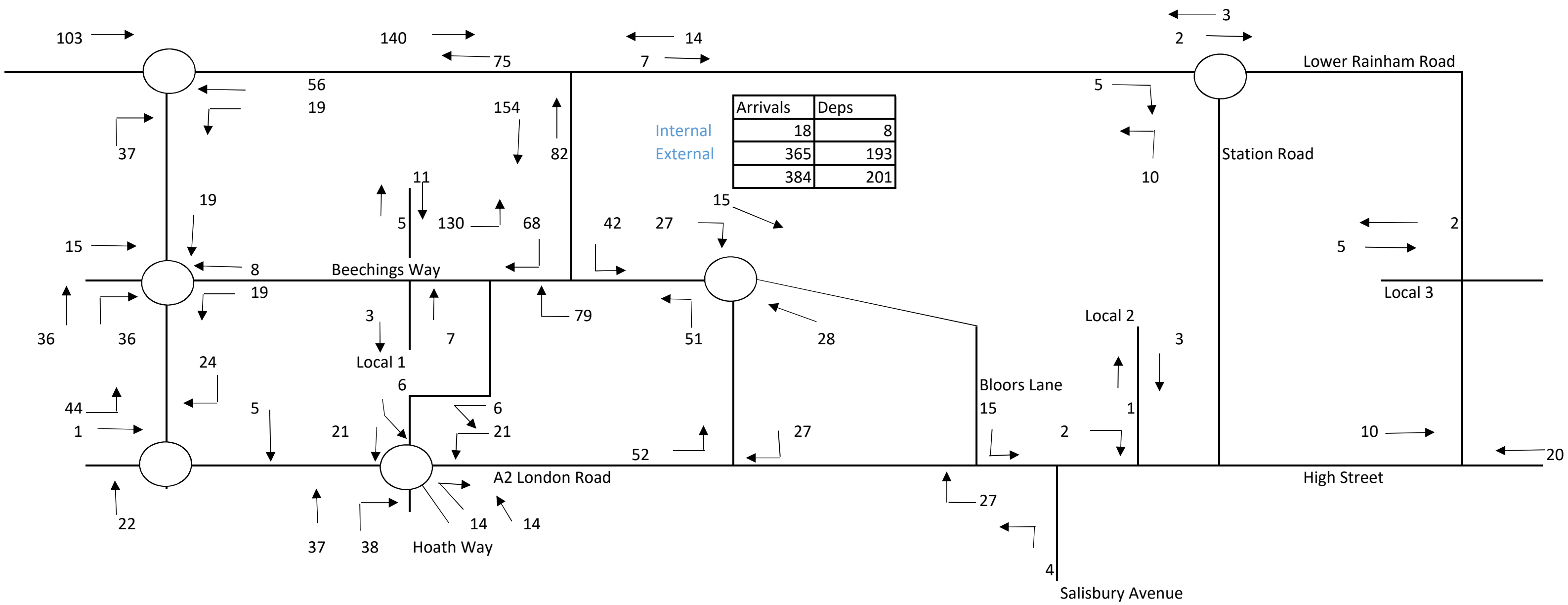
Total Trips

Traffic Flows - AM Peak



	Arrivals	Deps
Internal	35	140
External	139	350
	175	490

Traffic Flows - PM Peak



	Arrivals	Deps
Internal	18	8
External	365	193
	384	201

Appendix H

Pump Lane, Lower Rainham

Road Safety Audit
Stage 1

26 September 2019

David Tucker Associates

Mott MacDonald House
8-10 Sydenham Road
Croydon CR0 2EE
United Kingdom

T +44 (0)20 8774 2000
F +44 (0)20 8681 5706
mottmac.com

David Tucker Associates
Forester House
Doctors Lane
Henley in Arden
Warwickshire
B95 5AW

Pump Lane, Lower Rainham

Road Safety Audit
Stage 1

26 September 2019

David Tucker Associates

Issue and Revision Record

Revision	Date	Originator	Checker	Approver	Description
A	26/09/2019	J Man	M S Ring	T J Blaney	First Issue

Information class: Standard

This document is issued for the party which commissioned it and for specific purposes connected with the above-captioned project only. It should not be relied upon by any other party or used for any other purpose.

We accept no responsibility for the consequences of this document being relied upon by any other party, or being used for any other purpose, or containing any error or omission which is due to an error or omission in data supplied to us by other parties.

This document contains confidential information and proprietary intellectual property. It should not be shown to other parties without consent from us and from the party which commissioned it.

Contents

1 Introduction

This report describes a Stage 1 Road Safety Audit carried out on the proposed highway modifications in the vicinity of Pump Lane, Lower Rainham.

The audit was carried out at the request of David Tucker Associates.

The audit took place at the Croydon office of Mott MacDonald and consisted of a detailed examination of the submitted documentation and drawings listed in **Appendix A**.

It is confirmed that this is a Stage 1 Road Safety Audit and that the audit was undertaken upon completion of the preliminary design work.

The Road Safety Audit Team as approved by the client's Project Sponsor, Simon Tucker, consisted of:

Matthew Ring	BSc (Hons), MCIHT, MSoRSA (Certificate of Competency in Road Safety Audit, April 2016) Audit Team Leader, Mott MacDonald
Jeffrey Man	MEng, MCIHT, MSoRSA Audit Team Member, Mott MacDonald

The Audit Team visited the site of the proposed works together on Friday 20th September 2019 at 14:00hrs. During this visit the weather was fine, and the road surface dry. Traffic conditions were light. No pedestrian or cycle activity were observed in the vicinity.

This Road Safety Audit was carried out in accordance with Highways England's Departmental Standard GG119. The Road Safety Audit Team has examined and reported only on the road safety implications of the scheme as presented and has not examined or verified the compliance of the designs to any other criteria.

The comments and suggestions for road safety improvements made in this report seek to address matters that might have an adverse effect on road safety in the context of the chosen design. No attempt has been made to comment on the justification of the scheme. Consequently, the auditors accept no responsibility for the design or construction of the scheme.

All the issues raised in this report are considered to be required for action. The comments contained in the report are based on safety related concerns and as such the design engineer will need to consider carefully how to respond to each of the issues. The Audit Response Report to the audit should be completed by the Design Team and kept on file for future reference.

A Key Plan indicating the location of any identified safety related issues is provided in **Appendix B**.

Scheme Description

The scheme consists of three areas where improvements are proposed:

Pump Lane, Lower Rainham – A signal controlled alternate one-way working system is proposed at the southern end of Pump Lane, Lower Rainham at the railway underbridge. Furthermore, a 2.5m shared footway / cycleway is proposed on the eastern side of Pump Lane.

Lower Rainham Road, Lower Rainham – The main site access consists of a priority T-junction on Lower Rainham Road. The carriageway is proposed to be widened to accommodate a right-turn lane.

Yokosuka Way – Lower Rainham Road, Gillingham – The approach to the roundabout on the eastern arm of the existing roundabout is proposed to be widened to accommodate two lanes, with kerb realignments on the southern side of Lower Rainham Road and amendments to the central splitter island to facilitate this.

2 Items Raised at this Stage 1 Audit

This section describes road safety related issues identified by the Audit Team that are associated with the scheme as presented in **Appendix A**. A reference key plan is shown in **Appendix B**.

2.1 Pump Lane, Lower Rainham

2.1.1 Problem 2.1.1

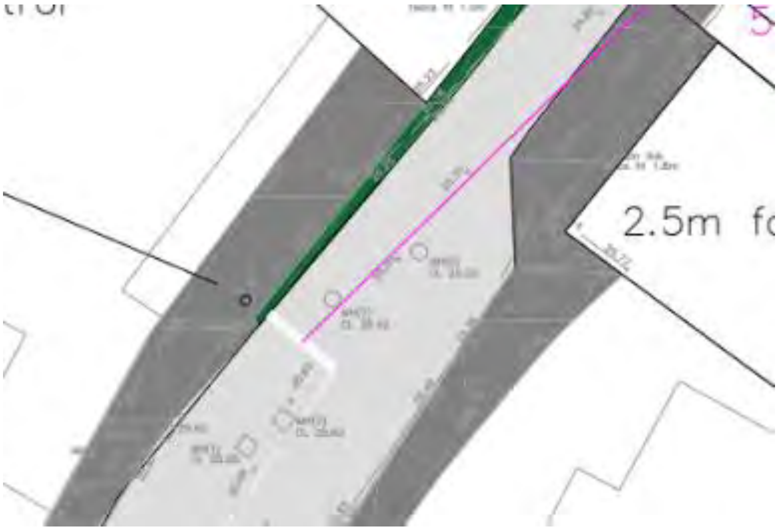
Location: Pump Lane, south of railway underbridge.

Summary: Proximity of stop line to single lane shuttle working section, south of the railway underbridge.

Alternate one-way working signal system is proposed at the railway underbridge and the carriageway is proposed to be reduced under the bridge to 3.0m to provide a 2.5m wide shared footway / cycleway.

On the southern side of the railway underbridge, the stop line is proposed approximately 10m south from the single lane section, with a short taper in the eastern footway provided. Swept paths have not been provided for vehicles travelling southbound. The audit team is concerned the short manoeuvring distance could increase the risk of head-on collisions and / or kerb strikes leading to loss of control type collisions.

Figure 1: Proposed alternate one-way working.



Source: David Tucker Associates

Recommendation

It is recommended that swept path analysis is undertaken for vehicles travelling southbound. Should the movement be unfeasible, it is recommended the stop line south of the underbridge is set further back from the junction.

2.1.2 Problem 2.1.2

Location: Pump Lane, south of railway underbridge.

Summary: On street parking leading to vehicles on approach to signal stop line not being in a position to see nearside signals.

The audit team observed a number of vehicles parked on street on the section of Pump Lane south of the railway underbridge. The proposed stop line is located in a section where vehicles were observed to be parked. The audit team is concerned that the presence of parked vehicles requires drivers to use the centre of Pump Lane on approach to the railway underbridge which could reduce the visibility of the nearside traffic signals.

This could increase the risk of late braking, leading to shunt-type collisions, or vehicles proceeding on a red signal, leading to head-on collisions.

Furthermore, drivers in the centre of Pump Lane travelling northbound waiting at a red traffic signal are likely to obstruct southbound vehicles increasing the risk of late braking shunt type collisions.

Figure 2: Existing on-street parking on Pump Lane.

Source: Mott MacDonald

Recommendation

It is recommended that parking restrictions are considered to provide a clear approach to the signals. Furthermore, it is recommended that offside signals are proposed in addition to any nearside signals.

2.1.3 Problem 2.1.3

Location: Pump Lane, south of railway underbridge.

Summary: Signal equipment potentially impeding access to properties.

The location of traffic signal equipment has not been provided for the proposed alternate one-way working signal system. The driveway for No. 185 Pump Lane is located between the stop line and the railway underbridge. Should signal equipment be located in the vicinity of the vehicular crossover, this could increase the risk of vehicles striking the signal equipment.

Recommendation

It is recommended that care is taken to locate the signal equipment south of the railway underbridge, such that it would not impede access to the existing driveway.

2.1.4 Problem 2.1.4

Location: Pump Lane, south of railway underbridge.

Summary: Vegetation present on corner north of No. 204 Pump Lane reducing visibility at potential pinch point.

A buildout is proposed to facilitate the provision of the 2.5m wide shared footway / cycleway. The proposed shared footway / cycleway re-joins the existing footway by a sharp taper, which potentially creates a pinch point where the width of the footway / cycleway reduces. Vegetation is present immediately east of this location, which would reduce the inter-visibility of pedestrians and cyclists from the railway underbridge, and other pedestrians and cyclists south of the pinch point, as well as vehicles egressing from the driveway of No. 204 Pump Lane. This could result in an increased risk of collisions between different users of the shared users of the shared footway / cycleway facility.

Recommendation

It is recommended the vegetation is cut back at the corner of north of No.204 Pump Lane. Furthermore, it is recommended that a shallower taper is provided where the proposed footway / cycleway re-joins the existing footway.

2.2 Lower Rainham Road, Lower Rainham

2.2.1 Problem 2.2.1

Location: Lower Rainham Road, east of proposed site access.

Summary: The posted change in speed limit in close proximity to the new access.

On Lower Rainham Road immediately east of the proposed site access, the posted mandatory traffic speed limit changes from 40mph to 30mph. The audit team is concerned that eastbound motorists may accelerate due to the change in speed limit at the same location motorists will be slowing to turn into the proposed site access, leading to an increased risk of rear-end shunt type collisions.

Furthermore, drivers waiting to egress the proposed new access may fail to fully appreciate the approach speed of vehicles slowing down or accelerating for the change in speed limit increasing the risk of turning vehicle collisions.

Figure 3: Existing 30mph / 40mph speed transition.

Source: Mott MacDonald

Recommendation

It is recommended that, in conjunction with the Highway Authority, the position of the 30mph / 40mph speed limit transition is reviewed and relocated away from the new site access.

2.2.2 Problem 2.2.2

Location: Lower Rainham Road, east of proposed site access.

Summary: Lack of crossing facility across Lower Rainham Road.

A footway is proposed on the east side of the site access road providing pedestrian access between the site westwards towards Lower Rainham Road. A footway is currently provided on the south side of Lower Rainham Road towards Pump Lane but terminates at Pump Lane and no dropped kerb facility is provided. A footway is provided on the northern side of Lower Rainham Road providing eastbound access towards Grange.

It is not proposed to provide a pedestrian crossing facility on Lower Rainham Road linking the site access with the northern footway. The lack of a formal crossing facility could lead to pedestrians using the existing traffic islands that are not designed for this purpose. This increases the risk of collisions between pedestrians travelling to and from the site, and passing vehicles, and also slips, trips and falls as no dropped kerb facilities are provided.

Recommendation

It is recommended that a formal pedestrian crossing facility with a central refuge island is provided to allow pedestrians to cross Lower Rainham Road.

2.3 Yokosuka Way – Lower Rainham Road, Gillingham

2.3.1 Problem 2.3.1

Location: Yokosuka Way – Lower Rainham Road, Eastern Arm.

Summary: Kerb alignment on approach to roundabout directs vehicles from the nearside lane into the offside lane.

On the eastern arm of the roundabout between Lower Rainham Road and Yokosuka Way, the approach to the roundabout is proposed to be widened to increase the number of approach lanes from one to two. Realignment of the southern kerbline and the central splitter island is proposed to facilitate this.

Approximately 15m east of the roundabout the proposed southern kerbline appears to ‘kink’ which could deflect drivers in the nearside lane towards the offside lane. This could increase the risk of side-swipe type collisions.

Recommendation

It is recommended that the proposed kerb realignment is revised to provide a continuous alignment.

3 Audit Team Statement

We certify that this audit has been carried out in accordance with Highways England's Departmental Standard GG119

Road Safety Audit Team Leader

M S Ring BSc (Hons) MCIHT, MSoRSA
(Certificate of Competency in Road Safety Audit, April 2016)

Signed:

Date: 26th September 2019

Projects Principal
Mott MacDonald House
8-10 Sydenham Road
Croydon
CR0 2EE

J Man MEng MCIHT MSoRSA

Signed:

Date: 26th September 2019

Traffic Engineer
Mott MacDonald House
8-10 Sydenham Road
Croydon
CR0 2EE

Appendices

A. List of Drawings & Documents Examined

The following drawings and documents were examined as part of this Road Safety Audit.

Table 1: Drawings

Drawing Number	Revision	Drawing Title
20230-05	A	Proposed Pump Lane Railway Bridge Improvements
20230-05-02	-	Proposed Right Turn Lane, Lower Rainham Road
20230-10	A	Proposed Improvements, Yokosuka Way – Lower Rainham Road, Lower Rainham Road East Arm

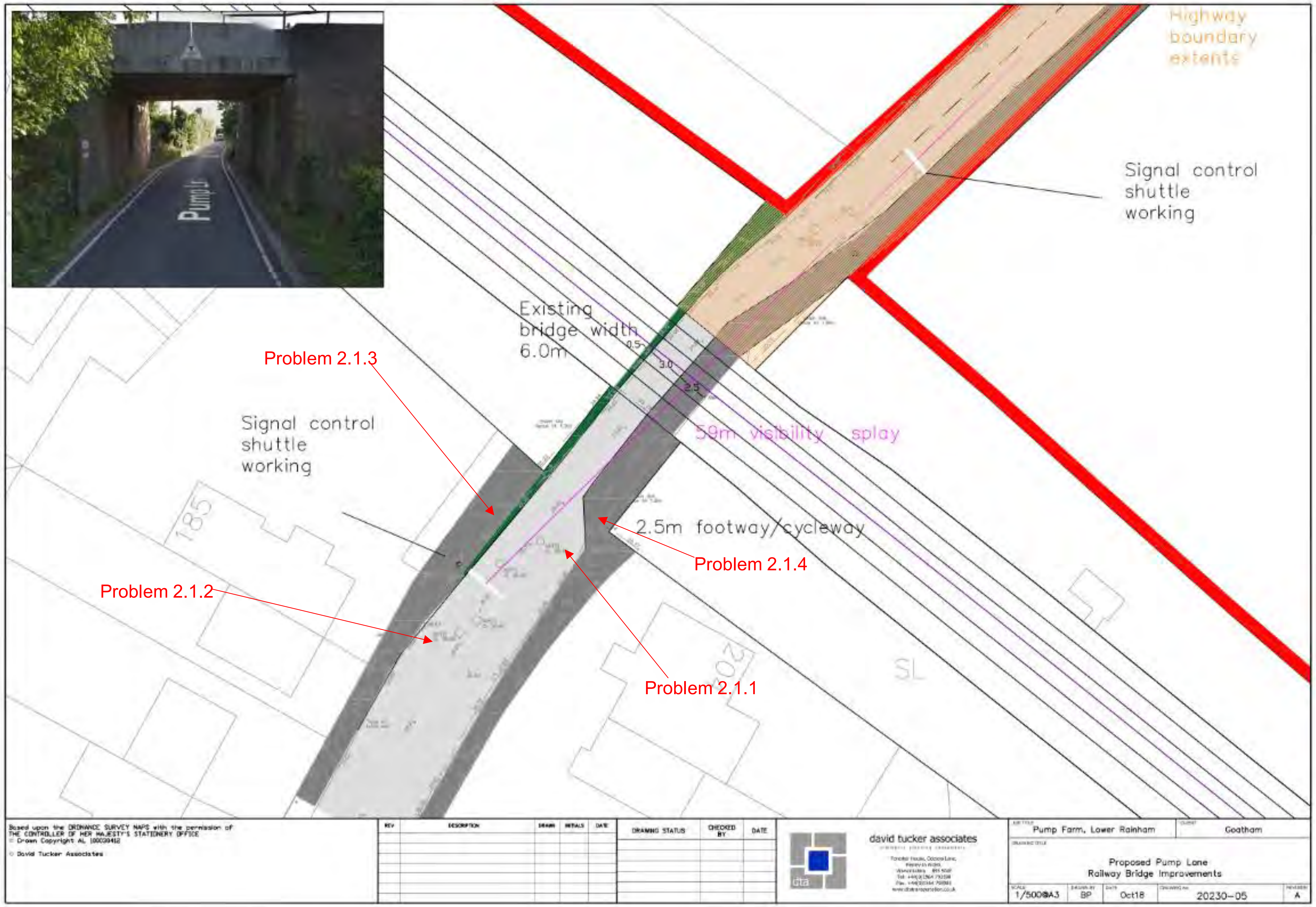
Source: David Tucker Associates

Table 2: Documents

Document Number	Revision	Document Title
-	-	Road Safety Audit Brief
20230-03	-	Transport Assessment

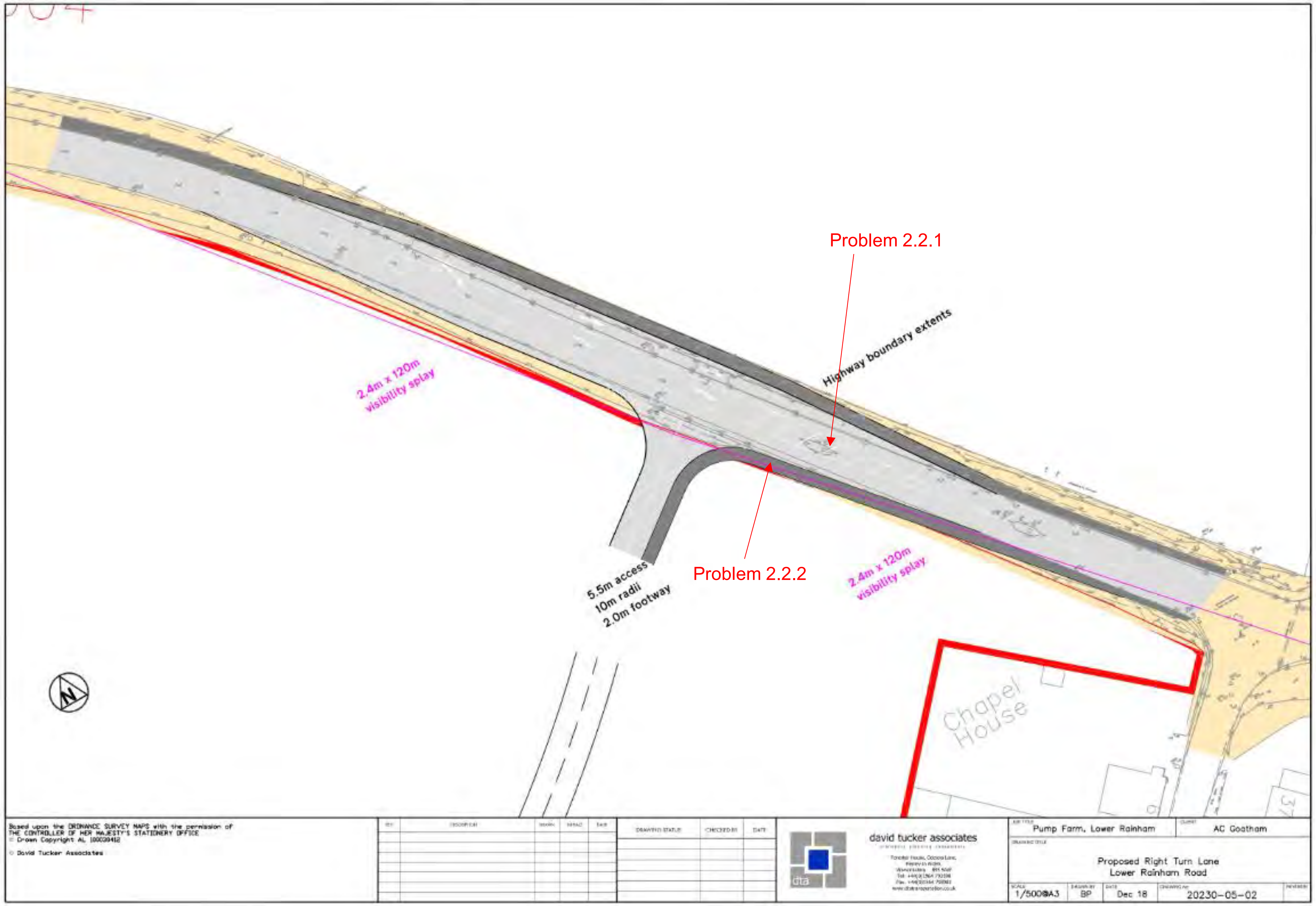
Source: David Tucker Associates

B. Key Plan – Pump Lane, Lower Rainham



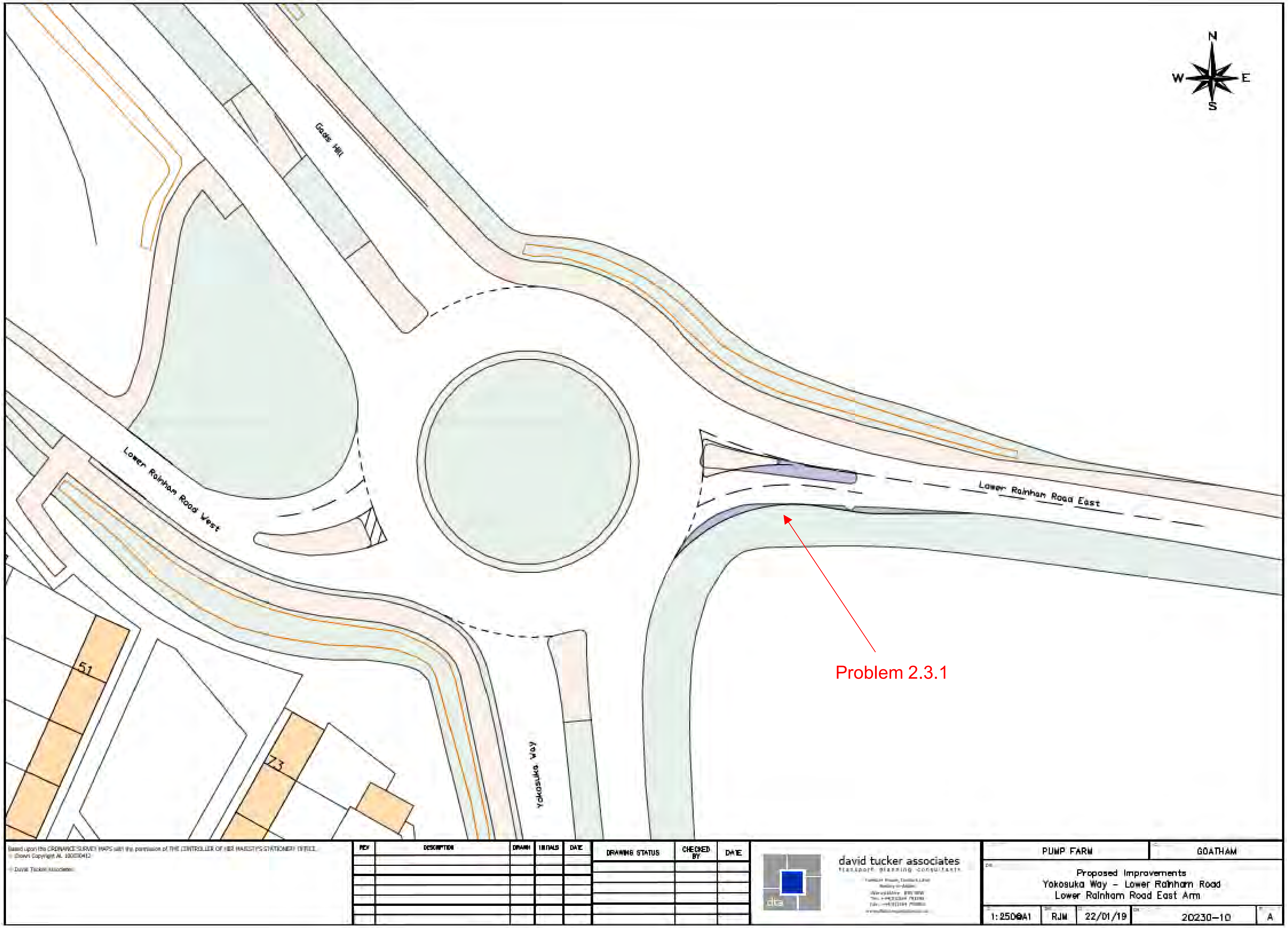
Not to Scale

C. Key Plan – Lower Rainham Road, Lower Rainham



Not to Scale

D. Key Plan – Yokosuka Way – Lower Rainham Road, Gillingham



Not to Scale

mottmac.com

Appendix I

1.0 INTRODUCTION

1.1 This report sets out the design office response to the results of a Stage 1 Road Safety Audits (RSAs) carried out by Mott Macdonald in relation to the access proposals associated with the development of land off Pump Lane, Lower Rainham. The RSA reports is attached at the end of this note.

2.0 ITEMS RAISED

Problem 2.1.1
Location: *Pump Lane, South of Railway Underbridge*
Summary: *Proximity of stop line to single lane shuttle working section, south of the railway underbridge.*

Recommendation

2.1 It is recommended that swept path analysis is undertaken for vehicles travelling southbound. Should the movement be unfeasible, it is recommended the stop line south of the bridge is set further back from the junction.

Designer's Response

2.2 The auditor's recommendation is accepted. Swept path analysis has been undertaken on the junction and is shown on D**rawing 20230-05d** attached to this note. The southern stop line has been moved south, whilst still not impacting the access to dwelling 185. The eastern kerb for the footway/cycleway has been smoothed to allow vehicles better transition.

Problem 2.1.2
Location: *Pump Lane, South of Railway Underbridge.*
Summary: *On street parking leading to vehicles on approach to signal stop line not being in a position to see nearside signals.*

<u>Recommendation</u>

2.3 It is recommended that parking restrictions are considered to provide a clear approach to the signals. Furthermore, it is recommended that offside signals are proposed in addition to any nearside signals.

<u>Designer's Response</u>

2.4 The auditor's recommendation is noted. A TRO will be considered to address on street parking issues within the vicinity of the signal junction.

Problem 2.1.3

Location: *Pump Lane, South of Railway Underbridge.*

Summary: *Signal equipment potentially impeding access to properties.*

<u>Recommendation</u>

2.5 It is recommended that care is taken to locate the signal equipment south of the railway underbridge, such that it would not impede access to the existing driveway.

<u>Designer's Response</u>

2.6 The auditor's recommendation is accepted and this will be addressed at the detailed design stage.

Problem 2.1.4

Location: *Pump Lane, South of Railway Underbridge*

Summary: *Vegetation present on corner north of No. 204 Pump Lane reducing visibility at potential pinch point.*

<u>Recommendation</u>

2.7 It is recommended the vegetation is cut back at the corner of north No. 204 Pump Lane. Furthermore, it is recommended that a shallower taper is provided where the proposed footway / Cycleway re-joins the existing footway.

Designer's Response

2.8 The auditor's recommendation is accepted and this will be addressed at the detailed design stage.

Problem 2.2.1

Location: *Lower Rainham Road, East of proposed site access.*

Summary: *The posted change in speed limit in close proximity to the new access.*

Recommendation

2.9 It is recommended that, in conjunction with the Highway Authority, the position of the 30mph/40mph speed limit transition is reviewed and relocated away from the new site access.

Designer's Response

2.10 The auditor's recommendation is accepted. **Drawing 20230-05d-2** shows the proposed relocated 30mph/40mph location to the west of the site access right turn lane.

Problem 2.2.2

Location: *Lower Rainham Road, East of proposed site access.*

Summary: *Lack of crossing facility across Lower Rainham Road.*

Recommendation

2.11 It is recommended that a formal pedestrian crossing facility with a central refuge island is provided to allow pedestrians to cross Lower Rainham Road.

Designer's Response

2.12 The auditor's recommendation is accepted and a proposed pedestrian crossing is shown on **Drawing 20230-05d-2**. This is located to the east of the access, where the relocated speed limit change will be moved from.

Problem 2.3.1

Location: *Yokosuka Way – Lower Rainham Road, Eastern Arm.*

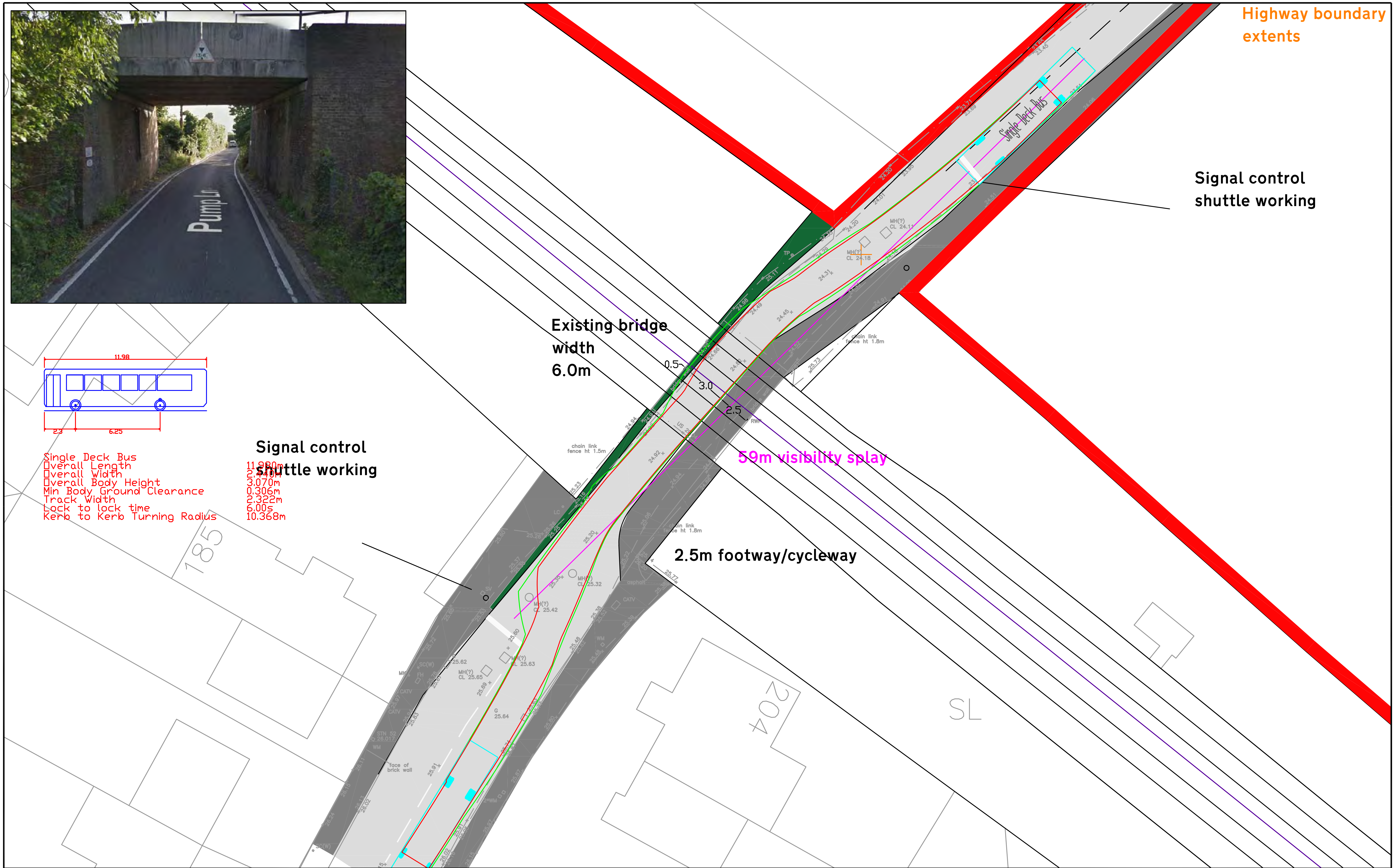
Summary: *Kerb alignment on approach to roundabout directs vehicles from the nearside lane into the offside lane.*

Recommendation

2.13 It is recommended that the proposed kerb alignment is revised to provide a continuous alignment.

Designer's Response

2.14 The auditor's recommendation is accepted and a proposed kerb has been realigned to provide better alignment. This is show on **Drawing 20230-05d-3**.



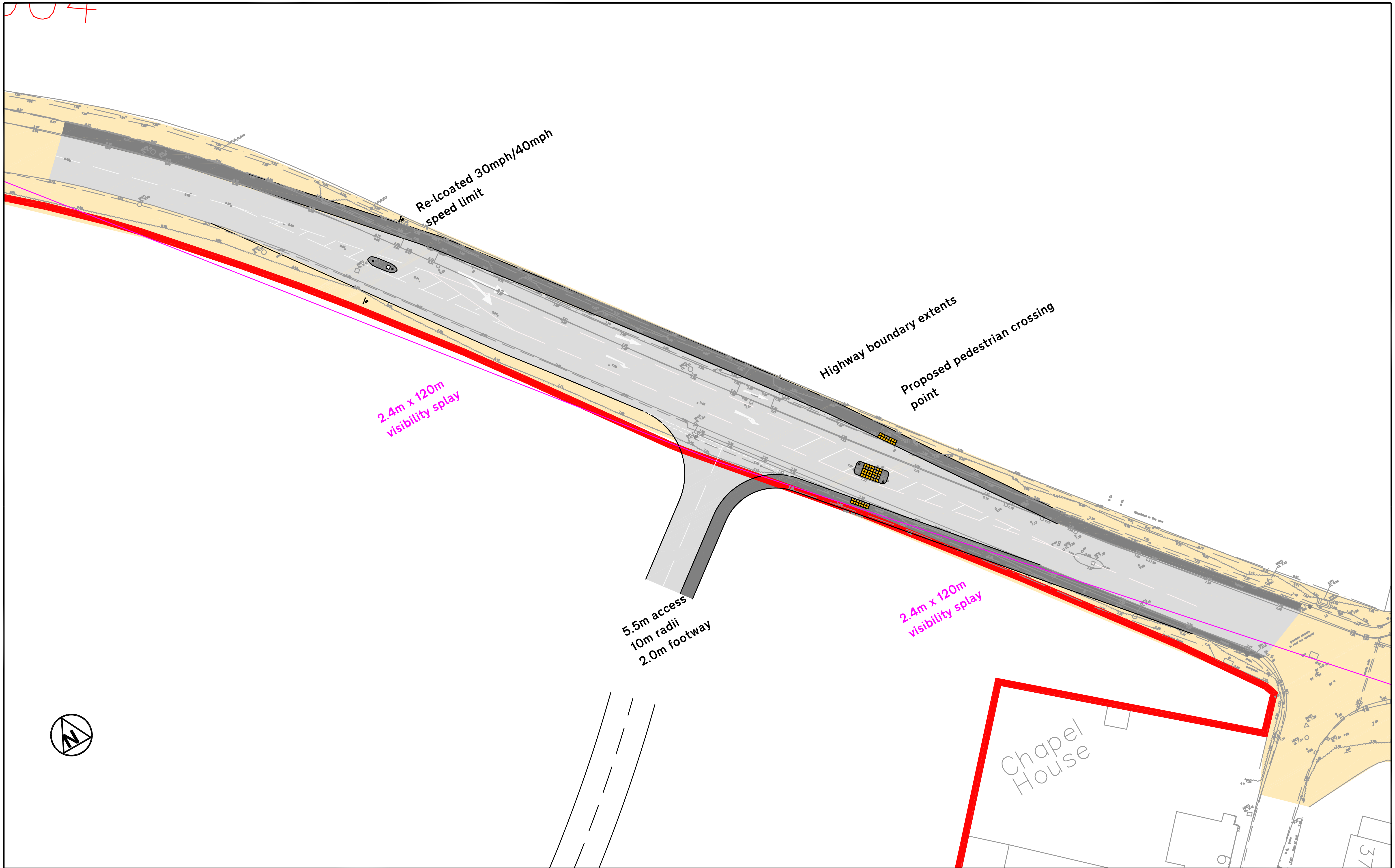
REV	DESCRIPTION	DRAWN	INITIALS	DATE

DRAWING STATUS	CHECKED BY	DATE

dta
david tucker associates
transport planning consultants
Forester House, Doctors Lane,
Henley in Arden,
Warwickshire B95 5AW
Tel: +44(0)1564 793598
Fax: +44(0)1564 793983
www.dtatransportation.co.uk

JOB TITLE: Pump Farm, Lower Rainham
CLIENT: Goatham
DRAWING TITLE: Proposed Pump Lane Railway Bridge Improvements

SCALE	DRAWN BY	DATE	DRAWING No	REVISION
1/500@A3	BP	Oct19	20230-05	d



REV	DESCRIPTION	DRAWN	INITIALS	DATE

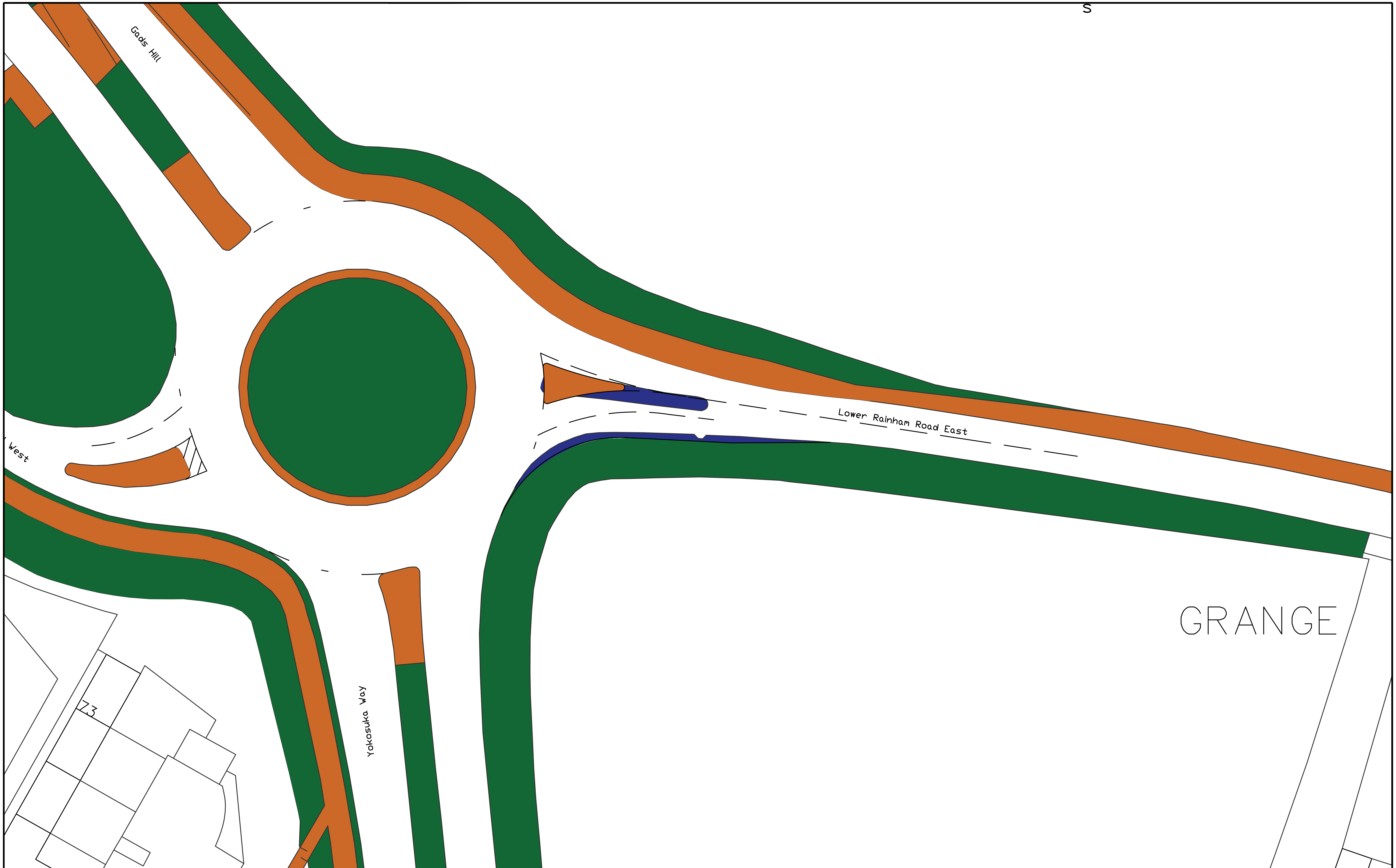
DRAWING STATUS	CHECKED BY	DATE

david tucker associates
transport planning consultants
Forester House, Doctors Lane,
Henley in Arden,
Warwickshire B95 5AW
Tel: +44(0)1564 793598
Fax: +44(0)1564 793983
www.dtatransportation.co.uk

JOB TITLE	CLIENT
Pump Farm, Lower Rainham	AC Goatham

DRAWING TITLE
Proposed Right Turn Lane
Lower Rainham Road

SCALE	DRAWN BY	DATE	DRAWING No	REVISION
1/500@A3	BP	Oct19	20230-05-02	d



REV	DESCRIPTION	DRAWN	INITIALS	DATE

DRAWING STATUS	CHECKED BY	DATE

david tucker associates
transport planning consultants
Forester House, Doctors Lane,
Henley in Arden,
Warwickshire B95 5AW
Tel: +44(0)1564 793598
Fax: +44(0)1564 793983
www.dtatransportation.co.uk

JOB TITLE	CLIENT
Pump Farm, Lower Rainham	AC Goatham

DRAWING TITLE
Proposed Improvments
Yokosuka Way – Lower Rainham Road
Lower Rainham Road East Arm

SCALE	DRAWN BY	DATE	DRAWING No	REVISION
1/500@A3	BP	Oct19	20230–05–03	d

Appendix J

Land at Pump Farm, Lower Rainham

Walking, Cycling & Horse-Riding Assessment and Review

david tucker associates
transport planning consultants

1. SCHEME DESCRIPTION AND BACKGROUND

Background

The proposals are for 1,250 resdiential dwellings, a local centre, 80 bed care home, 60 bed extra care facility and 2 form entry primary school. It is requested by the Local Highway Authority that a Non-Motorised User Audit be provided to establish suitable walking and cycling routes from the site to key facilities.

Guidance for Non-Motorised User Audit was previously set out in HD 42/05. This has since been replaced with HD 42/17 Walking, Cycling and Horse-Riding Assessment and Review and this guidacne has therefore been used as a basis for preparing this document.

Study area

The key local facilites are shown in Figure 1 which outlines the location of primary, secondary schools, local retail, heath centre, bus stops and train station. The assessment therefore considers walking and cycling routes to these key facilities from the site.

2. WALKING, CYCLING & HORSE-RIDING ASSESSMENT

This Chapter summarises the findings of the assessment as set out in Chapter 4 of HD 42/17. The findings under each topic area are summarised in an individual table and any potential opportunities for improvements are noted in each table and then summarised in Chapter 3.

2-1 Review of walking, cycling & horse-riding policies and strategies

Relevant non-motorised user policies include:

Kent County Council Local Transport Plan 4

Outcome 3) Safer Travel: Provide a safer road, footway and cycleway network to reduce the likelihood of casualties, and encourage other transport providers to improve safety on their networks.

2-2 Collision data

A detailed assessment of PIC data recorded within the area over the most recent 5-year period has been undertaken, the data has been obtained from the Medway District Council. The area which has been assessed and the location of the PICs recorded is shown in **Figure 1** below. A summary of the incidents is shown at **Table 1.**

Figure 1 – Location of accidents

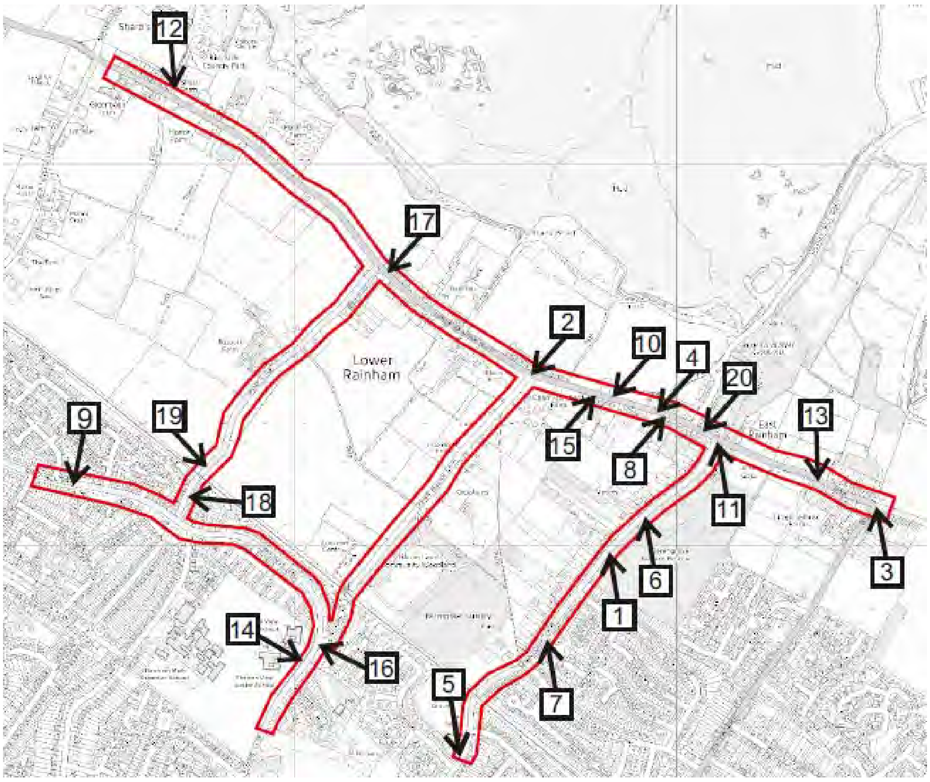


Table 1 – Summary of Recorded Accidents

				Vehicles			
PIC	Severity	No. Casualties	No. Vehicles	1	2	3	4
1	Fatal	2	2	Motorcycle	Car		
2	Serious	1	2	Motorcycle	Car		
3	Serious	1	2	Pedal cycle	Car		
4	Slight	1	2	Car	Car		
5	Slight	1	2	Pedal cycle	Car		
6	Serious	1	2	Car	Motorcycle		
7	Slight	1	2	Car	Car		
8	Slight	3	2	Van/Goods	Car		
9	Slight	1	2	Car	Car		
10	Slight	1	2	Car	Car		
11	Slight	1	2	Car	Motorcycle		
12	Serious	2	3	Motorcycle	Motorcycle	Car	
13	Serious	2	2	Motorcycle	Car		
14	Slight	1	2	Car	Car		
15	Slight	3	2	Car	Car		
16	Slight	1	1	Car			
17	Slight	4	2	Van/Goods	Car		
18	Slight	1	4	Car	Car	Car	Car
19	Serious	1	1	Motorcycle			
20	Slight	2	2	Car	Car		

Between 01/06/2013 and the 31/05/2018 there have been 20 recorded PIC incidents within the surveyed area, of these 20 PICs 1 was recorded as 'fatal' in severity, another 6 as 'serious' in severity and all others were recorded as 'slight' incidents.

The fatal PIC occurred on 04/06/2013 at location 'Berengrave Lane O/S no 123, Rainham' and is identified as number '1' on **Figure 3** above. This PIC involved a car and motorcycle colliding head on and the motorcyclist sustaining head injuries and whose vehicle caught fire during the incident.

The first serious PIC occurred on 21/11/2013 at location 'Lower Rainham Road junction with Lower Bloors Lane, Rainham' and is identified as number '2' on **Figure 3** above. This PIC involved the collision of a car with a motorcycle as it was pulling out of a junction and into a queue of stationary traffic.

The second serious PIC occurred on 18/11/2013 at location 'Lower Rainham Road Jw Station Road, Rainham' and is identified as number '3' on **Figure 3** above. This PIC involved a car turning left from Station Road onto Lower Rainham Road and colliding with a pedal cycle.

The third serious PIC occurred on 10/06/2015 at location 'outside No. 135 Berengrave Lane, Rainham' and is identified as number '6' on **Figure 3** above. This PIC involved a car colliding with a motorcycle as it pulled away from a nearside lay-by.

The fourth serious PIC occurred on 08/04/2017 at location 'B2004 Lower Rainham Road at junction with entrance to Riverside Country Park, Gillingham' and is identified as number '12' on **Figure 3** above. This PIC involved a car driving into the back of two slowed motorcycles passing the Riverside Country Park entrance.

The fifth serious PIC occurred on 15/04/2017 at location 'o/s 728 Lower Rainham Road, Gillingham' and is identified as number '13' on **Figure 3** above. This PIC involved a collision between a motorcycle and a car which resulted from the motorcycle overtaking and in doing so passing into the right-hand lane, an oncoming car could not stop in time to avoid the motorbike.

The sixth and final serious collision occurred on 10/05/2016 at location 'Pump Lane, Gillingham, Kent' and is identified as number '19' on **Figure 3** above. This PIC involved a motorcyclist which lost control of their vehicle under wet slippery conditions and came off their bike and impacted with a tree.

Two accidents involved pedestrians both of which were classed as slight. These occurred at locations 9 and 16.

2-3 Public transport services and interchange information

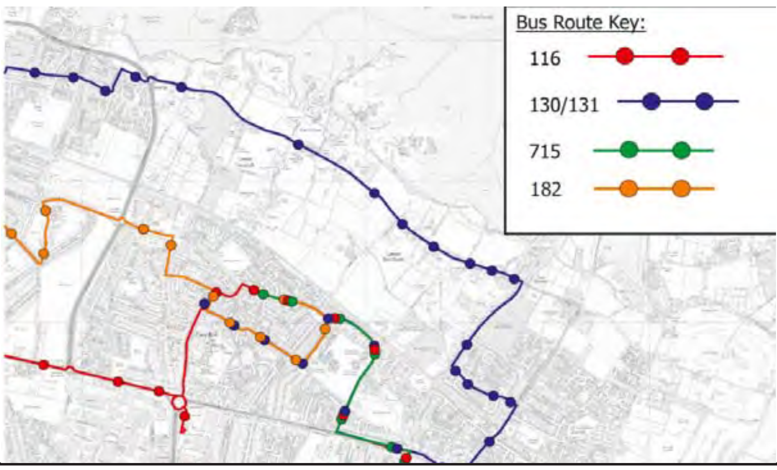
There are a number of bus stops located within the vicinity of the site. The closest of which is located on Beechings Way approximately 600m south of the centre of the proposed development site, the second of which is located on Lower Rainham Road which runs along the site frontage and can be accessed approximately 600m north of the proposed development site. Regular services run to and from these stops routing through Lower Rainham and providing links to towns and cities further-a-field.

The buses servicing these stops including their route and frequency are summarised in **Table 2** below.

Table 2 – Bus routes, times and frequency

Service	Operator	Stop	Route	Frequency		
				Mon-Fri	Sat	Sun
130/131	NU-Venture	Truro Close	Medway Maritime Hospital - Twydall - Hempstead Valley - Penenden Heath - Maidstone	Every 1-2 hours 06:27 - 17:45)	Every 2 hours (07:53 - 16:48)	N/A
715	The Kings Ferry	Truro Close	Twydall - Rainham - Hempstead Valley - Wigmore - London	06:18 (Out) 19:19 (Out)	N/A	N/A
116	Arriva Kent & Surrey	Truro Close	Chatham - Universities - Gillingham - Twydall - Parkwood - Hempstead Valley	Every 20 mins (08:23 - 19:14)	Every 20 mins (08:25 - 18:55)	N/A
182	Arriva Kent & Surrey	Beechings Green	Chatham – Twydall	Every 10 mins	Every 10 mins	Every 20 mins

The route and various stops for each service is summarised in **Figure 2** below.



2-4 Trip Generators

The existing site is used as a fruit orchard and as such does not generate significant vehicular trips or walking, cycling or horse-riding trips.

The trip generation for the proposed development is based on a number of parameters taking into account various journey purpose and journey mode. This is set out in detail in the Transport Assessment. The overall external trip generation is set out in **Table 3**.

Table 3 – Forecast Trip Generation

Total	In	Out	Total
AM peak	115	315	430
PM peak	320	160	480

2-5 Site Visit

A site visit was undertaken in September 2019. This includes a detailed review of the cycling routes to the local facilities and schools as requested by Medway Council.

Route to Secondary Schools

Robert Napier School

Good cycle links are available to The Rober Napier School. Beechings Way benefits from a segregated off-road cycle track on the southern side of the road set back behind a verge. This is shown in **Image 1**.

Image 1 – Off-Road Cycleway on Beechings Way

On approach to the Cornwallis Roundabout the segregated route continues over a bridge across the Ito Way arm of the junction. The route is shown in **Image 2**.

Image 2 – Segregated Footway/Cycleway at Cornwallis Roundabout

The route ends on Cornwallis Avenue, however a lightly trafficked route is available via Beatty Avenue linking with Second Avenue. Cyclists may need to discount for this short stretch until Second Avenue where a signed cycle route is provided to the rear of the school grounds. This is shown in **Image 3**.

Image 3 – Signed Cycle Route to the rear of Robert Napier School

The Howard School/ Rainham School for Girls

Cycle access is via Beechings Way, London Road and Maidstone Road. As set out above Beechings Way benefits from a designated cycle route on the southern side and this continues onto Bloors Lane on the western side. This is shown in **Image 4** below.

Image 4 – Cycle Route on western side of Bloors Lane

At the junction of Bloors Lane with London Road the cycle route continues on the northern side of the road. No cycle route is provided on the southern side of London Road or on Salisbury Avenue which would allow continuous cycle access to these schools.

<u>Route to Local Facilities</u>

Rainham itself provides a local centre on the High Street. Cycle access from the site is via Beechings Way, Bloors Lane and London Road. A designated off-road cycle route is provided on the southern side of Beechings Way as shown in **Image 1**.

As set out above Beechings Way benefits from a designated cycle route on the southern side and this continues onto Bloors Lane on the western side. At the junction of Bloors Lane with London Road the cycle route continues on the northern side of the road as shown in **Image 4**.

Image 4 – Off Road Cycle Route on London Road

This provides a continuous off-road cycle route to the Kia Motor Garage on London Road where London Road meets High Street.

Local facilities serving the Twydall residential area to the south west of the site can be accessed via the footway/cycleway on the southern side of Beechings Way with pedestrian only access provided for a short stretch of Goudhurst Road which is relatively lightly trafficked.

2-6 Consultation with key stakeholders
Discussions have been undertaken with various officers at Medway Council and Highways England. This report has been prepared in response to initial comments received from Medway Council.

2-7 Existing pedestrian, cyclist and equestrian facilities within the local area

The following pedestrian, cyclist and equestrian facilities within the scheme extents have been identified:

Pedestrian Facilities

a) Existing walking and cycling facilities within the immediate vicinity of the site are limited especially regarding Pump Lane which runs through the centre of the site. Pump Lane is a narrow single lane which does not currently have the capacity to accommodate for cyclists or any footway provision.

b) The walking and cycling provisions existing along Lower Rainham Road are variable. There are no designated cycle lanes along the carriageway meaning that cyclists are required to share the carriageway with motor vehicles. From approximately 1.1km west of the proposed sites north western boundary the speed limit of Lower Rainham Road changes to 40mph which compromises cyclist safety especially under shared use. Where Pump Lane meets Lower Rainham Road the carriageway narrows to a single lane where passage of vehicles is controlled by filter lights, this continues for approximately 200m and is not appropriate for cyclist use.

c) West of the site there is a smooth tarmac footway provided on one side of the carriageway (either southside or northside) at any one point. Where Pump Lane meets Lower Rainham Road this footway provision increases to existing on both sides of the carriageway. These footways are approximately 2.0m wide in compliance with Manual for Streets. The footway reduces significantly to the east of Pump Lane. However, this is not a desire line from the development.

d) To the south of the site upon passage under the rail line, footways are established on both sides of the carriageway as Pump Lane widens and becomes a two-way carriageway. The footway provisions existing throughout Lower Rainham are more than adequate, footways are wide commonly with large grass verges between the roadside and footway. Signalised crossings are implemented regularly throughout the local highway network and dropped tactile paving where pedestrians have to cross roads in order to ensure safe crossing.

Cyclist Facilities

a) This NR 1 is located approximately 1km east from the sites northern boundary allowing easy access to this off-road traffic free National Route. National Cycle Route (NR) 1 runs into Lower Rainham from the east, routing north along Berengrave Lane where it meets the Medway River path. There are no designated cycle lanes on-road throughout the town.

Equestrian Facilities

a) A bridleway discects the eastern portion of the site linking Pump Lane with Lower Bloors Lane.

2-8 Existing pedestrian, cyclist and equestrian facilities beyond scheme extents and links to County /strategic networks
The following pedestrian, cyclist and equestrian facilities outside the immediate scheme extents, but within the study area, have been identified: **Pedestrian and Cyclist Facilities** a) NCN Route 1 **Equestrian Facilities** a) There are no dedicated equestrian facilities.

Appendix K

Land at Pump Farm and Bloors Farm, Lower Rainham

Framework Travel Plan

david tucker associates
transport planning consultants

Land at Pump Farm and Bloors Farm, Lower Rainham

Framework Travel Plan

13th September 2019
SJT/JA/AK 20230-04b Framework Travel Plan

Prepared by:

David Tucker Associates
Forester House, Doctors Lane
Henley-in-Arden
Warwickshire
B95 5AW

Tel: 01564 793598
Fax: 01564 796983
inmail@dtatransportation.co.uk
www.dtatransportation.co.uk

Prepared For:

AC Goatham

Table of Contents

1.0 INTRODUCTION

1.1 This Travel Plan (TP) has been prepared on behalf of AC Goatham by David Tucker Associates (DTA) in respect of the proposed development of around 96 Acres of land at Pump Farm and Bloors Farm, Lower Rainham to provide up to 1250 private dwellings, a primary school, local centre and elderly care home. It is accompanied by a Transport Assessment (TA) report.

1.2 This Framework Travel Plan focuses on the residential development, however a number of measures are also considered for implementation for the staff employed on site. In respect of the primary school, the School Travel Plan Champion will liaise separately with Medway Council School Travel Plan team.

1.3 A TP is a term used for a package of measures aimed at promoting sustainable transport, with the main aim of reducing travel by single occupancy vehicles. TPs are site specific and are dependent upon not only the location of the site but the size and type of development located there. They also require continuous monitoring and refinement in order to be successful.

1.4 This TP sets out the various travel-related measures and strategies that will be implemented to encourage residents to consider the use of a range of travel modes. The key objectives of the TP are to:

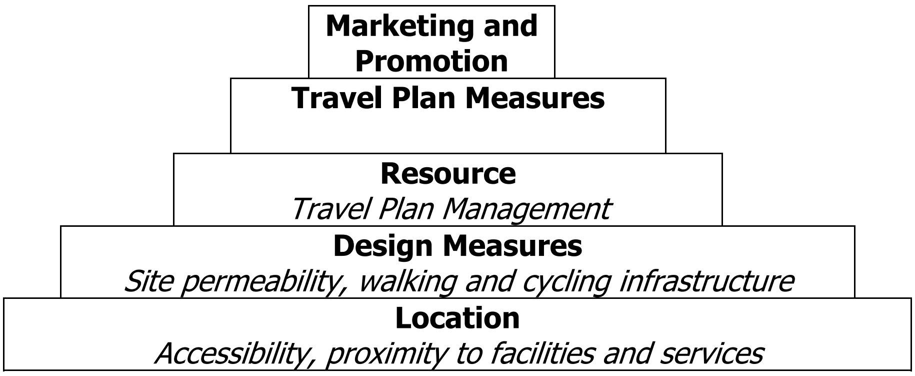
- Deliver a long-term and sustained commitment to changing and widening travel choice;
- Address the access needs of residents by enabling walking, cycling, public transport and car sharing;
- Promote healthy lifestyles and raise awareness about the benefits of utilising sustainable travel opportunities; and
- Build upon good urban design principles that open up the permeability of the development encouraging walking and cycling as the first choice for local trips.

1.5 The TP includes:

- A strategy for setting target modal share for access to the site;

- A strategy for achieving the target;
- A process for monitoring progress towards achieving the target;
- Public transport initiatives;
- Cycling incentives and facilities; and
- Walking incentives.

1.6 In producing the residential TP, reference has been made to 'Making residential travel plans work: good practice guidelines' published by the Department for Transport (DfT) in September 2005 and the DfT's 'Good Practice Guidelines: Delivering Travel Plans through the Planning Process' (2009). This document considers the TP as a 'pyramid of measures and actions' as shown diagrammatically below:



1.7 At the base of the pyramid is the choice of location. **Section 2.0** of the TP considers the site location in detail including all aspects of accessibility of the site and its proximity to existing facilities and services. The next level of the pyramid comprises the fundamental characteristics that need to be incorporated into the design of the site from an early stage. Details of design measures incorporated into the development masterplan are also considered in **Section 2.0**.

1.8 **Section 3.0** details the resources required to facilitate and develop the measures featuring in the final levels of the pyramid. **Section 4.0** describes the individual measures designed to build upon the advantages of the location in order to encourage more sustainable travel. **Sections 5.0** and **6.0** detail the targets and monitoring of the TP.

2.0 RELEVANT POLICY

2.1 National Planning Policy Framework

2.1.1 In February 2019, the Government published a revised National Planning Policy Framework (NPPF).

2.1.2 Within this context, the NPPF identifies in Paragraph 110 that applications for development should:

"a) give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;

b) address the needs of people with disabilities and reduced mobility in relation to all modes of transport;

c) create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;

d) allow for the efficient delivery of goods, and access by service and emergency vehicles; and

e) be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations."

2.1.3 Paragraph 111 of the NPPF goes on to state that: *"All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed".*

2.1.4 In reinforcing the principle of supporting sustainable development, paragraph 10 stipulates that at the heart of the Framework is *"...a presumption in favour of sustainable development".*

2.2 Medway's Car Parking Standards

2.2.1 The development is submitted in outline, however car parking provision will be provided in accordance with the relevant residential car parking standards for Medway Council at the reserved matters stage.

3.0 SUSTAINABLE ACCESS AND MOVEMENT STRATEGY

3.1 Introduction

3.1.1 The overall Access and Movement Strategy for the proposed development is based on the principle of reducing the quantum of single occupancy car use associated with the site by maximising the potential for pedestrian and cycle movements, the use of existing public transport services, and the opportunities for car sharing.

3.2 Pedestrian and Cycle Access

3.2.1 The walking and cycling strategy for the site promotes these travel modes to reduce use of the private car. Given the proximity of the site to local centres, walking and cycling have the potential to be attractive alternatives to the private car. There are associated health and lifestyle as well as community benefits that would also come about from this goal.

3.2.2 An established network of footways and crossing points throughout the local area provides direct and convenient access to a range of facilities and public transport connections. With regard to the latter, bus stops served by frequent services operate in close proximity to the sites southern boundary and rail services are accessible within walking/ cycling distance of the site. Measures to delivering enhanced connectivity between the proposed development and local services are identified below.

3.2.3 In terms of existing local pedestrian crossing facilities, dropped kerbs and tactile paving is provided along Lower Rainham Road, north of the site and Beechings Way, south of the site. There are also several clearly marked zebra crossing facilities along Beechings Way.

3.2.4 Key to promoting walking and cycling is the design of the development – specifically that the environment addresses actual and perceived safety issues. Underlying this is an emphasis on place making with a user hierarchy which places pedestrians at the top reflecting the ethos extolled by Manual for Streets (MfS).

3.2.5 It is important that the site is integrated into the existing built-up area both to ensure that there is a coherent network of routes, and to ensure that there are not external issues that would undermine the efforts to encourage walking and cycling within and to/from the site. This is achieved by identifying gaps in the provision for pedestrians and cyclists on the local road network.

3.2.6 Foot/ cycle access to the proposed development would be achieved through a number of connection points, including:

- Via the proposed vehicle access from Lower Rainham Road; and
- Via a series of footpath links to the site including from Lower Rainham Road (north), Lower Bloors Lane (east), and Lower Twydall Lane to the (west)

3.2.7 These connections to the north, east, south and west will provide a good level of connectivity to the local area and nearby facilities as discussed within the TA. Furthermore, the footway and cycleway links proposed within the site itself is extensive.

3.2.8 With regards to cycling, the National Cycle Route 1 runs into Lower Rainham from the east, routing north along Berengrave Lane where it meets the Medway River path. This National Route 1 is located approximately 1km (at its closest point) east from the sites northern boundary allowing easy access to this off-road traffic free route.

3.2.9 With regard to the development site, it would be designed to facilitate foot and cycle movements along desire lines through the development, linking to the external access points. This will include the provision of the following where appropriate in line with the DfT's MfS and MfS2:

- A good level of street and path lighting;
- Warning signs prior to junctions;
- On-site roads will be designed to 20mph;
- Tactile and coloured surfacing;
- Safety kerbing;
- Reduced junction mouth widths to promote slower vehicle speed where appropriate; and
- Signage to direct pedestrians and cyclists to key facilities and places of interest, including distances.

3.2.10 A mix of cycle parking facilities will be provided at the development to comply with local standards and will be designed and tailored to the likely needs of future occupants. Cycle parking will be provided within the confines of a dwelling/ garage, or alternatively provided in secure, well lit, covered cycle storage facilities.

3.2.11 In terms of off-site improvements, the following measures are proposed:

- The Railway Bridge at Pump Lane (south) (**Drawing 20230-05** within the TA):
  - A shuttle working scheme through the bridge which will provide a 2.5m wide combined footway/ cycleway and a 3m wide running carriageway.

3.3 Bus Service Provision

3.3.1 The site is ideally located within 600m of existing bus services operating within Lower Rainham, a bus route map is attached at **Appendix A**. Bus stops located on Beechings Way and Pump Lane, to the south of the site, benefit from regular bus services. A summary these of local bus services is provided in **Table 1** below. The location of the bus stops in relation to the site are shown on the bus stop isochrone plan included in **Figure 1**. This shows the stops are within 800m of the vast majority of the site boundary.

Table 1 – Summary of local bus services

				Frequency		
Service	Operator	Stop	Route	Mon-Fri	Sat	Sun
130/131	NU-Venture	Beechings Way (Truro Close)	Medway Maritime Hospital - Twydall - Hempstead Valley - Penenden Heath - Maidstone	Every 1-2 hours 06:27 - 17:45	Every 2 hours (07:53 - 16:48)	N/A
715	The Kings Ferry	Beechings Way (Truro Close)	Twydall - Rainham - Hempstead Valley - Wigmore - London	06:18 (out) 19:19 (In)	N/A	N/A
116	Arriva Kent & Surrey	Beechings Way (Truro Close)	Chatham - Universities - Gillingham - Twydall - Parkwood - Hempstead Valley	Every 20 mins (08:23 - 19:14)	Every 20 mins (08:25 - 18:55)	N/A
182	Arriva Kent & Surrey	Beechings Green	Chatham - Twydall	Every 10 mins	Every 10 mins	Every 20 mins

3.3.2 Pedestrian routes through the development site to the local bus stops will be designed to be direct, convenient and safe in order to encourage the use of public transport.

Improvements to pedestrian facilities along the site frontage as set out in **Section 2.2** would also be provided in the form of new crossings and footway improvements.

3.3.3 In terms of off-site measures, improvements to existing bus stops located within the vicinity of the site would be provided as part of the development proposals. These measures could include, but are not limited to providing:

- Bus shelters and seating;
- Raised kerbing;
- Information pole/ totem; and
- Real-time information.

3.3.4 A contribution towards these improvements would be secured through the Section 106 agreement.

3.4 Rail Service Provision

3.4.1 Rainham train station is located within walking/ cycling distance of the site, approximately 2.5km south east. The station can be readily accessed via Pump Lane and Lower Rainham Road to the north or Pump Lane and Beechings Way/ Tufton Road to the south. The station is operated by Southeastern Rail. In terms of facilities, cycle parking stands are provided with space for 64 bikes, as well as 233 car parking spaces (4 of which are accessible spaces). The number 783 and 131 bus services operate within the vicinity of the site, stopping at the station access.

3.4.2 There are a number of regular services operating from Rainham Station which enable travel to local and national destinations. These services are summarised in **Table 2** below.

Table 2 – Summary of train services from Rainham Railway Station

	Frequency [1], trains/hour			Typical Journey Time (minutes)
	Peak [2]		Inter-Peak	
Destination	To	From		
London (Stations)	5	3	3	1hr 3mins
Dover Priory	3	2	2.5	46mins - 1hr 32mins
Ramsgate	2	2	2	56mins - 1hr
Faversham	4	5	2	16mins
1. Includes both direct trains and departures with a change of train				
2. To-destination based on AM; From-destination based on PM				

3.4.3 A contribution towards improved cycle parking provision at Rainham Railway Station could be provided, thus enhancing travel to/ from the site by sustainable modes. This would be secured as part of the Section 106 agreement.

3.5 Summary

3.5.1 The site is well located in terms of public transport with bus stops to regular bus services located within easy walking distance from the centre of the site. These provide frequent connections to local destinations.

3.5.2 Pedestrian access to the proposed development would be provided to at a number of locations linking the wider network, thus delivering a good degree of permeability through the site and facilitating movements along pedestrian desire lines. The development proposals include measures to link in with existing foot/ cycle facilities and provide enhancements to existing provision where appropriate.

4.0 TRAVEL PLAN MANAGEMENT

4.1 Introduction

4.1.1 A principal aim of the TP is to achieve more sustainable travel from the outset in preference to cutting car use incrementally once residents are in occupation. Therefore, the initiatives implemented from the onset will be funded by and instigated by the Developer via the marketing organisation and the maintenance company.

4.2 Sustainable Travel Strategy – Overall Management

4.2.1 A Lead Travel Plan Coordinator (TPC) will be appointed and funded by the Developer to oversee the implementation and continued development of the initiatives set out within the TP. At this stage, it is envisaged that an external specialist company experienced in such work will provide the Lead TPC role.

4.2.2 The Lead TPC will be appointed by the Developer prior to commencement of development to ensure that the TP is established and engrained into the development from the start. This will include overall management responsibility for the site and will also include the role of co-ordinating the TP.

4.2.3 The Lead TPC will also be responsible for monitoring the progress of the TP and disseminating information to residents. Full details of the TPC's responsibilities are set out in **Table 4** below.

4.2.4 The Developer will fund the position of the Lead TPC for a minimum of two years following the completion of the development. Based on expected build-out rates, the Lead TPC role could therefore cover a period of 12 years – although this will be affected by demand and prevailing economic conditions.

4.2.5 At the end of this period the position will be reviewed following which consideration will be given to the role being funded through the ring-fencing of funds generated by the sustainable travel ventures. In particular, if the TP targets are not being met, consideration will be given to how this role could be continued and enhanced to bring about the required improvements in its effectiveness.

4.2.6 Where appropriate, the Lead TPC would prepare a business case to secure any additional funding which is deemed to be necessary for the TP development. This would be targeted at responding to any identified deficiencies in the effectiveness of the overall TP measures where targets are not being met and impairing the effectiveness of their implementation. The additional funding would be targeted at improving the effectiveness of such measures and hence increasing the success of the TP and seeking to reduce off-site mitigation liabilities such as off-site highway improvement works.

4.2.7 The following table details the key roles of the Lead TPC.

Table 3 – Lead TPC Roles

Overall Management
- Managing and implementing the TP; - Setting up the TP Steering Group and local working group; - Informing the local authority of the progress of the residential development and first occupation; - Being the first point of contact for all users of the site, providing overall advice to the residents; - Communication and engagement with all parties/stakeholders.
Site Wide Initiatives
- Liaising with the Developer on the funding and delivery of site-wide infrastructure (external and internal); - Setting up a sustainable travel website for the whole site; - Setting up a car share database for the whole site using Medway's Liftshare website; www.liftshare.com/uk/community/medway - Setting up user group meetings where appropriate; - Liaising with operators and negotiating over desired public transport service changes; - Promoting the TP to the outside community through public meetings where appropriate; - Implementing promotional days and events; and - Organising the site wide travel audit.
Community Website

Establishing a community website to incorporate the following: - Information on development progress; - Information on public transport services (bus and train); - Real-time public transport information where possible; - Links to public transport and journey planner websites; - Local walking and cycling information (including walking and cycling route maps); and - News updates including information on travel strategy progress and upcoming events.
Review of Data
- Analysing the annual travel survey and presenting the results externally; - Gathering bus patronage information; - Collection of car-share registration information; - Gathering and collating the results of the travel surveys; and - Preparing an Annual Performance Review report for submission to the local authority.
Implementation of Additional Measures
- Liaising with the local authority to identify additional sustainable travel measures should they be required
Initiatives
- Promoting and monitoring car share uptake on the site; - Preparing and distributing home welcome packs to new residents; - Collating feedback from questionnaires included within the welcome packs; and - Initiating and organising personalised travel planning sessions.
Marketing
- Explaining and marketing the TP to new residents (supported by strong TP branding); - Producing questionnaires, promotional and informative material; - Collating data on existing bus routes and disseminating to new residents; - Organising development/community travel events; and - Promoting initiatives.

4.3 Travel Plan Steering Group

4.3.1 The mechanism proposed for the delivery of the car shift targets and any ongoing mitigation/ intervention is the establishment of a TP Steering Group (TPSG). The primary role of the TPSG would be to:

- Make the high-level decisions on the direction of the TP;
- Appoint an independent organisation to monitor the impact of the TP in meeting the targets set;
- Debate the effectiveness of the TP;
- Provide a forum for airing ideas on how the effectiveness of the TP could be improved; and
- Provide guidance and support to the Lead TPC.

4.3.2 It is anticipated that the TPSG would comprise the following key stakeholders:

- The Lead TPC;
- Medway District Council as the local authority; and
- Representatives from the development.

4.3.3 Public transport operators would also be invited to attend meetings where appropriate.

4.3.4 The results/ minutes of the TPSG meetings will be widely communicated to interested parties associated with the development.

5.0 TRAVEL PLAN INITIATIVES

5.1 Introduction

5.1.1 In order to meet the aims and objectives for sustainable travel set out in this TP, a number of measures will be implemented. The proposed measures to be provided as part of the development and TP are split into the following categories:

- Measures to Promote and Encourage Walking and Cycling;
- Measures to Promote and Encourage Public Transport Use;
- Measures to Promote and Encourage Car Sharing; and
- Measures to Reduce the Need to Travel.

5.1.2 The vast majority of measures will be aimed at promoting and encouraging the use of existing travel facilities in the area (walking, cycling and public transport), but also car sharing where appropriate. Measures to promote and encourage each form of sustainable travel mode are outlined below.

5.2 Measures to Promote and Encourage Walking and Cycling

5.2.1 The following measures are to be implemented to promote and encourage residents to walk and cycle to and from the proposed development:

- Local maps showing walking routes, which will be disseminated through the marketing regime;
- Information on local and national walking events, such as Walk to Work Week, which will be disseminated through the marketing regime;
- Website links to the Council's sustainable information, and links to national websites such as SUSTRANS, will be disseminated through the marketing regime;
- Information on Bicycle User Groups that may be operating within the local area would be provided to residents will be disseminated through the marketing regime;
- Information on cycling events such as 'National Bike Week' will be disseminated through the marketing regime; and
- Information on the economic, social, environmental and health benefits of cycling will be disseminated through the marketing regime.

5.3 Measures to Promote and Encourage Public Transport Use

5.3.1 The following measures are to be implemented to promote and encourage residents to use public transport when travelling to and from the proposed development:

- Links to journey planning websites such as Traveline will be disseminated through the marketing regime;
- Providing information on a new online resource – www.nextbuses.mobi – which enables residents to obtain timetables, route details and bus stop locations across the UK by entering a town or postcode, downloaded directly to smartphone / mobile phone;
- Bus route maps and timetables will be provided through the marketing regime; and
- Information on the benefits of public transport use will be disseminated through the marketing regime.
- A residential travel voucher will be offered to each household costing around £50 per household. The final cost and nature of the voucher will be agreed via a S106 Agreement.

5.4 Measures to Promote and Encourage Car Sharing

5.4.1 Car sharing can be an effective means of easing traffic congestion and facilitating the achievement of sustainable travel objectives. For residents that live in close proximity to one another and have common journey requirements, car sharing can represent an effective mechanism for reducing the volume of trips to and from work, school, and/or recreational activities.

5.4.2 The following measures are to be implemented to promote and encourage residents to car share when travelling to and from the proposed development:

- The Lead TPC would set up a car share database for the site as a whole using Medway's Liftshare website; www.liftshare.com/uk/community/medway
- Information on car sharing opportunities at the site would be provided to residents through the marketing regime;
- Information on what car sharing is and its potential benefits would be disseminated to residents; and

- Information on 'car sharing' events such as Liftshare week would be publicised.

5.4.3 The nature of the Car Share database will be for final determination by the Lead TPC. This could be done via the implementation of a bespoke Community Car Share Scheme database created with access provided through the Community website (see below).

5.5 Measures to Reduce the Need to Travel

5.5.1 Home Working is another effective manner of reducing traffic congestion and facilitating the achievement of sustainable travel objectives. The following measures are to be implemented to promote and encourage residents of the proposed development to work from home:

- Infrastructure for broadband access will be provided to facilitate remote home working;
- Information on what home working is and its potential benefits, disseminated through the marketing regime; and
- Similar measures could also be introduced to reduce unnecessary non-work travel, for example, home shopping, home learning and home entertainment opportunities.

5.6 Marketing and Promotion of the Travel Plan Measures

5.6.1 In order to deliver the behavioural change required to meet the targets, there will need to be a sustained and long-term commitment to communicating and marketing the TP objective to the residents of the proposed development. The main responsibility of marketing and promotion of the measures will lie with the Lead TPC.

5.6.2 The promotional methods utilised to increase awareness and prompt people to think about their travel choices are set out below.

Household Welcome Packs

5.6.3 Household Welcome Packs will be given to all new residents and these packs will include the following:

- Details of the TP and its purpose;
- Contact details of the Lead TPC;

- Information leaflets on the benefits of adopting more sustainable travel practices;
- Local walking and cycling route maps;
- A map showing key local facilities and amenities;
- Information on local Bicycle User Groups that may be operating in the local area;
- Information on public transport services including schedules, maps and www.nextbuses.mobi;
- Information on key sustainable travel events such as 'National Bike Week' and 'Liftshare Week';
- Information and marketing material on car sharing;
- Information on the economic, social, environmental and health benefits of travelling by sustainable modes;
- Promotion of free health/ exercise apps for mobile phones'
- Information on home delivery services;
- Information on working at home and its potential benefits;
- Website links to, for example, the Council's sustainable travel page and national websites such as SUSTRANS; and
- Feedback survey forms.

5.6.4 The Lead TPC will agree the content of the Household Welcome Packs with the local authority.

Community Website

5.6.5 A website/ webpage advertising and providing information on the development would be created by the Developer. It is proposed that this would provide information on a range of issues, such as:

- Local/proposed amenities, including schools, shopping facilities, leisure and so on;
- The development and sustainable travel opportunities, including information on the TP;
- Upcoming community events and activities such as walk to work/school days; and
- Up-to-date news/ press releases on the development.

Promotional Travel Leaflets

5.6.6 As part of the ongoing marketing regime, promotional leaflets advertising upcoming community events and relevant travel information will be distributed to residents by the Lead TPC as and when appropriate.

5.6.7 The TPC will also use social media to promote the Travel Plan and disseminate sustainable travel information if any appropriate method is available.

5.7 Measures for Employment Uses on Site

5.7.1 The following measures will be considered for the employment units on the site. This may apply to the staff at the extra care and care home facilities.

- Showers and locks on site;
- Pool umbrellas for staff; and
- Use of Social Media to promote and disseminate sustainable travel information.

6.0 TRAVEL PLAN TARGETS AND INDICATORS

6.1 Introduction

6.1.1 The overall TP objective for the development is to reduce the percentage of occupants travelling by car and this chapter provides an indication as to the overall impact travel planning could have on reducing car trips.

6.2 Outcomes

6.2.1 The Good Practice Guidelines identifies that good practice has evolved from previous guidance into a single main approach to TPs. It states that:

"The 'outcomes' approach, specifies outcomes linked to specific targets that can also be strengthened with sanctions if these are not met. This approach is distinct from that which focuses wholly on the establishment of a list of measures, e.g. the provision of a shuttle bus or cycle shelter. Many, if not the majority of, travel plans combine the two approaches, depending upon the type of travel plan and what it is designed to achieve. However, the establishment of outcomes is important."

6.2.2 With the outcomes approach, the focus is placed on ensuring the performance of the TP – for example, meeting modal shift targets. The applicant/ developer is then required to commit to meeting these targets, and agrees to a monitoring and review process. Should the targets not be met within the timescales stated, then it may be appropriate to implement remedial measures (see **Section 6.4**).

6.2.3 It is identified in the Good Practice Guidelines that, for new developments in particular, outcome targets should be expressed in terms of a maximum end level of car use. This figure should be lower than what would be expected should the development not have a TP.

6.3 Preliminary Baseline Mode Share

6.3.1 In order to estimate a preliminary baseline mode share for the proposed development, reference has been made to the existing journey to work mode share for the Middle

Super Output Area (MSOA) of Medway 018. This information is summarised in **Table 5**. The baseline position would be reviewed following completion of the first travel survey.

Table 4 – Preliminary Baseline Mode Share (Medway 018)

Method of Travel to Work	Base Mode Share
Driving a car or van	67.0%
On foot	11.5%
Passenger in a car or van	6.8%
Bicycle	2.2%
Bus, minibus, coach, or Train	10.7%
Motorcycle, scooter or moped	1.2%
Underground/ Metro/ Light Rail	0.1%
Other	0.3%
Total	100.0%

6.4 Mode Shift

6.4.1 The Access and Movement Strategy outlined in **Chapter 2** has been designed to reduce the number of private car trips by promoting more sustainable modes of travel to and from the site. Given the measures proposed, an initial 10% mode shift reduction target for car use has been identified for the development site. This target was estimated based on predicted mode shifts by sustainable travel modes, as set out in **Table 6** below.

Table 5 – Target Mode Shift Calculations

Method of Travel to Work	Year 1 (Baseline)	Mode Shift	Year 3	Year 5
Driving a car or van	67.0%	-10%	63.5%	60%
On foot	11.5%	+20%	12.5%	13.5%
Passenger in a car or van	6.8%	+20%	7.4%	8%
Bicycle	2.2%	+10%	2.85%	3.5%
Bus, minibus, coach, or Train	10.7%	+10%	11.8%	13%
Motorcycle, scooter or moped	1.2%	-	1.2%	1.2%
Underground, metro, light rail	0.1%	-	0.1%	0.1%
Other	0.3%	-	0.3%	0.3%
Total	100.0%	-	100%	100.0%

6.4.2 The predicted shifts by sustainable travel modes identified in **Table 6** are not fixed, but are intended to give an indication of how the 10% reduction in car driver mode share could be achieved. The assumptions behind the predicted shifts in sustainable travel modes are outlined below:

- **Walking and Cycling** – Delivering permeability, connectivity and initiatives to encourage travel by pedestrians and cyclists form part of the accessibility strategy for the proposed development. Furthermore, a number of key local facilities, including schools, are located within reasonable walking and cycling distances. It is therefore reasonable to assume that there would be some increase in travel by active modes from the base situation. A mode shift of 20% by foot and 10% by bicycle is considered achievable for the development;
- **Car Passenger** – Given that car sharing will be promoted through the dissemination of marketing material, sustainable travel events, and by directing residents to the site car share scheme, some increase in car passenger mode share is likely. A mode shift increase of 20% travelling as a car passenger is therefore considered achievable; and
- **Public Transport** – The proposed development is located in close proximity to bus stops served by frequent services and to Rainham Railway Station. Measures to promote travel by public transport will be implemented at the proposed development. A mode shift of 10% by public transport is therefore considered to be achievable.

6.4.3 The base mode share for the site and associated car driver target will be reviewed within three months of occupation of the 50th dwelling. The targets will be measured on a proportional basis against the total number of occupied dwellings at relevant intervals (See **Chapter 6**).

6.5 Indicators

6.5.1 The Good Practice Guidelines highlights the importance of distinguishing between outcome targets and indicators. Whereas the target for the proposed development is focussed on reducing the number of car trips, the indicators are used to monitor how the site is being accessed and how effectively different modes are meeting travel needs. This information can subsequently be used to identify where the greatest potential for mode shift may lie and to inform the implementation strategy for the TP over the coming year.

6.5.2 A number of indicators will be measured at the proposed development. The responsibility for measuring these indicators lies with the Lead TPC, and will include the following:

- % of residents walking;
- % of residents cycling;
- % of residents using public transport; and
- % of residents that are car sharing and/ or registered car share users.

7.0 MONITORING STRATEGY

7.1 Introduction

7.1.1 As stated within the DfT's Good Practice Guidelines, TPs are living documents that need to be updated regularly and implementing a TP involves *"a continuous process for improving, monitoring, reviewing and adjusting the measures in the plan to reflect changing circumstances"*.

7.1.2 Monitoring the TP is essential in gauging the success of the measures adopted at meeting the targets set. It would commence following occupation of the 50th dwelling and would continue for a minimum of 5 years following full occupation of the development. After this time, it is envisaged that the TP would become a voluntary initiative, monitored on a voluntary basis by the site's residents.

7.2 Data Collection

7.2.1 In order to understand how the site is being accessed and how effectively residents' travel needs are being met, a number of multi-modal indicators will be monitored as part of the monitoring regime (including travel by foot, cycle, public transport and car share). This information will be collected through residential travel surveys using questionnaires, which will be undertaken by the Lead TPC. These surveys would also be used to obtain feedback from residents on the TP measures implemented and to identify where the greatest potential for modal shift lies.

7.2.2 The questionnaire surveys would be used to review the base mode share for the site and associated car trip target. This reflects an approach in which the monitoring regime is an iterative process, aiming for continual improvement throughout the implementation period. In line with this approach, there will be a biennial process of review following the collation and analysis of data obtained through the monitoring regime.

7.3 Data Reporting

7.3.1 The Lead TPC will be responsible for the preparation of performance reports setting out the findings of the data collection process and the implications in terms of the ongoing operation of the TP.

7.3.2 The monitoring reports should include a summary of measures enacted over the previous year, and the resources expended on the Travel Plan over the same period.

7.3.3 A minimum of 35% response rate must be obtained in order for the travel questionnaire surveys to be considered statistically significant. If this cannot be achieved, discussions will be had with Integrated Transport regarding carrying out TRICS SAM or ATC surveys.

7.3.4 Consideration will be given to offer of entry into a prize draw for residents or members of staff following completion of the surveys. This should not be travel related.

7.3.5 The results of the monitoring for the TP would be submitted by the Lead TPC to the TPSG and local authority within 3 months of the survey being completed, and this process would continue for the duration of the monitoring regime.

7.3.6 In addition, the findings will be reported back to the residents via appropriate forms and dissemination methods, such as community e-newsletters.

7.4 Remedial Measures

7.4.1 Should the monitoring and review process reveal no change, further remedial measures will be considered for implementation. The monitoring and review process should highlight areas where measures would best be focused in order to achieve the overall 10% mode shift reduction in car use.

7.4.2 These measures are likely to include the ramping up of marketing measures targeted at encouraging a greater shift towards sustainable mode of travel, and could comprise:

- The provision of bus/ cycle vouchers to encourage uptake;
- The introduction of personal travel planning; and
- Targeted campaigns.

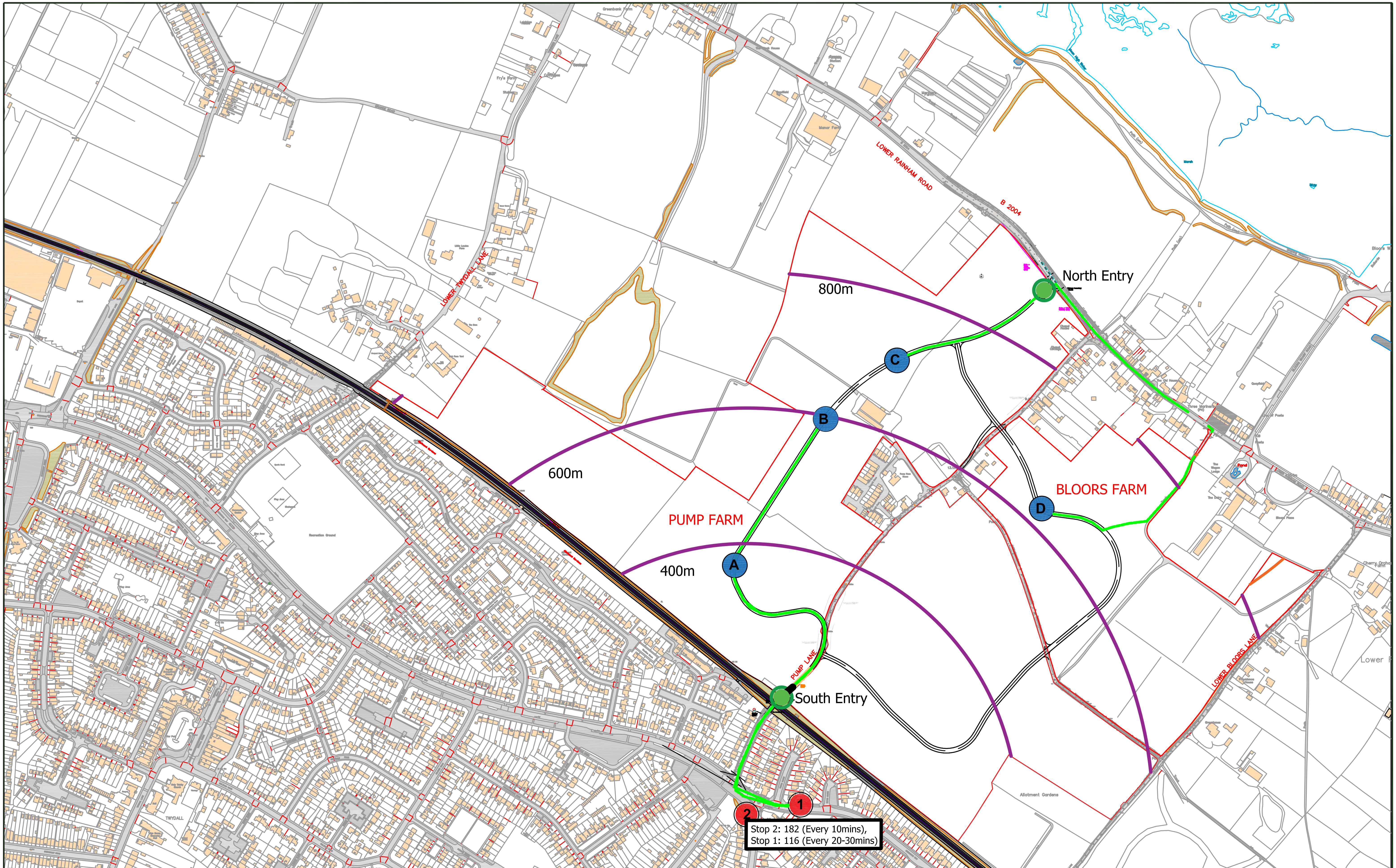
7.4.3 Should remedial action be required, the Lead TPC and the local authority will agree a strategy for implementing appropriate measures.

7.5 Ownership and Handover

7.5.1 In the short term, the ownership of the TP lies with the Lead TPC and the Developer until the end of the formal implementation period, although this will depend on the attainment of the targets during this time. In the long term, the ownership of the TP will ultimately rest with the future residents. An appropriate handover mechanism will be agreed between the developer and the local authority.

7.5.2 It is anticipated that during the last year, the Lead TPC will adopt a more passive role in monitoring and reviewing the TP, providing a supervisory service to the residents during this period. This would include facilitating the formation of a suitable residents' group to take on this role if appropriate. Whilst the responsibility to ensure that the TP is reviewed and monitored during this period will remain with the Lead TPC and Developer, the residents will be encouraged gradually to take on more responsibility in order to facilitate the handover process.

Figure 1



REV	DESCRIPTION	DRAWN	INITIALS	DATE

DRAWING STATUS	CHECKED BY	DATE

dta
david tucker associates
transport planning consultants
Forester House, Doctors Lane,
Henley in Arden,
Warwickshire B95 5AW
Tel: +44(0)1564 793598
Fax: +44(0)1564 793983
www.dtatransportation.co.uk

JOB TITLE
Pump Farm, Lower Rainham

CLIENT

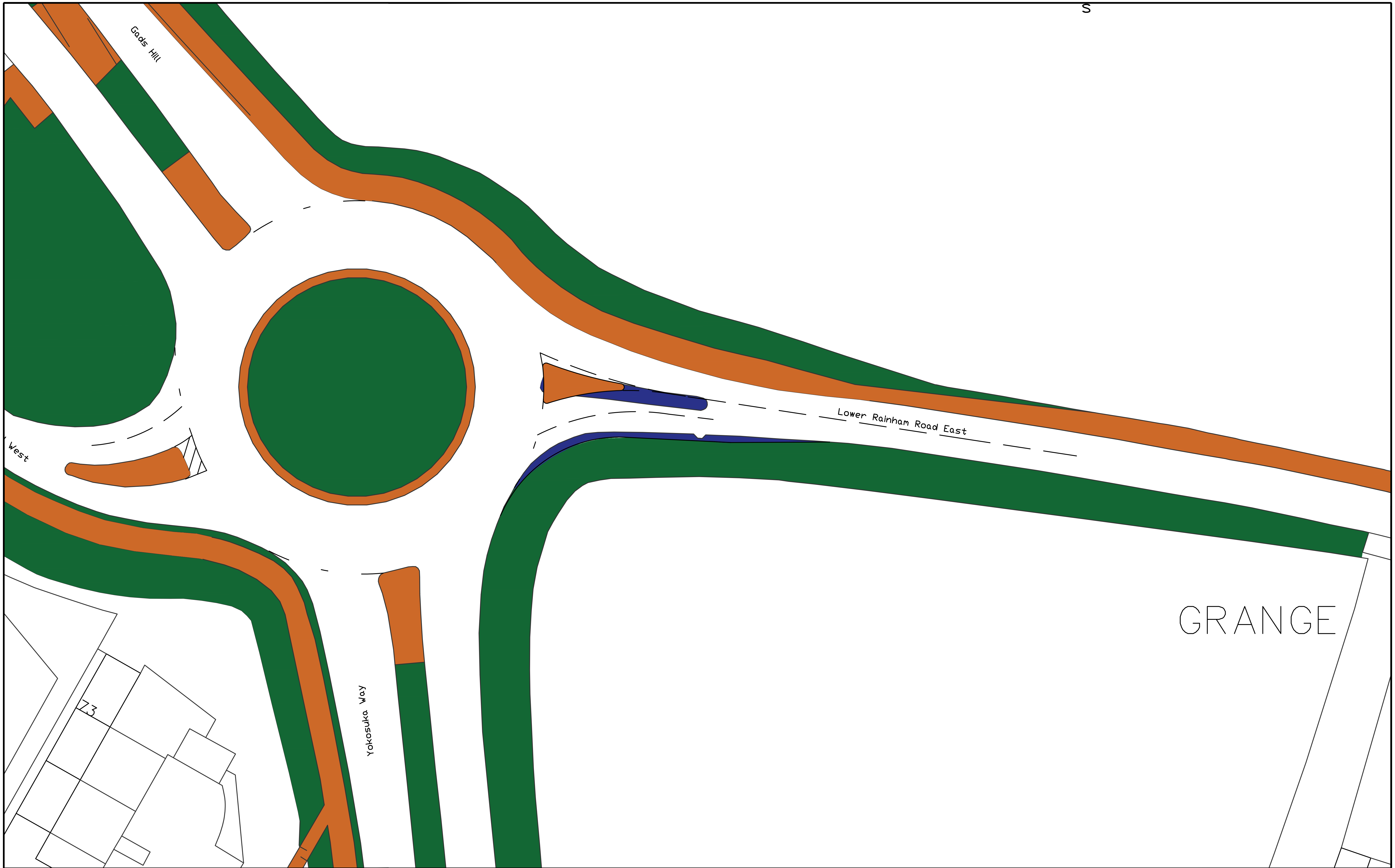
DRAWING TITLE
Bus Stop Proximity to Site (400m, 600m, 800m)
Distance from Southern Entry Points
Stop 1: Beechings Way, Stop 2: Pump Lane Roundabout

SCALE	DRAWN BY	DATE	DRAWING No	REVISION
1/5000@A3	AK	08/11/18	20230-07	

Appendix A

arriva
a DB company

Appendix L



REV	DESCRIPTION	DRAWN	INITIALS	DATE

DRAWING STATUS	CHECKED BY	DATE

david tucker associates
transport planning consultants

Forester House, Doctors Lane,
Henley in Arden,
Warwickshire B95 5AW
Tel: +44(0)1564 793598
Fax: +44(0)1564 793983
www.dtatransportation.co.uk

JOB TITLE: Pump Farm, Lower Rainham

CLIENT: AC Goatham

DRAWING TITLE:
Proposed Improvments
Yokosuka Way – Lower Rainham Road
Lower Rainham Road East Arm

SCALE	DRAWN BY	DATE	DRAWING No	REVISION
1/500@A3	BP	Oct19	20230–05–03	d

Appendix M

FAO: Mr S Tucker

DTA Transportation Ltd

Forrester House

Doctors's Lane

HENLEY-IN-ARDEN

Warwickshire

B95 5AW

Dear Mr Tucker,

Pump Farm and Bloor Farm, Rainham: residential development site.

Thank you for the information about the proposed residential development 'Pump Farm and Bloor Farm' on the site between the Chatham - Sittingbourne railway line and Lower Rainham Road. Arriva is grateful for your engagement at this early stage and the opportunity to shape how public transport solutions are planned for this development.

From the drawing 'Land Use Plan' emailed to me on 23rd July and the information emailed to us previously on 14th December 2018 I note that it will be possible for pedestrians, and vehicles up to 14'3" high, to access/egress the development using Pump Lane to connect with Beechings Way. This will allow residents to access our existing frequent-interval 182 service at stops on Beechings Way, as well as our service 116 and the other operators' services 130/1 and 715. While the bus travel market and our services can change over time, and present we have no plans to substantially change service 182 and I fully expect that Arriva will continue to serve Twydall estate with frequent services for the foreseeable future. These services currently have some spare capacity but if the new development generated substantial patronage we would look to use double-deck vehicles on more journeys or increase the service frequency, or a combination of both if commercially viable to do so.

If it was necessary to improve the service at certain times of day to meet the needs of your development, we would be happy to discuss this and plan how the enhanced service could become commercially viable.

If you do need to extend a service into the development, we suggest that consideration is given to our service 1. The service currently terminates at Gillingham Strand and could be extended along Lower Rainham Road to access the proposed development from the north. The service would require a road loop or turning head with a layover point within the development. This would require a developer contribution to facilitate the service to serve the site.

Arriva Southern Counties
Invicta House
Armstrong Road
Maidstone
Kent
ME15 6TX

www.arrivabus.co.uk

Regarding the Residential Travel Plan, Arriva is experienced in working with developers and we can offer a range of support, e.g. printed service information and discounted ticketing. We would expect there to be a developer contribution towards the cost of these promotional activities and will be pleased to develop proposals with your travel plan coordinator.

We consider this to be a sensible and appropriate location for substantial residential development in the vicinity of Chatham and Gillingham, in terms of being well suited to having good access to bus services to those towns. Thank you again for involving Arriva in the bus service planning for this development - we look forward to working with you at the development progresses through the planning process.

Yours sincerely

M Jennings

Area Head of Commercial

Arriva Southern Counties

1.0 Education Trips

1.1 The NTS data identifies that 41% of primary school education trips were undertaken by car. The Council have queried whether this is too low given the location of the site to existing residential areas. Based on travel patterns observed at nearby primary schools it has been requested by Medway that 100% of external pupil trips are made by car.

1.2 Based on the revised numbers, there will be a draw of 81 external pupils. The overall external vehicular trip generation associated with primary education is shown in **Table 1** below.

Table 1 – Primary School External Pupil and Staff Trips

Primary School Staff	In	Out	Total
AM peak	16	0	16
PM peak	0	16	16
Primary School Pupils	In	Out	Total
AM peak	81	81	162
PM peak	0	0	0
Totals	In	Out	Total
AM peak	97	81	178
PM peak	0	16	16

2.0 Total External Trips

2.1 Based on the revised assumptions above, the total external residential trip generation is set out in **Table 2** below. This is a revised version of Table 6 in Technical Note 1.

Table 2 – Total External Trips

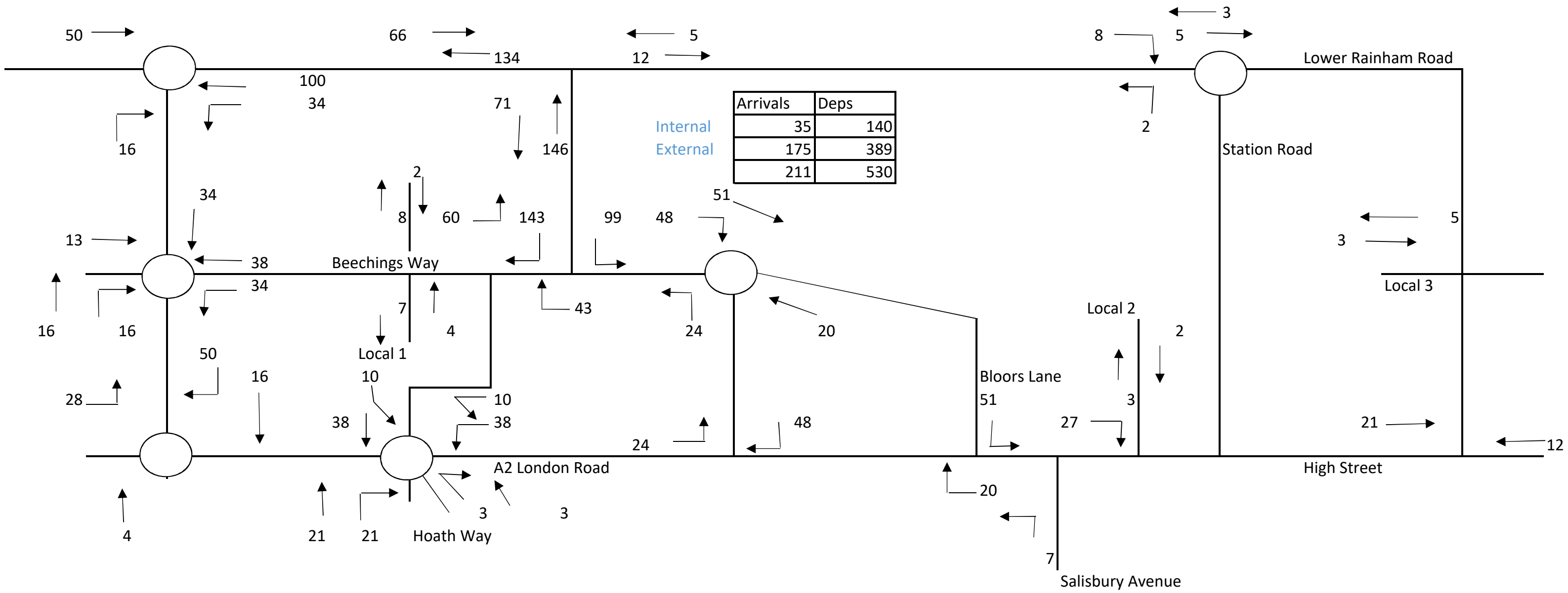
Vehicle Trips by purpose			
Commuting	In	Out	Total
AM peak	34	134	168
PM peak	160	73	234
Business	In	Out	Total
AM peak	5	21	27
PM peak	19	9	28
Education/escort education	In	Out	Total
AM peak	14	54	67
PM peak	8	4	12
Shopping	In	Out	Total
AM peak	4	16	20
PM peak	39	18	57
Personal business	In	Out	Total
AM peak	15	60	75
PM peak	66	30	96
Leisure/other	In	Out	Total
AM peak	6	23	29
PM peak	67	31	98
Primary School Staff and Pupils	In	Out	Total
AM peak	97	81	178
PM peak	0	16	16
Total External Vehicle Trips			
Total	In	Out	Total
AM peak	175	389	565
PM peak	360	181	541
Total External Vehicle (including Care Home)			
Total	In	Out	Total
AM peak	187	398	585
PM peak	365	193	558

2.2 The total trip generations for the residential, care home and combined total are included in **Appendix A**.

Appendix A

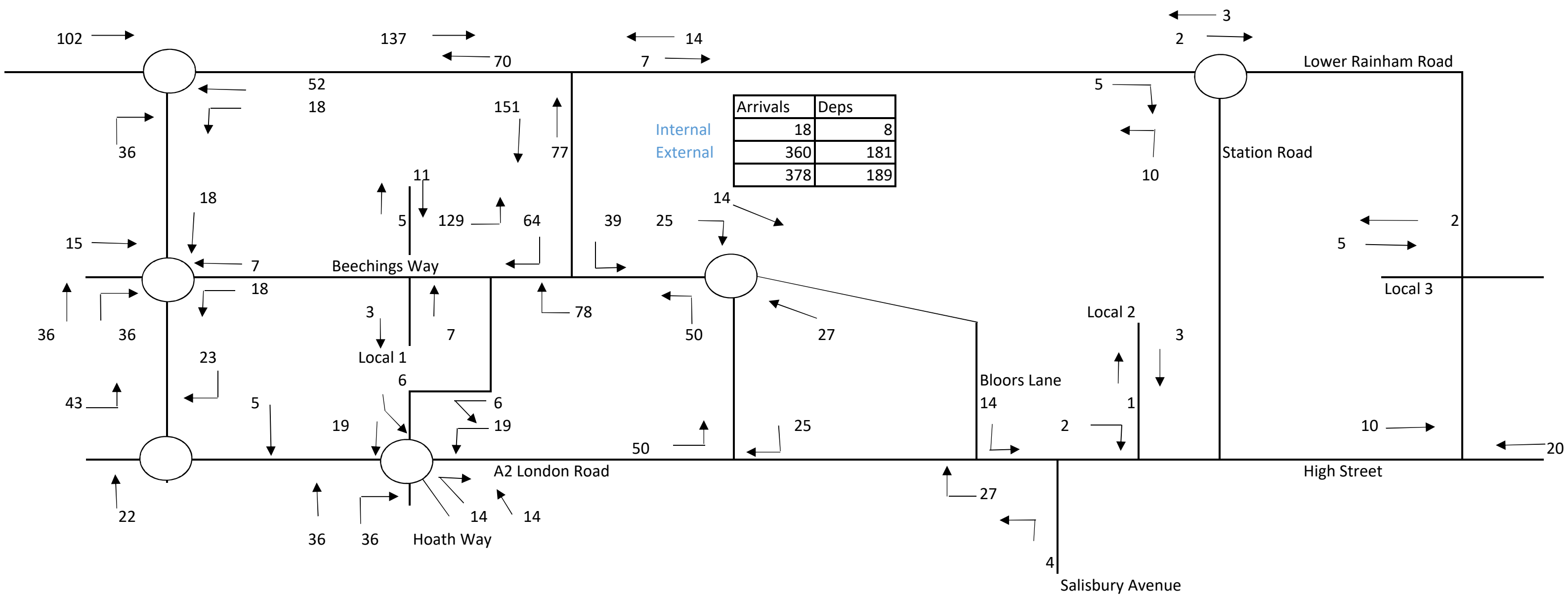
Total Residential Trips

Traffic Flows - AM Peak



	Arrivals	Deps
Internal	35	140
External	175	389
	211	530

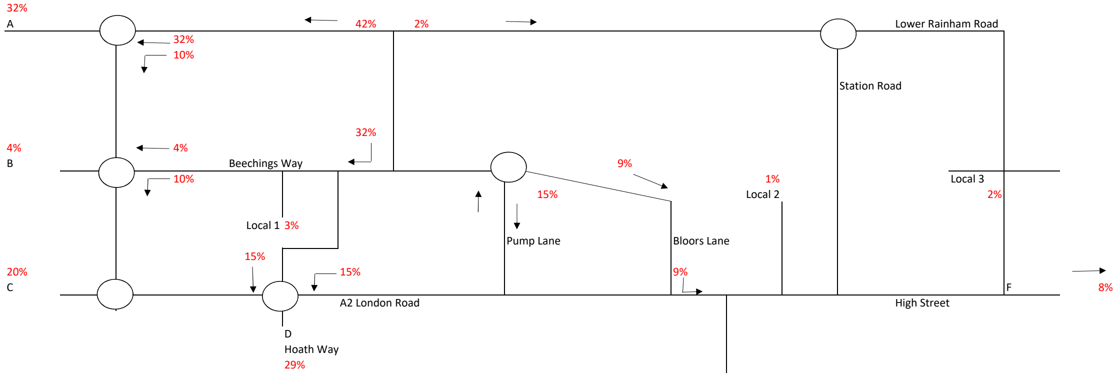
Traffic Flows - PM Peak



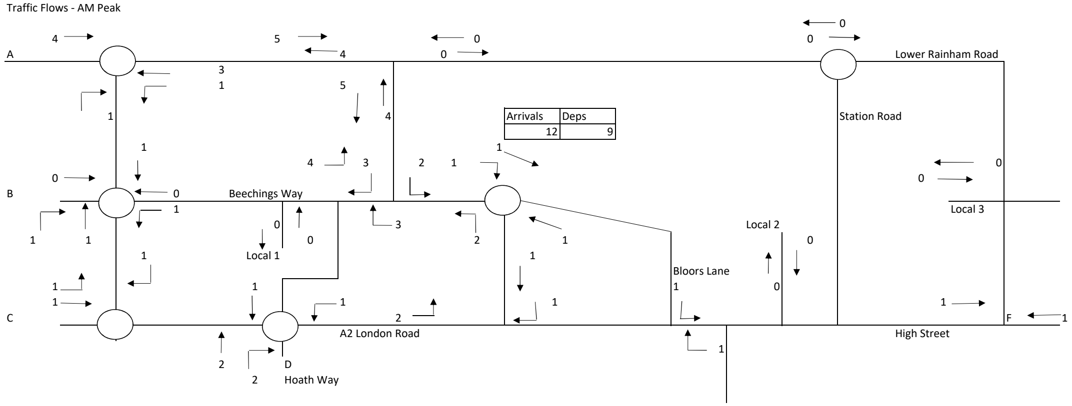
	Arrivals	Deps
Internal	18	8
External	360	181
	378	189

Care Home Trips

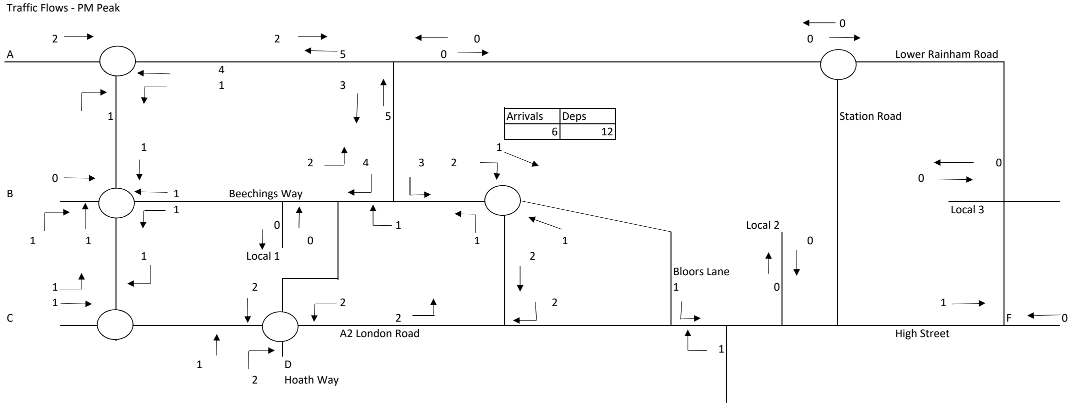
Distribution



Traffic Flows - AM Peak

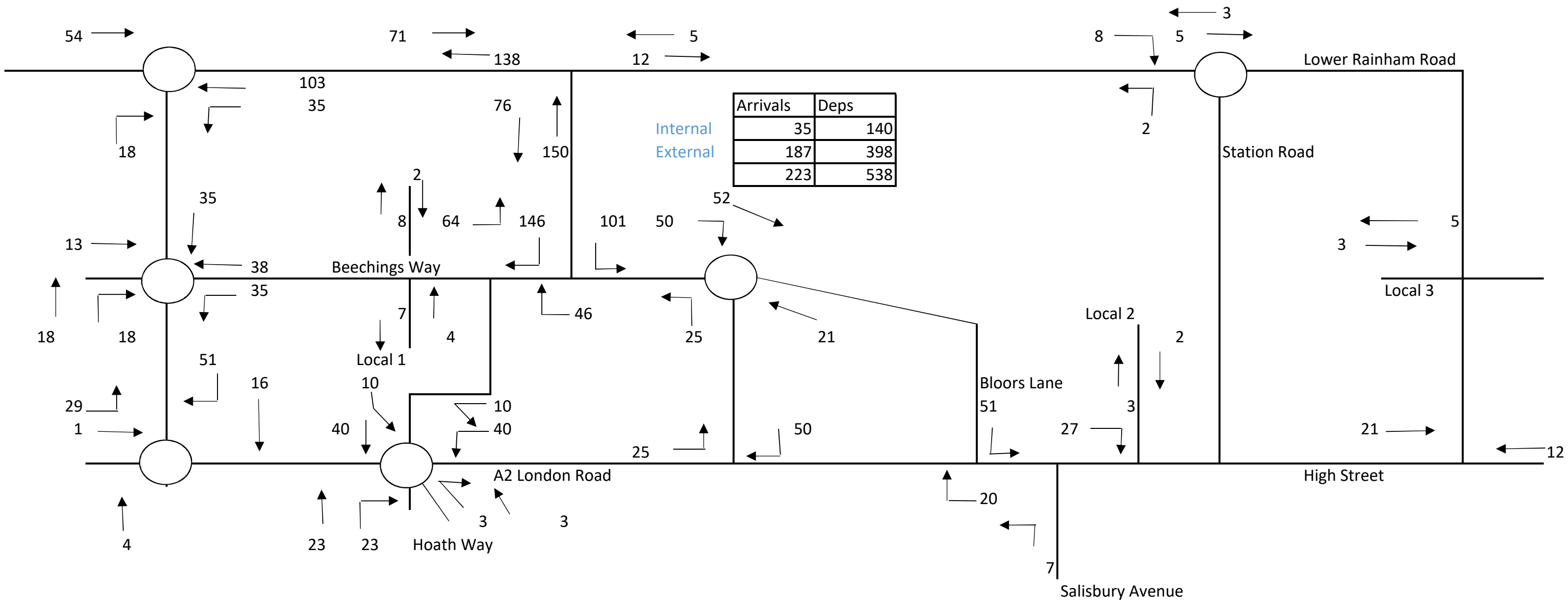


Traffic Flows - PM Peak



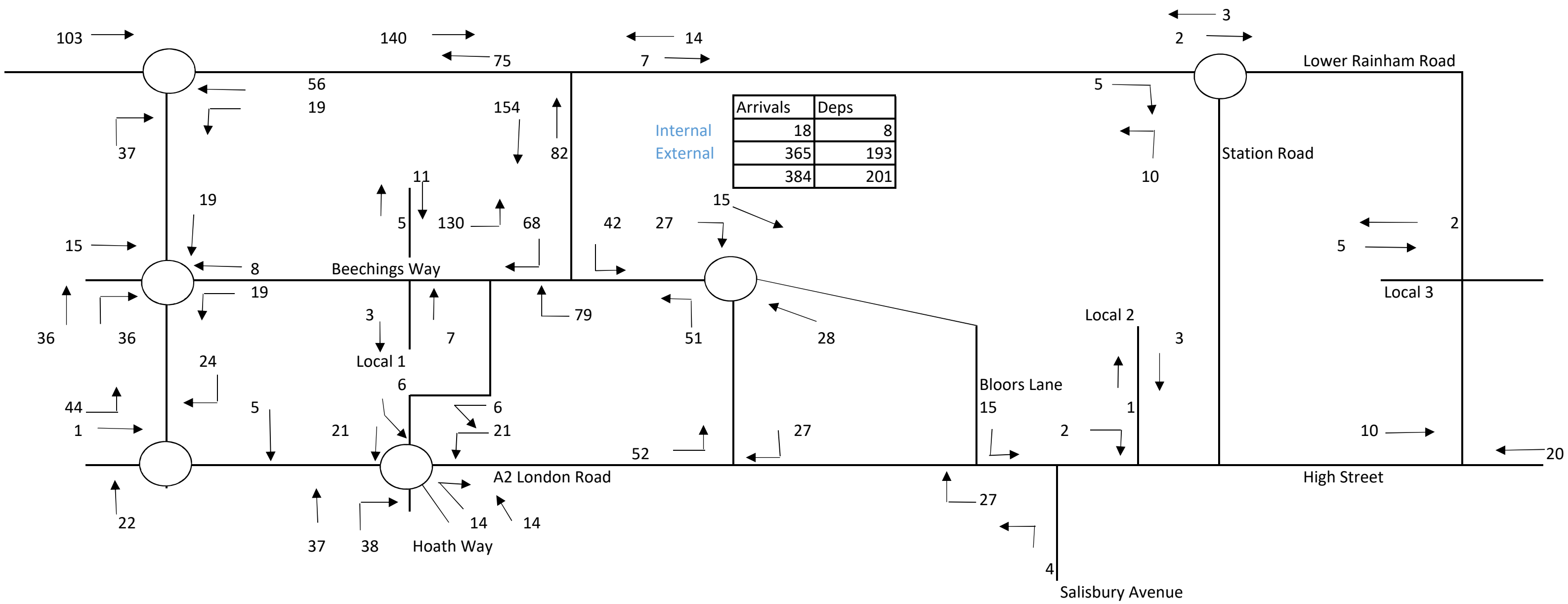
Total Trips

Traffic Flows - AM Peak



	Arrivals	Deps
Internal	35	140
External	187	398
	223	538

Traffic Flows - PM Peak



	Arrivals	Deps
Internal	18	8
External	365	193
	384	201

Appendix C

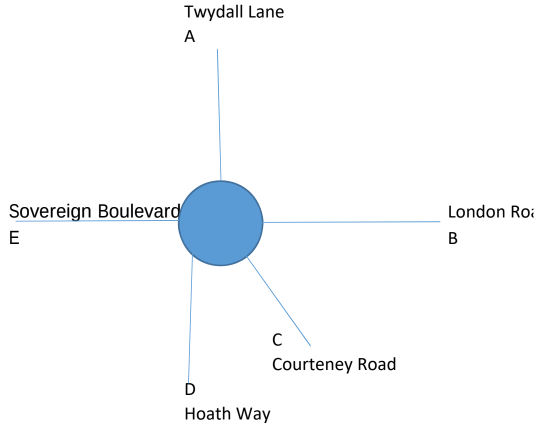
A2 London Road / Soverign Boulevard / Hoath Way / Twydall Lane / Courteney Road

2035 RC AM — **Totals**

	A	B	C	D	E
A		33	39	242	93
B	4		150	319	654
C	42	39		0	159
D	216	232			900
E	53	461	215	680	36

2035 RC PM — **Totals**

	A	B	C	D	E
A		40	36	158	28
B	10		186	275	494
C	74	89		0	472
D	362	295	0	0	693
E	37	659	417	740	21



2035 RC AM — 1.027 **PCUs**

	A	B	C	D	E
A	0	34	40	248	95
B	4	0	154	327	671
C	43	40	0	0	163
D	222	238	0	0	924
E	54	473	220	698	37

2035 RC PM — 1.027 **PCUs**

	A	B	C	D	E
A	0	41	37	163	29
B	10	0	191	283	508
C	76	91	0	0	485
D	371	303	0	0	712
E	38	677	428	760	22

2035 RC+Dev AM — **Totals**

	A	B	C	D	E
A		48	40	326	116
B	10		191	333	719
C	41	56		1	157
D	280	424			931
E	69	687	190	726	32

2035 RC+Dev PM — **Totals**

	A	B	C	D	E
A		37	46	159	26
B	12		183	278	484
C	78	135			469
D	339	523			690
E	33	753	360	701	16

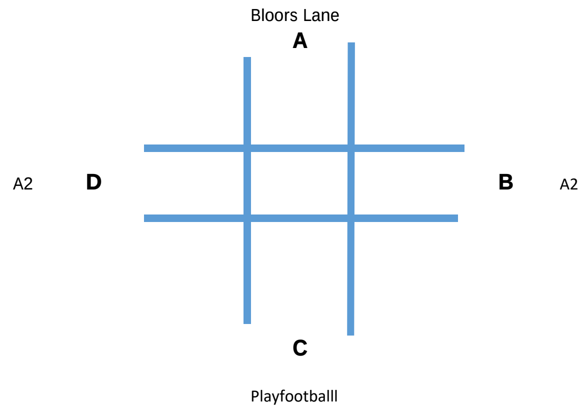
2035 RC+Dev AM — 1.027 **PCUs**

	A	B	C	D	E
A	0	49	41	335	119
B	10	0	196	342	738
C	42	57	0	1	161
D	288	435	0	0	956
E	71	706	196	746	33

2035 RC+Dev PM — 1.027 **PCUs**

	A	B	C	D	E
A	0	38	47	163	27
B	12	0	188	285	497
C	80	139	0	0	481
D	348	537	0	0	709
E	33	773	369	720	17

A2 / Bloors Lane / Playfootball



2035 RC AM — **Totals**

	A	B	C	D
A		275	34	60
B	287		50	860
C	59	31		35
D	91	585	24	

2035 RC PM — **Totals**

	A	B	C	D
A		330.2	6.1	81.5
B	186.2		29.3	850.5
C	7.8	22.0		15.2
D	69.0	736.7	0.6	

2035 RC AM — 1.03 **PCUs**

	A	B	C	D
A	0	283	35	62
B	295	0	51	886
C	61	32	0	36
D	94	603	25	0

2035 RC PM — **PCUs**

	A	B	C	D
A	0	340	6	84
B	192	0	30	876
C	8	23	0	16
D	71	759	1	0

2035 RC+Dev AM — **Totals**

	A	B	C	D
A		291	47	65
B	340		66	974
C	75	33		54
D	197	1139	39	

2035 RC+Dev PM — **Totals**

	A	B	C	D
A		292	11	77
B	192		31	818
C	8	21		14
D	135	1394	20	

2035 RC+Dev AM — **PCUs**

	A	B	C	D
A	0	300	49	67
B	350	0	68	1004
C	77	33	0	56
D	202	1173	41	0

2035 RC+Dev PM — **PCUs**

	A	B	C	D
A	0	301	11	79
B	197	0	32	842
C	9	21	0	15
D	139	1435	20	0

High Street/Station Road

2035 RC AM — **Totals**

	A	B	C	D
A		0	403	28
B	0		0	0
C	403	0		151
D	45	0	295	

2035 RC PM — **Totals**

	A	B	C	D
A			447	18
B				
C	538			216
D	31		267	

2035 RC AM — 1.03 **PCUs**

	A	B	C	D
A	0	0	415	28
B	0	0	0	0
C	415	0	0	155
D	47	0	303	0

2035 RC PM — 1.03 **PCUs**

	A	B	C	D
A	0	0	461	18
B	0	0	0	0
C	554	0	0	222
D	32	0	275	0

2035 RC+Dev AM — **Totals**

	A	B	C	D
A		0	434	31
B				
C	506	0		120
D	39	0	304	

2035 RC+Dev PM — **Totals**

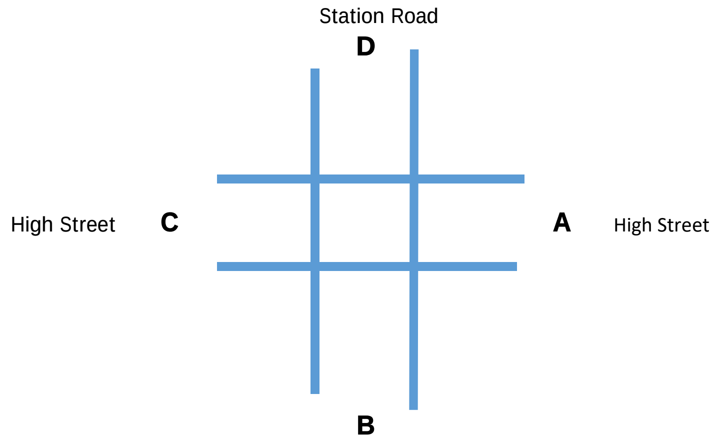
	A	B	C	D
A			438	19
B				
C	575			191
D	31		276	

2035 RC+Dev AM — **PCUs**

	A	B	C	D
A	0	0	447	31
B	0	0	0	0
C	521	0	0	124
D	40	0	313	0

2035 RC+Dev PM — **PCUs**

	A	B	C	D
A	0	0	451	20
B	0	0	0	0
C	592	0	0	196
D	32	0	284	0



Woodlands Road/ A2/ Rotary Gardens

2035 RC AM — **Totals**

	A	B	C	D
A		3	1218	72
B	0		0	0
C	1086	0		10
D	237	0	17	

2035 RC PM — **Totals**

	A	B	C	D
A		3.6	1467.3	89.6
B	0.0		0.0	0.0
C	1118.9	0.0		16.1
D	203.7	0.0	14.0	

2035 RC AM — 1.0215 **PCUs**

	A	B	C	D
A	0	3	1244	74
B	0	0	0	0
C	1110	0	0	11
D	242	0	18	0

2035 RC PM — 1.0215 **PCUs**

	A	B	C	D
A	0	4	1499	92
B	0	0	0	0
C	1143	0	0	16
D	208	0	14	0

2035 RC+Dev AM — **Totals**

	A	B	C	D
A		12	1423	97
B	0		0	0
C	1293	0		7
D	296	0	17	

2035 RC+Dev PM — **Totals**

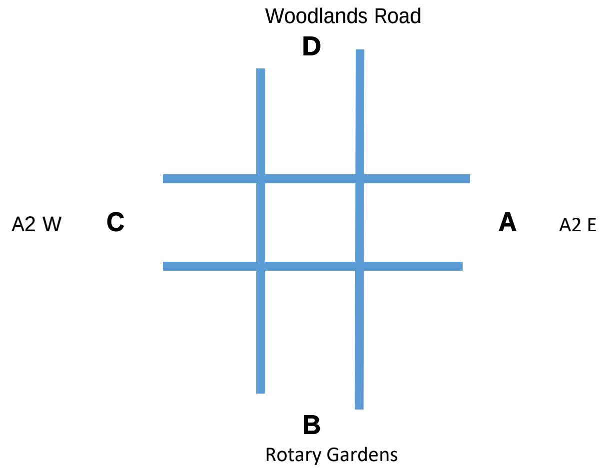
	A	B	C	D
A	0	3	1450	84
B	0		0	0
C	1194			10
D	227	0	14	

2035 RC+Dev AM — **PCUs**

	A	B	C	D
A	0	12	1454	99
B	0	0	0	0
C	1320	0	0	7
D	302	0	17	0

2035 RC+Dev PM — **PCUs**

	A	B	C	D
A	0	3	1481	86
B	0	0	0	0
C	1220	0	0	10
D	232	0	14	0



Piers Road/ Maritime Way

2035 RC AM — **Totals**

	A	B	C	D
A	76	973	0	219
B	442	2	703	19
C	0	888	82	281
D	204	507	69	0

2035 RC PM — **Totals**

	A	B	C	D
A	74	314	0	212
B	823	3	1031	258
C	0	621	4	293
D	168	260	174	0

2035 RC AM — 1.03 **PCUs**

	A	B	C	D
A	78	1002	0	225
B	455	2	724	20
C	0	915	85	290
D	211	522	71	0

2035 RC PM — 1.03 **PCUs**

	A	B	C	D
A	76	324	0	219
B	847	3	1062	265
C	0	639	4	301
D	173	268	179	0

2035 RC+Dev AM — **Totals**

	A	B	C	D
A	152	1058	0	266
B	448	2	780	29
C	0	1023	95	376
D	267	501	73	0

2035 RC+Dev PM — **Totals**

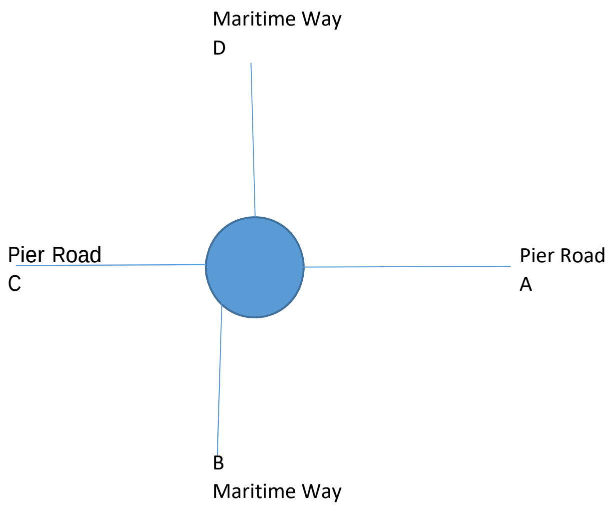
	A	B	C	D
A	103	359	0	210
B	790	4	1095	254
C	0	652	4	313
D	172	316	180	0

2035 RC+Dev AM — **PCUs**

	A	B	C	D
A	157	1090	0	273
B	462	2	803	30
C	0	1054	98	387
D	275	516	75	0

2035 RC+Dev PM — **PCUs**

	A	B	C	D
A	106	369	0	216
B	813	4	1127	261
C	0	672	4	322
D	177	326	185	0



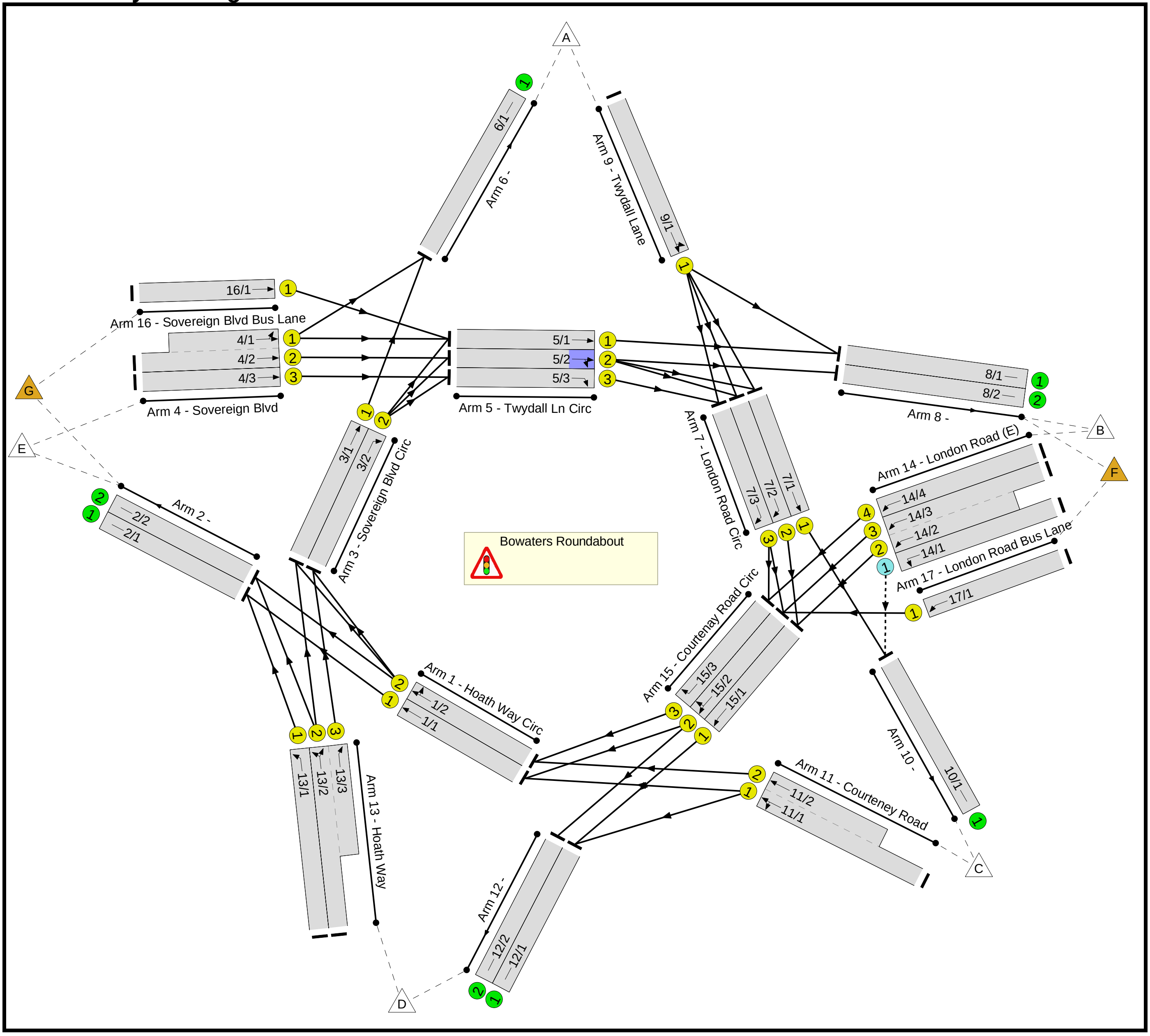
Appendix D

Full Input Data And Results

User and Project Details

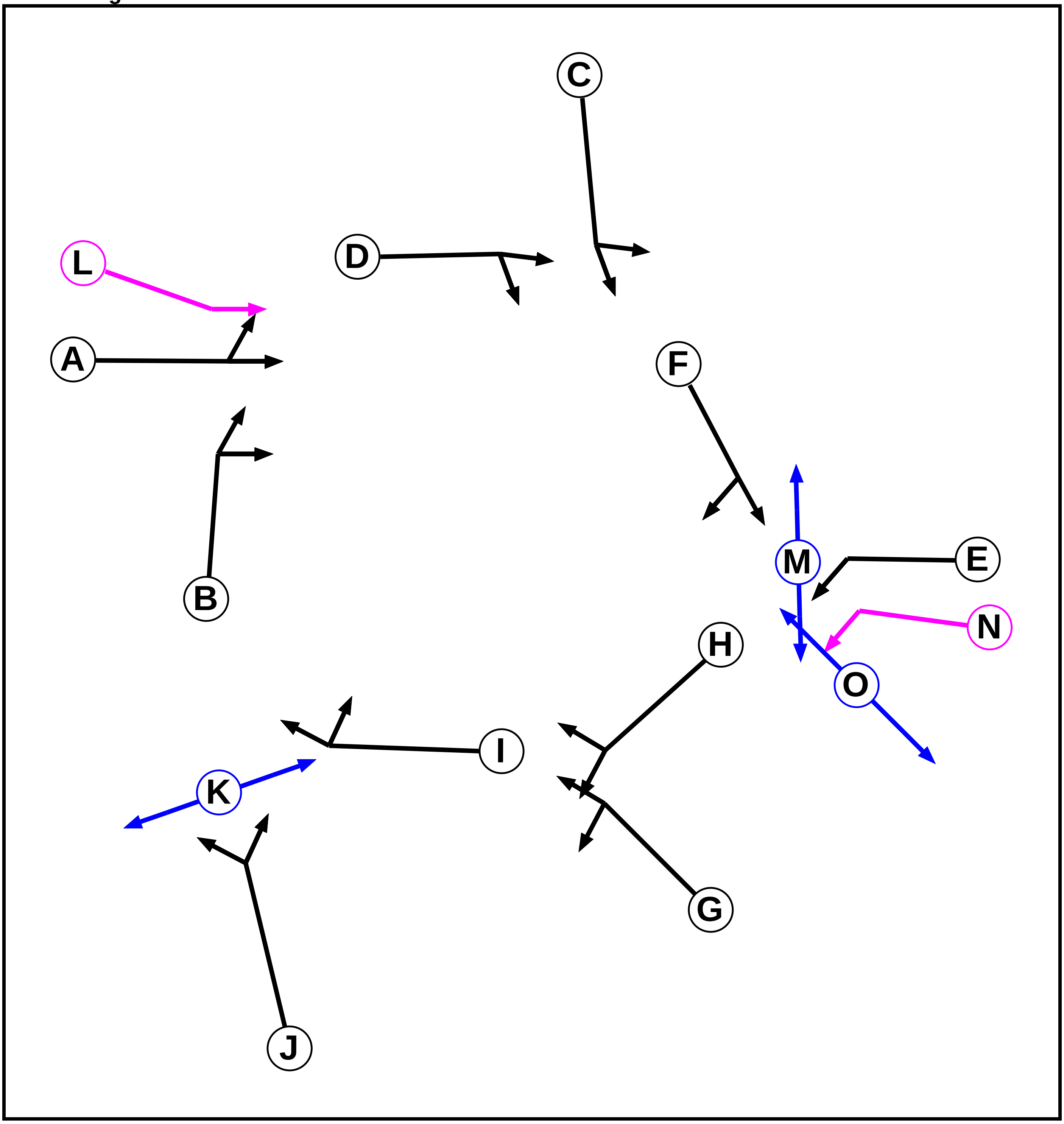
Project:	**Pump Farm - 20230**
Title:	**Bowaters Roundabout**
Location:	Gillingham, Medway
Client:	Goatham
Additional detail:	
File name:	Bowaters Roundabout_RevD.lsg3x
Author:	RM/JA
Company:	David Tucker Associates
Address:	Henley-in-Arden

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Full Input Data And Results

Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	2		7	7
D	Traffic	2		7	7
E	Traffic	3		7	7
F	Traffic	3		7	7
G	Traffic	4		7	7
H	Traffic	4		7	7
I	Traffic	5		7	2
J	Traffic	5		7	7
K	Pedestrian	5		5	5
L	Bus	1		5	5
M	Pedestrian	3		5	5
N	Bus	3		5	5
O	Pedestrian	3		5	5

Full Input Data And Results

Phase Intergreens Matrix

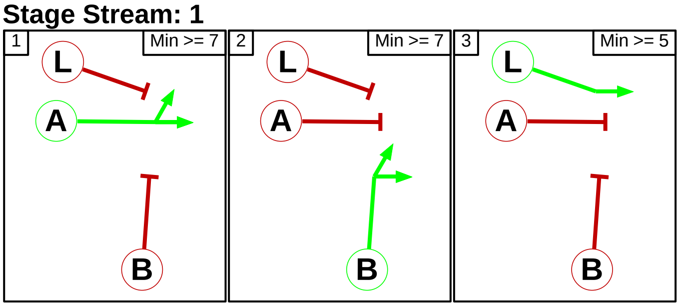
	Starting Phase															
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
Terminating Phase	A		5	-	-	-	-	-	-	-	-	-	5	-	-	-
	B	5		-	-	-	-	-	-	-	-	-	5	-	-	-
	C	-	-		5	-	-	-	-	-	-	-	-	-	-	-
	D	-	-	5		-	-	-	-	-	-	-	-	-	-	-
	E	-	-	-	-		5	-	-	-	-	-	-	5	5	-
	F	-	-	-	-	5		-	-	-	-	-	-	-	5	-
	G	-	-	-	-	-	-		5	-	-	-	-	-	-	-
	H	-	-	-	-	-	-	5		-	-	-	-	-	-	-
	I	-	-	-	-	-	-	-	-		5	-	-	-	-	-
	J	-	-	-	-	-	-	-	-	5		5	-	-	-	-
	K	-	-	-	-	-	-	-	-	-	10		-	-	-	-
	L	5	5	-	-	-	-	-	-	-	-	-		-	-	-
	M	-	-	-	-	12	-	-	-	-	-	-	-		-	-
	N	-	-	-	-	5	5	-	-	-	-	-	-	-		5
	O	-	-	-	-	-	-	-	-	-	-	-	-	-	5	

Phases in Stage

Stream	Stage No.	Phases in Stage
1	1	A
1	2	B
1	3	L
2	1	C
2	2	D
3	1	F M O
3	2	N
3	3	E O
4	1	H
4	2	G
5	1	I K
5	2	J

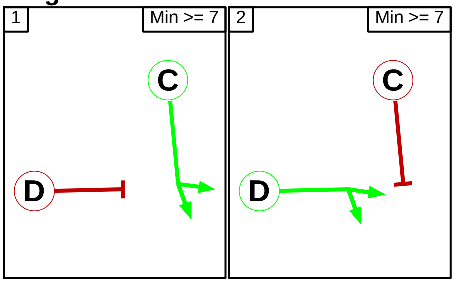
Stage Diagram

Stage Stream: 1

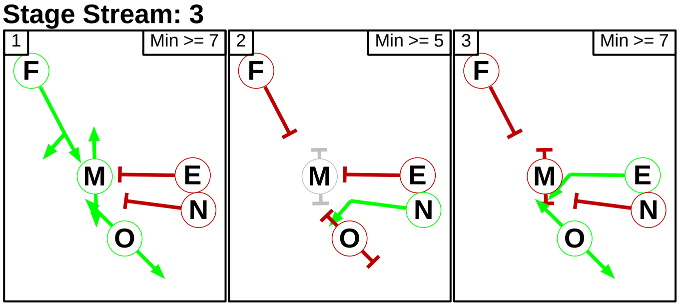


Full Input Data And Results

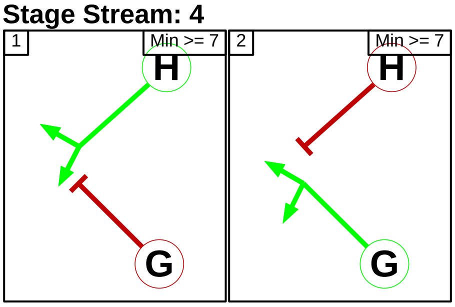
Stage Stream: 2



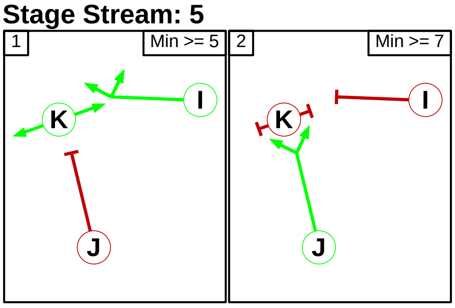
Stage Stream: 3



Stage Stream: 4



Stage Stream: 5



Phase Delays

Stage Stream: 1

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Stage Stream: 2

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Stage Stream: 3

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	3	F	Losing	7	7

Full Input Data And Results

Stage Stream: 4

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Stage Stream: 5

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	I	Losing	5	5

Prohibited Stage Change

Stage Stream: 1

		To Stage		
		1	2	3
From Stage	1		5	5
	2	5		5
	3	5	5	

Stage Stream: 2

		To Stage	
		1	2
From Stage	1		5
	2	5	

Stage Stream: 3

		To Stage		
		1	2	3
From Stage	1		5	12
	2	5		5
	3	5	5	

Stage Stream: 4

		To Stage	
		1	2
From Stage	1		5
	2	5	

Stage Stream: 5

		To Stage	
		1	2
From Stage	1		10
	2	5	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Bowaters Roundabout											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
14/1 (London Road (E))	10/1 (Left)	715	0	7/1	0.22	To 10/1 (Ahead)	-	-	-	-	-

Full Input Data And Results

Lane Input Data

Junction: Bowaters Roundabout												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
1/1 (Hoath Way Circ)	U	J	2	3	9.6	Geom	-	4.50	0.00	N	Arm 2 Ahead	50.00
1/2 (Hoath Way Circ)	U	J	2	3	9.6	Geom	-	4.50	0.00	N	Arm 2 Ahead	50.00
											Arm 3 Right	Inf
2/1	U		2	3	60.0	Inf	-	-	-	-	-	-
2/2	U		2	3	60.0	Inf	-	-	-	-	-	-
3/1 (Sovereign Blvd Circ)	U	B	2	3	16.9	Geom	-	4.50	0.00	N	Arm 6 Ahead	50.00
3/2 (Sovereign Blvd Circ)	U	B	2	3	16.9	Geom	-	4.50	0.00	N	Arm 5 Right	50.00
4/1 (Sovereign Blvd)	U	A	2	3	13.9	Geom	-	3.40	0.00	Y	Arm 5 Ahead	Inf
											Arm 6 Left	Inf
4/2 (Sovereign Blvd)	U	A	2	3	60.0	Geom	-	3.40	0.00	N	Arm 5 Ahead	Inf
4/3 (Sovereign Blvd)	U	A	2	3	60.0	Geom	-	3.40	0.00	N	Arm 5 Ahead	Inf
5/1 (Twydall Ln Circ)	U	D	2	3	9.9	Geom	-	4.00	0.00	Y	Arm 8 Ahead	50.00
5/2 (Twydall Ln Circ)	U	D	2	3	9.9	Geom	-	4.00	0.00	N	Arm 7 Right	50.00
											Arm 8 Ahead	50.00
5/3 (Twydall Ln Circ)	U	D	2	3	9.9	Geom	-	4.00	0.00	N	Arm 7 Right	50.00
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (London Road Circ)	U	F	2	3	8.2	Geom	-	4.00	0.00	N	Arm 10 Ahead	50.00
7/2 (London Road Circ)	U	F	2	3	8.2	Geom	-	4.00	0.00	N	Arm 15 Right	50.00
7/3 (London Road Circ)	U	F	2	3	8.2	Geom	-	4.00	0.00	N	Arm 15 Right	50.00
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/2	U		2	3	60.0	Inf	-	-	-	-	-	-

Full Input Data And Results

9/1 (Twydall Lane)	U	C	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 7 Ahead	30.00
											Arm 8 Left	20.00
10/1	U		2	3	60.0	Inf	-	-	-	-	-	-
11/1 (Courteney Road)	U	G	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 1 Ahead	20.00
											Arm 12 Left	20.00
11/2 (Courteney Road)	U	G	2	3	10.0	Geom	-	3.00	0.00	N	Arm 1 Ahead	20.00
12/1	U		2	3	60.0	Inf	-	-	-	-	-	-
12/2	U		2	3	60.0	Inf	-	-	-	-	-	-
13/1 (Hoath Way)	U	I	2	3	60.0	Geom	-	3.10	0.00	Y	Arm 2 Left	Inf
13/2 (Hoath Way)	U	I	2	3	60.0	Geom	-	3.10	0.00	N	Arm 2 Left	Inf
											Arm 3 Ahead	Inf
13/3 (Hoath Way)	U	I	2	3	8.7	Geom	-	3.10	0.00	N	Arm 3 Ahead	Inf
14/1 (London Road (E))	O		2	3	60.0	Geom	-	3.25	0.00	Y	Arm 10 Left	Inf
14/2 (London Road (E))	U	E	2	3	13.0	Geom	-	3.50	0.00	Y	Arm 15 Ahead	30.00
14/3 (London Road (E))	U	E	2	3	15.7	Geom	-	3.50	0.00	N	Arm 15 Ahead	35.00
14/4 (London Road (E))	U	E	2	3	60.0	Geom	-	3.50	0.00	N	Arm 15 Ahead	35.00
15/1 (Courtenay Road Circ)	U	H	2	3	7.8	Geom	-	4.00	0.00	Y	Arm 12 Ahead	50.00
15/2 (Courtenay Road Circ)	U	H	2	3	7.8	Geom	-	4.00	0.00	N	Arm 1 Right	50.00
											Arm 12 Ahead	50.00
15/3 (Courtenay Road Circ)	U	H	2	3	7.8	Geom	-	4.00	0.00	Y	Arm 1 Right	50.00
16/1 (Sovereign Blvd Bus Lane)	U	L	2	3	60.0	User	1900	-	-	-	-	-
17/1 (London Road Bus Lane)	U	N	2	3	60.0	User	1900	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
13: '2035 RC AM'	08:00	09:00	01:00	
14: '2035 RC PM'	17:00	18:00	01:00	
15: '2035 RC+Dev AM'	08:00	09:00	01:00	
16: '2035 RC+Dev PM'	17:00	18:00	01:00	

Scenario 11: '2035 RC AM' (FG13: '2035 RC AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination								
Origin		A	B	C	D	E	F	G	Tot.
	A	0	34	40	248	95	0	0	417
	B	4	0	154	327	671	0	0	1156
	C	43	40	0	0	163	0	0	246
	D	222	238	0	0	924	0	0	1384
	E	54	473	220	698	37	0	0	1482
	F	0	0	0	0	0	0	18	18
	G	0	0	0	0	0	18	0	18
	Tot.	323	785	414	1273	1890	18	18	4721

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 11: 2035 RC AM
Junction: Bowaters Roundabout	
1/1	522
1/2	549
2/1	1070
2/2	838
3/1	269
3/2	278
4/1 (short)	451
4/2 (with short)	988(In) 537(Out)
4/3	494
5/1	584
5/2	646
5/3	494
6/1	323
7/1	260
7/2	469
7/3	609
8/1	618
8/2	185
9/1	417
10/1	414
11/1 (with short)	246(In) 88(Out)
11/2 (short)	158
12/1	777
12/2	496
13/1	548
13/2 (with short)	836(In) 598(Out)
13/3 (short)	238
14/1	154
14/2 (short)	308
14/3 (with short)	681(In) 373(Out)
14/4	321
15/1	777
15/2	930
15/3	391
16/1	18
17/1	18

Lane Saturation Flows

Junction: Bowaters Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Hoath Way Circ)	4.50	0.00	N	Arm 2 Ahead	50.00	100.0 %	2141	2141
1/2 (Hoath Way Circ)	4.50	0.00	N	Arm 2 Ahead	50.00	84.2 %	2151	2151
				Arm 3 Right	Inf	15.8 %		
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1 (Sovereign Blvd Circ)	4.50	0.00	N	Arm 6 Ahead	50.00	100.0 %	2141	2141
3/2 (Sovereign Blvd Circ)	4.50	0.00	N	Arm 5 Right	50.00	100.0 %	2141	2141
4/1 (Sovereign Blvd)	3.40	0.00	Y	Arm 5 Ahead	Inf	88.0 %	1955	1955
				Arm 6 Left	Inf	12.0 %		
4/2 (Sovereign Blvd)	3.40	0.00	N	Arm 5 Ahead	Inf	100.0 %	2095	2095
4/3 (Sovereign Blvd)	3.40	0.00	N	Arm 5 Ahead	Inf	100.0 %	2095	2095
5/1 (Twydall Ln Circ)	4.00	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1956	1956
5/2 (Twydall Ln Circ)	4.00	0.00	N	Arm 7 Right	50.00	71.4 %	2092	2092
				Arm 8 Ahead	50.00	28.6 %		
5/3 (Twydall Ln Circ)	4.00	0.00	N	Arm 7 Right	50.00	100.0 %	2092	2092
6/1	Infinite Saturation Flow						Inf	Inf
7/1 (London Road Circ)	4.00	0.00	N	Arm 10 Ahead	50.00	100.0 %	2092	2092
7/2 (London Road Circ)	4.00	0.00	N	Arm 15 Right	50.00	100.0 %	2092	2092
7/3 (London Road Circ)	4.00	0.00	N	Arm 15 Right	50.00	100.0 %	2092	2092
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1 (Twydall Lane)	3.80	0.00	Y	Arm 7 Ahead	30.00	91.8 %	1896	1896
				Arm 8 Left	20.00	8.2 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1 (Courteney Road)	3.00	0.00	Y	Arm 1 Ahead	20.00	100.0 %	1781	1781
				Arm 12 Left	20.00	0.0 %		
11/2 (Courteney Road)	3.00	0.00	N	Arm 1 Ahead	20.00	100.0 %	1912	1912
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1 (Hoath Way)	3.10	0.00	Y	Arm 2 Left	Inf	100.0 %	1925	1925

13/2 (Hoath Way)	3.10	0.00	N	Arm 2 Left	Inf	62.9 %	2065	2065
				Arm 3 Ahead	Inf	37.1 %		
13/3 (Hoath Way)	3.10	0.00	N	Arm 3 Ahead	Inf	100.0 %	2065	2065
14/1 (London Road (E))	3.25	0.00	Y	Arm 10 Left	Inf	100.0 %	1940	1940
14/2 (London Road (E))	3.50	0.00	Y	Arm 15 Ahead	30.00	100.0 %	1871	1871
14/3 (London Road (E))	3.50	0.00	N	Arm 15 Ahead	35.00	100.0 %	2018	2018
14/4 (London Road (E))	3.50	0.00	N	Arm 15 Ahead	35.00	100.0 %	2018	2018
15/1 (Courtenay Road Circ)	4.00	0.00	Y	Arm 12 Ahead	50.00	100.0 %	1956	1956
15/2 (Courtenay Road Circ)	4.00	0.00	N	Arm 1 Right	50.00	46.7 %	2092	2092
				Arm 12 Ahead	50.00	53.3 %		
15/3 (Courtenay Road Circ)	4.00	0.00	Y	Arm 1 Right	50.00	100.0 %	1956	1956
16/1 (Sovereign Blvd Bus Lane Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
17/1 (London Road Bus Lane Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900

Scenario 12: '2035 RC PM' (FG14: '2035 RC PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination							
		A	B	C	D	E	F	G	Tot.
Origin	A	0	41	37	163	29	0	0	270
	B	10	0	191	283	508	0	0	992
	C	76	91	0	0	485	0	0	652
	D	371	303	0	0	712	0	0	1386
	E	38	677	428	760	22	0	0	1925
	F	0	0	0	0	0	0	18	18
	G	0	0	0	0	0	18	0	18
	Tot.	495	1112	656	1206	1756	18	18	5261

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 12: 2035 RC PM
Junction: Bowaters Roundabout	
1/1	607
1/2	632
2/1	1124
2/2	650
3/1	457
3/2	394
4/1 (short)	695
4/2 (with short)	1386(In) 691(Out)
4/3	539
5/1	851
5/2	909
5/3	539
6/1	495
7/1	465
7/2	387
7/3	587
8/1	892
8/2	238
9/1	270
10/1	656
11/1 (with short)	652(In) 319(Out)
11/2 (short)	333
12/1	653
12/2	553
13/1	517
13/2 (with short)	869(In) 566(Out)
13/3 (short)	303
14/1	191
14/2 (short)	266
14/3 (with short)	543(In) 277(Out)
14/4	258
15/1	653
15/2	841
15/3	299
16/1	18
17/1	18

Lane Saturation Flows

Junction: Bowaters Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Hoath Way Circ)	4.50	0.00	N	Arm 2 Ahead	50.00	100.0 %	2141	2141
1/2 (Hoath Way Circ)	4.50	0.00	N	Arm 2 Ahead	50.00	72.0 %	2158	2158
				Arm 3 Right	Inf	28.0 %		
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1 (Sovereign Blvd Circ)	4.50	0.00	N	Arm 6 Ahead	50.00	100.0 %	2141	2141
3/2 (Sovereign Blvd Circ)	4.50	0.00	N	Arm 5 Right	50.00	100.0 %	2141	2141
4/1 (Sovereign Blvd)	3.40	0.00	Y	Arm 5 Ahead	Inf	94.5 %	1955	1955
				Arm 6 Left	Inf	5.5 %		
4/2 (Sovereign Blvd)	3.40	0.00	N	Arm 5 Ahead	Inf	100.0 %	2095	2095
4/3 (Sovereign Blvd)	3.40	0.00	N	Arm 5 Ahead	Inf	100.0 %	2095	2095
5/1 (Twydall Ln Circ)	4.00	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1956	1956
5/2 (Twydall Ln Circ)	4.00	0.00	N	Arm 7 Right	50.00	73.8 %	2092	2092
				Arm 8 Ahead	50.00	26.2 %		
5/3 (Twydall Ln Circ)	4.00	0.00	N	Arm 7 Right	50.00	100.0 %	2092	2092
6/1	Infinite Saturation Flow						Inf	Inf
7/1 (London Road Circ)	4.00	0.00	N	Arm 10 Ahead	50.00	100.0 %	2092	2092
7/2 (London Road Circ)	4.00	0.00	N	Arm 15 Right	50.00	100.0 %	2092	2092
7/3 (London Road Circ)	4.00	0.00	N	Arm 15 Right	50.00	100.0 %	2092	2092
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1 (Twydall Lane)	3.80	0.00	Y	Arm 7 Ahead	30.00	84.8 %	1893	1893
				Arm 8 Left	20.00	15.2 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1 (Courteney Road)	3.00	0.00	Y	Arm 1 Ahead	20.00	100.0 %	1781	1781
				Arm 12 Left	20.00	0.0 %		
11/2 (Courteney Road)	3.00	0.00	N	Arm 1 Ahead	20.00	100.0 %	1912	1912
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1 (Hoath Way)	3.10	0.00	Y	Arm 2 Left	Inf	100.0 %	1925	1925

13/2 (Hoath Way)	3.10	0.00	N	Arm 2 Left	Inf	34.5 %	2065	2065
				Arm 3 Ahead	Inf	65.5 %		
13/3 (Hoath Way)	3.10	0.00	N	Arm 3 Ahead	Inf	100.0 %	2065	2065
14/1 (London Road (E))	3.25	0.00	Y	Arm 10 Left	Inf	100.0 %	1940	1940
14/2 (London Road (E))	3.50	0.00	Y	Arm 15 Ahead	30.00	100.0 %	1871	1871
14/3 (London Road (E))	3.50	0.00	N	Arm 15 Ahead	35.00	100.0 %	2018	2018
14/4 (London Road (E))	3.50	0.00	N	Arm 15 Ahead	35.00	100.0 %	2018	2018
15/1 (Courtenay Road Circ)	4.00	0.00	Y	Arm 12 Ahead	50.00	100.0 %	1956	1956
15/2 (Courtenay Road Circ)	4.00	0.00	N	Arm 1 Right	50.00	34.2 %	2092	2092
				Arm 12 Ahead	50.00	65.8 %		
15/3 (Courtenay Road Circ)	4.00	0.00	Y	Arm 1 Right	50.00	100.0 %	1956	1956
16/1 (Sovereign Blvd Bus Lane Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
17/1 (London Road Bus Lane Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900

Scenario 13: '2035 RC + Dev AM' (FG15: '2035 RC+Dev AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination								
		A	B	C	D	E	F	G	Tot.
Origin	A	0	49	41	335	119	0	0	544
	B	10	0	196	342	738	0	0	1286
	C	42	57	0	1	161	0	0	261
	D	288	435	0	0	956	0	0	1679
	E	71	706	196	746	33	0	0	1752
	F	0	0	0	0	0	0	18	18
	G	0	0	0	0	0	18	0	18
	Tot.	411	1247	433	1424	2007	18	18	5558

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 13: 2035 RC + Dev AM
Junction: Bowaters Roundabout	
1/1	578
1/2	600
2/1	1189
2/2	836
3/1	340
3/2	492
4/1 (short)	572
4/2 (with short)	1197(In) 625(Out)
4/3	555
5/1	782
5/2	854
5/3	555
6/1	411
7/1	237
7/2	551
7/3	682
8/1	831
8/2	434
9/1	544
10/1	433
11/1 (with short)	261(In) 116(Out)
11/2 (short)	145
12/1	870
12/2	554
13/1	611
13/2 (with short)	1068(In) 633(Out)
13/3 (short)	435
14/1	196
14/2 (short)	318
14/3 (with short)	724(In) 406(Out)
14/4	366
15/1	869
15/2	1017
15/3	455
16/1	18

Full Input Data And Results

17/1	18

Lane Saturation Flows

Junction: Bowaters Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Hoath Way Circ)	4.50	0.00	N	Arm 2 Ahead	50.00	100.0 %	2141	2141
1/2 (Hoath Way Circ)	4.50	0.00	N	Arm 2 Ahead	50.00	81.8 %	2152	2152
				Arm 3 Right	Inf	18.2 %		
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1 (Sovereign Blvd Circ)	4.50	0.00	N	Arm 6 Ahead	50.00	100.0 %	2141	2141
3/2 (Sovereign Blvd Circ)	4.50	0.00	N	Arm 5 Right	50.00	100.0 %	2141	2141
4/1 (Sovereign Blvd)	3.40	0.00	Y	Arm 5 Ahead	Inf	87.6 %	1955	1955
				Arm 6 Left	Inf	12.4 %		
4/2 (Sovereign Blvd)	3.40	0.00	N	Arm 5 Ahead	Inf	100.0 %	2095	2095
4/3 (Sovereign Blvd)	3.40	0.00	N	Arm 5 Ahead	Inf	100.0 %	2095	2095
5/1 (Twydall Ln Circ)	4.00	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1956	1956
5/2 (Twydall Ln Circ)	4.00	0.00	N	Arm 7 Right	50.00	49.2 %	2092	2092
				Arm 8 Ahead	50.00	50.8 %		
5/3 (Twydall Ln Circ)	4.00	0.00	N	Arm 7 Right	50.00	100.0 %	2092	2092
6/1	Infinite Saturation Flow						Inf	Inf
7/1 (London Road Circ)	4.00	0.00	N	Arm 10 Ahead	50.00	100.0 %	2092	2092
7/2 (London Road Circ)	4.00	0.00	N	Arm 15 Right	50.00	100.0 %	2092	2092
7/3 (London Road Circ)	4.00	0.00	N	Arm 15 Right	50.00	100.0 %	2092	2092
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1 (Twydall Lane)	3.80	0.00	Y	Arm 7 Ahead	30.00	91.0 %	1896	1896
				Arm 8 Left	20.00	9.0 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1 (Courteney Road)	3.00	0.00	Y	Arm 1 Ahead	20.00	99.1 %	1781	1781
				Arm 12 Left	20.00	0.9 %		
11/2 (Courteney Road)	3.00	0.00	N	Arm 1 Ahead	20.00	100.0 %	1912	1912
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1 (Hoath Way)	3.10	0.00	Y	Arm 2 Left	Inf	100.0 %	1925	1925

13/2 (Hoath Way)	3.10	0.00	N	Arm 2 Left	Inf	54.5 %	2065	2065
				Arm 3 Ahead	Inf	45.5 %		
13/3 (Hoath Way)	3.10	0.00	N	Arm 3 Ahead	Inf	100.0 %	2065	2065
14/1 (London Road (E))	3.25	0.00	Y	Arm 10 Left	Inf	100.0 %	1940	1940
14/2 (London Road (E))	3.50	0.00	Y	Arm 15 Ahead	30.00	100.0 %	1871	1871
14/3 (London Road (E))	3.50	0.00	N	Arm 15 Ahead	35.00	100.0 %	2018	2018
14/4 (London Road (E))	3.50	0.00	N	Arm 15 Ahead	35.00	100.0 %	2018	2018
15/1 (Courtenay Road Circ)	4.00	0.00	Y	Arm 12 Ahead	50.00	100.0 %	1956	1956
15/2 (Courtenay Road Circ)	4.00	0.00	N	Arm 1 Right	50.00	45.5 %	2092	2092
				Arm 12 Ahead	50.00	54.5 %		
15/3 (Courtenay Road Circ)	4.00	0.00	Y	Arm 1 Right	50.00	100.0 %	1956	1956
16/1 (Sovereign Blvd Bus Lane Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
17/1 (London Road Bus Lane Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900

Scenario 14: '2035 RC + Dev PM' (FG16: '2035 RC+Dev PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination								
		A	B	C	D	E	F	G	Tot.
Origin	A	0	38	47	163	27	0	0	275
	B	12	0	188	285	497	0	0	982
	C	80	139	0	0	481	0	0	700
	D	348	537	0	0	709	0	0	1594
	E	33	773	369	720	17	0	0	1912
	F	0	0	0	0	0	0	18	18
	G	0	0	0	0	0	18	0	18
	Tot.	473	1487	604	1168	1731	18	18	5499

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 14: 2035 RC + Dev PM
Junction: Bowaters Roundabout	
1/1	621
1/2	650
2/1	1126
2/2	623
3/1	440
3/2	676
4/1 (short)	637
4/2 (with short)	1336(In) 699(Out)
4/3	576
5/1	950
5/2	1047
5/3	576
6/1	473
7/1	416
7/2	317
7/3	610
8/1	988
8/2	517
9/1	275
10/1	604
11/1 (with short)	700(In) 342(Out)
11/2 (short)	358
12/1	594
12/2	574
13/1	505
13/2 (with short)	1089(In) 552(Out)
13/3 (short)	537
14/1	188
14/2 (short)	277
14/3 (with short)	538(In) 261(Out)
14/4	256
15/1	594
15/2	853
15/3	292
16/1	18

Full Input Data And Results

17/1	18

Lane Saturation Flows

Junction: Bowaters Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Hoath Way Circ)	4.50	0.00	N	Arm 2 Ahead	50.00	100.0 %	2141	2141
1/2 (Hoath Way Circ)	4.50	0.00	N	Arm 2 Ahead	50.00	64.5 %	2163	2163
				Arm 3 Right	Inf	35.5 %		
2/1	Infinite Saturation Flow						Inf	Inf
2/2	Infinite Saturation Flow						Inf	Inf
3/1 (Sovereign Blvd Circ)	4.50	0.00	N	Arm 6 Ahead	50.00	100.0 %	2141	2141
3/2 (Sovereign Blvd Circ)	4.50	0.00	N	Arm 5 Right	50.00	100.0 %	2141	2141
4/1 (Sovereign Blvd)	3.40	0.00	Y	Arm 5 Ahead	Inf	94.8 %	1955	1955
				Arm 6 Left	Inf	5.2 %		
4/2 (Sovereign Blvd)	3.40	0.00	N	Arm 5 Ahead	Inf	100.0 %	2095	2095
4/3 (Sovereign Blvd)	3.40	0.00	N	Arm 5 Ahead	Inf	100.0 %	2095	2095
5/1 (Twydall Ln Circ)	4.00	0.00	Y	Arm 8 Ahead	50.00	100.0 %	1956	1956
5/2 (Twydall Ln Circ)	4.00	0.00	N	Arm 7 Right	50.00	50.6 %	2092	2092
				Arm 8 Ahead	50.00	49.4 %		
5/3 (Twydall Ln Circ)	4.00	0.00	N	Arm 7 Right	50.00	100.0 %	2092	2092
6/1	Infinite Saturation Flow						Inf	Inf
7/1 (London Road Circ)	4.00	0.00	N	Arm 10 Ahead	50.00	100.0 %	2092	2092
7/2 (London Road Circ)	4.00	0.00	N	Arm 15 Right	50.00	100.0 %	2092	2092
7/3 (London Road Circ)	4.00	0.00	N	Arm 15 Right	50.00	100.0 %	2092	2092
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf
9/1 (Twydall Lane)	3.80	0.00	Y	Arm 7 Ahead	30.00	86.2 %	1894	1894
				Arm 8 Left	20.00	13.8 %		
10/1	Infinite Saturation Flow						Inf	Inf
11/1 (Courteney Road)	3.00	0.00	Y	Arm 1 Ahead	20.00	100.0 %	1781	1781
				Arm 12 Left	20.00	0.0 %		
11/2 (Courteney Road)	3.00	0.00	N	Arm 1 Ahead	20.00	100.0 %	1912	1912
12/1	Infinite Saturation Flow						Inf	Inf
12/2	Infinite Saturation Flow						Inf	Inf
13/1 (Hoath Way)	3.10	0.00	Y	Arm 2 Left	Inf	100.0 %	1925	1925

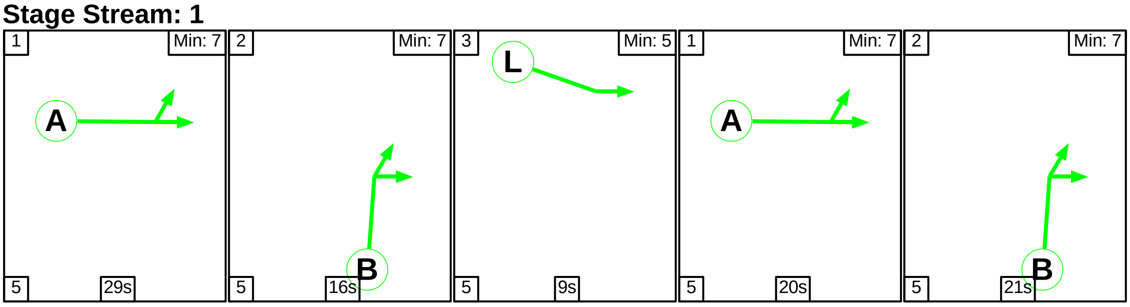
Full Input Data And Results

13/2 (Hoath Way)	3.10	0.00	N	Arm 2 Left	Inf	37.0 %	2065	2065
				Arm 3 Ahead	Inf	63.0 %		
13/3 (Hoath Way)	3.10	0.00	N	Arm 3 Ahead	Inf	100.0 %	2065	2065
14/1 (London Road (E))	3.25	0.00	Y	Arm 10 Left	Inf	100.0 %	1940	1940
14/2 (London Road (E))	3.50	0.00	Y	Arm 15 Ahead	30.00	100.0 %	1871	1871
14/3 (London Road (E))	3.50	0.00	N	Arm 15 Ahead	35.00	100.0 %	2018	2018
14/4 (London Road (E))	3.50	0.00	N	Arm 15 Ahead	35.00	100.0 %	2018	2018
15/1 (Courtenay Road Circ)	4.00	0.00	Y	Arm 12 Ahead	50.00	100.0 %	1956	1956
15/2 (Courtenay Road Circ)	4.00	0.00	N	Arm 1 Right	50.00	32.7 %	2092	2092
				Arm 12 Ahead	50.00	67.3 %		
15/3 (Courtenay Road Circ)	4.00	0.00	Y	Arm 1 Right	50.00	100.0 %	1956	1956
16/1 (Sovereign Blvd Bus Lane Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
17/1 (London Road Bus Lane Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900

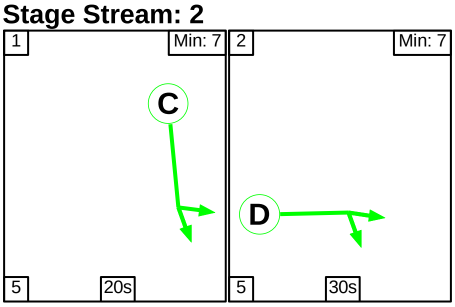
Scenario 11: '2035 RC AM' (FG13: '2035 RC AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1

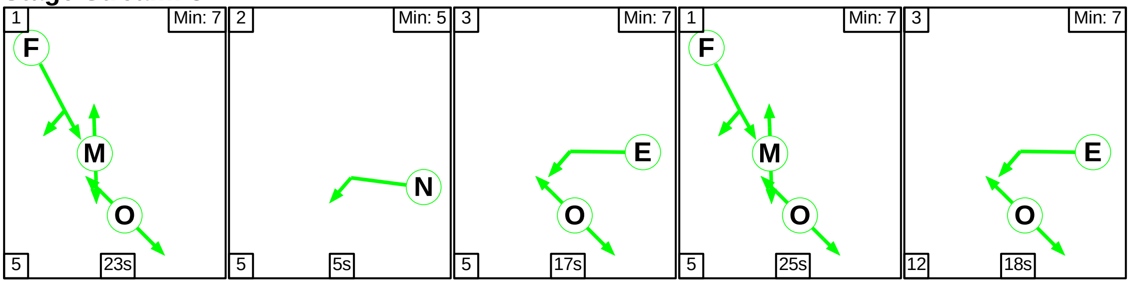


Stage Stream: 2

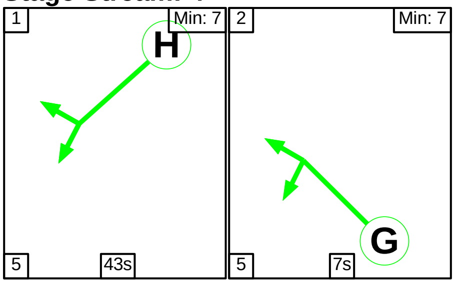


Full Input Data And Results

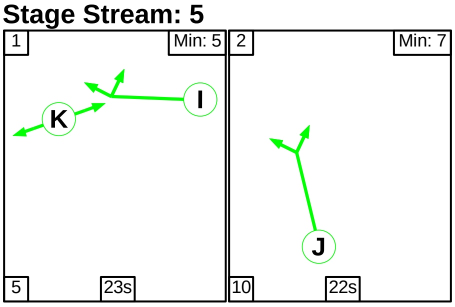
Stage Stream: 3



Stage Stream: 4



Stage Stream: 5



Stage Timings

Stage Stream: 1

Stage	1	2	3	1	2
Duration	29	16	9	20	21
Change Point	0	34	55	69	94

Stage Stream: 2

Stage	1	2	1	2
Duration	20	30	20	30
Change Point	109	14	49	74

Stage Stream: 3

Stage	1	2	3	1	3
Duration	23	5	17	25	18
Change Point	15	43	53	75	105

Stage Stream: 4

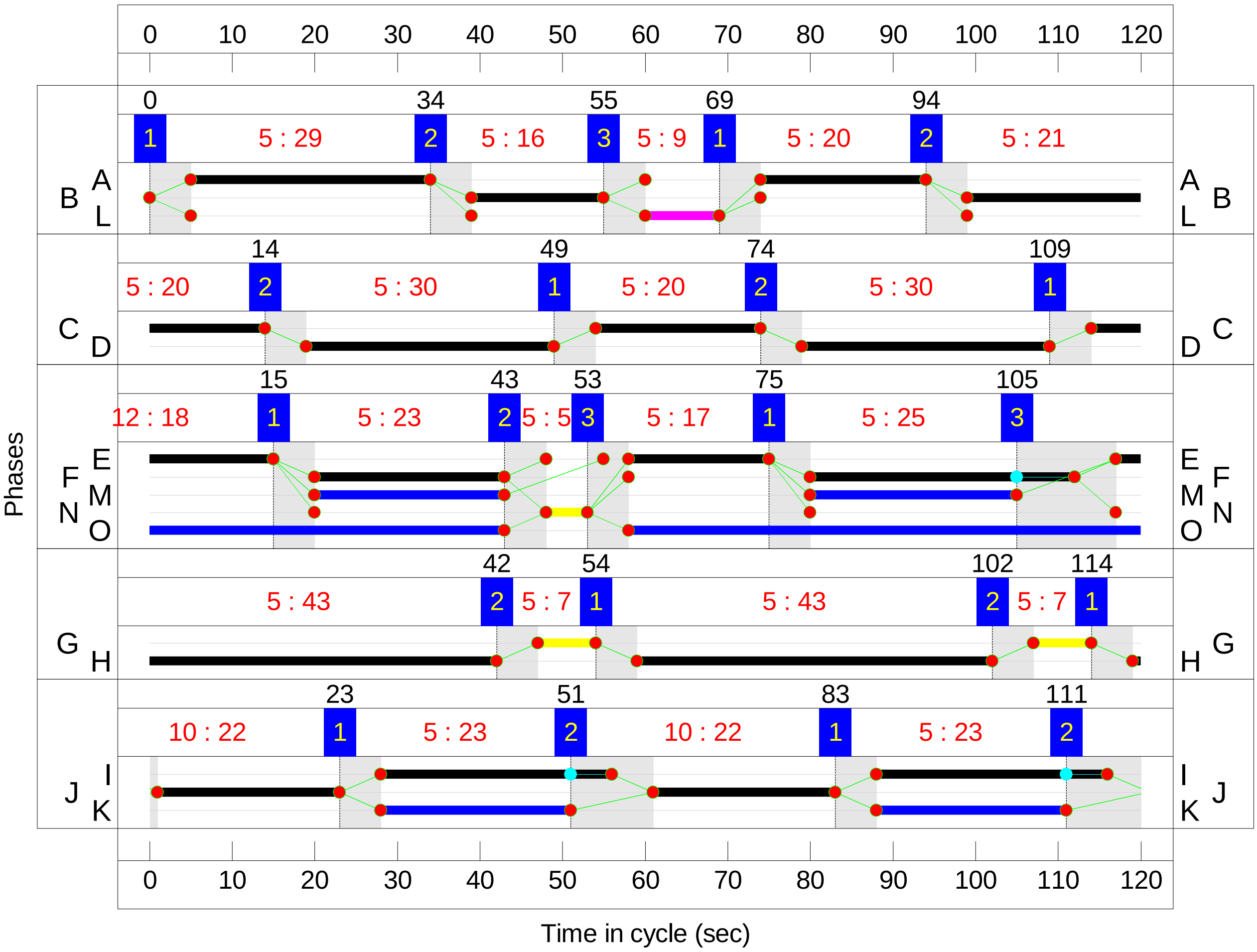
Stage	1	2	1	2
Duration	43	7	43	7
Change Point	114	42	54	102

Full Input Data And Results

Stage Stream: 5

Stage	1	2	1	2
Duration	23	22	23	22
Change Point	23	51	83	111

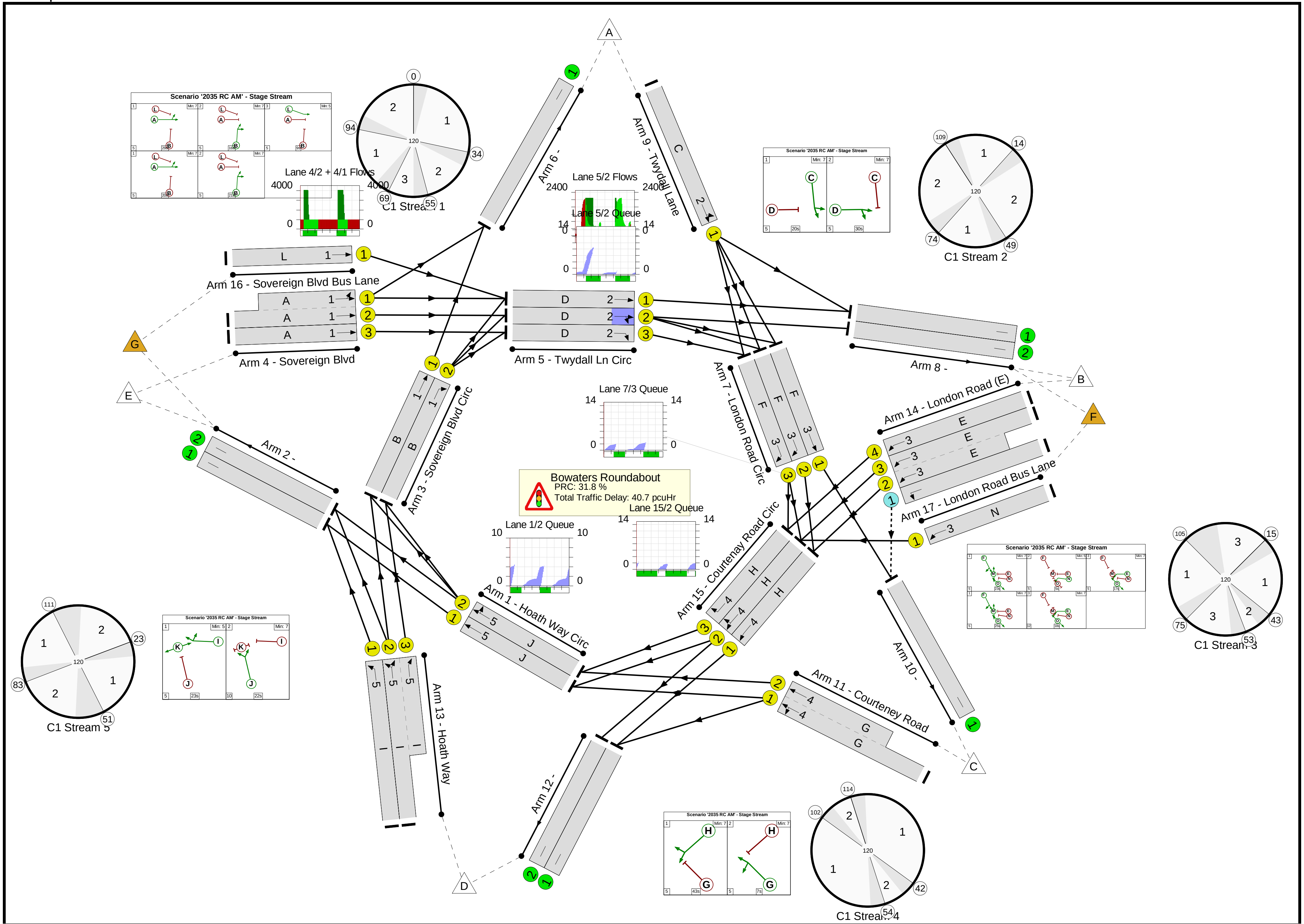
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Bowaters Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**68.3%**
Bowaters Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**68.3%**
1/1	Hoath Way Circ Ahead	U	5	N/A	J		2	44	-	522	2141	821	63.6%
1/2	Hoath Way Circ Ahead Right	U	5	N/A	J		2	44	-	549	2151	825	66.6%
2/1		U	N/A	N/A	-		-	-	-	1070	Inf	Inf	0.0%
2/2		U	N/A	N/A	-		-	-	-	838	Inf	Inf	0.0%
3/1	Sovereign Blvd Circ Ahead	U	1	N/A	B		2	37	-	269	2141	696	38.7%
3/2	Sovereign Blvd Circ Right	U	1	N/A	B		2	37	-	278	2141	696	40.0%
4/2+4/1	Sovereign Blvd Ahead Left	U	1	N/A	A		2	49	-	988	2095:1955	850+713	63.2 : 63.2%
4/3	Sovereign Blvd Ahead	U	1	N/A	A		2	49	-	494	2095	890	55.5%
5/1	Twydall Ln Circ Ahead	U	2	N/A	D		2	60	-	584	1956	1011	57.8%
5/2	Twydall Ln Circ Right Ahead	U	2	N/A	D		2	60	-	646	2092	1081	59.8%
5/3	Twydall Ln Circ Right	U	2	N/A	D		2	60	-	494	2092	1081	45.7%
6/1		U	N/A	N/A	-		-	-	-	323	Inf	Inf	0.0%
7/1	London Road Circ Ahead	U	3	N/A	F		2	55	-	260	2092	994	26.2%
7/2	London Road Circ Right	U	3	N/A	F		2	55	-	469	2092	994	47.2%
7/3	London Road Circ Right	U	3	N/A	F		2	55	-	609	2092	994	61.3%
8/1		U	N/A	N/A	-		-	-	-	618	Inf	Inf	0.0%

Full Input Data And Results

8/2		U	N/A	N/A	-		-	-	-	185	Inf	Inf	0.0%
9/1	Twydall Lane Ahead Left	U	2	N/A	C		2	40	-	417	1896	664	62.8%
10/1		U	N/A	N/A	-		-	-	-	414	Inf	Inf	0.0%
11/1+11/2	Courteney Road Ahead Left	U	4	N/A	G		2	14	-	246	1781:1912	142+255	62.0 : 62.0%
12/1		U	N/A	N/A	-		-	-	-	777	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	496	Inf	Inf	0.0%
13/1	Hoath Way Left	U	5	N/A	I		2	56	-	548	1925	930	58.9%
13/2+13/3	Hoath Way Left Ahead	U	5	N/A	I		2	56	-	836	2065:2065	876+349	68.3 : 68.3%
14/1	London Road (E) Left	O	N/A	N/A	-		-	-	-	154	1940	658	23.4%
14/3+14/2	London Road (E) Ahead	U	3	N/A	E		2	35	-	681	2018:1871	622+514	59.9 : 59.9%
14/4	London Road (E) Ahead	U	3	N/A	E		2	35	-	321	2018	622	51.6%
15/1	Courtenay Road Circ Ahead	U	4	N/A	H		2	86	-	777	1956	1434	54.2%
15/2	Courtenay Road Circ Right Ahead	U	4	N/A	H		2	86	-	930	2092	1534	60.6%
15/3	Courtenay Road Circ Right	U	4	N/A	H		2	86	-	391	1956	1434	27.3%
16/1	Sovereign Blvd Bus Lane Ahead	U	1	N/A	L		1	9	-	18	1900	158	11.4%
17/1	London Road Bus Lane Ahead	U	3	N/A	N		1	5	-	18	1900	95	18.9%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Bowaters Roundabout	**-**	**-**	**73**	**81**	**0**	**26.9**	**13.8**	**0.0**	**40.7**	**-**	**-**	**-**	**-**
Bowaters Roundabout	**-**	**-**	**73**	**81**	**0**	**26.9**	**13.8**	**0.0**	**40.7**	**-**	**-**	**-**	**-**
1/1	522	522	-	-	-	0.9	0.9	-	1.8	12.5	3.0	0.9	3.9
1/2	549	549	-	-	-	1.1	1.0	-	2.1	13.9	4.5	1.0	5.5
2/1	1070	1070	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	838	838	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	269	269	-	-	-	0.7	0.3	-	1.0	13.6	2.5	0.3	2.8
3/2	278	278	-	-	-	0.8	0.3	-	1.1	14.0	3.7	0.3	4.0
4/2+4/1	988	988	-	-	-	3.7	0.9	-	4.5	16.5	7.8	0.9	8.6
4/3	494	494	-	-	-	1.8	0.6	-	2.4	17.7	7.0	0.6	7.6
5/1	584	584	-	-	-	1.0	0.7	-	1.7	10.5	6.9	0.7	7.5
5/2	646	646	-	-	-	0.9	0.7	-	1.6	8.9	8.7	0.7	9.5
5/3	494	494	-	-	-	0.4	0.4	-	0.8	5.8	6.6	0.4	7.0
6/1	323	323	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	260	260	-	-	-	0.2	0.2	-	0.4	5.4	0.9	0.2	1.0
7/2	469	469	-	-	-	1.1	0.4	-	1.6	12.2	4.4	0.4	4.9
7/3	609	609	-	-	-	0.6	0.8	-	1.4	8.3	2.4	0.8	3.2
8/1	618	618	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	185	185	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	417	417	-	-	-	1.9	0.8	-	2.7	23.5	5.7	0.8	6.5
10/1	414	414	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1+11/2	246	246	-	-	-	1.7	0.8	-	2.5	36.1	2.5	0.8	3.3
12/1	777	777	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	496	496	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	548	548	-	-	-	1.7	0.7	-	2.4	15.9	6.5	0.7	7.3

Full Input Data And Results

13/2+13/3	836	836	-	-	-	2.5	1.1	-	3.5	15.3	7.1	1.1	8.2
14/1	154	154	73	81	0	0.0	0.2	-	0.2	3.6	0.0	0.2	0.2
14/3+14/2	681	681	-	-	-	3.3	0.7	-	4.0	21.4	5.3	0.7	6.0
14/4	321	321	-	-	-	1.5	0.5	-	2.1	23.0	4.4	0.5	4.9
15/1	777	777	-	-	-	0.2	0.6	-	0.8	3.7	1.7	0.6	2.3
15/2	930	930	-	-	-	0.4	0.8	-	1.1	4.4	2.9	0.8	3.7
15/3	391	391	-	-	-	0.0	0.2	-	0.2	1.9	1.1	0.2	1.3
16/1	18	18	-	-	-	0.3	0.1	-	0.3	63.7	0.6	0.1	0.6
17/1	18	18	-	-	-	0.3	0.1	-	0.4	78.0	0.6	0.1	0.7

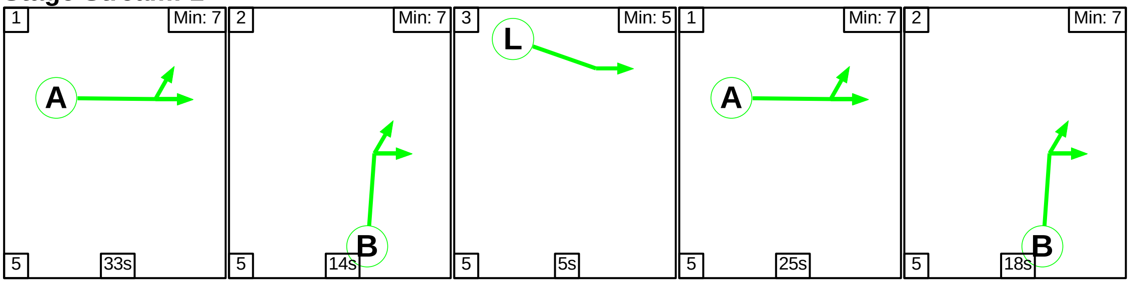
C1	Stream: 1	PRC for Signalled Lanes (%):	42.4	Total Delay for Signalled Lanes (pcuHr):	9.38	Cycle Time (s):	120
C1	Stream: 2	PRC for Signalled Lanes (%):	43.2	Total Delay for Signalled Lanes (pcuHr):	6.80	Cycle Time (s):	120
C1	Stream: 3	PRC for Signalled Lanes (%):	46.9	Total Delay for Signalled Lanes (pcuHr):	9.87	Cycle Time (s):	120
C1	Stream: 4	PRC for Signalled Lanes (%):	45.2	Total Delay for Signalled Lanes (pcuHr):	4.61	Cycle Time (s):	120
C1	Stream: 5	PRC for Signalled Lanes (%):	31.8	Total Delay for Signalled Lanes (pcuHr):	9.89	Cycle Time (s):	120
		PRC Over All Lanes (%):	31.8	Total Delay Over All Lanes(pcuHr):	40.69		

Full Input Data And Results

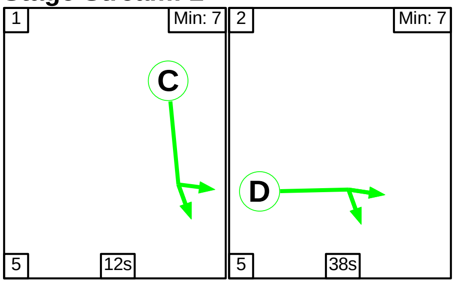
Scenario 12: '2035 RC PM' (FG14: '2035 RC PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

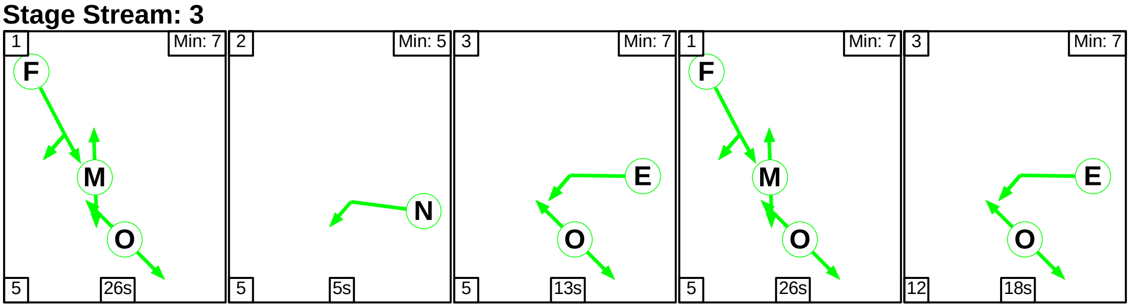
Stage Stream: 1



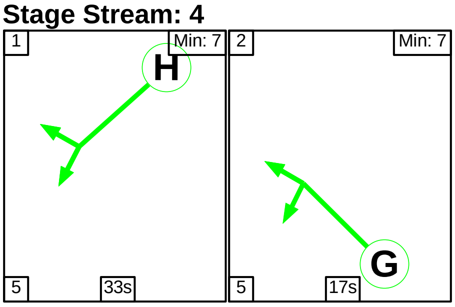
Stage Stream: 2



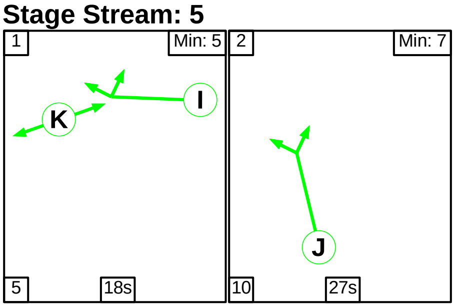
Stage Stream: 3



Stage Stream: 4



Stage Stream: 5



Stage Timings

Stage Stream: 1

Stage	1	2	3	1	2
Duration	33	14	5	25	18
Change Point	0	38	57	67	97

Full Input Data And Results

Stage Stream: 2

Stage	1	2	1	2
Duration	12	38	12	38
Change Point	102	119	42	59

Stage Stream: 3

Stage	1	2	3	1	3
Duration	26	5	13	26	18
Change Point	7	38	48	66	97

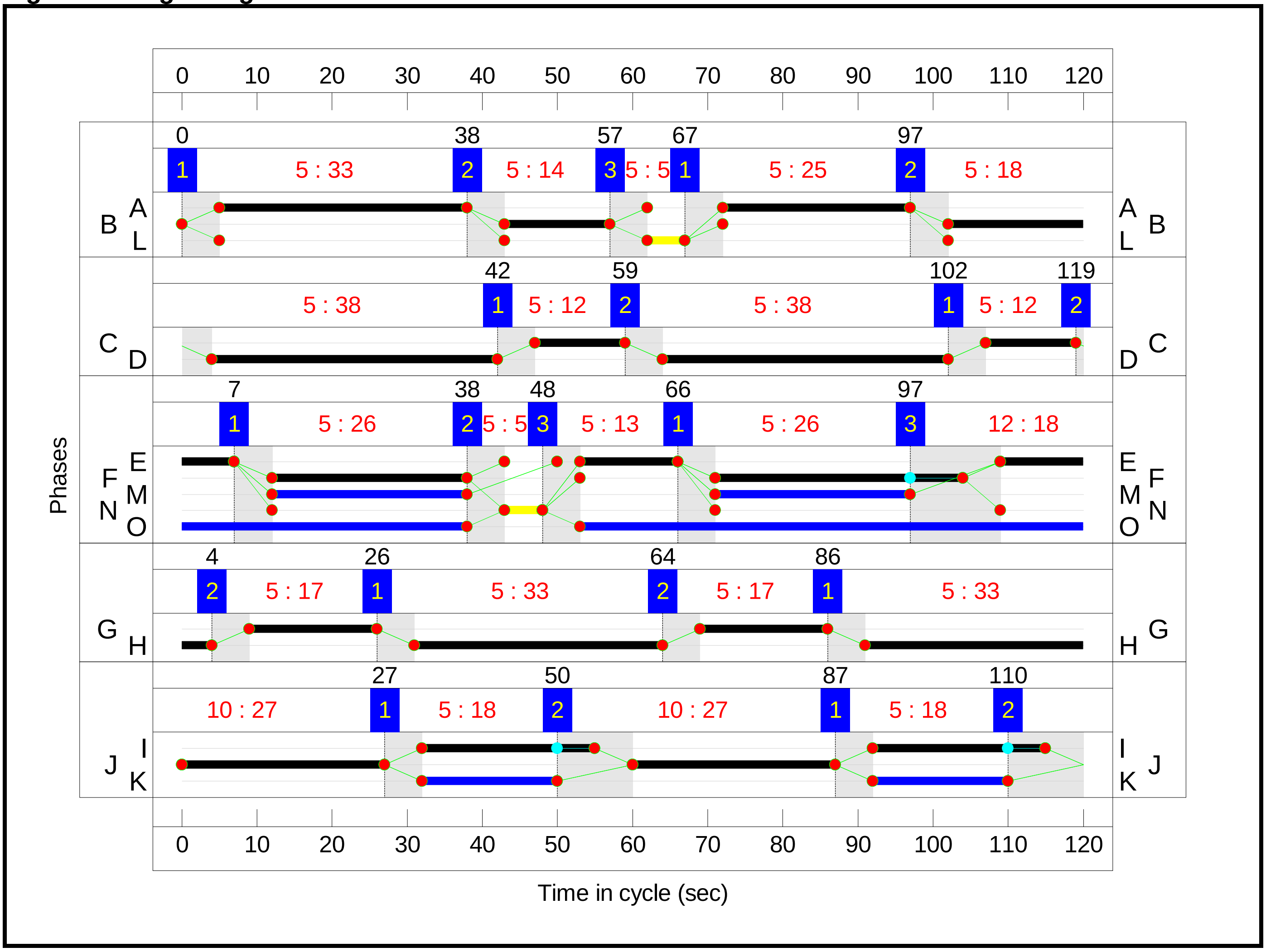
Stage Stream: 4

Stage	1	2	1	2
Duration	33	17	33	17
Change Point	26	64	86	4

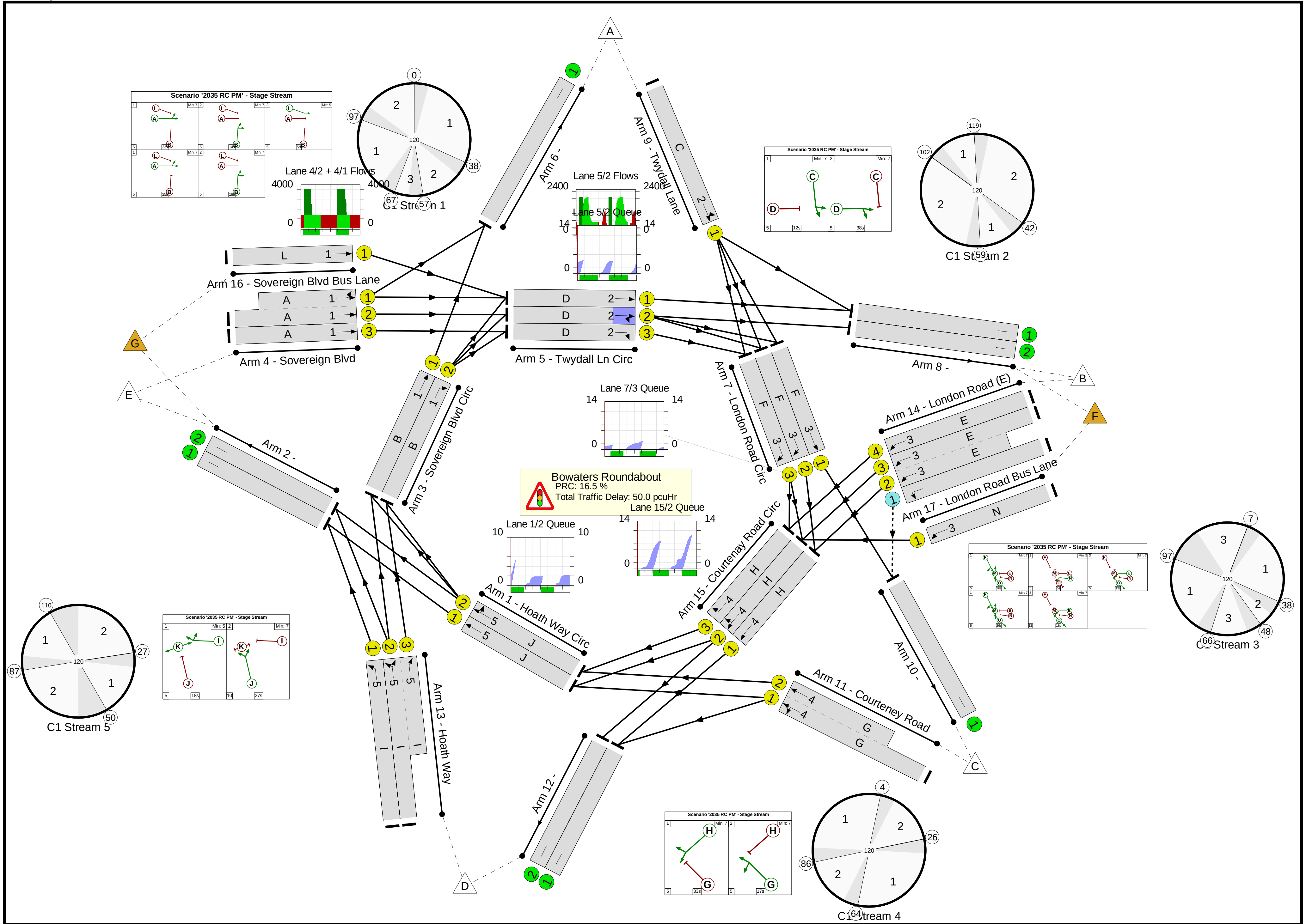
Stage Stream: 5

Stage	1	2	1	2
Duration	18	27	18	27
Change Point	27	50	87	110

Signal Timings Diagram



Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Bowaters Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**77.3%**
Bowaters Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**77.3%**
1/1	Hoath Way Circ Ahead	U	5	N/A	J		2	54	-	607	2141	999	60.8%
1/2	Hoath Way Circ Ahead Right	U	5	N/A	J		2	54	-	632	2158	1007	62.8%
2/1		U	N/A	N/A	-		-	-	-	1124	Inf	Inf	0.0%
2/2		U	N/A	N/A	-		-	-	-	650	Inf	Inf	0.0%
3/1	Sovereign Blvd Circ Ahead	U	1	N/A	B		2	32	-	457	2141	607	75.3%
3/2	Sovereign Blvd Circ Right	U	1	N/A	B		2	32	-	394	2141	607	65.0%
4/2+4/1	Sovereign Blvd Ahead Left	U	1	N/A	A		2	58	-	1386	2095:1955	913+918	75.7 : 75.7%
4/3	Sovereign Blvd Ahead	U	1	N/A	A		2	58	-	539	2095	1047	51.5%
5/1	Twydall Ln Circ Ahead	U	2	N/A	D		2	76	-	851	1956	1271	66.9%
5/2	Twydall Ln Circ Right Ahead	U	2	N/A	D		2	76	-	909	2092	1360	66.8%
5/3	Twydall Ln Circ Right	U	2	N/A	D		2	76	-	539	2092	1360	39.6%
6/1		U	N/A	N/A	-		-	-	-	495	Inf	Inf	0.0%
7/1	London Road Circ Ahead	U	3	N/A	F		2	59	-	465	2092	1063	43.7%
7/2	London Road Circ Right	U	3	N/A	F		2	59	-	387	2092	1063	36.4%
7/3	London Road Circ Right	U	3	N/A	F		2	59	-	587	2092	1063	55.2%
8/1		U	N/A	N/A	-		-	-	-	892	Inf	Inf	0.0%

Full Input Data And Results

8/2		U	N/A	N/A	-		-	-	-	238	Inf	Inf	0.0%
9/1	Twydall Lane Ahead Left	U	2	N/A	C		2	24	-	270	1893	410	65.8%
10/1		U	N/A	N/A	-		-	-	-	656	Inf	Inf	0.0%
11/1+11/2	Courteney Road Ahead Left	U	4	N/A	G		2	34	-	652	1781:1912	534+560	59.7 : 59.4%
12/1		U	N/A	N/A	-		-	-	-	653	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	553	Inf	Inf	0.0%
13/1	Hoath Way Left	U	5	N/A	I		2	46	-	517	1925	770	67.1%
13/2+13/3	Hoath Way Left Ahead	U	5	N/A	I		2	46	-	869	2065:2065	733+392	77.3 : 77.3%
14/1	London Road (E) Left	O	N/A	N/A	-		-	-	-	191	1940	613	31.2%
14/3+14/2	London Road (E) Ahead	U	3	N/A	E		2	31	-	543	2018:1871	555+515	49.9 : 51.7%
14/4	London Road (E) Ahead	U	3	N/A	E		2	31	-	258	2018	555	46.5%
15/1	Courtenay Road Circ Ahead	U	4	N/A	H		2	66	-	653	1956	1108	58.9%
15/2	Courtenay Road Circ Right Ahead	U	4	N/A	H		2	66	-	841	2092	1185	70.9%
15/3	Courtenay Road Circ Right	U	4	N/A	H		2	66	-	299	1956	1108	27.0%
16/1	Sovereign Blvd Bus Lane Ahead	U	1	N/A	L		1	5	-	18	1900	95	18.9%
17/1	London Road Bus Lane Ahead	U	3	N/A	N		1	5	-	18	1900	95	18.9%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Bowaters Roundabout	**-**	**-**	**97**	**94**	**0**	**32.4**	**17.6**	**0.0**	**50.0**	**-**	**-**	**-**	**-**
Bowaters Roundabout	**-**	**-**	**97**	**94**	**0**	**32.4**	**17.6**	**0.0**	**50.0**	**-**	**-**	**-**	**-**
1/1	607	607	-	-	-	0.7	0.8	-	1.5	8.9	4.8	0.8	5.6
1/2	632	632	-	-	-	0.9	0.8	-	1.7	9.9	5.5	0.8	6.3
2/1	1124	1124	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	650	650	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	457	457	-	-	-	1.2	1.5	-	2.6	20.9	6.0	1.5	7.5
3/2	394	394	-	-	-	1.0	0.9	-	2.0	17.8	5.7	0.9	6.7
4/2+4/1	1386	1386	-	-	-	4.4	1.5	-	6.0	15.5	9.8	1.5	11.4
4/3	539	539	-	-	-	1.5	0.5	-	2.1	13.7	6.6	0.5	7.1
5/1	851	851	-	-	-	0.8	1.0	-	1.8	7.6	3.9	1.0	4.9
5/2	909	909	-	-	-	0.9	1.0	-	1.9	7.5	4.7	1.0	5.7
5/3	539	539	-	-	-	0.1	0.3	-	0.4	2.9	0.4	0.3	0.7
6/1	495	495	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	465	465	-	-	-	0.5	0.4	-	0.9	7.2	2.1	0.4	2.4
7/2	387	387	-	-	-	0.9	0.3	-	1.2	11.2	3.2	0.3	3.5
7/3	587	587	-	-	-	0.7	0.6	-	1.3	8.0	2.6	0.6	3.2
8/1	892	892	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	238	238	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	270	270	-	-	-	1.6	1.0	-	2.6	34.1	4.0	1.0	5.0
10/1	656	656	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1+11/2	652	652	-	-	-	3.2	0.7	-	4.0	21.9	4.6	0.7	5.4
12/1	653	653	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	553	553	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	517	517	-	-	-	2.1	1.0	-	3.1	21.8	7.0	1.0	8.1

Full Input Data And Results

13/2+13/3	869	869	-	-	-	3.4	1.7	-	5.1	21.1	7.7	1.7	9.4
14/1	191	191	97	94	0	0.0	0.2	-	0.2	4.3	0.0	0.2	0.2
14/3+14/2	543	543	-	-	-	2.8	0.5	-	3.3	21.8	4.0	0.5	4.5
14/4	258	258	-	-	-	1.3	0.4	-	1.7	24.2	3.7	0.4	4.1
15/1	653	653	-	-	-	1.5	0.7	-	2.2	12.2	7.1	0.7	7.9
15/2	841	841	-	-	-	1.8	1.2	-	3.0	12.8	10.7	1.2	11.9
15/3	299	299	-	-	-	0.4	0.2	-	0.6	7.0	1.4	0.2	1.6
16/1	18	18	-	-	-	0.3	0.1	-	0.4	78.0	0.6	0.1	0.7
17/1	18	18	-	-	-	0.3	0.1	-	0.4	78.0	0.6	0.1	0.7

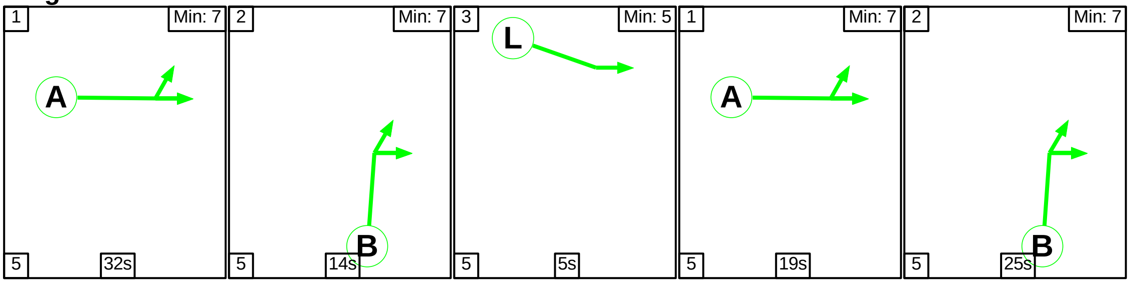
C1 Stream: 1 PRC for Signalled Lanes (%): 18.9 Total Delay for Signalled Lanes (pcuHr): 13.03 Cycle Time (s): 120
C1 Stream: 2 PRC for Signalled Lanes (%): 34.5 Total Delay for Signalled Lanes (pcuHr): 6.67 Cycle Time (s): 120
C1 Stream: 3 PRC for Signalled Lanes (%): 63.0 Total Delay for Signalled Lanes (pcuHr): 8.85 Cycle Time (s): 120
C1 Stream: 4 PRC for Signalled Lanes (%): 26.9 Total Delay for Signalled Lanes (pcuHr): 9.75 Cycle Time (s): 120
C1 Stream: 5 PRC for Signalled Lanes (%): 16.5 Total Delay for Signalled Lanes (pcuHr): 11.47 Cycle Time (s): 120
PRC Over All Lanes (%): 16.5 Total Delay Over All Lanes(pcuHr): 50.00

Full Input Data And Results

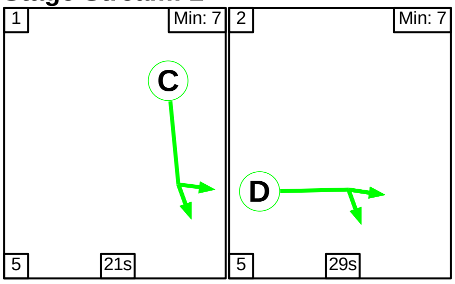
Scenario 13: '2035 RC + Dev AM' (FG15: '2035 RC+Dev AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

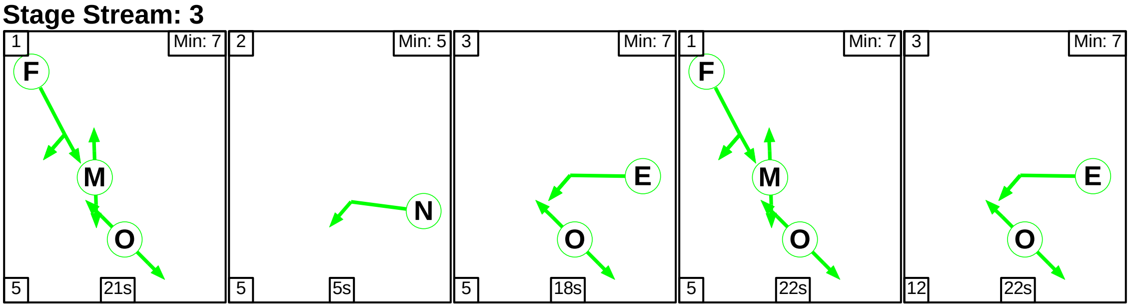
Stage Stream: 1



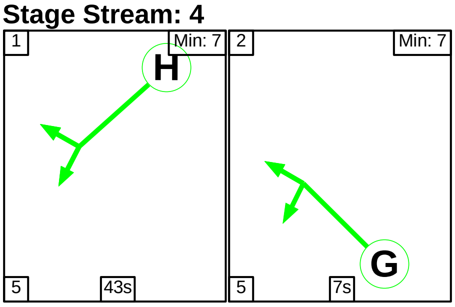
Stage Stream: 2



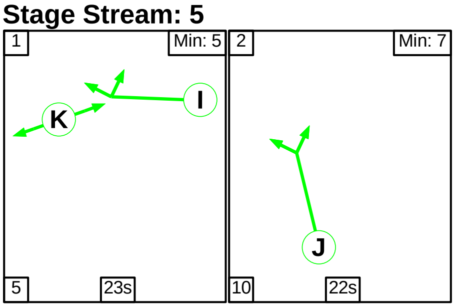
Stage Stream: 3



Stage Stream: 4



Stage Stream: 5



Stage Timings

Stage Stream: 1

Stage	1	2	3	1	2
Duration	32	14	5	19	25
Change Point	0	37	56	66	90

Full Input Data And Results

Stage Stream: 2

Stage	1	2	1	2
Duration	21	29	21	29
Change Point	90	116	30	56

Stage Stream: 3

Stage	1	2	3	1	3
Duration	21	5	18	22	22
Change Point	24	50	60	83	110

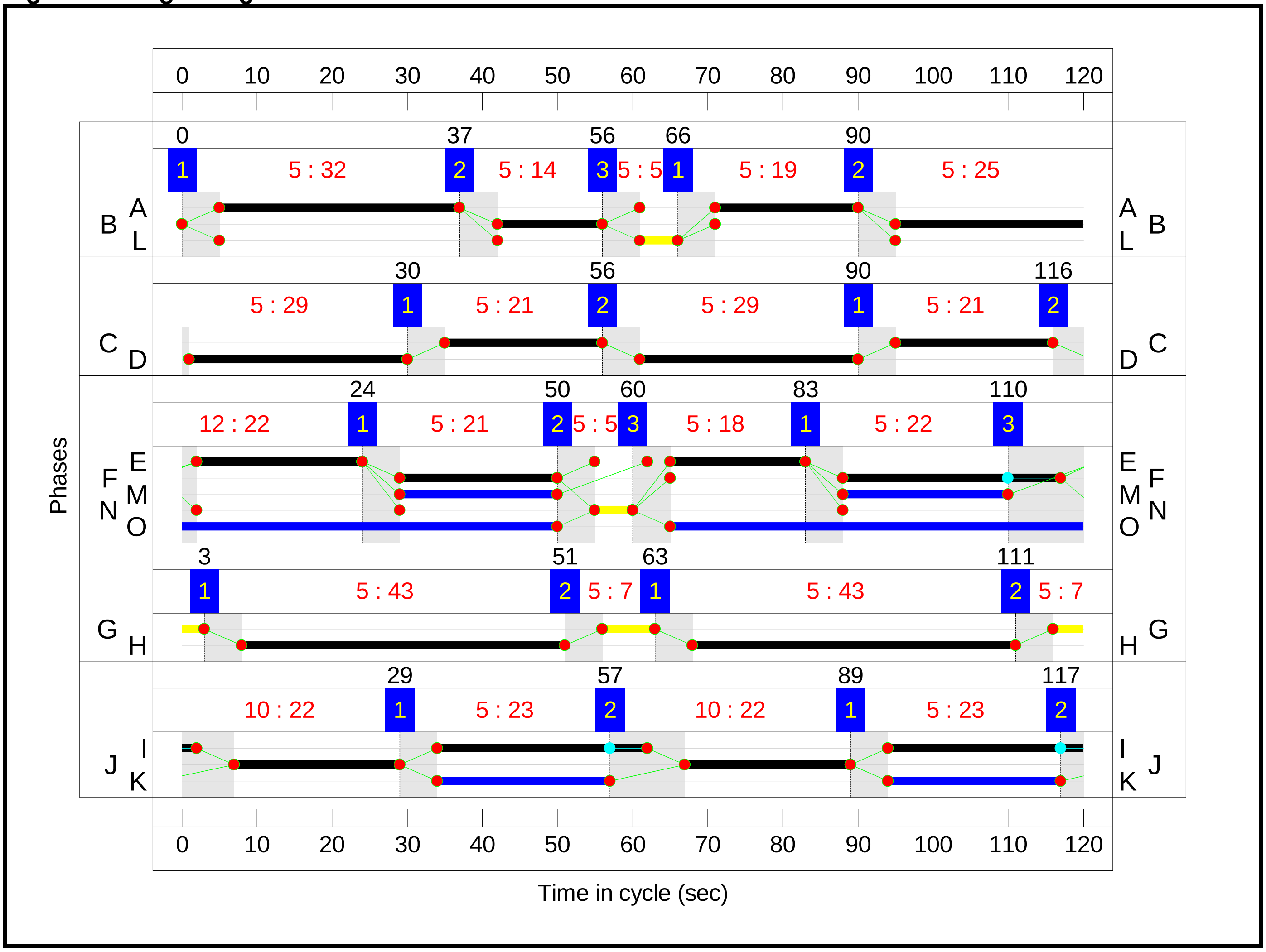
Stage Stream: 4

Stage	1	2	1	2
Duration	43	7	43	7
Change Point	3	51	63	111

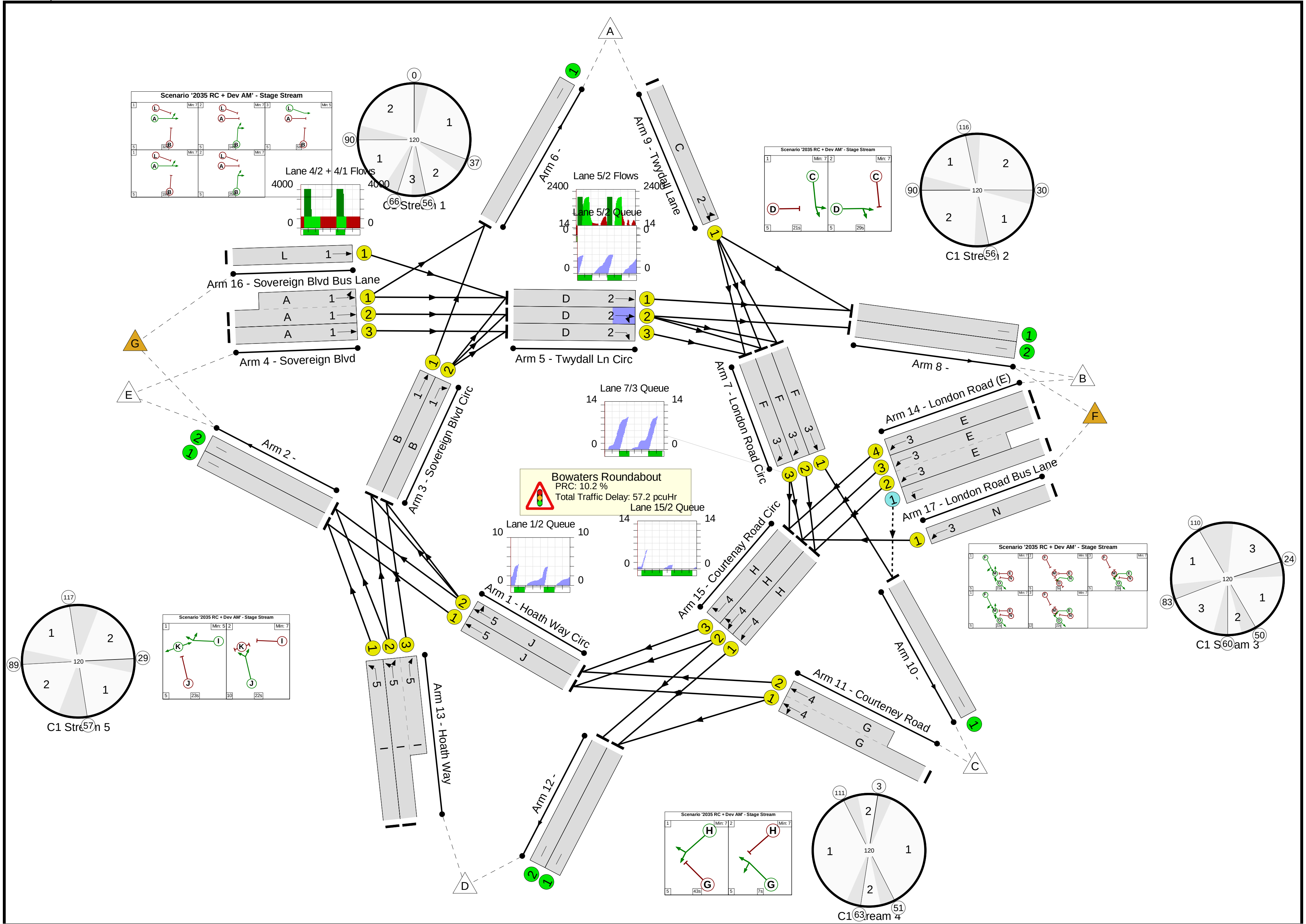
Stage Stream: 5

Stage	1	2	1	2
Duration	23	22	23	22
Change Point	29	57	89	117

Signal Timings Diagram



Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Bowaters Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.6%**
Bowaters Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**81.6%**
1/1	Hoath Way Circ Ahead	U	5	N/A	J		2	44	-	578	2141	821	70.4%
1/2	Hoath Way Circ Ahead Right	U	5	N/A	J		2	44	-	600	2152	825	72.7%
2/1		U	N/A	N/A	-		-	-	-	1189	Inf	Inf	0.0%
2/2		U	N/A	N/A	-		-	-	-	836	Inf	Inf	0.0%
3/1	Sovereign Blvd Circ Ahead	U	1	N/A	B		2	39	-	340	2141	732	46.5%
3/2	Sovereign Blvd Circ Right	U	1	N/A	B		2	39	-	492	2141	732	67.3%
4/2+4/1	Sovereign Blvd Ahead Left	U	1	N/A	A		2	51	-	1197	2095:1955	856+783	73.0 : 73.0%
4/3	Sovereign Blvd Ahead	U	1	N/A	A		2	51	-	555	2095	925	60.0%
5/1	Twydall Ln Circ Ahead	U	2	N/A	D		2	58	-	782	1956	978	80.0%
5/2	Twydall Ln Circ Right Ahead	U	2	N/A	D		2	58	-	854	2092	1046	81.6%
5/3	Twydall Ln Circ Right	U	2	N/A	D		2	58	-	555	2092	1046	53.1%
6/1		U	N/A	N/A	-		-	-	-	411	Inf	Inf	0.0%
7/1	London Road Circ Ahead	U	3	N/A	F		2	50	-	237	2092	907	26.1%
7/2	London Road Circ Right	U	3	N/A	F		2	50	-	551	2092	907	60.8%
7/3	London Road Circ Right	U	3	N/A	F		2	50	-	682	2092	907	75.2%
8/1		U	N/A	N/A	-		-	-	-	831	Inf	Inf	0.0%

Full Input Data And Results

8/2		U	N/A	N/A	-		-	-	-	434	Inf	Inf	0.0%
9/1	Twydall Lane Ahead Left	U	2	N/A	C		2	42	-	544	1896	695	78.3%
10/1		U	N/A	N/A	-		-	-	-	433	Inf	Inf	0.0%
11/1+11/2	Courteney Road Ahead Left	U	4	N/A	G		2	14	-	261	1781:1912	237+255	48.8 : 56.9%
12/1		U	N/A	N/A	-		-	-	-	870	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	554	Inf	Inf	0.0%
13/1	Hoath Way Left	U	5	N/A	I		2	56	-	611	1925	930	65.7%
13/2+13/3	Hoath Way Left Ahead	U	5	N/A	I		2	56	-	1068	2065:2065	816+561	77.6 : 77.6%
14/1	London Road (E) Left	O	N/A	N/A	-		-	-	-	196	1940	663	29.6%
14/3+14/2	London Road (E) Ahead	U	3	N/A	E		2	40	-	724	2018:1871	706+553	57.5 : 57.5%
14/4	London Road (E) Ahead	U	3	N/A	E		2	40	-	366	2018	706	51.8%
15/1	Courtenay Road Circ Ahead	U	4	N/A	H		2	86	-	869	1956	1434	60.6%
15/2	Courtenay Road Circ Right Ahead	U	4	N/A	H		2	86	-	1017	2092	1534	66.3%
15/3	Courtenay Road Circ Right	U	4	N/A	H		2	86	-	455	1956	1434	31.7%
16/1	Sovereign Blvd Bus Lane Ahead	U	1	N/A	L		1	5	-	18	1900	95	18.9%
17/1	London Road Bus Lane Ahead	U	3	N/A	N		1	5	-	18	1900	95	18.9%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Bowaters Roundabout	**-**	**-**	**85**	**111**	**0**	**35.4**	**21.8**	**0.0**	**57.2**	**-**	**-**	**-**	**-**
Bowaters Roundabout	**-**	**-**	**85**	**111**	**0**	**35.4**	**21.8**	**0.0**	**57.2**	**-**	**-**	**-**	**-**
1/1	578	578	-	-	-	0.9	1.2	-	2.1	12.8	3.5	1.2	4.7
1/2	600	600	-	-	-	1.0	1.3	-	2.3	13.9	4.4	1.3	5.8
2/1	1189	1189	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	836	836	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	340	340	-	-	-	1.0	0.4	-	1.5	15.6	2.5	0.4	3.0
3/2	492	492	-	-	-	1.4	1.0	-	2.4	17.9	6.8	1.0	7.8
4/2+4/1	1197	1197	-	-	-	4.4	1.3	-	5.8	17.3	8.3	1.3	9.7
4/3	555	555	-	-	-	2.0	0.7	-	2.7	17.6	7.1	0.7	7.8
5/1	782	782	-	-	-	1.8	2.0	-	3.7	17.2	7.2	2.0	9.1
5/2	854	854	-	-	-	1.8	2.2	-	3.9	16.6	6.0	2.2	8.1
5/3	555	555	-	-	-	0.7	0.6	-	1.3	8.3	2.1	0.6	2.7
6/1	411	411	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	237	237	-	-	-	0.5	0.2	-	0.7	10.9	3.3	0.2	3.5
7/2	551	551	-	-	-	1.4	0.8	-	2.1	13.9	5.6	0.8	6.4
7/3	682	682	-	-	-	2.5	1.5	-	4.0	21.0	10.6	1.5	12.1
8/1	831	831	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	434	434	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	544	544	-	-	-	2.6	1.8	-	4.3	28.5	8.0	1.8	9.8
10/1	433	433	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1+11/2	261	261	-	-	-	1.8	0.6	-	2.3	32.0	2.3	0.6	2.8
12/1	870	870	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	554	554	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	611	611	-	-	-	2.0	1.0	-	2.9	17.3	7.6	1.0	8.6

Full Input Data And Results

13/2+13/3	1068	1068	-	-	-	3.3	1.7	-	5.0	16.7	7.7	1.7	9.4
14/1	196	196	85	111	0	0.0	0.2	-	0.2	3.9	0.0	0.2	0.2
14/3+14/2	724	724	-	-	-	3.1	0.7	-	3.8	19.0	5.6	0.7	6.3
14/4	366	366	-	-	-	1.6	0.5	-	2.1	20.8	4.9	0.5	5.4
15/1	869	869	-	-	-	0.7	0.8	-	1.5	6.2	7.7	0.8	8.4
15/2	1017	1017	-	-	-	0.3	1.0	-	1.2	4.4	6.0	1.0	7.0
15/3	455	455	-	-	-	0.2	0.2	-	0.4	3.4	5.6	0.2	5.8
16/1	18	18	-	-	-	0.3	0.1	-	0.4	78.0	0.6	0.1	0.7
17/1	18	18	-	-	-	0.3	0.1	-	0.4	78.0	0.6	0.1	0.7

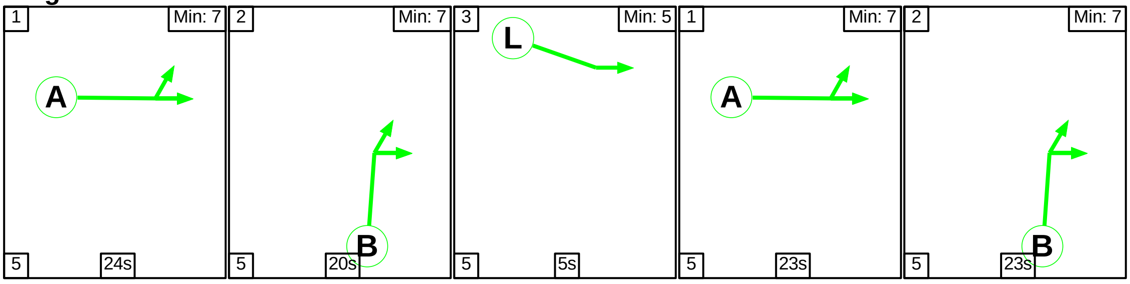
C1 Stream: 1 PRC for Signalled Lanes (%): 23.2 Total Delay for Signalled Lanes (pcuHr): 12.77 Cycle Time (s): 120
C1 Stream: 2 PRC for Signalled Lanes (%): 10.2 Total Delay for Signalled Lanes (pcuHr): 13.28 Cycle Time (s): 120
C1 Stream: 3 PRC for Signalled Lanes (%): 19.6 Total Delay for Signalled Lanes (pcuHr): 13.15 Cycle Time (s): 120
C1 Stream: 4 PRC for Signalled Lanes (%): 35.8 Total Delay for Signalled Lanes (pcuHr): 5.50 Cycle Time (s): 120
C1 Stream: 5 PRC for Signalled Lanes (%): 16.0 Total Delay for Signalled Lanes (pcuHr): 12.28 Cycle Time (s): 120
PRC Over All Lanes (%): 10.2 Total Delay Over All Lanes(pcuHr): 57.19

Full Input Data And Results

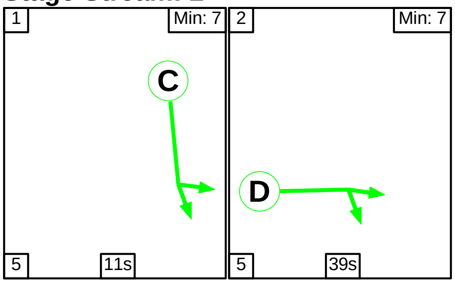
Scenario 14: '2035 RC + Dev PM' (FG16: '2035 RC+Dev PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

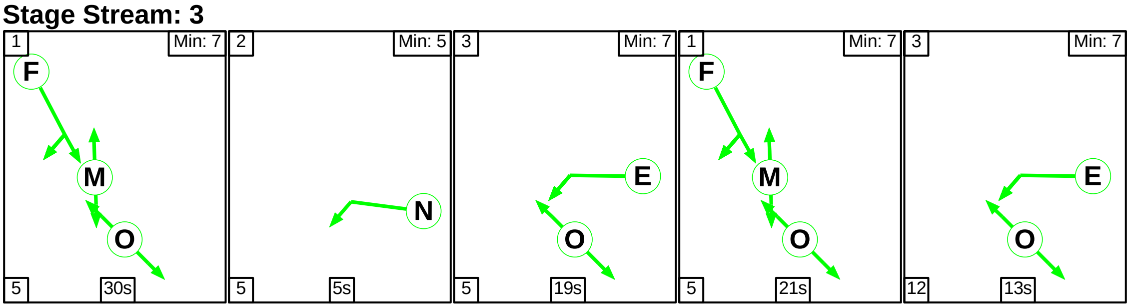
Stage Stream: 1



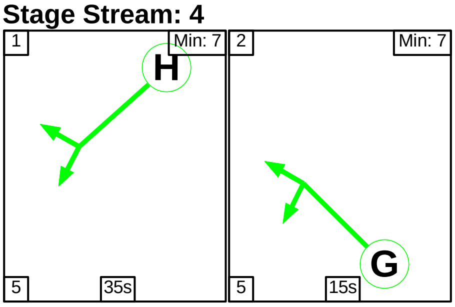
Stage Stream: 2



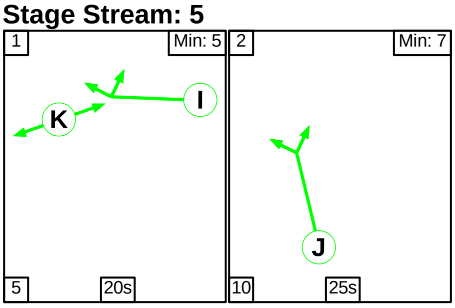
Stage Stream: 3



Stage Stream: 4



Stage Stream: 5



Stage Timings

Stage Stream: 1

Stage	1	2	3	1	2
Duration	24	20	5	23	23
Change Point	30	59	84	94	2

Full Input Data And Results

Stage Stream: 2

Stage	1	2	1	2
Duration	11	39	11	39
Change Point	6	22	66	82

Stage Stream: 3

Stage	1	2	3	1	3
Duration	30	5	19	21	13
Change Point	35	70	80	104	10

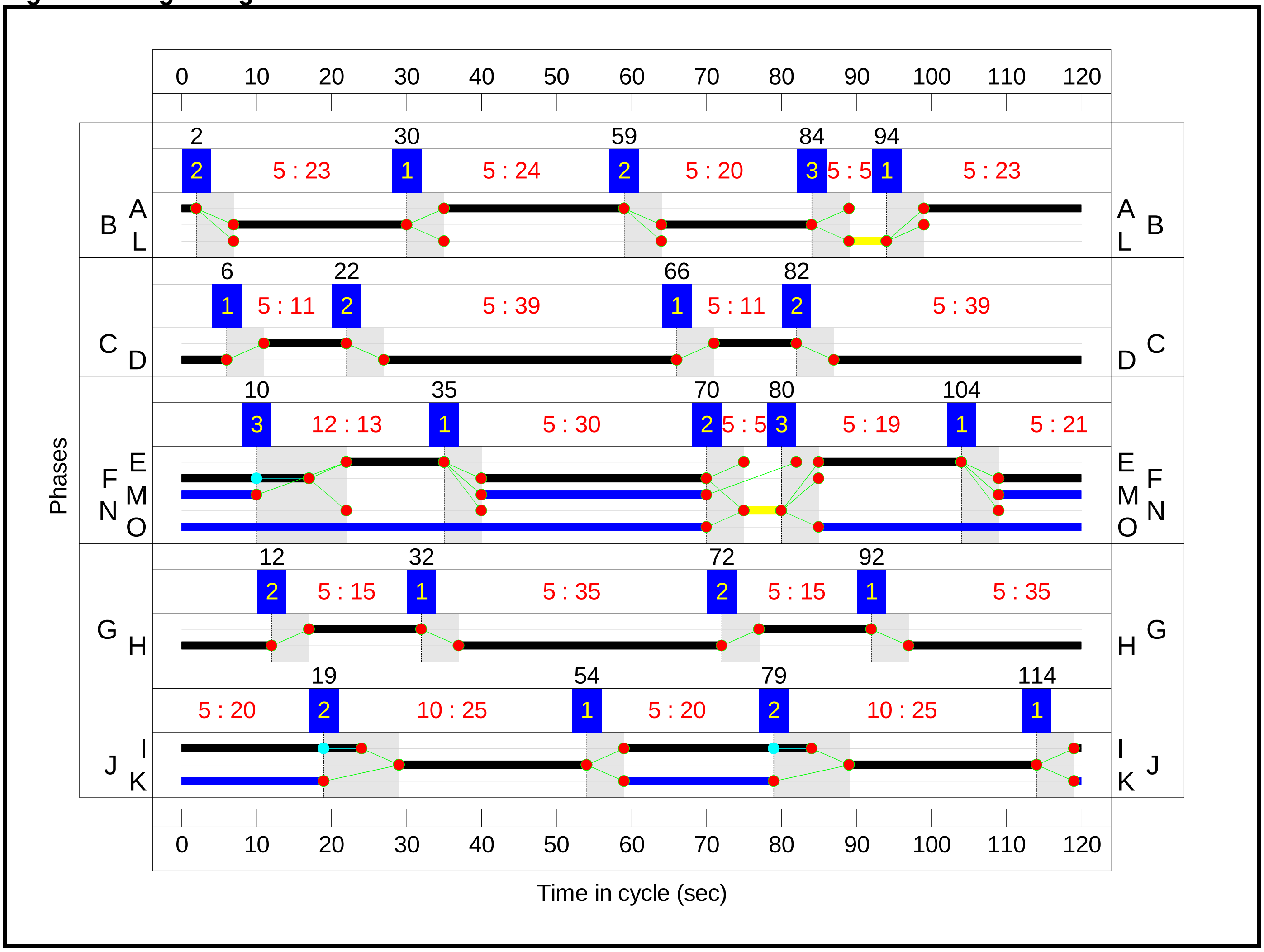
Stage Stream: 4

Stage	1	2	1	2
Duration	35	15	35	15
Change Point	92	12	32	72

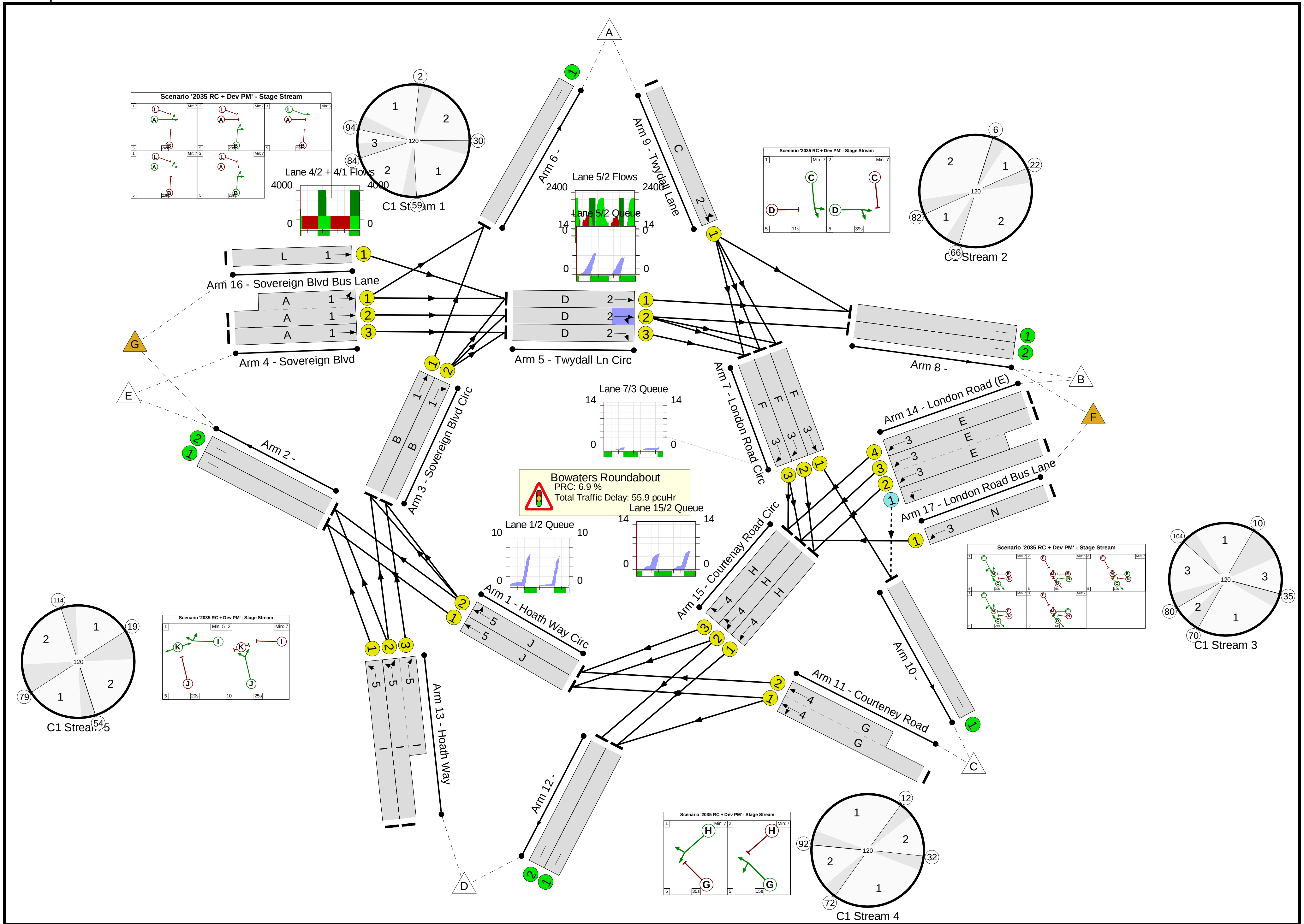
Stage Stream: 5

Stage	1	2	1	2
Duration	20	25	20	25
Change Point	54	79	114	19

Signal Timings Diagram



Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Bowaters Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.2%**
Bowaters Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**84.2%**
1/1	Hoath Way Circ Ahead	U	5	N/A	J		2	50	-	621	2141	928	66.9%
1/2	Hoath Way Circ Ahead Right	U	5	N/A	J		2	50	-	650	2163	937	69.3%
2/1		U	N/A	N/A	-		-	-	-	1126	Inf	Inf	0.0%
2/2		U	N/A	N/A	-		-	-	-	623	Inf	Inf	0.0%
3/1	Sovereign Blvd Circ Ahead	U	1	N/A	B		2	43	-	440	2141	803	54.8%
3/2	Sovereign Blvd Circ Right	U	1	N/A	B		2	43	-	676	2141	803	84.2%
4/2+4/1	Sovereign Blvd Ahead Left	U	1	N/A	A		2	47	-	1336	2095:1955	855+779	81.7 : 81.7%
4/3	Sovereign Blvd Ahead	U	1	N/A	A		2	47	-	576	2095	855	67.3%
5/1	Twydall Ln Circ Ahead	U	2	N/A	D		2	78	-	950	1956	1304	72.9%
5/2	Twydall Ln Circ Right Ahead	U	2	N/A	D		2	78	-	1047	2092	1395	75.1%
5/3	Twydall Ln Circ Right	U	2	N/A	D		2	78	-	576	2092	1395	41.3%
6/1		U	N/A	N/A	-		-	-	-	473	Inf	Inf	0.0%
7/1	London Road Circ Ahead	U	3	N/A	F		2	58	-	416	2092	1046	39.8%
7/2	London Road Circ Right	U	3	N/A	F		2	58	-	317	2092	1046	30.3%
7/3	London Road Circ Right	U	3	N/A	F		2	58	-	610	2092	1046	58.3%
8/1		U	N/A	N/A	-		-	-	-	988	Inf	Inf	0.0%

Full Input Data And Results

8/2		U	N/A	N/A	-		-	-	-	517	Inf	Inf	0.0%
9/1	Twydall Lane Ahead Left	U	2	N/A	C		2	22	-	275	1894	379	72.6%
10/1		U	N/A	N/A	-		-	-	-	604	Inf	Inf	0.0%
11/1+11/2	Courteney Road Ahead Left	U	4	N/A	G		2	30	-	700	1781:1912	475+510	72.0 : 70.2%
12/1		U	N/A	N/A	-		-	-	-	594	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	574	Inf	Inf	0.0%
13/1	Hoath Way Left	U	5	N/A	I		2	50	-	505	1925	834	60.5%
13/2+13/3	Hoath Way Left Ahead	U	5	N/A	I		2	50	-	1089	2065:2065	722+702	76.5 : 76.5%
14/1	London Road (E) Left	O	N/A	N/A	-		-	-	-	188	1940	623	30.2%
14/3+14/2	London Road (E) Ahead	U	3	N/A	E		2	32	-	538	2018:1871	499+530	52.3 : 52.3%
14/4	London Road (E) Ahead	U	3	N/A	E		2	32	-	256	2018	572	44.8%
15/1	Courtenay Road Circ Ahead	U	4	N/A	H		2	70	-	594	1956	1174	50.6%
15/2	Courtenay Road Circ Right Ahead	U	4	N/A	H		2	70	-	853	2092	1255	68.0%
15/3	Courtenay Road Circ Right	U	4	N/A	H		2	70	-	292	1956	1174	24.9%
16/1	Sovereign Blvd Bus Lane Ahead	U	1	N/A	L		1	5	-	18	1900	95	18.9%
17/1	London Road Bus Lane Ahead	U	3	N/A	N		1	5	-	18	1900	95	18.9%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Bowaters Roundabout	**-**	**-**	**94**	**94**	**0**	**34.9**	**21.0**	**0.0**	**55.9**	**-**	**-**	**-**	**-**
Bowaters Roundabout	**-**	**-**	**94**	**94**	**0**	**34.9**	**21.0**	**0.0**	**55.9**	**-**	**-**	**-**	**-**
1/1	621	621	-	-	-	0.6	1.0	-	1.6	9.4	6.1	1.0	7.1
1/2	650	650	-	-	-	0.8	1.1	-	1.9	10.6	6.7	1.1	7.8
2/1	1126	1126	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
2/2	623	623	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
3/1	440	440	-	-	-	1.0	0.6	-	1.7	13.5	4.4	0.6	5.0
3/2	676	676	-	-	-	1.9	2.6	-	4.5	23.9	11.5	2.6	14.0
4/2+4/1	1336	1336	-	-	-	5.9	2.2	-	8.1	21.8	11.3	2.2	13.5
4/3	576	576	-	-	-	2.3	1.0	-	3.4	21.0	8.5	1.0	9.5
5/1	950	950	-	-	-	1.1	1.3	-	2.4	9.2	6.4	1.3	7.8
5/2	1047	1047	-	-	-	1.1	1.5	-	2.6	8.9	7.0	1.5	8.5
5/3	576	576	-	-	-	0.1	0.4	-	0.4	2.7	0.5	0.4	0.8
6/1	473	473	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	416	416	-	-	-	0.4	0.3	-	0.7	5.9	1.3	0.3	1.6
7/2	317	317	-	-	-	1.0	0.2	-	1.3	14.3	3.1	0.2	3.3
7/3	610	610	-	-	-	0.3	0.7	-	1.0	5.9	1.8	0.7	2.5
8/1	988	988	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	517	517	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/1	275	275	-	-	-	1.7	1.3	-	3.0	39.4	4.3	1.3	5.6
10/1	604	604	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
11/1+11/2	700	700	-	-	-	3.9	1.2	-	5.1	26.2	5.4	1.2	6.6
12/1	594	594	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	574	574	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/1	505	505	-	-	-	1.8	0.8	-	2.6	18.5	6.5	0.8	7.2

Full Input Data And Results

13/2+13/3	1089	1089	-	-	-	4.0	1.6	-	5.6	18.4	7.1	1.6	8.7
14/1	188	188	94	94	0	0.0	0.2	-	0.2	4.1	0.0	0.2	0.2
14/3+14/2	538	538	-	-	-	2.7	0.5	-	3.3	21.9	4.4	0.5	4.9
14/4	256	256	-	-	-	1.3	0.4	-	1.7	23.7	4.0	0.4	4.4
15/1	594	594	-	-	-	0.8	0.5	-	1.3	8.1	6.8	0.5	7.3
15/2	853	853	-	-	-	1.0	1.1	-	2.1	8.7	5.8	1.1	6.9
15/3	292	292	-	-	-	0.5	0.2	-	0.7	8.7	4.5	0.2	4.7
16/1	18	18	-	-	-	0.3	0.1	-	0.4	78.0	0.6	0.1	0.7
17/1	18	18	-	-	-	0.3	0.1	-	0.4	78.0	0.6	0.1	0.7

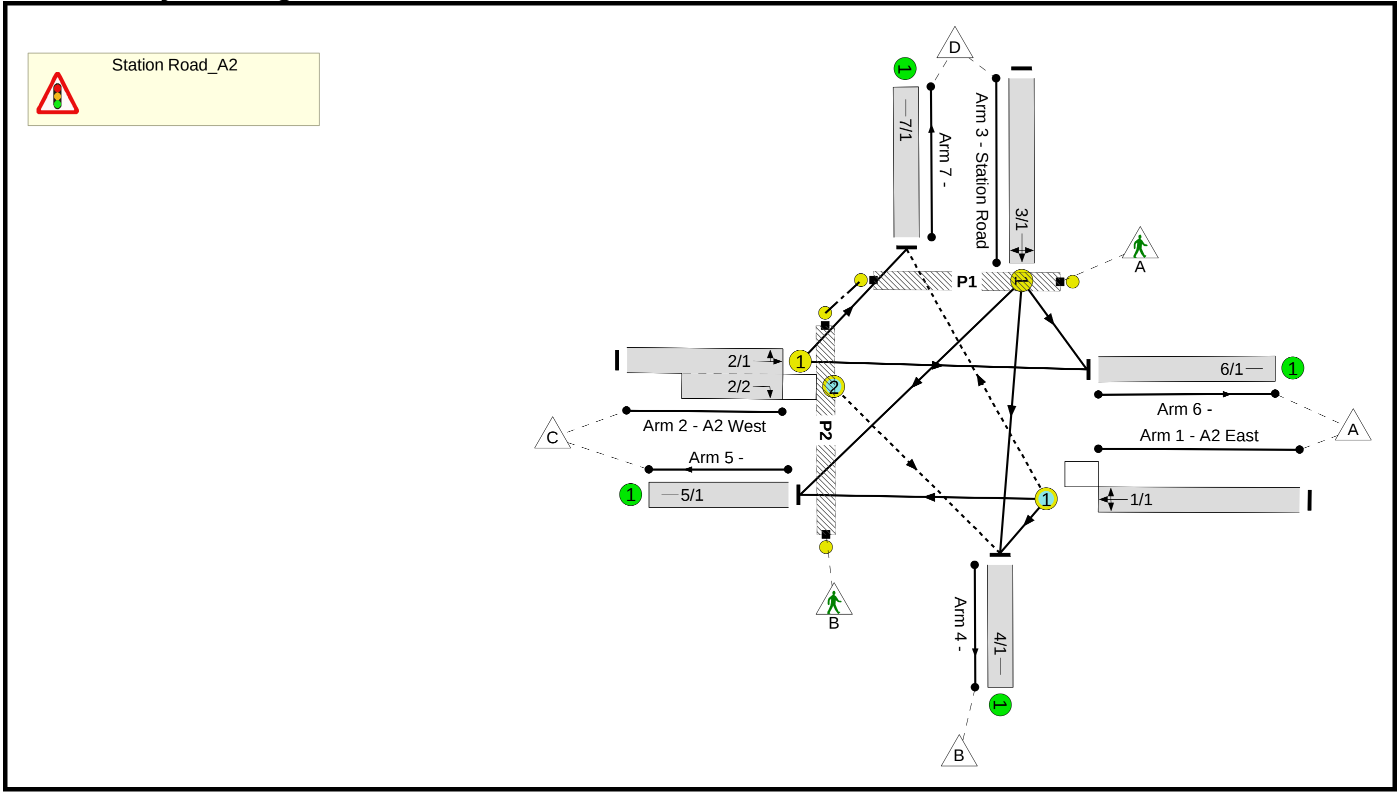
C1 Stream: 1 PRC for Signalled Lanes (%): 6.9 Total Delay for Signalled Lanes (pcuHr): 17.97 Cycle Time (s): 120
C1 Stream: 2 PRC for Signalled Lanes (%): 19.9 Total Delay for Signalled Lanes (pcuHr): 8.48 Cycle Time (s): 120
C1 Stream: 3 PRC for Signalled Lanes (%): 54.3 Total Delay for Signalled Lanes (pcuHr): 8.29 Cycle Time (s): 120
C1 Stream: 4 PRC for Signalled Lanes (%): 25.0 Total Delay for Signalled Lanes (pcuHr): 9.20 Cycle Time (s): 120
C1 Stream: 5 PRC for Signalled Lanes (%): 17.7 Total Delay for Signalled Lanes (pcuHr): 11.70 Cycle Time (s): 120
PRC Over All Lanes (%): 6.9 Total Delay Over All Lanes(pcuHr): 55.86

Full Input Data And Results
Full Input Data And Results

User and Project Details

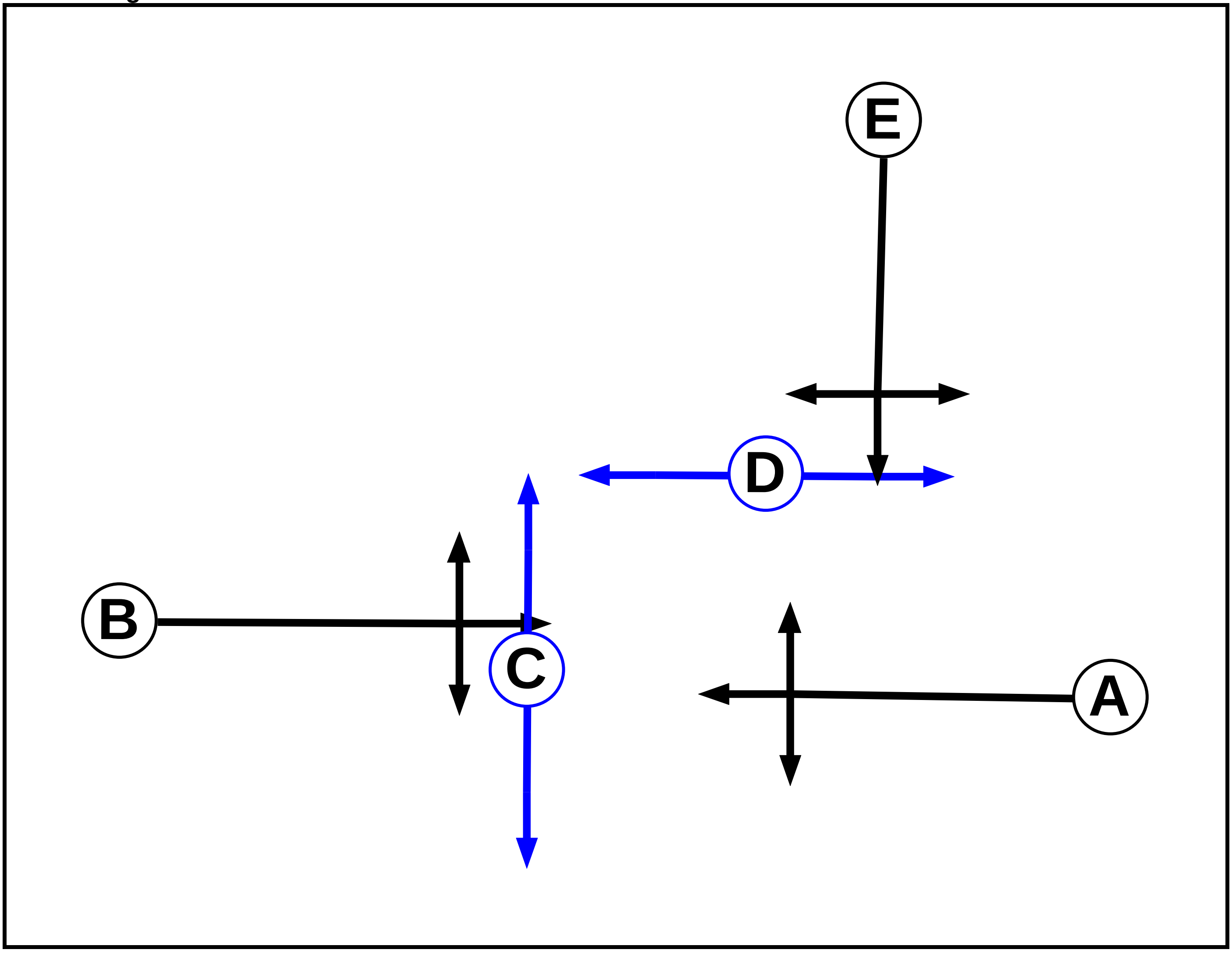
Project:	**Pump Farm, Lower Rainham**
Title:	
Location:	Station Road_A2
Additional detail:	
File name:	Station Road_A2 RevA.lsg3x
Author:	
Company:	David Tucker Associates
Address:	

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Pedestrian		5	5
D	Pedestrian		5	5
E	Traffic		7	7

Full Input Data And Results

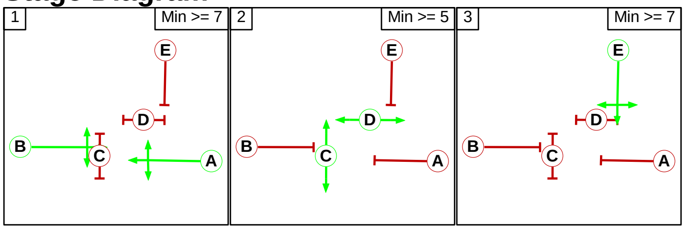
Phase Intergreens Matrix

	Starting Phase					
		A	B	C	D	E
Terminating Phase	A		-	10	9	7
	B	-		5	7	6
	C	10	10		-	10
	D	11	11	-		11
	E	5	5	8	5	

Phases in Stage

Stage No.	Phases in Stage
1	A B
2	C D
3	E

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	B	Losing	5	5
2	3	C	Losing	1	1

Prohibited Stage Change

	To Stage			
		1	2	3
From Stage	1		12	7
	2	11		11
	3	5	8	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Station Road_A2											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
1/1 (A2 East)	7/1 (Right)	1439	0	2/1	1.09	All	2.00	2.00	0.50	2	2.00
2/2 (A2 West)	4/1 (Right)	1439	0	1/1	1.09	To 4/1 (Left) To 5/1 (Ahead)	2.00	-	0.50	2	2.00

Full Input Data And Results

Lane Input Data

Junction: Station Road_A2												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
1/1 (A2 East)	O	A	2	3	60.0	Geom	-	3.10	0.00	Y	Arm 4 Left	7.00
											Arm 5 Ahead	Inf
											Arm 7 Right	7.00
2/1 (A2 West)	U	B	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 6 Ahead	Inf
											Arm 7 Left	7.00
2/2 (A2 West)	O	B	2	3	6.0	Geom	-	3.00	0.00	N	Arm 4 Right	7.00
3/1 (Station Road)	U	E	2	3	60.0	Geom	-	4.10	0.00	Y	Arm 4 Ahead	Inf
											Arm 5 Right	12.00
											Arm 6 Left	7.00
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2035 RC AM'	08:00	09:00	01:00	
2: '2035 RC PM'	17:00	18:00	01:00	
3: '2035 RC+Dev AM'	08:00	09:00	01:00	
4: '2035 RC+Dev PM'	17:00	18:00	01:00	

Scenario 1: '2035 RC AM' (FG1: '2035 RC AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	0	415	28	443
	B	0	0	0	0	0
	C	415	0	0	155	570
	D	47	0	303	0	350
	Tot.	462	0	718	183	1363

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 1: 2035 RC AM
Junction: Station Road_A2	
1/1	443
2/1 (with short)	570(In) 570(Out)
2/2 (short)	0
3/1	350
4/1	0
5/1	718
6/1	462
7/1	183

Lane Saturation Flows

Junction: Station Road_A2								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A2 East)	3.10	0.00	Y	Arm 4 Left	7.00	0.0 %	1899	1899
				Arm 5 Ahead	Inf	93.7 %		
				Arm 7 Right	7.00	6.3 %		
2/1 (A2 West)	3.20	0.00	Y	Arm 6 Ahead	Inf	72.8 %	1828	1828
				Arm 7 Left	7.00	27.2 %		
2/2 (A2 West)	3.00	0.00	N	Arm 4 Right	7.00	0.0 %	2055	2055
3/1 (Station Road)	4.10	0.00	Y	Arm 4 Ahead	Inf	0.0 %	1781	1781
				Arm 5 Right	12.00	86.6 %		
				Arm 6 Left	7.00	13.4 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2035 RC PM' (FG2: '2035 RC PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	0	461	18	479
	B	0	0	0	0	0
	C	554	0	0	222	776
	D	32	0	275	0	307
	Tot.	586	0	736	240	1562

Traffic Lane Flows

Lane	Scenario 2: 2035 RC PM
Junction: Station Road_A2	
1/1	479
2/1 (with short)	776(In) 776(Out)
2/2 (short)	0
3/1	307
4/1	0
5/1	736
6/1	586
7/1	240

Lane Saturation Flows

Junction: Station Road_A2								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A2 East)	3.10	0.00	Y	Arm 4 Left	7.00	0.0 %	1910	1910
				Arm 5 Ahead	Inf	96.2 %		
				Arm 7 Right	7.00	3.8 %		
2/1 (A2 West)	3.20	0.00	Y	Arm 6 Ahead	Inf	71.4 %	1823	1823
				Arm 7 Left	7.00	28.6 %		
2/2 (A2 West)	3.00	0.00	N	Arm 4 Right	7.00	0.0 %	2055	2055
3/1 (Station Road)	4.10	0.00	Y	Arm 4 Ahead	Inf	0.0 %	1785	1785
				Arm 5 Right	12.00	89.6 %		
				Arm 6 Left	7.00	10.4 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf

Scenario 3: '2035 RC+Dev AM' (FG3: '2035 RC+Dev AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	0	447	31	478
	B	0	0	0	0	0
	C	521	0	0	124	645
	D	40	0	313	0	353
	Tot.	561	0	760	155	1476

Traffic Lane Flows

Lane	Scenario 3: 2035 RC+Dev AM
Junction: Station Road_A2	
1/1	478
2/1 (with short)	645(In) 645(Out)
2/2 (short)	0
3/1	353
4/1	0
5/1	760
6/1	561
7/1	155

Lane Saturation Flows

Junction: Station Road_A2								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A2 East)	3.10	0.00	Y	Arm 4 Left	7.00	0.0 %	1899	1899
				Arm 5 Ahead	Inf	93.5 %		
				Arm 7 Right	7.00	6.5 %		
2/1 (A2 West)	3.20	0.00	Y	Arm 6 Ahead	Inf	80.8 %	1858	1858
				Arm 7 Left	7.00	19.2 %		
2/2 (A2 West)	3.00	0.00	N	Arm 4 Right	7.00	0.0 %	2055	2055
3/1 (Station Road)	4.10	0.00	Y	Arm 4 Ahead	Inf	0.0 %	1784	1784
				Arm 5 Right	12.00	88.7 %		
				Arm 6 Left	7.00	11.3 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: '2035 RC+Dev PM' (FG4: '2035 RC+Dev PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	0	451	20	471
	B	0	0	0	0	0
	C	592	0	0	196	788
	D	32	0	284	0	316
	Tot.	624	0	735	216	1575

Full Input Data And Results

Traffic Lane Flows

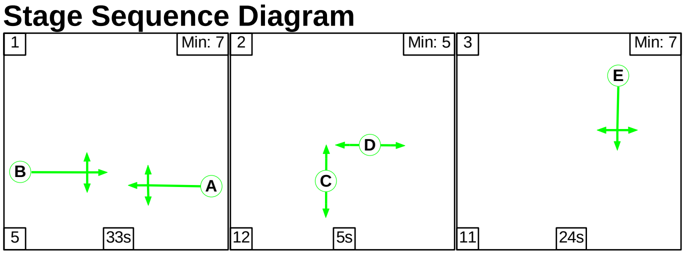
Lane	Scenario 4: 2035 RC+Dev PM
Junction: Station Road_A2	
1/1	471
2/1 (with short)	788(In) 788(Out)
2/2 (short)	0
3/1	316
4/1	0
5/1	735
6/1	624
7/1	216

Lane Saturation Flows

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
Junction: Station Road_A2								
1/1 (A2 East)	3.10	0.00	Y	Arm 4 Left	7.00	0.0 %	1908	1908
				Arm 5 Ahead	Inf	95.8 %		
				Arm 7 Right	7.00	4.2 %		
2/1 (A2 West)	3.20	0.00	Y	Arm 6 Ahead	Inf	75.1 %	1837	1837
				Arm 7 Left	7.00	24.9 %		
2/2 (A2 West)	3.00	0.00	N	Arm 4 Right	7.00	0.0 %	2055	2055
3/1 (Station Road)	4.10	0.00	Y	Arm 4 Ahead	Inf	0.0 %	1786	1786
				Arm 5 Right	12.00	89.9 %		
				Arm 6 Left	7.00	10.1 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: '2035 RC AM' (FG1: '2035 RC AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

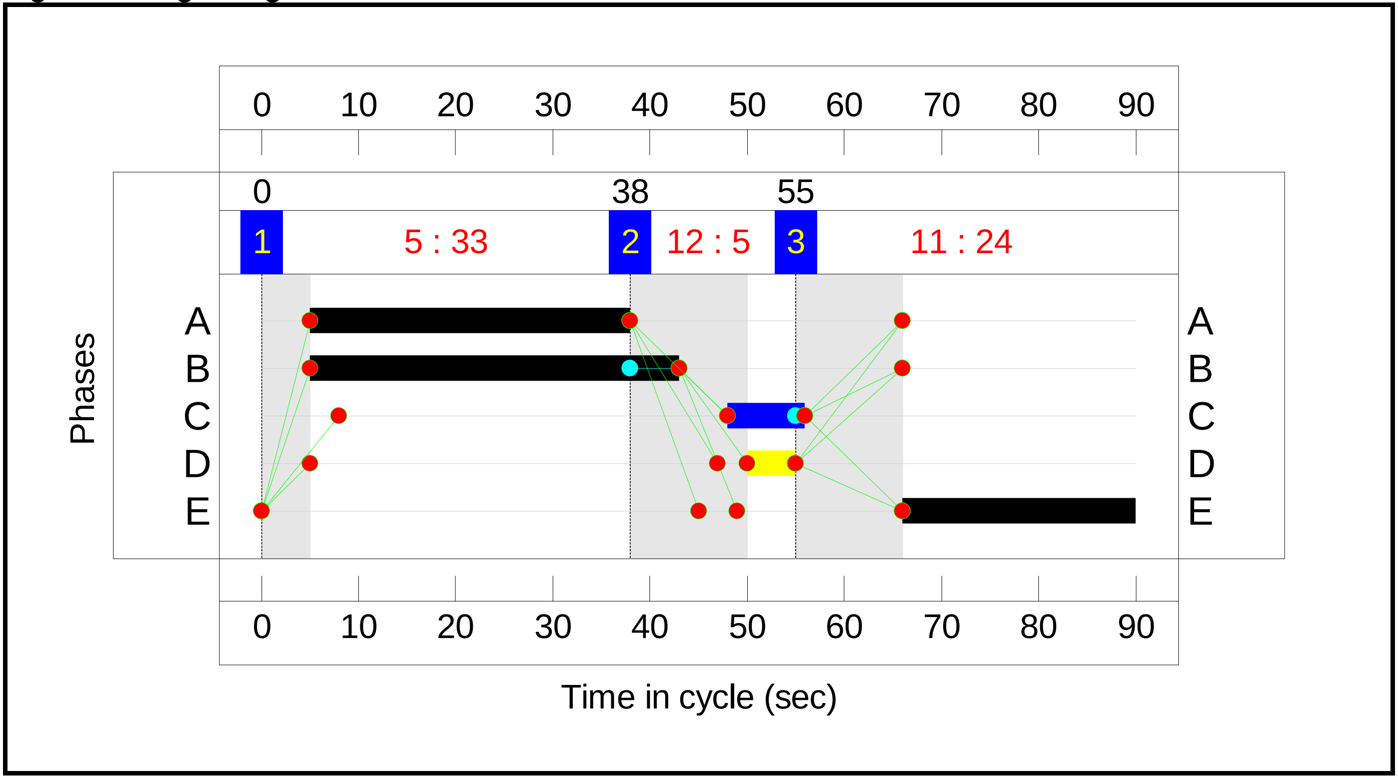


Full Input Data And Results

Stage Timings

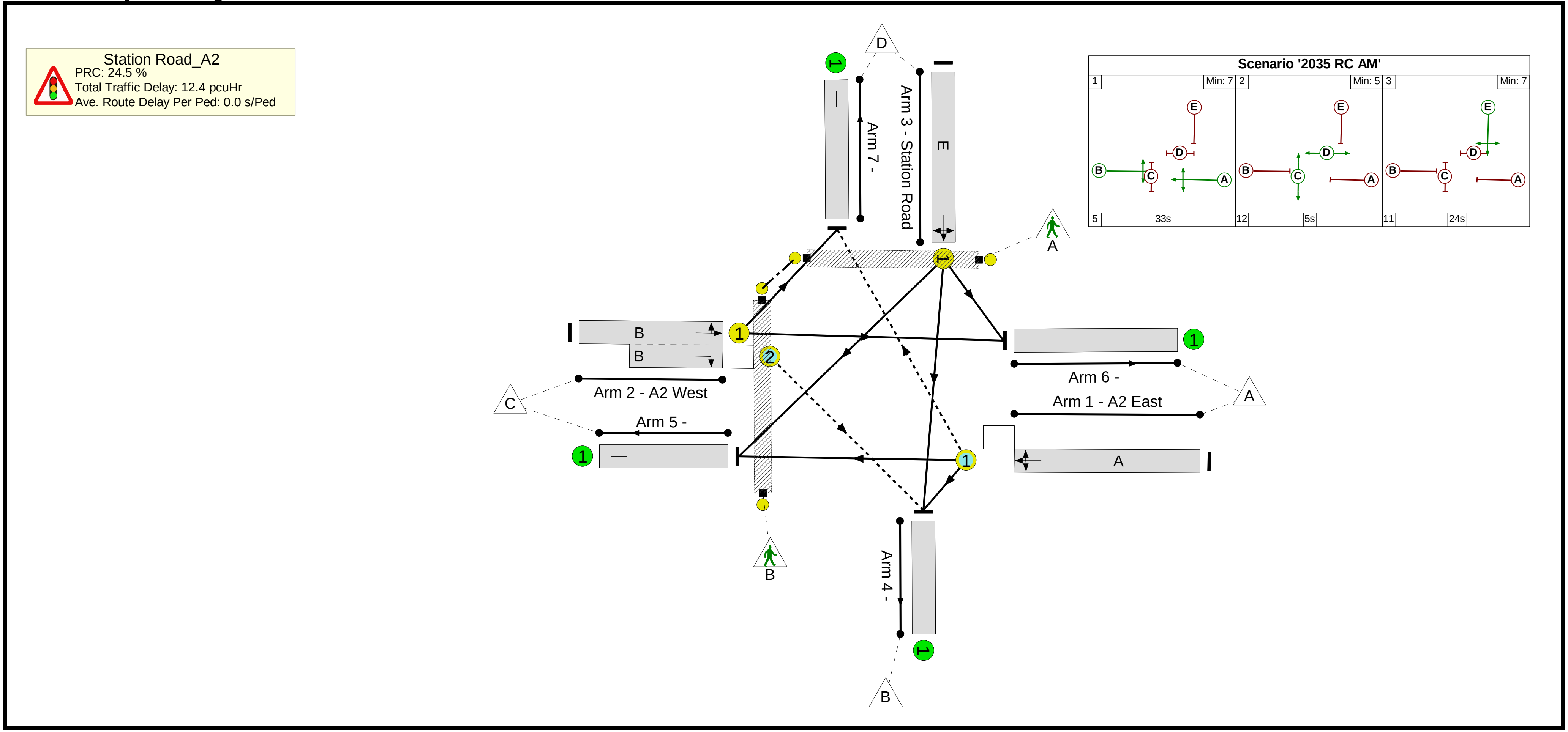
Stage	1	2	3
Duration	33	5	24
Change Point	0	38	55

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**72.3%**
Station Road_A2	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**72.3%**
1/1	A2 East Left Ahead Right	O	N/A	N/A	A		1	33	-	443	1899	717	61.8%
2/1+2/2	A2 West Right Ahead Left	U+O	N/A	N/A	B		1	38	-	570	1828:2055	788+0	72.3 : 0.0%
3/1	Station Road Ahead Right Left	U	N/A	N/A	E		1	24	-	350	1781	495	70.7%
4/1		U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	718	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	462	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	183	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	D		1	5	-	0	-	4000	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C		1	8	-	0	-	6400	0.0%

Full Input Data And Results

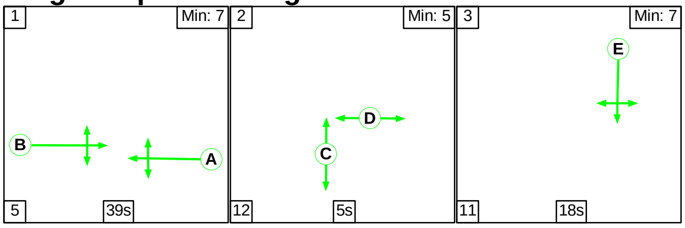
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**28**	**0**	**0**	**9.0**	**3.3**	**0.1**	**12.4**	**-**	**-**	**-**	**-**
Station Road_A2	**-**	**-**	**28**	**0**	**0**	**9.0**	**3.3**	**0.1**	**12.4**	**-**	**-**	**-**	**-**
1/1	443	443	28	0	0	2.8	0.8	0.1	3.7	30.1	9.0	0.8	9.8
2/1+2/2	570	570	0	0	0	3.3	1.3	0.0	4.6	29.2	11.7	1.3	13.0
3/1	350	350	-	-	-	2.8	1.2	-	4.0	41.5	7.8	1.2	9.0
4/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	718	718	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	462	462	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	183	183	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0

C1 PRC for Signalled Lanes (%): 24.5 Total Delay for Signalled Lanes (pcuHr): 12.36 Cycle Time (s): 90
PRC Over All Lanes (%): 24.5 Total Delay Over All Lanes(pcuHr): 12.36

Full Input Data And Results

Scenario 2: '2035 RC PM' (FG2: '2035 RC PM', Plan 1: 'Network Control Plan 1')

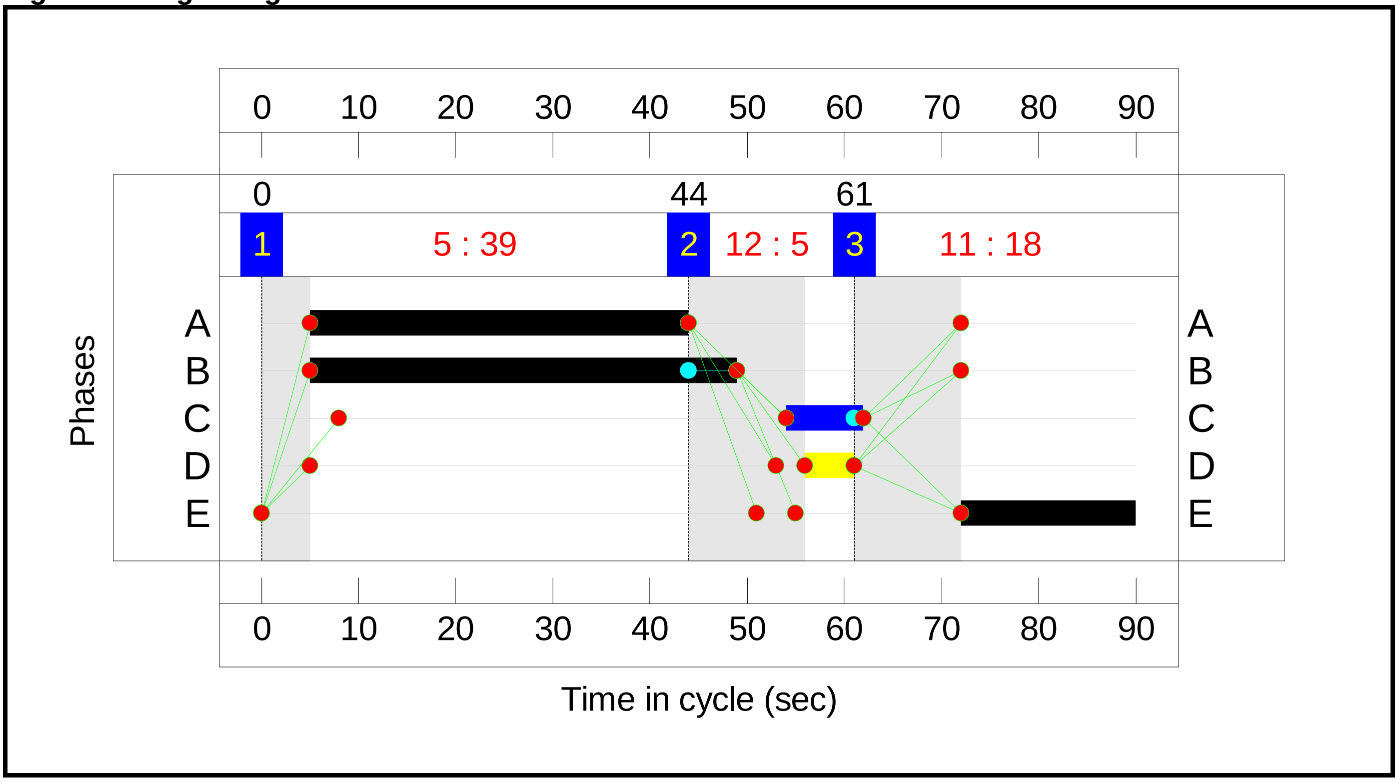
Stage Sequence Diagram



Stage Timings

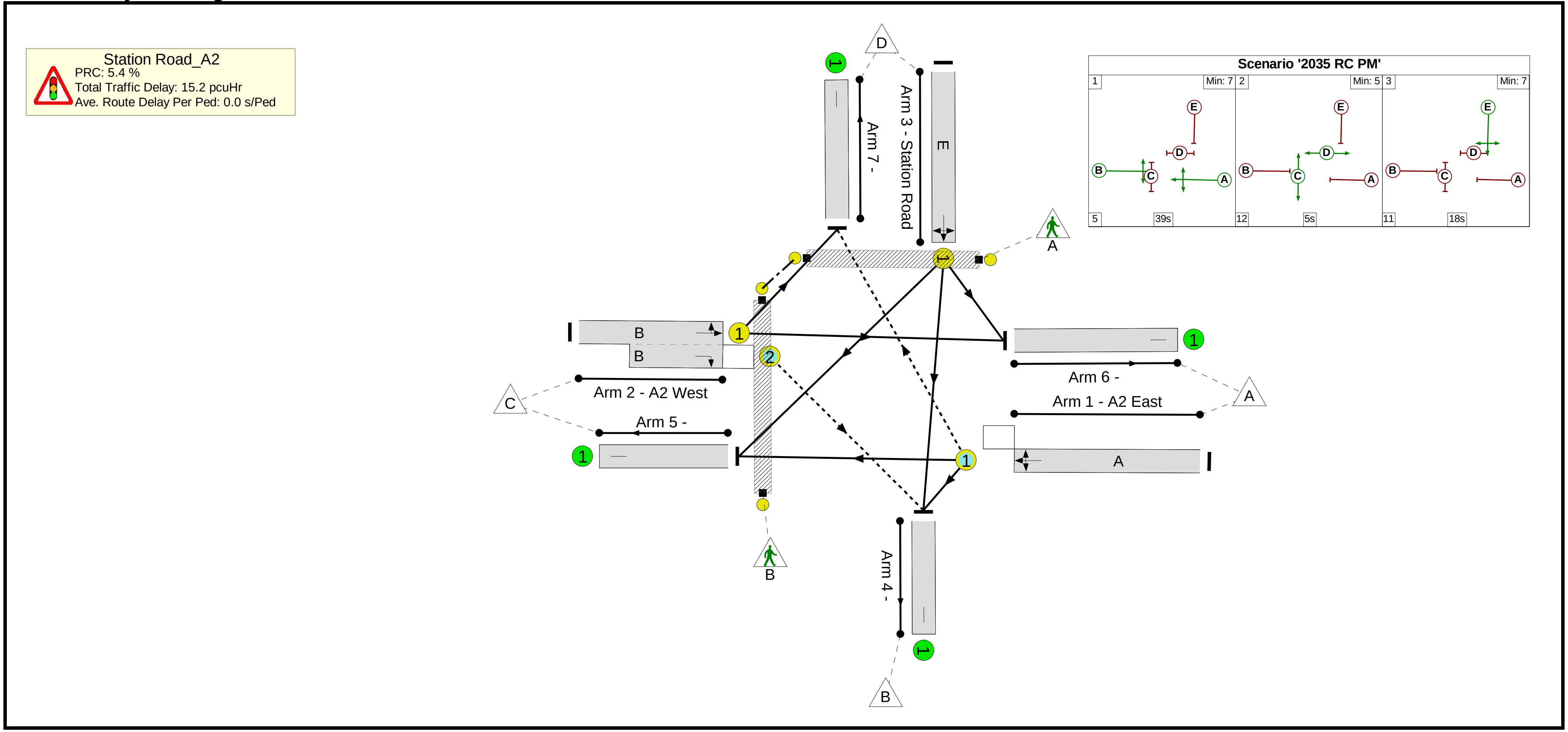
Stage	1	2	3
Duration	39	5	18
Change Point	0	44	61

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**85.4%**
Station Road_A2	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**85.4%**
1/1	A2 East Left Ahead Right	O	N/A	N/A	A		1	39	-	479	1910	849	56.4%
2/1+2/2	A2 West Right Ahead Left	U+O	N/A	N/A	B		1	44	-	776	1823:2055	908+0	85.4 : 0.0%
3/1	Station Road Ahead Right Left	U	N/A	N/A	E		1	18	-	307	1785	377	81.5%
4/1		U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	736	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	586	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	240	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	D		1	5	-	0	-	4000	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C		1	8	-	0	-	6400	0.0%

Full Input Data And Results

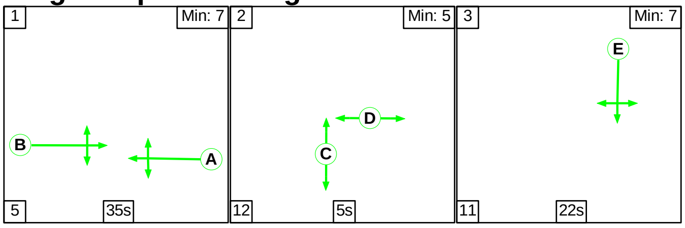
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**18**	**0**	**0**	**9.6**	**5.5**	**0.1**	**15.2**	**-**	**-**	**-**	**-**
Station Road_A2	**-**	**-**	**18**	**0**	**0**	**9.6**	**5.5**	**0.1**	**15.2**	**-**	**-**	**-**	**-**
1/1	479	479	18	0	0	2.5	0.6	0.1	3.2	24.2	8.8	0.6	9.4
2/1+2/2	776	776	0	0	0	4.2	2.8	0.0	7.1	32.7	16.8	2.8	19.6
3/1	307	307	-	-	-	2.9	2.1	-	5.0	58.2	7.2	2.1	9.3
4/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	736	736	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	586	586	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	240	240	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0

C1 PRC for Signalled Lanes (%): 5.4 Total Delay for Signalled Lanes (pcuHr): 15.23 Cycle Time (s): 90
PRC Over All Lanes (%): 5.4 Total Delay Over All Lanes(pcuHr): 15.23

Full Input Data And Results

Scenario 3: '2035 RC+Dev AM' (FG3: '2035 RC+Dev AM', Plan 1: 'Network Control Plan 1')

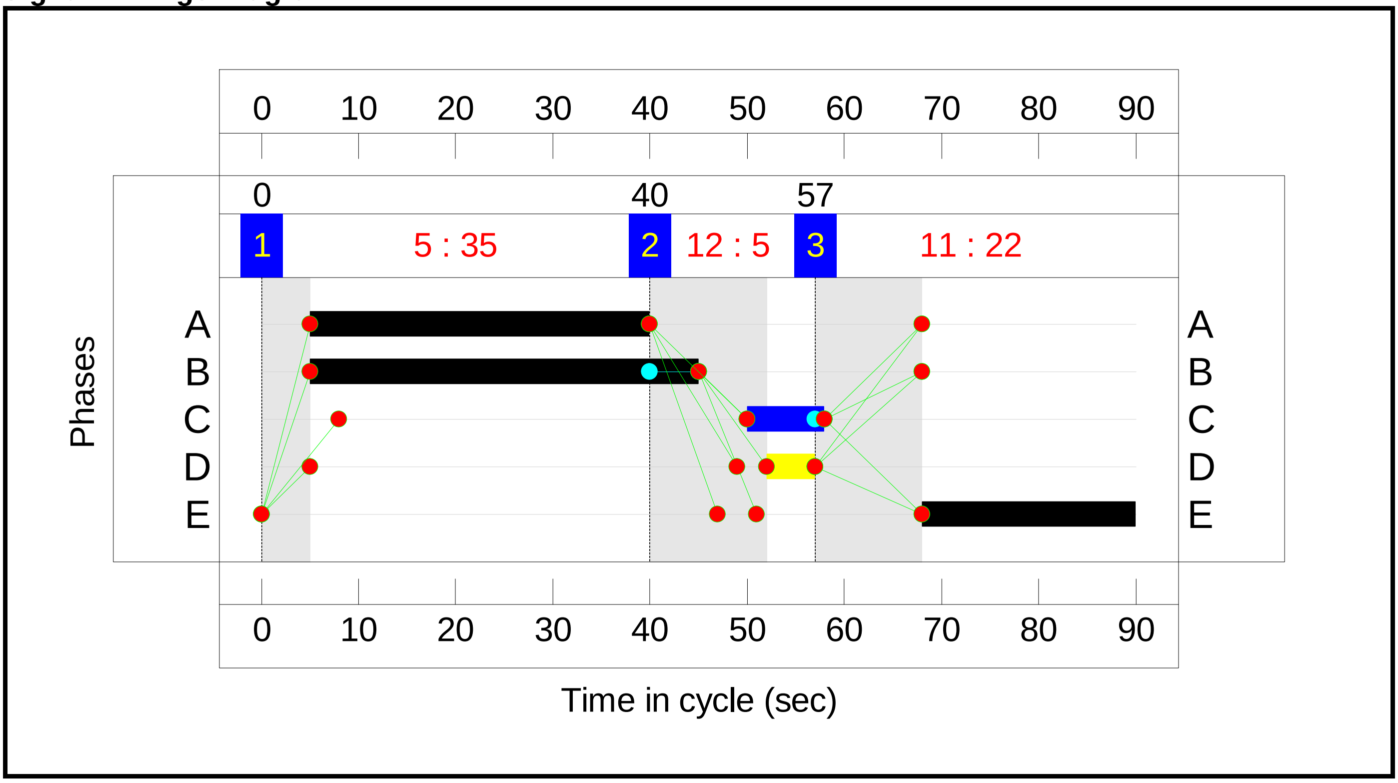
Stage Sequence Diagram



Stage Timings

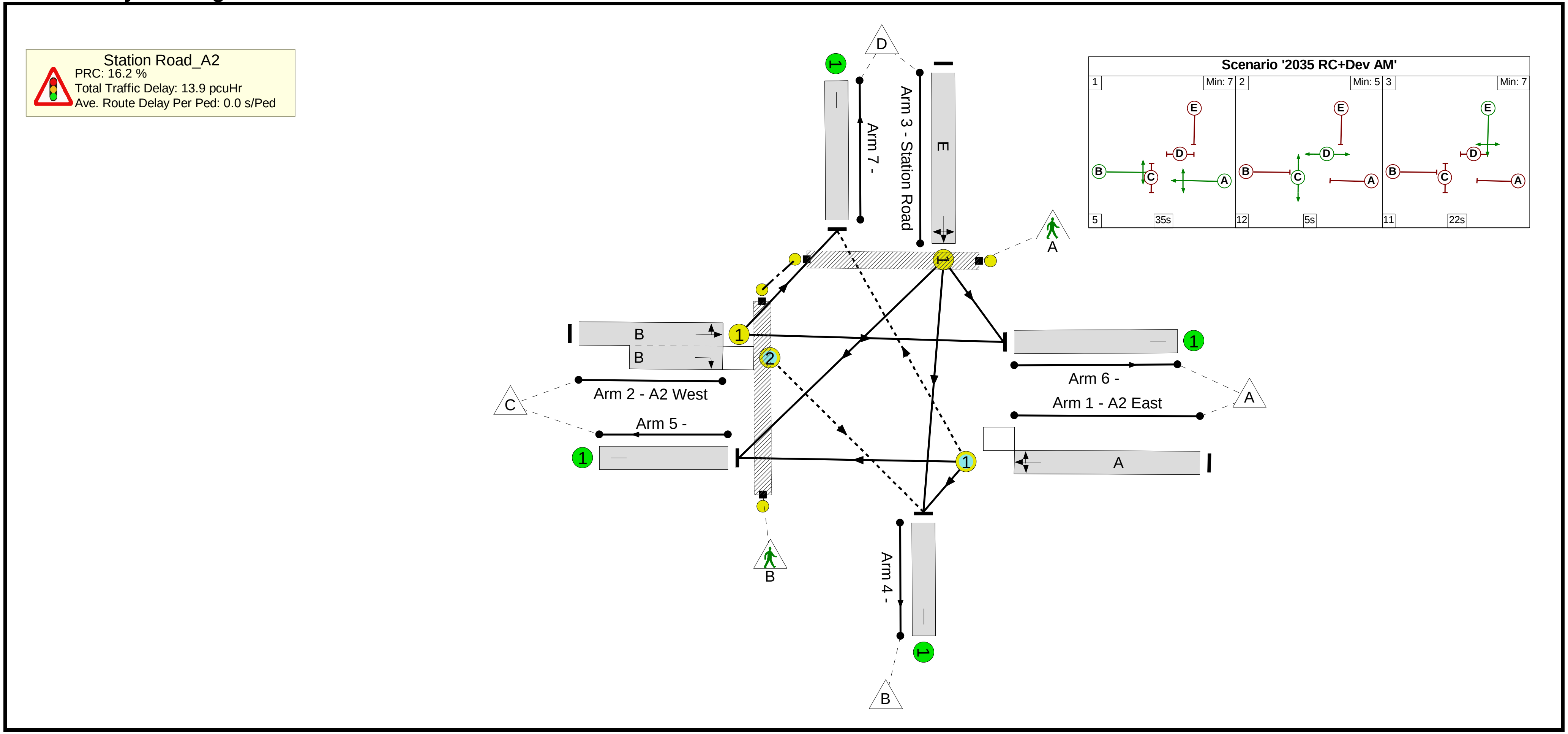
Stage	1	2	3
Duration	35	5	22
Change Point	0	40	57

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**77.4%**
Station Road_A2	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**77.4%**
1/1	A2 East Left Ahead Right	O	N/A	N/A	A		1	35	-	478	1899	760	62.9%
2/1+2/2	A2 West Right Ahead Left	U+O	N/A	N/A	B		1	40	-	645	1858:2055	839+0	76.9 : 0.0%
3/1	Station Road Ahead Right Left	U	N/A	N/A	E		1	22	-	353	1784	456	77.4%
4/1		U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	760	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	561	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	155	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	D		1	5	-	0	-	4000	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C		1	8	-	0	-	6400	0.0%

Full Input Data And Results

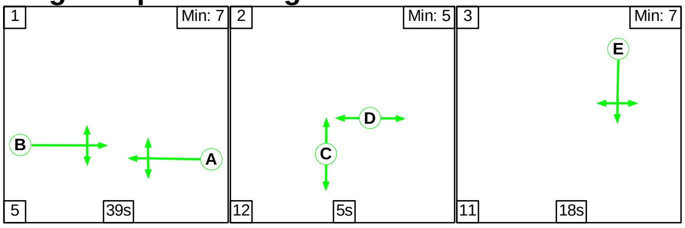
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**31**	**0**	**0**	**9.6**	**4.1**	**0.1**	**13.9**	**-**	**-**	**-**	**-**
Station Road_A2	**-**	**-**	**31**	**0**	**0**	**9.6**	**4.1**	**0.1**	**13.9**	**-**	**-**	**-**	**-**
1/1	478	478	31	0	0	2.9	0.8	0.1	3.8	29.0	9.6	0.8	10.4
2/1+2/2	645	645	0	0	0	3.7	1.6	0.0	5.3	29.8	13.4	1.6	15.1
3/1	353	353	-	-	-	3.0	1.7	-	4.7	48.0	8.1	1.7	9.8
4/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	760	760	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	561	561	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	155	155	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0

C1 PRC for Signalled Lanes (%): 16.2 Total Delay for Signalled Lanes (pcuHr): 13.89 Cycle Time (s): 90
PRC Over All Lanes (%): 16.2 Total Delay Over All Lanes(pcuHr): 13.89

Full Input Data And Results

Scenario 4: '2035 RC+Dev PM' (FG4: '2035 RC+Dev PM', Plan 1: 'Network Control Plan 1')

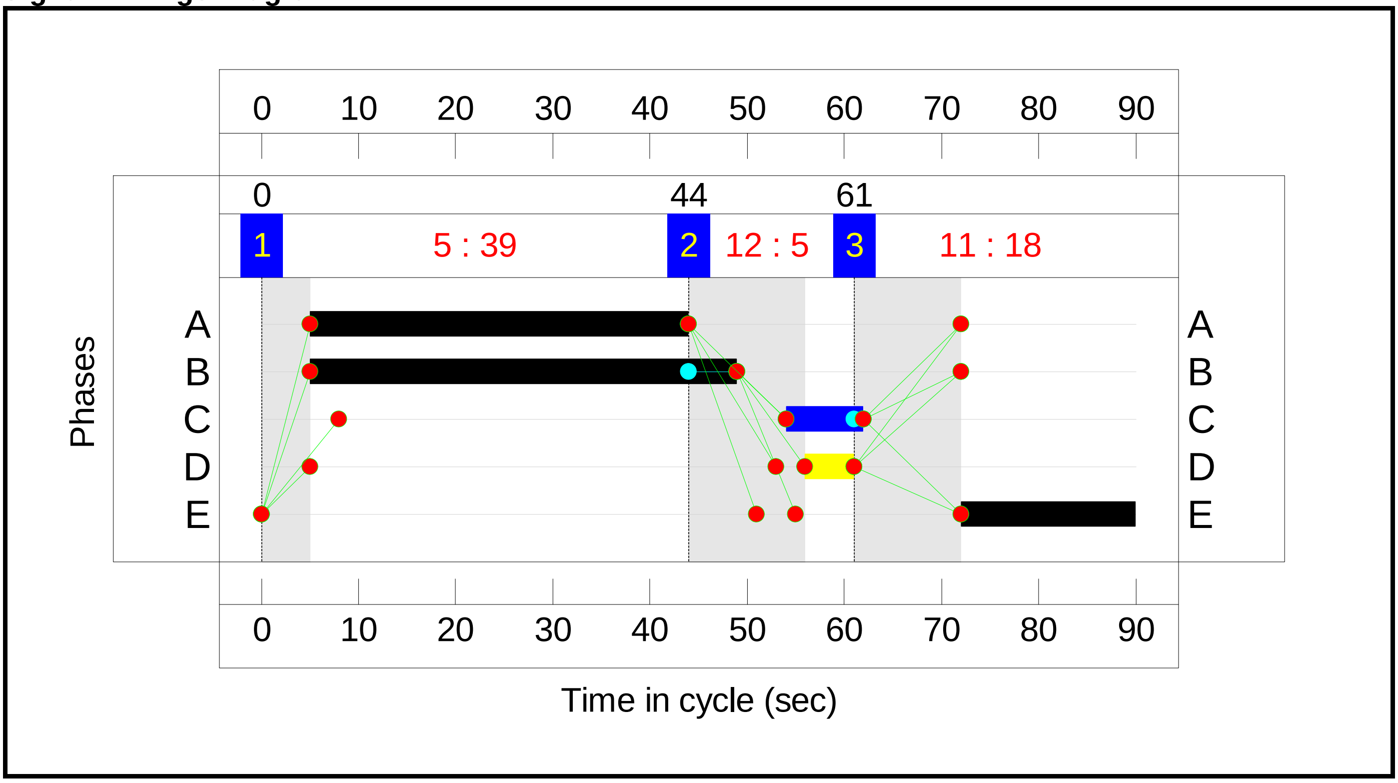
Stage Sequence Diagram



Stage Timings

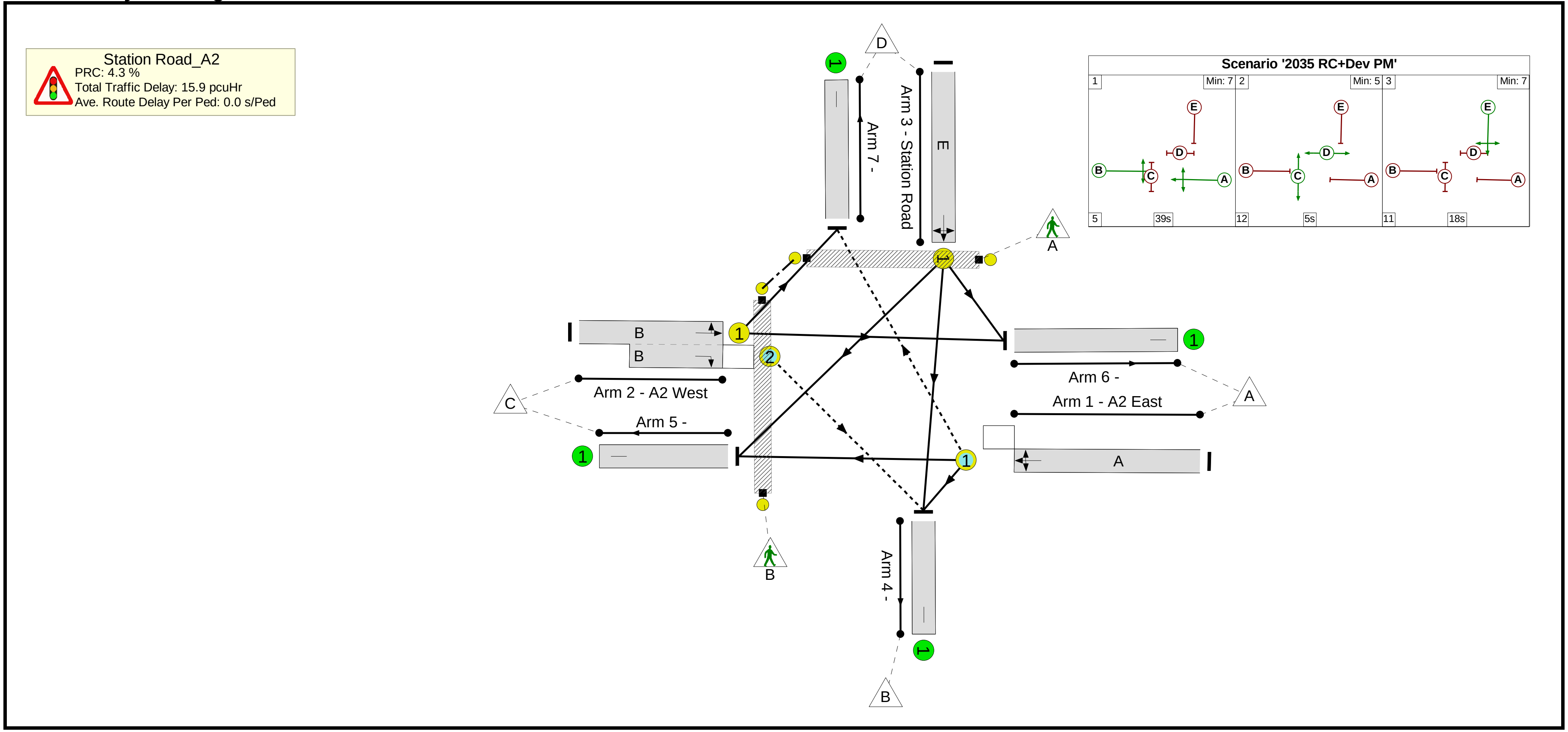
Stage	1	2	3
Duration	39	5	18
Change Point	0	44	61

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.3%**
Station Road_A2	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.3%**
1/1	A2 East Left Ahead Right	O	N/A	N/A	A		1	39	-	471	1908	848	55.5%
2/1+2/2	A2 West Right Ahead Left	U+O	N/A	N/A	B		1	44	-	788	1837:2055	914+0	86.3 : 0.0%
3/1	Station Road Ahead Right Left	U	N/A	N/A	E		1	18	-	316	1786	377	83.8%
4/1		U	N/A	N/A	-		-	-	-	0	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	735	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	624	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	216	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	D		1	5	-	0	-	4000	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	C		1	8	-	0	-	6400	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**20**	**0**	**0**	**9.7**	**6.0**	**0.1**	**15.9**	**-**	**-**	**-**	**-**
Station Road_A2	**-**	**-**	**20**	**0**	**0**	**9.7**	**6.0**	**0.1**	**15.9**	**-**	**-**	**-**	**-**
1/1	471	471	20	0	0	2.4	0.6	0.1	3.2	24.2	8.6	0.6	9.3
2/1+2/2	788	788	0	0	0	4.3	3.0	0.0	7.3	33.5	17.3	3.0	20.3
3/1	316	316	-	-	-	3.0	2.4	-	5.4	61.4	7.5	2.4	9.9
4/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	735	735	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	624	624	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	216	216	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0

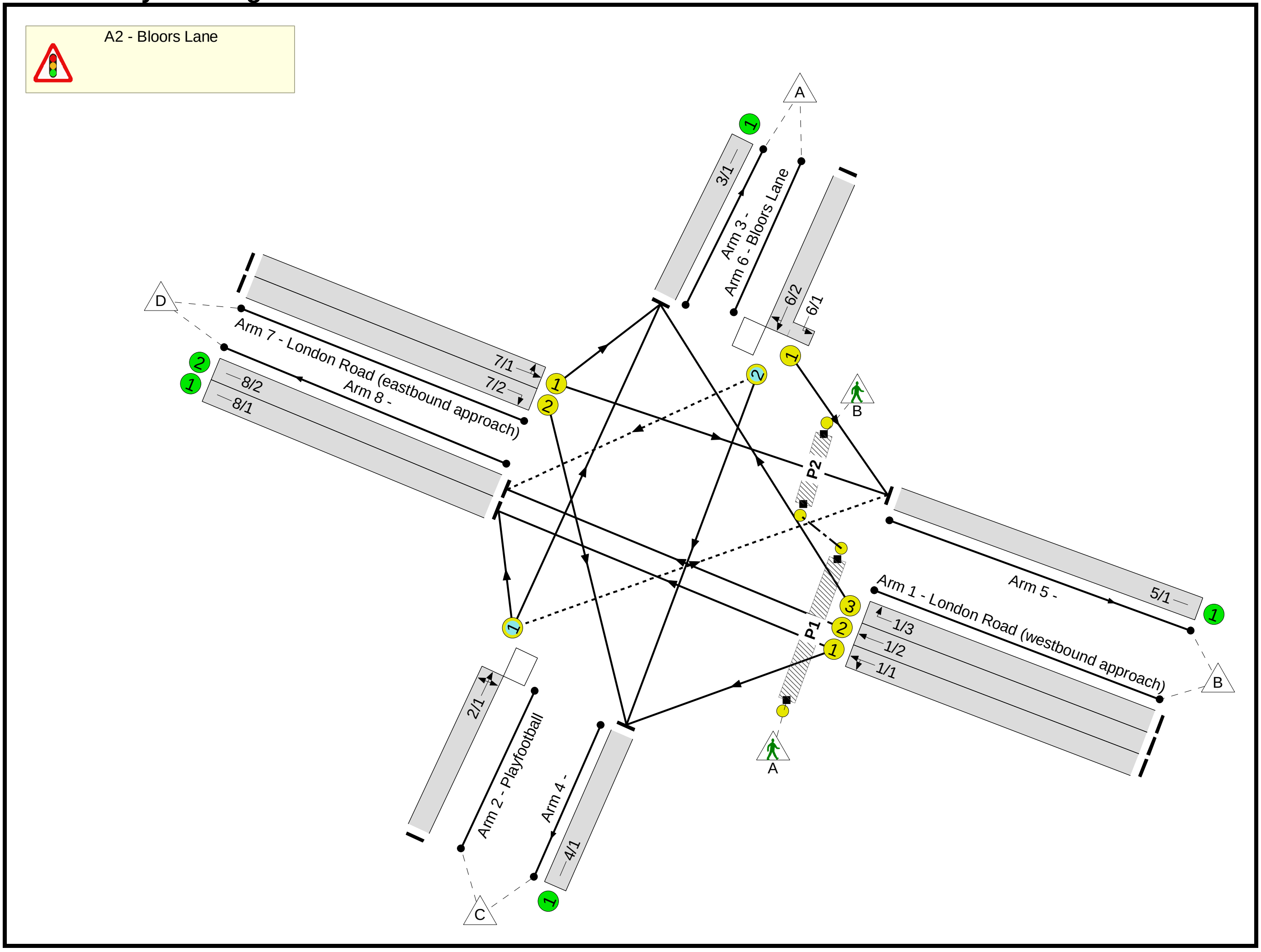
C1 PRC for Signalled Lanes (%): 4.3 Total Delay for Signalled Lanes (pcuHr): 15.89 Cycle Time (s): 90
PRC Over All Lanes (%): 4.3 Total Delay Over All Lanes(pcuHr): 15.89

Full Input Data And Results

User and Project Details

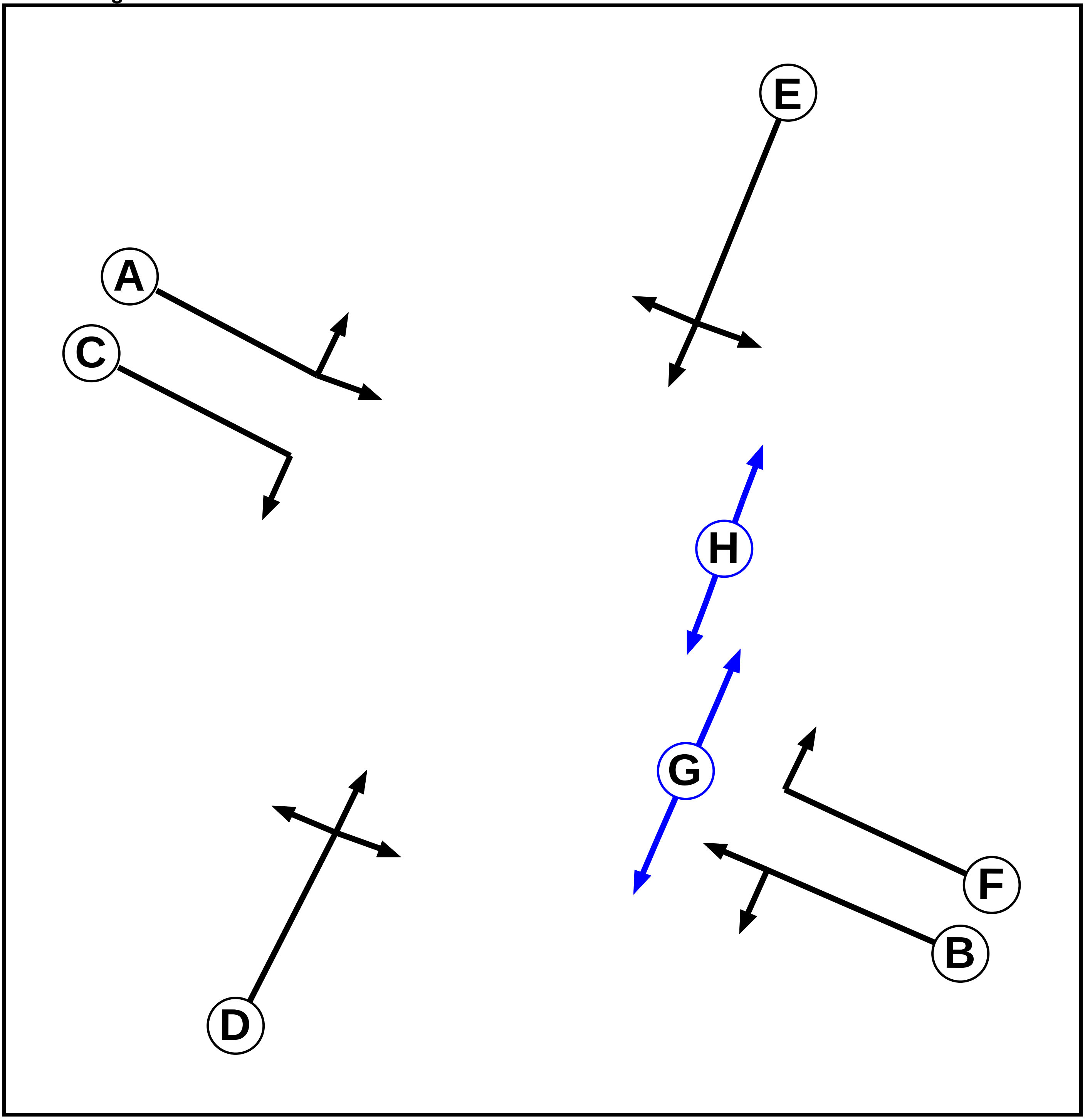
Project:	**Lower Rainham (20230)**
Title:	**A2 Bloors Lane Signal Junction**
Location:	
Additional detail:	
File name:	A2_Bloors Lane signals_RevB.lsg3x
Author:	RM
Company:	David Tucker Associates
Address:	Henley-in-Arden

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Full Input Data And Results

Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Traffic		7	7
G	Pedestrian		5	5
H	Pedestrian		5	5

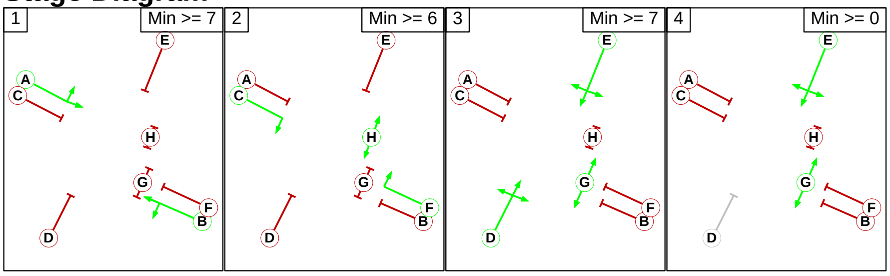
Phase Intergreens Matrix

	Starting Phase								
		A	B	C	D	E	F	G	H
Terminating Phase	A		-	-	5	6	5	-	8
	B	-		5	6	5	-	5	-
	C	-	5		5	5	-	-	-
	D	6	5	5		-	5	-	8
	E	5	5	5	-		5	-	6
	F	6	-	-	5	5		5	-
	G	-	10	-	-	-	10		-
	H	5	-	-	5	5	-	-	

Phases in Stage

Stage No.	Phases in Stage
1	A B
2	C F H
3	D E G
4	E G

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	B	Losing	2	2
3	1	E	Losing	2	2

Full Input Data And Results

Prohibited Stage Change

		To Stage			
		1	2	3	4
From Stage	1		8	6	6
	2	6		5	5
	3	10	10		0
	4	10	10	2	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A2 - Bloors Lane											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
2/1 (Playfootball)	5/1 (Right)	1439	0	6/1	1.09	All	2.00	2.00	0.50	2	2.00
				6/2	1.09	All					
6/2 (Bloors Lane)	8/2 (Right)	1439	0	2/1	1.09	To 3/1 (Ahead) To 8/1 (Left)	2.00	2.00	0.50	2	2.00

Full Input Data And Results

Lane Input Data

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
Junction: A2 - Bloors Lane												
1/1 (London Road (westbound approach))	U	B	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 4 Left	10.00
											Arm 8 Ahead	Inf
1/2 (London Road (westbound approach))	U	B	2	3	60.0	Geom	-	3.00	0.00	N	Arm 8 Ahead	Inf
1/3 (London Road (westbound approach))	U	F	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 3 Right	10.00
2/1 (Playfootball)	O	D	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 3 Ahead	Inf
											Arm 5 Right	10.00
											Arm 8 Left	10.00
3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Bloors Lane)	U	E	2	3	1.0	Geom	-	3.25	0.00	Y	Arm 5 Left	10.00
6/2 (Bloors Lane)	O	E	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
											Arm 8 Right	10.00
7/1 (London Road (eastbound approach))	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 3 Left	15.00
											Arm 5 Ahead	Inf
7/2 (London Road (eastbound approach))	U	C	2	3	60.0	Geom	-	3.65	0.00	Y	Arm 4 Right	10.00
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/2	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
12: '2035 RC AM'	08:00	09:00	01:00	
13: '2035 RC PM'	17:00	18:00	01:00	
14: '2035 RC+Dev AM'	08:00	09:00	01:00	
15: '2035 RC+Dev PM'	17:00	18:00	01:00	

Scenario 8: '2035 RC AM' (FG12: '2035 RC AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	283	35	62	380
	B	295	0	51	886	1232
	C	61	32	0	36	129
	D	94	603	25	0	722
	Tot.	450	918	111	984	2463

Traffic Lane Flows

Lane	Scenario 8: 2035 RC AM
Junction: A2 - Bloors Lane	
1/1	440
1/2	497
1/3	295
2/1	129
3/1	450
4/1	111
5/1	918
6/1 (short)	283
6/2 (with short)	380(In) 97(Out)
7/1	697
7/2	25
8/1	425
8/2	559

Full Input Data And Results

Lane Saturation Flows

Junction: A2 - Bloors Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (London Road (westbound approach))	3.00	0.00	Y	Arm 4 Left	10.00	11.6 %	1882	1882
				Arm 8 Ahead	Inf	88.4 %		
1/2 (London Road (westbound approach))	3.00	0.00	N	Arm 8 Ahead	Inf	100.0 %	2055	2055
1/3 (London Road (westbound approach))	3.00	0.00	Y	Arm 3 Right	10.00	100.0 %	1665	1665
2/1 (Playfootball)	3.25	0.00	Y	Arm 3 Ahead	Inf	47.3 %	1798	1798
				Arm 5 Right	10.00	24.8 %		
				Arm 8 Left	10.00	27.9 %		
3/1	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1 (Bloors Lane)	3.25	0.00	Y	Arm 5 Left	10.00	100.0 %	1687	1687
6/2 (Bloors Lane)	3.25	0.00	Y	Arm 4 Ahead	Inf	36.1 %	1770	1770
				Arm 8 Right	10.00	63.9 %		
7/1 (London Road (eastbound approach))	3.65	0.00	Y	Arm 3 Left	15.00	13.5 %	1954	1954
				Arm 5 Ahead	Inf	86.5 %		
7/2 (London Road (eastbound approach))	3.65	0.00	Y	Arm 4 Right	10.00	100.0 %	1722	1722
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf

Scenario 9: '2035 RC PM' (FG13: '2035 RC PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	340	6	84	430
	B	192	0	30	876	1098
	C	8	23	0	16	47
	D	71	759	1	0	831
	Tot.	271	1122	37	976	2406

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 9: 2035 RC PM
Junction: A2 - Bloors Lane	
1/1	427
1/2	479
1/3	192
2/1	47
3/1	271
4/1	37
5/1	1122
6/1 (short)	340
6/2 (with short)	430(In) 90(Out)
7/1	830
7/2	1
8/1	413
8/2	563

Lane Saturation Flows

Junction: A2 - Bloors Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (London Road (westbound approach))	3.00	0.00	Y	Arm 4 Left	10.00	7.0 %	1895	1895
				Arm 8 Ahead	Inf	93.0 %		
1/2 (London Road (westbound approach))	3.00	0.00	N	Arm 8 Ahead	Inf	100.0 %	2055	2055
1/3 (London Road (westbound approach))	3.00	0.00	Y	Arm 3 Right	10.00	100.0 %	1665	1665
2/1 (Playfootball)	3.25	0.00	Y	Arm 3 Ahead	Inf	17.0 %	1725	1725
				Arm 5 Right	10.00	48.9 %		
				Arm 8 Left	10.00	34.0 %		
3/1	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1 (Bloors Lane)	3.25	0.00	Y	Arm 5 Left	10.00	100.0 %	1687	1687
6/2 (Bloors Lane)	3.25	0.00	Y	Arm 4 Ahead	Inf	6.7 %	1702	1702
				Arm 8 Right	10.00	93.3 %		
7/1 (London Road (eastbound approach))	3.65	0.00	Y	Arm 3 Left	15.00	8.6 %	1963	1963
				Arm 5 Ahead	Inf	91.4 %		
7/2 (London Road (eastbound approach))	3.65	0.00	Y	Arm 4 Right	10.00	100.0 %	1722	1722
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf

Scenario 10: '2035 RC+Dev AM' (FG14: '2035 RC+Dev AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	300	49	67	416
	B	350	0	68	1004	1422
	C	77	33	0	56	166
	D	202	1173	41	0	1416
	Tot.	629	1506	158	1127	3420

Traffic Lane Flows

Lane	Scenario 10: 2035 RC+Dev AM
Junction: A2 - Bloors Lane	
1/1	502
1/2	570
1/3	350
2/1	166
3/1	629
4/1	158
5/1	1506
6/1 (short)	300
6/2 (with short)	416(In) 116(Out)
7/1	1375
7/2	41
8/1	490
8/2	637

Lane Saturation Flows

Junction: A2 - Bloors Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (London Road (westbound approach))	3.00	0.00	Y	Arm 4 Left	10.00	13.5 %	1877	1877
				Arm 8 Ahead	Inf	86.5 %		
1/2 (London Road (westbound approach))	3.00	0.00	N	Arm 8 Ahead	Inf	100.0 %	2055	2055
1/3 (London Road (westbound approach))	3.00	0.00	Y	Arm 3 Right	10.00	100.0 %	1665	1665
2/1 (Playfootball)	3.25	0.00	Y	Arm 3 Ahead	Inf	46.4 %	1796	1796
				Arm 5 Right	10.00	19.9 %		
				Arm 8 Left	10.00	33.7 %		
3/1	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1 (Bloors Lane)	3.25	0.00	Y	Arm 5 Left	10.00	100.0 %	1687	1687
6/2 (Bloors Lane)	3.25	0.00	Y	Arm 4 Ahead	Inf	42.2 %	1785	1785
				Arm 8 Right	10.00	57.8 %		
7/1 (London Road (eastbound approach))	3.65	0.00	Y	Arm 3 Left	15.00	14.7 %	1951	1951
				Arm 5 Ahead	Inf	85.3 %		
7/2 (London Road (eastbound approach))	3.65	0.00	Y	Arm 4 Right	10.00	100.0 %	1722	1722
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf

Scenario 11: '2035 RC+Dev PM' (FG15: '2035 RC+Dev PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	301	11	79	391
	B	197	0	32	842	1071
	C	9	21	0	15	45
	D	139	1435	20	0	1594
	Tot.	345	1757	63	936	3101

Full Input Data And Results

Traffic Lane Flows

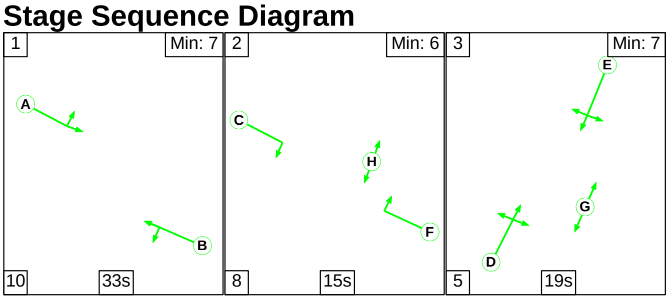
Lane	Scenario 11: 2035 RC+Dev PM
Junction: A2 - Bloors Lane	
1/1	409
1/2	465
1/3	197
2/1	45
3/1	345
4/1	63
5/1	1757
6/1 (short)	301
6/2 (with short)	391(In) 90(Out)
7/1	1574
7/2	20
8/1	392
8/2	544

Lane Saturation Flows

Junction: A2 - Bloors Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (London Road (westbound approach))	3.00	0.00	Y	Arm 4 Left	10.00	7.8 %	1893	1893
				Arm 8 Ahead	Inf	92.2 %		
1/2 (London Road (westbound approach))	3.00	0.00	N	Arm 8 Ahead	Inf	100.0 %	2055	2055
1/3 (London Road (westbound approach))	3.00	0.00	Y	Arm 3 Right	10.00	100.0 %	1665	1665
2/1 (Playfootball)	3.25	0.00	Y	Arm 3 Ahead	Inf	20.0 %	1732	1732
				Arm 5 Right	10.00	46.7 %		
				Arm 8 Left	10.00	33.3 %		
3/1	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
6/1 (Bloors Lane)	3.25	0.00	Y	Arm 5 Left	10.00	100.0 %	1687	1687
6/2 (Bloors Lane)	3.25	0.00	Y	Arm 4 Ahead	Inf	12.2 %	1714	1714
				Arm 8 Right	10.00	87.8 %		
7/1 (London Road (eastbound approach))	3.65	0.00	Y	Arm 3 Left	15.00	8.8 %	1963	1963
				Arm 5 Ahead	Inf	91.2 %		
7/2 (London Road (eastbound approach))	3.65	0.00	Y	Arm 4 Right	10.00	100.0 %	1722	1722
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf

Scenario 8: '2035 RC AM' (FG12: '2035 RC AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

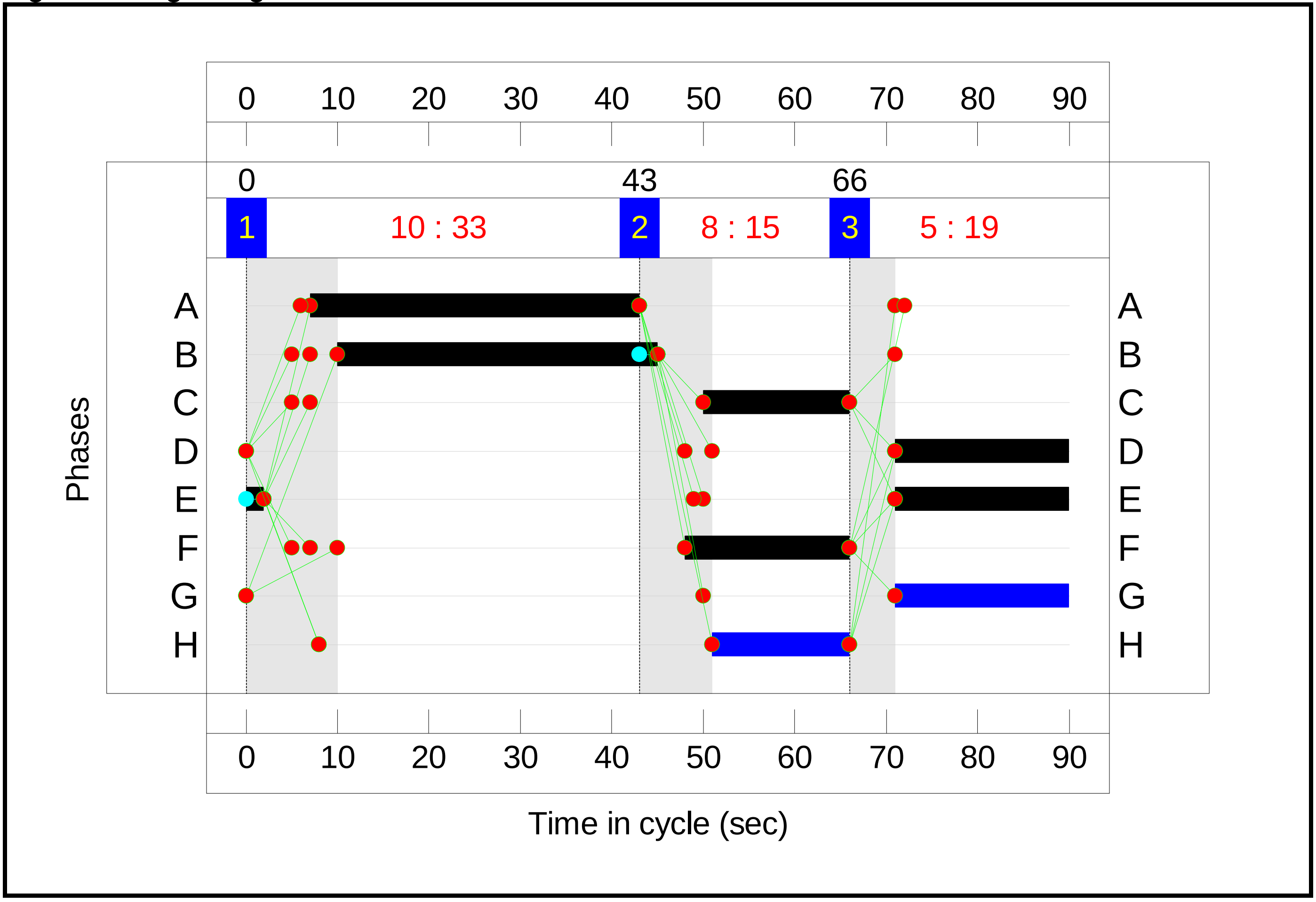


Full Input Data And Results

Stage Timings

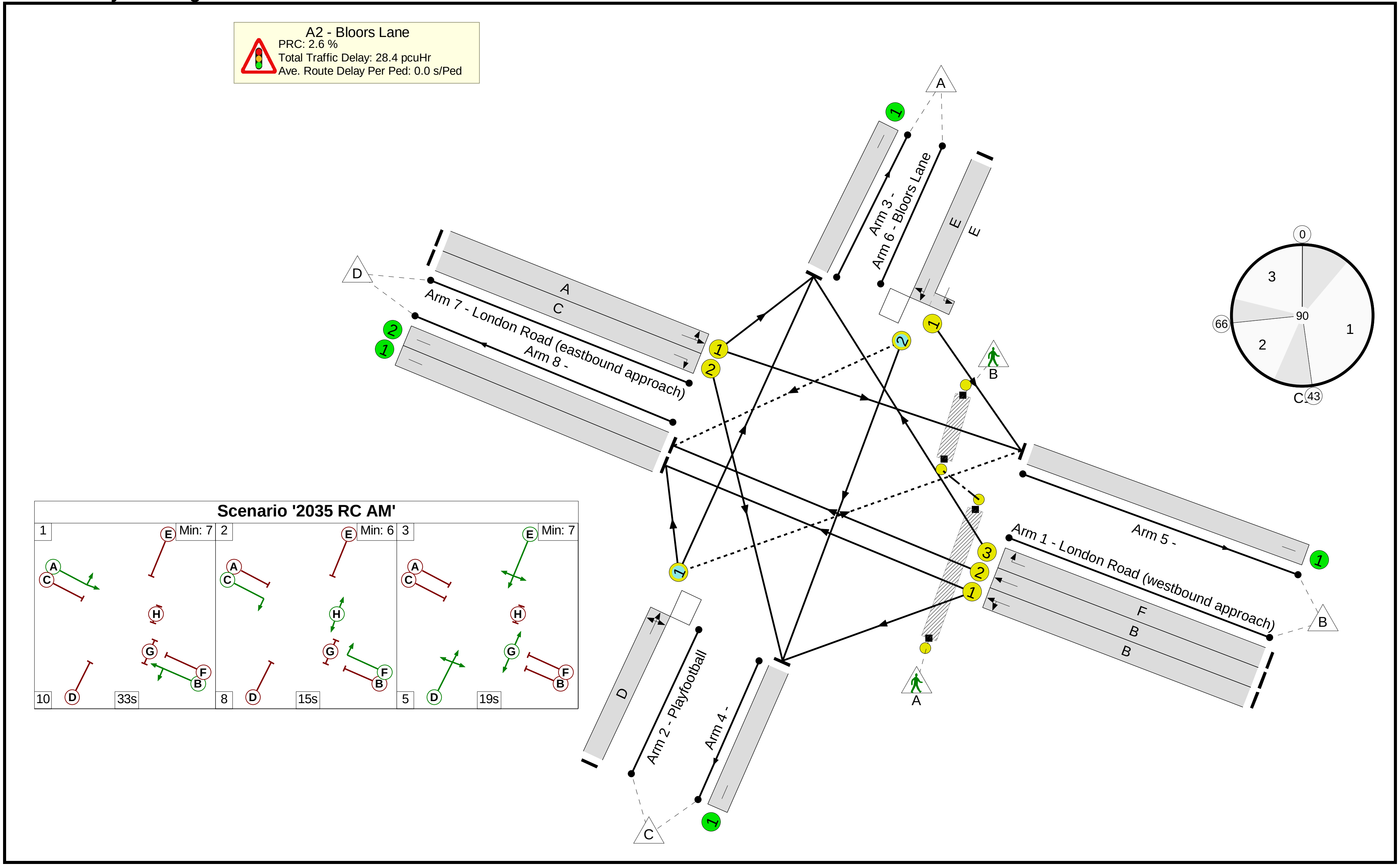
Stage	1	2	3
Duration	33	15	19
Change Point	0	43	66

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A2 Bloors Lane Signal Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.7%**
A2 - Bloors Lane	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.7%**
1/1	London Road (westbound approach) Left Ahead	U	N/A	N/A	B		1	35	-	440	1882	753	58.4%
1/2	London Road (westbound approach) Ahead	U	N/A	N/A	B		1	35	-	497	2055	822	60.5%
1/3	London Road (westbound approach) Right	U	N/A	N/A	F		1	18	-	295	1665	352	83.9%
2/1	Playfootball Ahead Right Left	O	N/A	N/A	D		1	19	-	129	1798	322	40.0%
3/1		U	N/A	N/A	-		-	-	-	450	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	111	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	918	Inf	Inf	0.0%
6/2+6/1	Bloors Lane Ahead Left Right	O+U	N/A	N/A	E		1	21	-	380	1770:1687	111+323	87.7 : 87.7%
7/1	London Road (eastbound approach) Left Ahead	U	N/A	N/A	A		1	36	-	697	1954	803	86.8%
7/2	London Road (eastbound approach) Right	U	N/A	N/A	C		1	16	-	25	1722	325	7.7%
8/1		U	N/A	N/A	-		-	-	-	425	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	559	Inf	Inf	0.0%
Ped Link: P1	London Road Entry	-	N/A	-	G		1	19	-	0	-	15200	0.0%
Ped Link: P2	London Road Exit	-	N/A	-	H		1	15	-	0	-	12000	0.0%

Full Input Data And Results

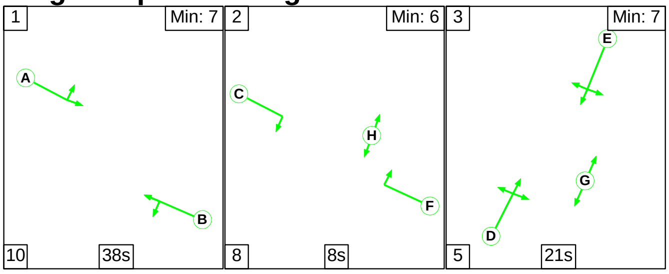
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A2 Bloors Lane Signal Junction	**-**	**-**	**93**	**0**	**1**	**17.7**	**10.5**	**0.2**	**28.4**	**-**	**-**	**-**	**-**
A2 - Bloors Lane	**-**	**-**	**93**	**0**	**1**	**17.7**	**10.5**	**0.2**	**28.4**	**-**	**-**	**-**	**-**
1/1	440	440	-	-	-	2.6	0.7	-	3.3	26.9	8.6	0.7	9.3
1/2	497	497	-	-	-	3.0	0.8	-	3.7	26.9	9.8	0.8	10.6
1/3	295	295	-	-	-	2.8	2.4	-	5.2	63.4	7.0	2.4	9.5
2/1	129	129	32	0	0	1.1	0.3	0.1	1.5	42.6	2.7	0.3	3.0
3/1	450	450	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	111	111	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	918	918	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2+6/1	380	380	61	0	1	3.4	3.2	0.0	6.6	62.7	8.7	3.2	11.9
7/1	697	697	-	-	-	4.7	3.1	-	7.8	40.3	15.9	3.1	19.0
7/2	25	25	-	-	-	0.2	0.0	-	0.3	36.1	0.5	0.0	0.6
8/1	425	425	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	559	559	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0

C1 PRC for Signalled Lanes (%): 2.6 Total Delay for Signalled Lanes (pcuHr): 28.38 Cycle Time (s): 90
PRC Over All Lanes (%): 2.6 Total Delay Over All Lanes(pcuHr): 28.38

Full Input Data And Results

Scenario 9: '2035 RC PM' (FG13: '2035 RC PM', Plan 1: 'Network Control Plan 1')

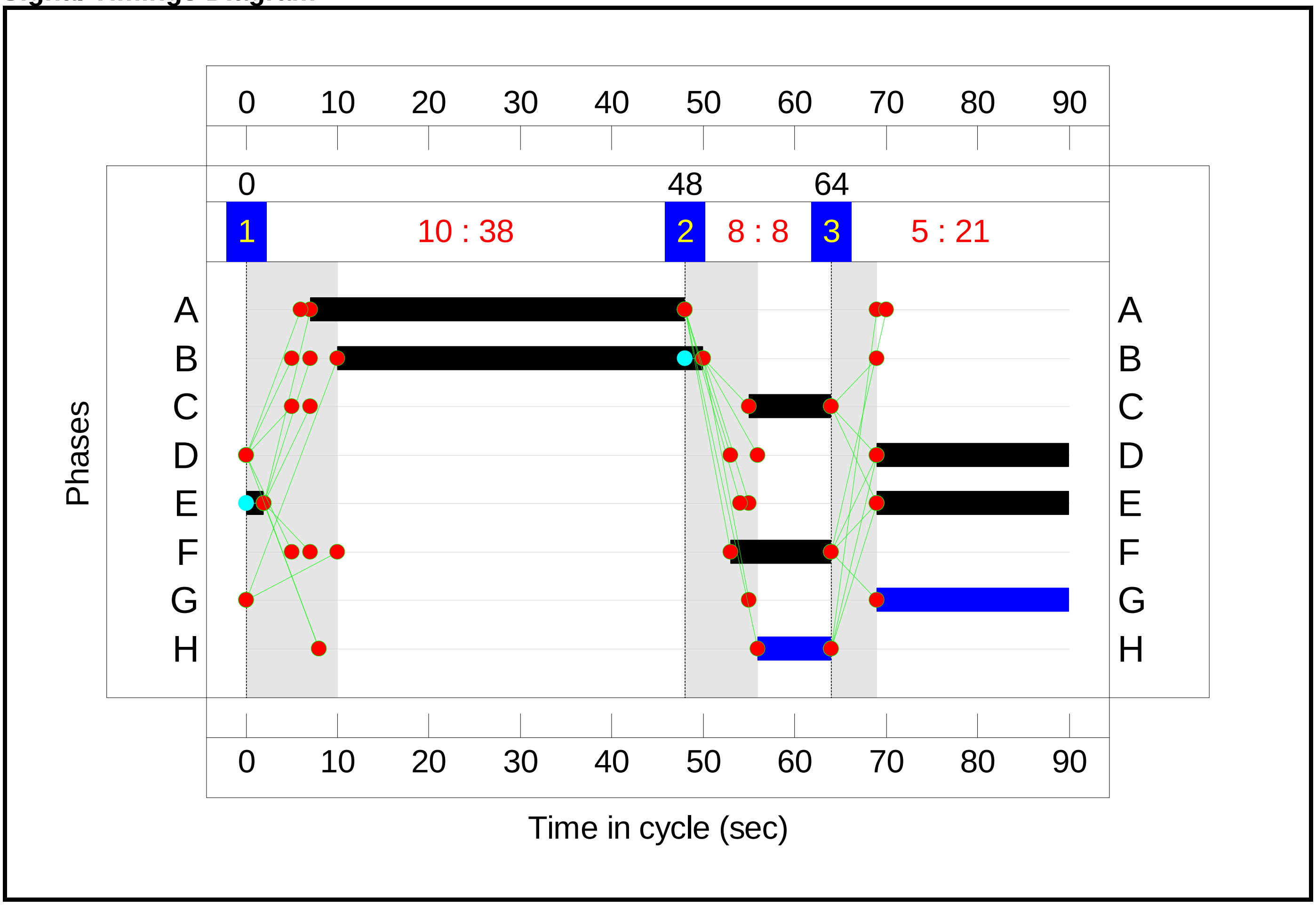
Stage Sequence Diagram



Stage Timings

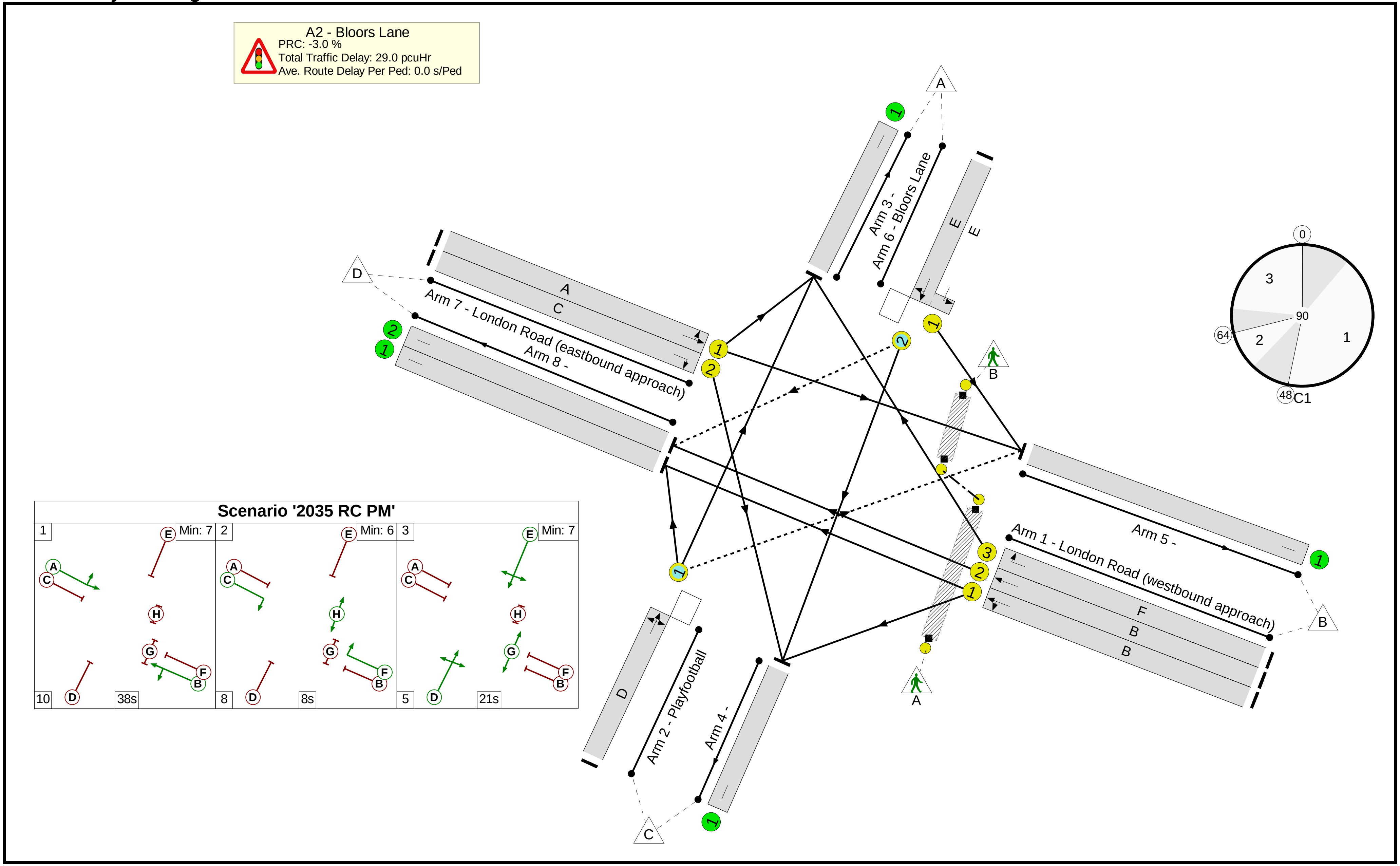
Stage	1	2	3
Duration	38	8	21
Change Point	0	48	64

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

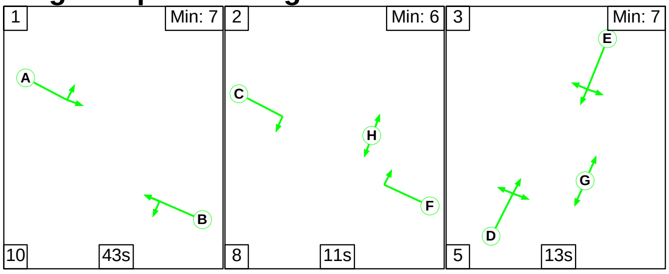
Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A2 Bloors Lane Signal Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**92.7%**
A2 - Bloors Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**92.7%**
1/1	London Road (westbound approach) Left Ahead	U	N/A	N/A	B		1	40	-	427	1895	863	49.5%
1/2	London Road (westbound approach) Ahead	U	N/A	N/A	B		1	40	-	479	2055	936	51.2%
1/3	London Road (westbound approach) Right	U	N/A	N/A	F		1	11	-	192	1665	222	86.5%
2/1	Playfootball Ahead Right Left	O	N/A	N/A	D		1	21	-	47	1725	163	28.8%
3/1		U	N/A	N/A	-		-	-	-	271	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	37	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	1122	Inf	Inf	0.0%
6/2+6/1	Bloors Lane Ahead Left Right	O+U	N/A	N/A	E		1	23	-	430	1702:1687	97+367	92.7 : 92.7%
7/1	London Road (eastbound approach) Left Ahead	U	N/A	N/A	A		1	41	-	830	1963	916	90.6%
7/2	London Road (eastbound approach) Right	U	N/A	N/A	C		1	9	-	1	1722	191	0.5%
8/1		U	N/A	N/A	-		-	-	-	413	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	563	Inf	Inf	0.0%
Ped Link: P1	London Road Entry	-	N/A	-	G		1	21	-	0	-	16800	0.0%
Ped Link: P2	London Road Exit	-	N/A	-	H		1	8	-	0	-	6400	0.0%

Full Input Data And Results

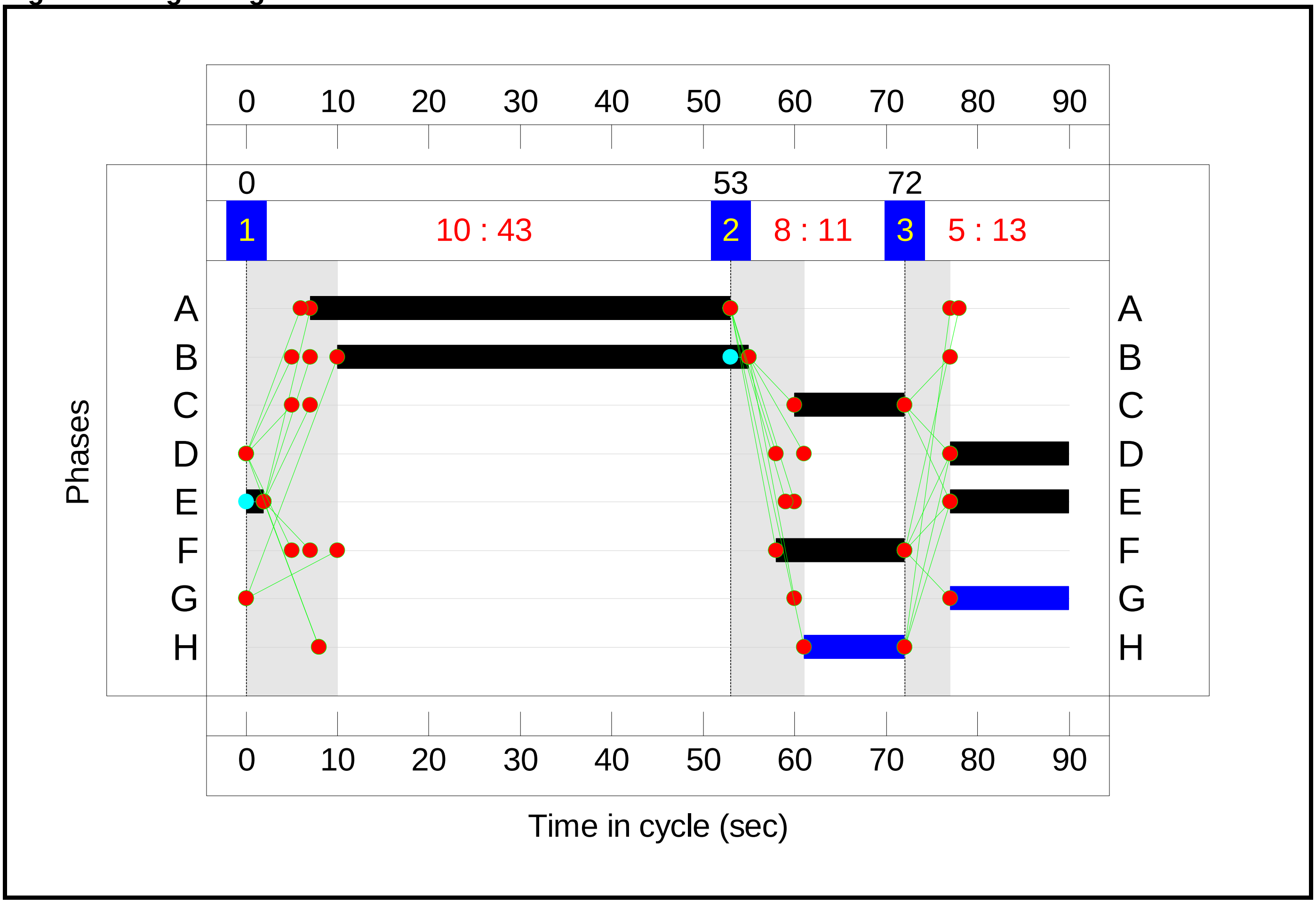
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A2 Bloors Lane Signal Junction	**-**	**-**	**99**	**0**	**8**	**15.7**	**13.2**	**0.1**	**29.0**	**-**	**-**	**-**	**-**
A2 - Bloors Lane	**-**	**-**	**99**	**0**	**8**	**15.7**	**13.2**	**0.1**	**29.0**	**-**	**-**	**-**	**-**
1/1	427	427	-	-	-	2.0	0.5	-	2.5	21.3	7.5	0.5	8.0
1/2	479	479	-	-	-	2.3	0.5	-	2.8	21.3	8.4	0.5	8.9
1/3	192	192	-	-	-	2.0	2.7	-	4.7	89.0	4.7	2.7	7.4
2/1	47	47	17	0	6	0.3	0.2	0.1	0.7	51.6	0.9	0.2	1.1
3/1	271	271	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	37	37	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	1122	1122	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2+6/1	430	430	82	0	2	3.8	4.9	0.0	8.7	73.1	10.1	4.9	15.1
7/1	830	830	-	-	-	5.1	4.4	-	9.5	41.2	19.1	4.4	23.5
7/2	1	1	-	-	-	0.0	0.0	-	0.0	45.5	0.0	0.0	0.0
8/1	413	413	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	563	563	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0

C1 PRC for Signalled Lanes (%): -3.0 Total Delay for Signalled Lanes (pcuHr): 29.03 Cycle Time (s): 90
PRC Over All Lanes (%): -3.0 Total Delay Over All Lanes(pcuHr): 29.03

Full Input Data And Results
Scenario 10: '2035 RC+Dev AM' (FG14: '2035 RC+Dev AM', Plan 1: 'Network Control Plan 1')
Stage Sequence Diagram


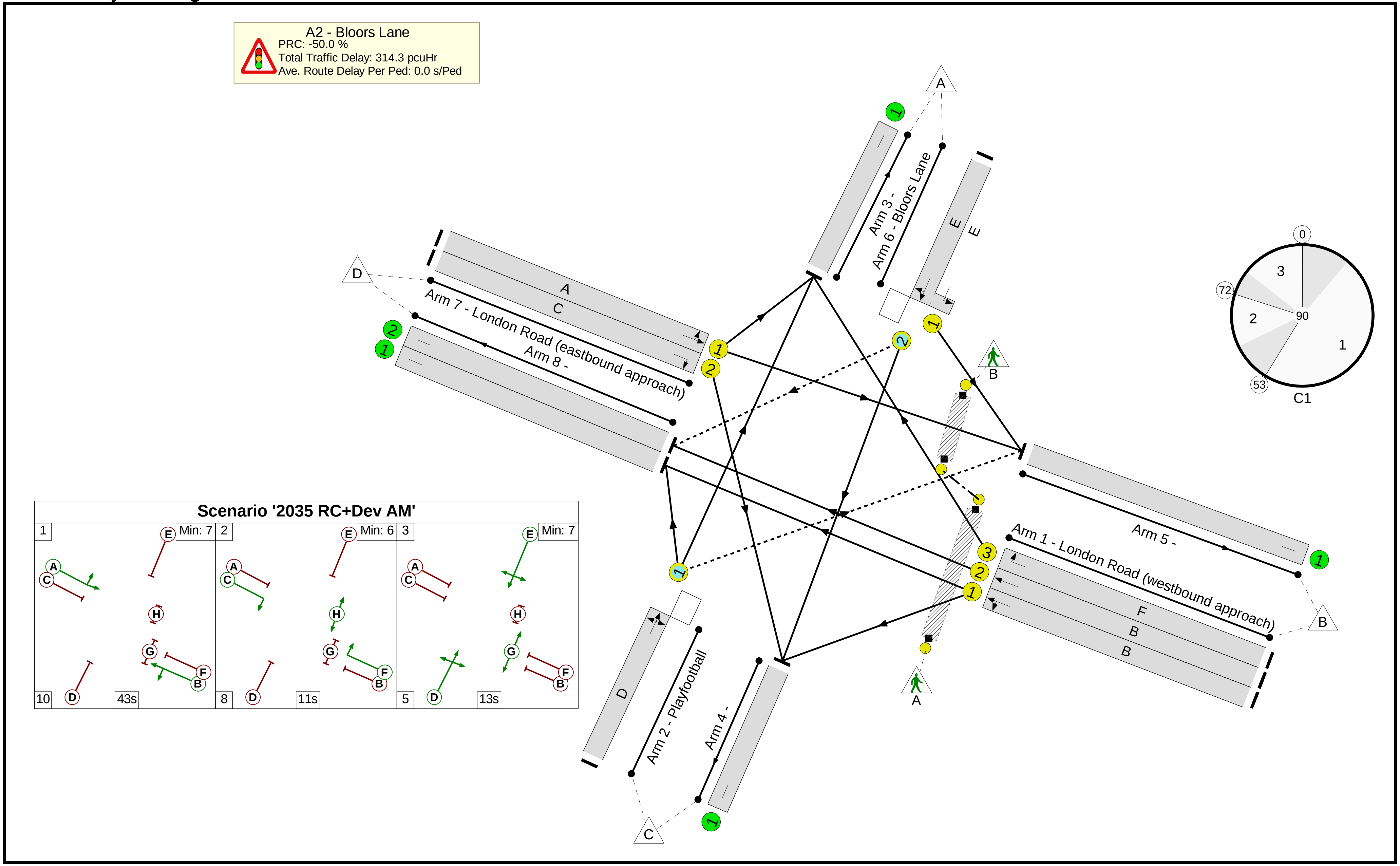
Stage Timings

Stage	1	2	3
Duration	43	11	13
Change Point	0	53	72

Signal Timings Diagram


Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A2 Bloors Lane Signal Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**135.0%**
A2 - Bloors Lane	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**135.0%**
1/1	London Road (westbound approach) Left Ahead	U	N/A	N/A	B		1	45	-	502	1877	959	52.3%
1/2	London Road (westbound approach) Ahead	U	N/A	N/A	B		1	45	-	570	2055	1050	54.3%
1/3	London Road (westbound approach) Right	U	N/A	N/A	F		1	14	-	350	1665	277	126.1%
2/1	Playfootball Ahead Right Left	O	N/A	N/A	D		1	13	-	166	1796	279	59.4%
3/1		U	N/A	N/A	-		-	-	-	629	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	158	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	1506	Inf	Inf	0.0%
6/2+6/1	Bloors Lane Ahead Left Right	O+U	N/A	N/A	E		1	15	-	416	1785:1687	90+232	129.2 : 129.2%
7/1	London Road (eastbound approach) Left Ahead	U	N/A	N/A	A		1	46	-	1375	1951	1019	135.0%
7/2	London Road (eastbound approach) Right	U	N/A	N/A	C		1	12	-	41	1722	249	16.5%
8/1		U	N/A	N/A	-		-	-	-	490	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	637	Inf	Inf	0.0%
Ped Link: P1	London Road Entry	-	N/A	-	G		1	13	-	0	-	10400	0.0%
Ped Link: P2	London Road Exit	-	N/A	-	H		1	11	-	0	-	8800	0.0%

Full Input Data And Results

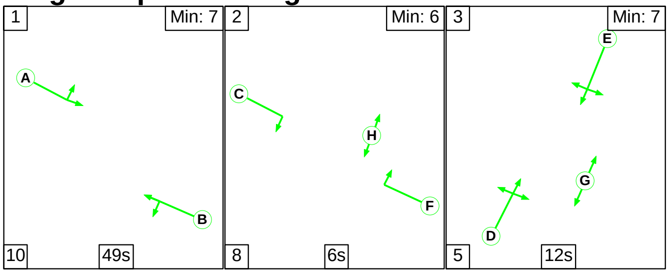
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A2 Bloors Lane Signal Junction	**-**	**-**	**46**	**0**	**39**	**44.6**	**269.6**	**0.2**	**314.3**	**-**	**-**	**-**	**-**
A2 - Bloors Lane	**-**	**-**	**46**	**0**	**39**	**44.6**	**269.6**	**0.2**	**314.3**	**-**	**-**	**-**	**-**
1/1	502	502	-	-	-	2.0	0.5	-	2.6	18.6	8.4	0.5	8.9
1/2	570	570	-	-	-	2.4	0.6	-	2.9	18.6	9.5	0.6	10.1
1/3	350	278	-	-	-	6.3	38.5	-	44.8	460.8	10.9	38.5	49.4
2/1	166	166	0	0	33	1.6	0.7	0.1	2.5	53.6	3.8	0.7	4.6
3/1	504	504	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	147	147	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	1134	1134	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2+6/1	416	322	46	0	6	9.0	49.1	0.0	58.2	503.7	14.1	49.1	63.3
7/1	1375	1019	-	-	-	22.9	180.0	-	202.8	531.1	43.3	180.0	223.3
7/2	41	41	-	-	-	0.4	0.1	-	0.5	42.4	0.9	0.1	1.0
8/1	490	490	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	622	622	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0

C1 PRC for Signalled Lanes (%): -50.0 Total Delay for Signalled Lanes (pcuHr): 314.34 Cycle Time (s): 90
PRC Over All Lanes (%): -50.0 Total Delay Over All Lanes(pcuHr): 314.34

Full Input Data And Results

Scenario 11: '2035 RC+Dev PM' (FG15: '2035 RC+Dev PM', Plan 1: 'Network Control Plan 1')

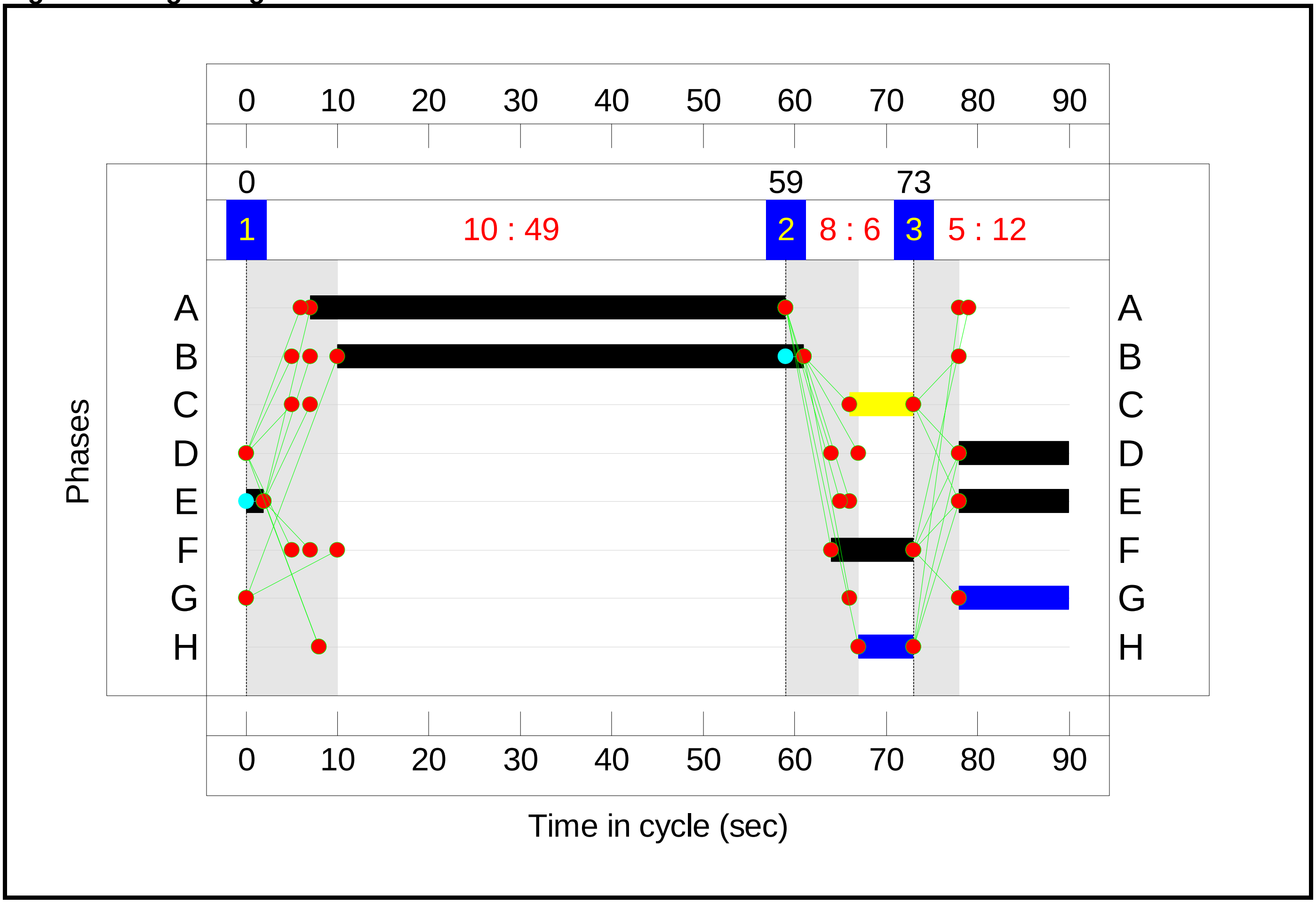
Stage Sequence Diagram



Stage Timings

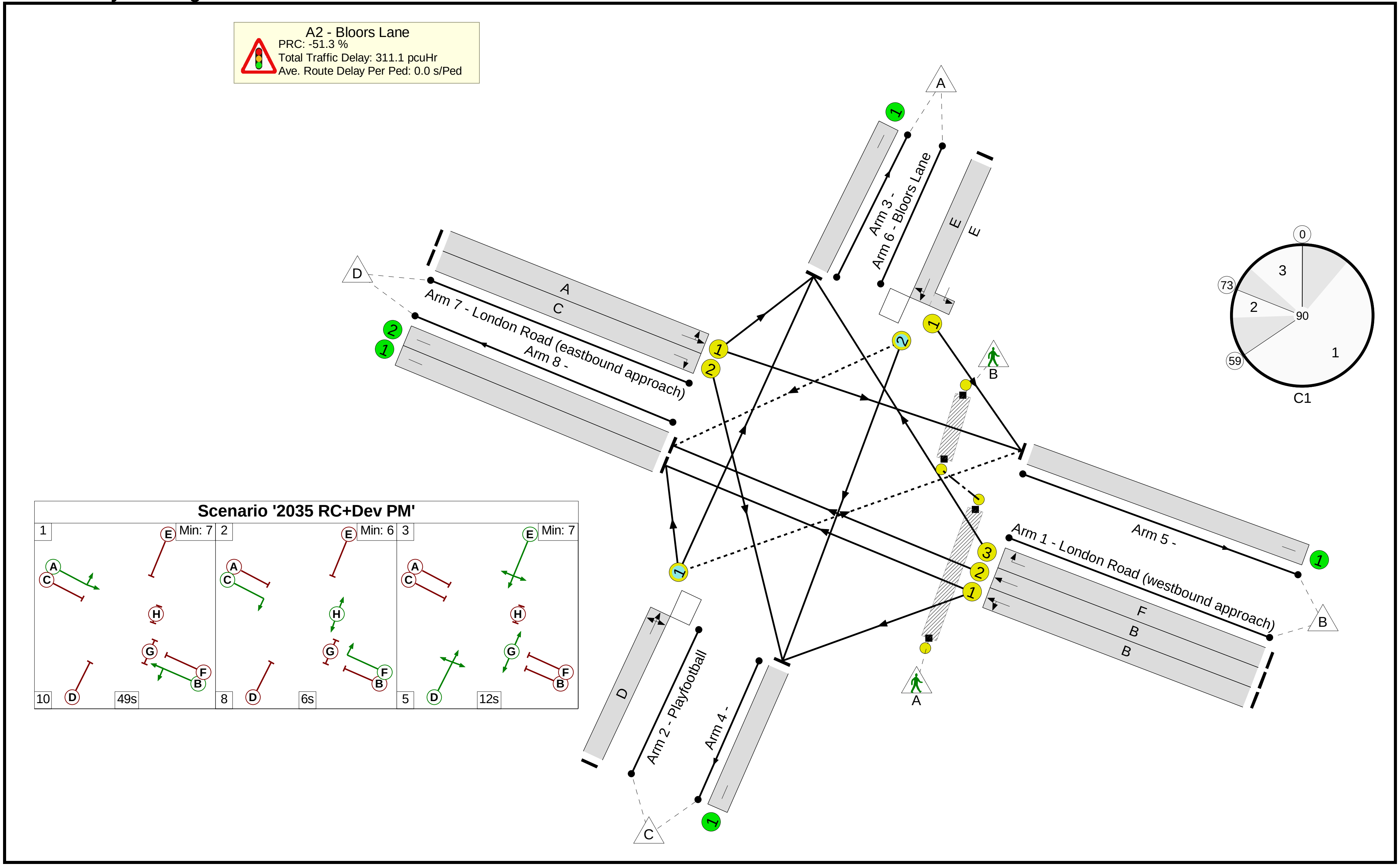
Stage	1	2	3
Duration	49	6	12
Change Point	0	59	73

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A2 Bloors Lane Signal Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**136.2%**
A2 - Bloors Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**136.2%**
1/1	London Road (westbound approach) Left Ahead	U	N/A	N/A	B		1	51	-	409	1893	1094	37.4%
1/2	London Road (westbound approach) Ahead	U	N/A	N/A	B		1	51	-	465	2055	1187	39.2%
1/3	London Road (westbound approach) Right	U	N/A	N/A	F		1	9	-	197	1665	185	106.5%
2/1	Playfootball Ahead Right Left	O	N/A	N/A	D		1	12	-	45	1732	171	26.3%
3/1		U	N/A	N/A	-		-	-	-	345	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	63	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	1757	Inf	Inf	0.0%
6/2+6/1	Bloors Lane Ahead Left Right	O+U	N/A	N/A	E		1	14	-	391	1714:1687	68+228	131.9 : 131.9%
7/1	London Road (eastbound approach) Left Ahead	U	N/A	N/A	A		1	52	-	1574	1963	1156	136.2%
7/2	London Road (eastbound approach) Right	U	N/A	N/A	C		1	7	-	20	1722	153	13.1%
8/1		U	N/A	N/A	-		-	-	-	392	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	544	Inf	Inf	0.0%
Ped Link: P1	London Road Entry	-	N/A	-	G		1	12	-	0	-	9600	0.0%
Ped Link: P2	London Road Exit	-	N/A	-	H		1	6	-	0	-	4800	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A2 Bloors Lane Signal Junction	**-**	**-**	**52**	**0**	**29**	**39.5**	**271.6**	**0.1**	**311.1**	**-**	**-**	**-**	**-**
A2 - Bloors Lane	**-**	**-**	**52**	**0**	**29**	**39.5**	**271.6**	**0.1**	**311.1**	**-**	**-**	**-**	**-**
1/1	409	409	-	-	-	1.2	0.3	-	1.5	12.9	5.5	0.3	5.8
1/2	465	465	-	-	-	1.3	0.3	-	1.7	12.9	6.3	0.3	6.7
1/3	197	185	-	-	-	2.6	10.6	-	13.2	241.0	5.2	10.6	15.9
2/1	45	45	0	0	21	0.4	0.2	0.1	0.7	54.5	1.0	0.2	1.2
3/1	296	296	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	60	60	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	1303	1303	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2+6/1	391	297	52	0	8	8.8	49.2	0.0	58.1	534.7	13.7	49.2	62.9
7/1	1574	1156	-	-	-	24.9	210.9	-	235.8	539.3	49.8	210.9	260.7
7/2	20	20	-	-	-	0.2	0.1	-	0.3	51.3	0.5	0.1	0.5
8/1	392	392	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	525	525	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0

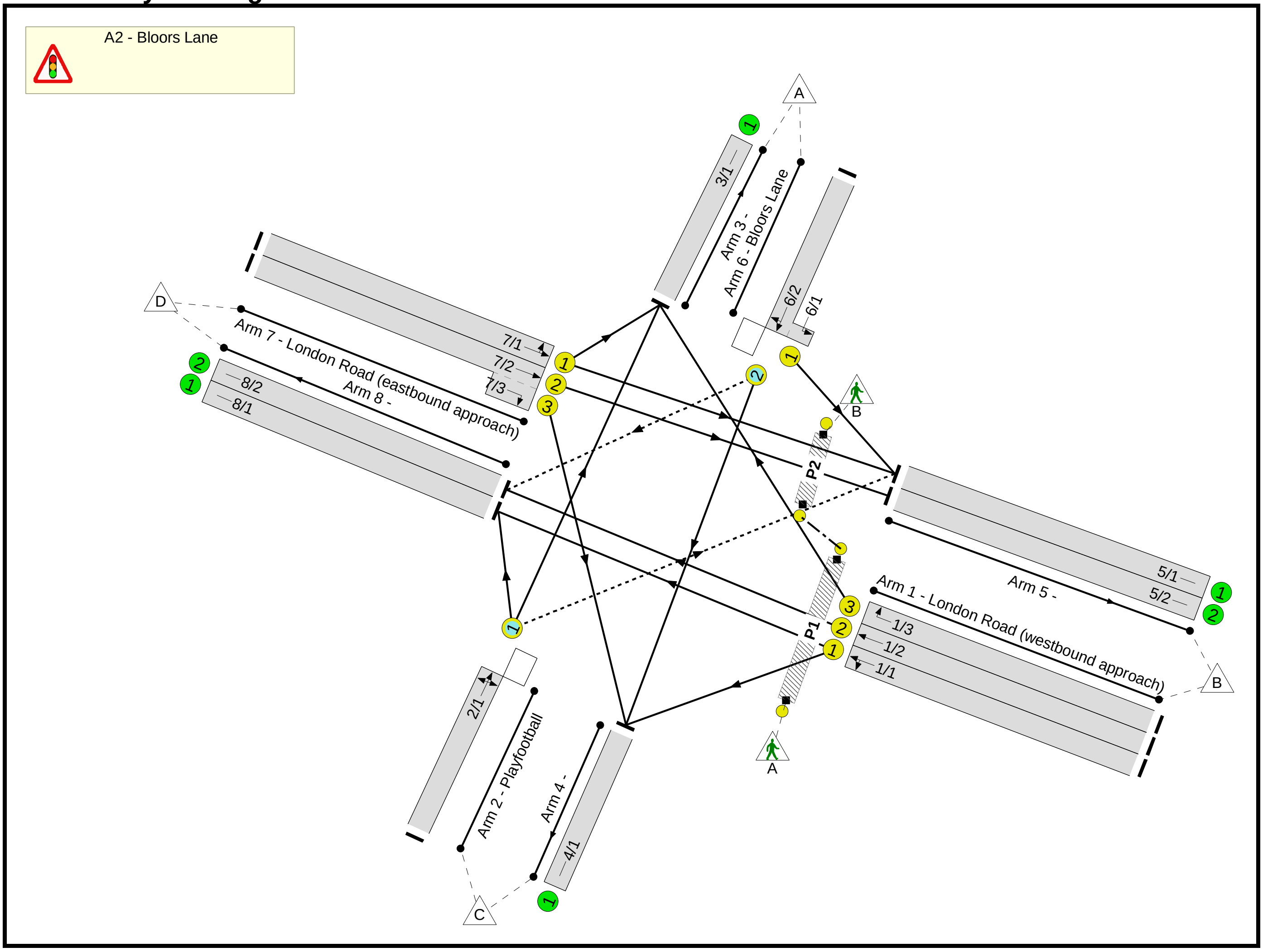
C1 PRC for Signalled Lanes (%): -51.3 Total Delay for Signalled Lanes (pcuHr): 311.15 Cycle Time (s): 90
PRC Over All Lanes (%): -51.3 Total Delay Over All Lanes(pcuHr): 311.15

Full Input Data And Results

User and Project Details

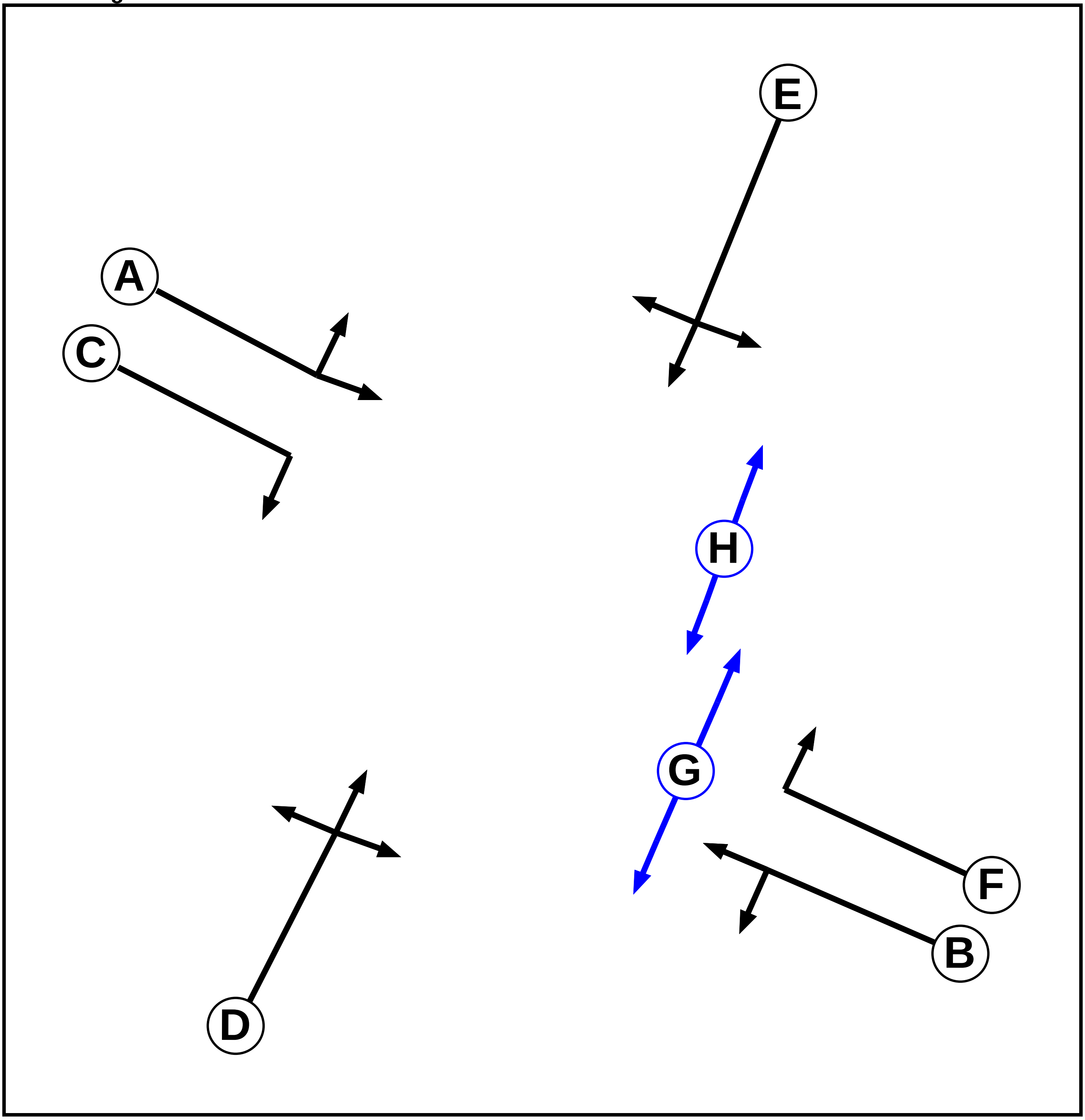
Project:	**Lower Rainham (20230)**
Title:	**A2 Bloors Lane Signal Junction**
Location:	
Additional detail:	
File name:	A2_Bloors Lane signals Mit_RevB.lsg3x
Author:	RM
Company:	David Tucker Associates
Address:	Henley-in-Arden

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Full Input Data And Results

Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7
F	Traffic		7	7
G	Pedestrian		5	5
H	Pedestrian		5	5

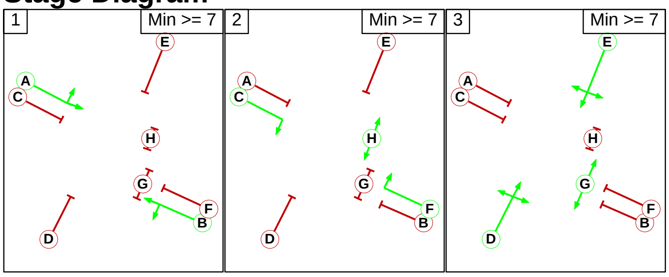
Phase Intergreens Matrix

		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		-	-	5	6	5	-	8
	B	-		5	6	5	-	5	-
	C	-	5		5	5	-	-	-
	D	6	5	5		-	5	-	8
	E	5	5	5	-		5	-	6
	F	6	-	-	5	5		5	-
	G	-	10	-	-	-	10		-
	H	5	-	-	5	5	-	-	

Phases in Stage

Stage No.	Phases in Stage
1	A B
2	C F H
3	D E G

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	B	Losing	3	3
3	1	E	Losing	1	1

Full Input Data And Results

Prohibited Stage Change

		To Stage		
		1	2	3
From Stage	1		8	6
	2	6		5
	3	10	10	

Full Input Data And Results

Give-Way Lane Input Data

Junction: A2 - Bloors Lane											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
2/1 (Playfootball)	5/1 (Right)	1439	0	6/1	1.09	All	2.00	2.00	0.50	2	2.00
				6/2	1.09	All					
6/2 (Bloors Lane)	8/2 (Right)	1439	0	2/1	1.09	To 3/1 (Ahead) To 8/1 (Left)	2.00	2.00	0.50	2	2.00

Full Input Data And Results

Lane Input Data

Junction: A2 - Bloors Lane												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
1/1 (London Road (westbound approach))	U	B	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 4 Left	10.00
											Arm 8 Ahead	Inf
1/2 (London Road (westbound approach))	U	B	2	3	60.0	Geom	-	3.00	0.00	N	Arm 8 Ahead	Inf
1/3 (London Road (westbound approach))	U	F	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 3 Right	15.00
2/1 (Playfootball)	O	D	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 3 Ahead	Inf
											Arm 5 Right	10.00
											Arm 8 Left	10.00
3/1	U		2	3	60.0	Inf	-	-	-	-	-	-
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Bloors Lane)	U	E	2	3	1.0	Geom	-	3.25	0.00	Y	Arm 5 Left	10.00
6/2 (Bloors Lane)	O	E	2	3	60.0	Geom	-	3.25	0.00	Y	Arm 4 Ahead	Inf
											Arm 8 Right	10.00
7/1 (London Road (eastbound approach))	U	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 3 Left	15.00
											Arm 5 Ahead	Inf
7/2 (London Road (eastbound approach))	U	A	2	3	17.4	Geom	-	3.20	0.00	N	Arm 5 Ahead	Inf
7/3 (London Road (eastbound approach))	U	C	2	3	3.0	Geom	-	3.00	0.00	Y	Arm 4 Right	15.00
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/2	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
13: '2035 RC+Dev AM'	08:00	09:00	01:00	
14: '2035 RC+Dev PM'	17:00	18:00	01:00	

Scenario 11: '2035 RC+Dev AM' (FG13: '2035 RC+Dev AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	300	49	67	416
	B	350	0	68	1004	1422
	C	77	33	0	56	166
	D	202	1173	41	0	1416
	Tot.	629	1506	158	1127	3420

Traffic Lane Flows

Lane	**Scenario 11: 2035 RC+Dev AM**
Junction: A2 - Bloors Lane	
1/1	505
1/2	567
1/3	350
2/1	166
3/1	629
4/1	158
5/1	803
5/2	703
6/1 (short)	300
6/2 (with short)	416(In) 116(Out)
7/1	672
7/2 (with short)	744(In) 703(Out)
7/3 (short)	41
8/1	493
8/2	634

Lane Saturation Flows

Junction: A2 - Bloors Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (London Road (westbound approach))	3.00	0.00	Y	Arm 4 Left	10.00	13.5 %	1877	1877
				Arm 8 Ahead	Inf	86.5 %		
1/2 (London Road (westbound approach))	3.00	0.00	N	Arm 8 Ahead	Inf	100.0 %	2055	2055
1/3 (London Road (westbound approach))	3.00	0.00	Y	Arm 3 Right	15.00	100.0 %	1741	1741
2/1 (Playfootball)	3.25	0.00	Y	Arm 3 Ahead	Inf	46.4 %	1796	1796
				Arm 5 Right	10.00	19.9 %		
				Arm 8 Left	10.00	33.7 %		
3/1	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (Bloors Lane)	3.25	0.00	Y	Arm 5 Left	10.00	100.0 %	1687	1687
6/2 (Bloors Lane)	3.25	0.00	Y	Arm 4 Ahead	Inf	42.2 %	1785	1785
				Arm 8 Right	10.00	57.8 %		
7/1 (London Road (eastbound approach))	3.50	0.00	Y	Arm 3 Left	15.00	30.1 %	1908	1908
				Arm 5 Ahead	Inf	69.9 %		
7/2 (London Road (eastbound approach))	3.20	0.00	N	Arm 5 Ahead	Inf	100.0 %	2075	2075
7/3 (London Road (eastbound approach))	3.00	0.00	Y	Arm 4 Right	15.00	100.0 %	1741	1741
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 12: '2035 RC+Dev PM' (FG14: '2035 RC+Dev PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
Origin		A	B	C	D	Tot.
	A	0	301	11	79	391
	B	197	0	32	842	1071
	C	9	21	0	15	45
	D	139	1435	20	0	1594
	Tot.	345	1757	63	936	3101

Traffic Lane Flows

Lane	Scenario 12: 2035 RC+Dev PM
Junction: A2 - Bloors Lane	
1/1	411
1/2	463
1/3	197
2/1	45
3/1	345
4/1	63
5/1	938
5/2	819
6/1 (short)	301
6/2 (with short)	391(In) 90(Out)
7/1	755
7/2 (with short)	839(In) 819(Out)
7/3 (short)	20
8/1	394
8/2	542

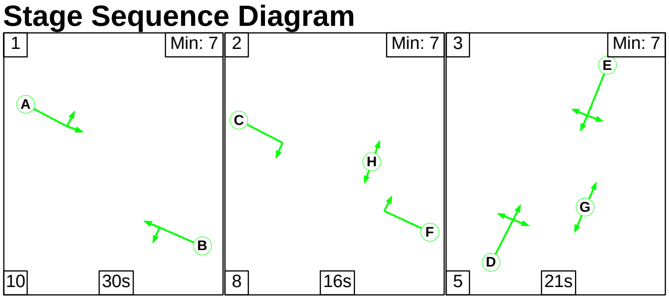
Full Input Data And Results

Lane Saturation Flows

Junction: A2 - Bloors Lane								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (London Road (westbound approach))	3.00	0.00	Y	Arm 4 Left	10.00	7.8 %	1893	1893
				Arm 8 Ahead	Inf	92.2 %		
1/2 (London Road (westbound approach))	3.00	0.00	N	Arm 8 Ahead	Inf	100.0 %	2055	2055
1/3 (London Road (westbound approach))	3.00	0.00	Y	Arm 3 Right	15.00	100.0 %	1741	1741
2/1 (Playfootball)	3.25	0.00	Y	Arm 3 Ahead	Inf	20.0 %	1732	1732
				Arm 5 Right	10.00	46.7 %		
				Arm 8 Left	10.00	33.3 %		
3/1	Infinite Saturation Flow						Inf	Inf
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1 (Bloors Lane)	3.25	0.00	Y	Arm 5 Left	10.00	100.0 %	1687	1687
6/2 (Bloors Lane)	3.25	0.00	Y	Arm 4 Ahead	Inf	12.2 %	1714	1714
				Arm 8 Right	10.00	87.8 %		
7/1 (London Road (eastbound approach))	3.50	0.00	Y	Arm 3 Left	15.00	18.4 %	1929	1929
				Arm 5 Ahead	Inf	81.6 %		
7/2 (London Road (eastbound approach))	3.20	0.00	N	Arm 5 Ahead	Inf	100.0 %	2075	2075
7/3 (London Road (eastbound approach))	3.00	0.00	Y	Arm 4 Right	15.00	100.0 %	1741	1741
8/1	Infinite Saturation Flow						Inf	Inf
8/2	Infinite Saturation Flow						Inf	Inf

Scenario 11: '2035 RC+Dev AM' (FG13: '2035 RC+Dev AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

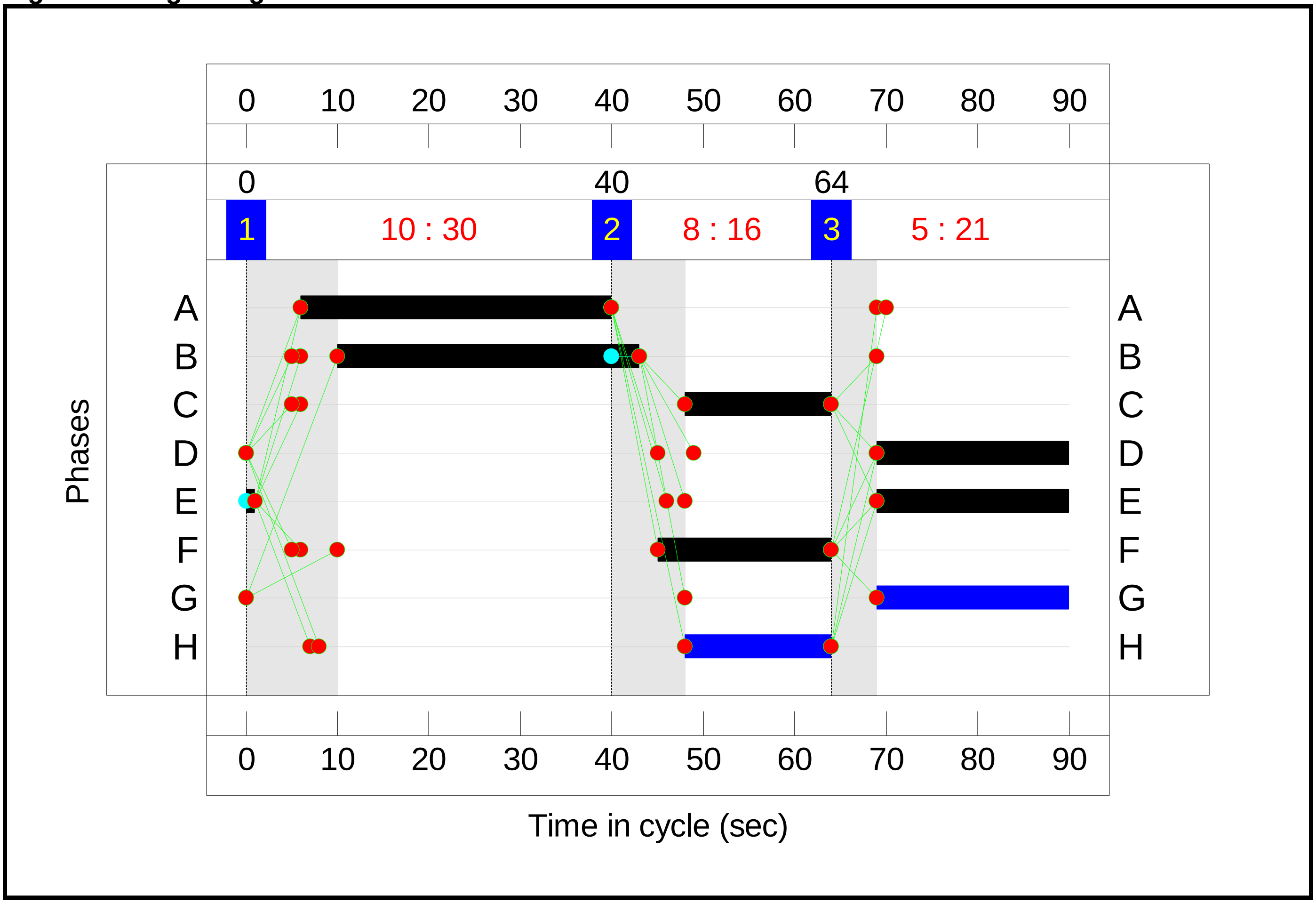


Full Input Data And Results

Stage Timings

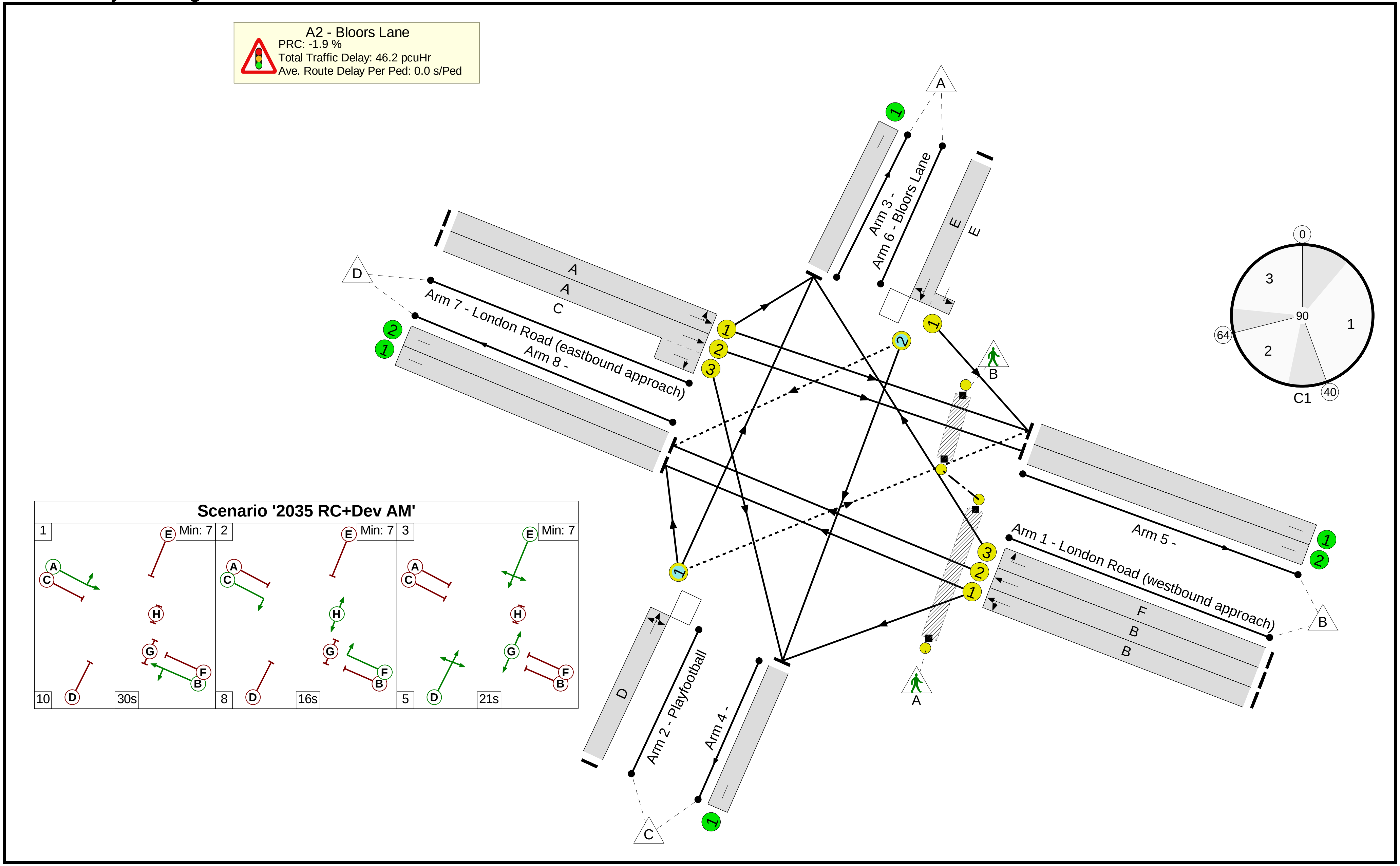
Stage	1	2	3
Duration	30	16	21
Change Point	0	40	64

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A2 Bloors Lane Signal Junction	-	-	**N/A**	-	-		-	-	-	-	-	-	**91.7%**
A2 - Bloors Lane	-	-	**N/A**	-	-		-	-	-	-	-	-	**91.7%**
1/1	London Road (westbound approach) Left Ahead	U	N/A	N/A	B		1	33	-	505	1877	709	71.2%
1/2	London Road (westbound approach) Ahead	U	N/A	N/A	B		1	33	-	567	2055	776	73.0%
1/3	London Road (westbound approach) Right	U	N/A	N/A	F		1	19	-	350	1741	387	90.5%
2/1	Playfootball Ahead Right Left	O	N/A	N/A	D		1	21	-	166	1796	401	41.4%
3/1		U	N/A	N/A	-		-	-	-	629	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	158	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	803	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	703	Inf	Inf	0.0%
6/2+6/1	Bloors Lane Ahead Left Right	O+U	N/A	N/A	E		1	22	-	416	1785:1687	127+328	91.4 : 91.4%
7/1	London Road (eastbound approach) Left Ahead	U	N/A	N/A	A		1	34	-	672	1908	742	90.6%
7/2+7/3	London Road (eastbound approach) Right Ahead	U	N/A	N/A	A C		1	34:16	-	744	2075:1741	767+45	91.7 : 91.7%
8/1		U	N/A	N/A	-		-	-	-	493	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	634	Inf	Inf	0.0%
Ped Link: P1	London Road Entry	-	N/A	-	G		1	21	-	0	-	16800	0.0%

Full Input Data And Results

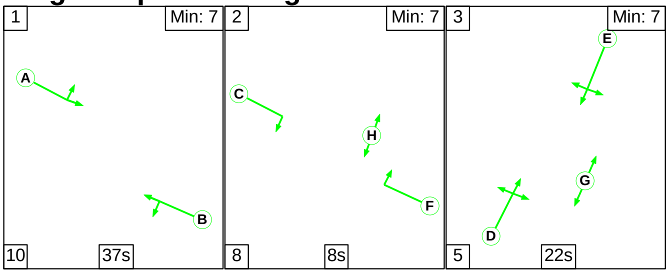
Ped Link: P2	London Road Exit	-	N/A	-	H		1	16	-	0	-	12800	0.0%
Item	**Arriving (pcu)**	**Leaving (pcu)**	**Turners In Gaps (pcu)**	**Turners When Unopposed (pcu)**	**Turners In Intergreen (pcu)**	**Uniform Delay (pcuHr)**	**Rand + Oversat Delay (pcuHr)**	**Storage Area Uniform Delay (pcuHr)**	**Total Delay (pcuHr)**	**Av. Delay Per PCU (s/pcu)**	**Max. Back of Uniform Queue (pcu)**	**Rand + Oversat Queue (pcu)**	**Mean Max Queue (pcu)**
Network: A2 Bloors Lane Signal Junction	**-**	**-**	**90**	**0**	**10**	**25.8**	**20.3**	**0.2**	**46.2**	**-**	**-**	**-**	**-**
A2 - Bloors Lane	**-**	**-**	**90**	**0**	**10**	**25.8**	**20.3**	**0.2**	**46.2**	**-**	**-**	**-**	**-**
1/1	505	505	-	-	-	3.3	1.2	-	4.6	32.6	10.7	1.2	11.9
1/2	567	567	-	-	-	3.8	1.3	-	5.1	32.6	12.1	1.3	13.5
1/3	350	350	-	-	-	3.3	3.9	-	7.2	74.3	8.5	3.9	12.4
2/1	166	166	23	0	10	1.3	0.4	0.2	1.8	39.3	3.4	0.4	3.8
3/1	629	629	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	158	158	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	803	803	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	703	703	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2+6/1	416	416	66	0	1	3.7	4.3	0.0	8.1	70.0	9.7	4.3	14.0
7/1	672	672	-	-	-	4.8	4.3	-	9.1	48.9	15.7	4.3	20.0
7/2+7/3	744	744	-	-	-	5.5	4.8	-	10.3	49.9	17.4	4.8	22.2
8/1	493	493	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	634	634	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0

C1 PRC for Signalled Lanes (%): -1.9 Total Delay for Signalled Lanes (pcuHr): 46.24 Cycle Time (s): 90
PRC Over All Lanes (%): -1.9 Total Delay Over All Lanes(pcuHr): 46.24

Full Input Data And Results

Scenario 12: '2035 RC+Dev PM' (FG14: '2035 RC+Dev PM', Plan 1: 'Network Control Plan 1')

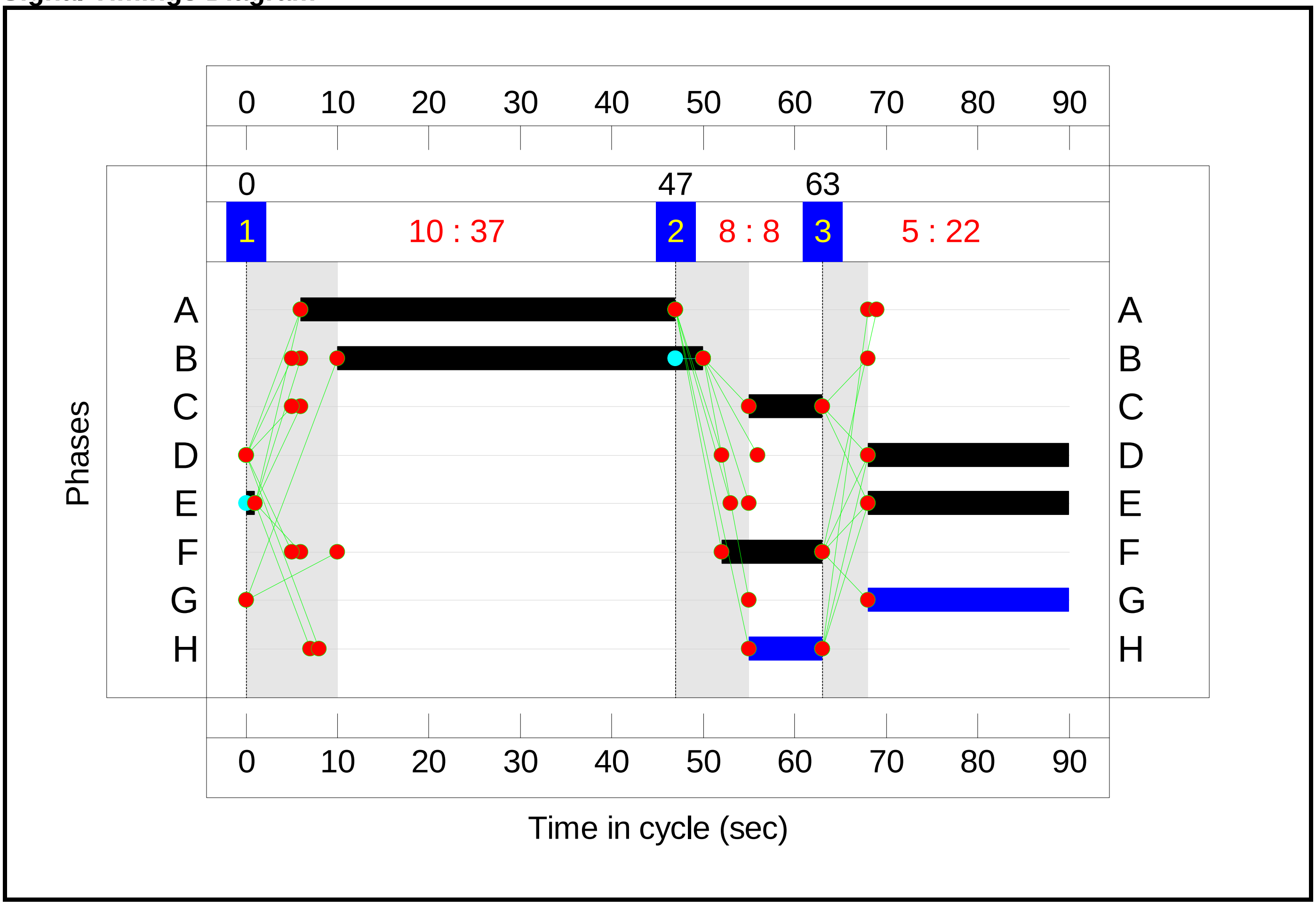
Stage Sequence Diagram



Stage Timings

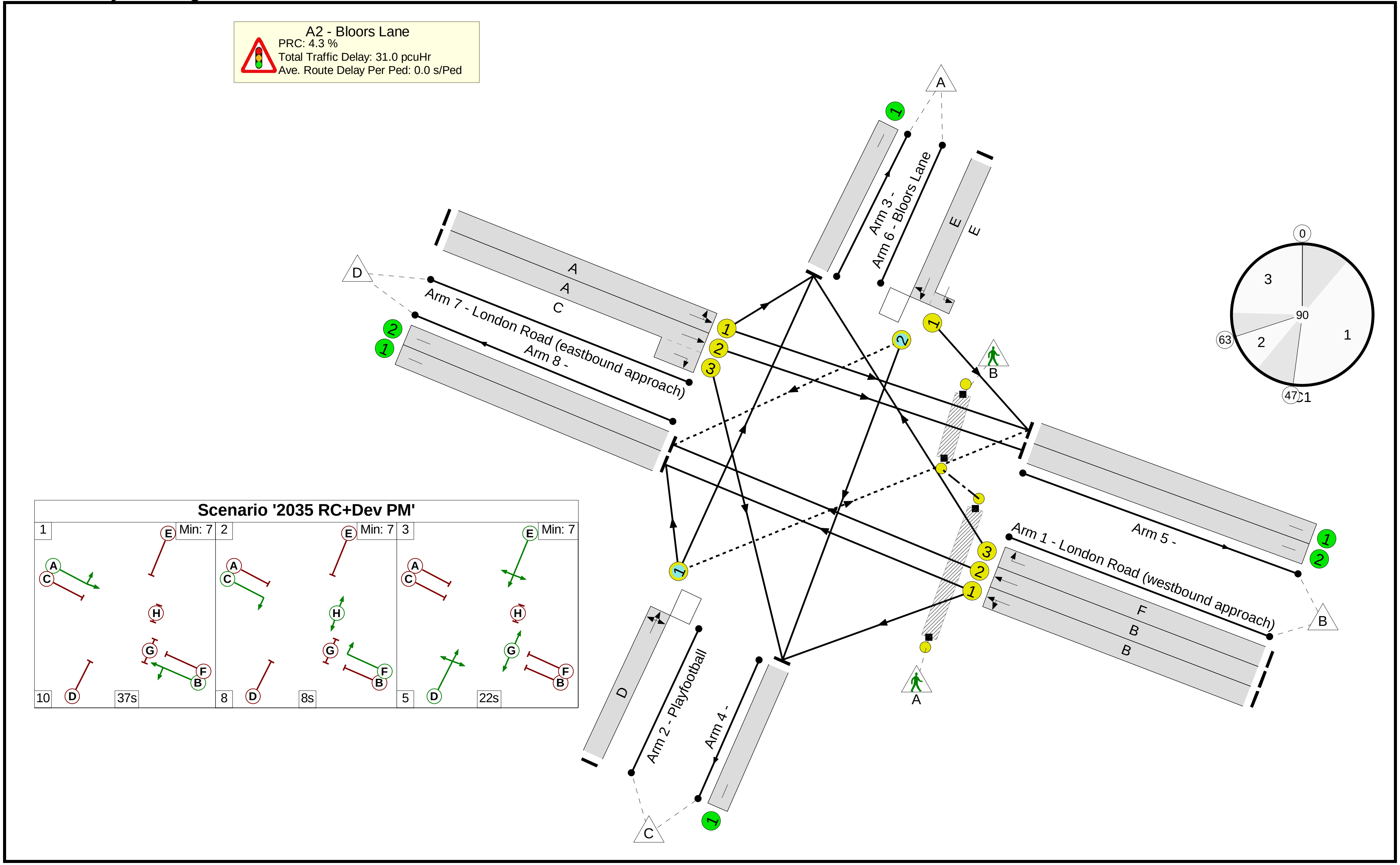
Stage	1	2	3
Duration	37	8	22
Change Point	0	47	63

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A2 Bloors Lane Signal Junction	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.3%**
A2 - Bloors Lane	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.3%**
1/1	London Road (westbound approach) Left Ahead	U	N/A	N/A	B		1	40	-	411	1893	862	47.7%
1/2	London Road (westbound approach) Ahead	U	N/A	N/A	B		1	40	-	463	2055	936	49.5%
1/3	London Road (westbound approach) Right	U	N/A	N/A	F		1	11	-	197	1741	232	84.9%
2/1	Playfootball Ahead Right Left	O	N/A	N/A	D		1	22	-	45	1732	171	26.3%
3/1		U	N/A	N/A	-		-	-	-	345	Inf	Inf	0.0%
4/1		U	N/A	N/A	-		-	-	-	63	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	938	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	819	Inf	Inf	0.0%
6/2+6/1	Bloors Lane Ahead Left Right	O+U	N/A	N/A	E		1	23	-	391	1714:1687	107+359	83.9 : 83.9%
7/1	London Road (eastbound approach) Left Ahead	U	N/A	N/A	A		1	41	-	755	1929	900	83.9%
7/2+7/3	London Road (eastbound approach) Right Ahead	U	N/A	N/A	A C		1	41:8	-	839	2075:1741	949+23	86.3 : 86.3%
8/1		U	N/A	N/A	-		-	-	-	394	Inf	Inf	0.0%
8/2		U	N/A	N/A	-		-	-	-	542	Inf	Inf	0.0%
Ped Link: P1	London Road Entry	-	N/A	-	G		1	22	-	0	-	17600	0.0%

Full Input Data And Results

Ped Link: P2	London Road Exit	-	N/A	-	H		1	8	-	0	-	6400	0.0%
Item	**Arriving (pcu)**	**Leaving (pcu)**	**Turners In Gaps (pcu)**	**Turners When Unopposed (pcu)**	**Turners In Intergreen (pcu)**	**Uniform Delay (pcuHr)**	**Rand + Oversat Delay (pcuHr)**	**Storage Area Uniform Delay (pcuHr)**	**Total Delay (pcuHr)**	**Av. Delay Per PCU (s/pcu)**	**Max. Back of Uniform Queue (pcu)**	**Rand + Oversat Queue (pcu)**	**Mean Max Queue (pcu)**
Network: A2 Bloors Lane Signal Junction	**-**	**-**	**99**	**0**	**1**	**19.4**	**11.6**	**0.1**	**31.0**	**-**	**-**	**-**	**-**
A2 - Bloors Lane	**-**	**-**	**99**	**0**	**1**	**19.4**	**11.6**	**0.1**	**31.0**	**-**	**-**	**-**	**-**
1/1	411	411	-	-	-	1.9	0.5	-	2.4	21.0	7.1	0.5	7.5
1/2	463	463	-	-	-	2.2	0.5	-	2.7	21.0	8.1	0.5	8.6
1/3	197	197	-	-	-	2.1	2.5	-	4.5	83.1	4.8	2.5	7.2
2/1	45	45	21	0	0	0.3	0.2	0.1	0.6	47.6	0.8	0.2	1.0
3/1	345	345	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/1	63	63	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	938	938	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	819	819	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2+6/1	391	391	78	0	1	3.3	2.5	0.0	5.8	53.4	8.8	2.5	11.3
7/1	755	755	-	-	-	4.4	2.5	-	6.9	33.0	16.4	2.5	18.9
7/2+7/3	839	839	-	-	-	5.1	3.0	-	8.1	34.6	18.6	3.0	21.6
8/1	394	394	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/2	542	542	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0

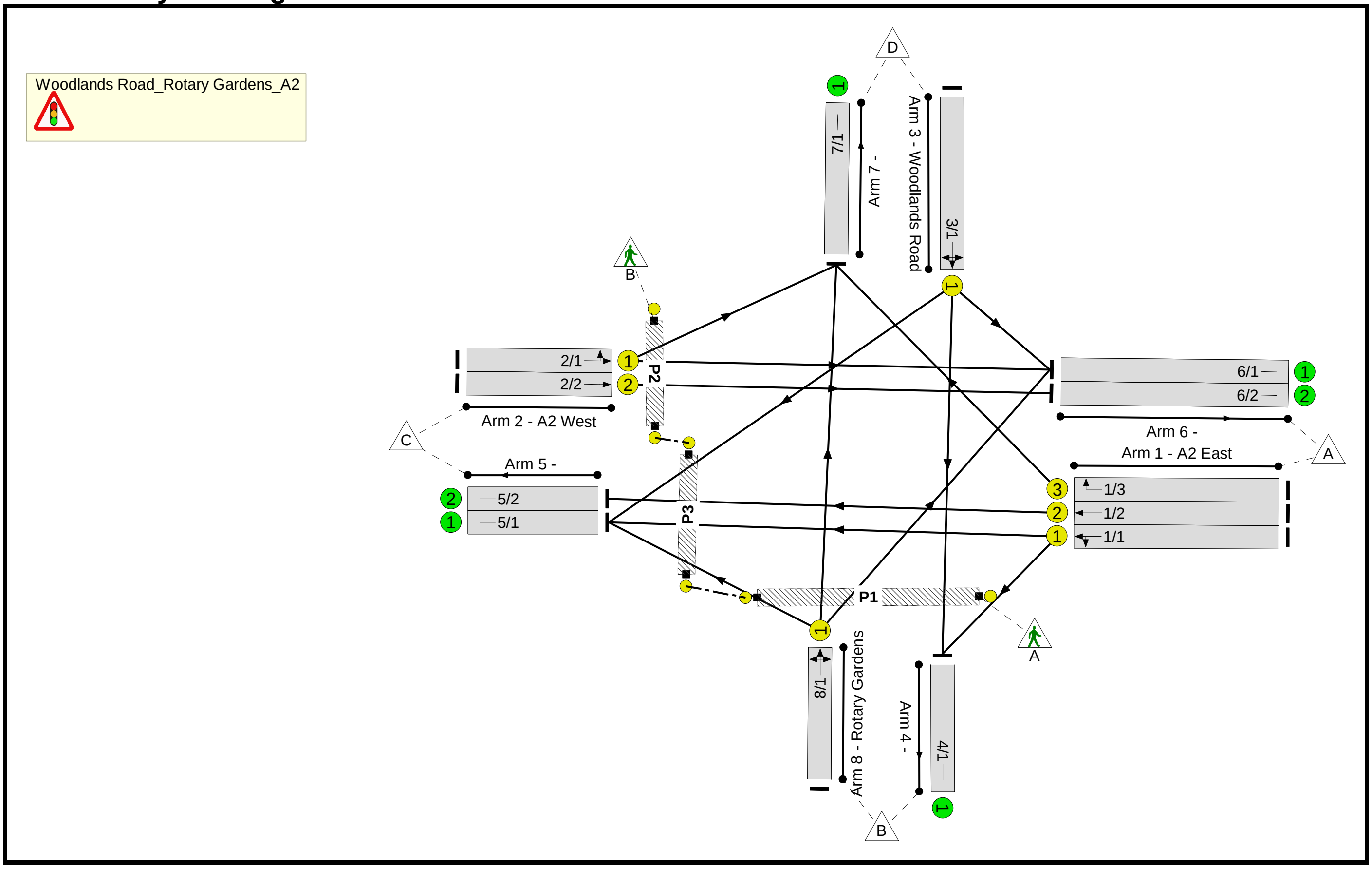
C1 PRC for Signalled Lanes (%): 4.3 Total Delay for Signalled Lanes (pcuHr): 31.04 Cycle Time (s): 90
PRC Over All Lanes (%): 4.3 Total Delay Over All Lanes(pcuHr): 31.04

Full Input Data And Results

User and Project Details

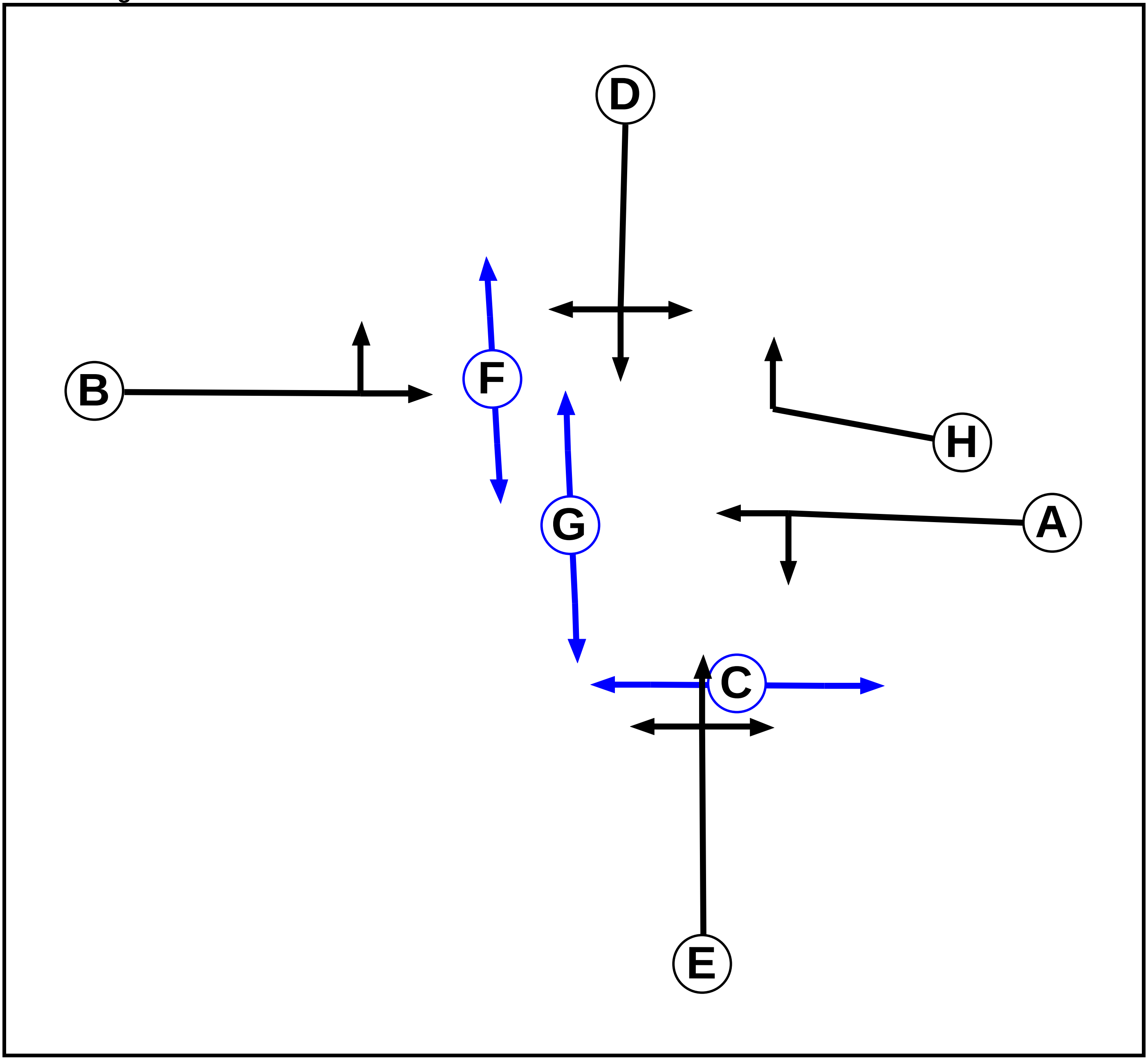
Project:	**Pump Farm, Lower Rainham**
Title:	
Location:	Woodlands Road_A2
Additional detail:	
File name:	Woodlands Road_Rotary Gardens_A2 RevA.lsg3x
Author:	
Company:	David Tucker Associates
Address:	

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Pedestrian		5	5
D	Traffic		7	7
E	Traffic		7	7
F	Pedestrian		5	5
G	Pedestrian		5	5
H	Traffic		7	7

Full Input Data And Results

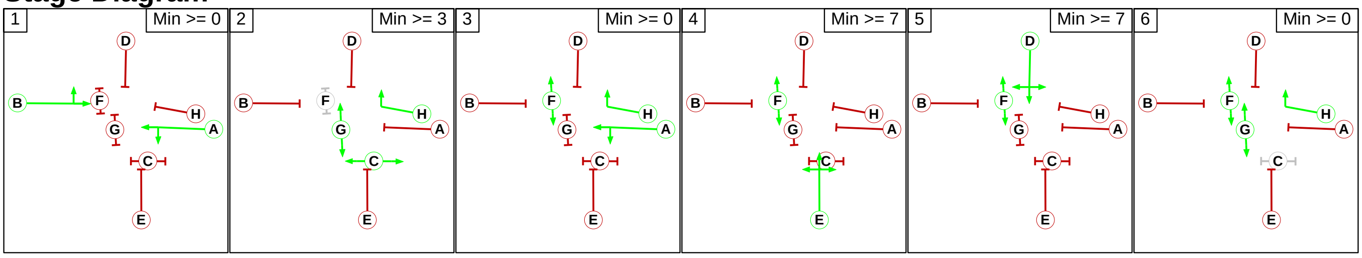
Phase Intergreens Matrix

		Starting Phase							
		A	B	C	D	E	F	G	H
Terminating Phase	A		-	6	5	5	-	8	-
	B	-		-	6	5	5	-	5
	C	12	-		12	12	-	-	-
	D	7	5	8		7	-	9	6
	E	5	5	5	7		-	6	5
	F	-	7	-	-	-		-	-
	G	7	-	-	7	7	-		-
	H	-	5	-	5	5	-	-	

Phases in Stage

Stage No.	Phases in Stage
1	A B
2	C G H
3	A F H
4	E F
5	D F
6	F G H

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
2	1	G	Losing	5	5
2	4	C	Losing	2	2
2	4	G	Losing	7	7
2	4	H	Losing	9	9
3	1	H	Losing	2	2
6	4	H	Losing	2	2

Full Input Data And Results

Prohibited Stage Change

		To Stage					
		1	2	3	4	5	6
From Stage	1		8	5	5	6	8
	2	12		12	14	12	0
	3	7	8		5	5	8
	4	7	6	5		7	6
	5	7	9	7	7		9
	6	7	0	7	7	7	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Woodlands Road_Rotary Gardens_A2
There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

Junction: Woodlands Road_Rotary Gardens_A2

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (A2 East)	U	A	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 4 Left	11.00
											Arm 5 Ahead	Inf
1/2 (A2 East)	U	A	2	3	60.0	Geom	-	3.00	0.00	N	Arm 5 Ahead	Inf
1/3 (A2 East)	U	H	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 7 Right	15.00
2/1 (A2 West)	U	B	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 6 Ahead	Inf
											Arm 7 Left	20.00
2/2 (A2 West)	U	B	2	3	60.0	Geom	-	3.20	0.00	N	Arm 6 Ahead	Inf
3/1 (Woodlands Road)	U	D	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 4 Ahead	Inf
											Arm 5 Right	18.00
											Arm 6 Left	10.00
4/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/2	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (Rotary Gardens)	U	E	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Left	10.00
											Arm 6 Right	19.00
											Arm 7 Ahead	Inf

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2035 RC AM'	08:00	09:00	01:00	
2: '2035 RC PM'	17:00	18:00	01:00	
3: '2035 RC+Dev AM'	08:00	09:00	01:00	
4: '2035 RC+Dev PM'	17:00	18:00	01:00	

Scenario 1: '2035 RC AM' (FG1: '2035 RC AM', Plan 2: 'Network Control Plan 2')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	0	3	1244	74	1321
	B	0	0	0	0	0
	C	1110	0	0	11	1121
	D	242	0	18	0	260
	Tot.	1352	3	1262	85	2702

Traffic Lane Flows

Lane	Scenario 1: 2035 RC AM
Junction: Woodlands Road_Rotary Gardens_A2	
1/1	596
1/2	651
1/3	74
2/1	535
2/2	586
3/1	260
4/1	3
5/1	611
5/2	651
6/1	766
6/2	586
7/1	85
8/1	0

Lane Saturation Flows

Junction: Woodlands Road_Rotary Gardens_A2								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A2 East)	3.00	0.00	Y	Arm 4 Left	11.00	0.5 %	1914	1914
				Arm 5 Ahead	Inf	99.5 %		
1/2 (A2 East)	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
1/3 (A2 East)	3.00	0.00	Y	Arm 7 Right	15.00	100.0 %	1741	1741
2/1 (A2 West)	3.20	0.00	Y	Arm 6 Ahead	Inf	97.9 %	1932	1932
				Arm 7 Left	20.00	2.1 %		
2/2 (A2 West)	3.20	0.00	N	Arm 6 Ahead	Inf	100.0 %	2075	2075
3/1 (Woodlands Road)	3.50	0.00	Y	Arm 4 Ahead	Inf	0.0 %	1716	1716
				Arm 5 Right	18.00	6.9 %		
				Arm 6 Left	10.00	93.1 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1 (Rotary Gardens)	3.50	0.00	Y	Arm 5 Left	10.00	0.0 %	1965	1965
				Arm 6 Right	19.00	0.0 %		
				Arm 7 Ahead	Inf	0.0 %		

Scenario 2: '2035 RC PM' (FG2: '2035 RC PM', Plan 2: 'Network Control Plan 2')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	4	1499	92	1595
	B	0	0	0	0	0
	C	1143	0	0	16	1159
	D	208	0	14	0	222
	Tot.	1351	4	1513	108	2976

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: 2035 RC PM
Junction: Woodlands Road_Rotary Gardens_A2	
1/1	720
1/2	783
1/3	92
2/1	553
2/2	606
3/1	222
4/1	4
5/1	730
5/2	783
6/1	745
6/2	606
7/1	108
8/1	0

Lane Saturation Flows

Junction: Woodlands Road_Rotary Gardens_A2								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A2 East)	3.00	0.00	Y	Arm 4 Left	11.00	0.6 %	1914	1914
				Arm 5 Ahead	Inf	99.4 %		
1/2 (A2 East)	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
1/3 (A2 East)	3.00	0.00	Y	Arm 7 Right	15.00	100.0 %	1741	1741
2/1 (A2 West)	3.20	0.00	Y	Arm 6 Ahead	Inf	97.1 %	1931	1931
				Arm 7 Left	20.00	2.9 %		
2/2 (A2 West)	3.20	0.00	N	Arm 6 Ahead	Inf	100.0 %	2075	2075
3/1 (Woodlands Road)	3.50	0.00	Y	Arm 4 Ahead	Inf	0.0 %	1715	1715
				Arm 5 Right	18.00	6.3 %		
				Arm 6 Left	10.00	93.7 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1 (Rotary Gardens)	3.50	0.00	Y	Arm 5 Left	10.00	0.0 %	1965	1965
				Arm 6 Right	19.00	0.0 %		
				Arm 7 Ahead	Inf	0.0 %		

Scenario 5: '2035 RC+Dev AM (No RG peds)' (FG3: '2035 RC+Dev AM', Plan 2: 'Network Control Plan 2')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	12	1454	99	1565
	B	0	0	0	0	0
	C	1320	0	0	7	1327
	D	302	0	17	0	319
	Tot.	1622	12	1471	106	3211

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 5: 2035 RC+Dev AM (No RG peds)
Junction: Woodlands Road_Rotary Gardens_A2	
1/1	702
1/2	764
1/3	99
2/1	635
2/2	692
3/1	319
4/1	12
5/1	707
5/2	764
6/1	930
6/2	692
7/1	106
8/1	0

Lane Saturation Flows

Junction: Woodlands Road_Rotary Gardens_A2								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A2 East)	3.00	0.00	Y	Arm 4 Left	11.00	1.7 %	1911	1911
				Arm 5 Ahead	Inf	98.3 %		
1/2 (A2 East)	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
1/3 (A2 East)	3.00	0.00	Y	Arm 7 Right	15.00	100.0 %	1741	1741
2/1 (A2 West)	3.20	0.00	Y	Arm 6 Ahead	Inf	98.9 %	1933	1933
				Arm 7 Left	20.00	1.1 %		
2/2 (A2 West)	3.20	0.00	N	Arm 6 Ahead	Inf	100.0 %	2075	2075
3/1 (Woodlands Road)	3.50	0.00	Y	Arm 4 Ahead	Inf	0.0 %	1714	1714
				Arm 5 Right	18.00	5.3 %		
				Arm 6 Left	10.00	94.7 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1 (Rotary Gardens)	3.50	0.00	Y	Arm 5 Left	10.00	0.0 %	1965	1965
				Arm 6 Right	19.00	0.0 %		
				Arm 7 Ahead	Inf	0.0 %		

Scenario 6: '2035 RC+Dev PM (No RG peds)' (FG4: '2035 RC+Dev PM', Plan 2: 'Network Control Plan 2')

Traffic Flows, Desired

Desired Flow :

	Destination					
		A	B	C	D	Tot.
Origin	A	0	3	1481	86	1570
	B	0	0	0	0	0
	C	1220	0	0	10	1230
	D	232	0	14	0	246
	Tot.	1452	3	1495	96	3046

Traffic Lane Flows

Lane	Scenario 6: 2035 RC+Dev PM (No RG peds)
Junction: Woodlands Road_Rotary Gardens_A2	
1/1	711
1/2	773
1/3	86
2/1	587
2/2	643
3/1	246
4/1	3
5/1	722
5/2	773
6/1	809
6/2	643
7/1	96
8/1	0

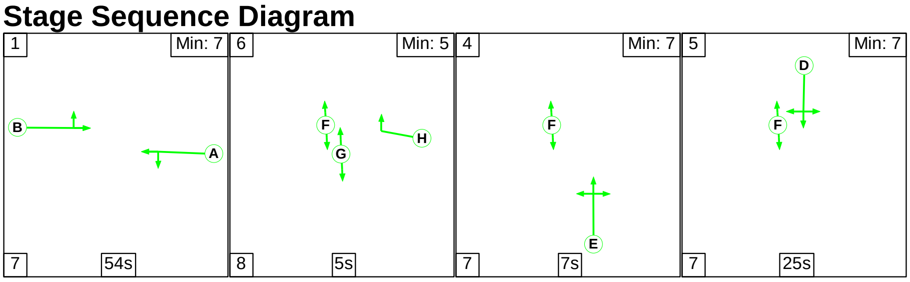
Full Input Data And Results

Lane Saturation Flows

Junction: Woodlands Road_Rotary Gardens_A2								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (A2 East)	3.00	0.00	Y	Arm 4 Left	11.00	0.4 %	1914	1914
				Arm 5 Ahead	Inf	99.6 %		
1/2 (A2 East)	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055	2055
1/3 (A2 East)	3.00	0.00	Y	Arm 7 Right	15.00	100.0 %	1741	1741
2/1 (A2 West)	3.20	0.00	Y	Arm 6 Ahead	Inf	98.3 %	1933	1933
				Arm 7 Left	20.00	1.7 %		
2/2 (A2 West)	3.20	0.00	N	Arm 6 Ahead	Inf	100.0 %	2075	2075
3/1 (Woodlands Road)	3.50	0.00	Y	Arm 4 Ahead	Inf	0.0 %	1714	1714
				Arm 5 Right	18.00	5.7 %		
				Arm 6 Left	10.00	94.3 %		
4/1	Infinite Saturation Flow						Inf	Inf
5/1	Infinite Saturation Flow						Inf	Inf
5/2	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
6/2	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1 (Rotary Gardens)	3.50	0.00	Y	Arm 5 Left	10.00	0.0 %	1965	1965
				Arm 6 Right	19.00	0.0 %		
				Arm 7 Ahead	Inf	0.0 %		

Scenario 1: '2035 RC AM' (FG1: '2035 RC AM', Plan 2: 'Network Control Plan 2')

Stage Sequence Diagram

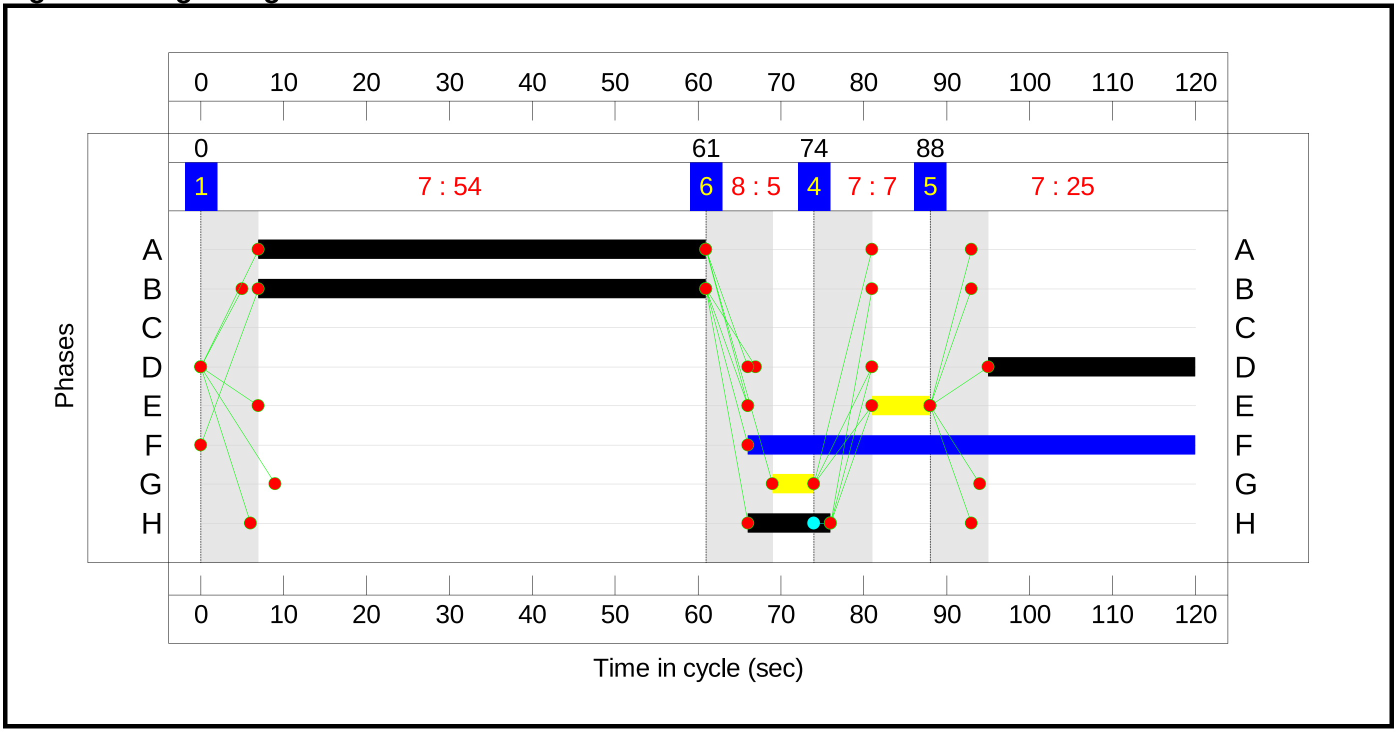


Stage Timings

Stage	**1**	**6**	**4**	**5**
Duration	54	5	7	25
Change Point	0	61	74	88

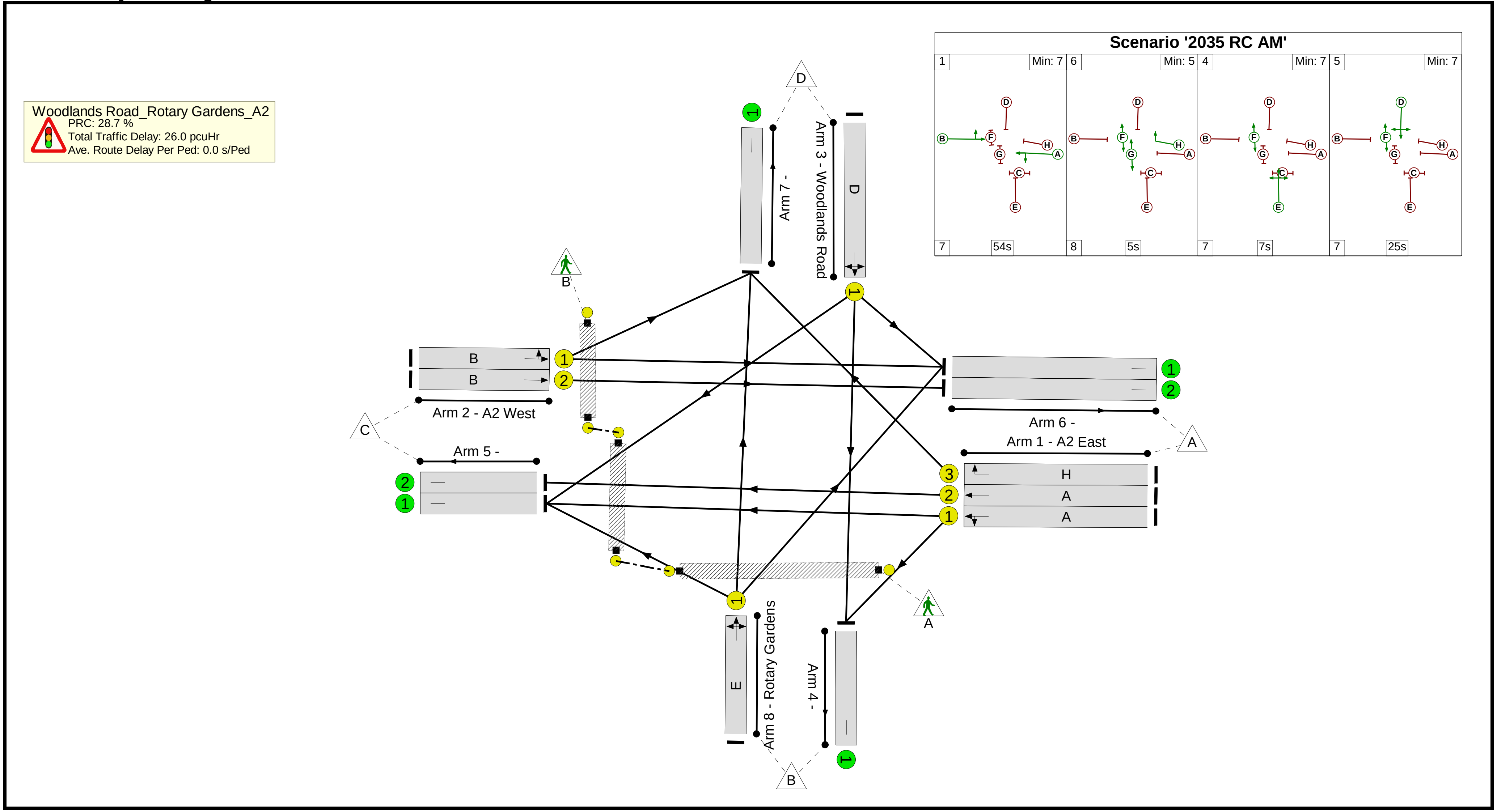
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**69.9%**
Woodlands Road_Rotary Gardens_A2	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**69.9%**
1/1	A2 East Left Ahead	U	N/A	N/A	A		1	54	-	596	1914	877	67.9%
1/2	A2 East Ahead	U	N/A	N/A	A		1	54	-	651	2055	942	69.1%
1/3	A2 East Right	U	N/A	N/A	H		1	10	-	74	1741	160	46.4%
2/1	A2 West Ahead Left	U	N/A	N/A	B		1	54	-	535	1932	885	60.4%
2/2	A2 West Ahead	U	N/A	N/A	B		1	54	-	586	2075	951	61.6%
3/1	Woodlands Road Ahead Right Left	U	N/A	N/A	D		1	25	-	260	1716	372	69.9%
4/1		U	N/A	N/A	-		-	-	-	3	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	611	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	651	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	766	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	586	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	85	Inf	Inf	0.0%
8/1	Rotary Gardens Left Right Ahead	U	N/A	N/A	E		1	7	-	0	1965	131	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C		0	0	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	F		1	54	-	0	-	32400	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	G		1	5	-	0	-	3000	0.0%

Full Input Data And Results

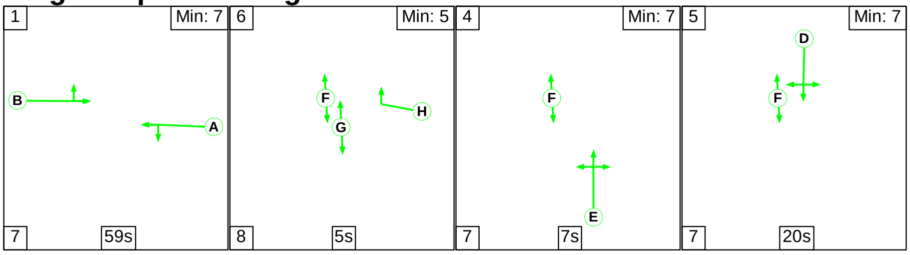
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**20.7**	**5.3**	**0.0**	**26.0**	**-**	**-**	**-**	**-**
Woodlands Road_Rotary Gardens_A2	**-**	**-**	**0**	**0**	**0**	**20.7**	**5.3**	**0.0**	**26.0**	**-**	**-**	**-**	**-**
1/1	596	596	-	-	-	4.2	1.1	-	5.3	31.9	15.6	1.1	16.6
1/2	651	651	-	-	-	4.7	1.1	-	5.8	31.9	17.2	1.1	18.3
1/3	74	74	-	-	-	1.1	0.4	-	1.5	72.5	2.3	0.4	2.8
2/1	535	535	-	-	-	3.6	0.8	-	4.4	29.5	13.2	0.8	14.0
2/2	586	586	-	-	-	4.0	0.8	-	4.8	29.4	14.7	0.8	15.4
3/1	260	260	-	-	-	3.1	1.1	-	4.3	59.2	7.9	1.1	9.1
4/1	3	3	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	611	611	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	651	651	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	766	766	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	586	586	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	85	85	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P3	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0

C1 PRC for Signalled Lanes (%): 28.7 Total Delay for Signalled Lanes (pcuHr): 25.99 Cycle Time (s): 120
PRC Over All Lanes (%): 28.7 Total Delay Over All Lanes(pcuHr): 25.99

Full Input Data And Results

Scenario 2: '2035 RC PM' (FG2: '2035 RC PM', Plan 2: 'Network Control Plan 2')

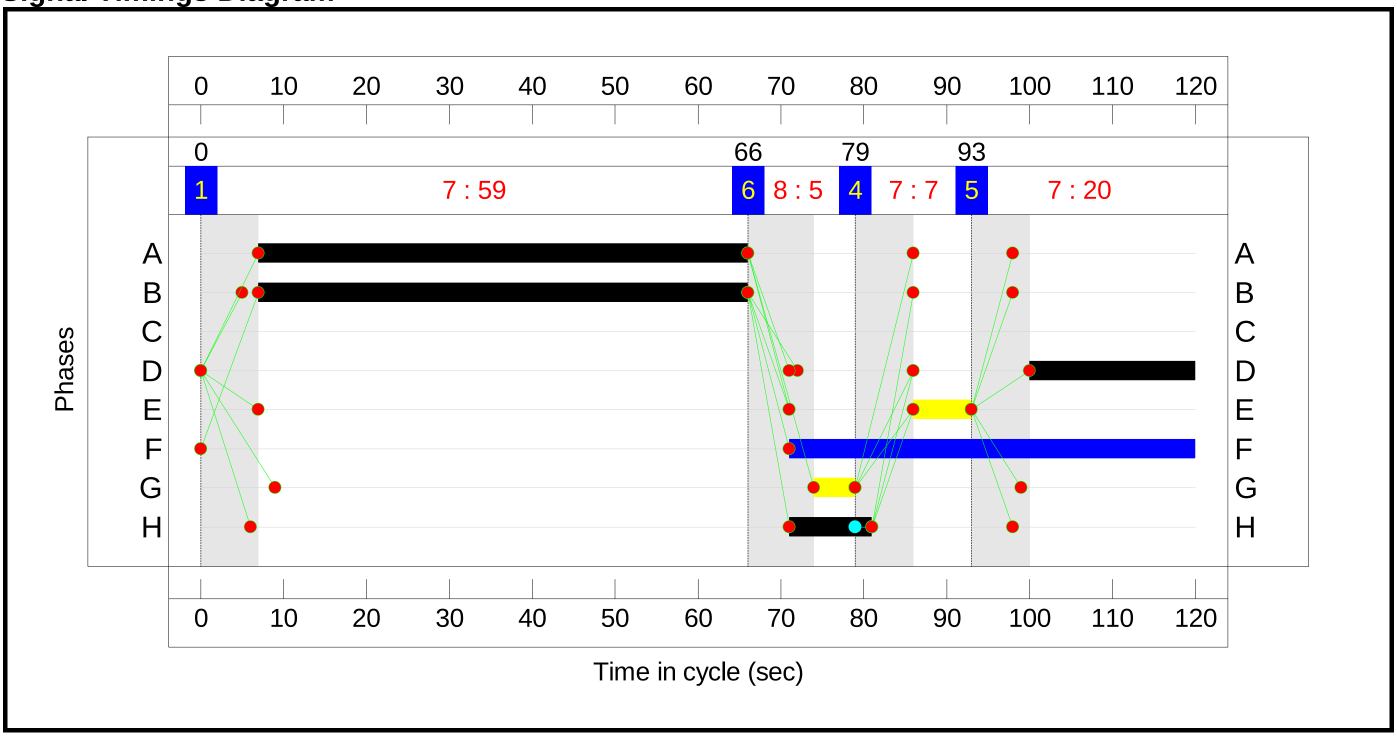
Stage Sequence Diagram



Stage Timings

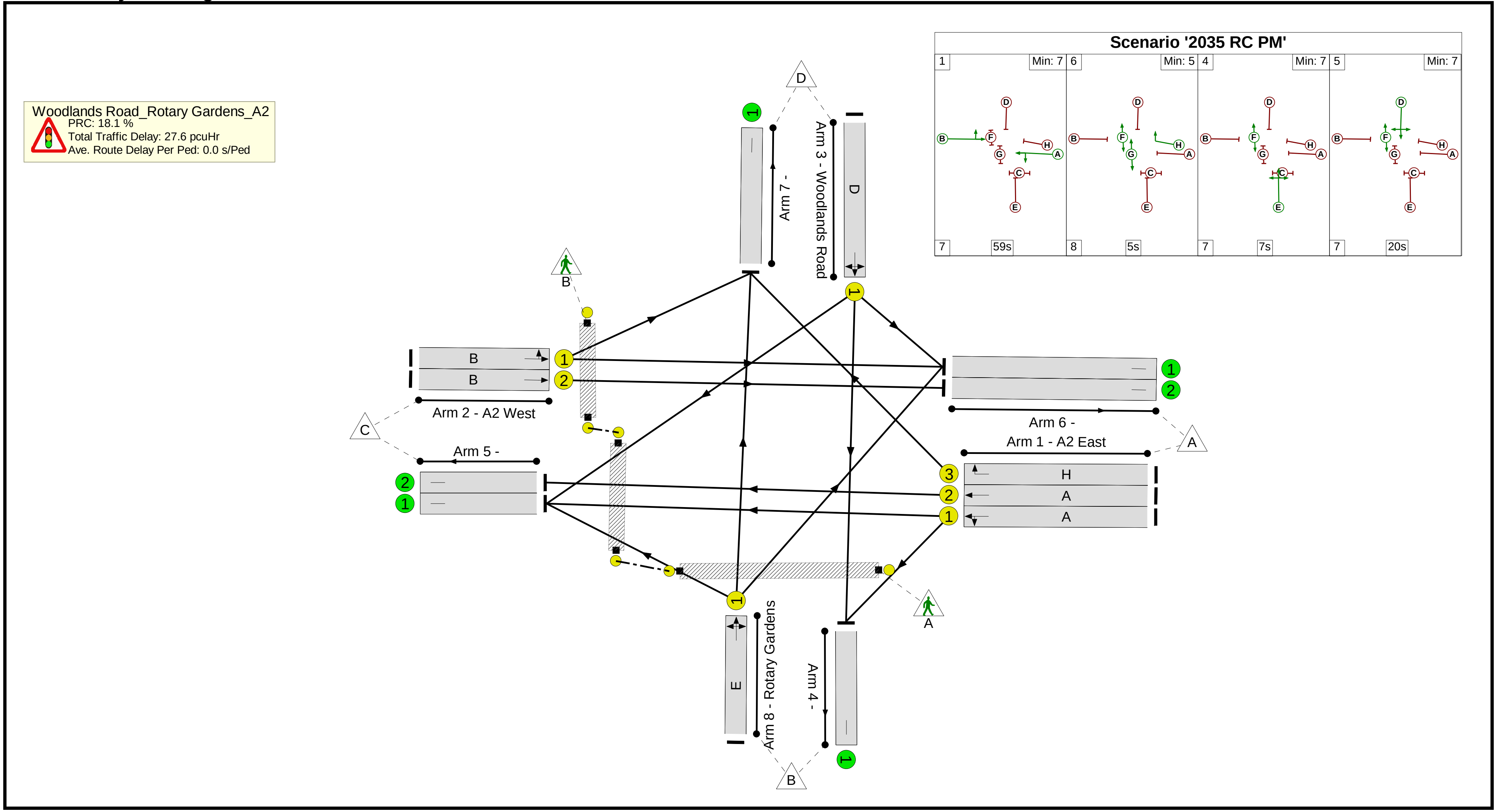
Stage	1	6	4	5
Duration	59	5	7	20
Change Point	0	66	79	93

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**76.2%**
Woodlands Road_Rotary Gardens_A2	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**76.2%**
1/1	A2 East Left Ahead	U	N/A	N/A	A		1	59	-	720	1914	957	75.2%
1/2	A2 East Ahead	U	N/A	N/A	A		1	59	-	783	2055	1027	76.2%
1/3	A2 East Right	U	N/A	N/A	H		1	10	-	92	1741	160	57.6%
2/1	A2 West Ahead Left	U	N/A	N/A	B		1	59	-	553	1931	966	57.3%
2/2	A2 West Ahead	U	N/A	N/A	B		1	59	-	606	2075	1038	58.4%
3/1	Woodlands Road Ahead Right Left	U	N/A	N/A	D		1	20	-	222	1715	300	74.0%
4/1		U	N/A	N/A	-		-	-	-	4	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	730	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	783	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	745	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	606	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	108	Inf	Inf	0.0%
8/1	Rotary Gardens Left Right Ahead	U	N/A	N/A	E		1	7	-	0	1965	131	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C		0	0	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	F		1	49	-	0	-	29400	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	G		1	5	-	0	-	3000	0.0%

Full Input Data And Results

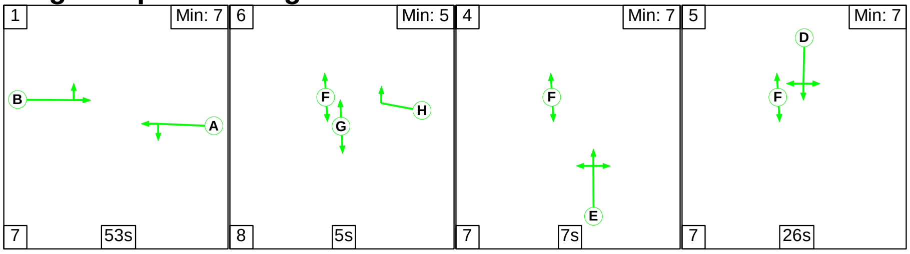
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**21.1**	**6.5**	**0.0**	**27.6**	**-**	**-**	**-**	**-**
Woodlands Road_Rotary Gardens_A2	**-**	**-**	**0**	**0**	**0**	**21.1**	**6.5**	**0.0**	**27.6**	**-**	**-**	**-**	**-**
1/1	720	720	-	-	-	4.8	1.5	-	6.3	31.5	19.2	1.5	20.7
1/2	783	783	-	-	-	5.3	1.6	-	6.9	31.5	20.9	1.6	22.5
1/3	92	92	-	-	-	1.3	0.7	-	2.0	78.4	2.9	0.7	3.6
2/1	553	553	-	-	-	3.2	0.7	-	3.9	25.4	12.9	0.7	13.6
2/2	606	606	-	-	-	3.6	0.7	-	4.3	25.3	14.1	0.7	14.8
3/1	222	222	-	-	-	2.9	1.4	-	4.3	69.2	7.0	1.4	8.3
4/1	4	4	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	730	730	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	783	783	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	745	745	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	606	606	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	108	108	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P3	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0

C1 PRC for Signalled Lanes (%): 18.1 Total Delay for Signalled Lanes (pcuHr): 27.59 Cycle Time (s): 120
PRC Over All Lanes (%): 18.1 Total Delay Over All Lanes(pcuHr): 27.59

Full Input Data And Results

Scenario 5: '2035 RC+Dev AM (No RG peds)' (FG3: '2035 RC+Dev AM', Plan 2: 'Network Control Plan 2')

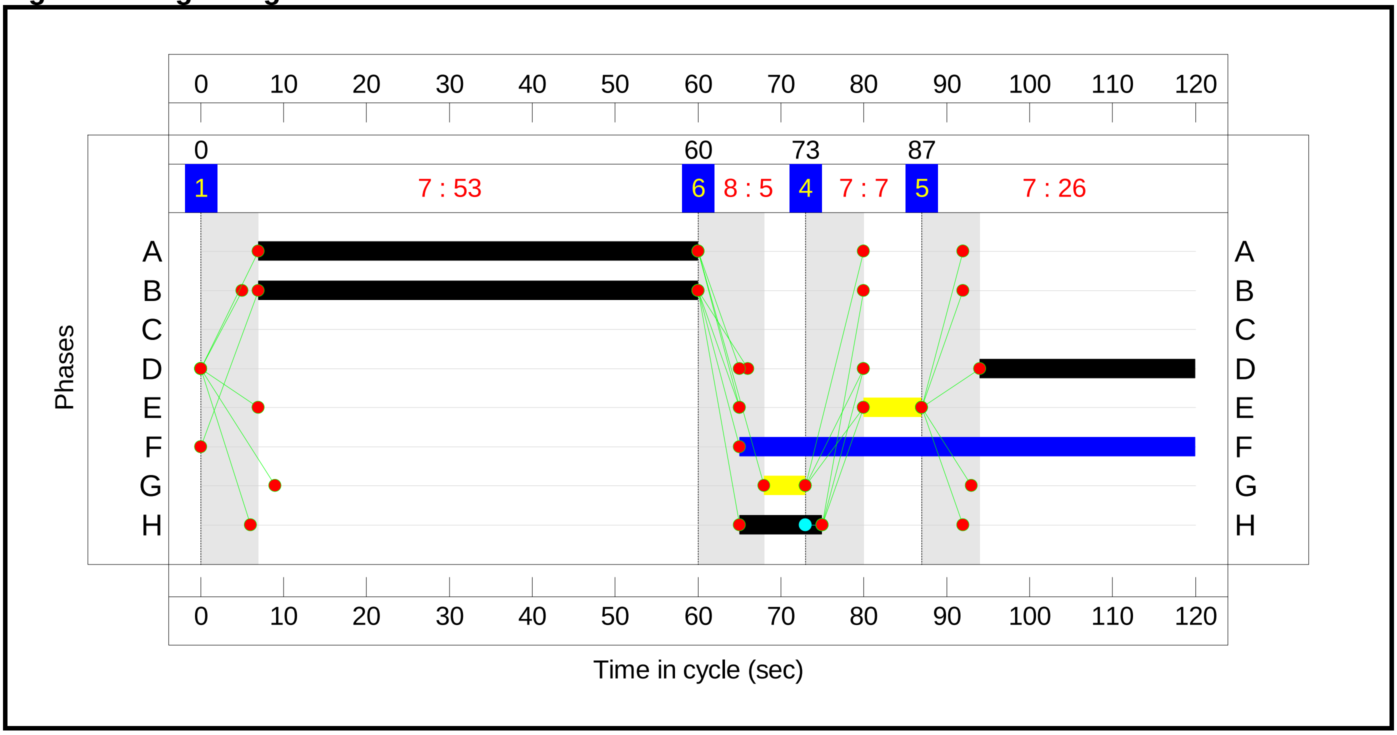
Stage Sequence Diagram



Stage Timings

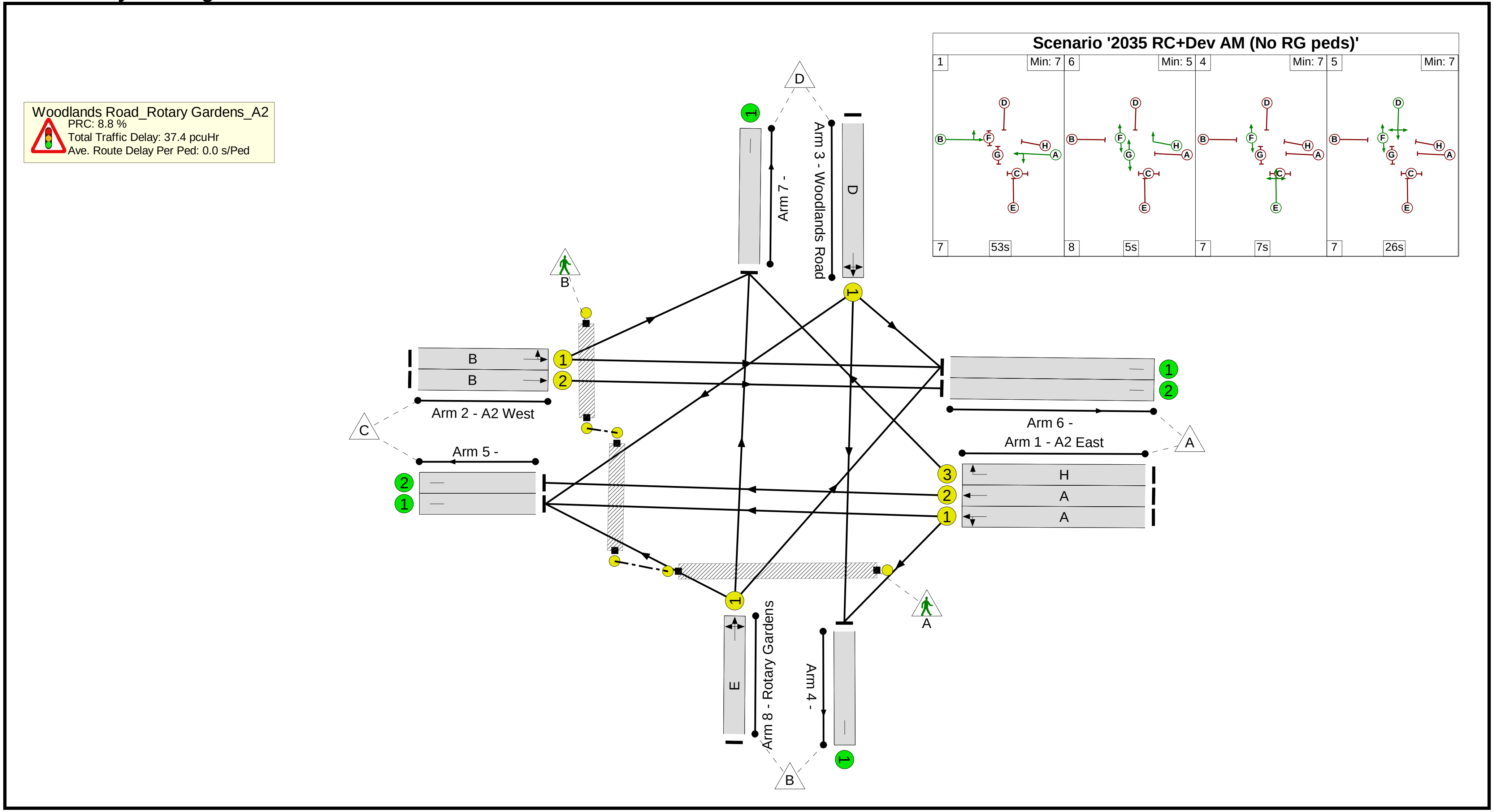
Stage	1	6	4	5
Duration	53	5	7	26
Change Point	0	60	73	87

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**82.7%**
Woodlands Road_Rotary Gardens_A2	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**82.7%**
1/1	A2 East Left Ahead	U	N/A	N/A	A		1	53	-	702	1911	860	81.6%
1/2	A2 East Ahead	U	N/A	N/A	A		1	53	-	764	2055	925	82.6%
1/3	A2 East Right	U	N/A	N/A	H		1	10	-	99	1741	160	62.0%
2/1	A2 West Ahead Left	U	N/A	N/A	B		1	53	-	635	1933	870	73.0%
2/2	A2 West Ahead	U	N/A	N/A	B		1	53	-	692	2075	934	74.1%
3/1	Woodlands Road Ahead Right Left	U	N/A	N/A	D		1	26	-	319	1714	386	82.7%
4/1		U	N/A	N/A	-		-	-	-	12	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	707	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	764	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	930	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	692	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	106	Inf	Inf	0.0%
8/1	Rotary Gardens Left Right Ahead	U	N/A	N/A	E		1	7	-	0	1965	131	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C		0	0	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	F		1	55	-	0	-	33000	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	G		1	5	-	0	-	3000	0.0%

Full Input Data And Results

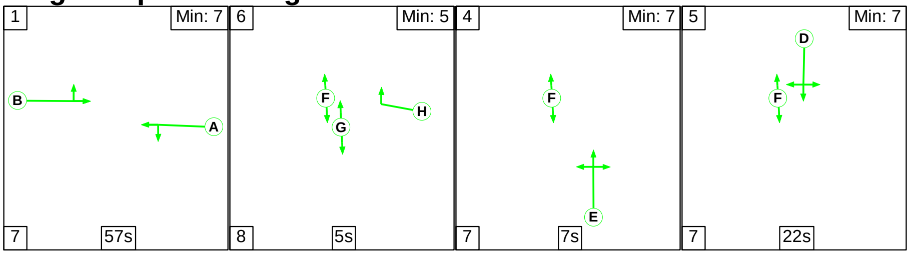
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**27.1**	**10.3**	**0.0**	**37.4**	**-**	**-**	**-**	**-**
Woodlands Road_Rotary Gardens_A2	**-**	**-**	**0**	**0**	**0**	**27.1**	**10.3**	**0.0**	**37.4**	**-**	**-**	**-**	**-**
1/1	702	702	-	-	-	5.6	2.2	-	7.8	39.8	20.3	2.2	22.4
1/2	764	764	-	-	-	6.1	2.3	-	8.4	39.8	22.3	2.3	24.6
1/3	99	99	-	-	-	1.4	0.8	-	2.2	81.5	3.2	0.8	4.0
2/1	635	635	-	-	-	4.8	1.3	-	6.1	34.6	17.3	1.3	18.6
2/2	692	692	-	-	-	5.2	1.4	-	6.6	34.6	19.0	1.4	20.4
3/1	319	319	-	-	-	3.9	2.2	-	6.2	69.6	10.1	2.2	12.3
4/1	12	12	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	707	707	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	764	764	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	930	930	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	692	692	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	106	106	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P3	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0

C1 PRC for Signalled Lanes (%): 8.8 Total Delay for Signalled Lanes (pcuHr): 37.36 Cycle Time (s): 120
PRC Over All Lanes (%): 8.8 Total Delay Over All Lanes(pcuHr): 37.36

Full Input Data And Results

Scenario 6: '2035 RC+Dev PM (No RG peds)' (FG4: '2035 RC+Dev PM', Plan 2: 'Network Control Plan 2')

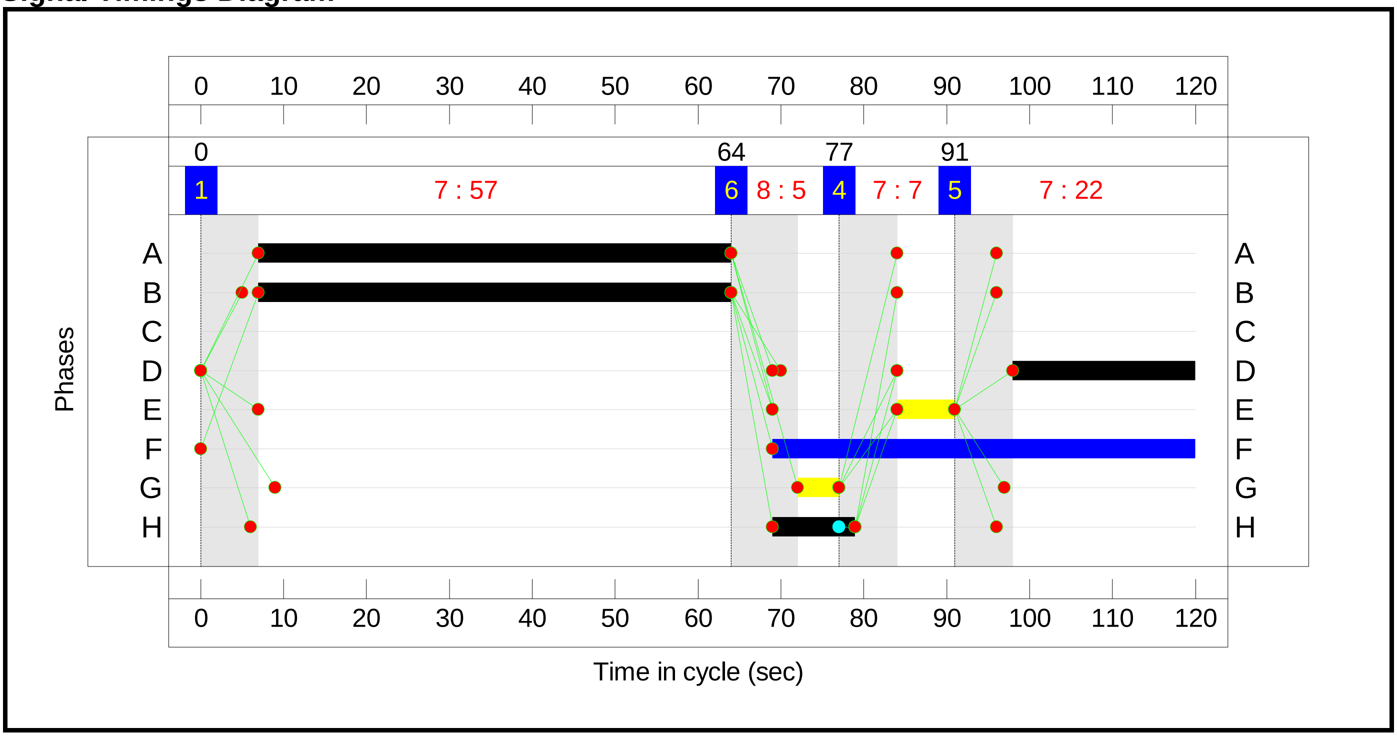
Stage Sequence Diagram



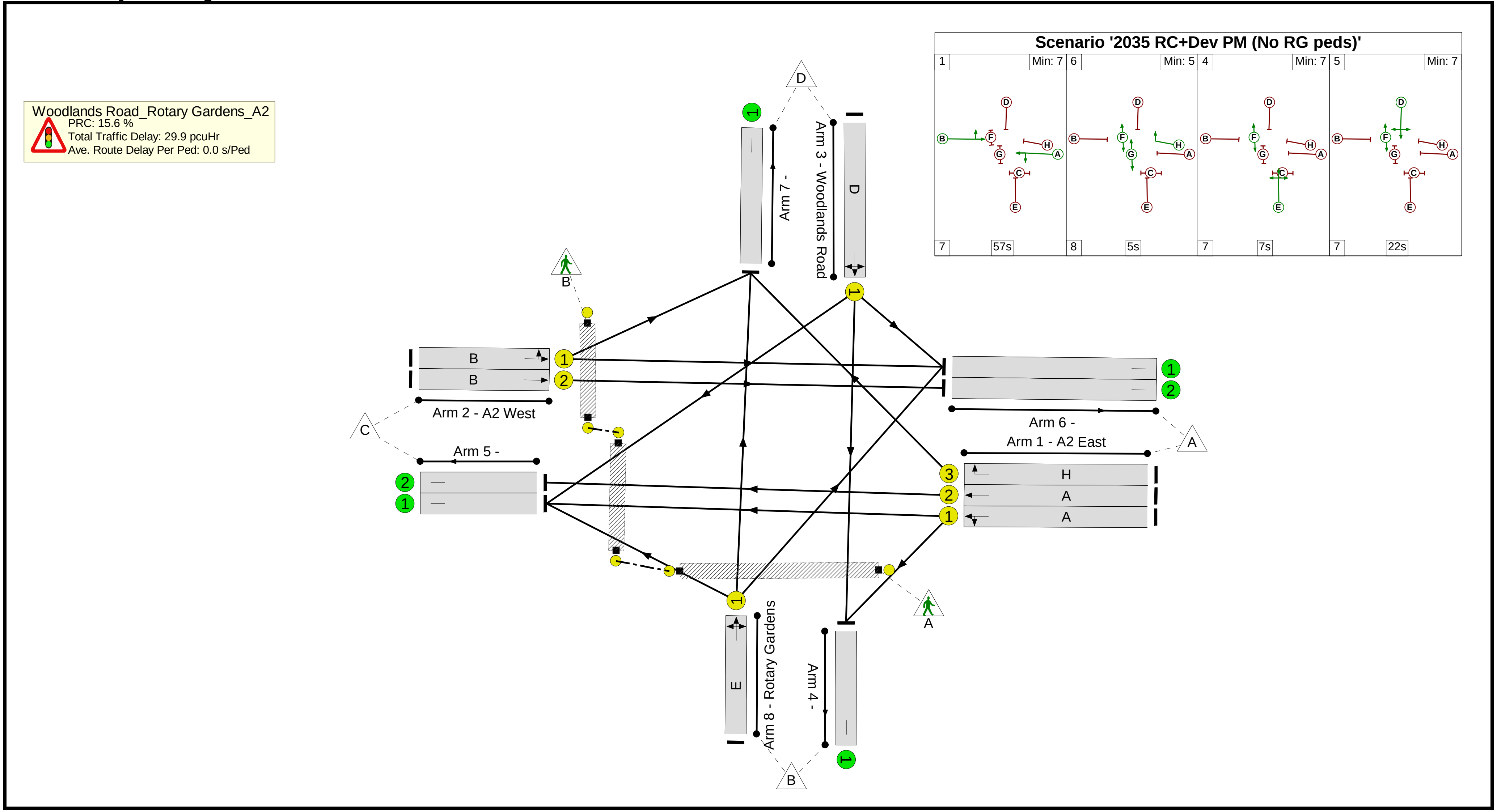
Stage Timings

Stage	1	6	4	5
Duration	57	5	7	22
Change Point	0	64	77	91

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**77.8%**
Woodlands Road_Rotary Gardens_A2	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**77.8%**
1/1	A2 East Left Ahead	U	N/A	N/A	A		1	57	-	711	1914	925	76.9%
1/2	A2 East Ahead	U	N/A	N/A	A		1	57	-	773	2055	993	77.8%
1/3	A2 East Right	U	N/A	N/A	H		1	10	-	86	1741	160	53.9%
2/1	A2 West Ahead Left	U	N/A	N/A	B		1	57	-	587	1933	934	62.8%
2/2	A2 West Ahead	U	N/A	N/A	B		1	57	-	643	2075	1003	64.1%
3/1	Woodlands Road Ahead Right Left	U	N/A	N/A	D		1	22	-	246	1714	329	74.9%
4/1		U	N/A	N/A	-		-	-	-	3	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	722	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	773	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	809	Inf	Inf	0.0%
6/2		U	N/A	N/A	-		-	-	-	643	Inf	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	96	Inf	Inf	0.0%
8/1	Rotary Gardens Left Right Ahead	U	N/A	N/A	E		1	7	-	0	1965	131	0.0%
Ped Link: P1	Unnamed Ped Link	-	N/A	-	C		0	0	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	N/A	-	F		1	51	-	0	-	30600	0.0%
Ped Link: P3	Unnamed Ped Link	-	N/A	-	G		1	5	-	0	-	3000	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**22.8**	**7.1**	**0.0**	**29.9**	**-**	**-**	**-**	**-**
Woodlands Road_Rotary Gardens_A2	**-**	**-**	**0**	**0**	**0**	**22.8**	**7.1**	**0.0**	**29.9**	**-**	**-**	**-**	**-**
1/1	711	711	-	-	-	5.0	1.6	-	6.7	33.8	19.4	1.6	21.0
1/2	773	773	-	-	-	5.5	1.7	-	7.2	33.7	21.3	1.7	23.0
1/3	86	86	-	-	-	1.2	0.6	-	1.8	76.2	2.7	0.6	3.3
2/1	587	587	-	-	-	3.8	0.8	-	4.6	28.2	14.5	0.8	15.4
2/2	643	643	-	-	-	4.1	0.9	-	5.0	28.2	15.9	0.9	16.8
3/1	246	246	-	-	-	3.1	1.4	-	4.6	66.9	7.7	1.4	9.2
4/1	3	3	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	722	722	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	773	773	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	809	809	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/2	643	643	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	96	96	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	0	0	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P2	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0
Ped Link: P3	0	0	-	-	-	-	-	-	0.0	0.0	-	-	0.0

C1 PRC for Signalled Lanes (%): 15.6 Total Delay for Signalled Lanes (pcuHr): 29.92 Cycle Time (s): 120
PRC Over All Lanes (%): 15.6 Total Delay Over All Lanes(pcuHr): 29.92

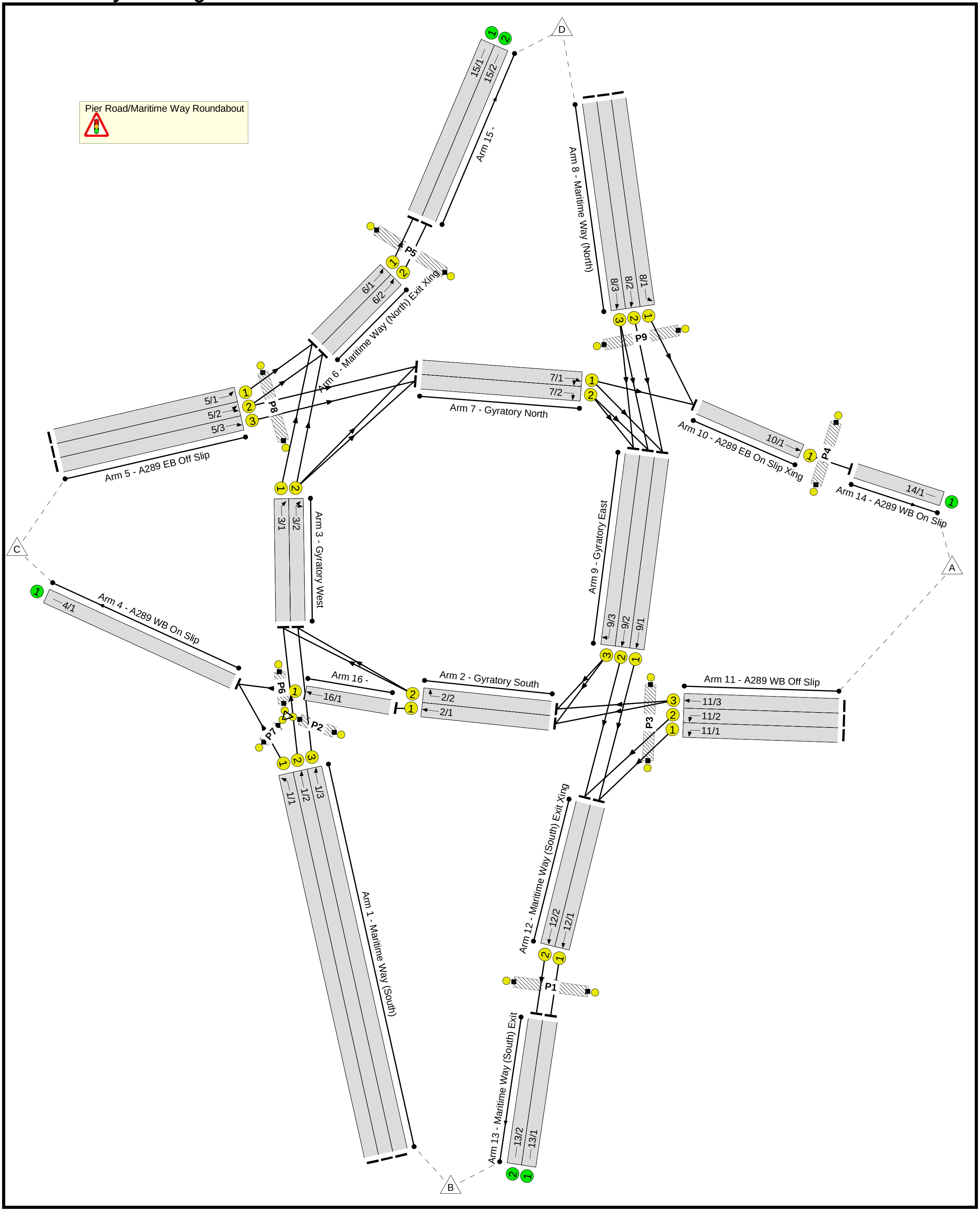
Full Input Data And Results

User and Project Details

Project:	**Lower Rainham**
Title:	
Location:	
Site Ref(s):	20230
Additional detail:	
File name:	Pier Road - Maritime Way RevA.lsg3x
Author:	RM
Company:	David Tucker Associates
Address:	Henley in Arden

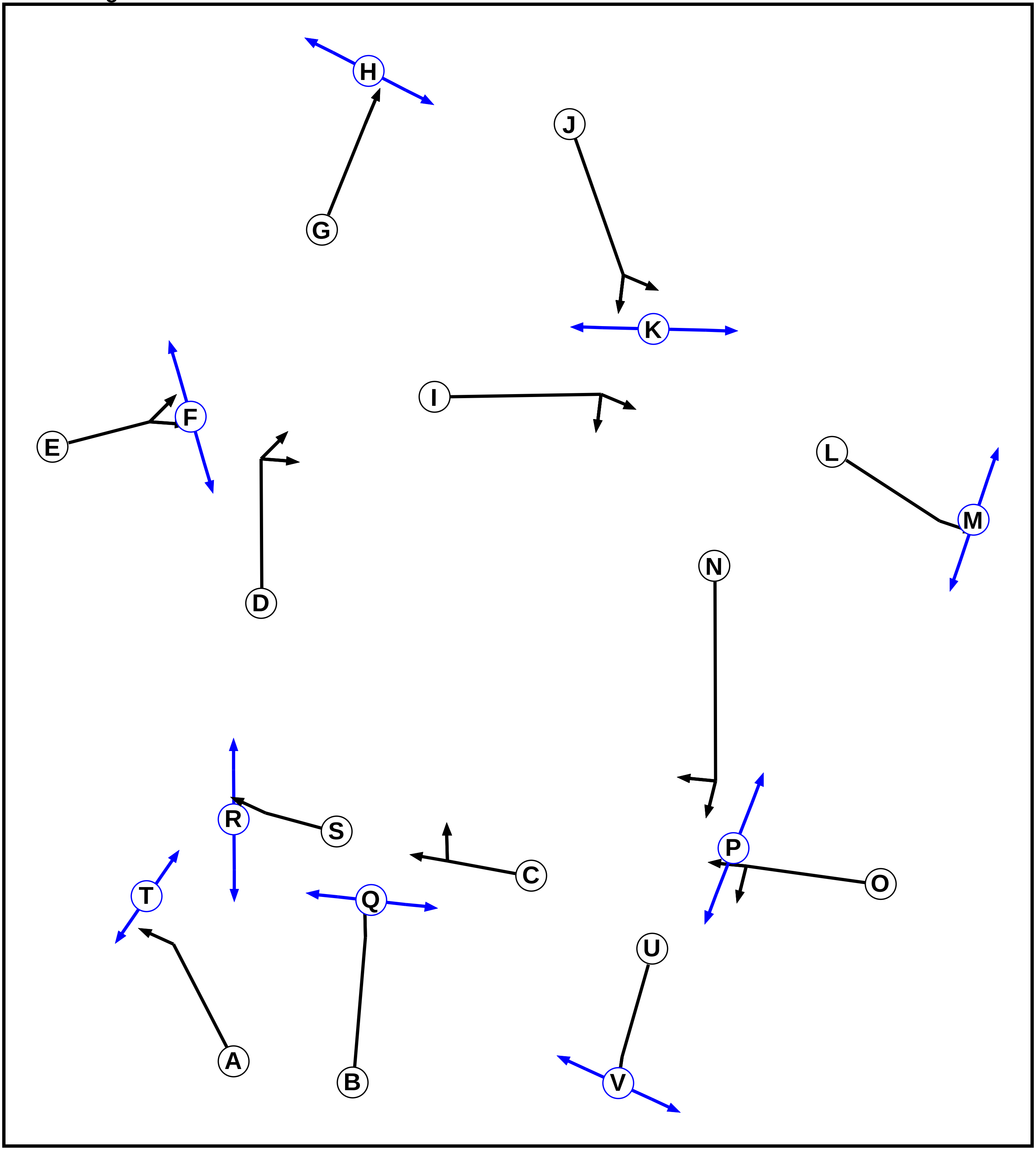
Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Full Input Data And Results

Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	6		7	7
B	Traffic	6		7	7
C	Traffic	6		7	2
D	Traffic	1		7	1
E	Traffic	1		7	7
F	Pedestrian	1		5	5
G	Traffic	2		7	7
H	Pedestrian	2		5	5
I	Traffic	3		7	1
J	Traffic	3		7	7
K	Pedestrian	3		5	5
L	Traffic	4		7	7
M	Pedestrian	4		5	5
N	Traffic	5		7	2
O	Traffic	5		7	7
P	Pedestrian	5		5	5
Q	Pedestrian	6		5	5
R	Pedestrian	6		5	5
S	Traffic	6		7	0
T	Pedestrian	6		5	5
U	Traffic	7		7	7
V	Pedestrian	7		5	5

Full Input Data And Results

Phase Intergreens Matrix

		Starting Phase																					
		A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
Terminating Phase	A		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-
	B	-		5	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-
	C	-	5		-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	-	-
	D	-	-	-		5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	E	-	-	-	5		5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	F	-	-	-	-	11		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	G	-	-	-	-	-	-		5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	H	-	-	-	-	-	-	8		-	-	-	-	-	-	-	-	-	-	-	-	-	-
	I	-	-	-	-	-	-	-	-		5	-	-	-	-	-	-	-	-	-	-	-	-
	J	-	-	-	-	-	-	-	-	5		5	-	-	-	-	-	-	-	-	-	-	-
	K	-	-	-	-	-	-	-	-	-	11		-	-	-	-	-	-	-	-	-	-	-
	L	-	-	-	-	-	-	-	-	-	-	-		5	-	-	-	-	-	-	-	-	-
	M	-	-	-	-	-	-	-	-	-	-	-	7		-	-	-	-	-	-	-	-	-
	N	-	-	-	-	-	-	-	-	-	-	-	-	-		5	-	-	-	-	-	-	-
	O	-	-	-	-	-	-	-	-	-	-	-	-	-	5		5	-	-	-	-	-	-
	P	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10		-	-	-	-	-	-
	Q	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	-	-
	R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		7	-	-	-
	S	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5		-	-	-
	T	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-	-
	U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		5
	V	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	

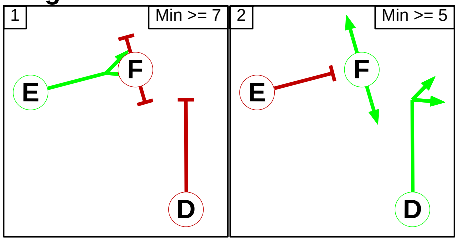
Phases in Stage

Stream	Stage No.	Phases in Stage
1	1	E
1	2	D F
2	1	G
2	2	H
3	1	I K
3	2	J
4	1	L
4	2	M
5	1	N P
5	2	O
6	1	A B R
6	2	C Q S T
7	1	V
7	2	U

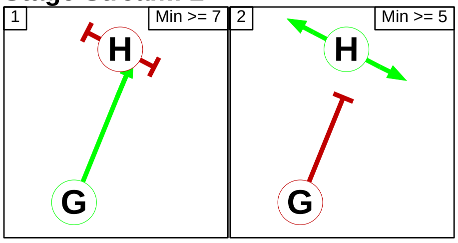
Full Input Data And Results

Stage Diagram

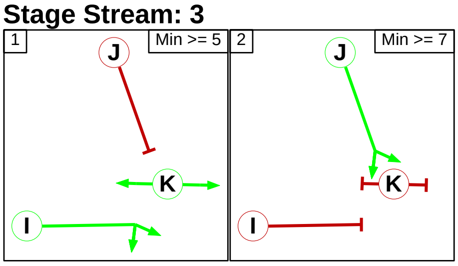
Stage Stream: 1



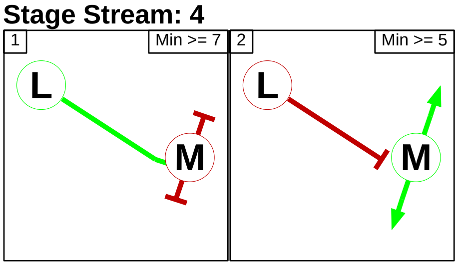
Stage Stream: 2



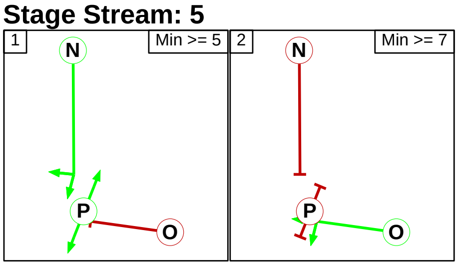
Stage Stream: 3



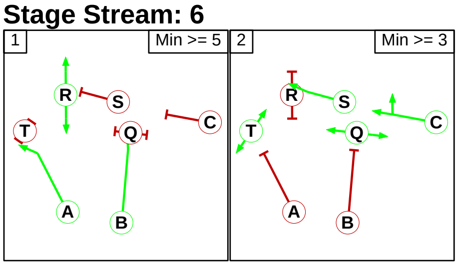
Stage Stream: 4



Stage Stream: 5

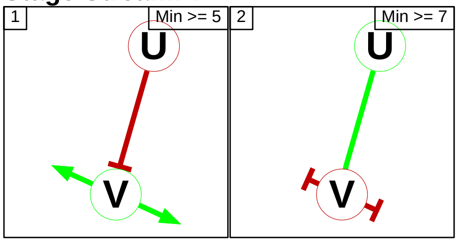


Stage Stream: 6



Full Input Data And Results

Stage Stream: 7



Phase Delays

Stage Stream: 1

Term. Stage	Start Stage	Phase	Type	Value	Cont value
2	1	D	Losing	6	6

Stage Stream: 2

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Stage Stream: 3

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	I	Losing	6	6

Stage Stream: 4

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Stage Stream: 5

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	N	Losing	5	5

Stage Stream: 6

Term. Stage	Start Stage	Phase	Type	Value	Cont value
2	1	C	Losing	5	5
2	1	S	Losing	8	8

Stage Stream: 7

Term. Stage	Start Stage	Phase	Type	Value	Cont value
There are no Phase Delays defined					

Prohibited Stage Change

Stage Stream: 1

	To Stage		
From Stage		1	2
	1		5
	2	11	

Full Input Data And Results

Stage Stream: 2

	To Stage	
From Stage	1	2
1		5
2	8	

Stage Stream: 3

	To Stage	
From Stage	1	2
1		11
2	5	

Stage Stream: 4

	To Stage	
From Stage	1	2
1		5
2	7	

Stage Stream: 5

	To Stage	
From Stage	1	2
1		10
2	5	

Stage Stream: 6

	To Stage	
From Stage	1	2
1		7
2	13	

Stage Stream: 7

	To Stage	
From Stage	1	2
1		9
2	5	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Pier Road/Maritime Way Roundabout
There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

Junction: Pier Road/Maritime Way Roundabout												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
1/1 (Maritime Way (South))	U	A	2	3	60.0	User	1900	-	-	-	-	-
1/2 (Maritime Way (South))	U	B	2	3	60.0	User	1900	-	-	-	-	-
1/3 (Maritime Way (South))	U	B	2	3	60.0	User	1900	-	-	-	-	-
2/1 (Gyratory South)	U	C	2	3	8.7	User	1900	-	-	-	-	-
2/2 (Gyratory South)	U	C	2	3	8.7	User	1900	-	-	-	-	-
3/1 (Gyratory West)	U	D	2	3	10.4	User	1900	-	-	-	-	-
3/2 (Gyratory West)	U	D	2	3	10.4	User	1900	-	-	-	-	-
4/1 (A289 WB On Slip)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (A289 EB Off Slip)	U	E	2	3	60.0	User	1900	-	-	-	-	-
5/2 (A289 EB Off Slip)	U	E	2	3	60.0	User	1900	-	-	-	-	-
5/3 (A289 EB Off Slip)	U	E	2	3	60.0	User	1900	-	-	-	-	-
6/1 (Maritime Way (North) Exit Xing)	U	G	2	3	14.8	User	1900	-	-	-	-	-
6/2 (Maritime Way (North) Exit Xing)	U	G	2	3	14.8	User	1900	-	-	-	-	-
7/1 (Gyratory North)	U	I	2	3	11.8	User	1900	-	-	-	-	-
7/2 (Gyratory North)	U	I	2	3	11.8	User	1900	-	-	-	-	-
8/1 (Maritime Way (North))	U	J	2	3	60.0	User	1900	-	-	-	-	-
8/2 (Maritime Way (North))	U	J	2	3	60.0	User	1900	-	-	-	-	-
8/3 (Maritime Way (North))	U	J	2	3	60.0	User	1900	-	-	-	-	-
9/1 (Gyratory East)	U	N	2	3	9.7	User	1900	-	-	-	-	-

9/2 (Gyratory East)	U	N	2	3	9.7	User	1900	-	-	-	-	-	-
9/3 (Gyratory East)	U	N	2	3	9.7	User	1900	-	-	-	-	-	-
10/1 (A289 EB On Slip Xing)	U	L	2	3	5.7	User	1900	-	-	-	-	-	-
11/1 (A289 WB Off Slip)	U	O	2	3	60.0	User	1900	-	-	-	-	-	-
11/2 (A289 WB Off Slip)	U	O	2	3	60.0	User	1900	-	-	-	-	-	-
11/3 (A289 WB Off Slip)	U	O	2	3	60.0	User	1900	-	-	-	-	-	-
12/1 (Maritime Way (South) Exit Xing)	U	U	2	3	11.3	User	1900	-	-	-	-	-	-
12/2 (Maritime Way (South) Exit Xing)	U	U	2	3	11.3	User	1900	-	-	-	-	-	-
13/1 (Maritime Way (South) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-	-
13/2 (Maritime Way (South) Exit)	U		2	3	60.0	Inf	-	-	-	-	-	-	-
14/1 (A289 WB On Slip)	U		2	3	60.0	Inf	-	-	-	-	-	-	-
15/1	U		2	3	60.0	Inf	-	-	-	-	-	-	-
15/2	U		2	3	60.0	Inf	-	-	-	-	-	-	-
16/1	U	S	2	3	6.1	User	1900	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'RC AM'	08:00	09:00	01:00	
2: 'RC + Lower Rainham 1250 Homes AM'	08:00	09:00	01:00	
3: 'RC PM'	17:00	18:00	01:00	
4: 'RC + Lower Rainham 1250 Homes PM'	17:00	18:00	01:00	

Scenario 1: 'AM Base' (FG1: 'RC AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	78	1002	0	226	1306
	B	455	2	724	20	1201
	C	0	915	84	289	1288
	D	210	522	71	0	803
	Tot.	743	2441	879	535	4598

Traffic Lane Flows

Lane	Scenario 1: AM Base
Junction: Pier Road/Maritime Way Roundabout	
1/1	724
1/2	20
1/3	457
2/1	155
2/2	304
3/1	246
3/2	535
4/1	879
5/1	285
5/2	394
5/3	609
6/1	531
6/2	4
7/1	924
7/2	610
8/1	210
8/2	300
8/3	293
9/1	691
9/2	748
9/3	155
10/1	743
11/1	504
11/2	498
11/3	304
12/1	1195
12/2	1246
13/1	1195
13/2	1246
14/1	743
15/1	531
15/2	4
16/1	155

Lane Saturation Flows

Junction: Pier Road/Maritime Way Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Maritime Way (South) Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (Maritime Way (South) Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
1/3 (Maritime Way (South) Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Gyratory South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
2/2 (Gyratory South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (Gyratory West Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (Gyratory West Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
4/1 (A289 WB On Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (A289 EB Off Slip Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (A289 EB Off Slip Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
5/3 (A289 EB Off Slip Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
6/1 (Maritime Way (North) Exit Xing Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Maritime Way (North) Exit Xing Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/1 (Gyratory North Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
7/2 (Gyratory North Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
8/1 (Maritime Way (North) Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
8/2 (Maritime Way (North) Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
8/3 (Maritime Way (North) Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (Gyratory East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
9/2 (Gyratory East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
9/3 (Gyratory East Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
10/1 (A289 EB On Slip Xing Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
11/1 (A289 WB Off Slip Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900

11/2 (A289 WB Off Slip Lane 2)	This lane uses a directly entered Saturation Flow	1900	1900
11/3 (A289 WB Off Slip Lane 3)	This lane uses a directly entered Saturation Flow	1900	1900
12/1 (Maritime Way (South) Exit Xing Lane 1)	This lane uses a directly entered Saturation Flow	1900	1900
12/2 (Maritime Way (South) Exit Xing Lane 2)	This lane uses a directly entered Saturation Flow	1900	1900
13/1 (Maritime Way (South) Exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/2 (Maritime Way (South) Exit Lane 2)	Infinite Saturation Flow	Inf	Inf
14/1 (A289 WB On Slip Lane 1)	Infinite Saturation Flow	Inf	Inf
15/1	Infinite Saturation Flow	Inf	Inf
15/2	Infinite Saturation Flow	Inf	Inf
16/1	This lane uses a directly entered Saturation Flow	1900	1900

Scenario 2: 'AM Development' (FG2: 'RC + Lower Rainham 1250 Homes AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	157	1090	0	274	1521
	B	461	2	803	30	1296
	C	0	1054	98	387	1539
	D	275	516	75	0	866
	Tot.	893	2662	976	691	5222

Traffic Lane Flows

Lane	Scenario 2: AM Development
Junction: Pier Road/Maritime Way Roundabout	
1/1	803
1/2	30
1/3	463
2/1	173
2/2	431
3/1	304
3/2	620
4/1	976
5/1	380
5/2	476
5/3	683
6/1	684
6/2	7
7/1	1088
7/2	684
8/1	275
8/2	296
8/3	295
9/1	766
9/2	806
9/3	173
10/1	893
11/1	549
11/2	541
11/3	431
12/1	1315
12/2	1347
13/1	1315
13/2	1347
14/1	893
15/1	684
15/2	7
16/1	173

Full Input Data And Results

Lane Saturation Flows

Junction: Pier Road/Maritime Way Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Maritime Way (South) Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (Maritime Way (South) Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
1/3 (Maritime Way (South) Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Gyratory South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
2/2 (Gyratory South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (Gyratory West Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (Gyratory West Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
4/1 (A289 WB On Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (A289 EB Off Slip Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (A289 EB Off Slip Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
5/3 (A289 EB Off Slip Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
6/1 (Maritime Way (North) Exit Xing Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Maritime Way (North) Exit Xing Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/1 (Gyratory North Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
7/2 (Gyratory North Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
8/1 (Maritime Way (North) Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
8/2 (Maritime Way (North) Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
8/3 (Maritime Way (North) Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (Gyratory East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
9/2 (Gyratory East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
9/3 (Gyratory East Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
10/1 (A289 EB On Slip Xing Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
11/1 (A289 WB Off Slip Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900

11/2 (A289 WB Off Slip Lane 2)	This lane uses a directly entered Saturation Flow	1900	1900
11/3 (A289 WB Off Slip Lane 3)	This lane uses a directly entered Saturation Flow	1900	1900
12/1 (Maritime Way (South) Exit Xing Lane 1)	This lane uses a directly entered Saturation Flow	1900	1900
12/2 (Maritime Way (South) Exit Xing Lane 2)	This lane uses a directly entered Saturation Flow	1900	1900
13/1 (Maritime Way (South) Exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/2 (Maritime Way (South) Exit Lane 2)	Infinite Saturation Flow	Inf	Inf
14/1 (A289 WB On Slip Lane 1)	Infinite Saturation Flow	Inf	Inf
15/1	Infinite Saturation Flow	Inf	Inf
15/2	Infinite Saturation Flow	Inf	Inf
16/1	This lane uses a directly entered Saturation Flow	1900	1900

Scenario 3: 'PM Base' (FG3: 'RC PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	76	323	0	218	617
	B	848	3	1062	266	2179
	C	0	640	4	302	946
	D	173	268	179	0	620
	Tot.	1097	1234	1245	786	4362

Traffic Lane Flows

Lane	Scenario 3: PM Base
Junction: Pier Road/Maritime Way Roundabout	
1/1	1062
1/2	266
1/3	851
2/1	183
2/2	294
3/1	484
3/2	927
4/1	1245
5/1	265
5/2	287
5/3	394
6/1	749
6/2	37
7/1	1174
7/2	397
8/1	173
8/2	223
8/3	224
9/1	473
9/2	438
9/3	183
10/1	1097
11/1	159
11/2	164
11/3	294
12/1	632
12/2	602
13/1	632
13/2	602
14/1	1097
15/1	749
15/2	37
16/1	183

Lane Saturation Flows

Junction: Pier Road/Maritime Way Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Maritime Way (South) Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (Maritime Way (South) Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
1/3 (Maritime Way (South) Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Gyratory South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
2/2 (Gyratory South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (Gyratory West Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (Gyratory West Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
4/1 (A289 WB On Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (A289 EB Off Slip Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (A289 EB Off Slip Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
5/3 (A289 EB Off Slip Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
6/1 (Maritime Way (North) Exit Xing Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Maritime Way (North) Exit Xing Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/1 (Gyratory North Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
7/2 (Gyratory North Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
8/1 (Maritime Way (North) Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
8/2 (Maritime Way (North) Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
8/3 (Maritime Way (North) Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (Gyratory East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
9/2 (Gyratory East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
9/3 (Gyratory East Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
10/1 (A289 EB On Slip Xing Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
11/1 (A289 WB Off Slip Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900

11/2 (A289 WB Off Slip Lane 2)	This lane uses a directly entered Saturation Flow	1900	1900
11/3 (A289 WB Off Slip Lane 3)	This lane uses a directly entered Saturation Flow	1900	1900
12/1 (Maritime Way (South) Exit Xing Lane 1)	This lane uses a directly entered Saturation Flow	1900	1900
12/2 (Maritime Way (South) Exit Xing Lane 2)	This lane uses a directly entered Saturation Flow	1900	1900
13/1 (Maritime Way (South) Exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/2 (Maritime Way (South) Exit Lane 2)	Infinite Saturation Flow	Inf	Inf
14/1 (A289 WB On Slip Lane 1)	Infinite Saturation Flow	Inf	Inf
15/1	Infinite Saturation Flow	Inf	Inf
15/2	Infinite Saturation Flow	Inf	Inf
16/1	This lane uses a directly entered Saturation Flow	1900	1900

Scenario 4: 'PM Development' (FG4: 'RC + Lower Rainham 1250 Homes PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

	Destination					
Origin		A	B	C	D	Tot.
	A	106	370	0	216	692
	B	814	4	1128	262	2208
	C	0	672	4	322	998
	D	177	325	185	0	687
	Tot.	1097	1371	1317	800	4585

Traffic Lane Flows

Lane	Scenario 4: PM Development
Junction: Pier Road/Maritime Way Roundabout	
1/1	1128
1/2	262
1/3	818
2/1	189
2/2	322
3/1	478
3/2	924
4/1	1317
5/1	275
5/2	295
5/3	428
6/1	753
6/2	47
7/1	1168
7/2	432
8/1	177
8/2	252
8/3	258
9/1	500
9/2	501
9/3	189
10/1	1097
11/1	185
11/2	185
11/3	322
12/1	685
12/2	686
13/1	685
13/2	686
14/1	1097
15/1	753
15/2	47
16/1	189

Lane Saturation Flows

Junction: Pier Road/Maritime Way Roundabout								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
1/1 (Maritime Way (South) Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
1/2 (Maritime Way (South) Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
1/3 (Maritime Way (South) Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
2/1 (Gyratory South Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
2/2 (Gyratory South Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
3/1 (Gyratory West Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
3/2 (Gyratory West Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
4/1 (A289 WB On Slip Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (A289 EB Off Slip Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
5/2 (A289 EB Off Slip Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
5/3 (A289 EB Off Slip Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
6/1 (Maritime Way (North) Exit Xing Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
6/2 (Maritime Way (North) Exit Xing Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
7/1 (Gyratory North Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
7/2 (Gyratory North Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
8/1 (Maritime Way (North) Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
8/2 (Maritime Way (North) Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
8/3 (Maritime Way (North) Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
9/1 (Gyratory East Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
9/2 (Gyratory East Lane 2)	This lane uses a directly entered Saturation Flow						1900	1900
9/3 (Gyratory East Lane 3)	This lane uses a directly entered Saturation Flow						1900	1900
10/1 (A289 EB On Slip Xing Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900
11/1 (A289 WB Off Slip Lane 1)	This lane uses a directly entered Saturation Flow						1900	1900

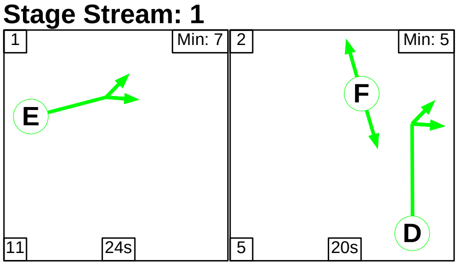
Full Input Data And Results

11/2 (A289 WB Off Slip Lane 2)	This lane uses a directly entered Saturation Flow	1900	1900
11/3 (A289 WB Off Slip Lane 3)	This lane uses a directly entered Saturation Flow	1900	1900
12/1 (Maritime Way (South) Exit Xing Lane 1)	This lane uses a directly entered Saturation Flow	1900	1900
12/2 (Maritime Way (South) Exit Xing Lane 2)	This lane uses a directly entered Saturation Flow	1900	1900
13/1 (Maritime Way (South) Exit Lane 1)	Infinite Saturation Flow	Inf	Inf
13/2 (Maritime Way (South) Exit Lane 2)	Infinite Saturation Flow	Inf	Inf
14/1 (A289 WB On Slip Lane 1)	Infinite Saturation Flow	Inf	Inf
15/1	Infinite Saturation Flow	Inf	Inf
15/2	Infinite Saturation Flow	Inf	Inf
16/1	This lane uses a directly entered Saturation Flow	1900	1900

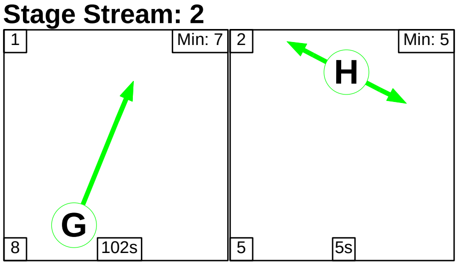
Scenario 1: 'AM Base' (FG1: 'RC AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

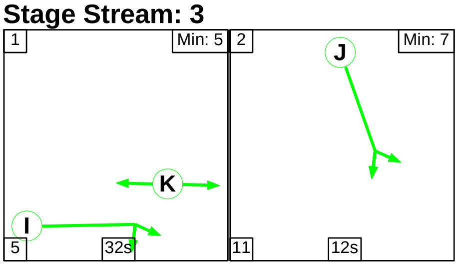
Stage Stream: 1



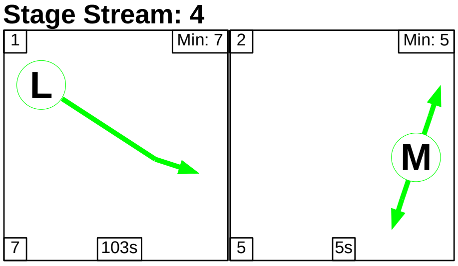
Stage Stream: 2



Stage Stream: 3

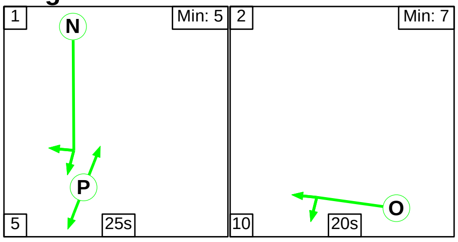


Stage Stream: 4

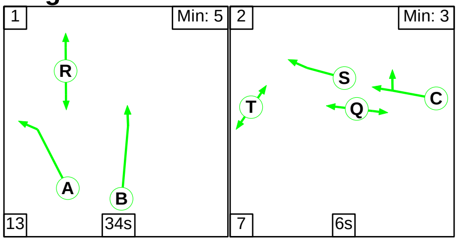


Full Input Data And Results

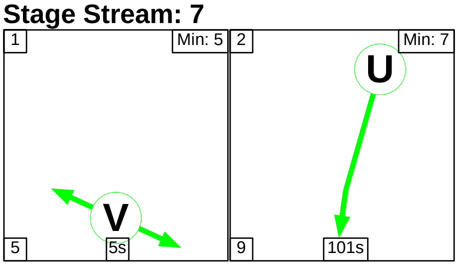
Stage Stream: 5



Stage Stream: 6



Stage Stream: 7



Stage Timings

Stage Stream: 1

Stage	1	2	1	2
Duration	24	20	24	20
Change Point	0	35	60	95

Stage Stream: 2

Stage	1	2
Duration	102	5
Change Point	102	92

Stage Stream: 3

Stage	1	2	1	2
Duration	32	12	32	12
Change Point	72	109	12	49

Stage Stream: 4

Stage	1	2
Duration	103	5
Change Point	100	90

Stage Stream: 5

Stage	1	2	1	2
Duration	25	20	25	20
Change Point	3	33	63	93

Full Input Data And Results

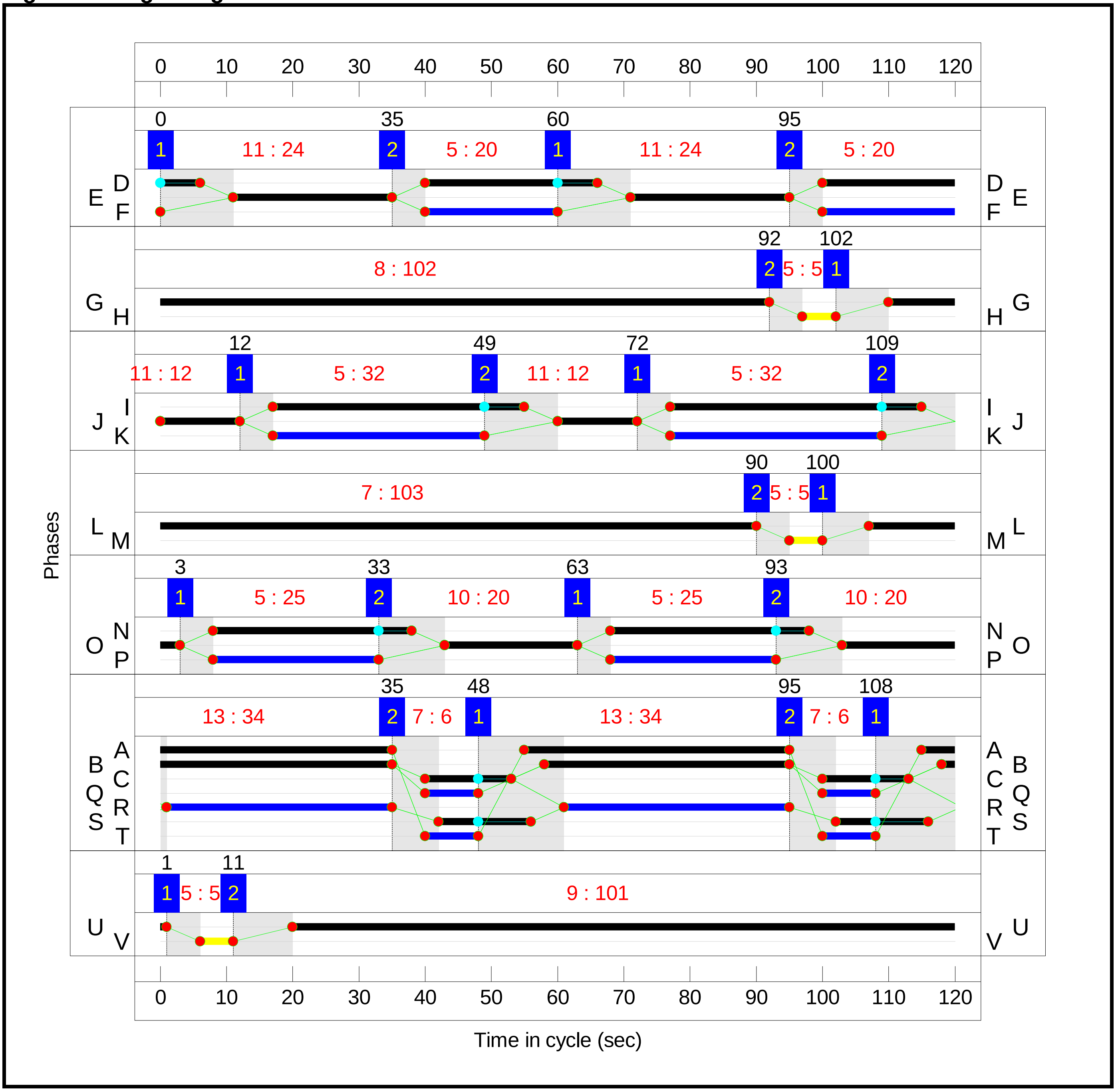
Stage Stream: 6

Stage	1	2	1	2
Duration	34	6	34	6
Change Point	48	95	108	35

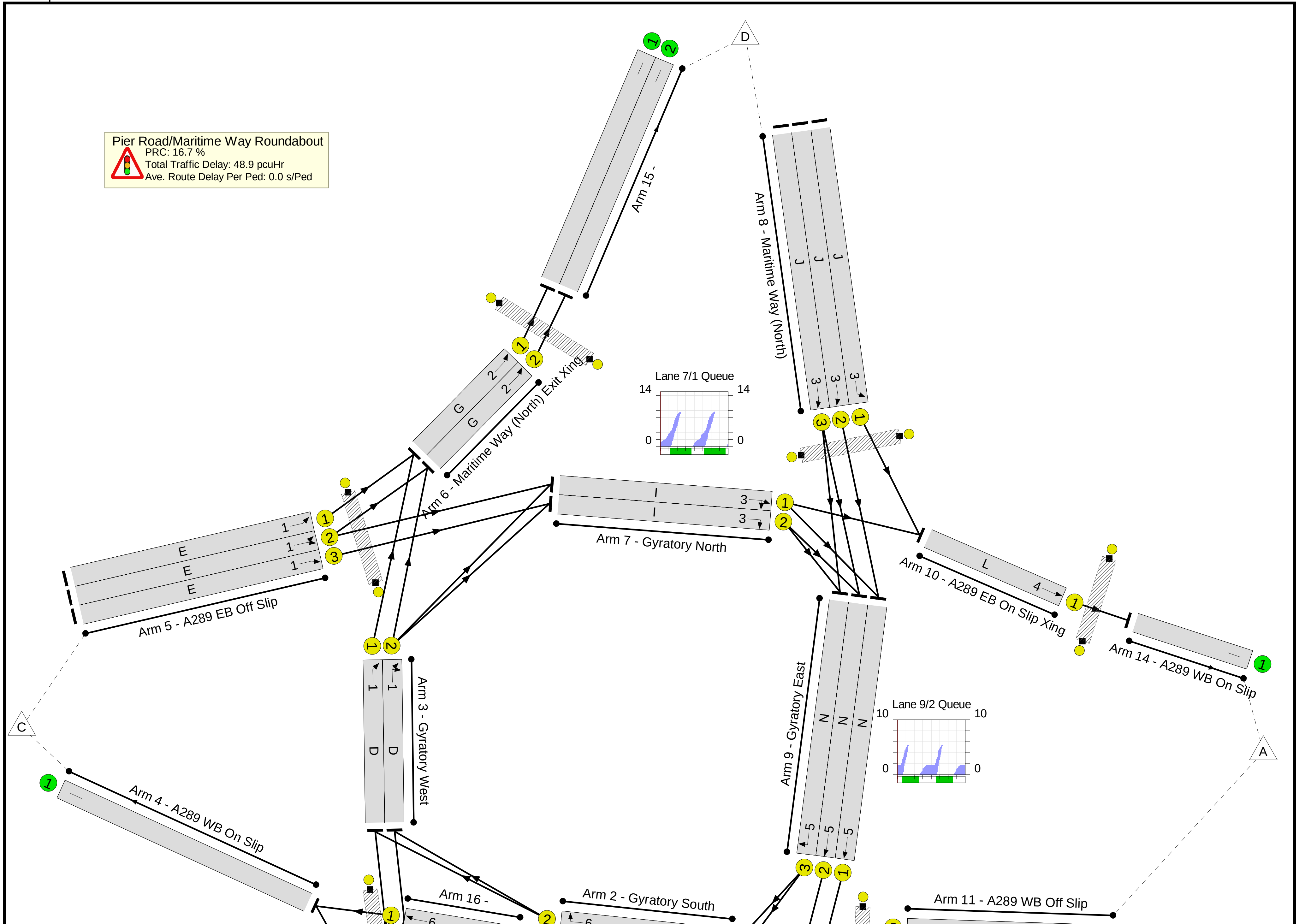
Stage Stream: 7

Stage	1	2
Duration	5	101
Change Point	1	11

Signal Timings Diagram



Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**77.2%**
Pier Road/Maritime Way Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**77.2%**
1/1	Maritime Way (South) Left	U	6	N/A	A		2	80	-	724	1900	1298	55.8%
1/2	Maritime Way (South) Ahead	U	6	N/A	B		2	74	-	20	1900	1203	1.7%
1/3	Maritime Way (South) Ahead	U	6	N/A	B		2	74	-	457	1900	1203	38.0%
2/1	Gyratory South Ahead	U	6	N/A	C		2	26	-	155	1900	443	35.0%
2/2	Gyratory South Right	U	6	N/A	C		2	26	-	304	1900	443	68.6%
3/1	Gyratory West Right	U	1	N/A	D		2	52	-	246	1900	855	28.8%
3/2	Gyratory West Right Right2	U	1	N/A	D		2	52	-	535	1900	855	62.6%
4/1	A289 WB On Slip	U	N/A	N/A	-		-	-	-	879	Inf	Inf	0.0%
5/1	A289 EB Off Slip Ahead	U	1	N/A	E		2	48	-	285	1900	792	36.0%
5/2	A289 EB Off Slip Ahead Ahead2	U	1	N/A	E		2	48	-	394	1900	792	49.8%
5/3	A289 EB Off Slip Ahead	U	1	N/A	E		2	48	-	609	1900	792	76.9%
6/1	Maritime Way (North) Exit Xing Ahead	U	2	N/A	G		1	102	-	531	1900	1631	32.6%
6/2	Maritime Way (North) Exit Xing Ahead	U	2	N/A	G		1	102	-	4	1900	1631	0.2%
7/1	Gyratory North Right Ahead	U	3	N/A	I		2	76	-	924	1900	1235	74.8%

Full Input Data And Results

7/2	Gyratory North Right	U	3	N/A	I		2	76	-	610	1900	1235	49.4%
8/1	Maritime Way (North) Left	U	3	N/A	J		2	24	-	210	1900	412	51.0%
8/2	Maritime Way (North) Ahead	U	3	N/A	J		2	24	-	300	1900	412	72.9%
8/3	Maritime Way (North) Ahead	U	3	N/A	J		2	24	-	293	1900	412	71.2%
9/1	Gyratory East Ahead	U	5	N/A	N		2	60	-	691	1900	982	70.4%
9/2	Gyratory East Ahead	U	5	N/A	N		2	60	-	748	1900	982	76.2%
9/3	Gyratory East Right	U	5	N/A	N		2	60	-	155	1900	982	15.8%
10/1	A289 EB On Slip Xing Ahead	U	4	N/A	L		1	103	-	743	1900	1647	45.1%
11/1	A289 WB Off Slip Left	U	5	N/A	O		2	40	-	504	1900	665	75.8%
11/2	A289 WB Off Slip Left	U	5	N/A	O		2	40	-	498	1900	665	74.9%
11/3	A289 WB Off Slip Ahead	U	5	N/A	O		2	40	-	304	1900	665	45.7%
12/1	Maritime Way (South) Exit Xing Ahead	U	7	N/A	U		1	101	-	1195	1900	1615	74.0%
12/2	Maritime Way (South) Exit Xing Ahead	U	7	N/A	U		1	101	-	1246	1900	1615	77.2%
13/1	Maritime Way (South) Exit	U	N/A	N/A	-		-	-	-	1195	Inf	Inf	0.0%
13/2	Maritime Way (South) Exit	U	N/A	N/A	-		-	-	-	1246	Inf	Inf	0.0%
14/1	A289 WB On Slip	U	N/A	N/A	-		-	-	-	743	Inf	Inf	0.0%
15/1		U	N/A	N/A	-		-	-	-	531	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	4	Inf	Inf	0.0%
16/1	Ahead	U	6	N/A	S		2	28	-	155	1900	475	32.6%

Full Input Data And Results

Ped Link: P1	Unnamed Ped Link	-	7	-	V		1	5	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	-	-			0	0	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	5	-	P		2	50	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	4	-	M		1	5	-	0	-	0	0.0%
Ped Link: P5	Unnamed Ped Link	-	2	-	H		1	5	-	0	-	0	0.0%
Ped Link: P6	Unnamed Ped Link	-	-	-			0	0	-	0	-	0	0.0%
Ped Link: P7	Unnamed Ped Link	-	-	-			0	0	-	0	-	0	0.0%
Ped Link: P8	Unnamed Ped Link	-	1	-	F		2	40	-	0	-	0	0.0%
Ped Link: P9	Unnamed Ped Link	-	3	-	K		2	64	-	0	-	0	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**27.9**	**21.0**	**0.0**	**48.9**	**-**	**-**	**-**	**-**
Pier Road/Maritime Way Roundabout	**-**	**-**	**0**	**0**	**0**	**27.9**	**21.0**	**0.0**	**48.9**	**-**	**-**	**-**	**-**
1/1	724	724	-	-	-	1.0	0.6	-	1.6	8.0	6.0	0.6	6.7
1/2	20	20	-	-	-	0.0	0.0	-	0.0	5.7	0.1	0.0	0.1
1/3	457	457	-	-	-	0.7	0.3	-	1.0	7.7	3.6	0.3	3.9
2/1	155	155	-	-	-	0.8	0.3	-	1.0	24.1	2.5	0.3	2.8
2/2	304	304	-	-	-	1.5	1.1	-	2.6	30.3	2.1	1.1	3.2
3/1	246	246	-	-	-	0.1	0.2	-	0.3	3.8	0.2	0.2	0.4
3/2	535	535	-	-	-	2.4	0.8	-	3.2	21.5	6.2	0.8	7.0
4/1	879	879	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	285	285	-	-	-	1.0	0.3	-	1.2	15.6	3.2	0.3	3.5
5/2	394	394	-	-	-	1.4	0.5	-	1.9	17.4	4.8	0.5	5.3
5/3	609	609	-	-	-	2.5	1.6	-	4.2	24.7	8.6	1.6	10.3
6/1	531	531	-	-	-	0.1	0.2	-	0.3	2.3	1.2	0.2	1.5
6/2	4	4	-	-	-	0.0	0.0	-	0.0	2.3	0.0	0.0	0.0
7/1	924	924	-	-	-	1.6	1.5	-	3.1	12.0	9.7	1.5	11.1
7/2	610	610	-	-	-	0.0	0.5	-	0.5	2.9	0.2	0.5	0.7
8/1	210	210	-	-	-	1.2	0.5	-	1.7	29.6	3.0	0.5	3.6
8/2	300	300	-	-	-	1.8	1.3	-	3.1	37.6	4.6	1.3	5.9
8/3	293	293	-	-	-	1.8	1.2	-	3.0	36.6	4.5	1.2	5.7
9/1	691	691	-	-	-	1.3	1.2	-	2.5	12.8	6.7	1.2	7.9
9/2	748	748	-	-	-	1.1	1.6	-	2.6	12.7	5.4	1.6	7.0
9/3	155	155	-	-	-	0.1	0.1	-	0.2	5.3	0.8	0.1	0.8
10/1	743	743	-	-	-	0.0	0.4	-	0.4	2.0	0.0	0.4	0.4
11/1	504	504	-	-	-	2.4	1.5	-	4.0	28.2	7.4	1.5	9.0
11/2	498	498	-	-	-	2.4	1.5	-	3.8	27.8	7.2	1.5	8.7

Full Input Data And Results

11/3	304	304	-	-	-	1.3	0.4	-	1.7	20.1	3.9	0.4	4.3
12/1	1195	1195	-	-	-	0.8	1.4	-	2.2	6.6	10.6	1.4	12.0
12/2	1246	1246	-	-	-	0.8	1.7	-	2.5	7.2	14.0	1.7	15.7
13/1	1195	1195	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	1246	1246	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	743	743	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	531	531	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	4	4	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/1	155	155	-	-	-	0.0	0.2	-	0.2	5.6	0.0	0.2	0.2
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P5	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P6	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P7	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P8	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P9	0	0	-	-	-	-	-	-	-	-	-	-	-

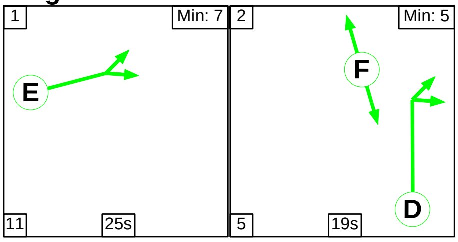
C1	Stream: 1	PRC for Signalled Lanes (%):	17.0	Total Delay for Signalled Lanes (pcuHr):	10.77	Cycle Time (s):	120
C1	Stream: 2	PRC for Signalled Lanes (%):	176.4	Total Delay for Signalled Lanes (pcuHr):	0.34	Cycle Time (s):	120
C1	Stream: 3	PRC for Signalled Lanes (%):	20.3	Total Delay for Signalled Lanes (pcuHr):	11.43	Cycle Time (s):	120
C1	Stream: 4	PRC for Signalled Lanes (%):	99.5	Total Delay for Signalled Lanes (pcuHr):	0.41	Cycle Time (s):	120
C1	Stream: 5	PRC for Signalled Lanes (%):	18.1	Total Delay for Signalled Lanes (pcuHr):	14.82	Cycle Time (s):	120
C1	Stream: 6	PRC for Signalled Lanes (%):	31.2	Total Delay for Signalled Lanes (pcuHr):	6.45	Cycle Time (s):	120
C1	Stream: 7	PRC for Signalled Lanes (%):	16.7	Total Delay for Signalled Lanes (pcuHr):	4.69	Cycle Time (s):	120
		PRC Over All Lanes (%):	16.7	Total Delay Over All Lanes(pcuHr):	48.91		

Full Input Data And Results

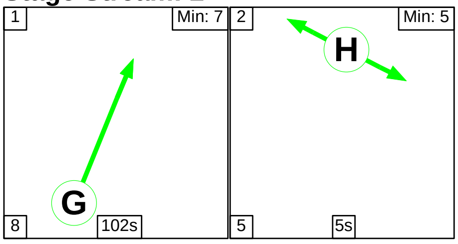
Scenario 2: 'AM Development' (FG2: 'RC + Lower Rainham 1250 Homes AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

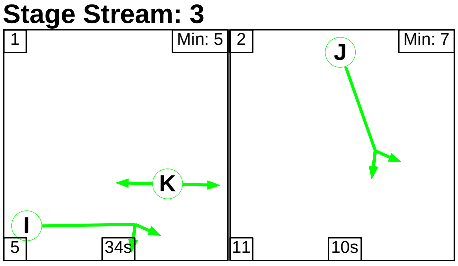
Stage Stream: 1



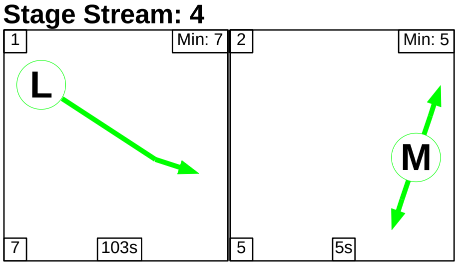
Stage Stream: 2



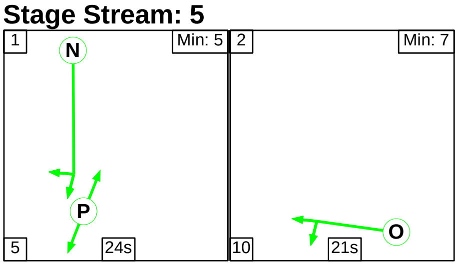
Stage Stream: 3



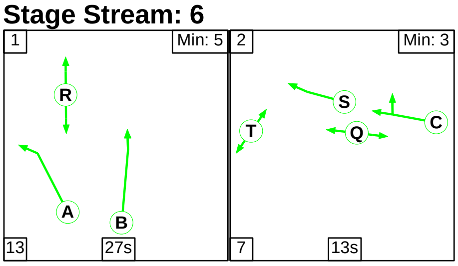
Stage Stream: 4



Stage Stream: 5

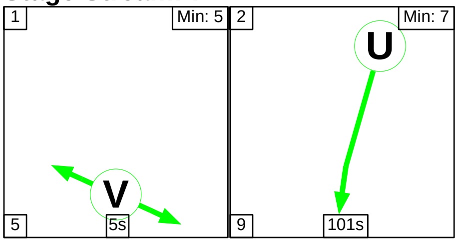


Stage Stream: 6



Full Input Data And Results

Stage Stream: 7



Stage Timings

Stage Stream: 1

Stage	1	2	1	2
Duration	25	19	25	19
Change Point	13	49	73	109

Stage Stream: 2

Stage	1	2
Duration	102	5
Change Point	64	54

Stage Stream: 3

Stage	1	2	1	2
Duration	34	10	34	10
Change Point	85	4	25	64

Stage Stream: 4

Stage	1	2
Duration	103	5
Change Point	114	104

Stage Stream: 5

Stage	1	2	1	2
Duration	24	21	24	21
Change Point	21	50	81	110

Stage Stream: 6

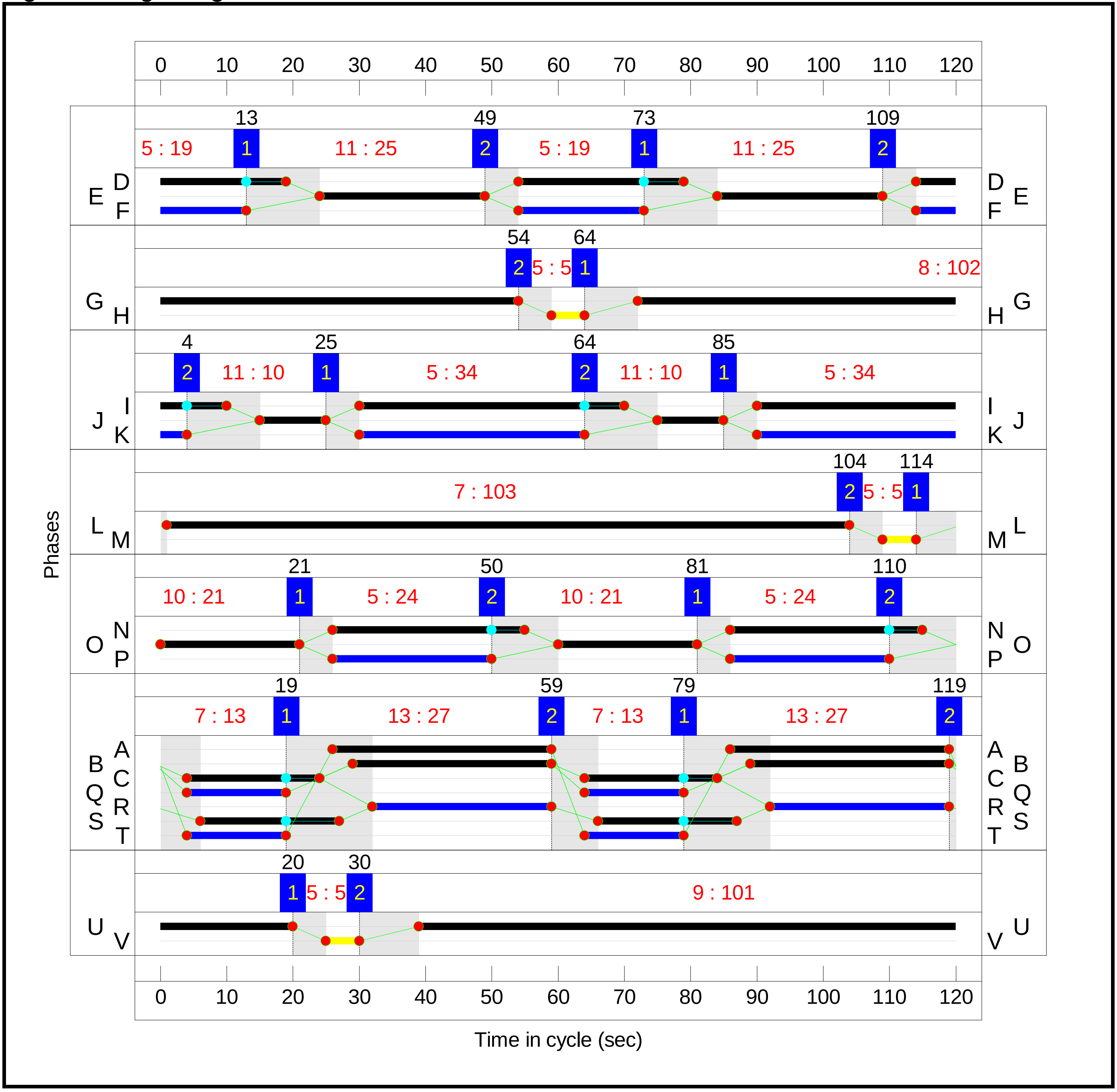
Stage	1	2	1	2
Duration	27	13	27	13
Change Point	19	59	79	119

Stage Stream: 7

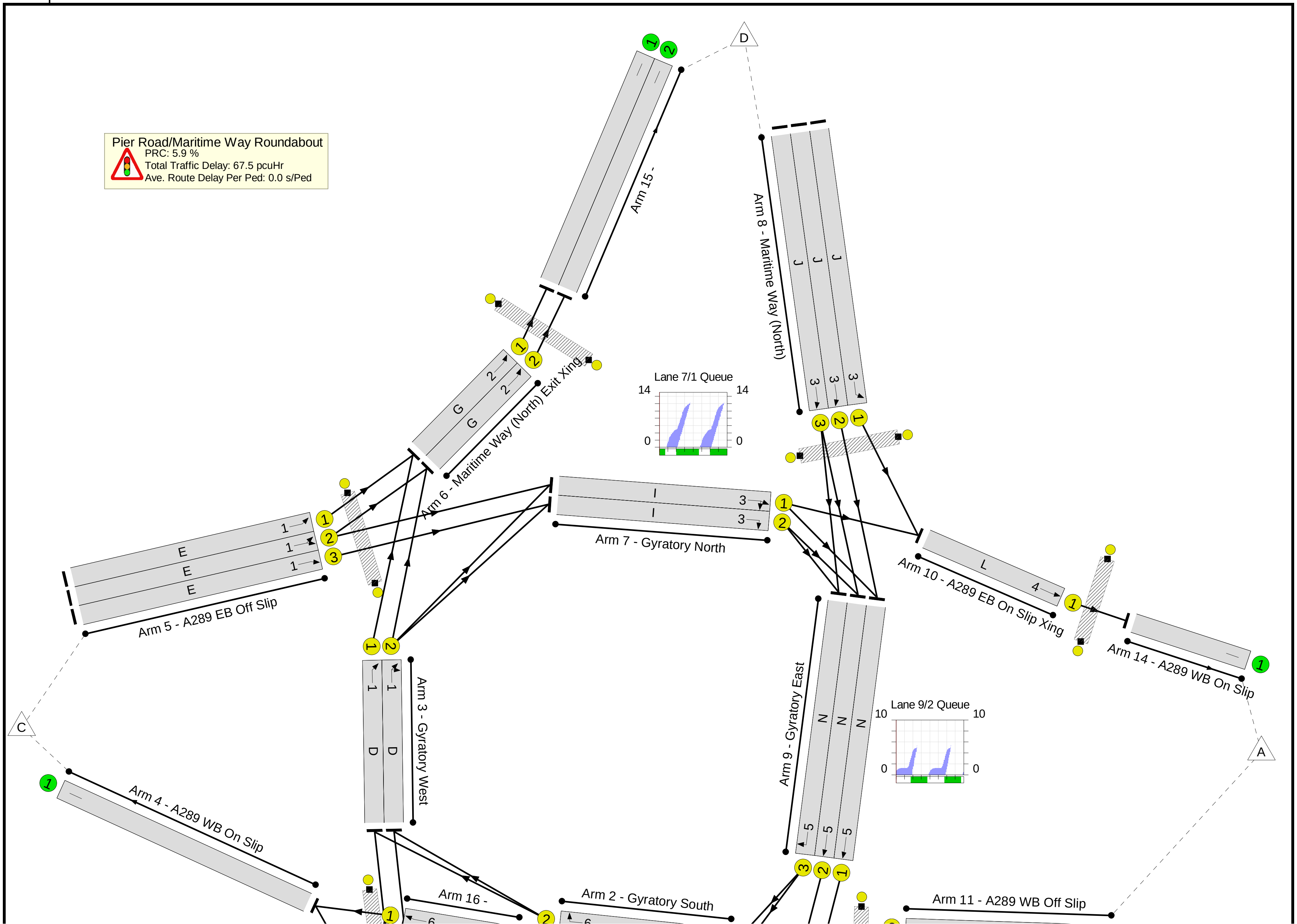
Stage	1	2
Duration	5	101
Change Point	20	30

Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**85.0%**
Pier Road/Maritime Way Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**85.0%**
1/1	Maritime Way (South) Left	U	6	N/A	A		2	66	-	803	1900	1077	74.6%
1/2	Maritime Way (South) Ahead	U	6	N/A	B		2	60	-	30	1900	982	3.1%
1/3	Maritime Way (South) Ahead	U	6	N/A	B		2	60	-	463	1900	982	47.2%
2/1	Gyratory South Ahead	U	6	N/A	C		2	40	-	173	1900	665	26.0%
2/2	Gyratory South Right	U	6	N/A	C		2	40	-	431	1900	665	64.8%
3/1	Gyratory West Right	U	1	N/A	D		2	50	-	304	1900	823	36.9%
3/2	Gyratory West Right Right2	U	1	N/A	D		2	50	-	620	1900	823	75.3%
4/1	A289 WB On Slip	U	N/A	N/A	-		-	-	-	976	Inf	Inf	0.0%
5/1	A289 EB Off Slip Ahead	U	1	N/A	E		2	50	-	380	1900	823	46.2%
5/2	A289 EB Off Slip Ahead Ahead2	U	1	N/A	E		2	50	-	476	1900	823	57.8%
5/3	A289 EB Off Slip Ahead	U	1	N/A	E		2	50	-	683	1900	823	83.0%
6/1	Maritime Way (North) Exit Xing Ahead	U	2	N/A	G		1	102	-	684	1900	1631	41.9%
6/2	Maritime Way (North) Exit Xing Ahead	U	2	N/A	G		1	102	-	7	1900	1631	0.4%
7/1	Gyratory North Right Ahead	U	3	N/A	I		2	80	-	1088	1900	1298	83.8%

Full Input Data And Results

7/2	Gyratory North Right	U	3	N/A	I		2	80	-	684	1900	1298	52.7%
8/1	Maritime Way (North) Left	U	3	N/A	J		2	20	-	275	1900	348	78.9%
8/2	Maritime Way (North) Ahead	U	3	N/A	J		2	20	-	296	1900	348	85.0%
8/3	Maritime Way (North) Ahead	U	3	N/A	J		2	20	-	295	1900	348	84.7%
9/1	Gyratory East Ahead	U	5	N/A	N		2	58	-	766	1900	950	80.6%
9/2	Gyratory East Ahead	U	5	N/A	N		2	58	-	806	1900	950	84.8%
9/3	Gyratory East Right	U	5	N/A	N		2	58	-	173	1900	950	18.2%
10/1	A289 EB On Slip Xing Ahead	U	4	N/A	L		1	103	-	893	1900	1647	54.2%
11/1	A289 WB Off Slip Left	U	5	N/A	O		2	42	-	549	1900	697	78.8%
11/2	A289 WB Off Slip Left	U	5	N/A	O		2	42	-	541	1900	697	77.7%
11/3	A289 WB Off Slip Ahead	U	5	N/A	O		2	42	-	431	1900	697	61.9%
12/1	Maritime Way (South) Exit Xing Ahead	U	7	N/A	U		1	101	-	1315	1900	1615	81.4%
12/2	Maritime Way (South) Exit Xing Ahead	U	7	N/A	U		1	101	-	1347	1900	1615	83.4%
13/1	Maritime Way (South) Exit	U	N/A	N/A	-		-	-	-	1315	Inf	Inf	0.0%
13/2	Maritime Way (South) Exit	U	N/A	N/A	-		-	-	-	1347	Inf	Inf	0.0%
14/1	A289 WB On Slip	U	N/A	N/A	-		-	-	-	893	Inf	Inf	0.0%
15/1		U	N/A	N/A	-		-	-	-	684	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	7	Inf	Inf	0.0%
16/1	Ahead	U	6	N/A	S		2	42	-	173	1900	697	24.8%

Full Input Data And Results

Ped Link: P1	Unnamed Ped Link	-	7	-	V		1	5	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	-	-			0	0	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	5	-	P		2	48	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	4	-	M		1	5	-	0	-	0	0.0%
Ped Link: P5	Unnamed Ped Link	-	2	-	H		1	5	-	0	-	0	0.0%
Ped Link: P6	Unnamed Ped Link	-	-	-			0	0	-	0	-	0	0.0%
Ped Link: P7	Unnamed Ped Link	-	-	-			0	0	-	0	-	0	0.0%
Ped Link: P8	Unnamed Ped Link	-	1	-	F		2	38	-	0	-	0	0.0%
Ped Link: P9	Unnamed Ped Link	-	3	-	K		2	68	-	0	-	0	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**34.3**	**33.1**	**0.0**	**67.5**	**-**	**-**	**-**	**-**
Pier Road/Maritime Way Roundabout	**-**	**-**	**0**	**0**	**0**	**34.3**	**33.1**	**0.0**	**67.5**	**-**	**-**	**-**	**-**
1/1	803	803	-	-	-	2.2	1.5	-	3.6	16.3	10.0	1.5	11.5
1/2	30	30	-	-	-	0.1	0.0	-	0.1	9.1	0.2	0.0	0.3
1/3	463	463	-	-	-	1.2	0.4	-	1.6	12.7	4.9	0.4	5.3
2/1	173	173	-	-	-	1.2	0.2	-	1.4	28.6	2.9	0.2	3.1
2/2	431	431	-	-	-	0.2	0.9	-	1.1	9.2	0.3	0.9	1.2
3/1	304	304	-	-	-	0.8	0.3	-	1.1	13.1	1.8	0.3	2.1
3/2	620	620	-	-	-	2.7	1.5	-	4.2	24.5	8.6	1.5	10.1
4/1	976	976	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	380	380	-	-	-	1.3	0.4	-	1.7	16.1	4.4	0.4	4.9
5/2	476	476	-	-	-	1.7	0.7	-	2.4	18.0	5.9	0.7	6.6
5/3	683	683	-	-	-	2.9	2.4	-	5.2	27.5	10.1	2.4	12.4
6/1	684	684	-	-	-	0.2	0.4	-	0.6	3.0	2.3	0.4	2.6
6/2	7	7	-	-	-	0.0	0.0	-	0.0	1.5	0.0	0.0	0.0
7/1	1088	1088	-	-	-	2.4	2.5	-	4.9	16.2	12.2	2.5	14.8
7/2	684	684	-	-	-	0.0	0.6	-	0.6	3.0	0.2	0.6	0.8
8/1	275	275	-	-	-	1.8	1.8	-	3.6	46.8	4.4	1.8	6.1
8/2	296	296	-	-	-	1.9	2.6	-	4.5	55.0	4.8	2.6	7.3
8/3	295	295	-	-	-	1.9	2.5	-	4.5	54.5	4.8	2.5	7.3
9/1	766	766	-	-	-	1.6	2.0	-	3.7	17.3	6.8	2.0	8.8
9/2	806	806	-	-	-	1.0	2.7	-	3.7	16.5	5.3	2.7	8.0
9/3	173	173	-	-	-	0.2	0.1	-	0.3	5.4	1.2	0.1	1.3
10/1	893	893	-	-	-	0.0	0.6	-	0.6	2.4	0.0	0.6	0.6
11/1	549	549	-	-	-	2.6	1.8	-	4.4	28.8	8.1	1.8	9.9
11/2	541	541	-	-	-	2.5	1.7	-	4.2	28.1	8.0	1.7	9.7

Full Input Data And Results

11/3	431	431	-	-	-	1.9	0.8	-	2.7	22.3	5.9	0.8	6.7
12/1	1315	1315	-	-	-	1.0	2.2	-	3.1	8.5	15.3	2.2	17.5
12/2	1347	1347	-	-	-	1.2	2.5	-	3.6	9.7	22.8	2.5	25.2
13/1	1315	1315	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	1347	1347	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	893	893	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	684	684	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	7	7	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/1	173	173	-	-	-	0.0	0.2	-	0.2	3.4	0.0	0.2	0.2
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P5	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P6	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P7	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P8	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P9	0	0	-	-	-	-	-	-	-	-	-	-	-

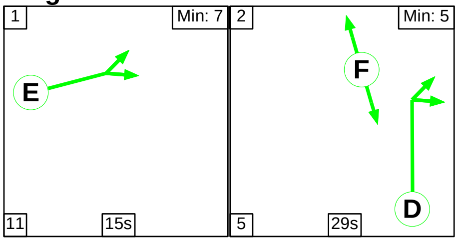
C1	Stream: 1	PRC for Signalled Lanes (%):	8.5	Total Delay for Signalled Lanes (pcuHr):	14.62	Cycle Time (s):	120
C1	Stream: 2	PRC for Signalled Lanes (%):	114.6	Total Delay for Signalled Lanes (pcuHr):	0.56	Cycle Time (s):	120
C1	Stream: 3	PRC for Signalled Lanes (%):	5.9	Total Delay for Signalled Lanes (pcuHr):	18.03	Cycle Time (s):	120
C1	Stream: 4	PRC for Signalled Lanes (%):	66.0	Total Delay for Signalled Lanes (pcuHr):	0.59	Cycle Time (s):	120
C1	Stream: 5	PRC for Signalled Lanes (%):	6.1	Total Delay for Signalled Lanes (pcuHr):	18.93	Cycle Time (s):	120
C1	Stream: 6	PRC for Signalled Lanes (%):	20.7	Total Delay for Signalled Lanes (pcuHr):	7.98	Cycle Time (s):	120
C1	Stream: 7	PRC for Signalled Lanes (%):	7.9	Total Delay for Signalled Lanes (pcuHr):	6.76	Cycle Time (s):	120
		PRC Over All Lanes (%):	5.9	Total Delay Over All Lanes(pcuHr):	67.47		

Full Input Data And Results

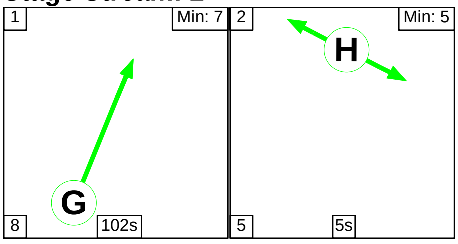
Scenario 3: 'PM Base' (FG3: 'RC PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

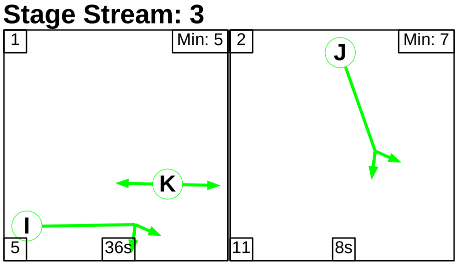
Stage Stream: 1



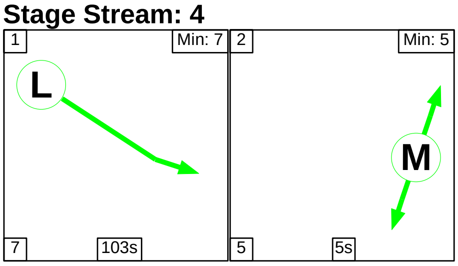
Stage Stream: 2



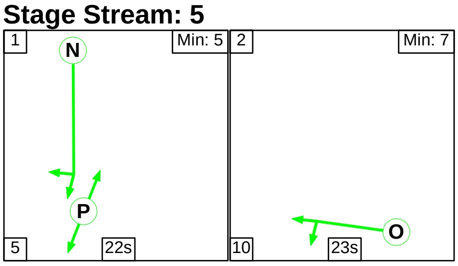
Stage Stream: 3



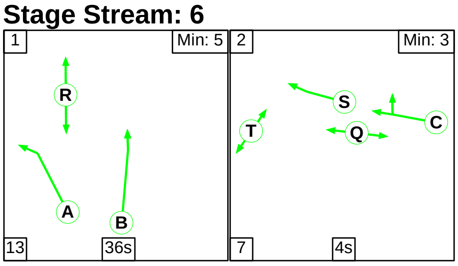
Stage Stream: 4



Stage Stream: 5

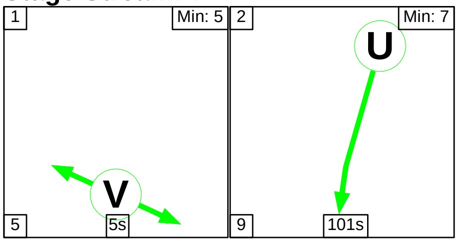


Stage Stream: 6



Full Input Data And Results

Stage Stream: 7



Stage Timings

Stage Stream: 1

Stage	1	2	1	2
Duration	15	29	15	29
Change Point	0	26	60	86

Stage Stream: 2

Stage	1	2
Duration	102	5
Change Point	7	117

Stage Stream: 3

Stage	1	2	1	2
Duration	36	8	36	8
Change Point	21	62	81	2

Stage Stream: 4

Stage	1	2
Duration	103	5
Change Point	31	21

Stage Stream: 5

Stage	1	2	1	2
Duration	22	23	22	23
Change Point	73	100	13	40

Stage Stream: 6

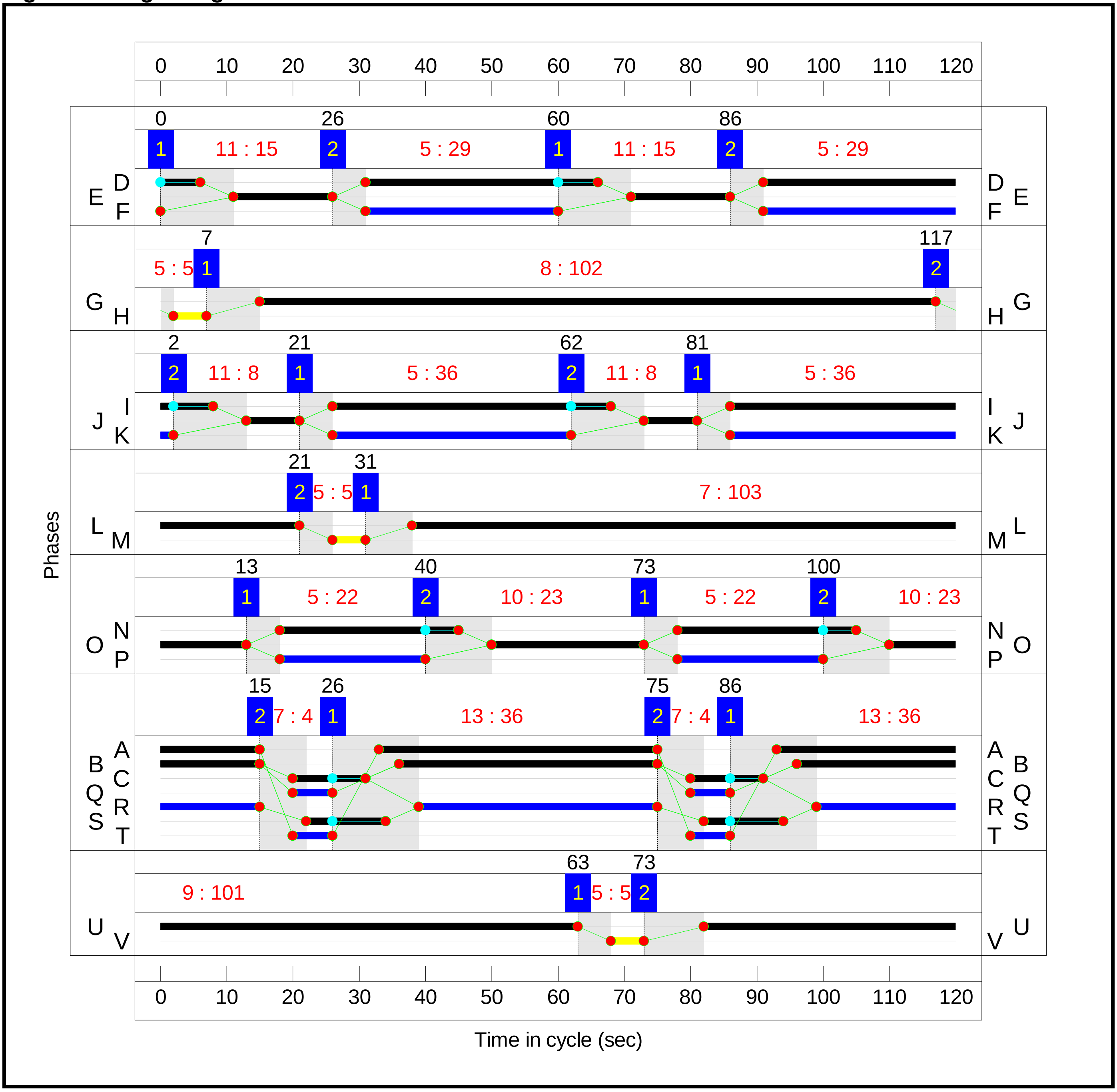
Stage	1	2	1	2
Duration	36	4	36	4
Change Point	26	75	86	15

Stage Stream: 7

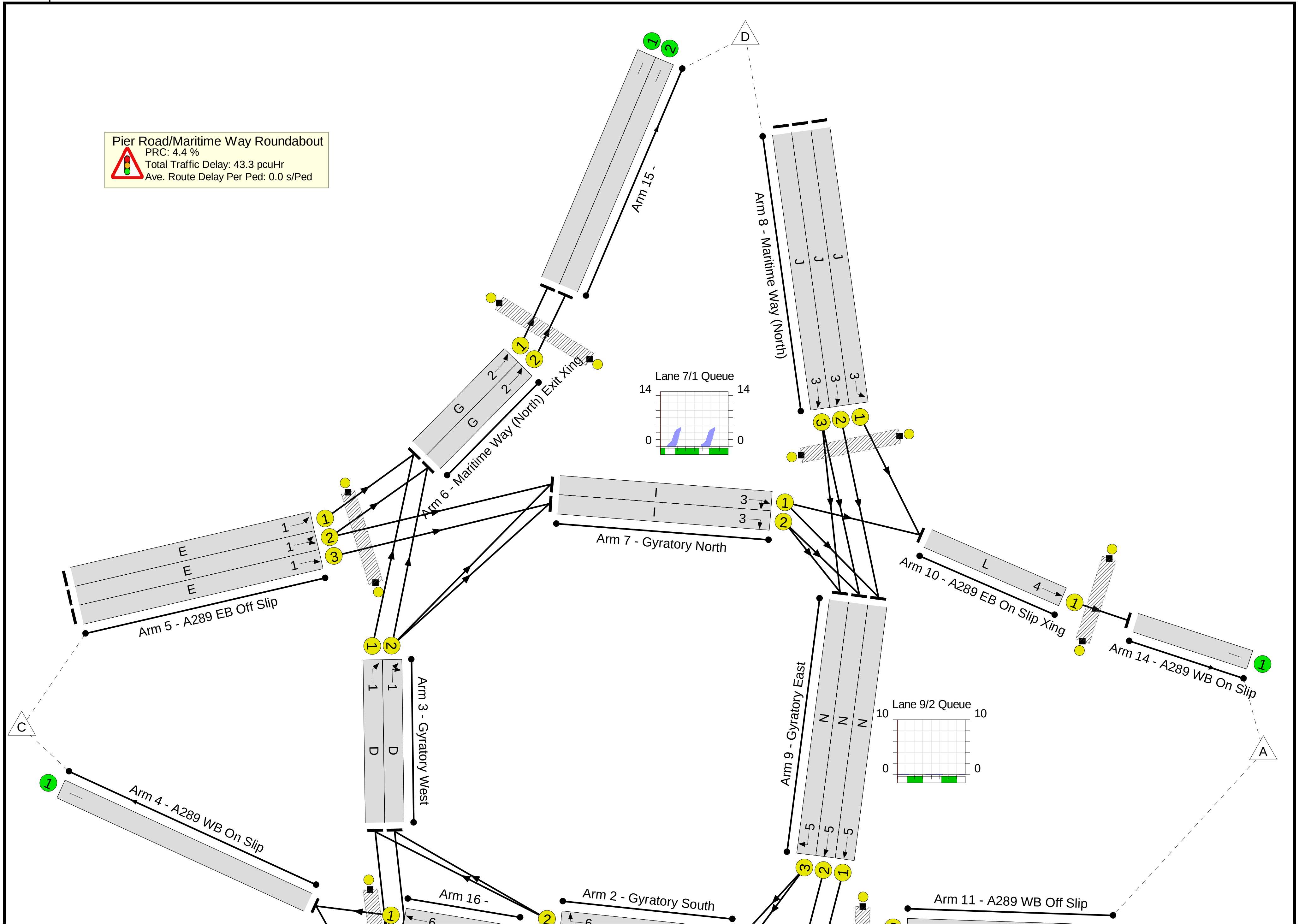
Stage	1	2
Duration	5	101
Change Point	63	73

Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	-	-	**N/A**	-	-		-	-	-	-	-	-	**86.2%**
Pier Road/Maritime Way Roundabout	-	-	**N/A**	-	-		-	-	-	-	-	-	**86.2%**
1/1	Maritime Way (South) Left	U	6	N/A	A		2	84	-	1062	1900	1362	78.0%
1/2	Maritime Way (South) Ahead	U	6	N/A	B		2	78	-	266	1900	1267	21.0%
1/3	Maritime Way (South) Ahead	U	6	N/A	B		2	78	-	851	1900	1267	67.2%
2/1	Gyratory South Ahead	U	6	N/A	C		2	22	-	183	1900	380	48.2%
2/2	Gyratory South Right	U	6	N/A	C		2	22	-	294	1900	380	77.4%
3/1	Gyratory West Right	U	1	N/A	D		2	70	-	484	1900	1140	42.5%
3/2	Gyratory West Right Right2	U	1	N/A	D		2	70	-	927	1900	1140	81.3%
4/1	A289 WB On Slip	U	N/A	N/A	-		-	-	-	1245	Inf	Inf	0.0%
5/1	A289 EB Off Slip Ahead	U	1	N/A	E		2	30	-	265	1900	507	52.3%
5/2	A289 EB Off Slip Ahead Ahead2	U	1	N/A	E		2	30	-	287	1900	507	56.6%
5/3	A289 EB Off Slip Ahead	U	1	N/A	E		2	30	-	394	1900	507	77.8%
6/1	Maritime Way (North) Exit Xing Ahead	U	2	N/A	G		1	102	-	749	1900	1631	45.9%
6/2	Maritime Way (North) Exit Xing Ahead	U	2	N/A	G		1	102	-	37	1900	1631	2.3%
7/1	Gyratory North Right Ahead	U	3	N/A	I		2	84	-	1174	1900	1362	86.2%

Full Input Data And Results

7/2	Gyratory North Right	U	3	N/A	I		2	84	-	397	1900	1362	29.2%
8/1	Maritime Way (North) Left	U	3	N/A	J		2	16	-	173	1900	285	60.7%
8/2	Maritime Way (North) Ahead	U	3	N/A	J		2	16	-	223	1900	285	78.2%
8/3	Maritime Way (North) Ahead	U	3	N/A	J		2	16	-	224	1900	285	78.6%
9/1	Gyratory East Ahead	U	5	N/A	N		2	54	-	473	1900	887	53.3%
9/2	Gyratory East Ahead	U	5	N/A	N		2	54	-	438	1900	887	49.4%
9/3	Gyratory East Right	U	5	N/A	N		2	54	-	183	1900	887	20.6%
10/1	A289 EB On Slip Xing Ahead	U	4	N/A	L		1	103	-	1097	1900	1647	66.6%
11/1	A289 WB Off Slip Left	U	5	N/A	O		2	46	-	159	1900	760	20.9%
11/2	A289 WB Off Slip Left	U	5	N/A	O		2	46	-	164	1900	760	21.6%
11/3	A289 WB Off Slip Ahead	U	5	N/A	O		2	46	-	294	1900	760	38.7%
12/1	Maritime Way (South) Exit Xing Ahead	U	7	N/A	U		1	101	-	632	1900	1615	39.1%
12/2	Maritime Way (South) Exit Xing Ahead	U	7	N/A	U		1	101	-	602	1900	1615	37.3%
13/1	Maritime Way (South) Exit	U	N/A	N/A	-		-	-	-	632	Inf	Inf	0.0%
13/2	Maritime Way (South) Exit	U	N/A	N/A	-		-	-	-	602	Inf	Inf	0.0%
14/1	A289 WB On Slip	U	N/A	N/A	-		-	-	-	1097	Inf	Inf	0.0%
15/1		U	N/A	N/A	-		-	-	-	749	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	37	Inf	Inf	0.0%
16/1	Ahead	U	6	N/A	S		2	24	-	183	1900	412	44.5%

Full Input Data And Results

Ped Link: P1	Unnamed Ped Link	-	7	-	V		1	5	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	-	-			0	0	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	5	-	P		2	44	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	4	-	M		1	5	-	0	-	0	0.0%
Ped Link: P5	Unnamed Ped Link	-	2	-	H		1	5	-	0	-	0	0.0%
Ped Link: P6	Unnamed Ped Link	-	-	-			0	0	-	0	-	0	0.0%
Ped Link: P7	Unnamed Ped Link	-	-	-			0	0	-	0	-	0	0.0%
Ped Link: P8	Unnamed Ped Link	-	1	-	F		2	58	-	0	-	0	0.0%
Ped Link: P9	Unnamed Ped Link	-	3	-	K		2	72	-	0	-	0	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**21.2**	**22.1**	**0.0**	**43.3**	**-**	**-**	**-**	**-**
Pier Road/Maritime Way Roundabout	**-**	**-**	**0**	**0**	**0**	**21.2**	**22.1**	**0.0**	**43.3**	**-**	**-**	**-**	**-**
1/1	1062	1062	-	-	-	1.6	1.8	-	3.4	11.4	11.2	1.8	13.0
1/2	266	266	-	-	-	0.3	0.1	-	0.4	5.7	1.7	0.1	1.8
1/3	851	851	-	-	-	1.4	1.0	-	2.4	10.3	8.5	1.0	9.5
2/1	183	183	-	-	-	0.2	0.5	-	0.7	13.9	0.3	0.5	0.8
2/2	294	294	-	-	-	1.8	1.6	-	3.5	42.6	4.9	1.6	6.5
3/1	484	484	-	-	-	0.7	0.4	-	1.1	8.0	4.7	0.4	5.0
3/2	927	927	-	-	-	1.3	2.1	-	3.4	13.4	4.7	2.1	6.8
4/1	1245	1245	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	265	265	-	-	-	1.4	0.5	-	1.9	26.2	3.8	0.5	4.3
5/2	287	287	-	-	-	1.5	0.6	-	2.2	27.2	4.1	0.6	4.7
5/3	394	394	-	-	-	2.2	1.7	-	3.9	35.9	6.0	1.7	7.7
6/1	749	749	-	-	-	0.1	0.4	-	0.5	2.6	1.3	0.4	1.7
6/2	37	37	-	-	-	0.0	0.0	-	0.0	1.1	0.0	0.0	0.0
7/1	1174	1174	-	-	-	1.0	3.0	-	4.0	12.2	5.3	3.0	8.3
7/2	397	397	-	-	-	0.9	0.2	-	1.1	9.9	6.6	0.2	6.8
8/1	173	173	-	-	-	1.1	0.8	-	1.9	39.7	2.7	0.8	3.5
8/2	223	223	-	-	-	1.5	1.7	-	3.2	52.1	3.5	1.7	5.2
8/3	224	224	-	-	-	1.5	1.7	-	3.3	52.5	3.5	1.7	5.3
9/1	473	473	-	-	-	0.0	0.6	-	0.6	4.5	0.6	0.6	1.2
9/2	438	438	-	-	-	0.1	0.5	-	0.6	4.6	0.2	0.5	0.7
9/3	183	183	-	-	-	0.0	0.1	-	0.1	2.6	0.2	0.1	0.3
10/1	1097	1097	-	-	-	0.1	1.0	-	1.1	3.7	4.8	1.0	5.8
11/1	159	159	-	-	-	0.5	0.1	-	0.7	14.8	1.7	0.1	1.9
11/2	164	164	-	-	-	0.5	0.1	-	0.7	14.9	1.8	0.1	1.9

Full Input Data And Results

11/3	294	294	-	-	-	1.0	0.3	-	1.4	16.6	3.4	0.3	3.7
12/1	632	632	-	-	-	0.1	0.3	-	0.4	2.2	0.8	0.3	1.1
12/2	602	602	-	-	-	0.1	0.3	-	0.4	2.2	0.8	0.3	1.1
13/1	632	632	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	602	602	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	1097	1097	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	749	749	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	37	37	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/1	183	183	-	-	-	0.0	0.4	-	0.4	8.6	0.0	0.4	0.4
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P5	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P6	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P7	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P8	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P9	0	0	-	-	-	-	-	-	-	-	-	-	-

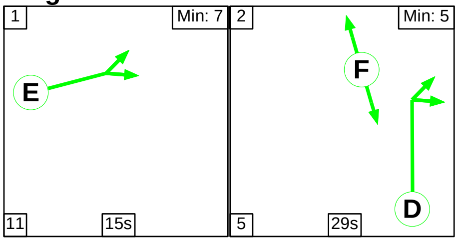
C1	Stream: 1	PRC for Signalled Lanes (%):	10.7	Total Delay for Signalled Lanes (pcuHr):	12.53	Cycle Time (s):	120
C1	Stream: 2	PRC for Signalled Lanes (%):	96.0	Total Delay for Signalled Lanes (pcuHr):	0.55	Cycle Time (s):	120
C1	Stream: 3	PRC for Signalled Lanes (%):	4.4	Total Delay for Signalled Lanes (pcuHr):	13.48	Cycle Time (s):	120
C1	Stream: 4	PRC for Signalled Lanes (%):	35.1	Total Delay for Signalled Lanes (pcuHr):	1.13	Cycle Time (s):	120
C1	Stream: 5	PRC for Signalled Lanes (%):	68.7	Total Delay for Signalled Lanes (pcuHr):	3.97	Cycle Time (s):	120
C1	Stream: 6	PRC for Signalled Lanes (%):	15.4	Total Delay for Signalled Lanes (pcuHr):	10.85	Cycle Time (s):	120
C1	Stream: 7	PRC for Signalled Lanes (%):	130.0	Total Delay for Signalled Lanes (pcuHr):	0.76	Cycle Time (s):	120
		PRC Over All Lanes (%):	4.4	Total Delay Over All Lanes(pcuHr):	43.28		

Full Input Data And Results

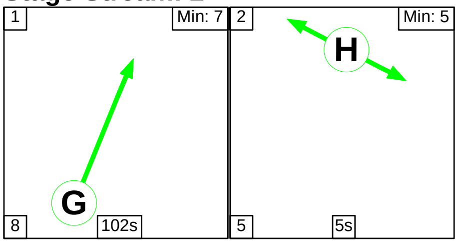
Scenario 4: 'PM Development' (FG4: 'RC + Lower Rainham 1250 Homes PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

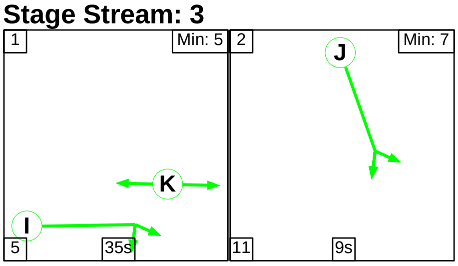
Stage Stream: 1



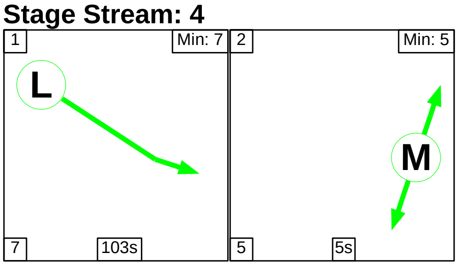
Stage Stream: 2



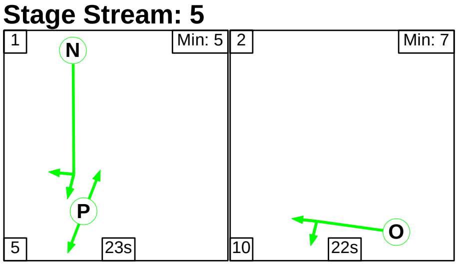
Stage Stream: 3



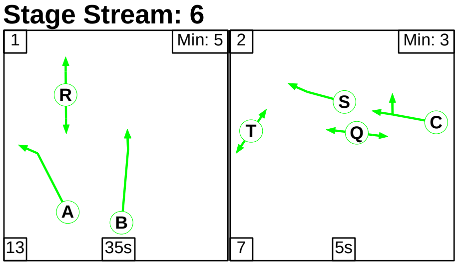
Stage Stream: 4



Stage Stream: 5

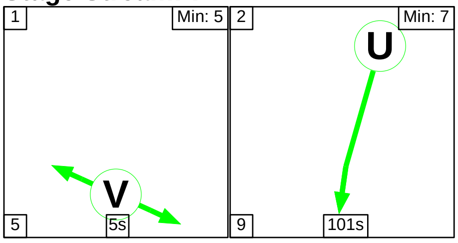


Stage Stream: 6



Full Input Data And Results

Stage Stream: 7



Stage Timings

Stage Stream: 1

Stage	1	2	1	2
Duration	15	29	15	29
Change Point	0	26	60	86

Stage Stream: 2

Stage	1	2
Duration	102	5
Change Point	7	117

Stage Stream: 3

Stage	1	2	1	2
Duration	35	9	35	9
Change Point	72	112	12	52

Stage Stream: 4

Stage	1	2
Duration	103	5
Change Point	20	10

Stage Stream: 5

Stage	1	2	1	2
Duration	23	22	23	22
Change Point	68	96	8	36

Stage Stream: 6

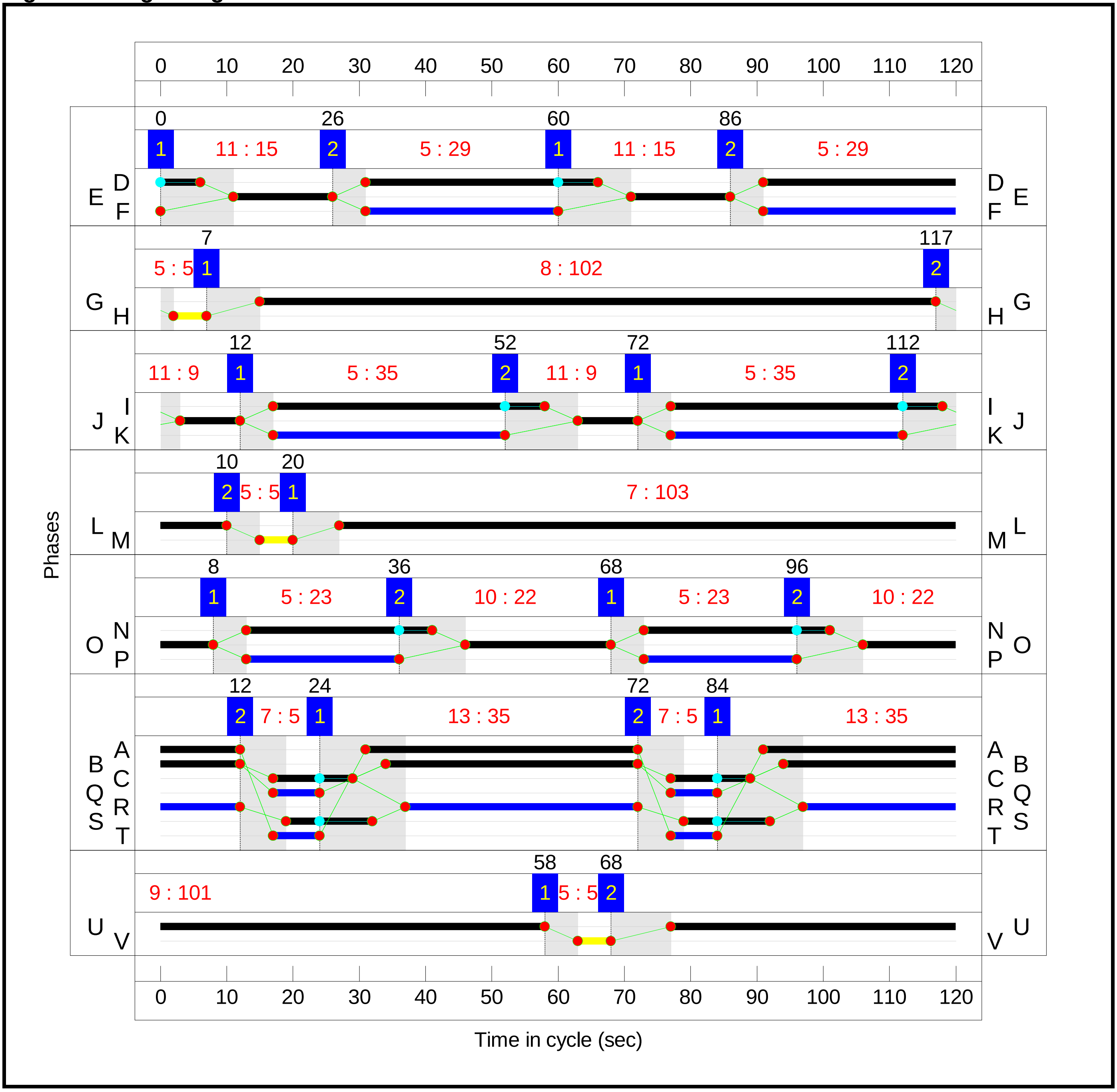
Stage	1	2	1	2
Duration	35	5	35	5
Change Point	24	72	84	12

Stage Stream: 7

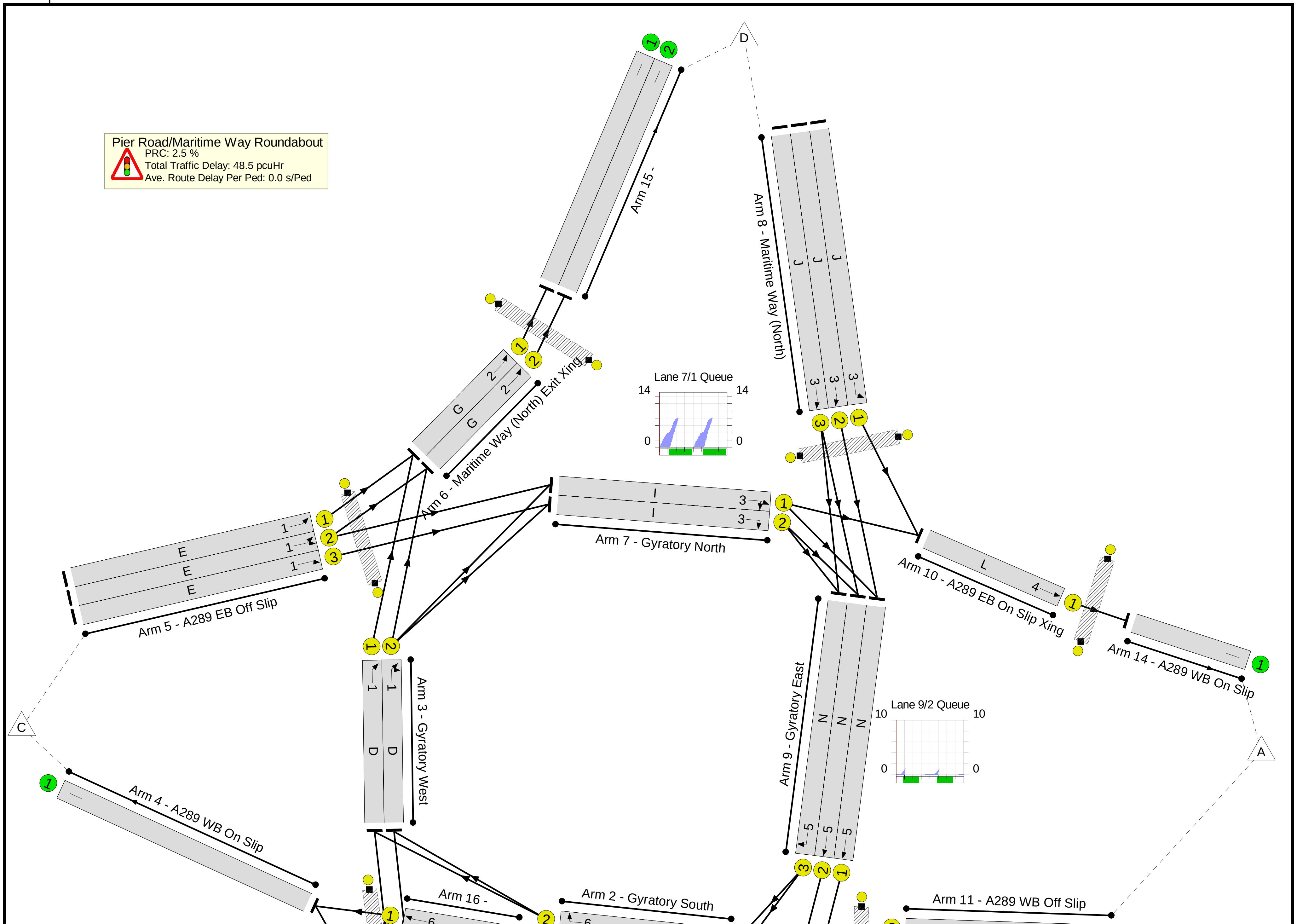
Stage	1	2
Duration	5	101
Change Point	58	68

Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.8%**
Pier Road/Maritime Way Roundabout	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.8%**
1/1	Maritime Way (South) Left	U	6	N/A	A		2	82	-	1128	1900	1330	84.8%
1/2	Maritime Way (South) Ahead	U	6	N/A	B		2	76	-	262	1900	1235	21.2%
1/3	Maritime Way (South) Ahead	U	6	N/A	B		2	76	-	818	1900	1235	66.2%
2/1	Gyratory South Ahead	U	6	N/A	C		2	24	-	189	1900	412	45.9%
2/2	Gyratory South Right	U	6	N/A	C		2	24	-	322	1900	412	78.2%
3/1	Gyratory West Right	U	1	N/A	D		2	70	-	478	1900	1140	41.9%
3/2	Gyratory West Right Right2	U	1	N/A	D		2	70	-	924	1900	1140	81.1%
4/1	A289 WB On Slip	U	N/A	N/A	-		-	-	-	1317	Inf	Inf	0.0%
5/1	A289 EB Off Slip Ahead	U	1	N/A	E		2	30	-	275	1900	507	54.3%
5/2	A289 EB Off Slip Ahead Ahead2	U	1	N/A	E		2	30	-	295	1900	507	58.2%
5/3	A289 EB Off Slip Ahead	U	1	N/A	E		2	30	-	428	1900	507	84.5%
6/1	Maritime Way (North) Exit Xing Ahead	U	2	N/A	G		1	102	-	753	1900	1631	46.2%
6/2	Maritime Way (North) Exit Xing Ahead	U	2	N/A	G		1	102	-	47	1900	1631	2.9%
7/1	Gyratory North Right Ahead	U	3	N/A	I		2	82	-	1168	1900	1330	87.8%

Full Input Data And Results

7/2	Gyratory North Right	U	3	N/A	I		2	82	-	432	1900	1330	32.5%
8/1	Maritime Way (North) Left	U	3	N/A	J		2	18	-	177	1900	317	55.9%
8/2	Maritime Way (North) Ahead	U	3	N/A	J		2	18	-	252	1900	317	79.6%
8/3	Maritime Way (North) Ahead	U	3	N/A	J		2	18	-	258	1900	317	81.5%
9/1	Gyratory East Ahead	U	5	N/A	N		2	56	-	500	1900	918	54.4%
9/2	Gyratory East Ahead	U	5	N/A	N		2	56	-	501	1900	918	54.6%
9/3	Gyratory East Right	U	5	N/A	N		2	56	-	189	1900	918	20.6%
10/1	A289 EB On Slip Xing Ahead	U	4	N/A	L		1	103	-	1097	1900	1647	66.6%
11/1	A289 WB Off Slip Left	U	5	N/A	O		2	44	-	185	1900	728	25.4%
11/2	A289 WB Off Slip Left	U	5	N/A	O		2	44	-	185	1900	728	25.4%
11/3	A289 WB Off Slip Ahead	U	5	N/A	O		2	44	-	322	1900	728	44.2%
12/1	Maritime Way (South) Exit Xing Ahead	U	7	N/A	U		1	101	-	685	1900	1615	42.4%
12/2	Maritime Way (South) Exit Xing Ahead	U	7	N/A	U		1	101	-	686	1900	1615	42.5%
13/1	Maritime Way (South) Exit	U	N/A	N/A	-		-	-	-	685	Inf	Inf	0.0%
13/2	Maritime Way (South) Exit	U	N/A	N/A	-		-	-	-	686	Inf	Inf	0.0%
14/1	A289 WB On Slip	U	N/A	N/A	-		-	-	-	1097	Inf	Inf	0.0%
15/1		U	N/A	N/A	-		-	-	-	753	Inf	Inf	0.0%
15/2		U	N/A	N/A	-		-	-	-	47	Inf	Inf	0.0%
16/1	Ahead	U	6	N/A	S		2	26	-	189	1900	443	42.6%

Full Input Data And Results

Ped Link: P1	Unnamed Ped Link	-	7	-	V		1	5	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	-	-			0	0	-	0	-	0	0.0%
Ped Link: P3	Unnamed Ped Link	-	5	-	P		2	46	-	0	-	0	0.0%
Ped Link: P4	Unnamed Ped Link	-	4	-	M		1	5	-	0	-	0	0.0%
Ped Link: P5	Unnamed Ped Link	-	2	-	H		1	5	-	0	-	0	0.0%
Ped Link: P6	Unnamed Ped Link	-	-	-			0	0	-	0	-	0	0.0%
Ped Link: P7	Unnamed Ped Link	-	-	-			0	0	-	0	-	0	0.0%
Ped Link: P8	Unnamed Ped Link	-	1	-	F		2	58	-	0	-	0	0.0%
Ped Link: P9	Unnamed Ped Link	-	3	-	K		2	70	-	0	-	0	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**0**	**0**	**23.4**	**25.1**	**0.0**	**48.5**	**-**	**-**	**-**	**-**
Pier Road/Maritime Way Roundabout	**-**	**-**	**0**	**0**	**0**	**23.4**	**25.1**	**0.0**	**48.5**	**-**	**-**	**-**	**-**
1/1	1128	1128	-	-	-	2.1	2.7	-	4.8	15.3	13.8	2.7	16.5
1/2	262	262	-	-	-	0.3	0.1	-	0.4	6.1	1.7	0.1	1.9
1/3	818	818	-	-	-	1.5	1.0	-	2.4	10.8	8.2	1.0	9.2
2/1	189	189	-	-	-	0.1	0.4	-	0.5	9.1	0.1	0.4	0.5
2/2	322	322	-	-	-	2.1	1.7	-	3.9	43.3	5.4	1.7	7.1
3/1	478	478	-	-	-	0.8	0.4	-	1.1	8.6	5.4	0.4	5.8
3/2	924	924	-	-	-	1.2	2.1	-	3.3	12.8	5.8	2.1	7.9
4/1	1317	1317	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	275	275	-	-	-	1.4	0.6	-	2.0	26.6	3.9	0.6	4.5
5/2	295	295	-	-	-	1.6	0.7	-	2.3	27.6	4.3	0.7	5.0
5/3	428	428	-	-	-	2.5	2.6	-	5.0	42.3	6.7	2.6	9.2
6/1	753	753	-	-	-	0.1	0.4	-	0.5	2.5	1.3	0.4	1.7
6/2	47	47	-	-	-	0.0	0.0	-	0.0	1.1	0.0	0.0	0.0
7/1	1168	1168	-	-	-	1.5	3.5	-	5.0	15.3	8.2	3.5	11.7
7/2	432	432	-	-	-	0.0	0.2	-	0.2	2.1	0.2	0.2	0.5
8/1	177	177	-	-	-	1.1	0.6	-	1.8	35.8	2.7	0.6	3.3
8/2	252	252	-	-	-	1.7	1.8	-	3.5	50.4	4.0	1.8	5.8
8/3	258	258	-	-	-	1.7	2.1	-	3.8	52.8	4.1	2.1	6.1
9/1	500	500	-	-	-	0.4	0.6	-	1.0	6.9	4.2	0.6	4.8
9/2	501	501	-	-	-	0.1	0.6	-	0.7	5.0	1.1	0.6	1.7
9/3	189	189	-	-	-	0.2	0.1	-	0.3	5.9	3.0	0.1	3.1
10/1	1097	1097	-	-	-	0.3	1.0	-	1.3	4.4	4.6	1.0	5.6
11/1	185	185	-	-	-	0.6	0.2	-	0.8	16.0	2.1	0.2	2.2
11/2	185	185	-	-	-	0.6	0.2	-	0.8	16.0	2.1	0.2	2.2

Full Input Data And Results

11/3	322	322	-	-	-	1.2	0.4	-	1.6	18.2	3.9	0.4	4.3
12/1	685	685	-	-	-	0.1	0.4	-	0.5	2.4	1.2	0.4	1.5
12/2	686	686	-	-	-	0.1	0.4	-	0.5	2.4	1.2	0.4	1.5
13/1	685	685	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
13/2	686	686	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
14/1	1097	1097	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/1	753	753	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
15/2	47	47	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
16/1	189	189	-	-	-	0.0	0.4	-	0.4	7.2	0.0	0.4	0.4
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P3	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P4	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P5	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P6	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P7	0	0	-	-	-	-	-	-	Inf	Inf	-	-	Inf
Ped Link: P8	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P9	0	0	-	-	-	-	-	-	-	-	-	-	-

C1	Stream: 1	PRC for Signalled Lanes (%):	6.5	Total Delay for Signalled Lanes (pcuHr):	13.76	Cycle Time (s):	120
C1	Stream: 2	PRC for Signalled Lanes (%):	94.9	Total Delay for Signalled Lanes (pcuHr):	0.55	Cycle Time (s):	120
C1	Stream: 3	PRC for Signalled Lanes (%):	2.5	Total Delay for Signalled Lanes (pcuHr):	14.29	Cycle Time (s):	120
C1	Stream: 4	PRC for Signalled Lanes (%):	35.1	Total Delay for Signalled Lanes (pcuHr):	1.33	Cycle Time (s):	120
C1	Stream: 5	PRC for Signalled Lanes (%):	65.0	Total Delay for Signalled Lanes (pcuHr):	5.22	Cycle Time (s):	120
C1	Stream: 6	PRC for Signalled Lanes (%):	6.1	Total Delay for Signalled Lanes (pcuHr):	12.41	Cycle Time (s):	120
C1	Stream: 7	PRC for Signalled Lanes (%):	111.9	Total Delay for Signalled Lanes (pcuHr):	0.92	Cycle Time (s):	120
		PRC Over All Lanes (%):	2.5	Total Delay Over All Lanes(pcuHr):	48.48		