

 TRANSPORT APPRAISAL

Lower Thames Crossing – Local Junction Impact
Assessment Modelling Report on Behalf of the London
Borough of Havering

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CONTENTS

| SECTION | HEADING | PAGE NO. |
|---------|----------------------------|----------|
| | EXECUTIVE SUMMARY | 1 |
| 1.0 | INTRODUCTION | 3 |
| 2.0 | HEALTHY STREETS ASSESSMENT | 7 |
| 3.0 | ACCIDENT ANALYSIS | 17 |
| 4.0 | JUNCTION MODELLING | 28 |
| 5.0 | SUMMARY AND CONCLUSIONS | 53 |

List of Figures

| | |
|-------------|--|
| Figure 1.1 | Route of the Lower Thames Crossing |
| Figure 3.1 | Collision Study Area – A12 / North Street |
| Figure 3.2 | Collision Study Area – A12 / Petits Lane |
| Figure 3.3 | Collision Study Area – A12 / Harold Court Road |
| Figure 3.4 | Collision Study Area – A12 / Gubbins Lane |
| Figure 3.5 | Collision Study Area – A127 / Ardleigh Green Road |
| Figure 3.6 | Collision Study Area – A127 / Wingletye Lane |
| Figure 3.7 | Collision Study Area – A127 / Hall Lane |
| Figure 3.8 | Collision Study Area – A127 / Front Lane |
| Figure 3.9 | Collision Study Area – A13 / Mash Way |
| Figure 3.10 | Collision Study Area – A13 / A1306 |
| Figure 3.11 | Collision Study Area – St Mary's Lane / Station Road |

List of Tables

| | |
|-----------|---|
| Table 3.1 | Personal Injury Accident Study Area |
| Table 3.2 | Personal Injury Accidents by Year |
| Table 3.3 | Personal Injury Accidents by Severity |
| Table 3.4 | Personal Injury Accidents by Road Condition |
| Table 3.5 | Personal Injury Accidents by Type |
| Table 4.1 | Surveyed Peak Hours |
| Table 4.2 | 2023 to 2030 Tempro Growth Factors |
| Table 4.3 | A12 / North Street Traffic Flows |

CONTENTS (CONTD.)

| | |
|------------|--|
| Table 4.4 | Linsig Modelling results of the A12/North Street/Haverling Road signalised Junction |
| Table 4.5 | A12 / Pettits Lane Traffic Flows |
| Table 4.6 | Linsig Modelling results of the A12/Pettis Lane signalised Junction |
| Table 4.7 | A12 / Harold Court Road Traffic Flows |
| Table 4.8 | Linsig Modelling results of the A12/Harold Court Road signalised Junction |
| Table 4.9 | A12 / Gubbins Lane Traffic Flows |
| Table 4.10 | Linsig Modelling results of the A12/Gubbins Lane signalised Junction |
| Table 4.11 | A127 / Squirrels Heath Road Traffic Flows |
| Table 4.12 | Linsig Modelling results of the A127/Squirrels Heath signalised Junction |
| Table 4.13 | A127 / Wingletye Lane Traffic Flows |
| Table 4.14 | Linsig Modelling results of the A127/Wingletye Lane Junction |
| Table 4.15 | A127 / Hall Lane (northern section) Traffic Flows |
| Table 4.16 | Junctions 10 Modelling results of the A127 / Hall Lane Junction (northern section) |
| Table 4.17 | A127 / Hall Lane (southern section) Traffic Flows |
| Table 4.18 | Junctions 10 Modelling results of the A127 / Hall Lane Junction (southern section) |
| Table 4.19 | A127 / Front Lane Traffic Flows |
| Table 4.20 | Linsig Modelling results of the A127 Southend Arterial Road/Front Lane Junction |
| Table 4.21 | A13 / Marsh Way Traffic Flows |
| Table 4.22 | Linsig Modelling results of the A13 / Marsh Way Junction |
| Table 4.23 | A13 / Wennington Road (northern roundabout) Traffic Flows |
| Table 4.24 | Linsig Modelling results of the A13 / Wennington Road Junction |
| Table 4.25 | St Mary's Lane / Station Road Junction Traffic Flows |
| Table 4.26 | Linsig Modelling results of the St Mary's Lane / Station Road (Bell Corner) junction |
| Table 5.1 | Summary of Findings and Recommendations at Each junction |

APPENDICES

Appendix 1 – CE Plans

CE Plan 9190/201 Junction Locations

Appendix 2 – Junction Modelling Results

EXECUTIVE SUMMARY

This Report was prepared on behalf of both the London Borough of Havering (LBH) and Transport for London to understand the impacts of the proposed Lower Thames Crossing (LTC) on eleven junctions within LBH. The Report also assessed each junction in relation to Transport for London's Healthy Streets criteria to identify opportunities for interventions with regard to public transport, walking and cycling. Accident data for all eleven junctions was also analysed.

The Healthy Streets assessment identified that most of the junctions would benefit from improved pedestrian/cycle crossing points whilst in others in addition would also benefit from the banning of U-turn manoeuvres, provision of bus priority measures, and Advanced Stop Lines for cyclists.

The accident data analysis found that the A12/North Street and A12/Pettits Lane had relatively high numbers of accidents in the 5 year period analysed (some 38 and 25 accidents respectively), whilst the A12/Gubbins Lane, A127/Squirrels Heath Road and A127/Hall Lane junctions had experienced 19 accidents. All five junctions are recommended for further investigation with regard to road safety.

With respect to the junction modelling, this was informed by new traffic surveys carried out at each junction in May 2023. The changes in flows caused by the LTC are taken from the National Highways 2030 LTAM. These flows were incorporated into the local models to create a 2030 "with LTC" scenario at each of the 11 modelled junctions. The findings of the modelling were as follows:

The following junctions operate within capacity and will continue to do so in the year 2030 with or without the Lower Thames Crossing scheme:

- A12 Colchester Road/Harold Court Road;
- A127 Southend Arterial Road/Wingletye Lane; *
- A13/Marsh Way;
- A127/Front Lane;
- A13/A1306 Wennington Road (Wennington Interchange); and
- A124 St Mary's Lane/Station Road/B1421 Corbetts Tey Road (Bell Corner).

The following junction will operate over capacity in 2030, with or without the LTC, however, there may be scope to improve this junction:

- A12 Colchester Road/Gubbins Lane/Gooshays Drive.

The LTC causes the following junctions to operate over capacity (i.e. without the LTC, these junctions would operate with reserve capacity in 2030):

- A127 Southend Arterial Road/Hall Lane; and
- A12 Eastern Avenue/Pettits Lane/Pettits Lane North;

The following junctions are severely over-capacity, both now and in the 2030 Do Something scenario. As such these junctions will likely require amendments to the strategic network to alleviate the strain on these junctions:

- A12/North Street/B175 Havering Road;
- A127 Southend Arterial Road/Ardleigh Green Road/Squirrels Heath Road.

1.0 INTRODUCTION

- 1.1 Cole Easdon (CE) has been instructed jointly by the London Borough of Havering (LBH) and Transport for London (TfL) to prepare a Report to consider the impacts of the proposed Lower Thames Crossing (LTC) on the operation of 11 junctions within the borough.
- 1.2 The LTC is a proposed new road scheme being promoted by National Highways that will deliver a new river crossing east of the existing Queen Elizabeth Bridge. The scheme will provide a new connection between the A2/M2 in Kent via a twin-bored tunnel underneath the Thames to the A13. A new three lane northbound and two-lane southbound road will then connect through to the M25 between junctions 29 and 30 within Havering.
- 1.3 The road would be approximately 23km long, 4.25km of which would be in tunnel. The tunnel entrances would be located to the east of the village of Chalk on the south of the River Thames and to the west of East Tilbury on the north side. A Plan indicating the proposed scheme is shown within Figure 1.1 below.

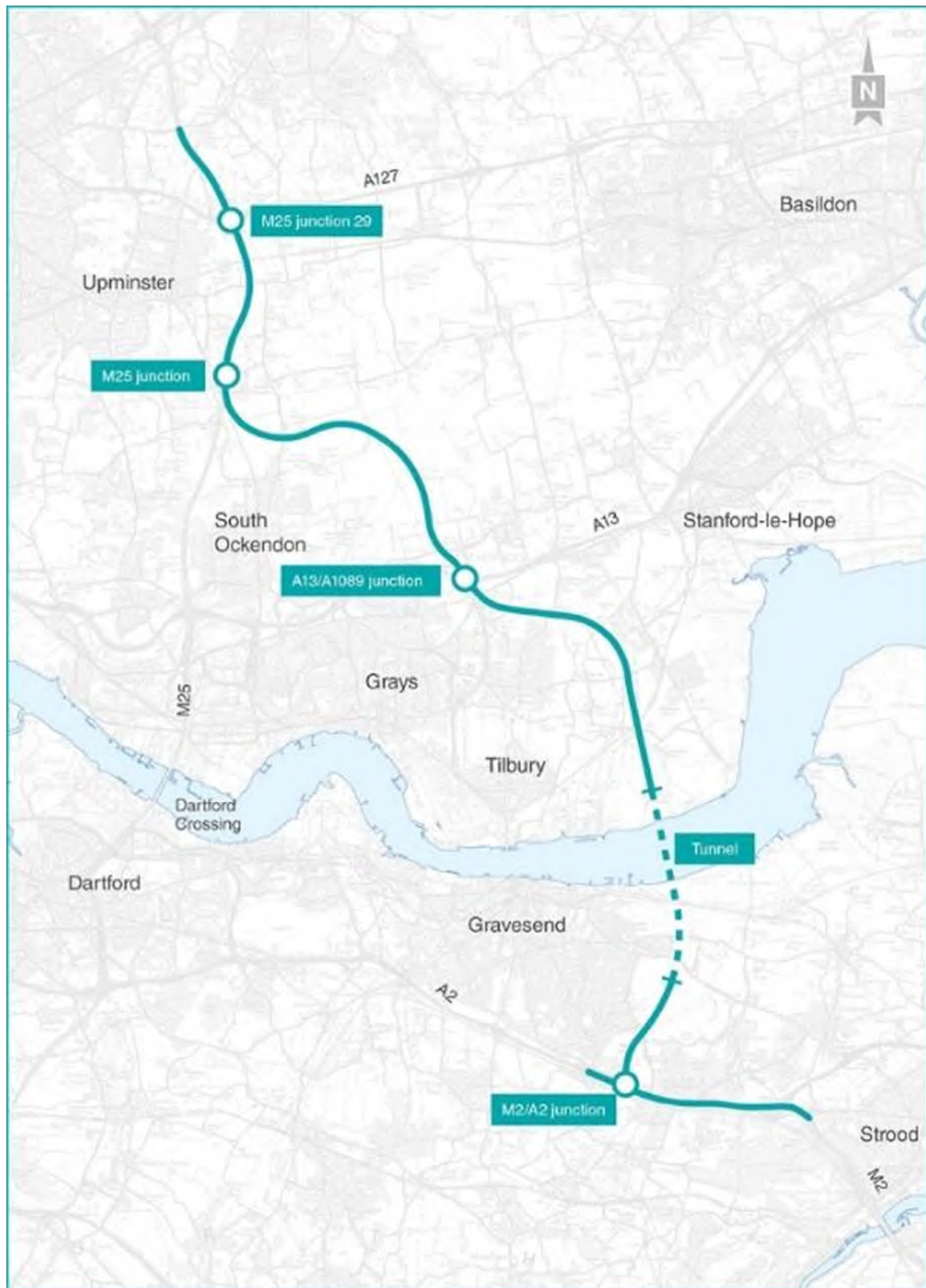


Figure 1.1: Route of the Lower Thames Crossing

- 1.4 The scheme is classified as a Nationally Significant Infrastructure Project (“NSIP”) under Part 5 of the Planning Act 2008 as amended by the Localism Act 2011.
- 1.5 LB Havering has responded to several public consultations on the Lower Thames Crossing scheme in recent years. A statutory (section 42) consultation took place towards the end of 2018. A Supplementary Consultation was undertaken in early 2020 and a further Design Refinement Consultation took place during the early summer 2020. The last public consultation that LB Havering responded to was the Local Refinement Consultation in June 2022.
- 1.6 To obtain consent, the scheme promoter is required to progress the scheme through the Planning Act 2008 Development Consent Order (DCO) process.
- 1.7 At the end of October 2022, National Highways submitted their application to the Planning Inspectorate (PINS). PINS decided to formally accept the application for Examination on 28th November. The project has now entered the pre-Examination period, and this is expected to last between 3 – 5 months. This will then be followed by a six month Examination by the Planning Inspectorate.
- 1.8 As part of their planning submission, National Highways has undertaken a review of potential impacts on twelve of Havering’s local junctions but has not undertaken local junction surveys that would provide a reliable baseline. Instead, their modelling has been based on a wide area strategic SATURN model covering large parts of the South East of England.
- 1.9 This study has been commissioned to enable the LB Havering to understand the impact on 11 key junctions within Havering of the additional traffic forecast to be generated by the LTC scheme. The following junctions have been considered:
- A12/North Street/B175 Havering Road;
 - A12 Eastern Avenue/Pettits Lane/Pettits Lane North;
 - A12 Colchester Road/Harold Court Road;
 - A12 Colchester Road/Gubbins Lane/Gooshays Drive;
 - A127 Southend Arterial Road/Ardleigh Green Road/Squirrels Heath Road;
 - A127 Southend Arterial Road/Wingletye Lane;
 - A127 Southend Arterial Road/Hall Lane;
 - A127 Southend Arterial Road/Front Lane;
 - A13/Marsh Way;
 - A13/A1306 Wennington Road (Wennington Interchange); and
 - A124 St Mary’s Lane/Station Road/B1421 Corbetts Tey Road (Bell Corner)

- 1.10 The location of the above junctions is shown on CE Plan 9190/201 [*Junction Locations*] included within Appendix 1.
- 1.11 In order to obtain up-to-date baseline survey data, traffic surveys at these junctions were carried out by Advanced Transport Research between 0700-1900 on 10th, 11th and 12th May 2023 via CCTV. Each of the junctions has been analysed using either Linsig V3 or Junctions 10 as appropriate. Further detail regarding the scope of the junction modelling and methodology, together with the modelling results is provided within Section 4 of this Report.
- 1.12 In addition to capacity considerations, LB Havering also wishes to consider the implications for pedestrians, cyclists and public transport. In this regard, CE have conducted an assessment of each junction in its existing layout against a number of the Mayor's 'Healthy Streets' criteria so as to highlight any deficiencies and potential areas for improvement with regard to pedestrians, cyclists and public transport. This analysis is presented within Section 2 of this Report.

Report Structure

- 1.13 The Report is structured as follows:
- Section 2.0 considers each of the junctions in relation to certain of the Healthy Streets criteria;
 - Section 3.0 provides analysis of the most recent 5 year period of personal injury accident data for each junction;
 - Section 4.0 sets out the results of the junction modelling at each of the 11 junctions; and
 - Section 5.0 summarises and concludes the Report.

2.0 HEALTHY STREETS ASSESSMENT

2.1 In order to provide an assessment of each junction in terms of its current facilities/suitability for pedestrians, cyclists and public transport, CE has had regard to TfL’s Healthy Streets indicators. These are used to assess how well a street performs in terms of its attractiveness for pedestrians, cyclists and public transport users.

2.2 Owing to this study’s particular focus on individual junctions rather than streets per se, we have considered 5 of the Healthy Streets indicators as follows:

- easy to cross;
- not too noisy;
- people choose to walk, cycle and use public transport;
- people feel safe; and
- people feel relaxed.

2.3 Each of the junctions is assessed in the following Tables.

Table 2.1 Junction 1 - A12/A125 North Street/B175 Havering Road

| Healthy Street Indicator | Comments / Observations | Suggested Areas for Improvement |
|---|--|--|
| Easy to cross | Lack of controlled pedestrian crossing facilities on the A12 (West), North Street and Havering Road. A high number of U-turn manoeuvres were observed with traffic travelling westbound on the A12. This is a particular concern owing to potential for conflict with pedestrian crossings. There is also a primary school located to the north of the junction on Havering Road and pupils are likely to cross this junction. | Consider installation of controlled pedestrian crossing facilities. Consider implementing a camera enforced U-turn ban |
| Not too noisy | The junction is heavily trafficked and therefore noisy. | Limited/no scope to improve this. Additional tree planting and landscaping would however provide a degree of noise mitigation. |
| People choose to walk, cycle and use public transport | The junction has limited pedestrian crossing facilities and only one cycle lane and one Advance Stop Line for cyclists, located on North Street. Footways on each arm of the junction are generally of a good width however. Bus services operate along all arms of the junction and there are 5 bus stops within 300m. There are however no bus priority measures through the junction although a northbound bus | Consider redesign of junction to accommodate controlled pedestrian / cycle crossing facilities on all arms of the junction. Consider implementing a camera enforced U-turn ban. Consider opportunities for bus priority measures to encourage modal shift. |

| Healthy Street Indicator | Comments / Observations | Suggested Areas for Improvement |
|--------------------------|--|---------------------------------|
| | lane is provided on North Street, terminating approximately 100m south of the junction. | |
| People feel safe | The lack of controlled crossing facilities means that many people will not feel safe crossing this junction. The high number of U-turning vehicles is also a safety concern. | As above. |
| People feel relaxed | The traffic noise combined with the lack of controlled crossing points means that many people will not feel relaxed. | As above. |

Table 2.2 Junction 2 - A12/Pettits Lane

| Healthy Street Indicator | Comments / Observations | Suggested Areas for Improvement |
|---|---|--|
| Easy to cross | No controlled pedestrian crossing facilities provided on any arm. A high number of U-turn manoeuvres were observed with traffic travelling westbound on the A12. This is a particular concern owing to potential for conflict with pedestrian crossings. The traffic islands for pedestrians to wait on to cross Pettits Lane are narrow with limited space, especially for larger groups. There is also no tactile paving present on any of the pedestrian crossing points. Pedestrians crossing the Eastern Avenue (east) arm of the A12 must also negotiate crossing 7 lanes of traffic in total. A footbridge is provided on Eastern Avenue (west) allowing pedestrians to cross on the west side of the junction, however It is a lengthy detour to use the bridge and not a convenient or direct route. | Consider installation of controlled pedestrian crossing facilities on all arms. Consider implementing a camera enforced U-turn ban. Install tactile paving where required. Consider a more compact junction layout that is easier for pedestrians and cyclists to negotiate. |
| Not too noisy | The junction is heavily trafficked and therefore noisy. | Limited/no scope to improve this. Additional tree planting and landscaping would however provide a degree of noise mitigation. |
| People choose to walk cycle, and use public transport | The junction has no pedestrian crossing facilities and no facilities for cyclists (such as cycle lanes and Advanced Stop Lines). The junction is large/sprawling and not particularly conducive to safe/convenient pedestrian movement. Bus stops are located in close proximity to the junction on the A12 | Consider redesign of junction to accommodate controlled pedestrian / cycle crossing facilities on all arms of the junction. Consider implementing a camera enforced U-turn ban. Consider opportunities for bus priority measures to encourage modal shift. |

| Healthy Street Indicator | Comments / Observations | Suggested Areas for Improvement |
|--------------------------|--|---------------------------------|
| | Eastern Avenue and on Pettits Lane (N and S). These can be accessed via good width footways/paths. There are no bus priority facilities at the junction | |
| People feel safe | The lack of controlled crossing facilities means that many people will not feel safe crossing this junction. The high number of U-turning vehicles is also a safety concern. | As above. |
| People feel relaxed | The traffic noise combined with the lack of controlled crossing points means that many people will not feel relaxed. | As above. |

Table 2.3 Junction 3 - A12/Harold Court Road

| Healthy Street Indicator | Comments / Observations | Suggested Areas for Improvement |
|--|---|--|
| Easy to cross | No controlled pedestrian crossing facilities on any arm. The pedestrian refuge island on Harold Court Road is narrow with limited space for pedestrians to wait, particular with pushchairs. A subway is however provided to the west of the junction to allow pedestrians across the A12. | Consider installation of controlled pedestrian crossing on Harold Court Road. |
| Not too noisy | The A12 is heavily trafficked and therefore noisy. | Limited/no scope to improve this. Additional tree planting and landscaping would however provide a degree of noise mitigation. |
| People choose to walk, cycle, and use public transport | The junction has no controlled pedestrian crossing facilities and no facilities for cyclists (such as cycle lanes and Advanced Stop Lines). An offroad cycle route provided on the south side of the A12. Access to it requires the crossing Harold Court Road for which there is no formal means to do so. There are bus stops situated in close proximity to the junction on the A12 and on Harold Court Road albeit there are no bus priority facilities provided. However, the frequency of the bus service along these roads is only 3-4 per hour therefore such measures may not be justified. | Consider provision of a controlled crossing facility on Harold Court Road as part of the junction layout. |

| Healthy Street Indicator | Comments / Observations | Suggested Areas for Improvement |
|--------------------------|--|---------------------------------|
| People feel safe | The lack of controlled crossing facilities means that many people will not feel safe crossing this junction. | As above. |
| People feel relaxed | The traffic noise combined with the lack of controlled crossing points means that people may not feel relaxed. | As above. |

Table 2.4 Junction 4 - A12/Gubbins Lane

| Healthy Street Indicator | Comments / Observations | Suggested Areas for Improvement |
|--|---|--|
| Easy to cross | There are no controlled pedestrian crossing facilities on Gooshays Drive or Gubbins Lane, and no crossing at all on the A12(w). A signalised pedestrian crossing facility is provided on the A12 (east). | Consider installation of controlled crossing facilities. |
| Not too noisy | The A12 is heavily trafficked and therefore the area is noisy. | Limited/no scope to address this. Additional tree planting and landscaping would however provide a degree of noise mitigation. |
| People choose to walk, cycle and use public transport. | The lack of pedestrian and cycle facilities at this junction and along the A12 generally mean that very few people are likely to choose to walk and cycle. There are bus stops on Gooshays Drive, Gubbins Lane and on the A12 in close proximity to the junction although there are no bus priority facilities. | Consider redesign of junction to incorporate improved pedestrian and cycle crossing facilities. Consider opportunities for bus priority measures to encourage modal shift. |
| People feel safe | The lack of controlled crossing facilities and high traffic volumes means that few people are likely to feel safe. A high number of U-turn manoeuvres were observed by vehicles heading westbound on the A12 which further compromises the safety of the junction for pedestrians, who may not be expecting U-turning vehicles when making their decision to cross. | As above as well as consider a formal camera enforced U-turn ban. |
| People feel relaxed | The high traffic volumes, noise and lack of controlled crossing facilities is likely to mean that people do not feel relaxed. | |

Table 2.5 Junction 5 - A127/Ardleigh Green Road/Squirrels Heath

| Healthy Street Indicator | Comments / Observations | Suggested Areas for Improvement |
|---|--|---|
| Easy to cross | There are no controlled pedestrian crossing facilities provided at the junction. There are no pedestrian crossing facilities at all on the A127 (S). A footbridge is provided over the A127(N). There is no tactile paving present on Ardleigh Green Road and the pedestrian 'island' on this road doesn't line up with the dropped kerbs. There is also no tactile paving present at the informal crossing point on Squirrels Heath Road. The pedestrian islands on both Ardleigh Green Road and Squirrels Heath Road are both very narrow and of an inadequate width for people with pushchairs or in wheelchairs. | Consider installation of controlled crossing facilities, together with tactile paving. |
| Not too noisy | The A12 is heavily trafficked and therefore the area is noisy. | Limited/no scope to address this. Additional tree planting and landscaping would however provide a degree of noise mitigation. |
| People choose to walk, cycle and use public transport | The lack of pedestrian and cycle facilities at this junction and along the A127 generally mean that very few people are likely to choose to walk and cycle. The footway on Ardleigh Green Road is somewhat narrow and on its northern side its usable width is impacted by trees. There are bus stops in close proximity to the junction on Ardleigh Green Road and Squirrels Heath Road. | Consider redesign of junction to incorporate improved pedestrian and cycle crossing facilities. Consider opportunities to install bus priority measures to encourage modal shift to bus services, thereby helping to alleviate some of the pressure on this junction. |
| People feel safe | The lack of controlled crossing facilities and high traffic volumes means that few people are likely to feel safe. A high number of U-turn manoeuvres were observed by vehicles heading northbound on the A127 which further compromises the safety of the junction for pedestrians, who may not be expecting U-turning vehicles when making their decision to cross. | As above as well as consider a formal camera enforced U-turn ban. |
| People feel relaxed | The high traffic volumes, noise and lack of controlled crossing facilities is likely to mean that people do not feel relaxed. | Improved crossing facilities would assist with making people feel more relaxed. |

Table 2.6 Junction 6 - A127/Wingletye Lane

| Healthy Street Indicator | Comments / Observations | Suggested Areas for Improvement |
|---|--|--|
| Easy to cross | There are no pedestrian crossing facilities across Wingletye Lane or the A127 in this location. The A127 constitutes major severance between the development north and south of this road. | Consider feasibility of signalling this junction to introduce pedestrian crossing facilities. |
| Not too noisy | In the vicinity of the junction, the A127 is heavily trafficked and also subject to a 50mph speed limit and is therefore noisy. | Limited/no scope to improve this. Additional tree planting and landscaping would however provide a degree of noise mitigation. |
| People choose to walk, cycle and use public transport | In the vicinity of the junction, the A127 is subject to a 50mph speed limit and is heavily trafficked therefore people are unlikely to choose to walk and cycle through this junction. There are no bus stops in the vicinity of the junction | As above, consider feasibility of signalling the junction to introduce pedestrian crossing facilities. |
| People feel safe | The speed and volume of traffic along the A127 means that people are unlikely to feel safe. The junction is also fairly remote and lacks natural surveillance. | Signalisation of the junction would reduce vehicle speeds and provide an opportunity for pedestrian crossing facilities. |
| People feel relaxed | For the same reasons as given above for 'people feel safe', people are unlikely to feel relaxed. | As above. |

Table 2.7 Junction 7 - A127/Hall Lane

| Healthy Street Indicator | Comments / Observations | Suggested Areas for Improvement |
|---|---|---------------------------------------|
| Easy to cross | An uncontrolled pedestrian crossing with tactile paving and refuge island is provided where the A127 northbound offslip meets Hall Road, facilitating north-south movement along Hall Lane. There are no east-west crossings across Hall Lane although these are not considered to be necessary owing to the lack of development on either side of Hall Lane. | No interventions considered necessary |
| Not too noisy | The junctions are relatively lightly trafficked and not too noisy. | No interventions considered necessary |
| People choose to walk, cycle and use public transport | There is a shared foot/cycle provided along Hall Lane facilitating a traffic-free connection to the northern edge of Upminster to Pages Wood. There are no bus stops in the vicinity of the junction. | No interventions considered necessary |

| Healthy Street Indicator | Comments / Observations | Suggested Areas for Improvement |
|--------------------------|---|---------------------------------------|
| People feel safe | Hall Lane is relatively lightly trafficked and does benefit from a shared foot/cycle way, together with street lighting. Most people would likely feel safe using Hall Lane, particularly during the hours of daylight. | No interventions considered necessary |
| People feel relaxed | For the reasons identified above, it is also considered that most people would feel relaxed in this location. | No interventions considered necessary |

Table 2.8 Junction 8 - A127 Front Lane

| Healthy Street Indicator | Comments / Observations | Suggested Areas for Improvement |
|---|---|--|
| Easy to cross | There are no pedestrian crossing facilities on Front Lane. There is a staggered informal crossing over the A127 however this is not considered to be a safe crossing owing to the speed limit of the road (50mph), absence of tactile paving and the need to cross 4 lanes of traffic. We recommend that a survey is conducted and a Report produced to assess the existing usage of this crossing so as to inform future discussions about its retention, removal, or possible alteration. | There is limited development on the north side of the A127 in this location and therefore the demand for north-south pedestrian movement across this road is likely to be low therefore no interventions are considered necessary, except for the possible removal or alteration of the existing staggered crossing if deemed appropriate following further survey work. |
| Not too noisy | The speed and volume of traffic along the A127 means that it is noisy. | Limited/no scope to change this. |
| People choose to walk, cycle and use public transport | The nature of the A127 means that people are unlikely to choose to walk and cycle. The footway provision along both Front Lane and the A127 is also very narrow. | No interventions considered necessary owing to the character of the A127 in this location. |
| People feel safe | The nature of the A127 means that people are unlikely to feel safe. | No interventions considered necessary owing to the character of the A127 in this location. |
| People feel relaxed | The nature of the A127 means that people are unlikely to feel relaxed. | No interventions considered necessary owing to the character of the A127 in this location. |

Table 2.9 Junction 9 - Marsh Way / A13 Junction

| Healthy Street Indicator | Comments / Observations | Suggested Areas for Improvement |
|---|---|---|
| Easy to cross | Controlled pedestrian crossing facilities are provided on Marsh Way (North and South arms), the A13 westbound offslip, the A13 eastbound onslip, and Consul Avenue. There are no crossing facilities on the A13 westbound onslip, eastbound offslip, or Courier Road. | Consider provision of pedestrian crossing facilities on those arms without them at present, and also consider provision of a foot/cycleway along the western side of Marsh Way between the two roundabouts. |
| Not too noisy | Whilst the junction is busy, the relatively low speed of traffic means that the area is not too noisy. | No interventions considered necessary. |
| People choose to walk, cycle and use public transport | There is a shared foot/cycle way along Marsh Way facilitating north-south movement through this junction. There is also a shared foot/cycle path along Consul Avenue. There are a pair of bus stops on the north side of Marsh Way in close proximity to the junction, served by a 10 minute frequency service and accessed via good width footways. | Consideration implementation of infrastructure as outlined above, as well as installation of Advanced Stop Lines for cyclists. |
| People feel safe | The area is well lit and generally considered to feel safe. | No interventions considered necessary |
| People feel relaxed | The generally good pedestrian and cycle provision through the junction means that people are likely to feel reasonably relaxed. | No interventions considered necessary. |

Table 2.10 Junction 10 - A13/A1306 Wennington Road (Wennington Interchange)

| Healthy Street Indicator | Comments / Observations | Suggested Areas for Improvement |
|--|--|---|
| Easy to cross | The junction incorporates uncontrolled crossing facilities for pedestrians and cyclists but due to the volume and speed of traffic it is not considered easy to cross. However, pedestrian movement in the area is low and the installation of controlled crossing facilities is unlikely to be justified. | The crossing points lack tactile paving and this should be remedied to improve safety. |
| Not too noisy | The volume and speed of traffic means that the junction is noisy. | Little/no scope to improve this. Additional tree planting and landscaping would however provide a degree of noise mitigation. |
| People choose to walk, cycle and use public transport. | The A3106 incorporates a shared foot/cycle way along both sides of the carriageway and therefore is conducive to encouraging walking and cycling. The foot/cycle way | Consider resurfacing of the foot/cycle ways through the junction and the cutting back of vegetation. |

| Healthy Street Indicator | Comments / Observations | Suggested Areas for Improvement |
|--------------------------|--|---|
| | surface is however in a poor state of repair in various locations and the usable width is also impacted by overgrown vegetation in places. There are no bus stops in the vicinity of the junction. | |
| People feel safe | The junction is lit and does incorporate dedicated pedestrian and cycle facilities. However, the speed and volume of traffic, and lack of controlled crossings may mean that some people do not feel safe. | Consider feasibility of introducing a controlled pedestrian / cycle crossing to enhance safety. |
| People feel relaxed | The volume and speed of traffic through the junction means that people are unlikely to feel relaxed. | |

Table 2.11 Junction 11 - A124/Station Road/B1421 (Bell Corner)

| Healthy Street Indicator | Comments / Observations | Suggested Areas for Improvement |
|---|--|---|
| Easy to cross | There are signal controlled pedestrian crossing facilities with tactile paving across every arm of the junction. | No improvements considered necessary |
| Not too noisy | The speed of traffic is relatively low and therefore the junction is not too noisy. | No improvements considered necessary. |
| People choose to walk, cycle and use public transport | The junction is situated in a high street location and therefore pedestrian activity is fairly high. The footways on all arms of the junction are of a good width to accommodate the pedestrian flow. Cycle parking is also provided at locations close to the junction indicating that people also choose to cycle. There are bus stops located on all 4 approach arms of the junction although there are no bus priority facilities. The bus stops can all be accessed via good width footways and via the abovementioned crossings. | Consider provision of cyclist Advanced Stop Lines. Consider opportunities for bus priority measures to encourage modal shift. |
| People feel safe | The town centre location with high footfall levels combined with the presence of signal-controlled crossing facilities means that most people will feel safe. Street lighting is also provided. | No improvements considered necessary |

| Healthy Street Indicator | Comments / Observations | Suggested Areas for Improvement |
|--------------------------|--|--------------------------------------|
| People feel relaxed | For the same reasons as given for 'people feel safe', people are likely to feel relaxed. | No improvements considered necessary |

2.4 Table 2.12 provides a summary of the suggested interventions at each junction based on the Healthy Streets assessment.

Table 2.12 Summary of suggested interventions based on Healthy Streets Assessment

| Junction | Suggested Interventions |
|--|--|
| A12/A125 North Street/B175 Havering Road | Consider installation of controlled pedestrian crossing facilities. Consider implementing a camera enforced U-turn ban. Consider potential for bus priority measures |
| A12/Pettits Lane | Consider installation of controlled pedestrian crossing facilities on all arms. Consider implementing a camera enforced U-turn ban. Install tactile paving where required. Consider a more compact junction layout that is easier for pedestrians and cyclists to negotiate. Consider potential for bus priority measures. |
| A12/Harold Court Road | Consider provision of a controlled crossing facility on Harold Court Road as part of the junction layout. |
| A12/Gubbins Lane | Consider redesign of junction to incorporate improved pedestrian and cycle crossing facilities. Consider incorporating a camera-enforced U-turn ban and opportunities for bus priority measures. |
| A127/Ardleigh Green Road/Squirrels Heath | Consider installation of controlled crossing facilities, together with tactile paving. Consider opportunities for bus priority measures. |
| A127/Wingletye Lane | Consider feasibility of signalling this junction and adding pedestrian crossing facilities to reduce the impact of the north-south severance caused by the A127. |
| A127/Hall Lane | No interventions identified. |
| A127/Front Lane | No interventions identified |
| A13/Marsh Way | Consider provision of pedestrian crossing facilities on those arms without them at present, and also consider provision of a foot/cycleway along the western side of Marsh Way between the two roundabouts. Consider installation of Advance Stop Lines for cyclists. |
| A13/A1306 Wennington Road | The crossing points lack tactile paving and this should be remedied to improve safety. Consider resurfacing of the foot/cycle ways through the junction and the cutting back of vegetation. |
| A124 St Mary's Lane/Station Road/B1421 (Bell Corner) | Consider provision of cyclist Advanced Stop Lines and opportunities for bus priority measures. |

3.0 ACCIDENT ANALYSIS

3.1 Cole Easdon obtained Personal Injury Accident Data for the most recent five-year period available (1st January 2018 and 31st December 2022) from TfL for all 11 junctions within the study area.

Study Area

3.2 The study area for each of the junctions is summarised in Table 3.1. Figures 3.1 to 3.11 show an aerial view¹ of each study area together with the locations of each accident. For each of the Figures below, green dots represent a slight accident whilst blue dots represent a serious accident and red dots represent a fatal accident.

Table 3.1: Personal Injury Accident Study Area

| Junction | Study Area |
|-------------------------------|--|
| 1: A12 / North Street | <ul style="list-style-type: none"> North Street between Eastern Avenue in the north and Romford bus garage in the south; Havering Road between Eastern Avenue in the south and Collier Row Lane in the north; and Eastern Avenue between the access into the Dunelm store in the west and the Texaco petrol station in the east. |
| 2: A12 / Petits Lane | <ul style="list-style-type: none"> Petits Lane from the junction with Heather Gardens in the north across the A12 junction to Marshalls Academy in the south; and Eastern Avenue between Heather Avenue in the west and Rise Park Boulevard in the east. |
| 3: A12 / Harold Court Road | <ul style="list-style-type: none"> Harold Court Road between Colchester Road in the north and Church Road / Ingreway in the south; and Colchester Road between Geoffrey Avenue in the west and Maylands Way in the east. |
| 4: A12 / Gubbins Lane | <ul style="list-style-type: none"> Gubbins Lane between Colchester Road in the north and Ridgeway in the south; Gooshays Drive between Colchester Road in the south and Camborne Avenue in the north; and Colchester Road between Kersey Gardens / New Hall Drive in the west and Avenue Road in the east. |
| 5: A127 / Ardleigh Green Road | <ul style="list-style-type: none"> Ardleigh Green Road between Southend Arterial Road in the east and Ardleigh Close in the west; Squirrels Heath Road between Southend Arterial Road in the west and Redden Court Road in the east; and Southend Arterial Road between Bryant Avenue in the northwest and Cecil Avenue in the southeast. |
| 6: A127 / Wingletye Lane | <ul style="list-style-type: none"> Wingletye Lane between Southend Arterial Road in the north and Essex Gardens in the south; and Southend Arterial Road between Redden Court Road in the northwest and the BP petrol station in the southeast. |
| 7: A127 / Hall Lane | <ul style="list-style-type: none"> Hall Lane to the north and south of the Southend Arterial Road including slip roads; and Southend Arterial Road either side of the Hall Lane interchange. |

¹ Source: Transport for London

| Junction | Study Area |
|-----------------------------------|---|
| 8: A127 / Front Lane | <ul style="list-style-type: none"> Front Lane between Southend Arterial Road in the north and Oak Royal Nurseries; and Southend Arterial Road between Wanderers Haven Animal Sanctuary and Cranham Leisuresales. |
| 9: A13 / Marsh Lane | <ul style="list-style-type: none"> Marsh Way between the C2C Railway line in the north and western access into CEME; and Slip roads onto the A13 to the east and west of the Marsh Way interchange. |
| 10: A13 / A1306 | <ul style="list-style-type: none"> Aerial Road between Redcorn in the south and the A13/A1306 interchange; New Road between A13/A1306 interchange in the south and Sandy Lane in the north; and Slip roads onto the A13 either side of the A13/A1306 interchange. |
| 11: St Mary's Lane / Station Road | <ul style="list-style-type: none"> Station Road between St Mary's Lane in the south and Upminster Station in the north; Corbets Tey Road between St Mary's Lane in the north and the southern boundary of Upminster Park in the south; and St Mary's Lane between Cranbourne Gardens in the west and the Waitrose supermarket in the east. |



Figure 3.1: Collision Study Area – A12 / North Street



Figure 3.2: Collision Study Area – A12 / Pettits Lane



Figure 3.3: Collision Study Area – A12 / Harold Court Road



Figure 3.4: Collision Study Area – A12 / Gubbins Lane



Figure 3.5: Collision Study Area – A127 / Ardleigh Green Road



Figure 3.6: Collision Study Area – A127 / Wingletye Lane



Figure 3.7: Collision Study Area – A127 / Hall Lane



Figure 3.8: Collision Study Area – A127 / Front Lane



Figure 3.9: Collision Study Area – A13 / Marsh Way



Figure 3.10: Collision Study Area – A13 / A1306



Figure 3.11: Collision Study Area – St Mary's Lane / Station Road

Accidents by Year

3.3 Table 3.2 provides a summary of the number of accidents recorded at each junction by year.

Table 3.2: Personal Injury Accidents by Year

| Junction | 2018 | 2019 | 2020 | 2021 | 2022 | Total |
|-----------------------------------|-----------|-----------|-----------|-----------|-----------|------------|
| 1: A12 / North Street | 8 | 9 | 7 | 6 | 8 | 38 |
| 2: A12 / Pettits Lane | 6 | 5 | 4 | 6 | 4 | 25 |
| 3: A12 / Harold Court Road | 5 | 6 | 2 | 1 | 2 | 16 |
| 4: A12 / Gubbins Lane | 7 | 0 | 6 | 0 | 6 | 19 |
| 5: A127 / Squirrels Heath Road | 4 | 3 | 3 | 3 | 6 | 19 |
| 6: A127 / Wingletye Lane | 3 | 0 | 2 | 1 | 2 | 8 |
| 7: A127 / Hall Lane | 5 | 5 | 3 | 2 | 4 | 19 |
| 8: A127 / Front Lane | 1 | 2 | 1 | 1 | 2 | 7 |
| 9: A13 / Marsh Lane | 6 | 3 | 1 | 5 | 2 | 17 |
| 10: A13 / A1306 | 1 | 3 | 3 | 0 | 1 | 8 |
| 11: St Mary's Lane / Station Road | 2 | 5 | 0 | 0 | 2 | 9 |
| TOTAL | 48 | 41 | 32 | 25 | 39 | 185 |

3.4 From Table 3.2 it can be seen that the junction with the highest number of accidents is that of the A12 with North Street, accounting for approximately 20% of the total number of accidents across the 11 junctions analysed, whilst some 13.5% of the total number of accidents occurred at the A12 / Pettits Lane junction. These two junctions combined account for a third of all accidents recorded within the study area. The A12/North Street junction averages greater than 1 accident every 2 months over the study period (38 accidents in 60 months). The junction with the fewest number of accidents is the A127/Front Lane with just 7 over the 5 year period analysed.

3.5 It is recommended that a more detailed review is conducted in particular of the A12 / North Street, A12 / Pettits Lane, A12 Gubbins Lane, A127 Ardleigh Green Road and Hall Lane junctions with regard to possible safety improvements (including the carrying out of Road Safety Audits). This Report has already identified deficiencies with the pedestrian crossing facilities at these junctions (and others), together with the high numbers of U-turn manouevres that occur at these junctions which should also be considered as part of any future mitigation measures. Independent Road Safety Audits of the two junctions with the highest number of accidents may help to identify possible remedial measures.

Accidents by Severity

3.6 Table 3.3 provides a summary of the number of accidents recorded at each junction by severity.

Table 3.3: Personal Injury Accidents by Severity

| Junction | Slight | | Serious | | Fatal | |
|-----------------------------------|------------|------------|-----------|------------|-----------|------------|
| | Accidents | Casualties | Accidents | Casualties | Accidents | Casualties |
| 1: A12 / North Street | 35 | 59 | 3 | 3 | 0 | 0 |
| 2: A12 / Petits Lane | 21 | 36 | 4 | 4 | 0 | 0 |
| 3: A12 / Harold Court Road | 15 | 29 | 1 | 1 | 0 | 0 |
| 4: A12 / Gubbins Lane | 17 | 26 | 2 | 2 | 0 | 0 |
| 5: A127 / Ardleigh Green Road | 16 | 30 | 2 | 4 | 1 | 2 |
| 6: A127 / Wingletye Lane | 8 | 15 | 0 | 0 | 0 | 0 |
| 7: A127 / Hall Lane | 17 | 30 | 1 | 1 | 1 | 1 |
| 8: A127 / Front Lane | 5 | 7 | 1 | 1 | 1 | 1 |
| 9: A13 / Marsh Lane | 15 | 18 | 1 | 1 | 1 | 1 |
| 10: A13 / A1306 | 7 | 8 | 0 | 0 | 1 | 1 |
| 11: St Mary's Lane / Station Road | 9 | 11 | 0 | 0 | 0 | 0 |
| TOTAL | 165 | 269 | 15 | 17 | 5 | 6 |

3.7 Table 3.3 indicates that there have been some 20 serious and fatal accidents within the study area, accounting for approximately 11% of the total number of accidents. The largest concentration of serious accidents occurred at the A12/North Street and A12/Pettits Lane junctions, accounting for 7 out of the 15 accidents. The five fatal accidents were spread amongst 5 different junctions indicating that no one junction is especially problematic in that regard.

Accidents by Type

3.8 Table 3.4 provides a summary of the number of accidents recorded at each junction by vehicles involved.

Table 3.4 Personal Injury Accidents by Type

| Type | Junction 1 | Junction 2 | Junction 3 | Junction 4 | Junction 5 | Junction 6 | Junction 7 | Junction 8 | Junction 9 | Junction 10 | Junction 11 | TOTAL |
|------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------|
| Car / Pedestrian | 3 | | 1 | | | | | | | | 3 | 7 |
| Car | 3 | | | | 1 | 1 | 1 | 2 | 2 | 1 | | 11 |
| Car / Car | 13 | 12 | 5 | 9 | 5 | 3 | 12 | 2 | 7 | 6 | 1 | 75 |
| X3 Car | 3 | 3 | 1 | | 3 | | 1 | | | | | 11 |
| X4 Car | 1 | | 1 | | 2 | 1 | | | | | | 5 |
| Car / LGV | 2 | 1 | 4 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | | 15 |

| Type | Junction 1 | Junction 2 | Junction 3 | Junction 4 | Junction 5 | Junction 6 | Junction 7 | Junction 8 | Junction 9 | Junction 10 | Junction 11 | TOTAL |
|------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------|
| Car / HGV | | | 1 | | | | 1 | | 2 | | | 4 |
| Car / Motorcycle | 4 | 2 | | 3 | | 1 | 1 | 1 | 1 | | | 13 |
| Car / Taxi | 1 | 1 | | | | 1 | | | | | | 3 |
| Car / Pedal Cycle | 4 | 1 | | 3 | | | | | | | 1 | 9 |
| Car / Bus | 1 | | | | | | | | 1 | | | 2 |
| Car / Minibus | | 1 | | | | | | | | | | 1 |
| Car / Other Vehicle | | | | | | | | | | | 1 | 1 |
| Bus Passenger | 1 | 1 | | 1 | | | | | | | 2 | 5 |
| LGV / HGV | 1 | | 1 | | | | | | | | | 2 |
| X2 Car / LGV | 1 | | 1 | | 1 | | 1 | | | | | 4 |
| X2 Car / Minibus | | | | | | | | | | | 1 | 1 |
| X3 Car / LGV | | | | 1 | | | | | | | | 1 |
| X3 Car / HGV | | | | | | | | | 1 | | | 1 |
| X2 Car / X2 LGV | | 1 | | | | | | | | | | 1 |
| LGV / LGV | | | | | 1 | | | | | | | 1 |
| X2 LGV / Car | | | 1 | | | | | | | | | 1 |
| Motorcycle / LGV | | 1 | | | | | 1 | | | | | 2 |
| Motorcycle / Taxi | | 1 | | | | | | | | | | 1 |
| Motorcycle / Other | | | | | 1 | | | | | | | 1 |
| Motorcycle / Ambulance | | | | | | | | | 1 | | | 1 |
| Motorcycle | | | | | 1 | | | | | | | 1 |
| Taxi / Wildlife | | | | 1 | | | | | | | | 1 |
| Minibus / LGV | | | | | 1 | | | | | | | 1 |
| X7 Car / LGV / X2 Pedestrian | | | | | 1 | | | | | | | 1 |
| 2x Car / HGV / Other | | | | | | | | 1 | | | | 1 |
| LGV / Pedal Cycle | | | | | | | | | 1 | | | 1 |

3.9 Table 3.4 reveals that there have been relatively few accidents involving pedestrians and cyclists across the 11 junctions, with just 8 involving pedestrians and 9 involving cyclists. A total of 7 of these occurred at the A12 / North Street junction, which also has the highest overall number of accidents. The low number of accidents involving pedestrians and cyclists generally across the study area is likely to be due to the characteristics of the junctions assessed. Pedestrian and cycle activity is likely to be relatively low owing to the high volume and speed of traffic, together with the provision of relatively poor pedestrian and cycle crossing facilities in the majority of locations.

- 3.10 The most common accident type involved two cars colliding. This is unsurprising given the high number of signalised junctions in particular, where rear shunt type accidents are common, together with accidents resulting from drivers disobeying traffic signals.

Summary

- 3.11 The analysis in this Section has shown there to be a high number of accidents occurring at two of the junctions within the study area, these being the A12 / North Street and the A12 / Pettits Lane. The Healthy Streets analysis within Section 2.0 of the Report identified a recommendation for improved pedestrian crossing facilities at these junctions as well as consideration being given to the banning of U-turn manoeuvres, which are considered to be particularly dangerous. Other junctions including the A12 / Gubbins Lane, A127 / Ardleigh Road Green and A127 / Hall Lane also had relatively high numbers of accidents (19 each). We recommend that Road Safety Audits are carried out at the North Street, Pettits Lane, Gubbins Lane, Ardleigh Green Road and Hall Lane junctions to allow possible further remedial measures to be identified.
- 3.12 With the LTC forecast to increase traffic flows through the Ardleigh Green Road and Hall Lane junctions (as discussed within the next Section) it is recommended that specific consideration is given to safety mitigation measures that could be implemented at these junctions.
- 3.13 It should also be noted that, as explained within the next Section, that National Highways have not modelled the left turn flow from the A127 onto Wingletye Lane, where the LTC is predicted to increase this movement by 222 PCUs in the AM peak and 117 PCUs in the PM peak. Given the presence of two schools on Wingletye Lane in the vicinity of the A127 junction, we recommend that specific further work is carried out examining the potential requirements for safety improvements at this junction and more generally along Wingletye Lane.

4.0 JUNCTION MODELLING

- 4.1 This Section sets out the results of the capacity modelling carried out at the 11 junctions with the study area. To inform the modelling, turning counts were undertaken at the junctions between the hours of 0700-1900 on 10th, 11th and 12th May 2023.
- 4.2 The changes in flows caused by the LTC are taken from the National Highways 2030 LTAM. These flows were incorporated into the local models to create a 2030 “with LTC” scenario at each of the 11 modelled junctions.
- 4.3 The following junctions have been modelled using Linsig V3.1:
- A12/North Street/B175 Havering Road;
 - A12 Eastern Avenue/Pettits Lane/Pettits Lane North;
 - A12 Colchester Road/Harold Court Road;
 - A12 Colchester Road/Gubbins Lane/Gooshays Drive;
 - A127 Southend Arterial Road/Ardleigh Green Road/Squirrels Heath Road;
 - A127 Southend Arterial Road/Wingletye Lane;
 - A127 Southend Arterial Road/Front Lane;
 - A13/Marsh Way;
 - A124 St Mary’s Lane/Station Road/B1421 Corbetts Tey Road (Bell Corner).
- 4.4 The following junctions have been modelled using Junctions 10:
- A127 Southend Arterial Road/Hall Lane;
 - A13/A1306 Wennington Road (Wennington Interchange).
- 4.5 The junctions have been modelled for the following scenarios:
- 2023 Base utilising data from CCTV surveys conducted during May 2023;
 - 2030 (Do Minimum) through application of a TEMPRO growth factor to the 2023 surveyed flow;
 - 2030 Base + Lower Thames Crossing (Do Something).
- 4.6 In common with the modelling conducted by National Highways in support of their planning application to build the Lower Thames Crossing, the junctions have been modelled for the time periods of 0700-0800 and 1700-1800. It should be noted, however, that only 6% of the peak hours as surveyed at the various junctions matched these two modelled hour peaks. Refer to Table 4.1 below for the surveyed peak hours at the junctions considered.

Table 4.1: Surveyed Peak Hours

| Junction 1 - A12 / North Street | | | | | | |
|--|-------------------------------------|----------------|------------------------------------|----------------|----------------------------------|----------------|
| | Wednesday 10 th May 2023 | | Thursday 11 th May 2023 | | Friday 12 th May 2023 | |
| | AM | PM | AM | PM | AM | PM |
| Surveyed peak hours | 07:45 to 08:45 | 17:30 to 18:30 | 07:30 to 08:30 | 17:00 to 18:00 | 07:30 to 08:30 | 17:15 to 18:15 |
| Junction 2 - A12 / Pettits Lane | | | | | | |
| | Wednesday 10 th May 2023 | | Thursday 11 th May 2023 | | Friday 12 th May 2023 | |
| | AM | PM | AM | PM | AM | PM |
| Surveyed peak hours | 07:45 to 08:45 | 17:15 to 18:15 | 08:00 to 09:00 | 17:00 to 18:00 | 07:30 to 08:30 | 17:15 to 18:15 |
| Junction 3 - A12/Harold Court Road | | | | | | |
| | Wednesday 10 th May 2023 | | Thursday 11 th May 2023 | | Friday 12 th May 2023 | |
| | AM | PM | AM | PM | AM | PM |
| Surveyed peak hours | 07:00 to 08:00 | 17:15 to 18:15 | 07:30 to 08:30 | 17:00 to 18:00 | 07:45 to 08:45 | 17:00 to 18:00 |
| Junction 4 - A12/Gubbins Lane | | | | | | |
| | Wednesday 10 th May 2023 | | Thursday 11 th May 2023 | | Friday 12 th May 2023 | |
| | AM | PM | AM | PM | AM | PM |
| Surveyed peak hours | 07:30 to 08:30 | 17:15 to 18:15 | 07:30 to 08:30 | 17:00 to 18:00 | 07:30 to 08:30 | 17:00 to 18:00 |
| Junction 5 - A127/Ardleigh Green Road | | | | | | |
| | Wednesday 10 th May 2023 | | Thursday 11 th May 2023 | | Friday 12 th May 2023 | |
| | AM | PM | AM | PM | AM | PM |
| Surveyed peak hours | 07:15 to 08:15 | 16:30 to 17:30 | 07:15 to 08:15 | 16:15 to 17:15 | 07:15 to 08:15 | 17:45 to 18:45 |
| Junction 6 - A127/Wingletye Lane | | | | | | |
| | Wednesday 10 th May 2023 | | Thursday 11 th May 2023 | | Friday 12 th May 2023 | |
| | AM | PM | AM | PM | AM | PM |
| Surveyed peak hours | 07:00 to 08:00 | 17:00 to 18:00 | 07:15 to 08:15 | 16:30 to 17:30 | 07:15 to 08:15 | 17:15 to 18:15 |
| Junction7A - A127 - Hall Lane | | | | | | |
| | Wednesday 10 th May 2023 | | Thursday 11 th May 2023 | | Friday 12 th May 2023 | |
| | AM | PM | AM | PM | AM | PM |
| Surveyed peak hours | 07:30 to 08:30 | 16:45 to 17:45 | 07:30 to 08:30 | 16:30 to 17:30 | 07:45 to 08:45 | 16:00 to 17:00 |
| Junction7B - A127 - Hall Lane | | | | | | |
| | Wednesday 10 th May 2023 | | Thursday 11 th May 2023 | | Friday 12 th May 2023 | |
| | AM | PM | AM | PM | AM | PM |
| Surveyed peak hours | 07:30 to 08:30 | 17:30 to 18:30 | 07:45 to 08:45 | 16:15 to 17:15 | 07:45 to 08:45 | 16:00 to 17:00 |
| Junction 8 - A127/Front Lane | | | | | | |
| | Wednesday 10 th May 2023 | | Thursday 11 th May 2023 | | Friday 12 th May 2023 | |
| | AM | PM | AM | PM | AM | PM |
| Surveyed peak hours | 07:00 to 08:00 | 16:45 to 17:45 | 07:00 to 08:00 | 16:30 to 17:30 | 07:15 to 08:15 | 16:45 to 17:45 |
| Junction 9A - A13 - Marsh Way | | | | | | |
| | Wednesday 10 th May 2023 | | Thursday 11 th May 2023 | | Friday 12 th May 2023 | |
| | AM | PM | AM | PM | AM | PM |
| Surveyed peak hours | 09:30 to 10:30 | 16:30 to 17:30 | 07:45 to 08:45 | 16:15 to 17:15 | 07:30 to 08:30 | 16:15 to 17:15 |
| Junction 9B - A13 - Marsh Way | | | | | | |
| | Wednesday 10 th May 2023 | | Thursday 11 th May 2023 | | Friday 12 th May 2023 | |
| | AM | PM | AM | PM | AM | PM |
| Surveyed peak hours | 09:00 to 10:00 | 16:30 to 17:30 | 07:30 to 08:30 | 16:15 to 17:15 | 07:30 to 08:30 | 16:15 to 17:15 |
| Junction 10A - A13/A1306 | | | | | | |
| | Wednesday 10 th May 2023 | | Thursday 11 th May 2023 | | Friday 12 th May 2023 | |
| | AM | PM | AM | PM | AM | PM |

| Junction 10A - A13/A1306 | | | | | | |
|---|-------------------------------------|----------------|------------------------------------|----------------|----------------------------------|----------------|
| Surveyed peak hours | 08:00 to 09:00 | 16:45 to 17:45 | 07:30 to 08:30 | 16:15 to 17:15 | 07:30 to 08:30 | 16:00 to 17:00 |
| Junction 10B - A13/A1306 | | | | | | |
| | Wednesday 10 th May 2023 | | Thursday 11 th May 2023 | | Friday 12 th May 2023 | |
| | AM | PM | AM | PM | AM | PM |
| Surveyed peak hours | 08:00 to 09:00 | 16:15 to 17:15 | 07:30 to 08:30 | 16:15 to 17:15 | 07:15 to 08:15 | 16:00 to 17:00 |
| Junction 11 - St Mary's Lane - Station Road | | | | | | |
| | Wednesday 10 th May 2023 | | Thursday 11 th May 2023 | | Friday 12 th May 2023 | |
| | AM | PM | AM | PM | AM | PM |
| Surveyed peak hours | 07:30 to 08:30 | 17:15 to 18:15 | 07:30 to 08:30 | 17:00 to 18:00 | 08:00 to 09:00 | 17:00 to 18:00 |

- 4.7 From Table 4.1 it can be seen that the surveyed peak hours at the majority of the junctions considered do not coincide with the peak hours modelled by National Highways. It is noted that the LTAM models the network peaks (0700-0800 and 1700-1800) for the Strategic Road Network (specifically the M25). Naturally, the peak hour at local junctions will vary according to local factors such as the nearby presence of schools and colleges and large employment sites for example. However, in many cases (though not all), the flows modelled by National Highways were higher than the surveyed 2023 0700-0800 and 0800-0900 flows, and therefore the overall difference in modelling outcomes is unlikely to be significantly changed.
- 4.8 There may be some merit, as part of a future study, in conducting further modelling of the junctions to suit the 2023 surveyed peak hours so that the performance of each of the junctions during the local peak hours can be better understood. Notwithstanding this, the interventions and recommendations identified in this Report are still considered to be valid and representative in light of the fact that the differences in flows between the modelled peaks and the local peaks are unlikely to be particularly significant.
- 4.9 The following TEMPRO growth factors were derived to obtain the 2030 base flows from the 2023 surveyed flows as set out in Table 4.2.

Table 4.2: 2023 to 2030 Temprow Growth Factors

| AM Weekday | | RTF15 (Sc1 Table 1, London) | Temprow Weekday AM Peak for Local Area (ORIGIN / DESTINATION) | Temprow Average Weekday for London (ORIGIN / DESTINATION) | (A*B)/C |
|------------|---------|-----------------------------|---|---|---------|
| Year From | Year To | A | B | C | D |
| 2023 | 2030 | 1.0591 | 1.0519 | 1.0645 | 1.0466 |
| PM Weekday | | RTF15 (Sc1 Table 1, London) | Temprow Weekday PM Peak for Local Area (ORIGIN / DESTINATION) | Temprow Average Weekday for London (ORIGIN / DESTINATION) | (A*B)/C |

| AM Weekday | | RTF15 (Sc1 Table 1, London) | Tempro Weekday AM Peak for Local Area (ORIGIN / DESTINATION) | Tempro Average Weekday for London (ORIGIN / DESTINATION) | (A*B)/C |
|------------|---------|-----------------------------|--|--|---------|
| Year From | Year To | A | B | C | D |
| 2023 | 2030 | 1.0591 | 1.0575 | 1.0645 | 1.0521 |

* Tempro Geographical Area - E02000472 : Havering 009 (2011 super output area - middle layer)

4.10 It should be noted that the flows in the LTAM were growthed to 2030 utilising data from known/planned committed developments rather than through application of a TEMPRO growth factor. This is considered to be a conservative approach which may underestimate the flows.

4.11 The following tables set out the results of the junction performance modelling that has been undertaken at each of the 11 junctions, together with the relevant traffic flows. The following definitions apply to the various junction modelling results tables that follow:

- *Do Minimum (DM)* – the baseline case (i.e. without the LTC being built);
- *Do Something (DS)* – with the project i.e. the LTC built and operational;
- *Practical Reserve Capacity (PRC)* – the reserve (spare) capacity at a junction. A negative value indicates that the demand on the junction exceeds 100% of its capacity;
- *Mean Max Queue (MMQ)* - The Mean Maximum Queue is the sum of the Maximum Back of Uniform Queue and the Random & Oversaturation Queue. It represents the maximum queue within a typical cycle averaged over all the cycles within the modelled time period. When a Lane is oversaturated the Maximum Queue within each cycle will grow progressively over the modelled time period. This means that the Mean Maximum Queue will be approximately half the final queue at the end of the modelled time period;
- *Ratio of Flow to Capacity* - The ratio of flow to capacity provides a measure of the utilised capacity of a junction approach arm. Arms exceeding a ratio of 0.85 (i.e. 85% capacity utilised) are considered to be approaching capacity at which point, queueing and delays start to increase;
- *Delay* – the average delay incurred by each vehicle arriving at the junction;
- *Level of Service (LOS)* – This refers to the unsignalised, and equivalent signalised, level of service values for the time segment, based on the Average Delay per Arriving Vehicle. The transportation LOS system uses the letters A through F, with the definitions below being typical: A = Free flow B = Reasonably free flow C = Stable flow D = Approaching unstable flow E = Unstable flow F = Forced or breakdown flow; and
- *Passenger Car Units (PCUs)* - A Passenger Car Unit is a measure used primarily to assess highway capacity, for modelling purposes. Different vehicles are assigned different values,

according to the space they take up. A car has a value of 1; smaller vehicles will have lower values, and larger vehicles will have higher values.

A12/North Street Junction

4.12 The traffic flows associated with each of the modelled scenarios are shown in Table 4.3 whilst the junction performance results are shown in Table 4.4.

Table 4.3: A12 / North Street Traffic Flows

| | | 2023 AM | | | | | 2023 PM | | | | | | |
|---------------|-----|---------|------|-----|------|------|---------|-----|------|-----|------|------|-----|
| | | | A | B | C | D | Tot | | A | B | C | D | Tot |
| Havering Road | A | 0 | 60 | 423 | 139 | 622 | A | 0 | 66 | 382 | 123 | 571 | |
| A12 (N) | B | 152 | 0 | 168 | 1314 | 1634 | B | 241 | 0 | 165 | 1172 | 1578 | |
| North Street | C | 328 | 164 | 0 | 165 | 657 | C | 454 | 193 | 0 | 233 | 880 | |
| A12 (S) | D | 66 | 1128 | 234 | 0 | 1428 | D | 103 | 1176 | 266 | 0 | 1545 | |
| | Tot | 546 | 1352 | 825 | 1618 | 4341 | Tot | 798 | 1435 | 813 | 1528 | 4574 | |

| | | 2030 AM | | | | | 2030 PM | | | | | | |
|---------------|-----|---------|------|-----|------|------|---------|-----|------|-----|------|------|-----|
| | | | A | B | C | D | Tot | | A | B | C | D | Tot |
| Havering Road | A | 0 | 63 | 443 | 145 | 651 | A | 0 | 69 | 402 | 129 | 600 | |
| A12 (N) | B | 159 | 0 | 176 | 1375 | 1710 | B | 254 | 0 | 174 | 1233 | 1661 | |
| North Street | C | 343 | 172 | 0 | 173 | 688 | C | 478 | 203 | 0 | 245 | 926 | |
| A12 (S) | D | 69 | 1181 | 245 | 0 | 1495 | D | 108 | 1237 | 280 | 0 | 1625 | |
| | Tot | 571 | 1416 | 864 | 1693 | 4544 | Tot | 840 | 1509 | 856 | 1607 | 4812 | |

| | | 2030 DS AM | | | | | 2030 DS PM | | | | | | |
|---------------|-----|------------|------|-----|------|------|------------|-----|------|-----|------|------|-----|
| | | | A | B | C | D | Tot | | A | B | C | D | Tot |
| Havering Road | A | 0 | 66 | 444 | 151 | 661 | A | 0 | 69 | 402 | 138 | 609 | |
| A12 (N) | B | 162 | 0 | 179 | 1378 | 1719 | B | 257 | 0 | 165 | 1235 | 1657 | |
| North Street | C | 335 | 168 | 0 | 194 | 697 | C | 477 | 204 | 0 | 244 | 925 | |
| A12 (S) | D | 83 | 1186 | 232 | 0 | 1501 | D | 101 | 1251 | 276 | 0 | 1628 | |
| | Tot | 580 | 1420 | 855 | 1723 | 4578 | Tot | 835 | 1524 | 843 | 1617 | 4819 | |

Table 4.4: Linsig Modelling results of the A12/North Street/Havering Road signalised Junction

| Junction 1 - A12 / North Street | | | | | |
|---------------------------------|--------------------------------|-----------------|--------------|----------------|--------------|
| | Practical Reserve Capacity (%) | MMQ | | | |
| | | A Havering Road | B A12 (NE) | C North Street | D A12 (SW) |
| 2023 AM | -22.1 | 41.2 / 4.8 | 76.6 / 15.2 | 11.0/6.7 | 17.7 / 68.4 |
| 2023PM | -28.2 | 48.5 / 4.8 | 45.8 / 13.2 | 69.6 / 12.3 | 22.5 / 91.5 |
| 2030 AM Reference Case | -27.9 | 53.5 / 5.7 | 100.6 / 16.7 | 11.8 / 7.7 | 19.3 / 88.6 |
| 2030 PM Reference Case | -34.9 | 61.3 / 5.2 | 97.2 / 14.5 | 90.9 / 16.7 | 26.6 / 116.7 |
| 2030 Do Something AM | -28.0 | 55.9 / 6.3 | 42.0 / 29.0 | 11.5 / 7.2 | 53.2 / 44.8 |
| 2030 Do Something PM | -34.2 | 61.3 / 6.2 | 34.2 / 21.9 | 89.8 / 17.1 | 79.3 / 74.9 |

4.13 Table 4.4 shows that the A12 junction with Havering Road and North Street is currently over capacity. This will worsen going forward without intervention. It would appear from the National Highways predicted traffic flows that some traffic will divert from this junction as a result of the LTC, however, the junction will remain over-capacity. Given the results shown in the above table, it is considered unlikely that alterations to this junction alone will remedy the issues encountered here. It will require a strategic approach to consider options for potential traffic reassignment onto other routes, possible banned turning movements, together with modal shift (noting that bus services operate along the A12 corridor as well as along North Street and Havering Road).

[A12/Pettits Lane Junction](#)

Table 4.5: A12 / Pettits Lane Traffic Flows

| | 2023 AM | | | | | | 2023 PM | | | | | |
|------------------|---------|-----|------|-----|------|------|---------|-----|------|-----|------|------|
| | | A | B | C | D | Tot | | A | B | C | D | Tot |
| Pettits Lane (N) | A | 0 | 303 | 241 | 51 | 595 | A | 0 | 253 | 241 | 65 | 559 |
| A12 (E) | B | 377 | 0 | 208 | 1546 | 2131 | B | 438 | 0 | 140 | 1444 | 2022 |
| Pettits Lane (S) | C | 190 | 133 | 0 | 30 | 353 | C | 315 | 213 | 0 | 68 | 596 |
| A12 (W) | D | 54 | 1351 | 96 | 0 | 1501 | D | 92 | 1328 | 107 | 0 | 1527 |
| | Tot | 621 | 1787 | 545 | 1627 | 4580 | Tot | 845 | 1794 | 488 | 1577 | 4704 |

2030 AM

2030 PM

| | | A | B | C | D | Tot |
|------------------|-----|-----|------|-----|------|------|
| Pettits Lane (N) | A | 0 | 317 | 252 | 53 | 622 |
| A12 (E) | B | 395 | 0 | 218 | 1618 | 2231 |
| Pettits Lane (S) | C | 199 | 139 | 0 | 31 | 369 |
| A12 (W) | D | 57 | 1414 | 100 | 0 | 1571 |
| | Tot | 651 | 1870 | 570 | 1702 | 4793 |

| | | A | B | C | D | Tot |
|-----|--|-----|------|-----|------|------|
| A | | 0 | 266 | 254 | 68 | 588 |
| B | | 461 | 0 | 147 | 1519 | 2127 |
| C | | 331 | 224 | 0 | 72 | 627 |
| D | | 97 | 1397 | 113 | 0 | 1607 |
| Tot | | 889 | 1887 | 514 | 1659 | 4949 |

2030 DS AM

| | | A | B | C | D | Tot |
|------------------|-----|-----|------|-----|------|------|
| Pettits Lane (N) | A | 0 | 379 | 251 | 39 | 669 |
| A12 (E) | B | 434 | 0 | 219 | 1642 | 2295 |
| Pettits Lane (S) | C | 211 | 144 | 0 | 31 | 386 |
| A12 (W) | D | 56 | 1450 | 85 | 0 | 1591 |
| | Tot | 701 | 1973 | 555 | 1712 | 4941 |

2030 DS PM

| | | A | B | C | D | Tot |
|-----|--|-----|------|-----|------|------|
| A | | 0 | 289 | 253 | 69 | 611 |
| B | | 492 | 0 | 147 | 1511 | 2150 |
| C | | 332 | 226 | 0 | 76 | 634 |
| D | | 96 | 1418 | 110 | 0 | 1624 |
| Tot | | 920 | 1933 | 510 | 1656 | 5019 |

Table 4.6: Linsig Modelling results of the A12/Pettis Lane signalised Junction

| Junction 2 - A12 / Pettits Lane | | | | | |
|---------------------------------|------|--------------------|--------------------|--------------------|--------------------|
| | PRC | MMQ | | | |
| | | A Pettits Lane (N) | B A12 (NE) | C Pettits Lane (S) | D A12 (SW) |
| 2023 AM | 8.6 | 8.0 / 1.4 | 17.3 / 15.3 / 14.5 | 5.5 / 5.9 | 14.5 / 14.1 / 15.3 |
| 2023 PM | 3.9 | 6.7 / 1.7 | 20.0 / 20.0 / 14.7 | 10.2 / 8.3 | 15.5 / 16.1 / 16.4 |
| 2030 AM | 3.9 | 8.8 / 1.4 | 19.0 / 16.3 / 16.4 | 5.8 / 6.5 | 15.8 / 15.2 / 17.0 |
| 2030 PM | -3.6 | 7.3 / 1.8 | 21.8 / 21.9 / 16.8 | 11.1 / 10.8 | 17.7 / 18.1 / 18.6 |
| 2030 Do Something AM | 7.7 | 8.6 / 1.0 | 23.6 / 23.5 / 13.9 | 6.1 / 5.9 | 15.0 / 15.6 / 15.7 |
| 2030 Do Something PM | -5.5 | 7.3 / 1.8 | 21.7 / 21.8 / 19.1 | 11.3 / 11.0 | 20.1 / 20.5 / 21.3 |

4.14 The A12 junction with Pettits Lane currently has spare capacity. In 2030 the junction capacity will reduce, remaining positive in the AM peak but will become slightly over-capacity in the PM. It would appear from the surveys undertaken that this junction has a significantly higher volume of traffic travel through it in the PM peak than the AM peak. The impact of the LTC as shown by the 'Do Something' results indicate only a small impact on PRC in the PM peak and a small improvement in PRC in the AM peak. There may be opportunities to improve this junction to cater for the future growth of traffic through this junction. The junction is already very large and therefore physical widening through the addition of lanes is unlikely to be justified, however possible mitigation could include refinement of the signal timings. There could also be merit in a wider study examining the impact of banning U-turn manoeuvres at this junction, where a high number of such manoeuvres were captured by the surveys.

4.15 As evidenced by Section 2.0 of this Report, this junction would benefit from significant enhancements to the pedestrian crossing facilities, where these are considered by Cole Easdon to be unsatisfactory at present. It is noted of course that the addition of new pedestrian crossing facilities would impact on the performance of the junction with regard to vehicle capacity and therefore further modelling and associated design work would be necessary to determine the extent of improvements that could be delivered.

A12/Harold Court Road Junction

Table 4.7: A12 / Harold Court Road Traffic Flows

| 2023 AM | | | | | | 2023 PM | | | | | |
|-------------------|-----|------|------|-----|------|---------|------|------|-----|------|--|
| | | A | B | C | Tot | | A | B | C | Tot | |
| A12 (W) | A | 0 | 1597 | 123 | 1720 | A | 0 | 1507 | 136 | 1643 | |
| A12 (E) | B | 2125 | 0 | 56 | 2181 | B | 1995 | 0 | 63 | 2058 | |
| Harold Court Road | C | 151 | 0 | 0 | 151 | C | 206 | 0 | 0 | 206 | |
| | Tot | 2276 | 1597 | 179 | 4052 | Tot | 2201 | 1507 | 199 | 3907 | |

| 2030 AM | | | | | | 2030 PM | | | | | |
|-------------------|-----|------|------|-----|------|---------|------|------|-----|------|--|
| | | A | B | C | Tot | | A | B | C | Tot | |
| A12 (W) | A | 0 | 1671 | 129 | 1800 | A | 0 | 1586 | 143 | 1729 | |
| A12 (E) | B | 2224 | 0 | 59 | 2283 | B | 2099 | 0 | 66 | 2165 | |
| Harold Court Road | C | 158 | 0 | 0 | 158 | C | 217 | 0 | 0 | 217 | |
| | Tot | 2382 | 1671 | 188 | 4241 | Tot | 2316 | 1586 | 209 | 4111 | |

| 2030 DS AM | | | | | | 2030 DS PM | | | | | |
|-------------------|-----|------|------|-----|------|------------|------|------|-----|------|--|
| | | A | B | C | Tot | | A | B | C | Tot | |
| A12 (W) | A | 0 | 1368 | 129 | 1497 | A | 0 | 1541 | 144 | 1685 | |
| A12 (E) | B | 2330 | 0 | 97 | 2427 | B | 2070 | 0 | 66 | 2136 | |
| Harold Court Road | C | 141 | 0 | 0 | 141 | C | 226 | 0 | 0 | 226 | |
| | Tot | 2471 | 1368 | 226 | 4065 | Tot | 2296 | 1541 | 210 | 4047 | |

Table 4.8: Linsig Modelling results of the A12/Harold Court Road signalised Junction

| Junction 3 - A12/ Harold Court Road | | | | |
|-------------------------------------|------|-----------------|-----------------|---------------------|
| | PRC | MMQ | | |
| | | A A12 Eastbound | B A12 Westbound | C Harold Court Road |
| 2023 AM | 10.7 | 2.1 / 3.9 | 8.9 / 11.2 | 5.2 |
| 2023 PM | 17.4 | 1.6 / 3.5 | 8.8 / 10.0 | 6.0 |
| 2030 AM | 5.8 | 2.8 / 4.2 | 9.6 / 12.4 | 5.5 |
| 2030 PM | 11.5 | 2.1 / 3.6 | 9.8 / 11.6 | 6.2 |
| 2030 Do Something AM | 15.3 | 1.1 / 4.2 | 10.6 / 14.6 | 4.7 |
| 2030 Do Something PM | 14.8 | 1.8 / 3.6 | 9.6 / 11.2 | 6.6 |

4.16 The A12 junction with Harold Court Road currently operates with reserve capacity. In 2030 the junction capacity will reduce but remain positive. It would appear from the flows predicted in the Do Something scenario that traffic will divert from this junction as a result of the LTC, with the junction experiencing increases in PRC. The junction has a very unsatisfactory pedestrian crossing on Harold Court Road (with a particularly narrow pedestrian refuge island) as shown in Photograph 4.1 and it is recommended that an improvement scheme is considered in this regard.



Photograph 4.1: Informal crossing facility on Harold Court Road

A12/Gubbins Lane Junction

Table 4.9: A12 / Gubbins Lane Traffic Flows

| 2023 AM | | | | | | | 2023 PM | | | | | | |
|---------------|-----|-----|------|-----|------|------|---------|-----|------|-----|------|------|--|
| | | A | B | C | D | Tot | | A | B | C | D | Tot | |
| Gooshays Lane | A | 0 | 45 | 405 | 89 | 539 | A | 0 | 59 | 385 | 128 | 572 | |
| A12 (E) | B | 311 | 0 | 104 | 1464 | 1879 | B | 375 | 0 | 159 | 1189 | 1723 | |
| Gubbins Lane | C | 254 | 95 | 0 | 94 | 443 | C | 305 | 71 | 0 | 108 | 484 | |
| A12 (W) | D | 132 | 920 | 126 | 0 | 1178 | D | 218 | 870 | 247 | 0 | 1335 | |
| | Tot | 697 | 1060 | 635 | 1647 | 4039 | Tot | 898 | 1000 | 791 | 1425 | 4114 | |

| 2030 AM | | | | | | | 2030 PM | | | | | | |
|---------------|-----|-----|------|-----|------|------|---------|-----|------|-----|------|------|--|
| | | A | B | C | D | Tot | | A | B | C | D | Tot | |
| Gooshays Lane | A | 0 | 47 | 424 | 93 | 564 | A | 0 | 62 | 405 | 135 | 602 | |
| A12 (E) | B | 325 | 0 | 109 | 1532 | 1966 | B | 395 | 0 | 167 | 1251 | 1813 | |
| Gubbins Lane | C | 266 | 99 | 0 | 98 | 463 | C | 321 | 75 | 0 | 114 | 510 | |
| A12 (W) | D | 138 | 963 | 132 | 0 | 1233 | D | 229 | 915 | 260 | 0 | 1404 | |
| | Tot | 729 | 1109 | 665 | 1723 | 4226 | Tot | 945 | 1052 | 832 | 1500 | 4329 | |

| 2030 DS AM | | | | | | | 2030 DS PM | | | | | | |
|---------------|-----|-----|-----|-----|------|------|------------|-----|-----|-----|------|------|--|
| | | A | B | C | D | Tot | | A | B | C | D | Tot | |
| Gooshays Lane | A | 0 | 88 | 406 | 95 | 589 | A | 0 | 79 | 371 | 128 | 578 | |
| A12 (E) | B | 344 | 0 | 134 | 1570 | 2048 | B | 396 | 0 | 144 | 1253 | 1793 | |
| Gubbins Lane | C | 268 | 82 | 0 | 97 | 447 | C | 330 | 88 | 0 | 102 | 520 | |
| A12 (W) | D | 138 | 742 | 132 | 0 | 1012 | D | 229 | 830 | 260 | 0 | 1319 | |
| | Tot | 750 | 912 | 672 | 1762 | 4096 | Tot | 955 | 997 | 775 | 1483 | 4210 | |

Table 4.10: Linsig Modelling results of the A12/Gubbins Lane signalised Junction

| Junction 4 - A12 / Gubbins Lane | | | | | |
|---------------------------------|-------|------------------|-----------------|----------------|---------------------------|
| | PRC | MMQ | | | |
| | | A Gooshays Drive | B A12 Eastbound | C Gubbins Lane | D A12 Westbound |
| 2023 AM | -3.6 | 14.8 | 15.8 / 28.1 | 18.1 | 11.3 / 12.8 / 12.8 / 6.4 |
| 2023PM | -8.0 | 17.0 | 13.6 / 27.6 | 18.6 | 12.9 / 14.8 / 14.8 / 14.5 |
| 2030 AM | -9.1 | 15.8 | 17.1 / 35.0 | 20.8 | 12.2 / 13.7 / 13.8 / 9.5 |
| 2030 PM | -13.7 | 18.6 | 14.5 / 39.0 | 30.6 | 14.5 / 16.5 / 16.5 / 18.6 |
| 2030 Do Something AM | -9.1 | 18.6 | 17.3 / 34.9 | 19.6 | 9.2 / 10.2 / 10.0 / 9.5 |
| 2030 Do Something PM | -12.8 | 16.5 | 44.3 / 18.8 | 31.1 | 11.3 / 13.2 / 13.2 / 14.7 |

4.17 The A12 junction with Gubbins Lane and Gooshays Drive is currently over capacity. This will worsen going forward without intervention. It would appear from the National Highways Do Something traffic flows that some traffic will divert from this junction as a result of the LTC, however, the junction will remain over-capacity. As identified within Section 2.0, the junction would benefit from the provision of improved pedestrian crossing facilities and consideration given to the banning of U-turn manoeuvres. There appears to be public highway land available either side of Gooshays Drive where consideration could be given to alternative junction layouts.

A12/Squirrels Heath Road Junction

Table 4.11: A127 / Squirrels Heath Road Traffic Flows

2023 AM

| | | A | B | C | D | Tot |
|----------------------|-----|------|-----|------|-----|------|
| A127 (N) | A | 0 | 170 | 1195 | 167 | 1532 |
| Squirrels Heath Road | B | 210 | 0 | 18 | 380 | 608 |
| A127 (S) | C | 1145 | 198 | 0 | 127 | 1470 |
| Ardleigh Green Road | D | 81 | 262 | 275 | 0 | 618 |
| | Tot | 1436 | 630 | 1488 | 674 | 4228 |

2030 PM

| | | A | B | C | D | Tot |
|---|-----|------|-----|------|-----|------|
| A | A | 0 | 171 | 1130 | 219 | 1520 |
| B | B | 157 | 0 | 23 | 424 | 604 |
| C | C | 1141 | 218 | 0 | 150 | 1509 |
| D | D | 81 | 259 | 275 | 0 | 615 |
| | Tot | 1379 | 648 | 1428 | 793 | 4248 |

2030 AM

| | | A | B | C | D | Tot |
|----------------------|-----|------|-----|------|-----|------|
| A127 (N) | A | 0 | 178 | 1251 | 175 | 1604 |
| Squirrels Heath Road | B | 220 | 0 | 19 | 398 | 637 |
| A127 (S) | C | 1198 | 207 | 0 | 133 | 1538 |
| Ardleigh Green Road | D | 85 | 274 | 288 | 0 | 647 |
| | Tot | 1503 | 659 | 1558 | 706 | 4426 |

2030 PM

| | | A | B | C | D | Tot |
|---|-----|------|-----|------|-----|------|
| A | A | 0 | 180 | 1189 | 230 | 1599 |
| B | B | 165 | 0 | 24 | 446 | 635 |
| C | C | 1200 | 229 | 0 | 158 | 1587 |
| D | D | 85 | 272 | 289 | 0 | 646 |
| | Tot | 1450 | 681 | 1502 | 834 | 4467 |

2030 DS AM

| | | A | B | C | D | Tot |
|----------------------|-----|------|-----|------|-----|------|
| A127 (N) | A | 0 | 151 | 1624 | 165 | 1940 |
| Squirrels Heath Road | B | 191 | 0 | 19 | 424 | 634 |
| A127 (S) | C | 1242 | 228 | 0 | 164 | 1634 |
| Ardleigh Green Road | D | 73 | 233 | 349 | 0 | 655 |
| | Tot | 1506 | 612 | 1992 | 753 | 4863 |

2030 DS PM

| | | A | B | C | D | Tot |
|---|-----|------|-----|------|-----|------|
| A | A | 0 | 169 | 1368 | 230 | 1767 |
| B | B | 173 | 0 | 24 | 439 | 636 |
| C | C | 1228 | 241 | 0 | 188 | 1657 |
| D | D | 54 | 256 | 348 | 0 | 658 |
| | Tot | 1455 | 666 | 1740 | 857 | 4718 |

Table 4.12: Linsig Modelling results of the A127/Squirrels Heath signalised Junction

| Junction 5 - A127/ Squirrels Heath / Ardleigh Green Road | | | | | |
|--|-------|------------------------------|-------------------------------------|----------------------------------|---------------------------------|
| | RFC | MMQ | | | |
| | | A A127 (N) | B Squirrels Heath Road | C A127 (S) | D Ardleigh Green Road |
| 2023 AM | -54.7 | 147.1/ 122.2 | 118.3 | 134.5 / 139.3 | 2.5 / 99.5 |
| 2023PM | -59.6 | 124.6 / 159.8 | 122.8 | 142.7 / 151.4 | 2.6 / 106.1 |
| 2030 AM | -62.3 | 155.3 / 155.7 | 135.7 | 153.2 / 159.1 | 2.7 / 114.3 |
| 2030 PM | -67.0 | 150.8 / 174.4 | 141.4 | 164.9 / 173.5 | 2.7 / 122.0 |
| 2030 Do Something AM | -81.0 | 214.9 / 242.1 | 158.5 | 233.2 / 155.5 | 2.3 / 144.1 |
| 2030 Do Something PM | -79.3 | 194.4 / 222.2 | 158.8 | 207.7 / 181.5 | 1.7 / 140.5 |
| Distance to next junction along each link | | 1,000m / 174PCUs to A127/A12 | 664m / 115PCUs to A127/Gubbins Lane | 800m / 139PCUs to Wingletye Lane | 183m / 32 PCUs to Adleigh Close |

Red text indicates junction causes blocking upstream

- 4.18 As can be seen from Table 4.12, the A127 junction with Squirrels Heath Road and Ardleigh Green Road is currently well over capacity, with extensive queuing during both peak hours blocking adjacent junctions in all four directions. This situation worsens in the 2030 base in line with background traffic increases between 2023 and 2030. The LTC does however cause significant worsening of the junction's performance, with queues in particular worsening dramatically on the A127.
- 4.19 However, given the extent to which this junction is already over capacity, it is unlikely that physical alterations to this junction alone will remedy the issues encountered here. Additionally, the junction appears to be quite tightly constrained by existing buildings meaning the scope for an improvement scheme in terms of widening would be limited.
- 4.20 Instead, we suggest it will require a more strategic approach that considers possible options for re-routing traffic away from this junction together of course with modal shift. It is noted that bus services operate along the A127, Squirrels Heath Road and Ardleigh Green Road and thus there would be merit in considering bus priority measures. There is a significant amount of residential development on either side of the A127 and therefore scope to encourage greater use of bus services.

A127/Wingletye Lane Junction

Table 4.13: A127 / Wingletye Lane Traffic Flows

| | | 2023 AM | | | | 2023 PM | | | |
|----------------|-----|---------|------|-----|------|---------|------|------|------|
| | | A | B | C | Tot | A | B | C | Tot |
| A127 (W) | A | 0 | 1665 | 0 | 1665 | A | 0 | 1599 | 1599 |
| A127 (E) | B | 1152 | 0 | 802 | 1954 | B | 1109 | 0 | 1985 |
| Wingletye Lane | C | 242 | 0 | 0 | 242 | C | 242 | 0 | 242 |
| | Tot | 1394 | 1665 | 802 | 3861 | Tot | 1351 | 1599 | 3826 |

| | | 2030 AM | | | | 2030 PM | | | |
|----------------|-----|---------|------|-----|------|---------|------|------|------|
| | | A | B | C | Tot | A | B | C | Tot |
| A127 (W) | A | 0 | 1743 | 0 | 1743 | A | 0 | 1682 | 1682 |
| A127 (E) | B | 1206 | 0 | 839 | 2045 | B | 1167 | 0 | 2089 |
| Wingletye Lane | C | 253 | 0 | 0 | 253 | C | 255 | 0 | 255 |
| | Tot | 1459 | 1743 | 839 | 4041 | Tot | 1422 | 1682 | 4026 |

| | | 2030 DS AM | | | | 2030 DS PM | | | |
|----------------|-----|------------|------|------|------|------------|------|------|------|
| | | A | B | C | Tot | A | B | C | Tot |
| A127 (W) | A | 0 | 1743 | 0 | 1743 | A | 0 | 1682 | 1682 |
| A127 (E) | B | 1394 | 0 | 1061 | 2455 | B | 1300 | 0 | 2339 |
| Wingletye Lane | C | 159 | 0 | 0 | 159 | C | 193 | 0 | 193 |
| | Tot | 1553 | 1743 | 1061 | 4357 | Tot | 1493 | 1682 | 4214 |

Table 4.14: Linsig Modelling results of the A127/Wingletye Lane Junction

| Junction 6 - A127 - Wingletye Lane | | | |
|------------------------------------|---------|------------------|------------------|
| | PRC (%) | MMQ | |
| | | B A127 Westbound | C Wingletye Lane |
| 2023 AM | 22.2 | | 0.3 |
| 2023 PM | 17.4 | | 0.3 |
| 2030 AM | 16.8 | | 0.4 |
| 2030 PM | 11.6 | | 0.4 |
| 2030 Do Something AM | 10.0 | | 0.2 |
| 2030 Do Something PM | 7.1 | | 0.3 |

4.21 The A127 junction with Wingletye Lane when modelled in isolation operates well within capacity for all modelled scenarios. The junction is a left-in / left-out arrangement, i.e. traffic cannot turn right from Wingletye Lane to travel east along the A127. However, as noted within Table 4.7, queuing traffic from the Ardleigh Green Road/Squirrels Heath Road junction with the A127 will block back to this junction, thus impacting on the ability for vehicles to join the A127 from Wingletye Lane. This blocking occurs at all of the scenarios that have been analysed. It is noted that in the Do Something scenario, the PRC of the junction is expected to worsen as a

result of the LTC, reducing from 16.8% in the 2030 AM Base down to 10% in the Do Something scenario, and likewise from 11.6% to 7.1% respectively in the PM peak.

- 4.22 It is to be noted that the modelling for this junction carried out by National Highways did not include the left turn flow from the A127 into Wingletye Lane, where the Do Something flows indicate that an additional 222 PCUs in the AM peak and 117 PCUs in the PM peak will make this manoeuvre along Wingletye Lane. Given the presence of two schools on Wingletye Lane and a zebra crossing some 75m south of the A127, it is considered that further consideration should be given to any impacts along Wingletye Lane resulting from the LTC.
- 4.23 The A127 is subject to a 50mph speed limit in the vicinity of Wingletye Lane and there is limited forward visibility for westbound traffic turning left onto Wingletye Lane. In the event of traffic queues extending back from the zebra crossing adjacent to the Champion School towards the A127, this could give rise to safety concerns, with left turning vehicles from the A127 into Wingletye Lane unable to react in time. A more general concern is of course the additional traffic flow that will be generated along Wingletye Lane and the impacts of this on the adjacent schools and housing along this road.
- 4.24 It was noted from the traffic surveys that a significant number of vehicles perform U-turn manoeuvres at a number of signalised junctions along the A127 including the Squirrels Heath junction to the west of the Wingletye Junction. There may be some capacity gain to be achieved at the Squirrels Heath Road junction for instance, by amending the Wingletye junction to introduce a signalised arrangement that allows right turns into the A127.
- 4.25 It is noted that there is residential development located to the north of the A127 and therefore there is likely to be demand for north-south pedestrian movement across the A127 and onwards south along Wingletye Lane. The junction would therefore benefit from a redesign that incorporates pedestrian crossing facilities, where this may also help to stagger the onward westbound flow to the Squirrels Heath Road.
- 4.26 It is suggested that further analysis is conducted of the potential impacts arising along Wingletye Lane as a result of the LTC traffic, and options explored for a junction improvement scheme.

A127/Hall Lane Northern Junction

Table 4.15: A127 / Hall Lane (northern section) Traffic Flows

| 2023 AM | | | | | | 2023 PM | | | | | |
|-----------------|-------|-----|-----|-------|-----------|---------|-------|-------|-------|------|--|
| From \ To | A | B | C | Total | From \ To | Arm A | Arm B | Arm C | Total | | |
| A127 off-slip W | A | 0 | 337 | 378 | 715 | Arm A | 0 | 335 | 379 | 714 | |
| Hall Lane (N) | B | 233 | 0 | 18 | 251 | Arm B | 266 | 0 | 23 | 289 | |
| Hall Lane (E) | C | 317 | 35 | 0 | 352 | Arm C | 364 | 46 | 0 | 410 | |
| | Total | 550 | 372 | 396 | 1318 | Total | 630 | 381 | 402 | 1413 | |

| 2030 AM | | | | | | 2030 PM | | | | | |
|-----------------|-------|-----|-----|-------|-----------|---------|-----|-----|-------|------|--|
| From \ To | A | B | C | Total | From \ To | A | B | C | Total | | |
| A127 off-slip W | Arm A | 0 | 353 | 396 | 749 | Arm A | 0 | 353 | 399 | 752 | |
| Hall Lane (N) | Arm B | 244 | 0 | 19 | 263 | Arm B | 280 | 0 | 25 | 305 | |
| Hall Lane (E) | Arm C | 332 | 37 | 0 | 369 | Arm C | 383 | 49 | 0 | 432 | |
| | Total | 576 | 390 | 415 | 1381 | Total | 663 | 402 | 424 | 1489 | |

| 2030 DS AM | | | | | | 2030 DS PM | | | | | |
|-----------------|-------|-----|-----|-------|-----------|------------|-----|-----|-------|------|--|
| From \ To | A | B | C | Total | From \ To | A | B | C | Total | | |
| A127 off-slip W | Arm A | 0 | 353 | 360 | 713 | Arm A | 0 | 353 | 360 | 713 | |
| Hall Lane (N) | Arm B | 352 | 0 | 14 | 366 | Arm B | 280 | 0 | 27 | 307 | |
| Hall Lane (E) | Arm C | 568 | 53 | 0 | 621 | Arm C | 586 | 47 | 0 | 633 | |
| | Total | 920 | 406 | 374 | 1700 | Total | 866 | 400 | 387 | 1653 | |

Table 4.16: Junctions 10 Modelling results of the A127 / Hall Lane Junction (northern section)

| Junction 7 - A127 - Hall Lane (Northern section) | | | | | | | | | | |
|--|--------|-------------|-----------|------|-----|--------|-------------|-----------|------|-----|
| | AM | | | | | PM | | | | |
| | Set ID | Queue (PCU) | Delay (s) | RFC | LOS | Set ID | Queue (PCU) | Delay (s) | RFC | LOS |
| 2023 Surveyed | | | | | | | | | | |
| Hall Lane Southbound, left and right turn | D1 | 1.5 | 19.92 | 0.61 | C | D2 | 2.4 | 27.99 | 0.71 | D |
| Hall Lane westbound | | 0.1 | 6.26 | 0.06 | A | | 0.1 | 6.39 | 0.08 | A |
| 2030 Growthed | | | | | | | | | | |
| Hall Lane Southbound, left and right turn | D3 | 1.8 | 22.80 | 0.65 | C | D4 | 3.2 | 35.75 | 0.77 | E |
| Hall Lane westbound | | 0.1 | 6.41 | 0.07 | A | | 0.1 | 6.58 | 0.09 | A |
| 2030 Do Something | | | | | | | | | | |
| Hall Lane Southbound, left and right turn | D5 | 12.9 | 119.14 | 0.99 | F | D6 | 4.0 | 45.62 | 0.82 | E |
| Hall Lane westbound | | 0.1 | 6.47 | 0.09 | A | | 0.1 | 6.40 | 0.08 | A |

4.27 The A127 junction with Hall Lane (northern section) operates well within capacity for both 2023 and 2030 base scenarios. However, when the predicted traffic impact flows associated with

the Lower Thames Crossing scheme are added, the junction encounters a significant increase in queuing and delay on the southbound flow along Hall Lane, and the junction is predicted to exceed its capacity with an RFC of 0.99 (where values above 0.85 are considered to be above capacity). It is considered that there may be scope to improve this junction through redesign, where there would appear to be highway land available for this purpose.

A127/Hall Lane Southern Junction

Table 4.17: A127 / Hall Lane (southern section) Traffic Flows

2023 AM

| | From \ To | A | B | C | D | Total |
|---------------|-----------|-----|---|-----|-----|-------|
| Hall Lane (N) | A | 0 | 0 | 460 | 89 | 549 |
| A127 slip-off | B | 175 | 0 | 174 | 1 | 350 |
| Hall Lane (S) | C | 673 | 0 | 0 | 109 | 782 |
| A127 on-slip | D | 0 | 0 | 0 | 0 | 0 |
| | Total | 848 | 0 | 634 | 199 | 1681 |

2023 PM

| From \ To | A | B | C | D | Total |
|-----------|-----|---|-----|-----|-------|
| A | 0 | 0 | 530 | 108 | 638 |
| B | 110 | 0 | 164 | 0 | 274 |
| C | 604 | 0 | 0 | 154 | 758 |
| D | 0 | 0 | 0 | 0 | 0 |
| Total | 714 | 0 | 694 | 262 | 1670 |

2030 AM

| | From \ To | Arm A | Arm B | Arm C | Arm D | Total |
|---------------|-----------|-------|-------|-------|-------|-------|
| Hall Lane (N) | A | 0 | 0 | 482 | 94 | 576 |
| A127 slip-off | B | 184 | 0 | 183 | 2 | 369 |
| Hall Lane (S) | C | 705 | 0 | 0 | 115 | 822 |
| A127 on-slip | D | 0 | 0 | 0 | 0 | 0 |
| | Total | 889 | 0 | 667 | 211 | 1767 |

2030 PM

| From \ To | A | B | C | D | Total |
|-----------|-----|---|-----|-----|-------|
| A | 0 | 0 | 558 | 114 | 672 |
| B | 116 | 0 | 173 | 0 | 289 |
| C | 636 | 0 | 0 | 163 | 799 |
| D | 0 | 0 | 0 | 0 | 0 |
| Total | 752 | 0 | 731 | 277 | 1760 |

2030 DS AM

| | From \ To | A | B | C | D | Total |
|---------------|-----------|------|---|-----|-----|-------|
| Hall Lane (N) | A | 0 | 0 | 441 | 81 | 522 |
| A127 slip-off | B | 289 | 0 | 228 | 2 | 519 |
| Hall Lane (S) | C | 853 | 0 | 0 | 78 | 933 |
| A127 on-slip | D | 0 | 0 | 0 | 0 | 0 |
| | Total | 1142 | 0 | 671 | 161 | 1974 |

2030 DS PM

| From \ To | A | B | C | D | Total |
|-----------|-----|---|-----|-----|-------|
| A | 0 | 0 | 520 | 110 | 630 |
| B | 192 | 0 | 200 | 0 | 392 |
| C | 761 | 0 | 0 | 131 | 892 |
| D | 0 | 0 | 0 | 0 | 0 |
| Total | 953 | 0 | 720 | 241 | 1914 |

Table 4.18: Junctions 10 Modelling results of the A127 / Hall Lane Junction (southern section)

| Junction 7 - A127 - Hall Lane (Southern section) | | | | | | | | | | |
|--|--------|-------------|-----------|------|-----|--------|-------------|-----------|------|-----|
| | AM | | | | | PM | | | | |
| | Set ID | Queue (PCU) | Delay (s) | RFC | LOS | Set ID | Queue (PCU) | Delay (s) | RFC | LOS |
| 2023 | | | | | | | | | | |
| A127 westbound off-slip, ahead and left | D1 | 0.7 | 13.04 | 0.41 | B | D2 | 0.6 | 11.83 | 0.37 | B |
| A127 westbound off-slip, right | | 1.6 | 31.47 | 0.63 | D | | 0.7 | 20.87 | 0.41 | C |
| Hall Lane southbound | | 0.8 | 6.02 | 0.29 | A | | 1.2 | 6.34 | 0.37 | A |
| Entry to A127 westbound on-slip | | 0.0 | 0.00 | 0.00 | A | | 0.0 | 0.00 | 0.00 | A |
| Hall Lane northbound | | 0.0 | 0.00 | 0.00 | A | | 0.0 | 0.00 | 0.00 | A |
| 2030 | | | | | | | | | | |
| A127 westbound off-slip, ahead and left | D3 | 0.8 | 14.50 | 0.45 | B | D4 | 0.7 | 12.82 | 0.40 | B |
| A127 westbound off-slip, right | | 2.1 | 39.17 | 0.69 | E | | 0.8 | 23.86 | 0.46 | C |
| Hall Lane southbound | | 0.9 | 6.21 | 0.32 | A | | 1.4 | 6.67 | 0.41 | A |
| Entry to A127 westbound on-slip | | 0.0 | 0.00 | 0.00 | A | | 0.0 | 0.00 | 0.00 | A |
| Hall Lane northbound | | 0.0 | 0.00 | 0.00 | A | | 0.0 | 0.00 | 0.00 | A |
| 2030 Do Something | | | | | | | | | | |
| A127 westbound off-slip, ahead and left | D5 | 1.5 | 21.35 | 0.60 | C | D6 | 1.0 | 17.01 | 0.51 | C |
| A127 westbound off-slip, right | | 24.5 | 268.69 | 1.13 | F | | 3.2 | 59.25 | 0.79 | F |
| Hall Lane southbound | | 0.8 | 6.32 | 0.29 | A | | 1.4 | 6.98 | 0.41 | A |
| Entry to A127 westbound on-slip | | 0.0 | 0.00 | 0.00 | A | | 0.0 | 0.00 | 0.00 | A |
| Hall Lane northbound | | 0.0 | 0.00 | 0.00 | A | | 0.0 | 0.00 | 0.00 | A |

4.28 The A127 junction with Hall Lane (southern section) operates well within capacity for both 2023 and 2030 base scenarios. However, when the predicted traffic impact flows associated with the Lower Thames Crossing scheme are added, the junction encounters an increase in queuing and delay and is predicted to operate above capacity. This queuing will occur on the exit slip for the A127, with the AM peak queue extending almost back to the A127 through lane. This dangerous queuing will be generated by the LTC scheme and therefore warrants further consideration in relation to potential mitigation that might be required.

4.29 Altering the existing priority junction arrangement at the exit slip where it meets Hall Lane to a roundabout junction may minimise or remove the excessive queuing caused and we would recommend that further modelling and design work is conducted to explore the feasibility of this.

A127/Front Lane Junction

Table 4.19: A127 / Front Lane Traffic Flows

| 2023 AM | | | | | | 2023 PM | | | | | |
|------------|-----|------|------|-----|------|---------|------|------|-----|------|--|
| | | A | B | C | Tot | | A | B | C | Tot | |
| A127 (W) | A | 0 | 1766 | 0 | 1766 | A | 0 | 1658 | 0 | 1658 | |
| A127 (E) | B | 2143 | 0 | 198 | 2341 | B | 1891 | 0 | 318 | 2209 | |
| Front Lane | C | 89 | 0 | 0 | 89 | C | 93 | 0 | 0 | 93 | |
| | Tot | 2232 | 1766 | 198 | 4196 | Tot | 1984 | 1658 | 318 | 3960 | |

| 2030 AM | | | | | | 2030 PM | | | | | |
|------------|-----|------|------|-----|------|---------|------|------|-----|------|--|
| | | A | B | C | Tot | | A | B | C | Tot | |
| A127 (W) | A | 0 | 1848 | 0 | 1848 | A | 0 | 1744 | 0 | 1744 | |
| A127 (E) | B | 2243 | 0 | 207 | 2450 | B | 1990 | 0 | 335 | 2325 | |
| Front Lane | C | 93 | 0 | 0 | 93 | C | 98 | 0 | 0 | 98 | |
| | Tot | 2336 | 1848 | 207 | 4391 | Tot | 2088 | 1744 | 335 | 4167 | |

| 2030 DS AM | | | | | | 2030 DS PM | | | | | |
|------------|-----|------|------|-----|------|------------|------|------|-----|------|--|
| | | A | B | C | Tot | | A | B | C | Tot | |
| A127 (W) | A | 0 | 1848 | 0 | 1848 | A | 0 | 1744 | 0 | 1744 | |
| A127 (E) | B | 2793 | 0 | 328 | 3121 | B | 2322 | 0 | 358 | 2680 | |
| Front Lane | C | 151 | 0 | 0 | 151 | C | 161 | 0 | 0 | 161 | |
| | Tot | 2944 | 1848 | 328 | 5120 | Tot | 2483 | 1744 | 358 | 4585 | |

**Table 4.20: Linsig Modelling results of the A127 Southend Arterial Road/Front Lane Junction
Junction 8 - A127 Southend Arterial Road/Front Lane Junction**

| | PRC | MMQ |
|-------------------------|------|----------------------------|
| | | Front Lane (entry to A127) |
| 2023 AM | 51.7 | 0.1 |
| 2023 PM | 58.3 | 0.1 |
| 2030 AM | 45.3 | 0.1 |
| 2030 PM | 51.1 | 0.1 |
| 2030 Do Something AM | 15.5 | 0.2 |
| 2030 Do Something PM | 32.7 | 0.2 |

4.30 Table 4.20 indicates that the A127 Southend Arterial Road/Front Lane junction will operate with reserve capacity in all scenarios modelled. Our findings differ from those of National Highways, whose modelling predicted that this junction would operate over capacity in the Do Something scenario. We believe the differences in modelling outcomes at this junction are likely to be due to the fact that National Highways have not modelled the left turn flow from the A127 into Front Lane (whereas Cole Easdon’s modelling does).

4.31 In our model, owing to the left turn being included, Linsig has assigned more of the westbound straight through traffic to Lane 2 (to account for the fact that drivers will be wanting to avoid slowing down for the left turners), thereby allowing more traffic to merge into lane one from Front Lane. It should be noted however that the LTC does significantly reduce PRC values compared with the 2030 base scenario.

A13/Marsh Way Junction

Table 4.21: A13 / Marsh Way Traffic Flows

2023 AM

| | | A | B | C | D | E | F | Tot |
|---------------|-----|-----|-----|-----|-----|----|-----|------|
| Marsh Way (N) | A | 0 | 31 | 315 | 147 | 8 | 184 | 685 |
| Consul Avenue | B | 0 | 0 | 68 | 34 | 2 | 41 | 145 |
| A13 (E) | C | 271 | 33 | 77 | 214 | 54 | 338 | 987 |
| Marsh Way (S) | D | 119 | 15 | 32 | 0 | 0 | 57 | 223 |
| Courier Road | E | 30 | 4 | 8 | 1 | 0 | 3 | 46 |
| A13 (W) | F | 172 | 47 | 2 | 43 | 3 | 53 | 320 |
| | Tot | 592 | 130 | 502 | 439 | 67 | 676 | 2406 |

2023 PM

| | | A | B | C | D | E | F | Tot |
|---------------|-----|------|----|-----|-----|----|-----|------|
| Marsh Way (N) | A | 0 | 12 | 445 | 58 | 9 | 258 | 782 |
| Consul Avenue | B | 0 | 0 | 74 | 10 | 2 | 43 | 129 |
| A13 (E) | C | 283 | 27 | 135 | 67 | 43 | 6 | 561 |
| Marsh Way (S) | D | 207 | 20 | 98 | 0 | 0 | 105 | 430 |
| Courier Road | E | 53 | 5 | 24 | 1 | 0 | 18 | 101 |
| A13 (W) | F | 486 | 24 | 2 | 8 | 2 | 32 | 554 |
| | Tot | 1029 | 88 | 778 | 144 | 56 | 462 | 2557 |

2030 AM

| | | A | B | C | D | E | F | Tot |
|---------------|-----|-----|-----|-----|-----|----|-----|------|
| Marsh Way (N) | A | 0 | 32 | 330 | 154 | 8 | 193 | 717 |
| Consul Avenue | B | 0 | 0 | 71 | 36 | 2 | 43 | 152 |
| A13 (E) | C | 284 | 35 | 81 | 224 | 57 | 354 | 1035 |
| Marsh Way (S) | D | 125 | 16 | 33 | 0 | 0 | 60 | 234 |
| Courier Road | E | 31 | 4 | 8 | 1 | 0 | 3 | 47 |
| A13 (W) | F | 180 | 49 | 2 | 45 | 3 | 55 | 334 |
| | Tot | 620 | 136 | 525 | 460 | 70 | 708 | 2519 |

2030 PM

| | | A | B | C | D | E | F | Tot |
|---------------|-----|------|----|-----|-----|----|-----|------|
| Marsh Way (N) | A | 0 | 13 | 468 | 61 | 9 | 271 | 822 |
| Consul Avenue | B | 0 | 0 | 78 | 11 | 2 | 45 | 136 |
| A13 (E) | C | 298 | 28 | 142 | 70 | 45 | 6 | 589 |
| Marsh Way (S) | D | 218 | 21 | 103 | 0 | 0 | 110 | 452 |
| Courier Road | E | 56 | 5 | 25 | 1 | 0 | 19 | 106 |
| A13 (W) | F | 511 | 25 | 2 | 8 | 2 | 34 | 582 |
| | Tot | 1083 | 92 | 818 | 151 | 58 | 485 | 2687 |

2030 DS AM

| | | A | B | C | D | E | F | Tot |
|---------------|-----|-----|-----|-----|-----|----|-----|------|
| Marsh Way (N) | A | 0 | 28 | 329 | 154 | 8 | 186 | 705 |
| Consul Avenue | B | 0 | 0 | 75 | 36 | 2 | 40 | 153 |
| A13 (E) | C | 275 | 45 | 81 | 224 | 57 | 354 | 1036 |
| Marsh Way (S) | D | 125 | 16 | 33 | 0 | 0 | 60 | 234 |
| Courier Road | E | 31 | 4 | 8 | 1 | 0 | 3 | 47 |
| A13 (W) | F | 177 | 49 | 2 | 45 | 3 | 55 | 331 |
| | Tot | 608 | 142 | 528 | 460 | 70 | 698 | 2506 |

2030 DS PM

| | | A | B | C | D | E | F | Tot |
|---------------|-----|------|----|-----|-----|----|-----|------|
| Marsh Way (N) | A | 0 | 11 | 472 | 61 | 9 | 270 | 823 |
| Consul Avenue | B | 0 | 0 | 82 | 11 | 2 | 44 | 139 |
| A13 (E) | C | 304 | 34 | 142 | 70 | 45 | 6 | 601 |
| Marsh Way (S) | D | 218 | 21 | 103 | 0 | 0 | 110 | 452 |
| Courier Road | E | 56 | 5 | 25 | 1 | 0 | 19 | 106 |
| A13 (W) | F | 514 | 24 | 2 | 8 | 2 | 34 | 584 |
| | Tot | 1092 | 95 | 826 | 151 | 58 | 483 | 2705 |

Table 4.22: Linsig Modelling results of the A13 / Marsh Way Junction

| Junction 9 - Marsh Way Junction | | | | | | | |
|---------------------------------|------|-------------|-----------------|--------------|-------------|----------------|--------------|
| | PRC | MMQ | | | | | |
| | | A Marsh Way | B Consul Avenue | C A13 (East) | D Marsh Way | E Courier Road | F A13 (West) |
| 2023 AM | 71.0 | 0.1 / 0.1 | 0 / 0 | 5.8 / 4.3 | 0.0 / 0.1 | 0 / 0 | 1.7 / 2.1 |
| 2023PM | 59.3 | 0.2 / 0.1 | 0 / 0 | 0.7 / 6.0 | 0.0 / 1.1 | 0 / 0 | 3.2 / 0.7 |
| 2030 AM | 63.7 | 0.1 / 0.1 | 0 / 0 | 6.4 / 4.6 | 0.0 / 0.1 | 0 / 0 | 1.9 / 2.1 |
| 2030 PM | 51.5 | 0.2 / 0.1 | 0 / 0 | 0.7 / 6.2 | 0.0 / 1.7 | 0 / 0 | 3.4 / 0.8 |
| 2030 Do Something AM | 65.9 | 0.1 / 0.1 | 0 / 0 | 6.4 / 4.6 | 0.0 / 0.1 | 0 / 0 | 2.2 / 1.7 |
| 2030 Do Something PM | 50.0 | 0.2 / 0.1 | 0 / 0 | 0.7 / 6.2 | 0.0 / 1.7 | 0 / 0 | 3.5 / 0.8 |

4.32 Table 4.22 indicates that the A13 Marsh Way junction will operate with reserve capacity in all scenarios modelled.

A13/Wennington Road Junction

Table 4.23: A13 / Wennington Road (northern roundabout) Traffic Flows

| 2023 AM | | | | | | | 2023 PM | | | | | | |
|------------------------|-----------|-------|-------|-------|-------|-------|-----------|-------|-------|-------|-------|-------|--|
| | From \ To | Arm 2 | Arm 3 | Arm 4 | Arm 1 | Total | From \ To | Arm 2 | Arm 3 | Arm 4 | Arm 1 | Total | |
| A13 Eastbound on-slip | Arm 2 | 0 | 0 | 0 | 0 | 0 | Arm 2 | 0 | 0 | 0 | 0 | 0 | |
| Bridge | Arm 3 | 279 | 5 | 0 | 635 | 919 | Arm 3 | 302 | 11 | 0 | 719 | 1032 | |
| A13 Eastbound off-slip | Arm 4 | 1 | 345 | 0 | 158 | 504 | Arm 4 | 1 | 397 | 0 | 355 | 753 | |
| Wennington Road | Arm 1 | 449 | 557 | 0 | 1 | 1007 | Arm 1 | 453 | 526 | 0 | 12 | 991 | |
| | Total | 729 | 907 | 0 | 794 | - | Total | 756 | 934 | 0 | 1086 | - | |

| 2030 AM | | | | | | | 2030 PM | | | | | | |
|------------------------|-----------|-------|-------|-------|-------|-------|-----------|-------|-------|-------|-------|-------|--|
| | From \ To | Arm 2 | Arm 3 | Arm 4 | Arm 1 | Total | From \ To | Arm 2 | Arm 3 | Arm 4 | Arm 1 | Total | |
| A13 Eastbound on-slip | Arm 2 | 0 | 0 | 0 | 0 | 0 | Arm 2 | 0 | 0 | 0 | 0 | 0 | |
| Bridge | Arm 3 | 293 | 6 | 0 | 665 | 964 | Arm 3 | 317 | 12 | 0 | 753 | 1082 | |
| A13 Eastbound off-slip | Arm 4 | 2 | 362 | 0 | 166 | 530 | Arm 4 | 2 | 416 | 0 | 372 | 790 | |
| Wennington Road | Arm 1 | 470 | 583 | 0 | 2 | 1055 | Arm 1 | 475 | 551 | 0 | 13 | 1039 | |
| | Total | 765 | 951 | 0 | 833 | - | Total | 794 | 979 | 0 | 1138 | - | |

2030 DS AM

| | From \ To | Arm 2 | Arm 3 | Arm 4 | Arm 1 | Total |
|------------------------|-----------|-------|-------|-------|-------|-------|
| A13 Eastbound on-slip | Arm 2 | 0 | 0 | 0 | 0 | 0 |
| Bridge | Arm 3 | 304 | 6 | 0 | 691 | 1001 |
| A13 Eastbound off-slip | Arm 4 | 2 | 303 | 0 | 166 | 471 |
| Wennington Road | Arm 1 | 470 | 576 | 0 | 2 | 1048 |
| | Total | 776 | 885 | 0 | 859 | - |

2030 DS PM

| | From \ To | Arm 2 | Arm 3 | Arm 4 | Arm 1 | Total |
|--|-----------|-------|-------|-------|-------|-------|
| | Arm 2 | 0 | 0 | 0 | 0 | 0 |
| | Arm 3 | 403 | 12 | 0 | 773 | 1188 |
| | Arm 4 | 2 | 364 | 0 | 372 | 738 |
| | Arm 1 | 475 | 581 | 0 | 13 | 1069 |
| | Total | 880 | 957 | 0 | 1158 | - |

Table 4.23: A13 / Wennington Road (southern roundabout) Traffic Flows

2023 AM

| | From \ To | Arm 1 | Arm 2 | Arm 3 | Arm 4 | Total |
|------------------------|-----------|-------|-------|-------|-------|-------|
| Arterial Road | Arm 1 | 40 | 525 | 559 | 0 | 1124 |
| A13 Westbound on-slip | Arm 2 | 0 | 0 | 0 | 0 | 0 |
| Bridge | Arm 3 | 644 | 255 | 3 | 0 | 902 |
| A13 Westbound off-slip | Arm 4 | 280 | 2 | 366 | 0 | 648 |
| | Total | 964 | 782 | 928 | 0 | - |

2023 PM

| | From \ To | Arm 1 | Arm 2 | Arm 3 | Arm 4 | Total |
|--|-----------|-------|-------|-------|-------|-------|
| | Arm 1 | 37 | 466 | 668 | 0 | 1171 |
| | Arm 2 | 0 | 0 | 0 | 0 | 0 |
| | Arm 3 | 687 | 230 | 5 | 0 | 922 |
| | Arm 4 | 212 | 4 | 349 | 0 | 565 |
| | Total | 936 | 700 | 1022 | 0 | - |

2030 AM

| | From \ To | Arm 1 | Arm 2 | Arm 3 | Arm 4 | Total |
|------------------------|-----------|-------|-------|-------|-------|-------|
| Arterial Road | Arm 1 | 42 | 550 | 586 | 0 | 1178 |
| A13 Westbound on-slip | Arm 2 | 0 | 0 | 0 | 0 | 0 |
| Bridge | Arm 3 | 675 | 267 | 4 | 0 | 946 |
| A13 Westbound off-slip | Arm 4 | 294 | 3 | 384 | 0 | 681 |
| | Total | 1011 | 820 | 974 | 0 | - |

2030 PM

| | From \ To | Arm 1 | Arm 2 | Arm 3 | Arm 4 | Total |
|--|-----------|-------|-------|-------|-------|-------|
| | Arm 1 | 39 | 488 | 700 | 0 | 1227 |
| | Arm 2 | 0 | 0 | 0 | 0 | 0 |
| | Arm 3 | 720 | 241 | 6 | 0 | 967 |
| | Arm 4 | 222 | 5 | 366 | 0 | 593 |
| | Total | 981 | 734 | 1072 | 0 | - |

2030 DS AM

| | From \ To | Arm 1 | Arm 2 | Arm 3 | Arm 4 | Total |
|------------------------|-----------|-------|-------|-------|-------|-------|
| Arterial Road | Arm 1 | 42 | 496 | 586 | 0 | 1124 |
| A13 Westbound on-slip | Arm 2 | 0 | 0 | 0 | 0 | 0 |
| Bridge | Arm 3 | 609 | 267 | 4 | 0 | 880 |
| A13 Westbound off-slip | Arm 4 | 294 | 3 | 421 | 0 | 718 |
| | Total | 945 | 766 | 1011 | 0 | - |

2030 DS PM

| From \ To | Arm 1 | Arm 2 | Arm 3 | Arm 4 | Total |
|-----------|-------|-------|-------|-------|-------|
| Arm 1 | 39 | 469 | 700 | 0 | 1208 |
| Arm 2 | 0 | 0 | 0 | 0 | 0 |
| Arm 3 | 653 | 228 | 6 | 0 | 887 |
| Arm 4 | 222 | 5 | 472 | 0 | 699 |
| Total | 914 | 702 | 1178 | 0 | - |

Table 4.24: Linsig Modelling results of the A13 / Wennington Road Junction

| Junction 10 - A13 - A1306 Wennington Road | | | | | | | | | | | |
|---|----|--------|-------------|-----------|-----|-----|--------|-------------|-----------|-----|-----|
| | | AM | | | | PM | | | | | |
| | | Set ID | Queue (PCU) | Delay (s) | RFC | LOS | Set ID | Queue (PCU) | Delay (s) | RFC | LOS |
| 2023 | | | | | | | | | | | |
| Northern RA – Internal Road (S) | D1 | 0.7 | 2.58 | 0.42 | A | D2 | 0.9 | 2.80 | 0.47 | A | |
| Northern RA – A13 Eastbound Off-slip | | 0.5 | 3.28 | 0.34 | A | | 1.1 | 4.84 | 0.53 | A | |
| Northern RA – New Road (A1306) | | 0.9 | 2.90 | 0.47 | A | | 0.9 | 3.04 | 0.48 | A | |
| Southern RA - Arterial Road | | 1.1 | 3.12 | 0.52 | A | | 1.1 | 3.18 | 0.53 | A | |
| Southern RA - Internal Road (N) | | 0.6 | 2.51 | 0.36 | A | | 0.6 | 2.55 | 0.37 | A | |
| Southern RA - A13 Westbound Off-slip | | 0.5 | 2.49 | 0.33 | A | | 0.4 | 2.37 | 0.29 | A | |
| 2030 Base | | | | | | | | | | | |
| Northern RA - Internal Road (S) | D3 | 0.8 | 2.67 | 0.44 | A | D4 | 1.0 | 2.93 | 0.49 | A | |
| Northern RA - A13 Eastbound Off-slip | | 0.6 | 3.48 | 0.36 | A | | 1.3 | 5.42 | 0.57 | A | |
| Northern RA - New Road (A1306) | | 1.0 | 3.12 | 0.50 | A | | 1.0 | 3.28 | 0.51 | A | |
| Southern RA- Arterial Road | | 1.2 | 3.38 | 0.55 | A | | 1.3 | 3.45 | 0.56 | A | |
| Southern RA- Internal Road (N) | | 0.6 | 2.58 | 0.38 | A | | 0.6 | 2.63 | 0.39 | A | |
| Southern RA- A13 Westbound Off-slip | | 0.5 | 2.62 | 0.35 | A | | 0.4 | 2.48 | 0.31 | A | |
| 2030 Do Something | | | | | | | | | | | |
| Northern RA - Internal Road (S) | D5 | 0.9 | 2.76 | 0.46 | A | D6 | 1.2 | 3.24 | 0.54 | A | |
| Northern RA - A13 Eastbound Off-slip | | 0.5 | 3.36 | 0.33 | A | | 1.3 | 5.62 | 0.56 | A | |
| Northern RA - New Road (A1306) | | 1.0 | 2.98 | 0.49 | A | | 1.1 | 3.49 | 0.53 | A | |
| Southern RA- Arterial Road | | 1.2 | 3.37 | 0.54 | A | | 1.4 | 3.85 | 0.59 | A | |

| | AM | | | | | PM | | | | |
|-------------------------------------|--------|-------------|-----------|------|-----|--------|-------------|-----------|------|-----|
| | Set ID | Queue (PCU) | Delay (s) | RFC | LOS | Set ID | Queue (PCU) | Delay (s) | RFC | LOS |
| | 2023 | | | | | | | | | |
| Southern RA- Internal Road (N) | | 0.6 | 2.61 | 0.38 | A | | 0.8 | 2.82 | 0.43 | A |
| Southern RA- A13 Westbound Off-slip | | 0.6 | 2.72 | 0.37 | A | | 0.6 | 2.86 | 0.38 | A |

4.33 Table 4.24 indicates that the A13 / Wennington Road junction will operate with reserve capacity in all scenarios modelled.

St Mary's Lane/Station Road Junction Traffic Flows

Table 4.25: St Mary's Lane / Station Road Junction Traffic Flows

2023 AM

| | | A | B | C | D | Tot |
|--------------------|-----|-----|-----|-----|-----|------|
| Station Road | A | 0 | 54 | 299 | 237 | 590 |
| St Mary's Lane (E) | B | 53 | 0 | 76 | 230 | 359 |
| Corbets Tey Road | C | 294 | 83 | 0 | 51 | 428 |
| St Mary's Lane (W) | D | 343 | 227 | 34 | 0 | 604 |
| | Tot | 690 | 364 | 409 | 518 | 1981 |

2023 PM

| | | A | B | C | D | Tot |
|--------------------|-----|-----|-----|-----|-----|------|
| Station Road | A | 0 | 80 | 333 | 264 | 677 |
| St Mary's Lane (E) | B | 81 | 0 | 123 | 239 | 443 |
| Corbets Tey Road | C | 264 | 146 | 0 | 78 | 488 |
| St Mary's Lane (W) | D | 353 | 342 | 56 | 0 | 751 |
| | Tot | 698 | 568 | 512 | 581 | 2359 |

2030 AM

| | | A | B | C | D | Tot |
|--------------------|-----|-----|-----|-----|-----|------|
| Station Road | A | 0 | 65 | 359 | 284 | 708 |
| St Mary's Lane (E) | B | 64 | 0 | 91 | 276 | 431 |
| Corbets Tey Road | C | 353 | 100 | 0 | 61 | 514 |
| St Mary's Lane (W) | D | 412 | 272 | 41 | 0 | 725 |
| | Tot | 829 | 437 | 491 | 621 | 2378 |

2030 PM

| | | A | B | C | D | Tot |
|--------------------|-----|-----|-----|-----|-----|------|
| Station Road | A | 0 | 96 | 400 | 317 | 813 |
| St Mary's Lane (E) | B | 97 | 0 | 148 | 287 | 532 |
| Corbets Tey Road | C | 317 | 175 | 0 | 94 | 586 |
| St Mary's Lane (W) | D | 424 | 410 | 67 | 0 | 901 |
| | Tot | 838 | 681 | 615 | 698 | 2832 |

2030 DS AM

| | | A | B | C | D | Tot |
|--------------------|-----|-----|-----|-----|-----|------|
| Station Road | A | 0 | 44 | 329 | 287 | 660 |
| St Mary's Lane (E) | B | 63 | 0 | 74 | 188 | 325 |
| Corbets Tey Road | C | 381 | 105 | 0 | 59 | 545 |
| St Mary's Lane (W) | D | 457 | 283 | 42 | 0 | 782 |
| | Tot | 901 | 432 | 445 | 534 | 2312 |

2030 DS PM

| | | A | B | C | D | Tot |
|--------------------|-----|-----|-----|-----|-----|------|
| Station Road | A | 0 | 93 | 355 | 350 | 798 |
| St Mary's Lane (E) | B | 97 | 0 | 140 | 268 | 505 |
| Corbets Tey Road | C | 327 | 207 | 0 | 96 | 630 |
| St Mary's Lane (W) | D | 421 | 417 | 77 | 0 | 915 |
| | Tot | 845 | 717 | 572 | 714 | 2848 |

Table 4.26: Linsig Modelling results of the St Mary's Lane / Station Road (Bell Corner) junction

| Junction 11 - St Mary's Lane - Station Road | | | | |
|---|----------------|----------------------|--------------------|----------------------|
| PRC | MMQ | | | |
| | A Station Road | B St Mary's Lane (E) | C Corbets Tey Road | D St Mary's Lane (W) |
| | | | | |

| Junction 11 - St Mary's Lane - Station Road | | | | | |
|---|------|-------------|------|------------|-------------|
| 2023 AM | 47.6 | 7.9 / 6.6 | 7.3 | 6.0 / 5.3 | 8.5 / 5.4 |
| 2023 PM | 30.5 | 9.3 / 8.0 | 9.8 | 6.8 / 6.0 | 9.0 / 9.7 |
| 2030 AM | 23.3 | 10.0 / 8.7 | 9.6 | 7.6 / 6.9 | 11.1 / 6.8 |
| 2030 PM | 10.2 | 12.3 / 10.9 | 13.4 | 9.5 / 8.4 | 11.6 / 12.6 |
| 2030 Do Something AM | 18.6 | 10.0 / 8.5 | 5.7 | 8.0 / 7.4 | 12.3 / 6.9 |
| 2030 Do Something PM | 6.6 | 12.6 / 11.0 | 12.0 | 10.3 / 9.2 | 11.5 / 13.3 |

4.34 Table 4.26 indicates that the St Mary's Lane / Station Road junction will operate with reserve capacity in all scenarios modelled. The LTC does impact on PRC values in the time periods modelled, however spare capacity remains in the junction.

5.0 SUMMARY & CONCLUSIONS

- 5.1 The Healthy Streets analysis set out within Section 2.0 of this Report has identified a number of interventions that should be considered for future implementation at each of the junctions, based on the specific consideration given to the relevant Healthy Streets criteria.
- 5.2 The Accident Analysis presented within Section 3.0 of this Report has identified particularly high concentrations of accidents at the following locations:
- A12 / North Street (38 accidents in 5 years);
 - A12 / Pettits Lane (25 accidents in 5 years);
 - A12 / Gubbins Lane (19 accidents in 5 years);
 - A127 / Squirrels Heath (19 accidents in 5 years); and
 - A127 / Hall Lane (19 accidents in 5 years).
- 5.3 A recommendation has been made within the Report that these particular junctions are given further consideration with regard to a more detailed safety review, to include Road Safety Audits.
- 5.4 The Report has also identified a requirement for a more detailed review of the impacts of the LTC on Wingletye Lane, noting the presence of two schools on this road, and the fact that National Highways omitted the left-turn flow from the A127 into Wingletye Lane from their modelling.
- 5.5 With regard to the junction modelling outcomes, the following junctions operate within capacity and will continue to do so in the year 2030 with or without the impact of the Lower Thames Crossing scheme:
- A12 Colchester Road/Harold Court Road;
 - A127 Southend Arterial Road/Wingletye Lane; *
 - A13/Marsh Way;
 - A127/Front Lane;
 - A13/A1306 Wennington Road (Wennington Interchange); and
 - A124 St Mary's Lane/Station Road/B1421 Corbetts Tey Road (Bell Corner).
- * As noted in Section 4 of this Report, the Wingletye Lane junction works in isolation, however, it is impacted by queuing that extends back from the A127 / Ardleigh Green Road / Squirrels Heath Road junction.*
- 5.6 The following junctions will operate over capacity in 2030, with or without the LTC, however, there may be scope to improve this junction:

- A12 Colchester Road/Gubbins Lane/Gooshays Drive.

5.7 The LTC causes the following junctions to operate over capacity (i.e. without the LTC, these junctions would operate with reserve capacity in 2030):

- A127 Southend Arterial Road/Hall Lane; and
- A12 Eastern Avenue/Pettits Lane/Pettits Lane North;

5.8 The following junctions are severely over-capacity, both now and in the 2030 Do Something scenario. As such these junctions will likely require amendments to the strategic network to alleviate the strain on these junctions:

- A12/North Street/B175 Havering Road;
- A127 Southend Arterial Road/Ardleigh Green Road/Squirrels Heath Road.

5.9 A brief summary of the overall findings and recommendations relevant to all of the topics considered for each junction is set out in Table 5.1 below.

Table 5.1: Summary of Findings and Recommendations at Each Junction

| Junction | Recommended Healthy Streets Interventions | Accidents & Safety Findings/Interventions | Junction Performance Findings/Interventions |
|-----------------------|---|--|---|
| A12/North Street | Installation of controlled pedestrian crossing facilities and imposition of a ban on U-turns. Consider bus priority measures | 38 accidents in 5 years. Recommend that a Road Safety Audit is conducted of the junction | Junction significantly over capacity in 2023 and continues to be in 2030 Do Something scenario. Strategic approach required to look at options for rerouting traffic away from this junction together with modal shift measures. |
| A12/Pettits Lane | Installation of controlled pedestrian crossing facilities and imposition of a ban on U-turns. Consider bus priority measures. Consider more compact junction layout that is more pedestrian / cyclist friendly. | 25 accidents in 5 years. Recommend that a Road Safety Audit is conducted of the junction | Junction within capacity in 2023 base and 2030 Do Minimum scenarios. LTC causes junction to operate over capacity in Do Something scenario. Considered to be scope to improve junction performance through signal timings review and possible U-turn ban. |
| A12/Harold Court Road | Recommend installation of a controlled crossing on Harold Court Road – existing uncontrolled crossing considered unsatisfactory | 16 accidents in 5 years. No particular safety concerns aside from the crossing on Harold Court Road. | Junction will operate with reserve capacity in all scenarios. |

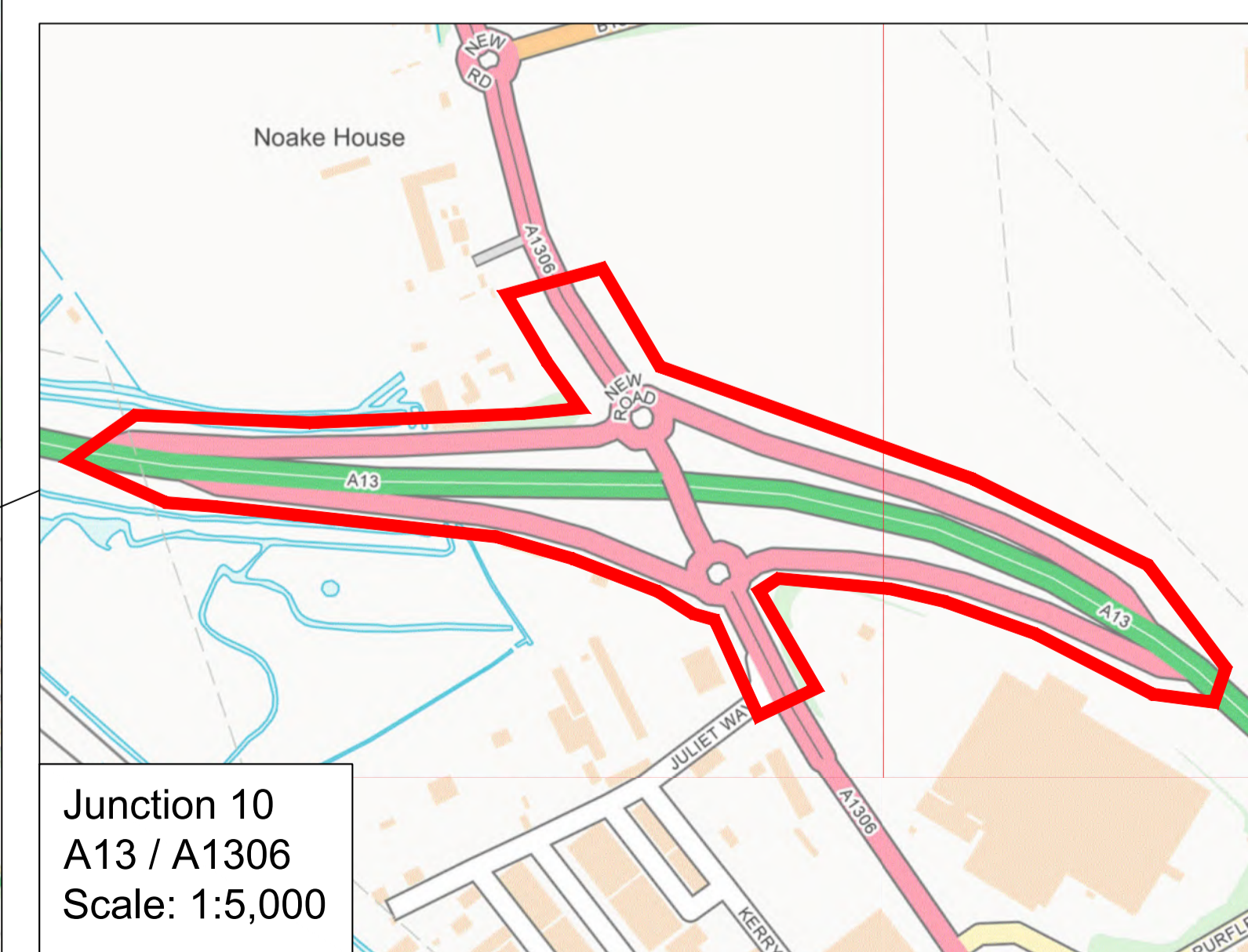
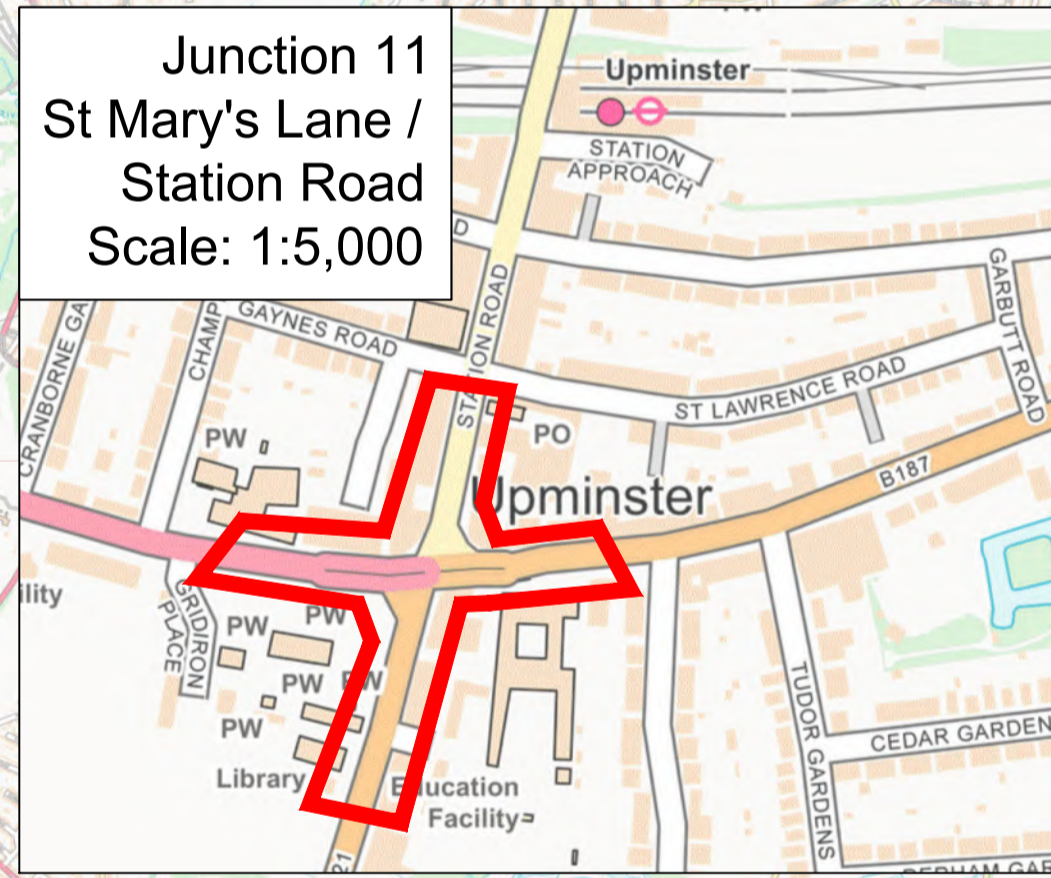
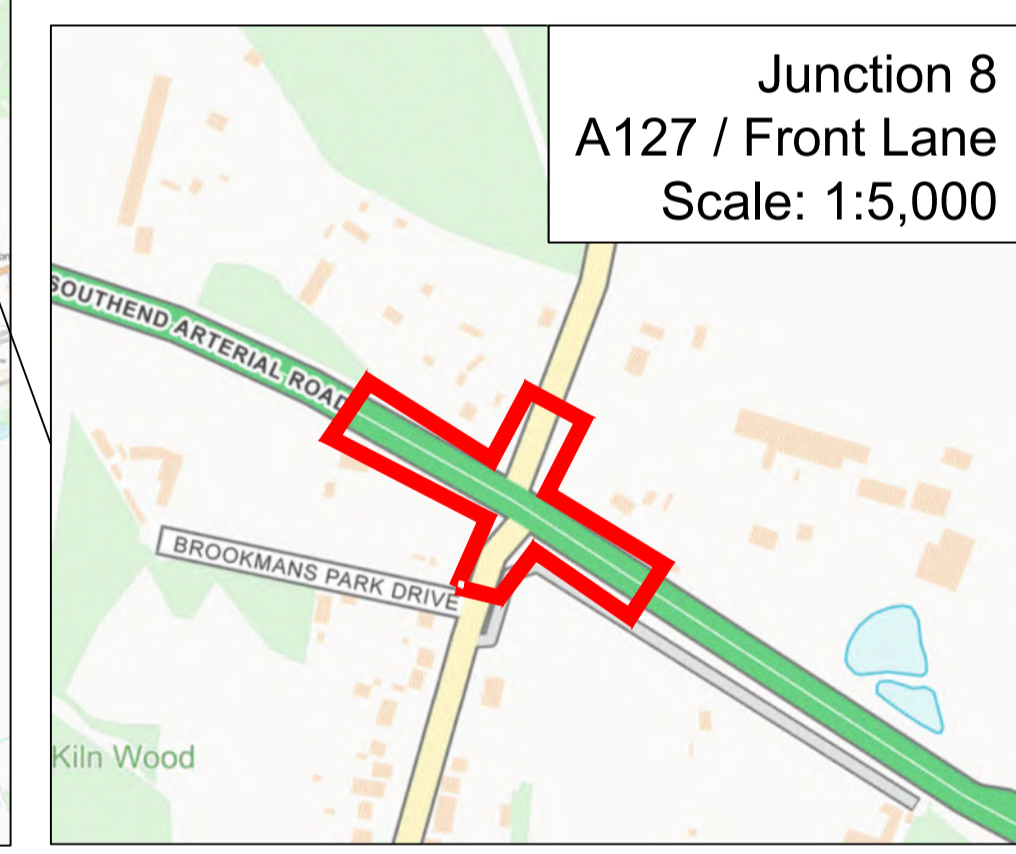
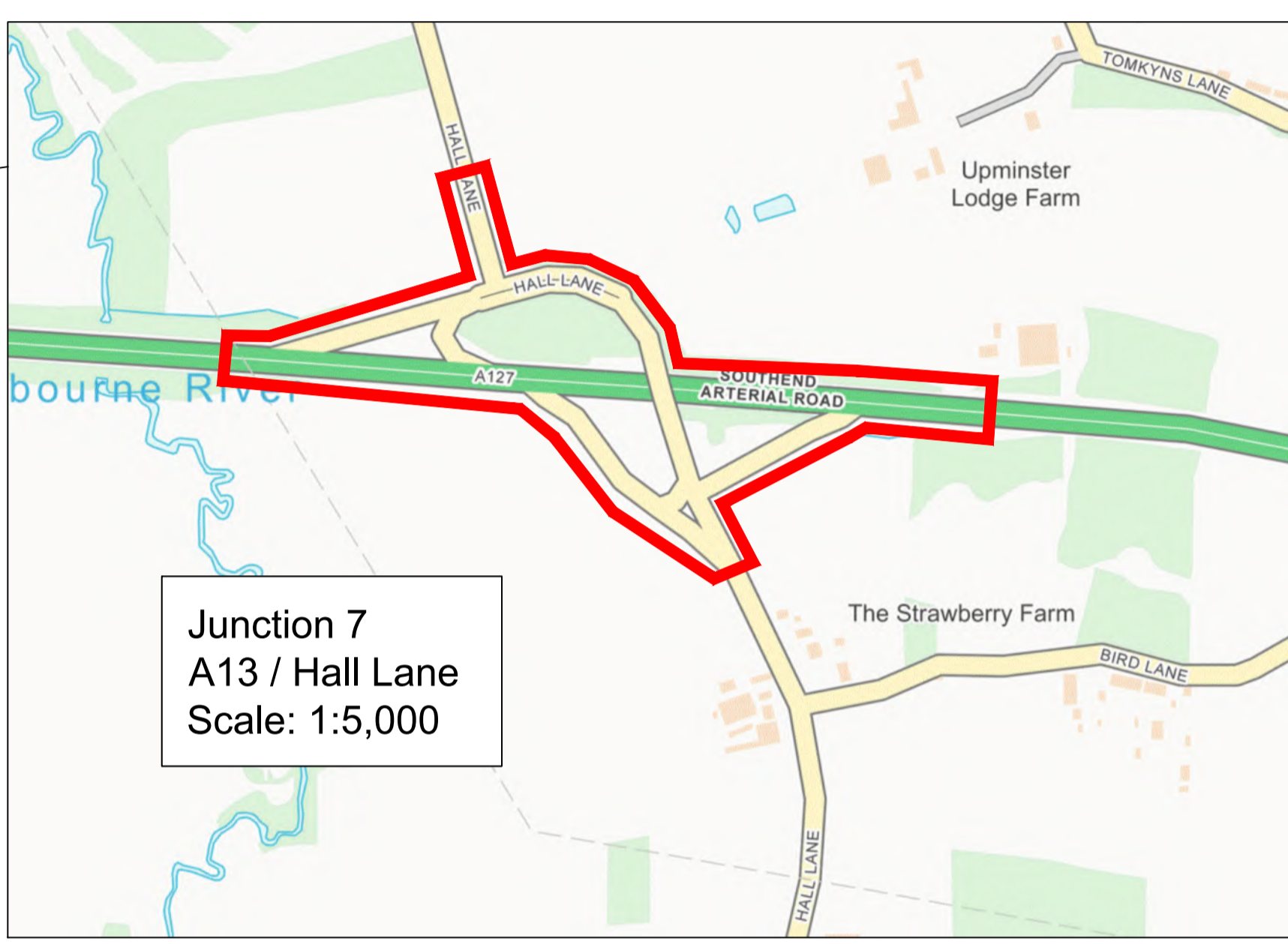
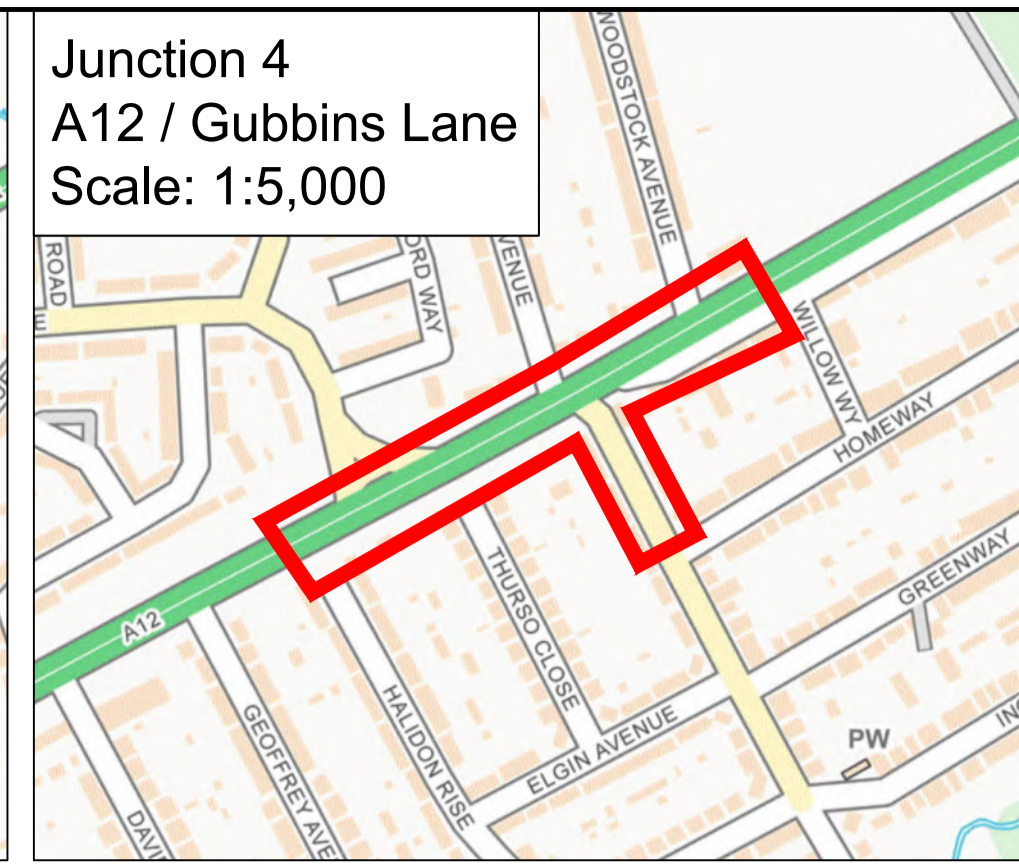
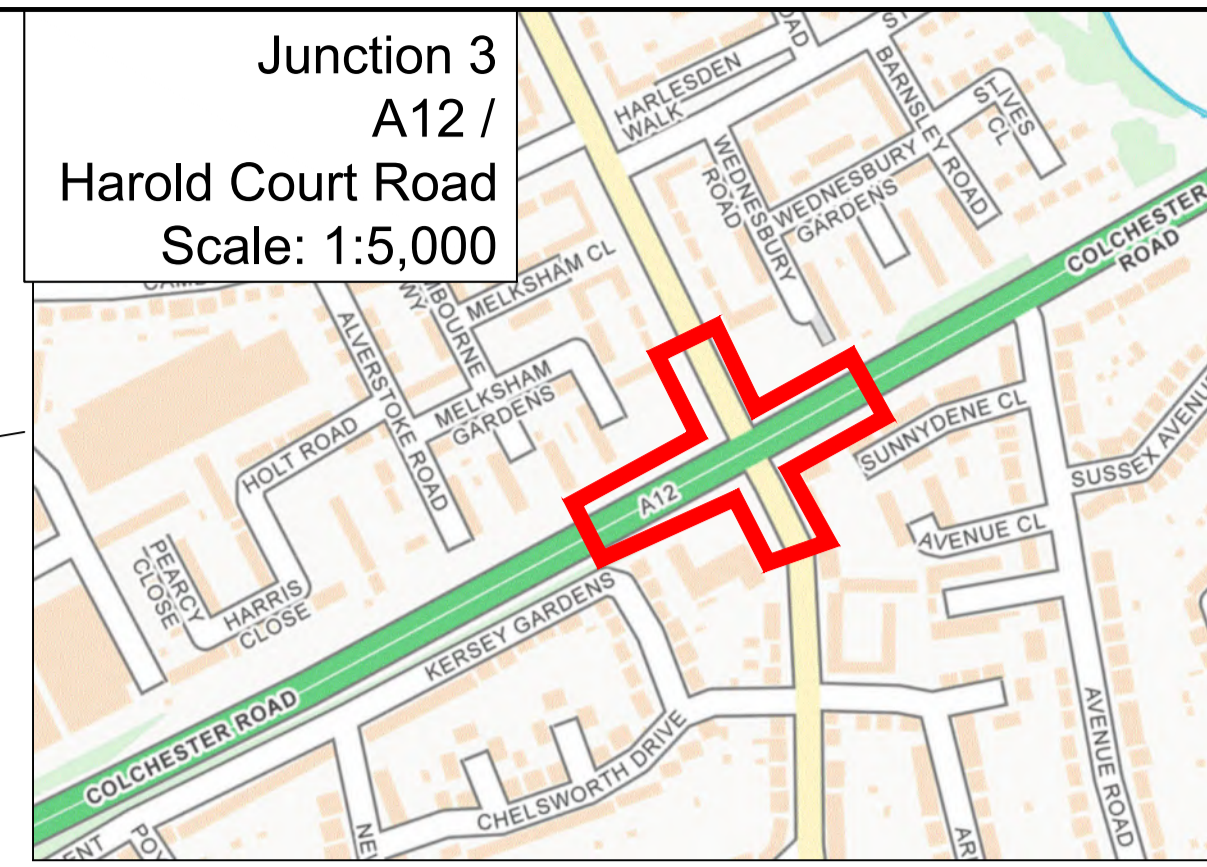
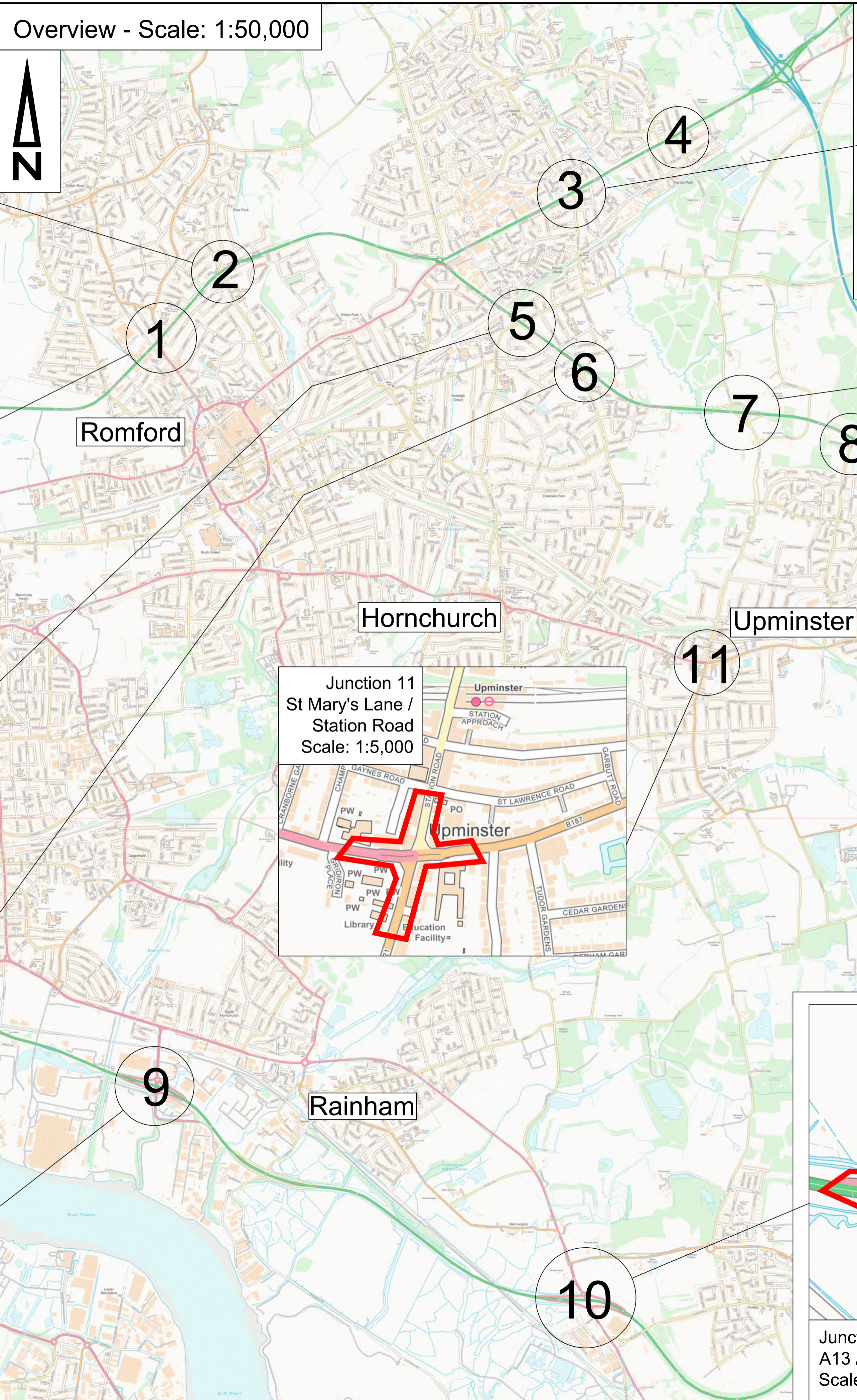
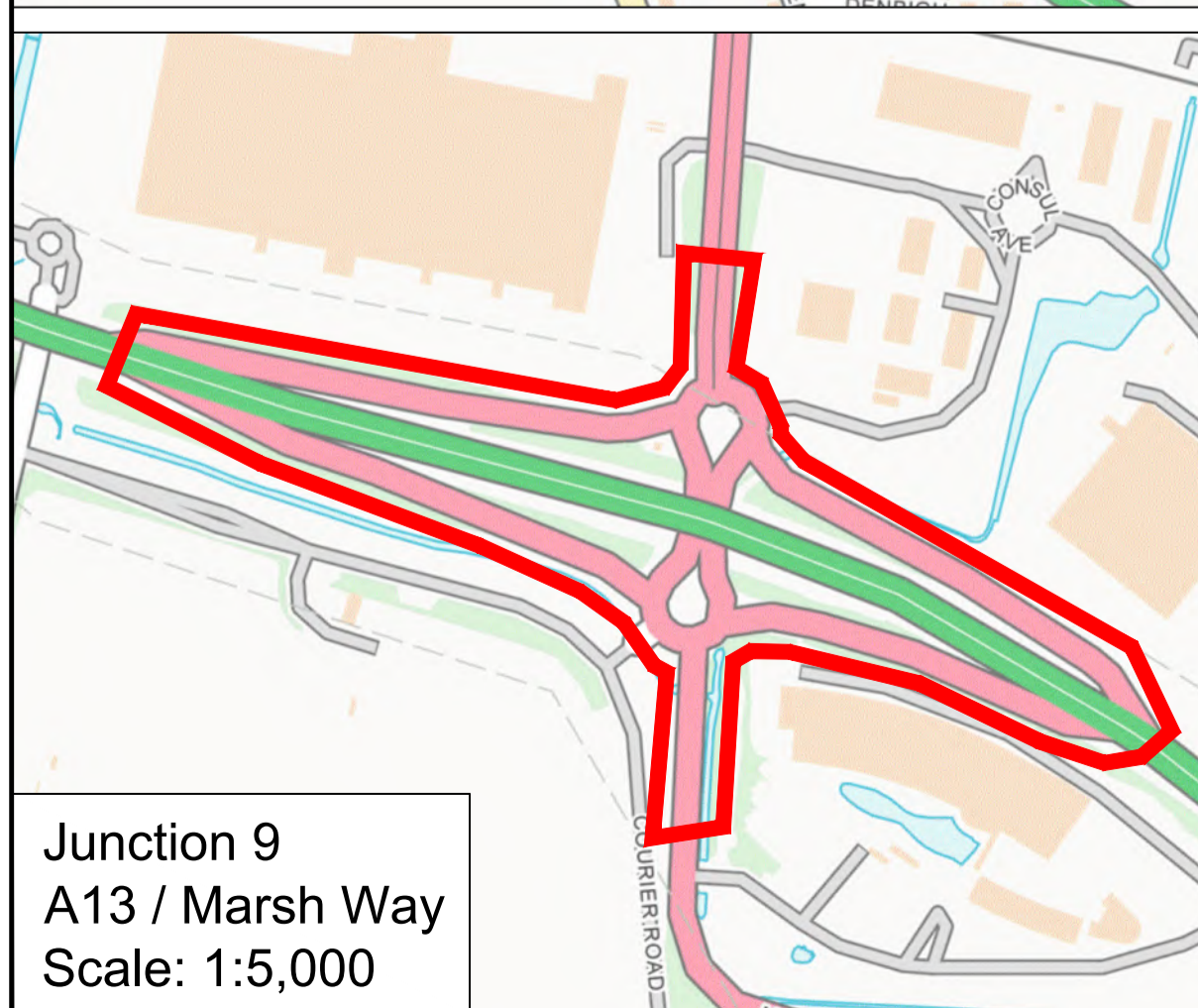
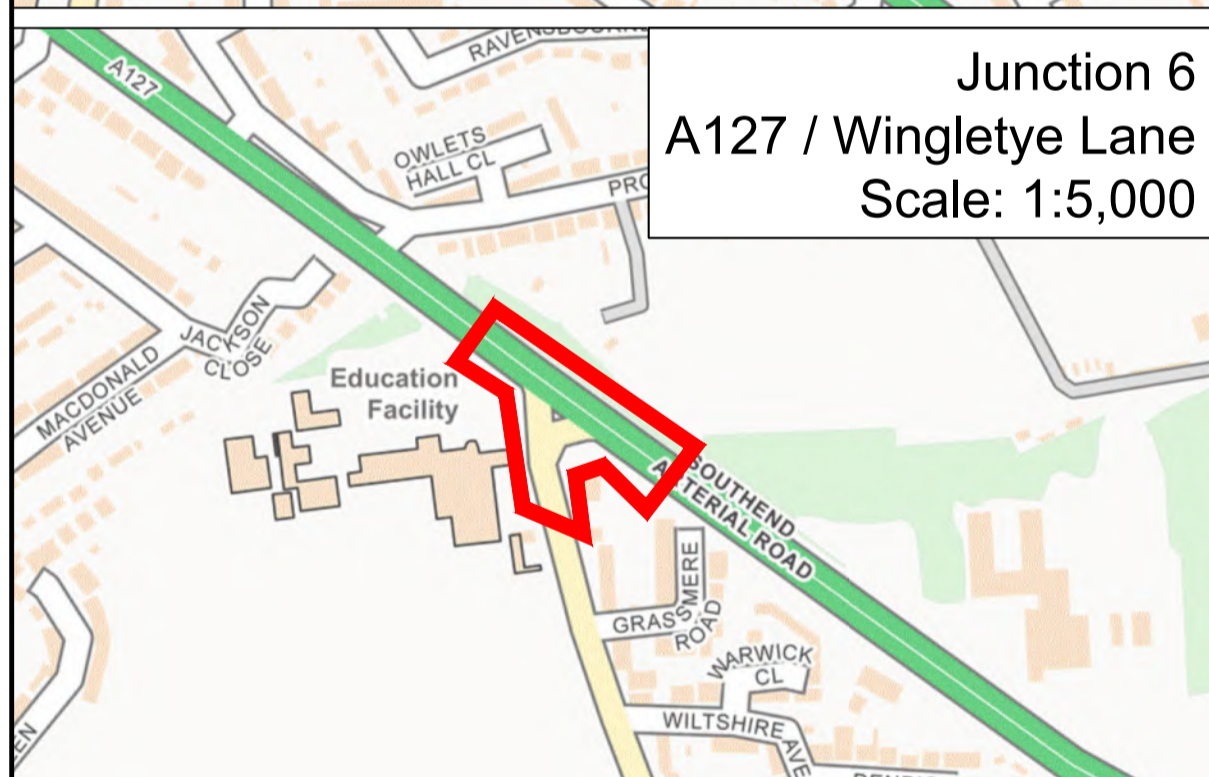
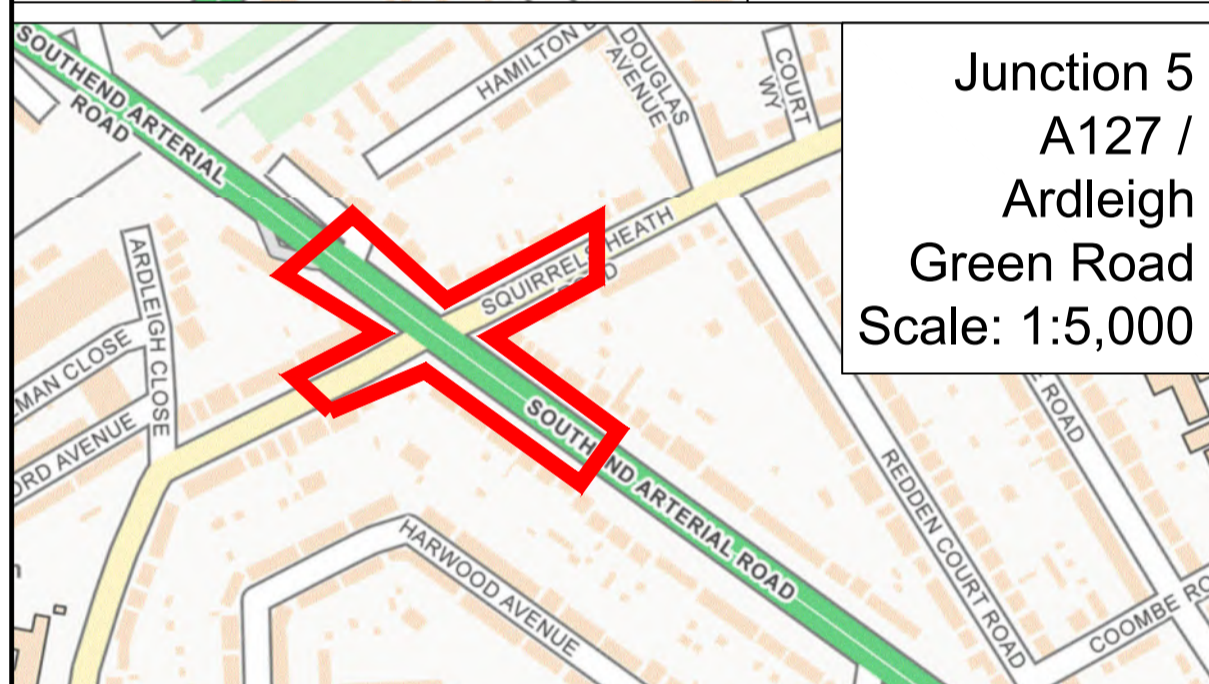
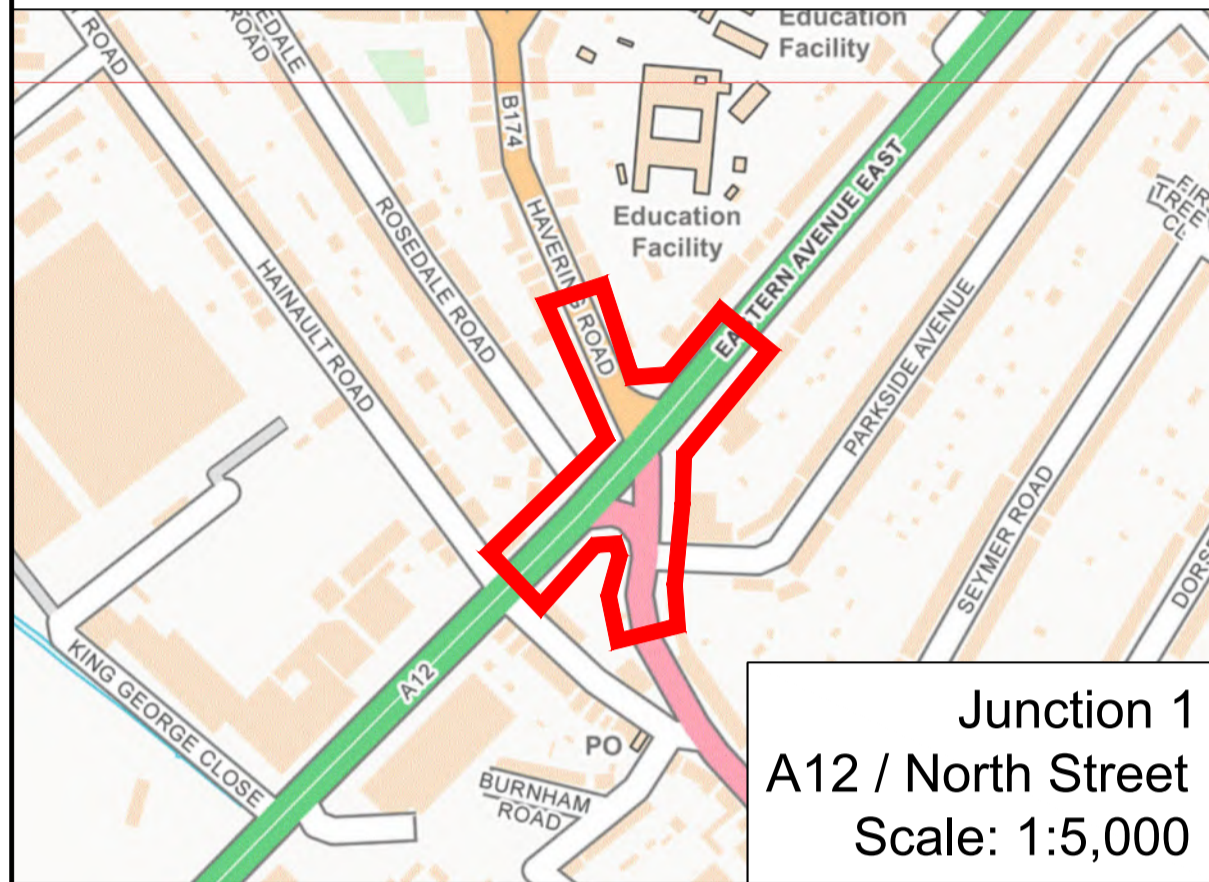
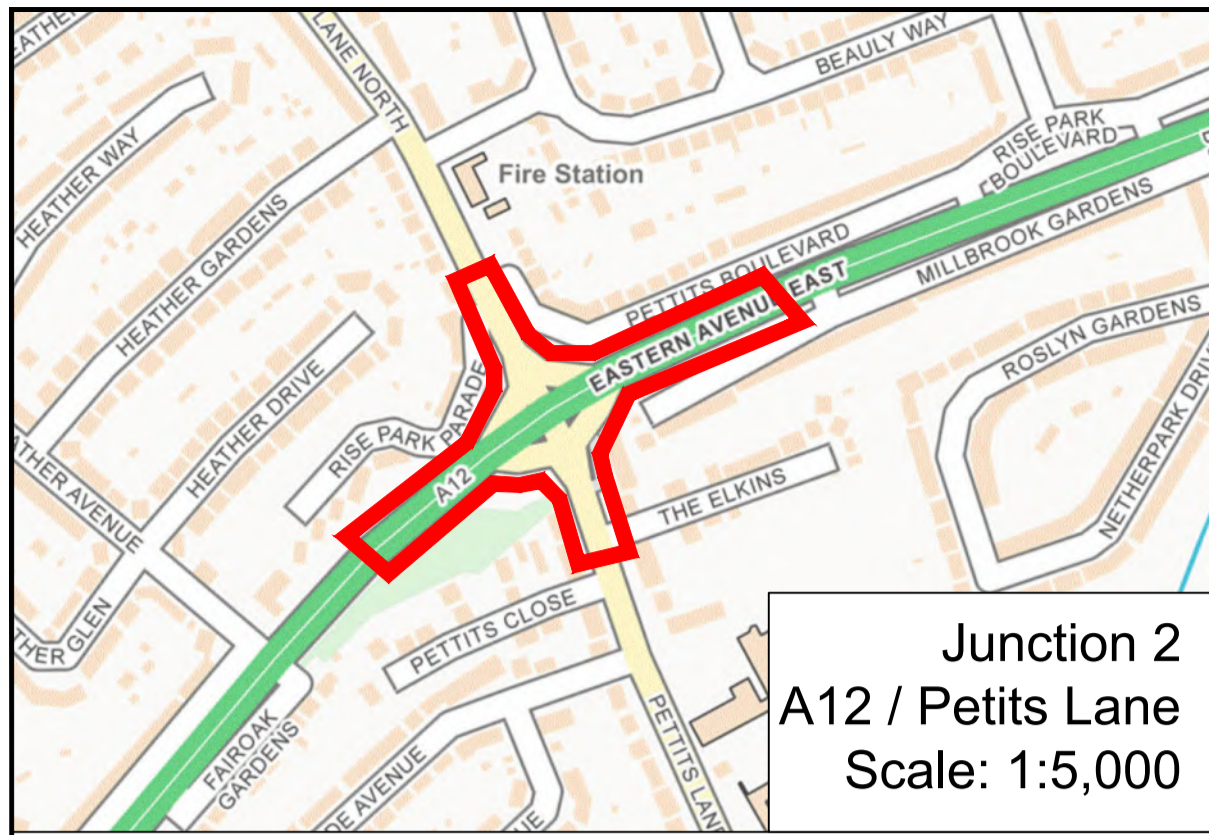
| Junction | Recommended Healthy Streets Interventions | Accidents & Safety Findings/Interventions | Junction Performance Findings/Interventions |
|--|---|---|--|
| A12/Gubbins Lane/Gooshays Drive | Installation of controlled pedestrian crossing facilities and imposition of a ban on U-turns. Consider bus priority measures | 19 accidents in 5 years. Recommend that a Road Safety Audit is conducted of the junction. | Overcapacity in all scenarios modelled, however there is likely to be scope to implement capacity improvements through measures such as signal timing reviews. |
| A127/Squirrels Heath Road/Ardleigh Green Road | Installation of controlled pedestrian crossing facilities and imposition of a ban on U-turns. Consider bus priority measures | 19 accidents in 5 years. Recommend that a Road Safety Audit is conducted of the junction. | Significantly overcapacity in all scenarios modelled. Strategic approach needed with respect to mitigation at this junction. |
| A127/Wingletye Lane | Consider feasibility of signalising the junction to incorporate pedestrian crossing facilities and to allow right turn movements from Wingletye Lane onto the A127. May help to reduce capacity issues at the Squirrels Heath junction. | 8 accidents in 5 years. Recommend that further work is conducted with specific regard to impact of the LTC on Wingletye Lane and the two schools located along this road. | Operates within capacity in all scenarios considered, however queueing back from the Squirrels Heath / Ardleigh Green Road impacts this junction. |
| A127/Hall Lane (northern and southern junctions) | No Healthy Streets interventions identified | 19 accidents in 5 years. Recommend that a Road Safety Audit is conducted of the junction. | Junction within capacity in 2023 base and 2030 Do Minimum scenarios. LTC causes junction to operate over capacity in Do Something scenario, leading to dangerous queue lengths almost back to the A127 through lane. Altering the existing priority junction arrangement at the exit slip where it meets Hall Lane to a roundabout junction may minimise or remove the excessive queueing caused. This is recommended for further investigation. |
| A127/Front Lane | Commission survey and report of usage of the existing staggered crossing on the A127 and options for its removal, retention or alteration. | 7 accidents in 5 years. Consider safety of existing staggered crossing. | Junction will operate with reserve capacity in all scenarios. |

| Junction | Recommended Healthy Streets Interventions | Accidents & Safety Findings/Interventions | Junction Performance Findings/Interventions |
|---|--|--|---|
| A13/Marsh Way | Consider provision of additional pedestrian crossing facilities and also consider provision of a foot/cycleway along the western side of Marsh Way between the two roundabouts. Consider addition of Advanced Stop Lines for cyclists. | 17 accidents in 5 years. Additional crossing facilities would be beneficial. | Junction will operate with reserve capacity in all scenarios. |
| A13/Wennington Road | Crossing points require tactile paving. Foot/cycle ways require resurfacing and vegetation cutting back | 8 accidents in 5 years. No specific interventions identified. | Junction will operate with reserve capacity in all scenarios. |
| St Mary's Lane / Station Road (Bell Corner) | Consider provision of Advanced Stop Lines for cyclists and bus priority measures | 9 accidents in 5 years. No specific interventions identified. | Junction will operate with reserve capacity in all scenarios. |

Cole Easdon Consultants Limited

July 2023

Appendix 1



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Client
London Borough of Havering

Job Title
Lower Thames Crossing
London Borough of Havering

Drawing Title
Junction Locations

| | | | | |
|--|--------------|------------|--------------|------------------|
| Drawing Status | | | | |
| FOR COMMENT | FOR PLANNING | FOR TENDER | FOR APPROVAL | FOR CONSTRUCTION |
| | | | | AS BUILT |
| **CONSTRUCTION AT CLIENT / CONTRACTOR RISK** | | | | |

| | | |
|--------------------|------------------------|------------------|
| Designed by CGC | Drawn by CGC | Checked by DH |
| Date June 2023 | Scale As Shown (A1) | |

| | |
|---------------------------|-----------|
| Dwg. No. Plan 9190/201 | Rev. - |
|---------------------------|-----------|

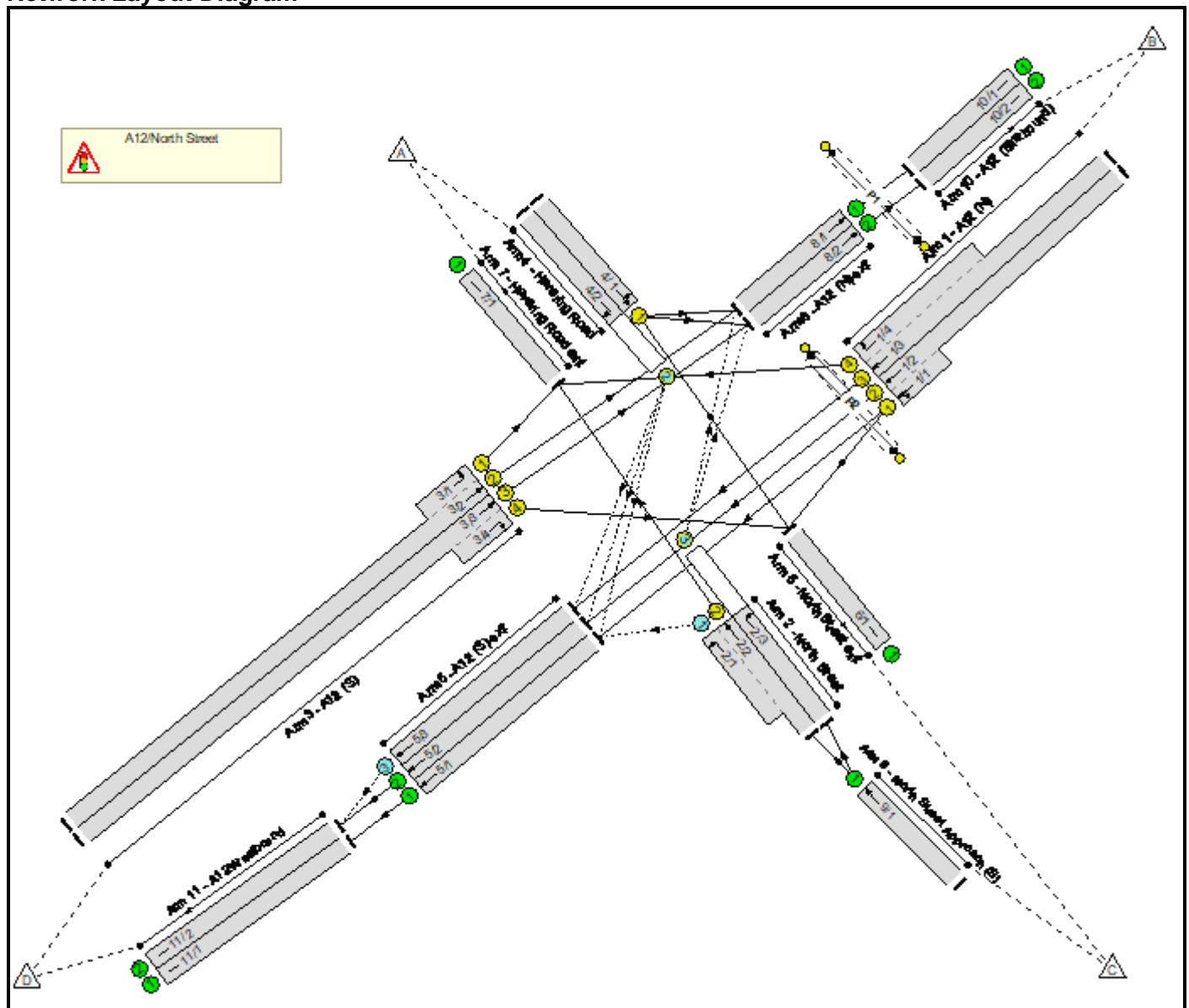
Appendix 2

Full Input Data And Results
Full Input Data And Results

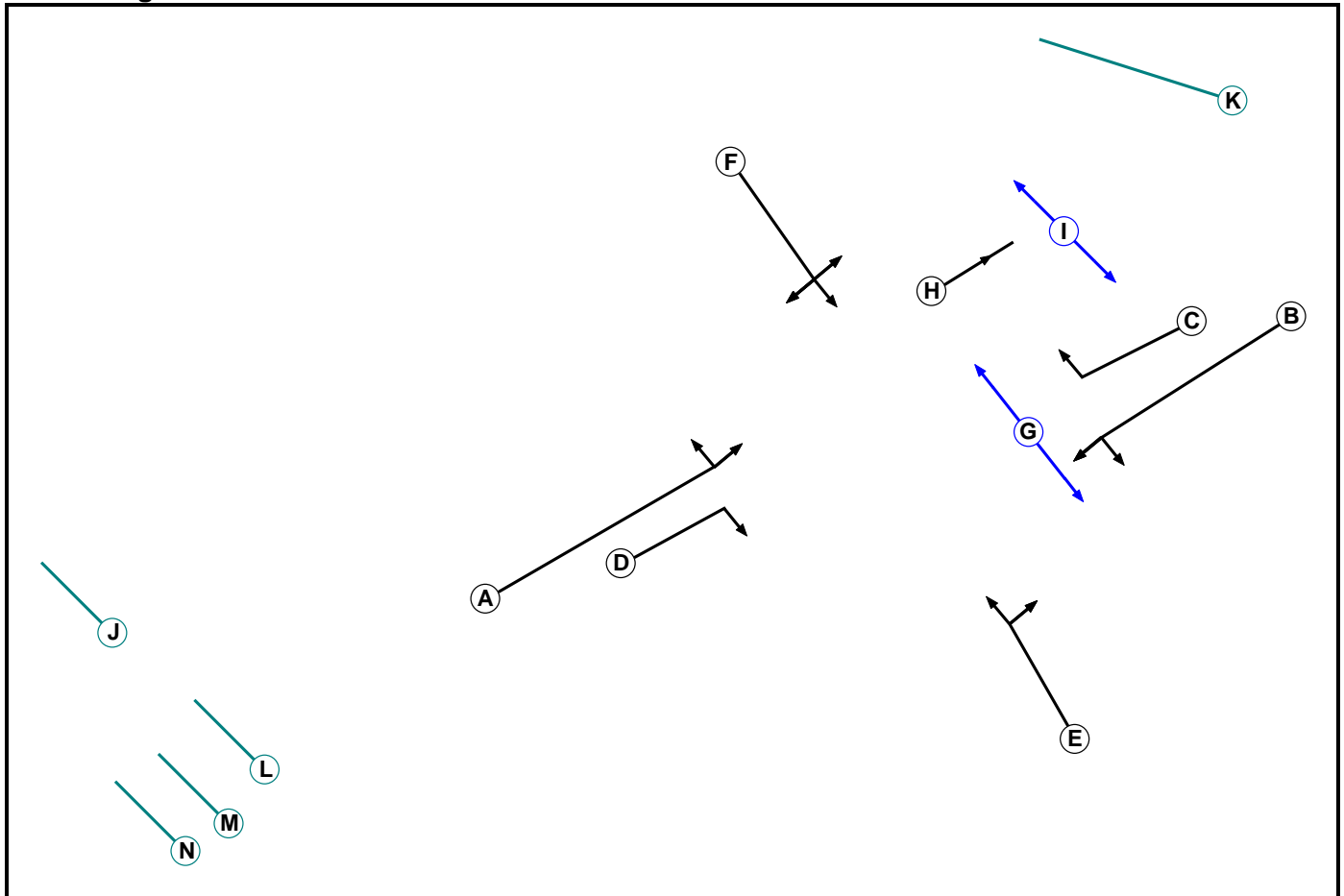
User and Project Details

| | |
|--------------------|------------------------------|
| Project: | |
| Title: | |
| Location: | |
| Additional detail: | |
| File name: | 1 - A12 - North Street.lsg3x |
| Author: | |
| Company: | |
| Address: | |

Network Layout Diagram



Phase Diagram



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 | 1 | | 7 | 7 |
| D | Traffic | 1 | | 7 | 7 |
| E | Traffic | 1 | | 7 | 7 |
| F | Traffic | 1 | | 7 | 7 |
| G | Pedestrian | 1 | | 6 | 6 |
| H | Traffic | 2 | | 7 | 7 |
| I | Pedestrian | 2 | | 7 | 7 |
| J | Dummy | 1 | | 3 | 3 |
| K | Dummy | 2 | | 3 | 3 |
| L | Dummy | 1 | | 1 | 1 |
| M | Dummy | 1 | | 1 | 1 |
| N | Dummy | 1 | | 1 | 1 |

Phase Intergreens Matrix

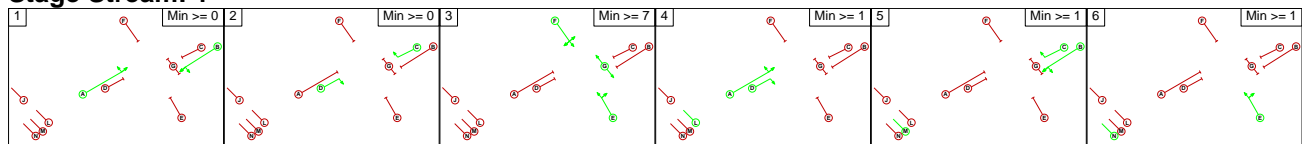
| | Starting Phase | | | | | | | | | | | | | |
|---|----------------|----|----|----|----|----|---|----|---|---|---|----|----|----|
| | A | B | C | D | E | F | G | H | I | J | K | L | M | N |
| A | - | - | 8 | - | 7 | 10 | - | - | - | 3 | - | - | 8 | 7 |
| B | - | - | - | 8 | 10 | 10 | 7 | - | - | 3 | - | 8 | - | 10 |
| C | 8 | - | - | - | 7 | 7 | 7 | - | - | 3 | - | 8 | - | 7 |
| D | - | 8 | - | - | 7 | 7 | - | - | - | 3 | - | - | 8 | 7 |
| E | 12 | 12 | 10 | 10 | - | - | - | - | - | 3 | - | 10 | 10 | - |
| F | 12 | 12 | 10 | 10 | - | - | - | - | - | 3 | - | 10 | 10 | 3 |
| G | - | 16 | 16 | - | - | - | - | - | - | 7 | - | 7 | 16 | 7 |
| H | - | - | - | - | - | - | - | - | 7 | - | 3 | - | - | - |
| I | - | - | - | - | - | - | - | 10 | - | - | 4 | - | - | - |
| J | 2 | 2 | 2 | 2 | 2 | 2 | 2 | - | - | - | - | 2 | 2 | 2 |
| K | - | - | - | - | - | - | - | 2 | 2 | - | - | - | - | - |
| L | - | 8 | 8 | - | 7 | 10 | 2 | - | - | 3 | - | - | - | - |
| M | 8 | - | - | 8 | 10 | 7 | 7 | - | - | 3 | - | - | - | - |
| N | 10 | 10 | 8 | 8 | - | 7 | 2 | - | - | 3 | - | - | - | - |

Phases in Stage

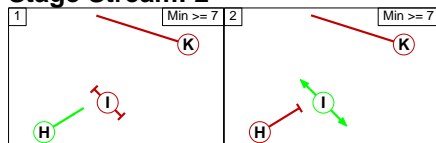
| Stream | Stage No. | Phases in Stage |
|--------|-----------|-----------------|
| 1 | 1 | A B |
| 1 | 2 | C D |
| 1 | 3 | E F G |
| 1 | 4 | A D L |
| 1 | 5 | B C M |
| 1 | 6 | E N |
| 2 | 1 | H |
| 2 | 2 | I |

Stage Diagram

Stage Stream: 1



Stage Stream: 2



Full Input Data And Results

Phase Delays

Stage Stream: 1

| Term. Stage | Start Stage | Phase | Type | Value | Cont value |
|-------------|-------------|-------|--------|-------|------------|
| 3 | 1 | E | Losing | 6 | 6 |
| 3 | 1 | F | Losing | 6 | 6 |
| 3 | 2 | E | Losing | 8 | 8 |
| 3 | 2 | F | Losing | 8 | 8 |

Stage Stream: 2

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

Prohibited Stage Change

Stage Stream: 1

| | | To Stage | | | | | |
|------------|---|----------|----|----|----|----|----|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| From Stage | 1 | | 8 | 10 | 8 | 8 | 10 |
| | 2 | 8 | | 7 | 8 | 8 | 7 |
| | 3 | 18 | 18 | | 12 | 16 | 7 |
| | 4 | 8 | 8 | 10 | | 8 | 7 |
| | 5 | 8 | 8 | 10 | 8 | | 10 |
| | 6 | 12 | 10 | 7 | 12 | 12 | |

Stage Stream: 2

| | | To Stage | |
|------------|---|----------|---|
| | | 1 | 2 |
| From Stage | 1 | | 7 |
| | 2 | 10 | |

Full Input Data And Results

Give-Way Lane Input Data

| Junction: A12/North Street | | | | | | | | | | | |
|----------------------------|--------------|-----------------------------------|-----------------------------------|---------------|------------------|----------------|--------------------------|----------------------------|------|------------------------|-------------------------------|
| 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 (North Street) | 5/1 (Left) | 1439 | 0 | 1/1 | 1.09 | To 5/1 (Ahead) | - | - | - | - | - |
| | | | | 1/2 | 1.09 | All | | | | | |
| | | | | 1/3 | 1.09 | All | | | | | |
| | | | | 4/2 | 1.09 | All | | | | | |
| 2/3 (North Street) | 8/1 (Right) | 1439 | 0 | 4/1 | 1.09 | All | 6.00 | - | 0.50 | 6 | 6.00 |
| | 8/2 (Right) | 1439 | 0 | 4/1 | 1.09 | All | | | | | |
| 4/2 (Havering Road) | 5/1 (Right) | 1439 | 0 | 2/2 | 1.09 | All | 5.00 | - | 0.50 | 5 | 5.00 |
| | 5/2 (Right) | 1439 | 0 | 2/2 | 1.09 | All | | | | | |
| | 5/3 (Right) | 1439 | 0 | 2/2 | 1.09 | All | | | | | |
| 5/3 (A12 (S) exit) | 11/2 (Ahead) | 1439 | 0 | 5/2 | 1.09 | All | - | - | - | - | - |

Full Input Data And Results

Lane Input Data

| Junction: A12/North Street | | | | | | | | | | | | |
|-----------------------------|-----------|--------|-------------|-----------|-----------------------|---------------|-----------------------------------|----------------|----------|---------------|--------------|--------------------|
| 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 (A12 (N)) | U | B | 2 | 3 | 5.0 | Geom | - | 3.60 | 0.00 | Y | Arm 5 Ahead | Inf |
| | | | | | | | | | | | Arm 6 Left | 75.80 |
| 1/2 (A12 (N)) | U | B | 2 | 3 | 60.0 | Geom | - | 2.80 | 0.00 | Y | Arm 5 Ahead | Inf |
| 1/3 (A12 (N)) | U | B | 2 | 3 | 60.0 | Geom | - | 3.10 | 0.00 | N | Arm 5 Ahead | Inf |
| 1/4 (A12 (N)) | U | C | 2 | 3 | 12.5 | Geom | - | 2.90 | 0.00 | Y | Arm 7 Right | 8.00 |
| 2/1 (North Street) | O | | 2 | 3 | 11.3 | Geom | - | 5.00 | 0.00 | Y | Arm 5 Left | 17.80 |
| 2/2 (North Street) | U | E | 2 | 3 | 60.0 | Geom | - | 3.20 | 0.00 | Y | Arm 7 Ahead | Inf |
| 2/3 (North Street) | O | E | 2 | 3 | 60.0 | Geom | - | 3.35 | 0.00 | Y | Arm 8 Right | 32.00 |
| 3/1 (A12 (S)) | U | A | 2 | 3 | 5.0 | Geom | - | 4.00 | 0.00 | Y | Arm 7 Left | 24.00 |
| 3/2 (A12 (S)) | U | A | 2 | 3 | 60.0 | Geom | - | 4.00 | 0.00 | Y | Arm 8 Ahead | Inf |
| 3/3 (A12 (S)) | U | A | 2 | 3 | 60.0 | Geom | - | 4.30 | 0.00 | N | Arm 8 Ahead | Inf |
| 3/4 (A12 (S)) | U | D | 2 | 3 | 5.0 | Geom | - | 4.40 | 0.00 | Y | Arm 6 Right | 9.75 |
| 4/1 (Havering Road) | U | F | 2 | 3 | 60.0 | Geom | - | 3.20 | 0.00 | Y | Arm 6 Ahead | Inf |
| | | | | | | | | | | | Arm 8 Left | 13.20 |
| 4/2 (Havering Road) | O | F | 2 | 3 | 60.0 | Geom | - | 3.30 | 0.00 | Y | Arm 5 Right | 33.50 |
| 5/1 (A12 (S) exit) | U | | 2 | 3 | 60.0 | Geom | - | 3.25 | 0.00 | Y | Arm 11 Ahead | Inf |
| 5/2 (A12 (S) exit) | U | | 2 | 3 | 60.0 | Geom | - | 3.10 | 0.00 | Y | Arm 11 Ahead | Inf |
| 5/3 (A12 (S) exit) | O | | 2 | 3 | 12.0 | Geom | - | 3.10 | 0.00 | Y | Arm 11 Ahead | Inf |
| 6/1 (North Street exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 7/1 (Havering Road exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 8/1 (A12 (N) exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 8/2 (A12 (N) exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |

Full Input Data And Results

| | | | | | | | | | | | | |
|---------------------------------------|---|--|---|---|------|------|---|------|------|---|----------------|-----|
| 9/1 (North Street Approach (S)) | U | | 2 | 3 | 60.0 | Geom | - | 3.20 | 0.00 | Y | Arm 2 Ahead | Inf |
| 10/1 (A12 (Eastbound)) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 10/2 (A12 (Eastbound)) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 11/1 (A12 Westbound) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 11/2 (A12 Westbound) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |

Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---------------------------------|------------|----------|----------|-------------|
| 1: 'Base Year 2023 AM' | 07:00 | 08:00 | 01:00 | |
| 2: 'Base Year 2023 PM' | 17:00 | 18:00 | 01:00 | |
| 3: 'Reference Case 2030 AM' | 07:00 | 08:00 | 01:00 | F1 * 1.0466 |
| 4: 'Reference Case 2030 PM' | 17:00 | 18:00 | 01:00 | F2 * 1.0521 |
| 7: 'Do Something 2030 + LTC AM' | 07:00 | 08:00 | 01:00 | F3+F5 |
| 8: 'Do Something 2030 + LTC PM' | 17:00 | 18:00 | 01:00 | F4+F6 |

Scenario 1: 'Base Year 2023 AM' (FG1: 'Base Year 2023 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | | |
|--------|-------------|-----|------|-----|------|------|
| | A | B | C | D | Tot. | |
| Origin | A | 0 | 60 | 423 | 139 | 622 |
| | B | 152 | 0 | 168 | 1314 | 1634 |
| | C | 328 | 164 | 0 | 165 | 657 |
| | D | 66 | 1128 | 234 | 0 | 1428 |
| | Tot. | 546 | 1352 | 825 | 1618 | 4341 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 1: Base Year 2023 AM |
|-----------------------------------|-------------------------------------|
| Junction: A12/North Street | |
| 1/1 (short) | 493 |
| 1/2 (with short) | 969(In) 476(Out) |
| 1/3 (with short) | 665(In) 513(Out) |
| 1/4 (short) | 152 |
| 2/1 (short) | 165 |
| 2/2 (with short) | 493(In) 328(Out) |
| 2/3 | 164 |
| 3/1 (short) | 66 |
| 3/2 (with short) | 607(In) 541(Out) |
| 3/3 (with short) | 821(In) 587(Out) |
| 3/4 (short) | 234 |
| 4/1 | 483 |
| 4/2 | 139 |
| 5/1 | 605 |
| 5/2 | 499 |
| 5/3 | 514 |
| 6/1 | 825 |
| 7/1 | 546 |
| 8/1 | 653 |
| 8/2 | 699 |
| 9/1 | 657 |
| 10/1 | 653 |
| 10/2 | 699 |
| 11/1 | 605 |
| 11/2 | 1013 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12/North Street | | | | | | | | |
|------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (A12 (N)) | 3.60 | 0.00 | Y | Arm 5 Ahead | Inf | 65.9 % | 1962 | 1962 |
| | | | | Arm 6 Left | 75.80 | 34.1 % | | |
| 1/2 (A12 (N)) | 2.80 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1895 | 1895 |
| 1/3 (A12 (N)) | 3.10 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 1/4 (A12 (N)) | 2.90 | 0.00 | Y | Arm 7 Right | 8.00 | 100.0 % | 1604 | 1604 |
| 2/1 (North Street) | 5.00 | 0.00 | Y | Arm 5 Left | 17.80 | 100.0 % | 1951 | 1951 |
| 2/2 (North Street) | 3.20 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1935 | 1935 |
| 2/3 (North Street) | 3.35 | 0.00 | Y | Arm 8 Right | 32.00 | 100.0 % | 1863 | 1863 |
| 3/1 (A12 (S)) | 4.00 | 0.00 | Y | Arm 7 Left | 24.00 | 100.0 % | 1896 | 1896 |
| 3/2 (A12 (S)) | 4.00 | 0.00 | Y | Arm 8 Ahead | Inf | 100.0 % | 2015 | 2015 |
| 3/3 (A12 (S)) | 4.30 | 0.00 | N | Arm 8 Ahead | Inf | 100.0 % | 2185 | 2185 |
| 3/4 (A12 (S)) | 4.40 | 0.00 | Y | Arm 6 Right | 9.75 | 100.0 % | 1781 | 1781 |
| 4/1 (Havering Road) | 3.20 | 0.00 | Y | Arm 6 Ahead | Inf | 87.6 % | 1908 | 1908 |
| | | | | Arm 8 Left | 13.20 | 12.4 % | | |
| 4/2 (Havering Road) | 3.30 | 0.00 | Y | Arm 5 Right | 33.50 | 100.0 % | 1862 | 1862 |
| 5/1 (A12 (S) exit) | 3.25 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1940 | 1940 |
| 5/2 (A12 (S) exit) | 3.10 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 5/3 (A12 (S) exit) | 3.10 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 6/1 (North Street exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Havering Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (A12 (N) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/2 (A12 (N) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 (North Street Approach (S)) | 3.20 | 0.00 | Y | Arm 2 Ahead | Inf | 100.0 % | 1935 | 1935 |
| 10/1 (A12 (Eastbound) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/2 (A12 (Eastbound) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

| | | | |
|--------------------------------|--------------------------|-----|-----|
| 11/1 (A12 Westbound Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 11/2 (A12 Westbound Lane 2) | Infinite Saturation Flow | Inf | Inf |

Scenario 2: 'Base Year 2023 PM' (FG2: 'Base Year 2023 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|------|-----|------|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 66 | 382 | 123 | 571 |
| | B | 241 | 0 | 165 | 1172 | 1578 |
| | C | 454 | 193 | 0 | 233 | 880 |
| | D | 103 | 1176 | 266 | 0 | 1545 |
| | Tot. | 798 | 1435 | 813 | 1528 | 4574 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 2: Base Year 2023 PM |
|-----------------------------------|-------------------------------------|
| Junction: A12/North Street | |
| 1/1 (short) | 444 |
| 1/2 (with short) | 873(In) 429(Out) |
| 1/3 (with short) | 705(In) 464(Out) |
| 1/4 (short) | 241 |
| 2/1 (short) | 233 |
| 2/2 (with short) | 687(In) 454(Out) |
| 2/3 | 193 |
| 3/1 (short) | 103 |
| 3/2 (with short) | 667(In) 564(Out) |
| 3/3 (with short) | 878(In) 612(Out) |
| 3/4 (short) | 266 |
| 4/1 | 448 |
| 4/2 | 123 |
| 5/1 | 621 |
| 5/2 | 442 |
| 5/3 | 465 |
| 6/1 | 813 |
| 7/1 | 798 |
| 8/1 | 693 |
| 8/2 | 742 |
| 9/1 | 880 |
| 10/1 | 693 |
| 10/2 | 742 |
| 11/1 | 621 |
| 11/2 | 907 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12/North Street | | | | | | | | |
|------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (A12 (N)) | 3.60 | 0.00 | Y | Arm 5 Ahead | Inf | 62.8 % | 1961 | 1961 |
| | | | | Arm 6 Left | 75.80 | 37.2 % | | |
| 1/2 (A12 (N)) | 2.80 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1895 | 1895 |
| 1/3 (A12 (N)) | 3.10 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 1/4 (A12 (N)) | 2.90 | 0.00 | Y | Arm 7 Right | 8.00 | 100.0 % | 1604 | 1604 |
| 2/1 (North Street) | 5.00 | 0.00 | Y | Arm 5 Left | 17.80 | 100.0 % | 1951 | 1951 |
| 2/2 (North Street) | 3.20 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1935 | 1935 |
| 2/3 (North Street) | 3.35 | 0.00 | Y | Arm 8 Right | 32.00 | 100.0 % | 1863 | 1863 |
| 3/1 (A12 (S)) | 4.00 | 0.00 | Y | Arm 7 Left | 24.00 | 100.0 % | 1896 | 1896 |
| 3/2 (A12 (S)) | 4.00 | 0.00 | Y | Arm 8 Ahead | Inf | 100.0 % | 2015 | 2015 |
| 3/3 (A12 (S)) | 4.30 | 0.00 | N | Arm 8 Ahead | Inf | 100.0 % | 2185 | 2185 |
| 3/4 (A12 (S)) | 4.40 | 0.00 | Y | Arm 6 Right | 9.75 | 100.0 % | 1781 | 1781 |
| 4/1 (Havering Road) | 3.20 | 0.00 | Y | Arm 6 Ahead | Inf | 85.3 % | 1903 | 1903 |
| | | | | Arm 8 Left | 13.20 | 14.7 % | | |
| 4/2 (Havering Road) | 3.30 | 0.00 | Y | Arm 5 Right | 33.50 | 100.0 % | 1862 | 1862 |
| 5/1 (A12 (S) exit) | 3.25 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1940 | 1940 |
| 5/2 (A12 (S) exit) | 3.10 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 5/3 (A12 (S) exit) | 3.10 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 6/1 (North Street exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Havering Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (A12 (N) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/2 (A12 (N) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 (North Street Approach (S)) | 3.20 | 0.00 | Y | Arm 2 Ahead | Inf | 100.0 % | 1935 | 1935 |
| 10/1 (A12 (Eastbound) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/2 (A12 (Eastbound) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

| | | | |
|--------------------------------|--------------------------|-----|-----|
| 11/1 (A12 Westbound Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 11/2 (A12 Westbound Lane 2) | Infinite Saturation Flow | Inf | Inf |

Scenario 3: 'Reference Case 2030 AM' (FG3: 'Reference Case 2030 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|------|-----|------|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 63 | 443 | 145 | 651 |
| | B | 159 | 0 | 176 | 1375 | 1710 |
| | C | 343 | 172 | 0 | 173 | 688 |
| | D | 69 | 1181 | 245 | 0 | 1495 |
| | Tot. | 571 | 1416 | 864 | 1693 | 4544 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 3: Reference Case 2030 AM |
|-----------------------------------|--|
| Junction: A12/North Street | |
| 1/1 (short) | 516 |
| 1/2 (with short) | 1014(In) 498(Out) |
| 1/3 (with short) | 696(In) 537(Out) |
| 1/4 (short) | 159 |
| 2/1 (short) | 173 |
| 2/2 (with short) | 516(In) 343(Out) |
| 2/3 | 172 |
| 3/1 (short) | 69 |
| 3/2 (with short) | 635(In) 566(Out) |
| 3/3 (with short) | 860(In) 615(Out) |
| 3/4 (short) | 245 |
| 4/1 | 506 |
| 4/2 | 145 |
| 5/1 | 636 |
| 5/2 | 520 |
| 5/3 | 537 |
| 6/1 | 864 |
| 7/1 | 571 |
| 8/1 | 683 |
| 8/2 | 733 |
| 9/1 | 688 |
| 10/1 | 683 |
| 10/2 | 733 |
| 11/1 | 636 |
| 11/2 | 1057 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12/North Street | | | | | | | | |
|------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (A12 (N)) | 3.60 | 0.00 | Y | Arm 5 Ahead | Inf | 65.9 % | 1962 | 1962 |
| | | | | Arm 6 Left | 75.80 | 34.1 % | | |
| 1/2 (A12 (N)) | 2.80 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1895 | 1895 |
| 1/3 (A12 (N)) | 3.10 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 1/4 (A12 (N)) | 2.90 | 0.00 | Y | Arm 7 Right | 8.00 | 100.0 % | 1604 | 1604 |
| 2/1 (North Street) | 5.00 | 0.00 | Y | Arm 5 Left | 17.80 | 100.0 % | 1951 | 1951 |
| 2/2 (North Street) | 3.20 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1935 | 1935 |
| 2/3 (North Street) | 3.35 | 0.00 | Y | Arm 8 Right | 32.00 | 100.0 % | 1863 | 1863 |
| 3/1 (A12 (S)) | 4.00 | 0.00 | Y | Arm 7 Left | 24.00 | 100.0 % | 1896 | 1896 |
| 3/2 (A12 (S)) | 4.00 | 0.00 | Y | Arm 8 Ahead | Inf | 100.0 % | 2015 | 2015 |
| 3/3 (A12 (S)) | 4.30 | 0.00 | N | Arm 8 Ahead | Inf | 100.0 % | 2185 | 2185 |
| 3/4 (A12 (S)) | 4.40 | 0.00 | Y | Arm 6 Right | 9.75 | 100.0 % | 1781 | 1781 |
| 4/1 (Havering Road) | 3.20 | 0.00 | Y | Arm 6 Ahead | Inf | 87.5 % | 1908 | 1908 |
| | | | | Arm 8 Left | 13.20 | 12.5 % | | |
| 4/2 (Havering Road) | 3.30 | 0.00 | Y | Arm 5 Right | 33.50 | 100.0 % | 1862 | 1862 |
| 5/1 (A12 (S) exit) | 3.25 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1940 | 1940 |
| 5/2 (A12 (S) exit) | 3.10 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 5/3 (A12 (S) exit) | 3.10 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 6/1 (North Street exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Havering Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (A12 (N) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/2 (A12 (N) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 (North Street Approach (S)) | 3.20 | 0.00 | Y | Arm 2 Ahead | Inf | 100.0 % | 1935 | 1935 |
| 10/1 (A12 (Eastbound) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/2 (A12 (Eastbound) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

| | | | |
|--------------------------------|--------------------------|-----|-----|
| 11/1 (A12 Westbound Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 11/2 (A12 Westbound Lane 2) | Infinite Saturation Flow | Inf | Inf |

Scenario 4: 'Reference Case 2030 PM' (FG4: 'Reference Case 2030 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|------|-----|------|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 69 | 402 | 129 | 600 |
| | B | 254 | 0 | 174 | 1233 | 1661 |
| | C | 478 | 203 | 0 | 245 | 926 |
| | D | 108 | 1237 | 280 | 0 | 1625 |
| | Tot. | 840 | 1509 | 856 | 1607 | 4812 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 4: Reference Case 2030 PM |
|-----------------------------------|--|
| Junction: A12/North Street | |
| 1/1 (short) | 467 |
| 1/2 (with short) | 919(In) 452(Out) |
| 1/3 (with short) | 742(In) 488(Out) |
| 1/4 (short) | 254 |
| 2/1 (short) | 245 |
| 2/2 (with short) | 723(In) 478(Out) |
| 2/3 | 203 |
| 3/1 (short) | 108 |
| 3/2 (with short) | 701(In) 593(Out) |
| 3/3 (with short) | 924(In) 644(Out) |
| 3/4 (short) | 280 |
| 4/1 | 471 |
| 4/2 | 129 |
| 5/1 | 652 |
| 5/2 | 467 |
| 5/3 | 488 |
| 6/1 | 856 |
| 7/1 | 840 |
| 8/1 | 728 |
| 8/2 | 781 |
| 9/1 | 926 |
| 10/1 | 728 |
| 10/2 | 781 |
| 11/1 | 652 |
| 11/2 | 955 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12/North Street | | | | | | | | |
|------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (A12 (N)) | 3.60 | 0.00 | Y | Arm 5 Ahead | Inf | 62.7 % | 1961 | 1961 |
| | | | | Arm 6 Left | 75.80 | 37.3 % | | |
| 1/2 (A12 (N)) | 2.80 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1895 | 1895 |
| 1/3 (A12 (N)) | 3.10 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 1/4 (A12 (N)) | 2.90 | 0.00 | Y | Arm 7 Right | 8.00 | 100.0 % | 1604 | 1604 |
| 2/1 (North Street) | 5.00 | 0.00 | Y | Arm 5 Left | 17.80 | 100.0 % | 1951 | 1951 |
| 2/2 (North Street) | 3.20 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1935 | 1935 |
| 2/3 (North Street) | 3.35 | 0.00 | Y | Arm 8 Right | 32.00 | 100.0 % | 1863 | 1863 |
| 3/1 (A12 (S)) | 4.00 | 0.00 | Y | Arm 7 Left | 24.00 | 100.0 % | 1896 | 1896 |
| 3/2 (A12 (S)) | 4.00 | 0.00 | Y | Arm 8 Ahead | Inf | 100.0 % | 2015 | 2015 |
| 3/3 (A12 (S)) | 4.30 | 0.00 | N | Arm 8 Ahead | Inf | 100.0 % | 2185 | 2185 |
| 3/4 (A12 (S)) | 4.40 | 0.00 | Y | Arm 6 Right | 9.75 | 100.0 % | 1781 | 1781 |
| 4/1 (Havering Road) | 3.20 | 0.00 | Y | Arm 6 Ahead | Inf | 85.4 % | 1903 | 1903 |
| | | | | Arm 8 Left | 13.20 | 14.6 % | | |
| 4/2 (Havering Road) | 3.30 | 0.00 | Y | Arm 5 Right | 33.50 | 100.0 % | 1862 | 1862 |
| 5/1 (A12 (S) exit) | 3.25 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1940 | 1940 |
| 5/2 (A12 (S) exit) | 3.10 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 5/3 (A12 (S) exit) | 3.10 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 6/1 (North Street exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Havering Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (A12 (N) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/2 (A12 (N) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 (North Street Approach (S)) | 3.20 | 0.00 | Y | Arm 2 Ahead | Inf | 100.0 % | 1935 | 1935 |
| 10/1 (A12 (Eastbound) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/2 (A12 (Eastbound) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

| | | | |
|--------------------------------|--------------------------|-----|-----|
| 11/1 (A12 Westbound Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 11/2 (A12 Westbound Lane 2) | Infinite Saturation Flow | Inf | Inf |

Scenario 5: 'Do Something 2030 + LTC AM' (FG7: 'Do Something 2030 + LTC AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | | |
|--------|-------------|-----|------|-----|------|------|
| | A | B | C | D | Tot. | |
| Origin | A | 0 | 66 | 444 | 151 | 661 |
| | B | 162 | 0 | 179 | 1378 | 1719 |
| | C | 335 | 168 | 0 | 194 | 697 |
| | D | 83 | 1186 | 232 | 0 | 1501 |
| | Tot. | 580 | 1420 | 855 | 1723 | 4578 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 5: Do Something 2030 + LTC AM |
|-----------------------------------|--|
| Junction: A12/North Street | |
| 1/1 (short) | 452 |
| 1/2 (with short) | 899(In) 447(Out) |
| 1/3 (with short) | 820(In) 658(Out) |
| 1/4 (short) | 162 |
| 2/1 (short) | 194 |
| 2/2 (with short) | 529(In) 335(Out) |
| 2/3 | 168 |
| 3/1 (short) | 83 |
| 3/2 (with short) | 807(In) 724(Out) |
| 3/3 (with short) | 694(In) 462(Out) |
| 3/4 (short) | 232 |
| 4/1 | 510 |
| 4/2 | 151 |
| 5/1 | 578 |
| 5/2 | 487 |
| 5/3 | 658 |
| 6/1 | 855 |
| 7/1 | 580 |
| 8/1 | 841 |
| 8/2 | 579 |
| 9/1 | 697 |
| 10/1 | 841 |
| 10/2 | 579 |
| 11/1 | 578 |
| 11/2 | 1145 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12/North Street | | | | | | | | |
|------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (A12 (N)) | 3.60 | 0.00 | Y | Arm 5 Ahead | Inf | 60.4 % | 1960 | 1960 |
| | | | | Arm 6 Left | 75.80 | 39.6 % | | |
| 1/2 (A12 (N)) | 2.80 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1895 | 1895 |
| 1/3 (A12 (N)) | 3.10 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 1/4 (A12 (N)) | 2.90 | 0.00 | Y | Arm 7 Right | 8.00 | 100.0 % | 1604 | 1604 |
| 2/1 (North Street) | 5.00 | 0.00 | Y | Arm 5 Left | 17.80 | 100.0 % | 1951 | 1951 |
| 2/2 (North Street) | 3.20 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1935 | 1935 |
| 2/3 (North Street) | 3.35 | 0.00 | Y | Arm 8 Right | 32.00 | 100.0 % | 1863 | 1863 |
| 3/1 (A12 (S)) | 4.00 | 0.00 | Y | Arm 7 Left | 24.00 | 100.0 % | 1896 | 1896 |
| 3/2 (A12 (S)) | 4.00 | 0.00 | Y | Arm 8 Ahead | Inf | 100.0 % | 2015 | 2015 |
| 3/3 (A12 (S)) | 4.30 | 0.00 | N | Arm 8 Ahead | Inf | 100.0 % | 2185 | 2185 |
| 3/4 (A12 (S)) | 4.40 | 0.00 | Y | Arm 6 Right | 9.75 | 100.0 % | 1781 | 1781 |
| 4/1 (Havering Road) | 3.20 | 0.00 | Y | Arm 6 Ahead | Inf | 87.1 % | 1907 | 1907 |
| | | | | Arm 8 Left | 13.20 | 12.9 % | | |
| 4/2 (Havering Road) | 3.30 | 0.00 | Y | Arm 5 Right | 33.50 | 100.0 % | 1862 | 1862 |
| 5/1 (A12 (S) exit) | 3.25 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1940 | 1940 |
| 5/2 (A12 (S) exit) | 3.10 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 5/3 (A12 (S) exit) | 3.10 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 6/1 (North Street exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Havering Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (A12 (N) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/2 (A12 (N) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 (North Street Approach (S)) | 3.20 | 0.00 | Y | Arm 2 Ahead | Inf | 100.0 % | 1935 | 1935 |
| 10/1 (A12 (Eastbound) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/2 (A12 (Eastbound) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

| | | | |
|--------------------------------|--------------------------|-----|-----|
| 11/1 (A12 Westbound Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 11/2 (A12 Westbound Lane 2) | Infinite Saturation Flow | Inf | Inf |

Scenario 6: 'Do Something 2030 + LTC PM' (FG8: 'Do Something 2030 + LTC PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | | | |
|--------|-------------|-----|------|-----|------|------|--|
| | A | B | C | D | Tot. | | |
| Origin | A | 0 | 69 | 402 | 138 | 609 | |
| | B | 257 | 0 | 165 | 1235 | 1657 | |
| | C | 477 | 204 | 0 | 244 | 925 | |
| | D | 101 | 1251 | 276 | 0 | 1628 | |
| | Tot. | 835 | 1524 | 843 | 1617 | 4819 | |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 6: Do Something 2030 + LTC PM |
|-----------------------------------|--|
| Junction: A12/North Street | |
| 1/1 (short) | 430 |
| 1/2 (with short) | 842(In) 412(Out) |
| 1/3 (with short) | 815(In) 558(Out) |
| 1/4 (short) | 257 |
| 2/1 (short) | 244 |
| 2/2 (with short) | 721(In) 477(Out) |
| 2/3 | 204 |
| 3/1 (short) | 101 |
| 3/2 (with short) | 829(In) 728(Out) |
| 3/3 (with short) | 799(In) 523(Out) |
| 3/4 (short) | 276 |
| 4/1 | 471 |
| 4/2 | 138 |
| 5/1 | 621 |
| 5/2 | 438 |
| 5/3 | 558 |
| 6/1 | 843 |
| 7/1 | 835 |
| 8/1 | 864 |
| 8/2 | 660 |
| 9/1 | 925 |
| 10/1 | 864 |
| 10/2 | 660 |
| 11/1 | 621 |
| 11/2 | 996 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12/North Street | | | | | | | | |
|------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (A12 (N)) | 3.60 | 0.00 | Y | Arm 5 Ahead | Inf | 61.6 % | 1960 | 1960 |
| | | | | Arm 6 Left | 75.80 | 38.4 % | | |
| 1/2 (A12 (N)) | 2.80 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1895 | 1895 |
| 1/3 (A12 (N)) | 3.10 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 1/4 (A12 (N)) | 2.90 | 0.00 | Y | Arm 7 Right | 8.00 | 100.0 % | 1604 | 1604 |
| 2/1 (North Street) | 5.00 | 0.00 | Y | Arm 5 Left | 17.80 | 100.0 % | 1951 | 1951 |
| 2/2 (North Street) | 3.20 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1935 | 1935 |
| 2/3 (North Street) | 3.35 | 0.00 | Y | Arm 8 Right | 32.00 | 100.0 % | 1863 | 1863 |
| 3/1 (A12 (S)) | 4.00 | 0.00 | Y | Arm 7 Left | 24.00 | 100.0 % | 1896 | 1896 |
| 3/2 (A12 (S)) | 4.00 | 0.00 | Y | Arm 8 Ahead | Inf | 100.0 % | 2015 | 2015 |
| 3/3 (A12 (S)) | 4.30 | 0.00 | N | Arm 8 Ahead | Inf | 100.0 % | 2185 | 2185 |
| 3/4 (A12 (S)) | 4.40 | 0.00 | Y | Arm 6 Right | 9.75 | 100.0 % | 1781 | 1781 |
| 4/1 (Havering Road) | 3.20 | 0.00 | Y | Arm 6 Ahead | Inf | 85.4 % | 1903 | 1903 |
| | | | | Arm 8 Left | 13.20 | 14.6 % | | |
| 4/2 (Havering Road) | 3.30 | 0.00 | Y | Arm 5 Right | 33.50 | 100.0 % | 1862 | 1862 |
| 5/1 (A12 (S) exit) | 3.25 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1940 | 1940 |
| 5/2 (A12 (S) exit) | 3.10 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 5/3 (A12 (S) exit) | 3.10 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 6/1 (North Street exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Havering Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (A12 (N) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/2 (A12 (N) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 (North Street Approach (S)) | 3.20 | 0.00 | Y | Arm 2 Ahead | Inf | 100.0 % | 1935 | 1935 |
| 10/1 (A12 (Eastbound) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/2 (A12 (Eastbound) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

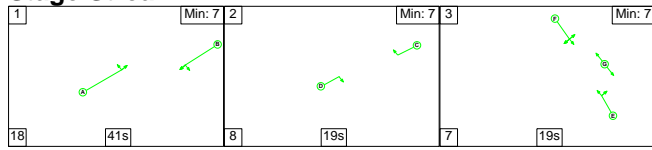
Full Input Data And Results

| | | | |
|--------------------------------|--------------------------|-----|-----|
| 11/1 (A12 Westbound Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 11/2 (A12 Westbound Lane 2) | Infinite Saturation Flow | Inf | Inf |

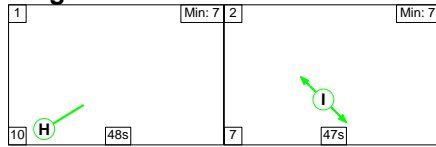
Scenario 1: 'Base Year 2023 AM' (FG1: 'Base Year 2023 AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

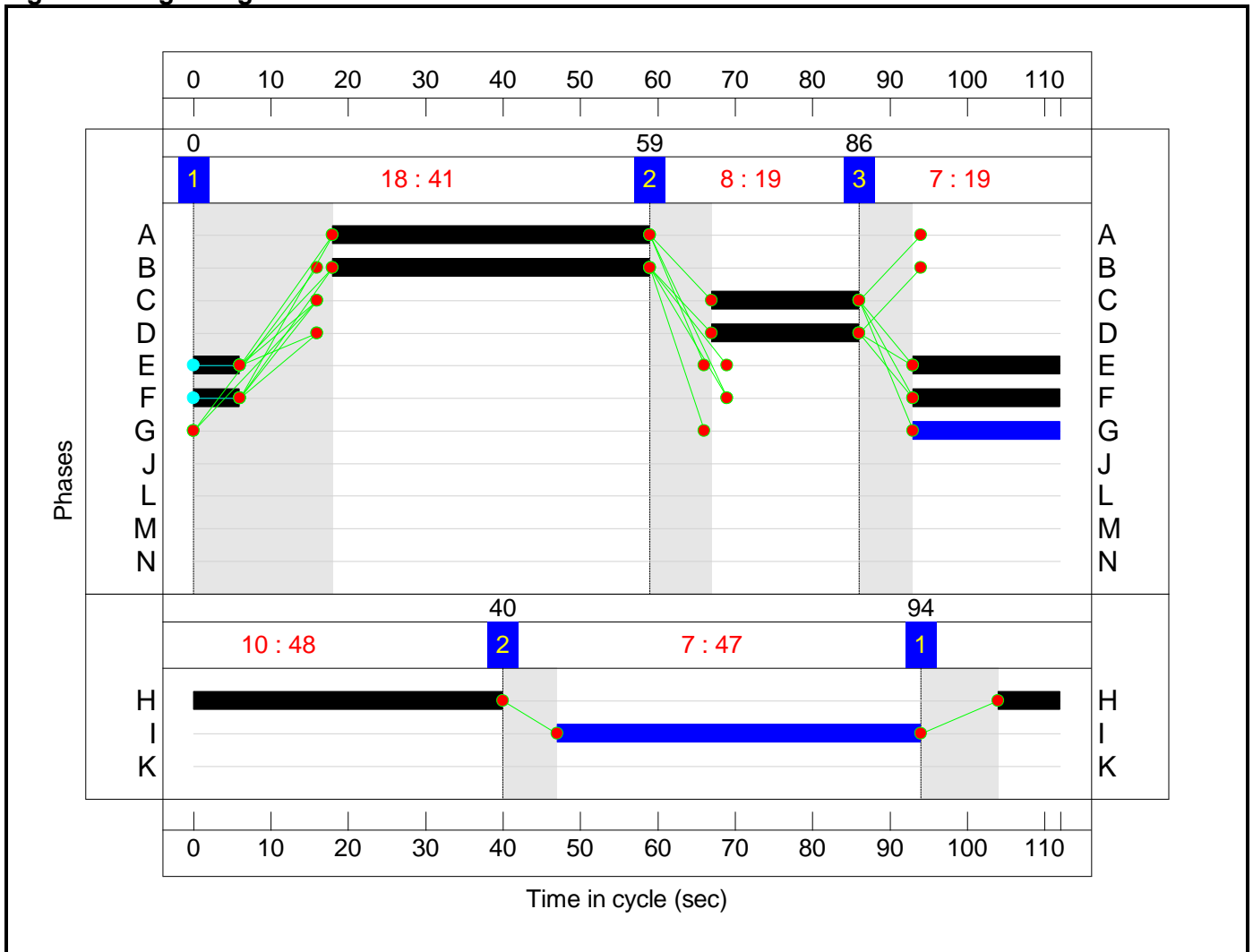
Stage Stream: 1

| Stage | 1 | 2 | 3 |
|--------------|----|----|----|
| Duration | 41 | 19 | 19 |
| Change Point | 0 | 59 | 86 |

Stage Stream: 2


| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 48 | 47 |
| Change Point | 94 | 40 |

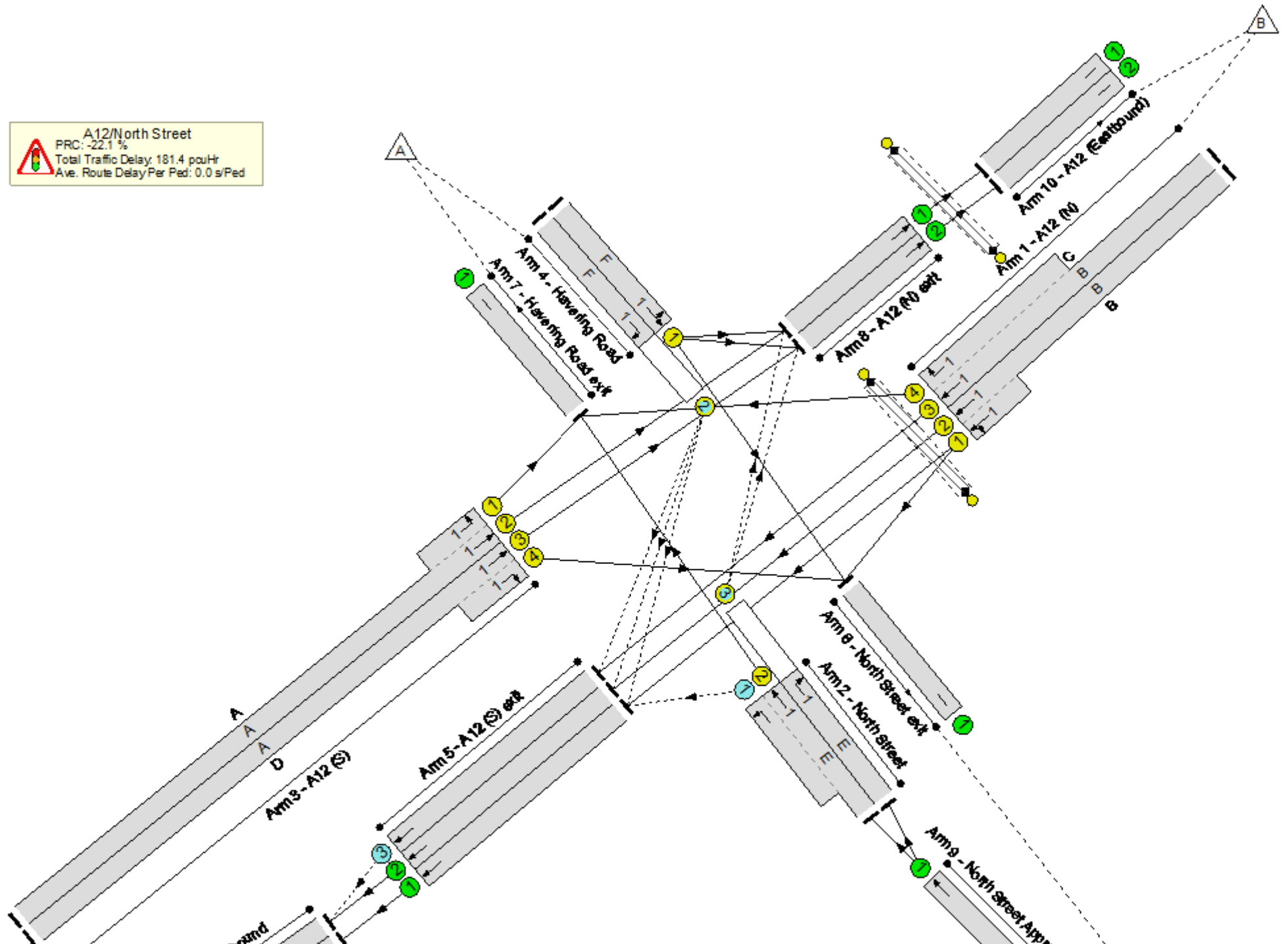
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

 A12/North Street
PRC: -22.1 %
Total Traffic Delay: 181.4 puHr
Ave. Route Delay Per Ped: 0.0 s/Ped



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 | - | - | | - | - | - | - | - | - | 109.9% |
| A12/North Street | - | - | N/A | - | - | | - | - | - | - | - | - | 109.9% |
| 1/2+1/1 | A12 (N) Ahead Left | U | 1 | N/A | B | | 1 | 41 | - | 969 | 1895:1962 | 434+450 | 109.6 : 109.6% |
| 1/3+1/4 | A12 (N) Ahead Right | U | 1 | N/A | B C | | 1 | 41:19 | - | 665 | 2065:1604 | 676+200 | 75.8 : 75.8% |
| 2/2+2/1 | North Street Left Ahead | U+O | 1 | N/A | E - | | 1 | 25 | - | 493 | 1935:1951 | 430+216 | 76.3 : 76.3% |
| 2/3 | North Street Right | O | 1 | N/A | E | | 1 | 25 | - | 164 | 1863 | 193 | 85.0% |
| 3/2+3/1 | A12 (S) Left Ahead | U | 1 | N/A | A | | 1 | 41 | - | 607 | 2015:1896 | 686+84 | 78.8 : 78.8% |
| 3/3+3/4 | A12 (S) Right Ahead | U | 1 | N/A | A D | | 1 | 41:19 | - | 821 | 2185:1781 | 534+213 | 109.9 : 109.9% |
| 4/1 | Havering Road Ahead Left | U | 1 | N/A | F | | 1 | 25 | - | 483 | 1908 | 443 | 109.0% |
| 4/2 | Havering Road Right | O | 1 | N/A | F | | 1 | 25 | - | 139 | 1862 | 194 | 71.7% |
| 5/1 | A12 (S) exit Ahead | U | N/A | N/A | - | | - | - | - | 605 | 1940 | 1940 | 29.7% |
| 5/2 | A12 (S) exit Ahead | U | N/A | N/A | - | | - | - | - | 499 | 1925 | 1925 | 23.8% |
| 5/3 | A12 (S) exit Ahead | O | N/A | N/A | - | | - | - | - | 514 | 1925 | 975 | 52.7% |
| 6/1 | North Street exit | U | N/A | N/A | - | | - | - | - | 825 | Inf | Inf | 0.0% |
| 7/1 | Havering Road exit | U | N/A | N/A | - | | - | - | - | 546 | Inf | Inf | 0.0% |
| 8/1 | A12 (N) exit Ahead | U | N/A | N/A | - | | - | - | - | 653 | Inf | Inf | 0.0% |
| 8/2 | A12 (N) exit Ahead | U | N/A | N/A | - | | - | - | - | 699 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|--------------|---------------------------------|---|-----|-----|---|--|---|----|---|------|------|------|-------|
| 9/1 | North Street Approach (S) Ahead | U | N/A | N/A | - | | - | - | - | 657 | 1935 | 1935 | 34.0% |
| 10/1 | A12 (Eastbound) | U | N/A | N/A | - | | - | - | - | 653 | Inf | Inf | 0.0% |
| 10/2 | A12 (Eastbound) | U | N/A | N/A | - | | - | - | - | 699 | Inf | Inf | 0.0% |
| 11/1 | A12 Westbound | U | N/A | N/A | - | | - | - | - | 605 | Inf | Inf | 0.0% |
| 11/2 | A12 Westbound | U | N/A | N/A | - | | - | - | - | 1013 | Inf | Inf | 0.0% |
| Ped Link: P1 | Unnamed Ped Link | - | 2 | - | I | | 1 | 47 | - | 0 | - | 0 | 0.0% |
| Ped Link: P2 | Unnamed Ped Link | - | 1 | - | G | | 1 | 19 | - | 0 | - | 0 | 0.0% |

Full Input Data And Results

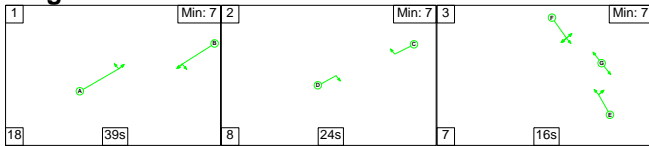
| | | | | | | |
|----|---------------------------------------|-------|---|--------|----------------|-----|
| C1 | Stream: 1 PRC for Signalled Lanes (%) | -22.1 | Total Delay for Signalled Lanes (pcuHr) | 175.40 | Cycle Time (s) | 112 |
| C1 | Stream: 2 PRC for Signalled Lanes (%) | 0.0 | Total Delay for Signalled Lanes (pcuHr) | 0.00 | Cycle Time (s) | 112 |
| | PRC Over All Lanes (%) | -22.1 | Total Delay Over All Lanes(pcuHr) | 181.43 | | |

Full Input Data And Results

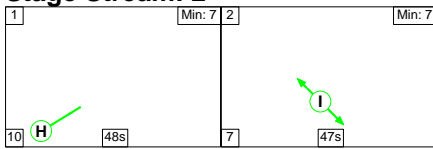
Scenario 2: 'Base Year 2023 PM' (FG2: 'Base Year 2023 PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

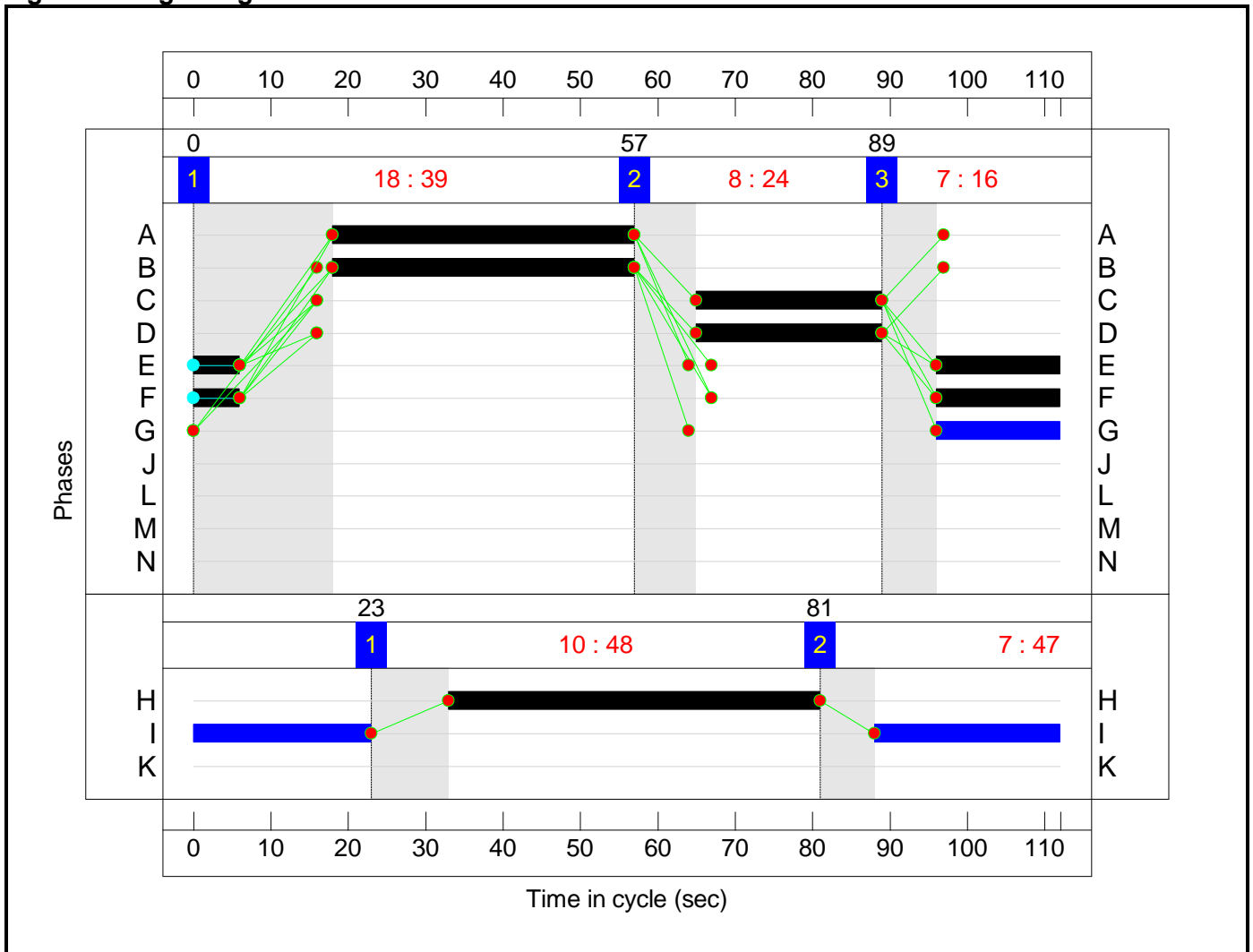
Stage Stream: 1

| Stage | 1 | 2 | 3 |
|--------------|----|----|----|
| Duration | 39 | 24 | 16 |
| Change Point | 0 | 57 | 89 |

Stage Stream: 2


| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 48 | 47 |
| Change Point | 23 | 81 |

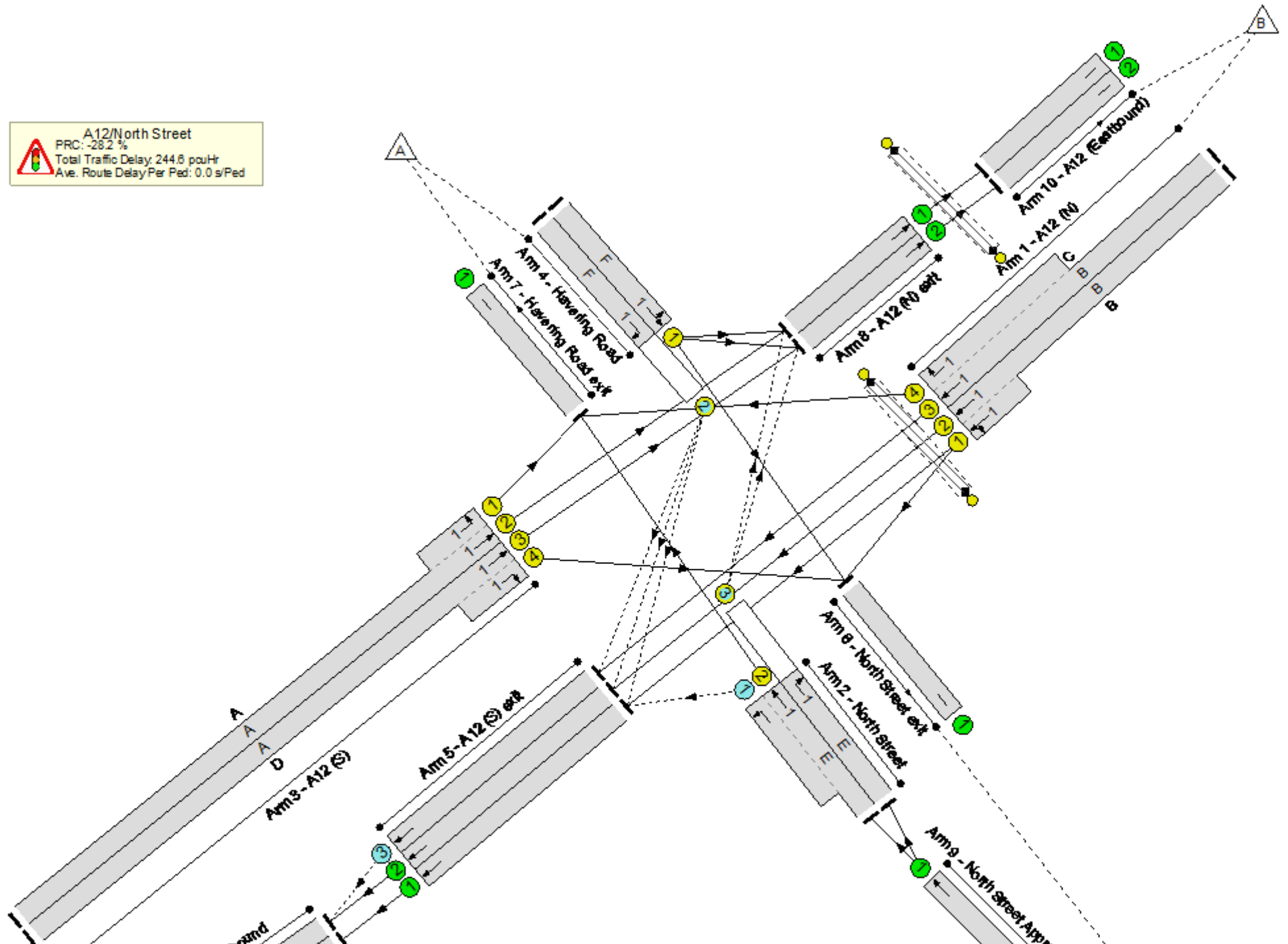
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

 A12/North Street
PRC: -28.2 %
Total Traffic Delay 244.6 puHr
Ave. Route Delay Per Ped: 0.0 s/Ped



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 | - | - | | - | - | - | - | - | - | 115.4% |
| A12/North Street | - | - | N/A | - | - | | - | - | - | - | - | - | 115.4% |
| 1/2+1/1 | A12 (N) Ahead Left | U | 1 | N/A | B | | 1 | 39 | - | 873 | 1895:1961 | 418+432 | 102.7 : 102.7% |
| 1/3+1/4 | A12 (N) Ahead Right | U | 1 | N/A | B C | | 1 | 39:24 | - | 705 | 2065:1604 | 608+357 | 76.4 : 67.5% |
| 2/2+2/1 | North Street Left Ahead | U+O | 1 | N/A | E - | | 1 | 22 | - | 687 | 1935:1951 | 395+203 | 114.9 : 114.9% |
| 2/3 | North Street Right | O | 1 | N/A | E | | 1 | 22 | - | 193 | 1863 | 193 | 100.1% |
| 3/2+3/1 | A12 (S) Left Ahead | U | 1 | N/A | A | | 1 | 39 | - | 667 | 2015:1896 | 628+115 | 89.8 : 89.8% |
| 3/3+3/4 | A12 (S) Right Ahead | U | 1 | N/A | A D | | 1 | 39:24 | - | 878 | 2185:1781 | 530+231 | 115.4 : 115.4% |
| 4/1 | Havering Road Ahead Left | U | 1 | N/A | F | | 1 | 22 | - | 448 | 1903 | 391 | 114.6% |
| 4/2 | Havering Road Right | O | 1 | N/A | F | | 1 | 22 | - | 123 | 1862 | 161 | 76.5% |
| 5/1 | A12 (S) exit Ahead | U | N/A | N/A | - | | - | - | - | 621 | 1940 | 1940 | 30.1% |
| 5/2 | A12 (S) exit Ahead | U | N/A | N/A | - | | - | - | - | 442 | 1925 | 1925 | 22.4% |
| 5/3 | A12 (S) exit Ahead | O | N/A | N/A | - | | - | - | - | 465 | 1925 | 1006 | 46.2% |
| 6/1 | North Street exit | U | N/A | N/A | - | | - | - | - | 813 | Inf | Inf | 0.0% |
| 7/1 | Havering Road exit | U | N/A | N/A | - | | - | - | - | 798 | Inf | Inf | 0.0% |
| 8/1 | A12 (N) exit Ahead | U | N/A | N/A | - | | - | - | - | 693 | Inf | Inf | 0.0% |
| 8/2 | A12 (N) exit Ahead | U | N/A | N/A | - | | - | - | - | 742 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|--------------|---------------------------------|---|-----|-----|---|--|---|----|---|-----|------|------|-------|
| 9/1 | North Street Approach (S) Ahead | U | N/A | N/A | - | | - | - | - | 880 | 1935 | 1935 | 45.5% |
| 10/1 | A12 (Eastbound) | U | N/A | N/A | - | | - | - | - | 693 | Inf | Inf | 0.0% |
| 10/2 | A12 (Eastbound) | U | N/A | N/A | - | | - | - | - | 742 | Inf | Inf | 0.0% |
| 11/1 | A12 Westbound | U | N/A | N/A | - | | - | - | - | 621 | Inf | Inf | 0.0% |
| 11/2 | A12 Westbound | U | N/A | N/A | - | | - | - | - | 907 | Inf | Inf | 0.0% |
| Ped Link: P1 | Unnamed Ped Link | - | 2 | - | I | | 1 | 47 | - | 0 | - | 0 | 0.0% |
| Ped Link: P2 | Unnamed Ped Link | - | 1 | - | G | | 1 | 16 | - | 0 | - | 0 | 0.0% |

Full Input Data And Results

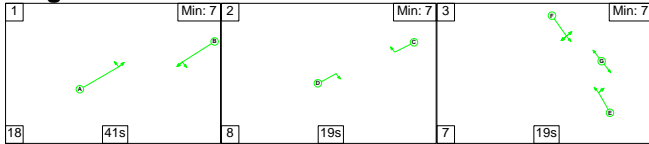
| | | | | | | |
|----|---------------------------------------|-------|---|--------|----------------|-----|
| C1 | Stream: 1 PRC for Signalled Lanes (%) | -28.2 | Total Delay for Signalled Lanes (pcuHr) | 239.21 | Cycle Time (s) | 112 |
| C1 | Stream: 2 PRC for Signalled Lanes (%) | 0.0 | Total Delay for Signalled Lanes (pcuHr) | 0.00 | Cycle Time (s) | 112 |
| | PRC Over All Lanes (%) | -28.2 | Total Delay Over All Lanes(pcuHr) | 244.58 | | |

Full Input Data And Results

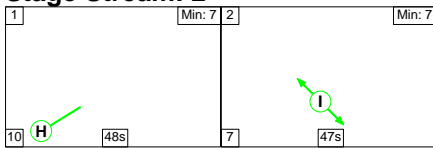
Scenario 3: 'Reference Case 2030 AM' (FG3: 'Reference Case 2030 AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

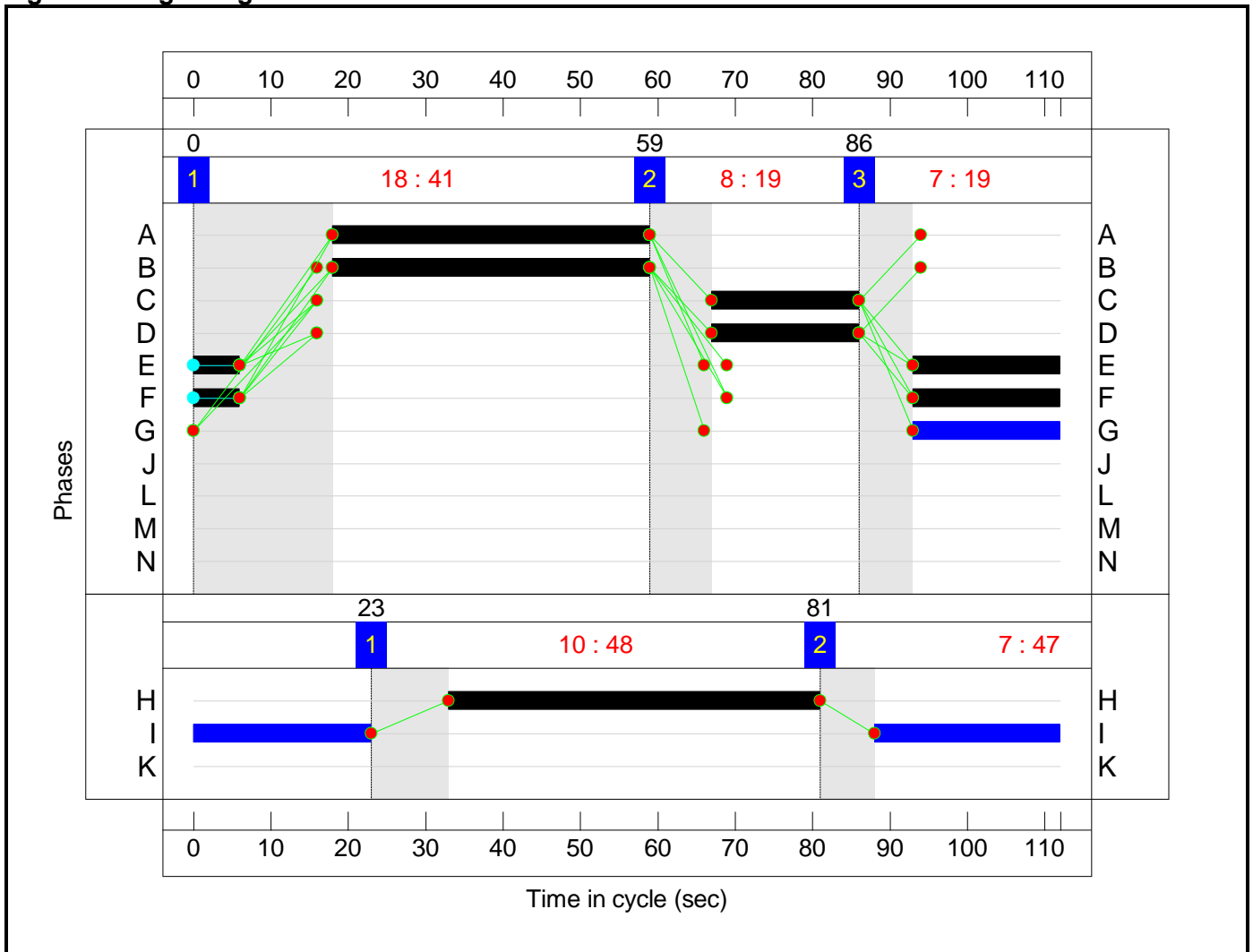
Stage Stream: 1

| Stage | 1 | 2 | 3 |
|--------------|----|----|----|
| Duration | 41 | 19 | 19 |
| Change Point | 0 | 59 | 86 |

Stage Stream: 2

| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 48 | 47 |
| Change Point | 23 | 81 |

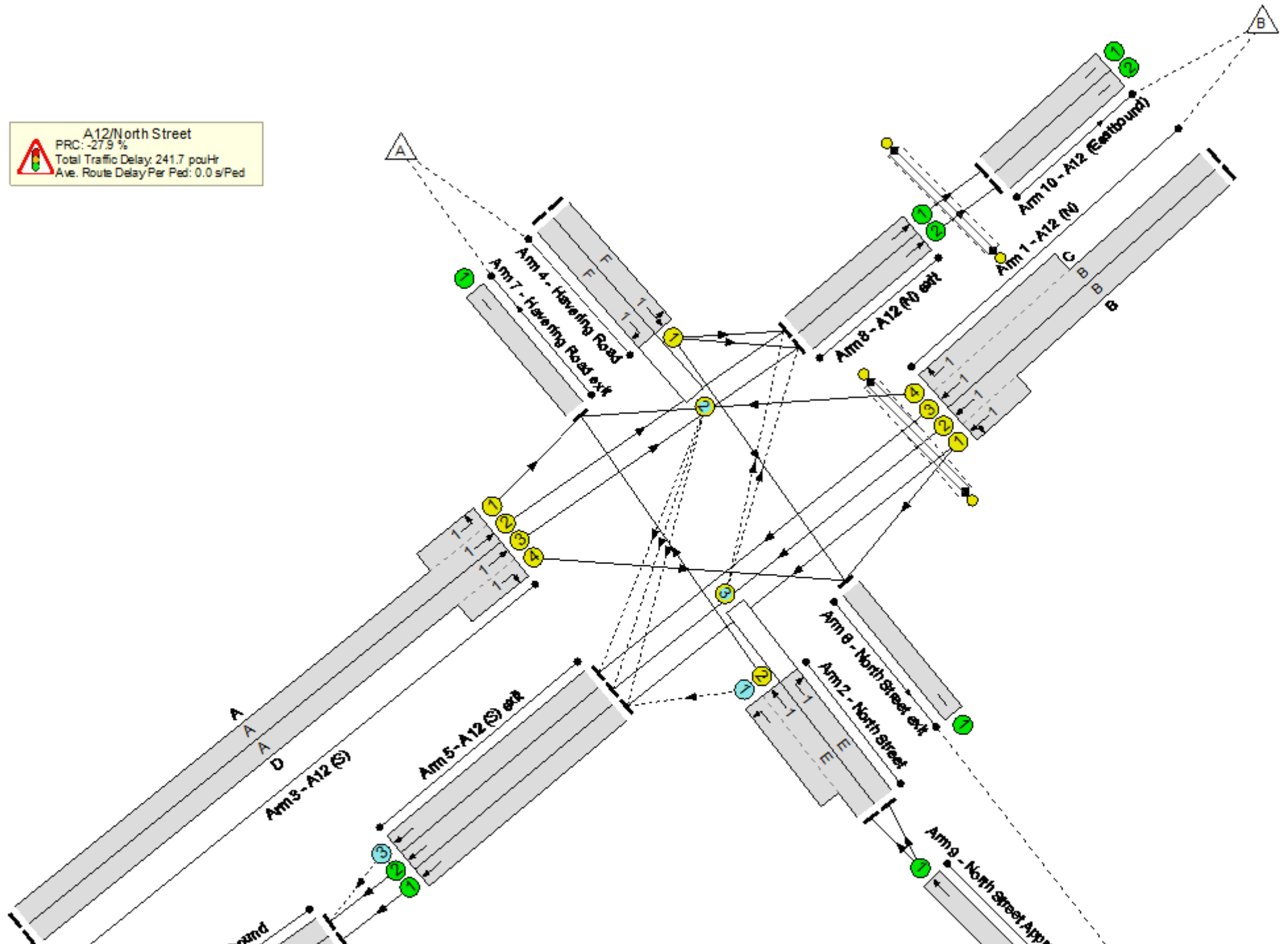
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

A12/North Street
PRC: -27.9 %
Total Traffic Delay: 241.7 puHr
Ave. Route Delay Per Ped: 0.0 s/Ped



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 | - | - | | - | - | - | - | - | - | 115.1% |
| A12/North Street | - | - | N/A | - | - | | - | - | - | - | - | - | 115.1% |
| 1/2+1/1 | A12 (N) Ahead Left | U | 1 | N/A | B | | 1 | 41 | - | 1014 | 1895:1962 | 434+450 | 114.7 : 114.7% |
| 1/3+1/4 | A12 (N) Ahead Right | U | 1 | N/A | B C | | 1 | 41:19 | - | 696 | 2065:1604 | 677+200 | 79.4 : 79.4% |
| 2/2+2/1 | North Street Left Ahead | U+O | 1 | N/A | E - | | 1 | 25 | - | 516 | 1935:1951 | 430+217 | 79.8 : 79.8% |
| 2/3 | North Street Right | O | 1 | N/A | E | | 1 | 25 | - | 172 | 1863 | 193 | 89.2% |
| 3/2+3/1 | A12 (S) Left Ahead | U | 1 | N/A | A | | 1 | 41 | - | 635 | 2015:1896 | 686+84 | 82.5 : 82.5% |
| 3/3+3/4 | A12 (S) Right Ahead | U | 1 | N/A | A D | | 1 | 41:19 | - | 860 | 2185:1781 | 534+213 | 115.1 : 115.1% |
| 4/1 | Havering Road Ahead Left | U | 1 | N/A | F | | 1 | 25 | - | 506 | 1908 | 443 | 114.2% |
| 4/2 | Havering Road Right | O | 1 | N/A | F | | 1 | 25 | - | 145 | 1862 | 177 | 81.8% |
| 5/1 | A12 (S) exit Ahead | U | N/A | N/A | - | | - | - | - | 636 | 1940 | 1940 | 30.5% |
| 5/2 | A12 (S) exit Ahead | U | N/A | N/A | - | | - | - | - | 520 | 1925 | 1925 | 23.7% |
| 5/3 | A12 (S) exit Ahead | O | N/A | N/A | - | | - | - | - | 537 | 1925 | 976 | 55.0% |
| 6/1 | North Street exit | U | N/A | N/A | - | | - | - | - | 864 | Inf | Inf | 0.0% |
| 7/1 | Havering Road exit | U | N/A | N/A | - | | - | - | - | 571 | Inf | Inf | 0.0% |
| 8/1 | A12 (N) exit Ahead | U | N/A | N/A | - | | - | - | - | 683 | Inf | Inf | 0.0% |
| 8/2 | A12 (N) exit Ahead | U | N/A | N/A | - | | - | - | - | 733 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|--------------|---------------------------------|---|-----|-----|---|--|---|----|---|------|------|------|-------|
| 9/1 | North Street Approach (S) Ahead | U | N/A | N/A | - | | - | - | - | 688 | 1935 | 1935 | 35.6% |
| 10/1 | A12 (Eastbound) | U | N/A | N/A | - | | - | - | - | 683 | Inf | Inf | 0.0% |
| 10/2 | A12 (Eastbound) | U | N/A | N/A | - | | - | - | - | 733 | Inf | Inf | 0.0% |
| 11/1 | A12 Westbound | U | N/A | N/A | - | | - | - | - | 636 | Inf | Inf | 0.0% |
| 11/2 | A12 Westbound | U | N/A | N/A | - | | - | - | - | 1057 | Inf | Inf | 0.0% |
| Ped Link: P1 | Unnamed Ped Link | - | 2 | - | I | | 1 | 47 | - | 0 | - | 0 | 0.0% |
| Ped Link: P2 | Unnamed Ped Link | - | 1 | - | G | | 1 | 19 | - | 0 | - | 0 | 0.0% |

Full Input Data And Results

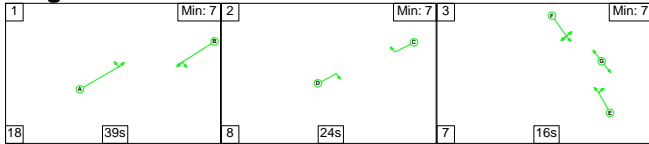
| | | | | | | |
|----|--|-------|--|--------|-----------------|-----|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -27.9 | Total Delay for Signalled Lanes (pcuHr): | 235.23 | Cycle Time (s): | 112 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | 0.0 | Total Delay for Signalled Lanes (pcuHr): | 0.00 | Cycle Time (s): | 112 |
| | PRC Over All Lanes (%): | -27.9 | Total Delay Over All Lanes(pcuHr): | 241.67 | | |

Full Input Data And Results

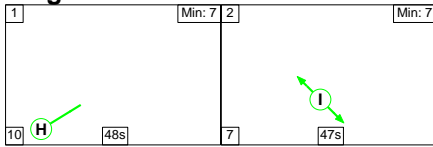
Scenario 4: 'Reference Case 2030 PM' (FG4: 'Reference Case 2030 PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

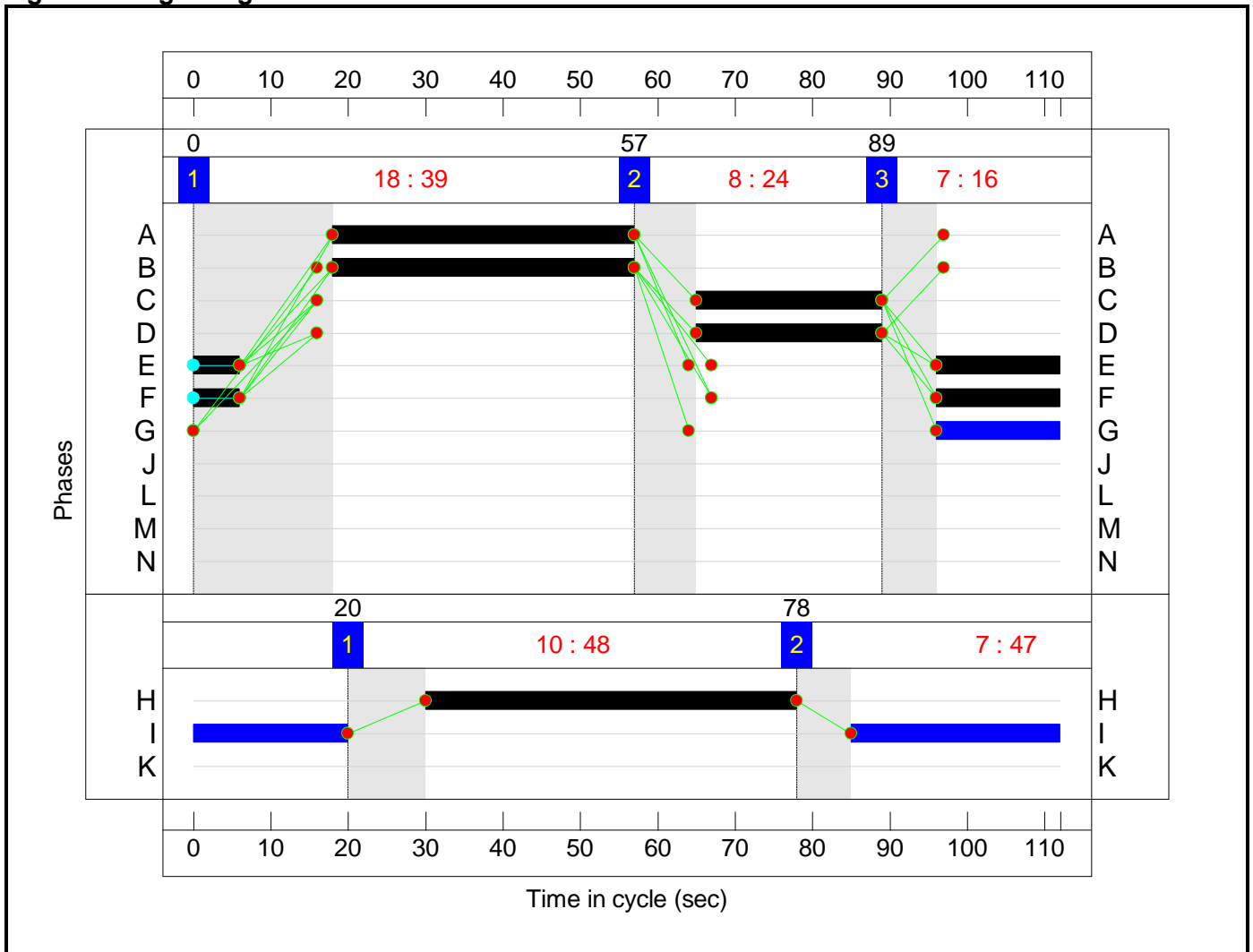
Stage Stream: 1

| Stage | 1 | 2 | 3 |
|--------------|----|----|----|
| Duration | 39 | 24 | 16 |
| Change Point | 0 | 57 | 89 |

Stage Stream: 2


| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 48 | 47 |
| Change Point | 20 | 78 |

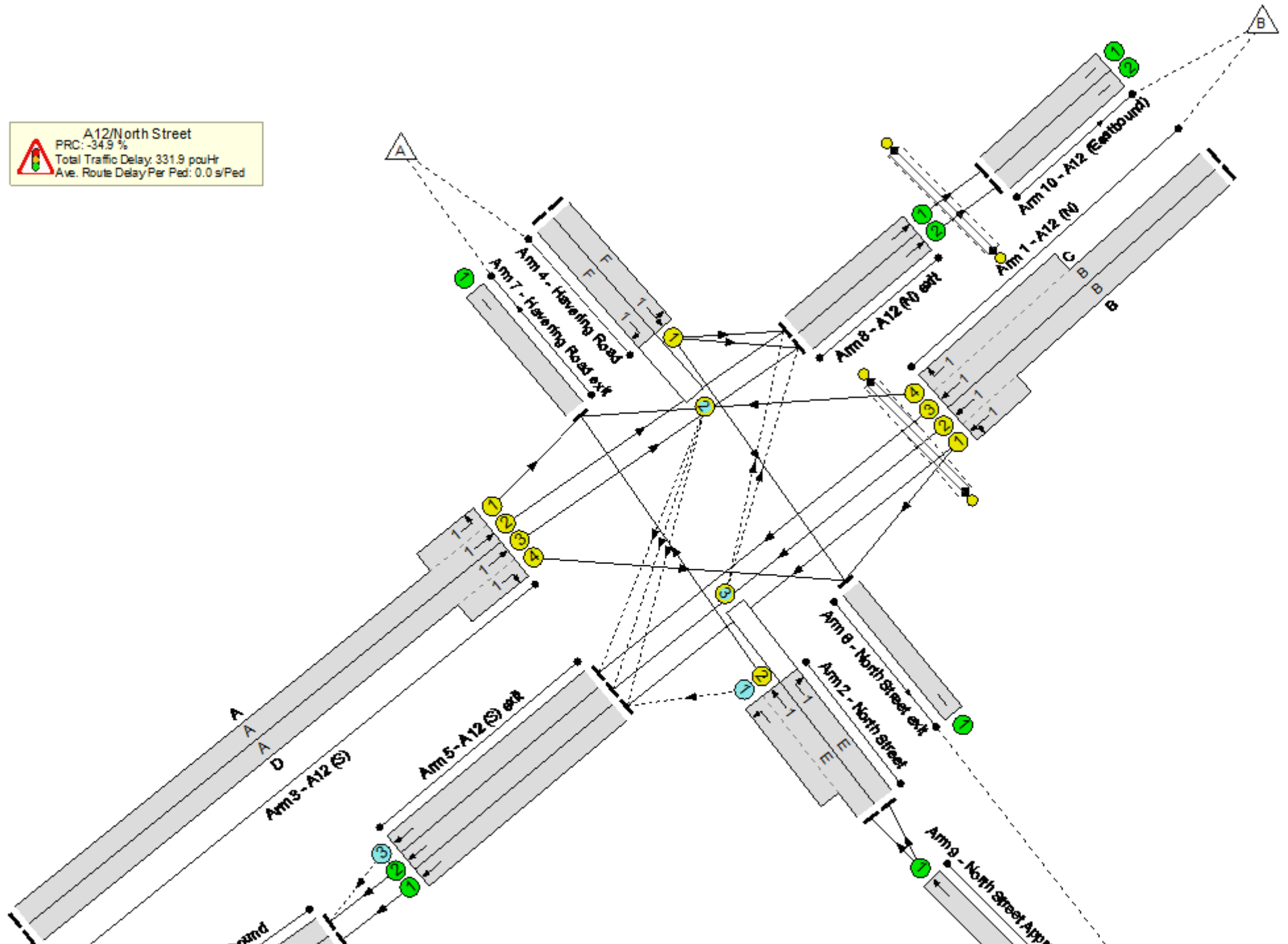
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

 **A12/North Street**
PRC: -34.9 %
Total Traffic Delay: 331.9 pcuHr
Ave. Route Delay Per Ped: 0.0 s/Ped



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 | - | - | | - | - | - | - | - | - | 121.4% |
| A12/North Street | - | - | N/A | - | - | | - | - | - | - | - | - | 121.4% |
| 1/2+1/1 | A12 (N) Ahead Left | U | 1 | N/A | B | | 1 | 39 | - | 919 | 1895:1961 | 418+432 | 108.1 : 108.1% |
| 1/3+1/4 | A12 (N) Ahead Right | U | 1 | N/A | B C | | 1 | 39:24 | - | 742 | 2065:1604 | 607+358 | 80.3 : 70.9% |
| 2/2+2/1 | North Street Left Ahead | U+O | 1 | N/A | E - | | 1 | 22 | - | 723 | 1935:1951 | 395+202 | 121.0 : 121.0% |
| 2/3 | North Street Right | O | 1 | N/A | E | | 1 | 22 | - | 203 | 1863 | 193 | 105.3% |
| 3/2+3/1 | A12 (S) Left Ahead | U | 1 | N/A | A | | 1 | 39 | - | 701 | 2015:1896 | 628+114 | 94.4 : 94.4% |
| 3/3+3/4 | A12 (S) Right Ahead | U | 1 | N/A | A D | | 1 | 39:24 | - | 924 | 2185:1781 | 530+231 | 121.4 : 121.4% |
| 4/1 | Havering Road Ahead Left | U | 1 | N/A | F | | 1 | 22 | - | 471 | 1903 | 391 | 120.5% |
| 4/2 | Havering Road Right | O | 1 | N/A | F | | 1 | 22 | - | 129 | 1862 | 161 | 80.3% |
| 5/1 | A12 (S) exit Ahead | U | N/A | N/A | - | | - | - | - | 652 | 1940 | 1940 | 30.3% |
| 5/2 | A12 (S) exit Ahead | U | N/A | N/A | - | | - | - | - | 467 | 1925 | 1925 | 22.5% |
| 5/3 | A12 (S) exit Ahead | O | N/A | N/A | - | | - | - | - | 488 | 1925 | 1005 | 48.6% |
| 6/1 | North Street exit | U | N/A | N/A | - | | - | - | - | 856 | Inf | Inf | 0.0% |
| 7/1 | Havering Road exit | U | N/A | N/A | - | | - | - | - | 840 | Inf | Inf | 0.0% |
| 8/1 | A12 (N) exit Ahead | U | N/A | N/A | - | | - | - | - | 728 | Inf | Inf | 0.0% |
| 8/2 | A12 (N) exit Ahead | U | N/A | N/A | - | | - | - | - | 781 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|--------------|---------------------------------|---|-----|-----|---|--|---|----|---|-----|------|------|-------|
| 9/1 | North Street Approach (S) Ahead | U | N/A | N/A | - | | - | - | - | 926 | 1935 | 1935 | 47.9% |
| 10/1 | A12 (Eastbound) | U | N/A | N/A | - | | - | - | - | 728 | Inf | Inf | 0.0% |
| 10/2 | A12 (Eastbound) | U | N/A | N/A | - | | - | - | - | 781 | Inf | Inf | 0.0% |
| 11/1 | A12 Westbound | U | N/A | N/A | - | | - | - | - | 652 | Inf | Inf | 0.0% |
| 11/2 | A12 Westbound | U | N/A | N/A | - | | - | - | - | 955 | Inf | Inf | 0.0% |
| Ped Link: P1 | Unnamed Ped Link | - | 2 | - | I | | 1 | 47 | - | 0 | - | 0 | 0.0% |
| Ped Link: P2 | Unnamed Ped Link | - | 1 | - | G | | 1 | 16 | - | 0 | - | 0 | 0.0% |

Full Input Data And Results

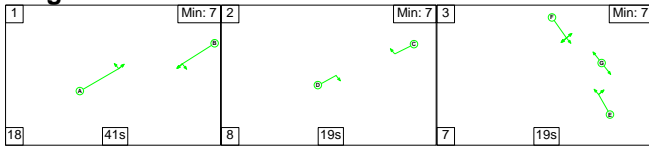
| | | | | | | |
|----|---------------------------------------|-------|---|--------|----------------|-----|
| C1 | Stream: 1 PRC for Signalled Lanes (%) | -34.9 | Total Delay for Signalled Lanes (pcuHr) | 326.10 | Cycle Time (s) | 112 |
| C1 | Stream: 2 PRC for Signalled Lanes (%) | 0.0 | Total Delay for Signalled Lanes (pcuHr) | 0.00 | Cycle Time (s) | 112 |
| | PRC Over All Lanes (%) | -34.9 | Total Delay Over All Lanes(pcuHr) | 331.87 | | |

Full Input Data And Results

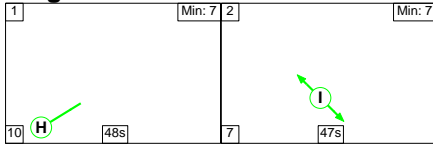
Scenario 5: 'Do Something 2030 + LTC AM' (FG7: 'Do Something 2030 + LTC AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

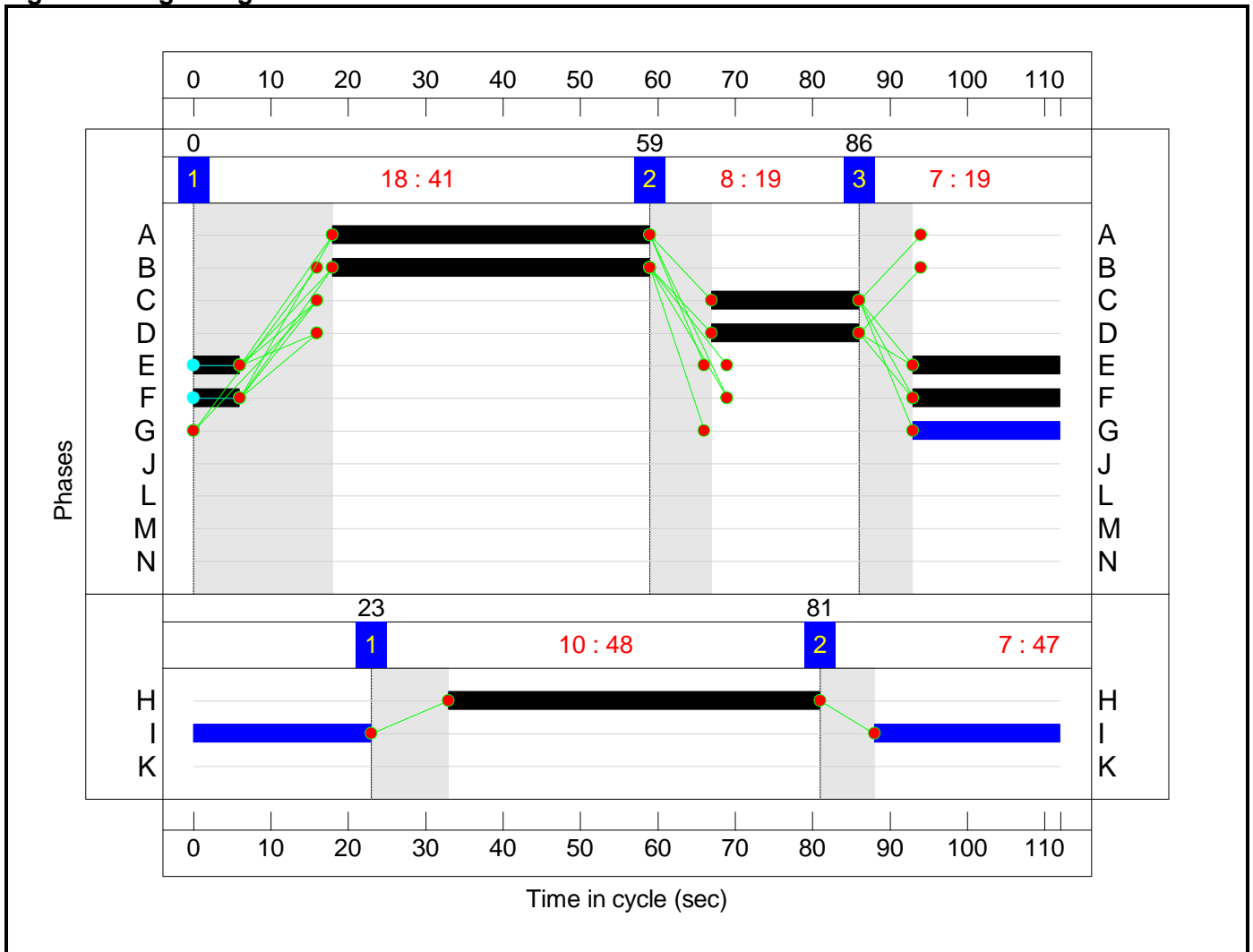
Stage Stream: 1

| Stage | 1 | 2 | 3 |
|--------------|----|----|----|
| Duration | 41 | 19 | 19 |
| Change Point | 0 | 59 | 86 |

Stage Stream: 2


| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 48 | 47 |
| Change Point | 23 | 81 |

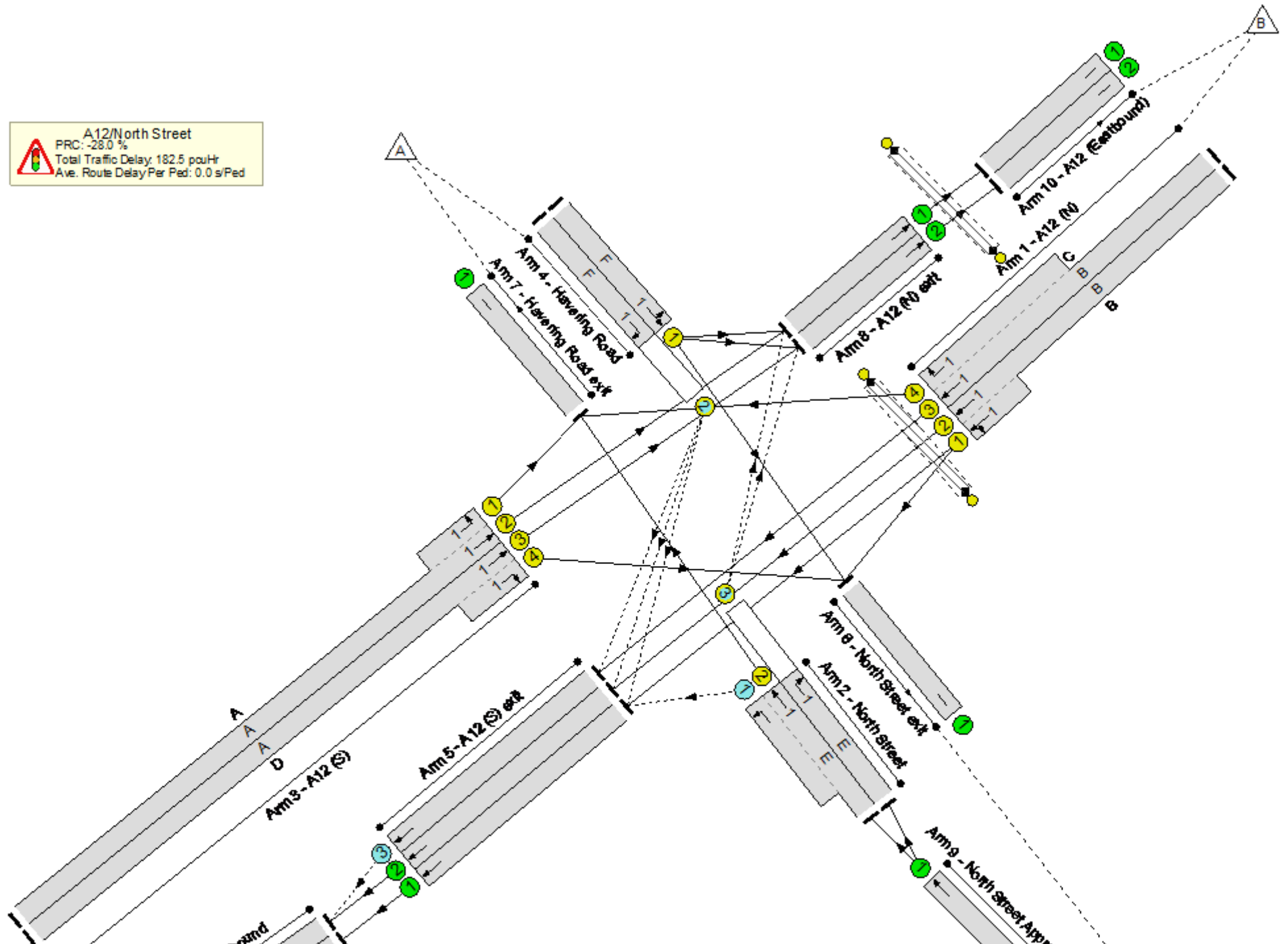
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

 **A12/North Street**
PRC: -28.0 %
Total Traffic Delay: 182.5 pu/Hr
Ave. Route Delay Per Ped: 0.0 s/Ped



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 | - | - | | - | - | - | - | - | - | 115.2% |
| A12/North Street | - | - | N/A | - | - | | - | - | - | - | - | - | 115.2% |
| 1/2+1/1 | A12 (N) Ahead Left | U | 1 | N/A | B | | 1 | 41 | - | 899 | 1895:1960 | 441+446 | 101.3 : 101.3% |
| 1/3+1/4 | A12 (N) Ahead Right | U | 1 | N/A | B C | | 1 | 41:19 | - | 820 | 2065:1604 | 690+170 | 95.4 : 95.4% |
| 2/2+2/1 | North Street Left Ahead | U+O | 1 | N/A | E - | | 1 | 25 | - | 529 | 1935:1951 | 427+247 | 78.5 : 78.5% |
| 2/3 | North Street Right | O | 1 | N/A | E | | 1 | 25 | - | 168 | 1863 | 193 | 87.1% |
| 3/2+3/1 | A12 (S) Left Ahead | U | 1 | N/A | A | | 1 | 41 | - | 807 | 2015:1896 | 690+79 | 104.9 : 104.9% |
| 3/3+3/4 | A12 (S) Right Ahead | U | 1 | N/A | A D | | 1 | 41:19 | - | 694 | 2185:1781 | 441+221 | 104.8 : 104.8% |
| 4/1 | Havering Road Ahead Left | U | 1 | N/A | F | | 1 | 25 | - | 510 | 1907 | 443 | 115.2% |
| 4/2 | Havering Road Right | O | 1 | N/A | F | | 1 | 25 | - | 151 | 1862 | 177 | 85.1% |
| 5/1 | A12 (S) exit Ahead | U | N/A | N/A | - | | - | - | - | 578 | 1940 | 1940 | 29.6% |
| 5/2 | A12 (S) exit Ahead | U | N/A | N/A | - | | - | - | - | 487 | 1925 | 1925 | 25.0% |
| 5/3 | A12 (S) exit Ahead | O | N/A | N/A | - | | - | - | - | 658 | 1925 | 952 | 69.1% |
| 6/1 | North Street exit | U | N/A | N/A | - | | - | - | - | 855 | Inf | Inf | 0.0% |
| 7/1 | Havering Road exit | U | N/A | N/A | - | | - | - | - | 580 | Inf | Inf | 0.0% |
| 8/1 | A12 (N) exit Ahead | U | N/A | N/A | - | | - | - | - | 841 | Inf | Inf | 0.0% |
| 8/2 | A12 (N) exit Ahead | U | N/A | N/A | - | | - | - | - | 579 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|--------------|---------------------------------|---|-----|-----|---|--|---|----|---|------|------|------|-------|
| 9/1 | North Street Approach (S) Ahead | U | N/A | N/A | - | | - | - | - | 697 | 1935 | 1935 | 36.0% |
| 10/1 | A12 (Eastbound) | U | N/A | N/A | - | | - | - | - | 841 | Inf | Inf | 0.0% |
| 10/2 | A12 (Eastbound) | U | N/A | N/A | - | | - | - | - | 579 | Inf | Inf | 0.0% |
| 11/1 | A12 Westbound | U | N/A | N/A | - | | - | - | - | 578 | Inf | Inf | 0.0% |
| 11/2 | A12 Westbound | U | N/A | N/A | - | | - | - | - | 1145 | Inf | Inf | 0.0% |
| Ped Link: P1 | Unnamed Ped Link | - | 2 | - | I | | 1 | 47 | - | 0 | - | 0 | 0.0% |
| Ped Link: P2 | Unnamed Ped Link | - | 1 | - | G | | 1 | 19 | - | 0 | - | 0 | 0.0% |

Full Input Data And Results

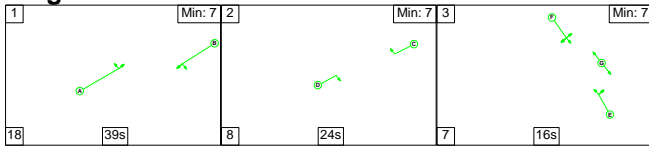
| | | | | | | |
|----|--|-------|--|--------|-----------------|-----|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -28.0 | Total Delay for Signalled Lanes (pcuHr): | 173.80 | Cycle Time (s): | 112 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | 0.0 | Total Delay for Signalled Lanes (pcuHr): | 0.00 | Cycle Time (s): | 112 |
| | PRC Over All Lanes (%): | -28.0 | Total Delay Over All Lanes(pcuHr): | 182.47 | | |

Full Input Data And Results

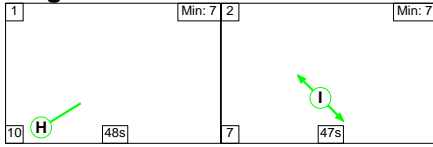
Scenario 6: 'Do Something 2030 + LTC PM' (FG8: 'Do Something 2030 + LTC PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

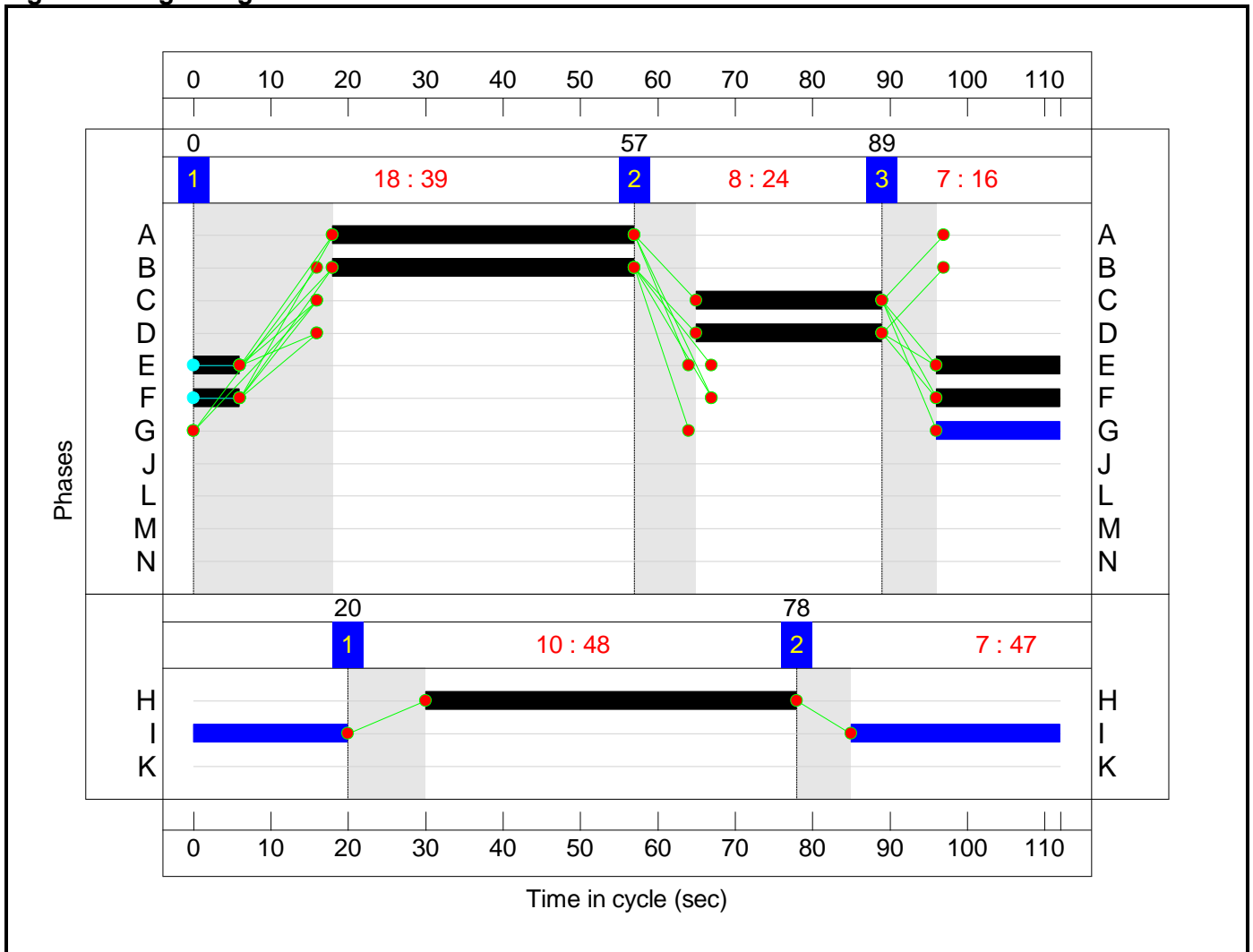
Stage Stream: 1

| Stage | 1 | 2 | 3 |
|--------------|----|----|----|
| Duration | 39 | 24 | 16 |
| Change Point | 0 | 57 | 89 |

Stage Stream: 2


| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 48 | 47 |
| Change Point | 20 | 78 |

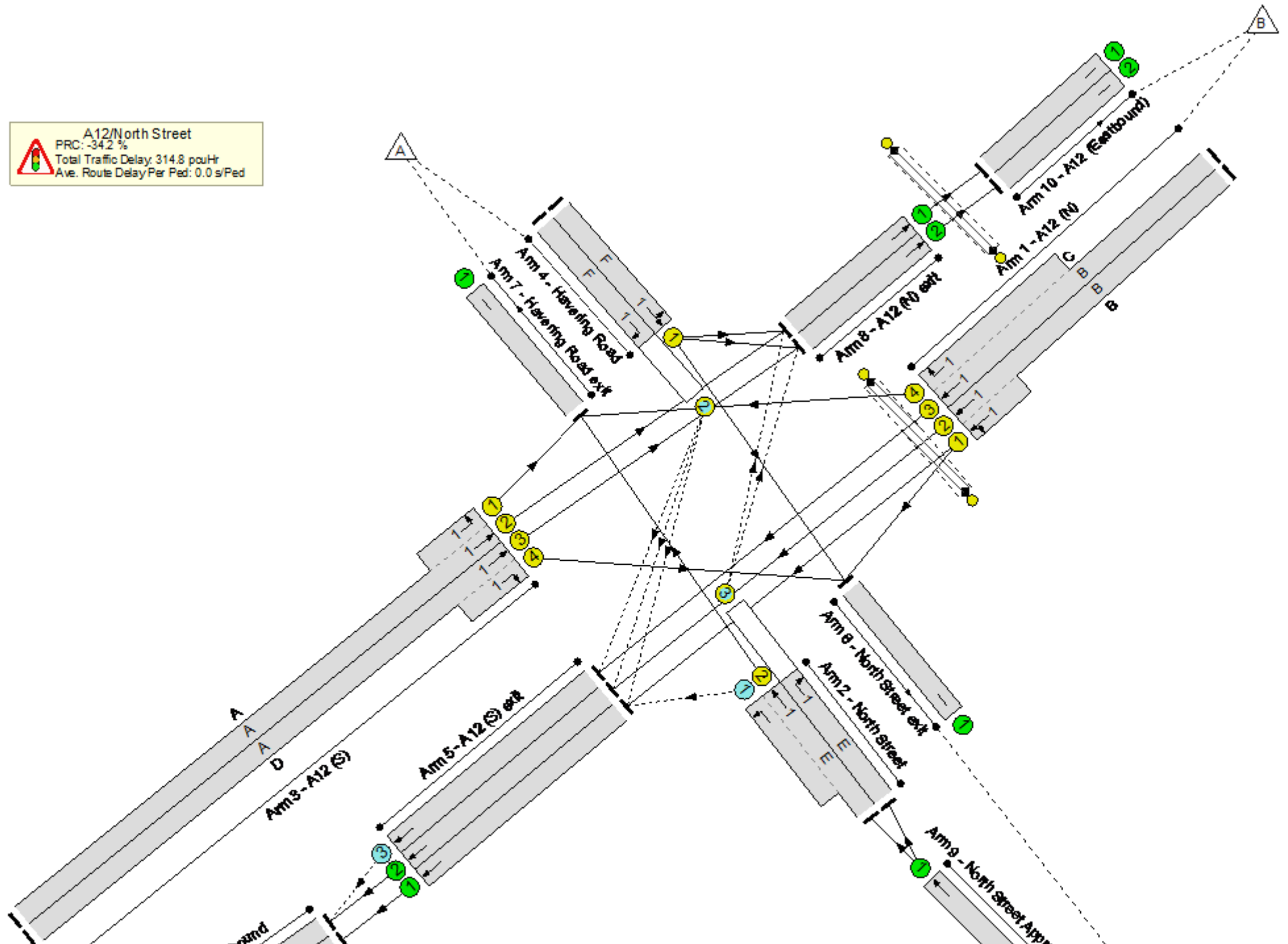
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

 A12/North Street
PRC: -34.2 %
Total Traffic Delay: 314.8 puHr
Ave. Route Delay Per Ped: 0.0 s/Ped



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 | - | - | | - | - | - | - | - | - | 120.7% |
| A12/North Street | - | - | N/A | - | - | | - | - | - | - | - | - | 120.7% |
| 1/2+1/1 | A12 (N) Ahead Left | U | 1 | N/A | B | | 1 | 39 | - | 842 | 1895:1960 | 415+433 | 99.3 : 99.3% |
| 1/3+1/4 | A12 (N) Ahead Right | U | 1 | N/A | B C | | 1 | 39:24 | - | 815 | 2065:1604 | 617+284 | 90.4 : 90.4% |
| 2/2+2/1 | North Street Left Ahead | U+O | 1 | N/A | E - | | 1 | 22 | - | 721 | 1935:1951 | 395+202 | 120.7 : 120.7% |
| 2/3 | North Street Right | O | 1 | N/A | E | | 1 | 22 | - | 204 | 1863 | 193 | 105.8% |
| 3/2+3/1 | A12 (S) Left Ahead | U | 1 | N/A | A | | 1 | 39 | - | 829 | 2015:1896 | 647+90 | 112.6 : 112.6% |
| 3/3+3/4 | A12 (S) Right Ahead | U | 1 | N/A | A D | | 1 | 39:24 | - | 799 | 2185:1781 | 465+245 | 112.4 : 112.4% |
| 4/1 | Havering Road Ahead Left | U | 1 | N/A | F | | 1 | 22 | - | 471 | 1903 | 391 | 120.5% |
| 4/2 | Havering Road Right | O | 1 | N/A | F | | 1 | 22 | - | 138 | 1862 | 161 | 85.9% |
| 5/1 | A12 (S) exit Ahead | U | N/A | N/A | - | | - | - | - | 621 | 1940 | 1940 | 29.8% |
| 5/2 | A12 (S) exit Ahead | U | N/A | N/A | - | | - | - | - | 438 | 1925 | 1925 | 22.8% |
| 5/3 | A12 (S) exit Ahead | O | N/A | N/A | - | | - | - | - | 558 | 1925 | 1003 | 55.6% |
| 6/1 | North Street exit | U | N/A | N/A | - | | - | - | - | 843 | Inf | Inf | 0.0% |
| 7/1 | Havering Road exit | U | N/A | N/A | - | | - | - | - | 835 | Inf | Inf | 0.0% |
| 8/1 | A12 (N) exit Ahead | U | N/A | N/A | - | | - | - | - | 864 | Inf | Inf | 0.0% |
| 8/2 | A12 (N) exit Ahead | U | N/A | N/A | - | | - | - | - | 660 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|--------------|---------------------------------|---|-----|-----|---|--|---|----|---|-----|------|------|-------|
| 9/1 | North Street Approach (S) Ahead | U | N/A | N/A | - | | - | - | - | 925 | 1935 | 1935 | 47.8% |
| 10/1 | A12 (Eastbound) | U | N/A | N/A | - | | - | - | - | 864 | Inf | Inf | 0.0% |
| 10/2 | A12 (Eastbound) | U | N/A | N/A | - | | - | - | - | 660 | Inf | Inf | 0.0% |
| 11/1 | A12 Westbound | U | N/A | N/A | - | | - | - | - | 621 | Inf | Inf | 0.0% |
| 11/2 | A12 Westbound | U | N/A | N/A | - | | - | - | - | 996 | Inf | Inf | 0.0% |
| Ped Link: P1 | Unnamed Ped Link | - | 2 | - | I | | 1 | 47 | - | 0 | - | 0 | 0.0% |
| Ped Link: P2 | Unnamed Ped Link | - | 1 | - | G | | 1 | 16 | - | 0 | - | 0 | 0.0% |

Full Input Data And Results

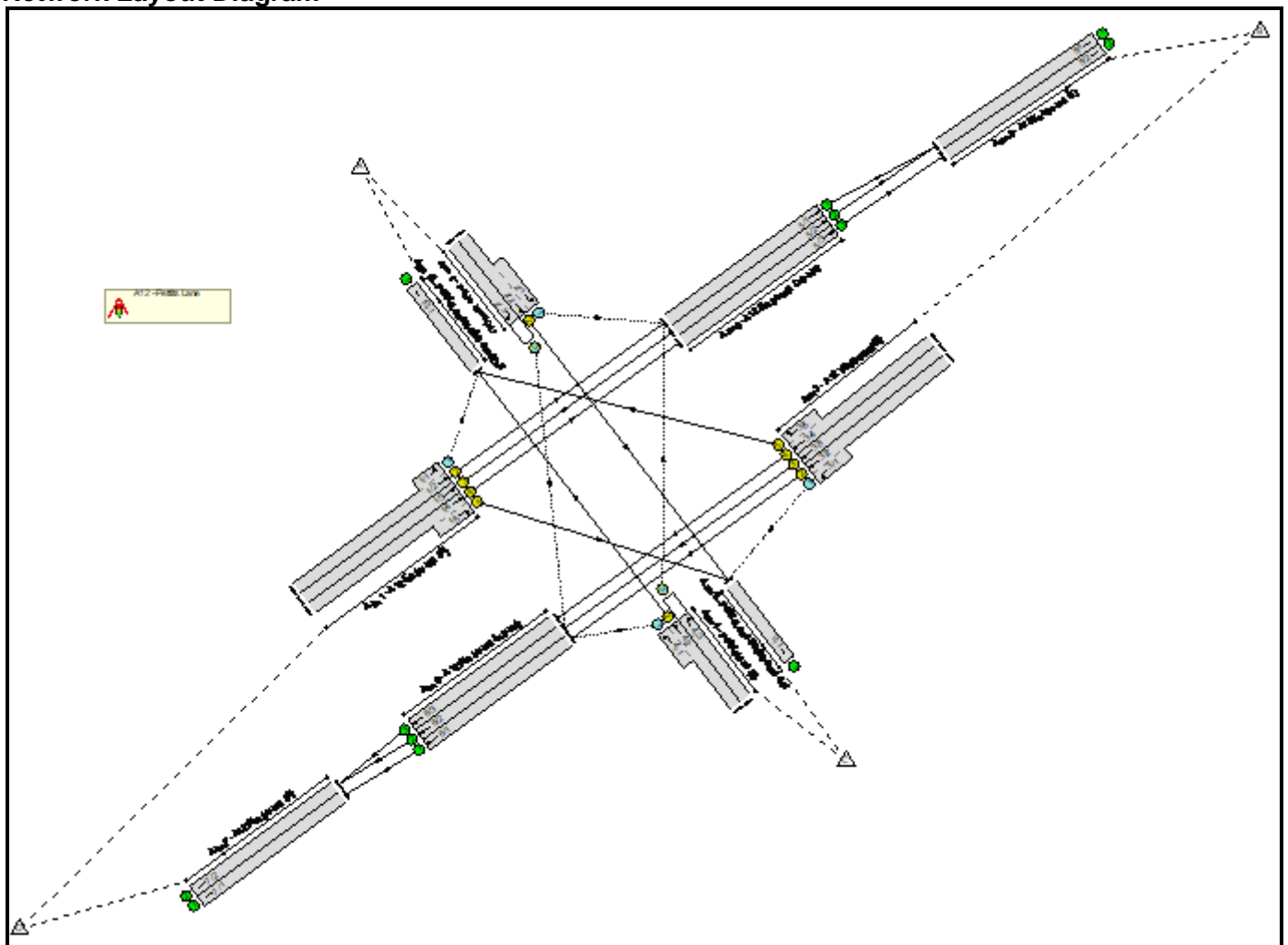
| | | | | | | |
|----|---------------------------------------|-------|---|--------|----------------|-----|
| C1 | Stream: 1 PRC for Signalled Lanes (%) | -34.2 | Total Delay for Signalled Lanes (pcuHr) | 308.04 | Cycle Time (s) | 112 |
| C1 | Stream: 2 PRC for Signalled Lanes (%) | 0.0 | Total Delay for Signalled Lanes (pcuHr) | 0.00 | Cycle Time (s) | 112 |
| | PRC Over All Lanes (%) | -34.2 | Total Delay Over All Lanes(pcuHr) | 314.83 | | |

Full Input Data And Results
Full Input Data And Results

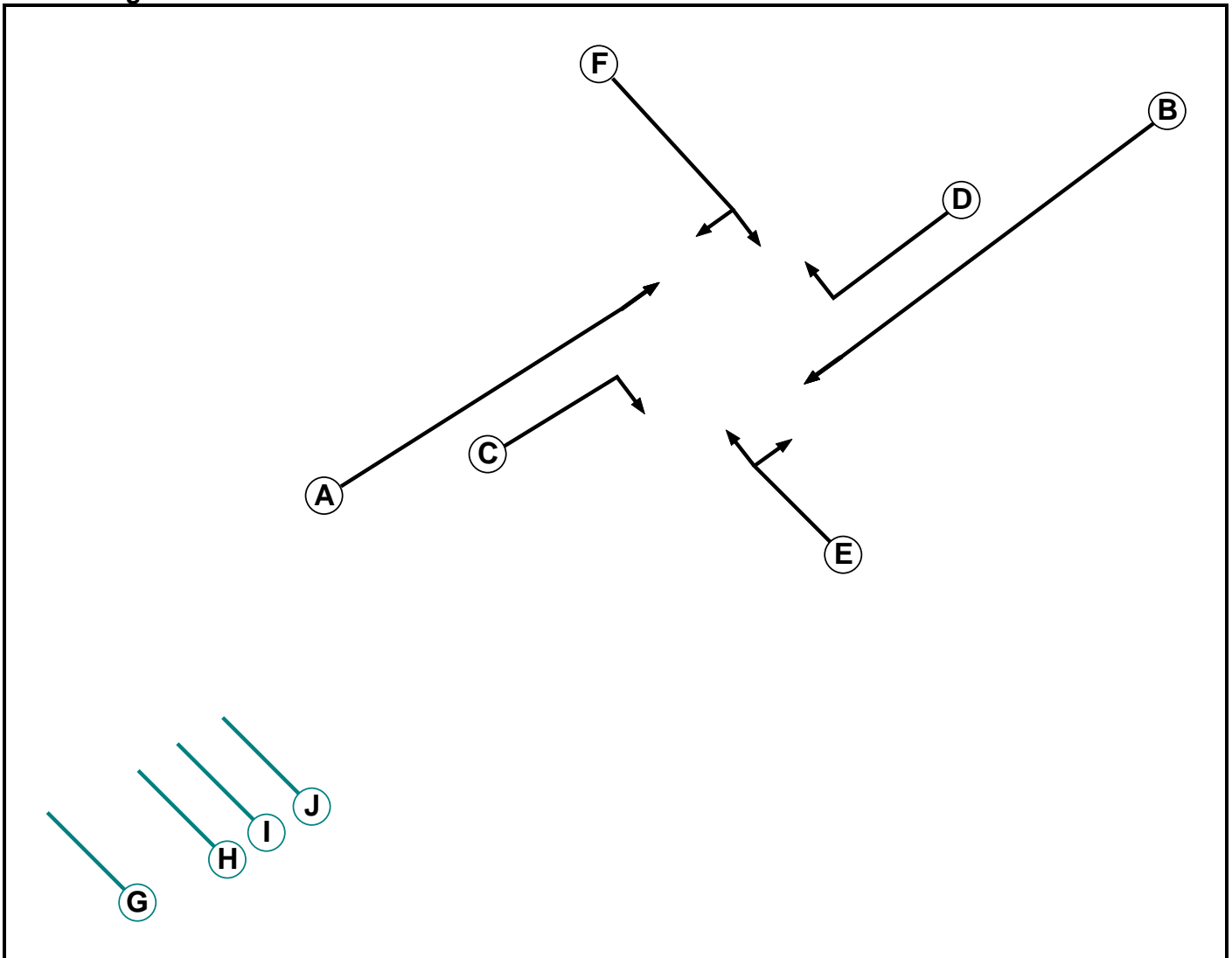
User and Project Details

| | |
|--------------------|----------------------------|
| Project: | |
| Title: | |
| Location: | |
| Additional detail: | |
| File name: | 2 A12 - Pettits Lane.lsg3x |
| Author: | |
| Company: | |
| Address: | |

Network Layout Diagram



Phase Diagram



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 | Dummy | | 7 | 7 |
| H | Dummy | | 7 | 7 |
| I | Dummy | | 7 | 7 |
| J | Dummy | | 7 | 7 |

Full Input Data And Results

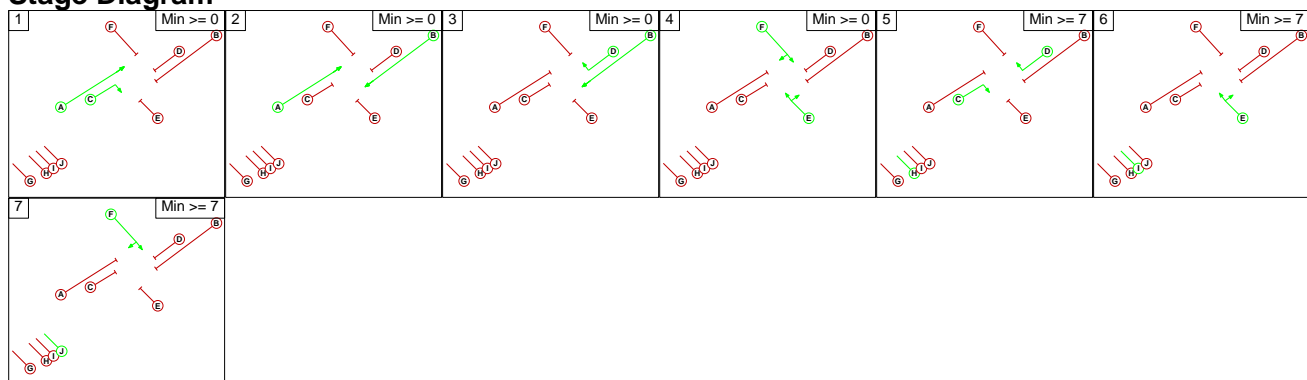
Phase Intergrens Matrix

| Terminating Phase | Starting Phase | | | | | | | | | | |
|-------------------|----------------|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H | I | J |
| | A | - | - | 7 | 7 | 8 | 3 | 7 | 7 | 8 | |
| | B | - | - | 7 | - | 8 | 7 | 3 | 7 | 8 | 7 |
| | C | - | 7 | - | - | 7 | 7 | 3 | - | 7 | 7 |
| | D | 8 | - | - | - | 7 | 7 | 3 | - | 7 | 7 |
| | E | 7 | 5 | 7 | 7 | - | 3 | 7 | - | 3 | |
| | F | 5 | 6 | 6 | 5 | - | 3 | 6 | 3 | - | |
| | G | 2 | 2 | 2 | 2 | 2 | - | 2 | 2 | 2 | |
| | H | 8 | 7 | - | - | 7 | 7 | 3 | - | 7 | 7 |
| | I | 7 | 5 | 7 | 7 | - | 2 | 3 | 7 | - | 8 |
| J | 5 | 6 | 6 | 5 | 2 | - | 3 | 6 | 8 | - | |

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1 | A C |
| 2 | A B |
| 3 | B D |
| 4 | E F |
| 5 | C D H |
| 6 | E I |
| 7 | F J |

Stage Diagram



Full Input Data And Results

Phase Delays

| Term. Stage | Start Stage | Phase | Type | Value | Cont value |
|-------------|-------------|-------|--------|-------|------------|
| 1 | 4 | C | Losing | 1 | 1 |
| 2 | 6 | A | Losing | 1 | 1 |
| 2 | 7 | B | Losing | 1 | 1 |
| 3 | 1 | B | Losing | 1 | 1 |
| 3 | 4 | D | Losing | 1 | 1 |
| 3 | 6 | D | Losing | 1 | 1 |
| 4 | 1 | F | Losing | 1 | 1 |

Prohibited Stage Change

| | | To Stage | | | | | | |
|------------|---|----------|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| From Stage | 1 | | 7 | 7 | 8 | 7 | 7 | 8 |
| | 2 | 7 | | 7 | 8 | 7 | 8 | 8 |
| | 3 | 8 | 8 | | 8 | 7 | 8 | 7 |
| | 4 | 7 | 7 | 7 | | 7 | 3 | 3 |
| | 5 | 8 | 8 | 7 | 7 | | 7 | 7 |
| | 6 | 7 | 7 | 7 | 2 | 7 | | 8 |
| | 7 | 6 | 6 | 6 | 2 | 6 | 8 | |

Full Input Data And Results

Give-Way Lane Input Data

| Junction: A12 - Pettits 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) |
| 1/1 (A12 Eastbound (W)) | 10/1 (Left) | 1439 | 0 | 3/2 | 1.09 | All | - | - | - | - | - |
| | | | | 3/3 | 1.09 | All | | | | | |
| | | | | 3/4 | 1.09 | All | | | | | |
| | | | | 2/3 | 1.09 | All | | | | | |
| 2/1 (Pettits Lane (N)) | 5/1 (Left) | 1439 | 0 | 1/2 | 1.09 | All | - | - | - | - | - |
| | | | | 1/3 | 1.09 | All | | | | | |
| | | | | 1/4 | 1.09 | All | | | | | |
| | | | | 4/3 | 1.09 | All | | | | | |
| 2/3 (Pettits Lane (N)) | 6/2 (Right) | 1439 | 0 | 4/2 | 1.09 | All | 3.00 | - | 0.50 | 3 | 3.00 |
| 3/1 (A12 Westbound (E)) | 9/1 (Left) | 1439 | 0 | 1/5 | 1.09 | All | - | - | - | - | - |
| | | | | 2/2 | 1.09 | All | | | | | |
| | | | | 3/2 | 1.09 | All | | | | | |
| 4/1 (Pettits Lane (S)) | 6/1 (Left) | 1439 | 0 | 3/3 | 1.09 | All | - | - | - | - | - |
| | | | | 3/4 | 1.09 | All | | | | | |
| | | | | 2/3 | 1.09 | All | | | | | |
| 4/3 (Pettits Lane (S)) | 5/1 (Right) | 1439 | 0 | 2/2 | 1.09 | All | 3.00 | - | 0.50 | 3 | 3.00 |

Full Input Data And Results

Lane Input Data

| Junction: A12 - Pettits 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 (A12 Eastbound (W)) | O | | 2 | 3 | 3.8 | Geom | - | 5.00 | 0.00 | Y | Arm 10 Left | 15.00 |
| 1/2 (A12 Eastbound (W)) | U | A | 2 | 3 | 60.0 | Geom | - | 2.60 | 0.00 | Y | Arm 5 Ahead | Inf |
| 1/3 (A12 Eastbound (W)) | U | A | 2 | 3 | 60.0 | Geom | - | 2.50 | 0.00 | N | Arm 5 Ahead | Inf |
| 1/4 (A12 Eastbound (W)) | U | A | 2 | 3 | 60.0 | Geom | - | 2.50 | 0.00 | N | Arm 5 Ahead | Inf |
| 1/5 (A12 Eastbound (W)) | U | C | 2 | 3 | 5.0 | Geom | - | 3.40 | 0.00 | Y | Arm 9 Right | Inf |
| 2/1 (Pettits Lane (N)) | O | | 2 | 3 | 7.0 | Geom | - | 4.50 | 0.00 | Y | Arm 5 Left | 27.00 |
| 2/2 (Pettits Lane (N)) | U | F | 2 | 3 | 60.0 | Geom | - | 3.40 | 0.00 | Y | Arm 9 Ahead | Inf |
| 2/3 (Pettits Lane (N)) | O | F | 2 | 3 | 60.0 | Geom | - | 3.40 | 0.00 | Y | Arm 6 Right | Inf |
| 3/1 (A12 Westbound (E)) | O | | 2 | 3 | 5.0 | Geom | - | 5.00 | 0.00 | Y | Arm 9 Left | 20.00 |
| 3/2 (A12 Westbound (E)) | U | B | 2 | 3 | 60.0 | Geom | - | 4.20 | 0.00 | Y | Arm 6 Ahead | Inf |
| 3/3 (A12 Westbound (E)) | U | B | 2 | 3 | 60.0 | Geom | - | 3.10 | 0.00 | N | Arm 6 Ahead | Inf |
| 3/4 (A12 Westbound (E)) | U | B | 2 | 3 | 60.0 | Geom | - | 3.10 | 0.00 | N | Arm 6 Ahead | Inf |
| 3/5 (A12 Westbound (E)) | U | D | 2 | 3 | 5.0 | Geom | - | 3.70 | 0.00 | Y | Arm 10 Right | 12.50 |
| 4/1 (Pettits Lane (S)) | O | | 2 | 3 | 5.0 | Geom | - | 5.00 | 0.00 | Y | Arm 6 Left | 58.00 |
| 4/2 (Pettits Lane (S)) | U | E | 2 | 3 | 60.0 | Geom | - | 3.10 | 0.00 | Y | Arm 10 Ahead | Inf |
| 4/3 (Pettits Lane (S)) | O | E | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 5 Right | Inf |
| 5/1 (A12 Eastbound (Internal)) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 5/2 (A12 Eastbound (Internal)) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 5/3 (A12 Eastbound (Internal)) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 6/1 (A12 Westbound(Internal)) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |

Full Input Data And Results

| | | | | | | | | | | | | |
|---|---|--|---|---|------|-----|---|---|---|---|---|---|
| 6/2 (A12 Westbound(Internal)) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 6/3 (A12 Westbound(Internal)) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 7/1 (A12 Westbound (W)) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 7/2 (A12 Westbound (W)) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 8/1 (A12 Eastbound (E)) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 8/2 (A12 Eastbound (E)) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 9/1 (Pettits Lane Southbound exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 10/1 (Pettits Lane Northbound Exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |

Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---------------------------------|------------|----------|----------|-------------|
| 1: 'Base Year 2023 AM' | 08:00 | 09:00 | 01:00 | |
| 2: 'Base Year 2023 PM' | 17:00 | 18:00 | 01:00 | |
| 3: 'Reference Case 2030 AM' | 08:00 | 09:00 | 01:00 | F1 * 1.0466 |
| 4: 'Reference Case 2030 PM' | 17:00 | 18:00 | 01:00 | F2*1.0521 |
| 7: 'Do Something 2030 + LTC AM' | 08:00 | 09:00 | 01:00 | F3+F5 |
| 8: 'Do Something 2030 + LTC PM' | 17:00 | 18:00 | 01:00 | F4+F6 |

Scenario 1: 'Base Year 2023 AM' (FG1: 'Base Year 2023 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | | |
|--------|-------------|-----|------|-----|------|------|
| | A | B | C | D | Tot. | |
| Origin | A | 0 | 303 | 241 | 51 | 595 |
| | B | 377 | 0 | 208 | 1546 | 2131 |
| | C | 190 | 133 | 0 | 30 | 353 |
| | D | 54 | 1351 | 96 | 0 | 1501 |
| | Tot. | 621 | 1787 | 545 | 1627 | 4580 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 1: Base Year 2023 AM |
|-------------------------------------|-------------------------------------|
| Junction: A12 - Pettits Lane | |
| 1/1 (short) | 54 |
| 1/2 (with short) | 488(In) 434(Out) |
| 1/3 | 476 |
| 1/4 (with short) | 537(In) 441(Out) |
| 1/5 (short) | 96 |
| 2/1 (short) | 303 |
| 2/2 (with short) | 544(In) 241(Out) |
| 2/3 | 51 |
| 3/1 (short) | 208 |
| 3/2 (with short) | 842(In) 634(Out) |
| 3/3 | 723 |
| 3/4 (with short) | 566(In) 189(Out) |
| 3/5 (short) | 377 |
| 4/1 (short) | 30 |
| 4/2 (with short) | 220(In) 190(Out) |
| 4/3 | 133 |
| 5/1 | 870 |
| 5/2 | 476 |
| 5/3 | 441 |
| 6/1 | 664 |
| 6/2 | 774 |
| 6/3 | 189 |
| 7/1 | 664 |
| 7/2 | 963 |
| 8/1 | 1346 |
| 8/2 | 441 |
| 9/1 | 545 |
| 10/1 | 621 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 - Pettits 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 (A12 Eastbound (W)) | 5.00 | 0.00 | Y | Arm 10 Left | 15.00 | 100.0 % | 1923 | 1923 |
| 1/2 (A12 Eastbound (W)) | 2.60 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1875 | 1875 |
| 1/3 (A12 Eastbound (W)) | 2.50 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2005 | 2005 |
| 1/4 (A12 Eastbound (W)) | 2.50 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2005 | 2005 |
| 1/5 (A12 Eastbound (W)) | 3.40 | 0.00 | Y | Arm 9 Right | Inf | 100.0 % | 1955 | 1955 |
| 2/1 (Pettits Lane (N)) | 4.50 | 0.00 | Y | Arm 5 Left | 27.00 | 100.0 % | 1956 | 1956 |
| 2/2 (Pettits Lane (N)) | 3.40 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1955 | 1955 |
| 2/3 (Pettits Lane (N)) | 3.40 | 0.00 | Y | Arm 6 Right | Inf | 100.0 % | 1955 | 1955 |
| 3/1 (A12 Westbound (E)) | 5.00 | 0.00 | Y | Arm 9 Left | 20.00 | 100.0 % | 1967 | 1967 |
| 3/2 (A12 Westbound (E)) | 4.20 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 2035 | 2035 |
| 3/3 (A12 Westbound (E)) | 3.10 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 3/4 (A12 Westbound (E)) | 3.10 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 3/5 (A12 Westbound (E)) | 3.70 | 0.00 | Y | Arm 10 Right | 12.50 | 100.0 % | 1772 | 1772 |
| 4/1 (Pettits Lane (S)) | 5.00 | 0.00 | Y | Arm 6 Left | 58.00 | 100.0 % | 2062 | 2062 |
| 4/2 (Pettits Lane (S)) | 3.10 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 4/3 (Pettits Lane (S)) | 3.50 | 0.00 | Y | Arm 5 Right | Inf | 100.0 % | 1965 | 1965 |
| 5/1 (A12 Eastbound (Internal) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A12 Eastbound (Internal) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/3 (A12 Eastbound (Internal) Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A12 Westbound(Internal) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A12 Westbound(Internal) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 (A12 Westbound(Internal) Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (A12 Westbound (W) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

| | | | |
|--|--------------------------|-----|-----|
| 7/2 (A12 Westbound (W) Lane 2) | Infinite Saturation Flow | Inf | Inf |
| 8/1 (A12 Eastbound (E) Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 8/2 (A12 Eastbound (E) Lane 2) | Infinite Saturation Flow | Inf | Inf |
| 9/1 (Pettits Lane Southbound exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 10/1 (Pettits Lane Northbound Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |

Scenario 2: 'Base Year 2023 PM' (FG2: 'Base Year 2023 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|------|-----|------|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 253 | 241 | 65 | 559 |
| | B | 438 | 0 | 140 | 1444 | 2022 |
| | C | 315 | 213 | 0 | 68 | 596 |
| | D | 92 | 1328 | 107 | 0 | 1527 |
| | Tot. | 845 | 1794 | 488 | 1577 | 4704 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 2: Base Year 2023 PM |
|-------------------------------------|-------------------------------------|
| Junction: A12 - Pettits Lane | |
| 1/1 (short) | 92 |
| 1/2 (with short) | 499(In) 407(Out) |
| 1/3 | 492 |
| 1/4 (with short) | 536(In) 429(Out) |
| 1/5 (short) | 107 |
| 2/1 (short) | 253 |
| 2/2 (with short) | 494(In) 241(Out) |
| 2/3 | 65 |
| 3/1 (short) | 140 |
| 3/2 (with short) | 806(In) 666(Out) |
| 3/3 | 778 |
| 3/4 (with short) | 438(In) 0(Out) |
| 3/5 (short) | 438 |
| 4/1 (short) | 68 |
| 4/2 (with short) | 383(In) 315(Out) |
| 4/3 | 213 |
| 5/1 | 873 |
| 5/2 | 492 |
| 5/3 | 429 |
| 6/1 | 734 |
| 6/2 | 843 |
| 6/3 | 0 |
| 7/1 | 734 |
| 7/2 | 843 |
| 8/1 | 1365 |
| 8/2 | 429 |
| 9/1 | 488 |
| 10/1 | 845 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 - Pettits 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 (A12 Eastbound (W)) | 5.00 | 0.00 | Y | Arm 10 Left | 15.00 | 100.0 % | 1923 | 1923 |
| 1/2 (A12 Eastbound (W)) | 2.60 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1875 | 1875 |
| 1/3 (A12 Eastbound (W)) | 2.50 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2005 | 2005 |
| 1/4 (A12 Eastbound (W)) | 2.50 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2005 | 2005 |
| 1/5 (A12 Eastbound (W)) | 3.40 | 0.00 | Y | Arm 9 Right | Inf | 100.0 % | 1955 | 1955 |
| 2/1 (Pettits Lane (N)) | 4.50 | 0.00 | Y | Arm 5 Left | 27.00 | 100.0 % | 1956 | 1956 |
| 2/2 (Pettits Lane (N)) | 3.40 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1955 | 1955 |
| 2/3 (Pettits Lane (N)) | 3.40 | 0.00 | Y | Arm 6 Right | Inf | 100.0 % | 1955 | 1955 |
| 3/1 (A12 Westbound (E)) | 5.00 | 0.00 | Y | Arm 9 Left | 20.00 | 100.0 % | 1967 | 1967 |
| 3/2 (A12 Westbound (E)) | 4.20 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 2035 | 2035 |
| 3/3 (A12 Westbound (E)) | 3.10 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 3/4 (A12 Westbound (E)) | 3.10 | 0.00 | N | Arm 6 Ahead | Inf | 0.0 % | 2065 | 2065 |
| 3/5 (A12 Westbound (E)) | 3.70 | 0.00 | Y | Arm 10 Right | 12.50 | 100.0 % | 1772 | 1772 |
| 4/1 (Pettits Lane (S)) | 5.00 | 0.00 | Y | Arm 6 Left | 58.00 | 100.0 % | 2062 | 2062 |
| 4/2 (Pettits Lane (S)) | 3.10 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 4/3 (Pettits Lane (S)) | 3.50 | 0.00 | Y | Arm 5 Right | Inf | 100.0 % | 1965 | 1965 |
| 5/1 (A12 Eastbound (Internal) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A12 Eastbound (Internal) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/3 (A12 Eastbound (Internal) Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A12 Westbound(Internal) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A12 Westbound(Internal) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 (A12 Westbound(Internal) Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (A12 Westbound (W) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

| | | | |
|--|--------------------------|-----|-----|
| 7/2 (A12 Westbound (W) Lane 2) | Infinite Saturation Flow | Inf | Inf |
| 8/1 (A12 Eastbound (E) Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 8/2 (A12 Eastbound (E) Lane 2) | Infinite Saturation Flow | Inf | Inf |
| 9/1 (Pettits Lane Southbound exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 10/1 (Pettits Lane Northbound Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |

Scenario 3: 'Reference Case 2030 AM' (FG3: 'Reference Case 2030 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|------|-----|------|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 317 | 252 | 53 | 622 |
| | B | 395 | 0 | 218 | 1618 | 2231 |
| | C | 199 | 139 | 0 | 31 | 369 |
| | D | 57 | 1414 | 100 | 0 | 1571 |
| | Tot. | 651 | 1870 | 570 | 1702 | 4793 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 3: Reference Case 2030 AM |
|-------------------------------------|--|
| Junction: A12 - Pettits Lane | |
| 1/1 (short) | 57 |
| 1/2 (with short) | 511(In) 454(Out) |
| 1/3 | 498 |
| 1/4 (with short) | 562(In) 462(Out) |
| 1/5 (short) | 100 |
| 2/1 (short) | 317 |
| 2/2 (with short) | 569(In) 252(Out) |
| 2/3 | 53 |
| 3/1 (short) | 218 |
| 3/2 (with short) | 878(In) 660(Out) |
| 3/3 | 753 |
| 3/4 (with short) | 600(In) 205(Out) |
| 3/5 (short) | 395 |
| 4/1 (short) | 31 |
| 4/2 (with short) | 230(In) 199(Out) |
| 4/3 | 139 |
| 5/1 | 910 |
| 5/2 | 498 |
| 5/3 | 462 |
| 6/1 | 691 |
| 6/2 | 806 |
| 6/3 | 205 |
| 7/1 | 691 |
| 7/2 | 1011 |
| 8/1 | 1408 |
| 8/2 | 462 |
| 9/1 | 570 |
| 10/1 | 651 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 - Pettits 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 (A12 Eastbound (W)) | 5.00 | 0.00 | Y | Arm 10 Left | 15.00 | 100.0 % | 1923 | 1923 |
| 1/2 (A12 Eastbound (W)) | 2.60 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1875 | 1875 |
| 1/3 (A12 Eastbound (W)) | 2.50 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2005 | 2005 |
| 1/4 (A12 Eastbound (W)) | 2.50 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2005 | 2005 |
| 1/5 (A12 Eastbound (W)) | 3.40 | 0.00 | Y | Arm 9 Right | Inf | 100.0 % | 1955 | 1955 |
| 2/1 (Pettits Lane (N)) | 4.50 | 0.00 | Y | Arm 5 Left | 27.00 | 100.0 % | 1956 | 1956 |
| 2/2 (Pettits Lane (N)) | 3.40 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1955 | 1955 |
| 2/3 (Pettits Lane (N)) | 3.40 | 0.00 | Y | Arm 6 Right | Inf | 100.0 % | 1955 | 1955 |
| 3/1 (A12 Westbound (E)) | 5.00 | 0.00 | Y | Arm 9 Left | 20.00 | 100.0 % | 1967 | 1967 |
| 3/2 (A12 Westbound (E)) | 4.20 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 2035 | 2035 |
| 3/3 (A12 Westbound (E)) | 3.10 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 3/4 (A12 Westbound (E)) | 3.10 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 3/5 (A12 Westbound (E)) | 3.70 | 0.00 | Y | Arm 10 Right | 12.50 | 100.0 % | 1772 | 1772 |
| 4/1 (Pettits Lane (S)) | 5.00 | 0.00 | Y | Arm 6 Left | 58.00 | 100.0 % | 2062 | 2062 |
| 4/2 (Pettits Lane (S)) | 3.10 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 4/3 (Pettits Lane (S)) | 3.50 | 0.00 | Y | Arm 5 Right | Inf | 100.0 % | 1965 | 1965 |
| 5/1 (A12 Eastbound (Internal) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A12 Eastbound (Internal) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/3 (A12 Eastbound (Internal) Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A12 Westbound(Internal) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A12 Westbound(Internal) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 (A12 Westbound(Internal) Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (A12 Westbound (W) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

| | | | |
|--|--------------------------|-----|-----|
| 7/2 (A12 Westbound (W) Lane 2) | Infinite Saturation Flow | Inf | Inf |
| 8/1 (A12 Eastbound (E) Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 8/2 (A12 Eastbound (E) Lane 2) | Infinite Saturation Flow | Inf | Inf |
| 9/1 (Pettits Lane Southbound exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 10/1 (Pettits Lane Northbound Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |

Scenario 4: 'Reference Case 2030 PM' (FG4: 'Reference Case 2030 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|------|-----|------|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 266 | 254 | 68 | 588 |
| | B | 461 | 0 | 147 | 1519 | 2127 |
| | C | 331 | 224 | 0 | 72 | 627 |
| | D | 97 | 1397 | 113 | 0 | 1607 |
| | Tot. | 889 | 1887 | 514 | 1659 | 4949 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 4: Reference Case 2030 PM |
|-------------------------------------|--|
| Junction: A12 - Pettits Lane | |
| 1/1 (short) | 97 |
| 1/2 (with short) | 525(In) 428(Out) |
| 1/3 | 519 |
| 1/4 (with short) | 563(In) 450(Out) |
| 1/5 (short) | 113 |
| 2/1 (short) | 266 |
| 2/2 (with short) | 520(In) 254(Out) |
| 2/3 | 68 |
| 3/1 (short) | 147 |
| 3/2 (with short) | 845(In) 698(Out) |
| 3/3 | 821 |
| 3/4 (with short) | 461(In) 0(Out) |
| 3/5 (short) | 461 |
| 4/1 (short) | 72 |
| 4/2 (with short) | 403(In) 331(Out) |
| 4/3 | 224 |
| 5/1 | 918 |
| 5/2 | 519 |
| 5/3 | 450 |
| 6/1 | 770 |
| 6/2 | 889 |
| 6/3 | 0 |
| 7/1 | 770 |
| 7/2 | 889 |
| 8/1 | 1437 |
| 8/2 | 450 |
| 9/1 | 514 |
| 10/1 | 889 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 - Pettits 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 (A12 Eastbound (W)) | 5.00 | 0.00 | Y | Arm 10 Left | 15.00 | 100.0 % | 1923 | 1923 |
| 1/2 (A12 Eastbound (W)) | 2.60 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1875 | 1875 |
| 1/3 (A12 Eastbound (W)) | 2.50 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2005 | 2005 |
| 1/4 (A12 Eastbound (W)) | 2.50 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2005 | 2005 |
| 1/5 (A12 Eastbound (W)) | 3.40 | 0.00 | Y | Arm 9 Right | Inf | 100.0 % | 1955 | 1955 |
| 2/1 (Pettits Lane (N)) | 4.50 | 0.00 | Y | Arm 5 Left | 27.00 | 100.0 % | 1956 | 1956 |
| 2/2 (Pettits Lane (N)) | 3.40 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1955 | 1955 |
| 2/3 (Pettits Lane (N)) | 3.40 | 0.00 | Y | Arm 6 Right | Inf | 100.0 % | 1955 | 1955 |
| 3/1 (A12 Westbound (E)) | 5.00 | 0.00 | Y | Arm 9 Left | 20.00 | 100.0 % | 1967 | 1967 |
| 3/2 (A12 Westbound (E)) | 4.20 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 2035 | 2035 |
| 3/3 (A12 Westbound (E)) | 3.10 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 3/4 (A12 Westbound (E)) | 3.10 | 0.00 | N | Arm 6 Ahead | Inf | 0.0 % | 2065 | 2065 |
| 3/5 (A12 Westbound (E)) | 3.70 | 0.00 | Y | Arm 10 Right | 12.50 | 100.0 % | 1772 | 1772 |
| 4/1 (Pettits Lane (S)) | 5.00 | 0.00 | Y | Arm 6 Left | 58.00 | 100.0 % | 2062 | 2062 |
| 4/2 (Pettits Lane (S)) | 3.10 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 4/3 (Pettits Lane (S)) | 3.50 | 0.00 | Y | Arm 5 Right | Inf | 100.0 % | 1965 | 1965 |
| 5/1 (A12 Eastbound (Internal) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A12 Eastbound (Internal) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/3 (A12 Eastbound (Internal) Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A12 Westbound(Internal) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A12 Westbound(Internal) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 (A12 Westbound(Internal) Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (A12 Westbound (W) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

| | | | |
|--|--------------------------|-----|-----|
| 7/2 (A12 Westbound (W) Lane 2) | Infinite Saturation Flow | Inf | Inf |
| 8/1 (A12 Eastbound (E) Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 8/2 (A12 Eastbound (E) Lane 2) | Infinite Saturation Flow | Inf | Inf |
| 9/1 (Pettits Lane Southbound exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 10/1 (Pettits Lane Northbound Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |

Scenario 5: 'Do Something 2030 + LTC AM' (FG7: 'Do Something 2030 + LTC AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | | |
|--------|-------------|-----|------|-----|------|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 379 | 251 | 39 | 669 |
| | B | 434 | 0 | 219 | 1642 | 2295 |
| | C | 211 | 144 | 0 | 31 | 386 |
| | D | 56 | 1450 | 85 | 0 | 1591 |
| | Tot. | 701 | 1973 | 555 | 1712 | 4941 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 5: Do Something 2030 + LTC AM |
|-------------------------------------|---|
| Junction: A12 - Pettits Lane | |
| 1/1 (short) | 56 |
| 1/2 (with short) | 512(In) 456(Out) |
| 1/3 | 524 |
| 1/4 (with short) | 555(In) 470(Out) |
| 1/5 (short) | 85 |
| 2/1 (short) | 379 |
| 2/2 (with short) | 630(In) 251(Out) |
| 2/3 | 39 |
| 3/1 (short) | 219 |
| 3/2 (with short) | 950(In) 731(Out) |
| 3/3 | 905 |
| 3/4 (with short) | 440(In) 6(Out) |
| 3/5 (short) | 434 |
| 4/1 (short) | 31 |
| 4/2 (with short) | 242(In) 211(Out) |
| 4/3 | 144 |
| 5/1 | 979 |
| 5/2 | 524 |
| 5/3 | 470 |
| 6/1 | 762 |
| 6/2 | 944 |
| 6/3 | 6 |
| 7/1 | 762 |
| 7/2 | 950 |
| 8/1 | 1503 |
| 8/2 | 470 |
| 9/1 | 555 |
| 10/1 | 701 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 - Pettits 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 (A12 Eastbound (W)) | 5.00 | 0.00 | Y | Arm 10 Left | 15.00 | 100.0 % | 1923 | 1923 |
| 1/2 (A12 Eastbound (W)) | 2.60 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1875 | 1875 |
| 1/3 (A12 Eastbound (W)) | 2.50 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2005 | 2005 |
| 1/4 (A12 Eastbound (W)) | 2.50 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2005 | 2005 |
| 1/5 (A12 Eastbound (W)) | 3.40 | 0.00 | Y | Arm 9 Right | Inf | 100.0 % | 1955 | 1955 |
| 2/1 (Pettits Lane (N)) | 4.50 | 0.00 | Y | Arm 5 Left | 27.00 | 100.0 % | 1956 | 1956 |
| 2/2 (Pettits Lane (N)) | 3.40 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1955 | 1955 |
| 2/3 (Pettits Lane (N)) | 3.40 | 0.00 | Y | Arm 6 Right | Inf | 100.0 % | 1955 | 1955 |
| 3/1 (A12 Westbound (E)) | 5.00 | 0.00 | Y | Arm 9 Left | 20.00 | 100.0 % | 1967 | 1967 |
| 3/2 (A12 Westbound (E)) | 4.20 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 2035 | 2035 |
| 3/3 (A12 Westbound (E)) | 3.10 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 3/4 (A12 Westbound (E)) | 3.10 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 3/5 (A12 Westbound (E)) | 3.70 | 0.00 | Y | Arm 10 Right | 12.50 | 100.0 % | 1772 | 1772 |
| 4/1 (Pettits Lane (S)) | 5.00 | 0.00 | Y | Arm 6 Left | 58.00 | 100.0 % | 2062 | 2062 |
| 4/2 (Pettits Lane (S)) | 3.10 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 4/3 (Pettits Lane (S)) | 3.50 | 0.00 | Y | Arm 5 Right | Inf | 100.0 % | 1965 | 1965 |
| 5/1 (A12 Eastbound (Internal) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A12 Eastbound (Internal) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/3 (A12 Eastbound (Internal) Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A12 Westbound(Internal) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A12 Westbound(Internal) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 (A12 Westbound(Internal) Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (A12 Westbound (W) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

| | | | |
|--|--------------------------|-----|-----|
| 7/2 (A12 Westbound (W) Lane 2) | Infinite Saturation Flow | Inf | Inf |
| 8/1 (A12 Eastbound (E) Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 8/2 (A12 Eastbound (E) Lane 2) | Infinite Saturation Flow | Inf | Inf |
| 9/1 (Pettits Lane Southbound exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 10/1 (Pettits Lane Northbound Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |

Scenario 6: 'Do Something 2030 + LTC PM' (FG8: 'Do Something 2030 + LTC PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | | |
|--------|-------------|-----|------|-----|------|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 289 | 253 | 69 | 611 |
| | B | 492 | 0 | 147 | 1511 | 2150 |
| | C | 332 | 226 | 0 | 76 | 634 |
| | D | 96 | 1418 | 110 | 0 | 1624 |
| | Tot. | 920 | 1933 | 510 | 1656 | 5019 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 6: Do Something 2030 + LTC PM |
|-------------------------------------|---|
| Junction: A12 - Pettits Lane | |
| 1/1 (short) | 96 |
| 1/2 (with short) | 531(In) 435(Out) |
| 1/3 | 525 |
| 1/4 (with short) | 568(In) 458(Out) |
| 1/5 (short) | 110 |
| 2/1 (short) | 289 |
| 2/2 (with short) | 542(In) 253(Out) |
| 2/3 | 69 |
| 3/1 (short) | 147 |
| 3/2 (with short) | 842(In) 695(Out) |
| 3/3 | 816 |
| 3/4 (with short) | 492(In) 0(Out) |
| 3/5 (short) | 492 |
| 4/1 (short) | 76 |
| 4/2 (with short) | 408(In) 332(Out) |
| 4/3 | 226 |
| 5/1 | 950 |
| 5/2 | 525 |
| 5/3 | 458 |
| 6/1 | 771 |
| 6/2 | 885 |
| 6/3 | 0 |
| 7/1 | 771 |
| 7/2 | 885 |
| 8/1 | 1475 |
| 8/2 | 458 |
| 9/1 | 510 |
| 10/1 | 920 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 - Pettits 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 (A12 Eastbound (W)) | 5.00 | 0.00 | Y | Arm 10 Left | 15.00 | 100.0 % | 1923 | 1923 |
| 1/2 (A12 Eastbound (W)) | 2.60 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1875 | 1875 |
| 1/3 (A12 Eastbound (W)) | 2.50 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2005 | 2005 |
| 1/4 (A12 Eastbound (W)) | 2.50 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2005 | 2005 |
| 1/5 (A12 Eastbound (W)) | 3.40 | 0.00 | Y | Arm 9 Right | Inf | 100.0 % | 1955 | 1955 |
| 2/1 (Pettits Lane (N)) | 4.50 | 0.00 | Y | Arm 5 Left | 27.00 | 100.0 % | 1956 | 1956 |
| 2/2 (Pettits Lane (N)) | 3.40 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1955 | 1955 |
| 2/3 (Pettits Lane (N)) | 3.40 | 0.00 | Y | Arm 6 Right | Inf | 100.0 % | 1955 | 1955 |
| 3/1 (A12 Westbound (E)) | 5.00 | 0.00 | Y | Arm 9 Left | 20.00 | 100.0 % | 1967 | 1967 |
| 3/2 (A12 Westbound (E)) | 4.20 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 2035 | 2035 |
| 3/3 (A12 Westbound (E)) | 3.10 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 3/4 (A12 Westbound (E)) | 3.10 | 0.00 | N | Arm 6 Ahead | Inf | 0.0 % | 2065 | 2065 |
| 3/5 (A12 Westbound (E)) | 3.70 | 0.00 | Y | Arm 10 Right | 12.50 | 100.0 % | 1772 | 1772 |
| 4/1 (Pettits Lane (S)) | 5.00 | 0.00 | Y | Arm 6 Left | 58.00 | 100.0 % | 2062 | 2062 |
| 4/2 (Pettits Lane (S)) | 3.10 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 4/3 (Pettits Lane (S)) | 3.50 | 0.00 | Y | Arm 5 Right | Inf | 100.0 % | 1965 | 1965 |
| 5/1 (A12 Eastbound (Internal) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A12 Eastbound (Internal) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/3 (A12 Eastbound (Internal) Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A12 Westbound(Internal) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A12 Westbound(Internal) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 (A12 Westbound(Internal) Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (A12 Westbound (W) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

| | | | |
|--|--------------------------|-----|-----|
| 7/2 (A12 Westbound (W) Lane 2) | Infinite Saturation Flow | Inf | Inf |
| 8/1 (A12 Eastbound (E) Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 8/2 (A12 Eastbound (E) Lane 2) | Infinite Saturation Flow | Inf | Inf |
| 9/1 (Pettits Lane Southbound exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 10/1 (Pettits Lane Northbound Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |

Scenario 7: '2023 Surveyed Peak Hour AM' (FG9: '2023 Surveyed Peak Hour AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|------|-----|------|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 198 | 299 | 66 | 563 |
| | B | 441 | 22 | 276 | 1350 | 2089 |
| | C | 252 | 134 | 0 | 55 | 441 |
| | D | 70 | 1381 | 168 | 14 | 1633 |
| | Tot. | 763 | 1735 | 743 | 1485 | 4726 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 7: 2023 Surveyed Peak Hour AM |
|-------------------------------------|--|
| Junction: A12 - Pettits Lane | |
| 1/1 (short) | 70 |
| 1/2 (with short) | 516(In) 446(Out) |
| 1/3 | 495 |
| 1/4 (with short) | 608(In) 440(Out) |
| 1/5 (short) | 168 |
| 2/1 (short) | 198 |
| 2/2 (with short) | 497(In) 299(Out) |
| 2/3 | 66 |
| 3/1 (short) | 276 |
| 3/2 (with short) | 879(In) 603(Out) |
| 3/3 | 709 |
| 3/4 (with short) | 479(In) 38(Out) |
| 3/5 (short) | 441 |
| 4/1 (short) | 55 |
| 4/2 (with short) | 307(In) 252(Out) |
| 4/3 | 134 |
| 5/1 | 778 |
| 5/2 | 495 |
| 5/3 | 440 |
| 6/1 | 658 |
| 6/2 | 775 |
| 6/3 | 38 |
| 7/1 | 658 |
| 7/2 | 813 |
| 8/1 | 1273 |
| 8/2 | 440 |
| 9/1 | 743 |
| 10/1 | 763 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 - Pettits 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 (A12 Eastbound (W)) | 5.00 | 0.00 | Y | Arm 10 Left | 15.00 | 100.0 % | 1923 | 1923 |
| 1/2 (A12 Eastbound (W)) | 2.60 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1875 | 1875 |
| 1/3 (A12 Eastbound (W)) | 2.50 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2005 | 2005 |
| 1/4 (A12 Eastbound (W)) | 2.50 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2005 | 2005 |
| 1/5 (A12 Eastbound (W)) | 3.40 | 0.00 | Y | Arm 9 Right | Inf | 100.0 % | 1955 | 1955 |
| 2/1 (Pettits Lane (N)) | 4.50 | 0.00 | Y | Arm 5 Left | 27.00 | 100.0 % | 1956 | 1956 |
| 2/2 (Pettits Lane (N)) | 3.40 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1955 | 1955 |
| 2/3 (Pettits Lane (N)) | 3.40 | 0.00 | Y | Arm 6 Right | Inf | 100.0 % | 1955 | 1955 |
| 3/1 (A12 Westbound (E)) | 5.00 | 0.00 | Y | Arm 9 Left | 20.00 | 100.0 % | 1967 | 1967 |
| 3/2 (A12 Westbound (E)) | 4.20 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 2035 | 2035 |
| 3/3 (A12 Westbound (E)) | 3.10 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 3/4 (A12 Westbound (E)) | 3.10 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 3/5 (A12 Westbound (E)) | 3.70 | 0.00 | Y | Arm 10 Right | 12.50 | 100.0 % | 1772 | 1772 |
| 4/1 (Pettits Lane (S)) | 5.00 | 0.00 | Y | Arm 6 Left | 58.00 | 100.0 % | 2062 | 2062 |
| 4/2 (Pettits Lane (S)) | 3.10 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 4/3 (Pettits Lane (S)) | 3.50 | 0.00 | Y | Arm 5 Right | Inf | 100.0 % | 1965 | 1965 |
| 5/1 (A12 Eastbound (Internal) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A12 Eastbound (Internal) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/3 (A12 Eastbound (Internal) Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A12 Westbound(Internal) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A12 Westbound(Internal) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 (A12 Westbound(Internal) Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (A12 Westbound (W) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

| | | | |
|--|--------------------------|-----|-----|
| 7/2 (A12 Westbound (W) Lane 2) | Infinite Saturation Flow | Inf | Inf |
| 8/1 (A12 Eastbound (E) Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 8/2 (A12 Eastbound (E) Lane 2) | Infinite Saturation Flow | Inf | Inf |
| 9/1 (Pettits Lane Southbound exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 10/1 (Pettits Lane Northbound Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |

Scenario 8: '2023 Surveyed Peak Hour PM' (FG10: '2023 Surveyed Peak Hour PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | | |
|--------|-------------|-----|------|-----|------|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 248 | 240 | 70 | 558 |
| | B | 431 | 18 | 130 | 1446 | 2025 |
| | C | 310 | 209 | 0 | 68 | 587 |
| | D | 92 | 1345 | 91 | 17 | 1545 |
| | Tot. | 833 | 1820 | 461 | 1601 | 4715 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 8: 2023 Surveyed Peak Hour PM |
|-------------------------------------|--|
| Junction: A12 - Pettits Lane | |
| 1/1 (short) | 92 |
| 1/2 (with short) | 513(In) 421(Out) |
| 1/3 | 479 |
| 1/4 (with short) | 536(In) 445(Out) |
| 1/5 (short) | 91 |
| 2/1 (short) | 248 |
| 2/2 (with short) | 488(In) 240(Out) |
| 2/3 | 70 |
| 3/1 (short) | 130 |
| 3/2 (with short) | 794(In) 664(Out) |
| 3/3 | 731 |
| 3/4 (with short) | 482(In) 51(Out) |
| 3/5 (short) | 431 |
| 4/1 (short) | 68 |
| 4/2 (with short) | 378(In) 310(Out) |
| 4/3 | 209 |
| 5/1 | 878 |
| 5/2 | 479 |
| 5/3 | 445 |
| 6/1 | 732 |
| 6/2 | 801 |
| 6/3 | 51 |
| 7/1 | 732 |
| 7/2 | 852 |
| 8/1 | 1357 |
| 8/2 | 445 |
| 9/1 | 461 |
| 10/1 | 833 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 - Pettits 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 (A12 Eastbound (W)) | 5.00 | 0.00 | Y | Arm 10 Left | 15.00 | 100.0 % | 1923 | 1923 |
| 1/2 (A12 Eastbound (W)) | 2.60 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1875 | 1875 |
| 1/3 (A12 Eastbound (W)) | 2.50 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2005 | 2005 |
| 1/4 (A12 Eastbound (W)) | 2.50 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2005 | 2005 |
| 1/5 (A12 Eastbound (W)) | 3.40 | 0.00 | Y | Arm 9 Right | Inf | 100.0 % | 1955 | 1955 |
| 2/1 (Pettits Lane (N)) | 4.50 | 0.00 | Y | Arm 5 Left | 27.00 | 100.0 % | 1956 | 1956 |
| 2/2 (Pettits Lane (N)) | 3.40 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1955 | 1955 |
| 2/3 (Pettits Lane (N)) | 3.40 | 0.00 | Y | Arm 6 Right | Inf | 100.0 % | 1955 | 1955 |
| 3/1 (A12 Westbound (E)) | 5.00 | 0.00 | Y | Arm 9 Left | 20.00 | 100.0 % | 1967 | 1967 |
| 3/2 (A12 Westbound (E)) | 4.20 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 2035 | 2035 |
| 3/3 (A12 Westbound (E)) | 3.10 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 3/4 (A12 Westbound (E)) | 3.10 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 3/5 (A12 Westbound (E)) | 3.70 | 0.00 | Y | Arm 10 Right | 12.50 | 100.0 % | 1772 | 1772 |
| 4/1 (Pettits Lane (S)) | 5.00 | 0.00 | Y | Arm 6 Left | 58.00 | 100.0 % | 2062 | 2062 |
| 4/2 (Pettits Lane (S)) | 3.10 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 4/3 (Pettits Lane (S)) | 3.50 | 0.00 | Y | Arm 5 Right | Inf | 100.0 % | 1965 | 1965 |
| 5/1 (A12 Eastbound (Internal) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A12 Eastbound (Internal) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/3 (A12 Eastbound (Internal) Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A12 Westbound(Internal) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A12 Westbound(Internal) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 (A12 Westbound(Internal) Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (A12 Westbound (W) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

| | | | |
|--|--------------------------|-----|-----|
| 7/2 (A12 Westbound (W) Lane 2) | Infinite Saturation Flow | Inf | Inf |
| 8/1 (A12 Eastbound (E) Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 8/2 (A12 Eastbound (E) Lane 2) | Infinite Saturation Flow | Inf | Inf |
| 9/1 (Pettits Lane Southbound exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 10/1 (Pettits Lane Northbound Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |

Scenario 9: '2030 Surveyed Peak Hour AM' (FG11: 'Copy of Reference Case 2030 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | | |
|--------|-------------|-----|------|-----|------|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 207 | 313 | 69 | 589 |
| | B | 462 | 23 | 289 | 1413 | 2187 |
| | C | 264 | 140 | 0 | 58 | 462 |
| | D | 73 | 1445 | 176 | 15 | 1709 |
| | Tot. | 799 | 1815 | 778 | 1555 | 4947 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 9: 2030 Surveyed Peak Hour AM |
|-------------------------------------|--|
| Junction: A12 - Pettits Lane | |
| 1/1 (short) | 73 |
| 1/2 (with short) | 540(In) 467(Out) |
| 1/3 | 518 |
| 1/4 (with short) | 636(In) 460(Out) |
| 1/5 (short) | 176 |
| 2/1 (short) | 207 |
| 2/2 (with short) | 520(In) 313(Out) |
| 2/3 | 69 |
| 3/1 (short) | 289 |
| 3/2 (with short) | 915(In) 626(Out) |
| 3/3 | 738 |
| 3/4 (with short) | 511(In) 49(Out) |
| 3/5 (short) | 462 |
| 4/1 (short) | 58 |
| 4/2 (with short) | 322(In) 264(Out) |
| 4/3 | 140 |
| 5/1 | 814 |
| 5/2 | 518 |
| 5/3 | 460 |
| 6/1 | 684 |
| 6/2 | 807 |
| 6/3 | 49 |
| 7/1 | 684 |
| 7/2 | 856 |
| 8/1 | 1332 |
| 8/2 | 460 |
| 9/1 | 778 |
| 10/1 | 799 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 - Pettits 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 (A12 Eastbound (W)) | 5.00 | 0.00 | Y | Arm 10 Left | 15.00 | 100.0 % | 1923 | 1923 |
| 1/2 (A12 Eastbound (W)) | 2.60 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1875 | 1875 |
| 1/3 (A12 Eastbound (W)) | 2.50 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2005 | 2005 |
| 1/4 (A12 Eastbound (W)) | 2.50 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2005 | 2005 |
| 1/5 (A12 Eastbound (W)) | 3.40 | 0.00 | Y | Arm 9 Right | Inf | 100.0 % | 1955 | 1955 |
| 2/1 (Pettits Lane (N)) | 4.50 | 0.00 | Y | Arm 5 Left | 27.00 | 100.0 % | 1956 | 1956 |
| 2/2 (Pettits Lane (N)) | 3.40 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1955 | 1955 |
| 2/3 (Pettits Lane (N)) | 3.40 | 0.00 | Y | Arm 6 Right | Inf | 100.0 % | 1955 | 1955 |
| 3/1 (A12 Westbound (E)) | 5.00 | 0.00 | Y | Arm 9 Left | 20.00 | 100.0 % | 1967 | 1967 |
| 3/2 (A12 Westbound (E)) | 4.20 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 2035 | 2035 |
| 3/3 (A12 Westbound (E)) | 3.10 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 3/4 (A12 Westbound (E)) | 3.10 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 3/5 (A12 Westbound (E)) | 3.70 | 0.00 | Y | Arm 10 Right | 12.50 | 100.0 % | 1772 | 1772 |
| 4/1 (Pettits Lane (S)) | 5.00 | 0.00 | Y | Arm 6 Left | 58.00 | 100.0 % | 2062 | 2062 |
| 4/2 (Pettits Lane (S)) | 3.10 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 4/3 (Pettits Lane (S)) | 3.50 | 0.00 | Y | Arm 5 Right | Inf | 100.0 % | 1965 | 1965 |
| 5/1 (A12 Eastbound (Internal) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A12 Eastbound (Internal) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/3 (A12 Eastbound (Internal) Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A12 Westbound(Internal) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A12 Westbound(Internal) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 (A12 Westbound(Internal) Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (A12 Westbound (W) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

| | | | |
|--|--------------------------|-----|-----|
| 7/2 (A12 Westbound (W) Lane 2) | Infinite Saturation Flow | Inf | Inf |
| 8/1 (A12 Eastbound (E) Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 8/2 (A12 Eastbound (E) Lane 2) | Infinite Saturation Flow | Inf | Inf |
| 9/1 (Pettits Lane Southbound exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 10/1 (Pettits Lane Northbound Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |

Scenario 10: '2030 Surveyed Peak Hour PM' (FG12: 'Copy of Reference Case 2030 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | | |
|--------|-------------|-----|------|-----|------|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 261 | 253 | 74 | 588 |
| | B | 453 | 19 | 137 | 1521 | 2130 |
| | C | 326 | 220 | 0 | 72 | 618 |
| | D | 97 | 1415 | 96 | 18 | 1626 |
| | Tot. | 876 | 1915 | 486 | 1685 | 4962 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 10: 2030 Surveyed Peak Hour PM |
|-------------------------------------|---|
| Junction: A12 - Pettits Lane | |
| 1/1 (short) | 97 |
| 1/2 (with short) | 540(In) 443(Out) |
| 1/3 | 503 |
| 1/4 (with short) | 565(In) 469(Out) |
| 1/5 (short) | 96 |
| 2/1 (short) | 261 |
| 2/2 (with short) | 514(In) 253(Out) |
| 2/3 | 74 |
| 3/1 (short) | 137 |
| 3/2 (with short) | 835(In) 698(Out) |
| 3/3 | 769 |
| 3/4 (with short) | 507(In) 54(Out) |
| 3/5 (short) | 453 |
| 4/1 (short) | 72 |
| 4/2 (with short) | 398(In) 326(Out) |
| 4/3 | 220 |
| 5/1 | 924 |
| 5/2 | 503 |
| 5/3 | 469 |
| 6/1 | 770 |
| 6/2 | 843 |
| 6/3 | 54 |
| 7/1 | 770 |
| 7/2 | 897 |
| 8/1 | 1427 |
| 8/2 | 469 |
| 9/1 | 486 |
| 10/1 | 876 |

Full Input Data And Results

Lane Saturation Flows

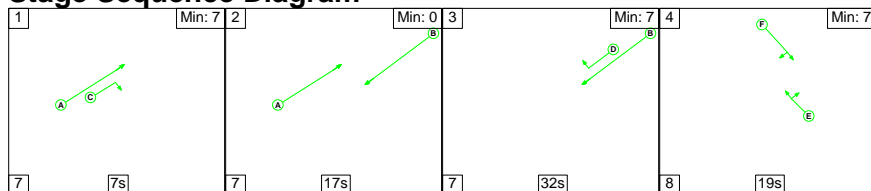
| Junction: A12 - Pettits Lane | | | | | | | | |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1 (A12 Eastbound (W)) | 5.00 | 0.00 | Y | Arm 10 Left | 15.00 | 100.0 % | 1923 | 1923 |
| 1/2 (A12 Eastbound (W)) | 2.60 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1875 | 1875 |
| 1/3 (A12 Eastbound (W)) | 2.50 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2005 | 2005 |
| 1/4 (A12 Eastbound (W)) | 2.50 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2005 | 2005 |
| 1/5 (A12 Eastbound (W)) | 3.40 | 0.00 | Y | Arm 9 Right | Inf | 100.0 % | 1955 | 1955 |
| 2/1 (Pettits Lane (N)) | 4.50 | 0.00 | Y | Arm 5 Left | 27.00 | 100.0 % | 1956 | 1956 |
| 2/2 (Pettits Lane (N)) | 3.40 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1955 | 1955 |
| 2/3 (Pettits Lane (N)) | 3.40 | 0.00 | Y | Arm 6 Right | Inf | 100.0 % | 1955 | 1955 |
| 3/1 (A12 Westbound (E)) | 5.00 | 0.00 | Y | Arm 9 Left | 20.00 | 100.0 % | 1967 | 1967 |
| 3/2 (A12 Westbound (E)) | 4.20 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 2035 | 2035 |
| 3/3 (A12 Westbound (E)) | 3.10 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 3/4 (A12 Westbound (E)) | 3.10 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2065 | 2065 |
| 3/5 (A12 Westbound (E)) | 3.70 | 0.00 | Y | Arm 10 Right | 12.50 | 100.0 % | 1772 | 1772 |
| 4/1 (Pettits Lane (S)) | 5.00 | 0.00 | Y | Arm 6 Left | 58.00 | 100.0 % | 2062 | 2062 |
| 4/2 (Pettits Lane (S)) | 3.10 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 4/3 (Pettits Lane (S)) | 3.50 | 0.00 | Y | Arm 5 Right | Inf | 100.0 % | 1965 | 1965 |
| 5/1 (A12 Eastbound (Internal) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A12 Eastbound (Internal) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/3 (A12 Eastbound (Internal) Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A12 Westbound(Internal) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A12 Westbound(Internal) Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 (A12 Westbound(Internal) Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (A12 Westbound (W) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

| | | | |
|---|--------------------------|-----|-----|
| 7/2 (A12 Westbound (W) Lane 2) | Infinite Saturation Flow | Inf | Inf |
| 8/1 (A12 Eastbound (E) Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 8/2 (A12 Eastbound (E) Lane 2) | Infinite Saturation Flow | Inf | Inf |
| 9/1 (Pettits Lane Southbound exit Lane 1) | Infinite Saturation Flow | Inf | Inf |
| 10/1 (Pettits Lane Northbound Exit Lane 1) | Infinite Saturation Flow | Inf | Inf |

Scenario 1: 'Base Year 2023 AM' (FG1: 'Base Year 2023 AM', Plan 1: 'Network Control Plan 1')

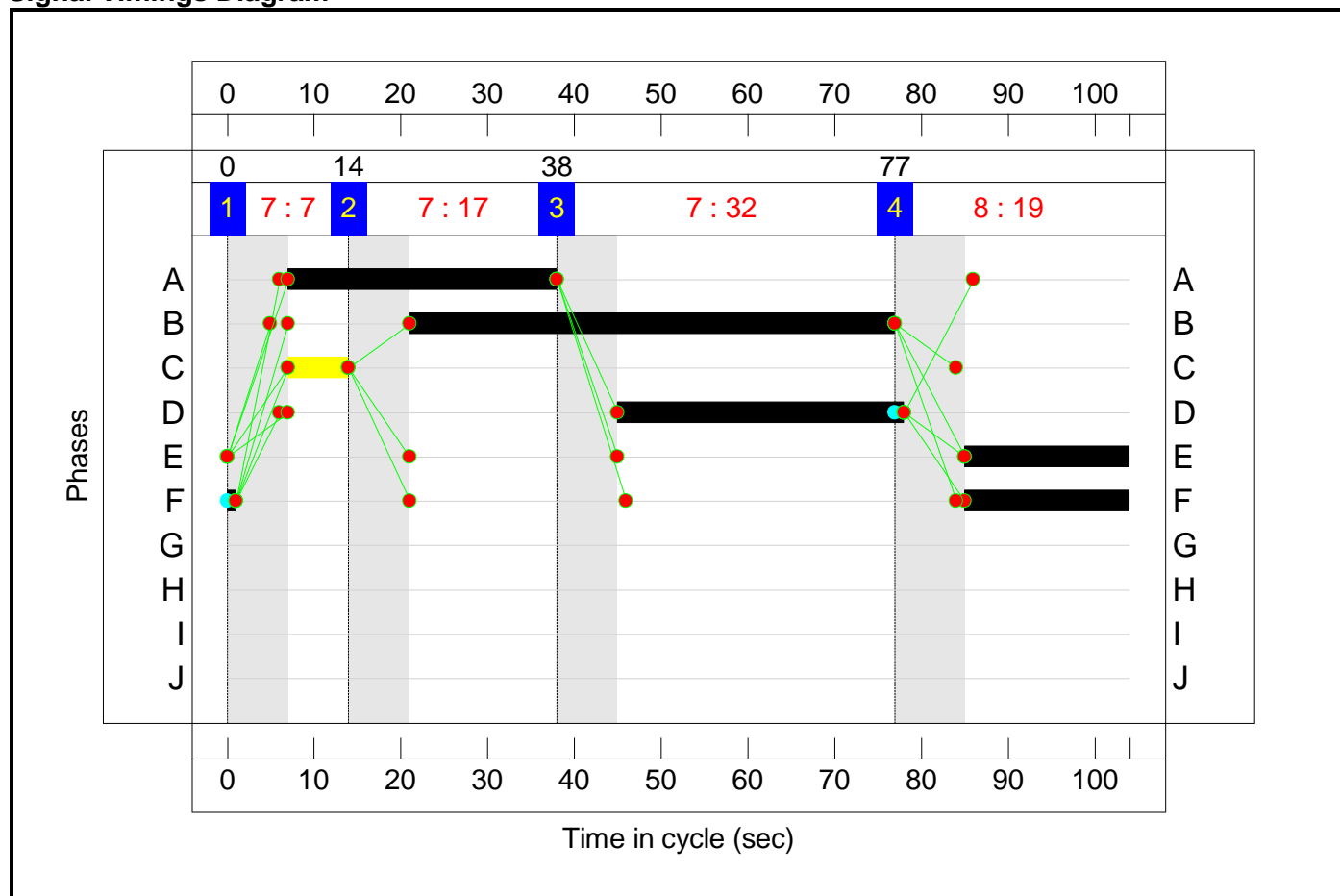
Stage Sequence Diagram



Stage Timings

| Stage | 1 | 2 | 3 | 4 |
|--------------|---|----|----|----|
| Duration | 7 | 17 | 32 | 19 |
| Change Point | 0 | 14 | 38 | 77 |

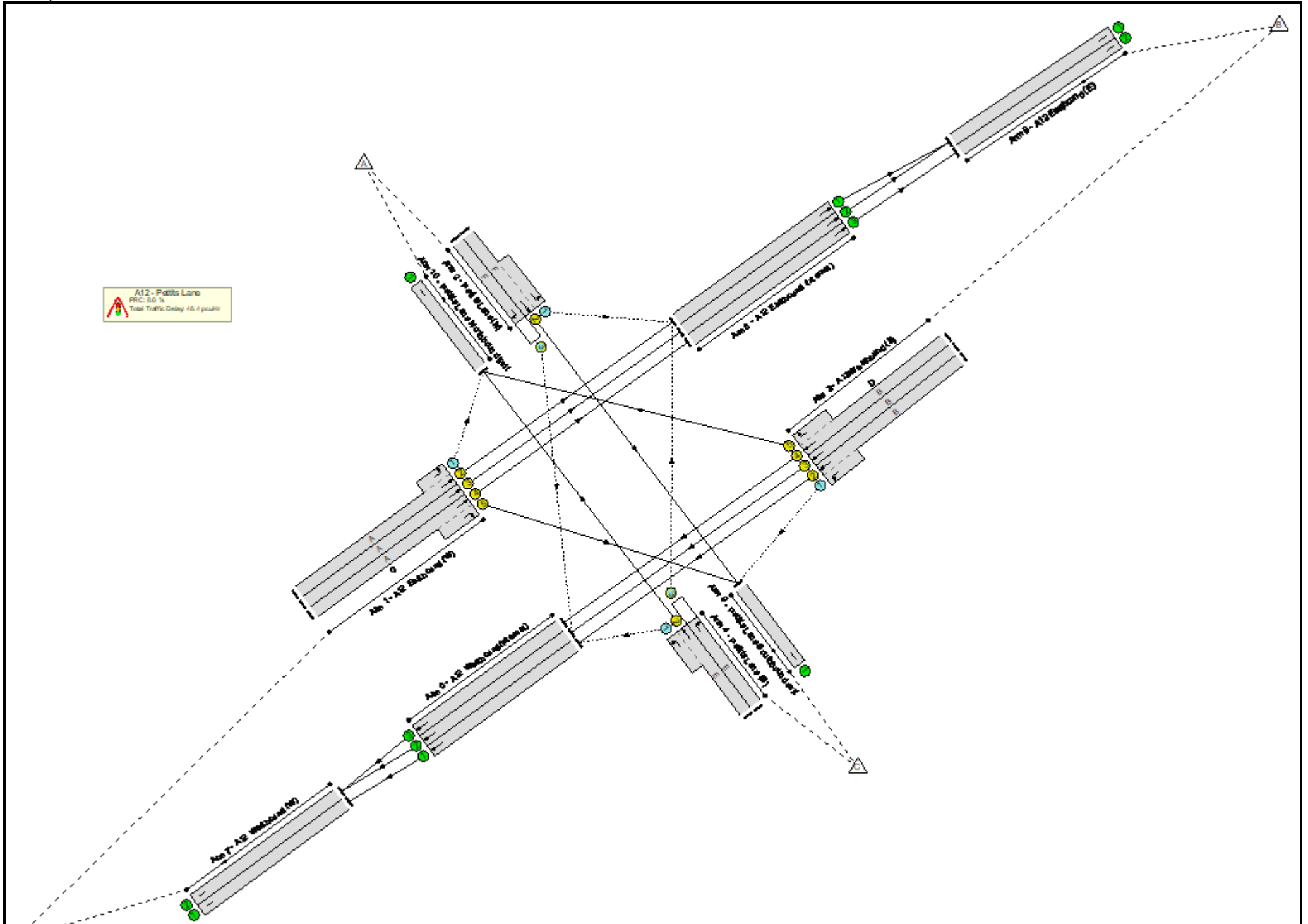
Signal Timings Diagram



Full Input Data And Results

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 | - | - | N/A | - | - | | - | - | - | - | - | - | 82.9% |
| A12 - Pettits Lane | - | - | N/A | - | - | | - | - | - | - | - | - | 82.9% |
| 1/2+1/1 | A12 Eastbound (W) Ahead Left | U+O | N/A | N/A | A - | | 1 | 31 | - | 488 | 1875:1923 | 537+67 | 80.8 : 80.8% |
| 1/3 | A12 Eastbound (W) Ahead | U | N/A | N/A | A | | 1 | 31 | - | 476 | 2005 | 617 | 77.2% |
| 1/4+1/5 | A12 Eastbound (W) Ahead Right | U | N/A | N/A | A C | | 1 | 31:7 | - | 537 | 2005:1955 | 536+117 | 82.3 : 82.3% |
| 2/2+2/1 | Pettits Lane (N) Left Ahead | U+O | N/A | N/A | F - | | 1 | 20 | - | 544 | 1955:1956 | 309+388 | 78.0 : 78.0% |
| 2/3 | Pettits Lane (N) Right | O | N/A | N/A | F | | 1 | 20 | - | 51 | 1955 | 219 | 23.3% |
| 3/2+3/1 | A12 Westbound (E) Ahead Left | U+O | N/A | N/A | B - | | 1 | 56 | - | 842 | 2035:1967 | 874+287 | 72.5 : 72.5% |
| 3/3 | A12 Westbound (E) Ahead | U | N/A | N/A | B | | 1 | 56 | - | 723 | 2065 | 1132 | 63.9% |
| 3/4+3/5 | A12 Westbound (E) Ahead Right | U | N/A | N/A | B D | | 1 | 56:33 | - | 566 | 2065:1772 | 230+459 | 82.1 : 82.1% |
| 4/2+4/1 | Pettits Lane (S) Left Ahead | U+O | N/A | N/A | E - | | 1 | 19 | - | 220 | 1925:2062 | 351+55 | 54.2 : 54.2% |
| 4/3 | Pettits Lane (S) Right | O | N/A | N/A | E | | 1 | 19 | - | 133 | 1965 | 161 | 82.9% |
| 5/1 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 870 | Inf | Inf | 0.0% |
| 5/2 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 476 | Inf | Inf | 0.0% |
| 5/3 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 441 | Inf | Inf | 0.0% |
| 6/1 | A12 Westbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 664 | Inf | Inf | 0.0% |
| 6/2 | A12 Westbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 774 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|------|-------------------------------------|---|-----|-----|---|--|---|---|---|------|-----|-----|------|
| 6/3 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 189 | Inf | Inf | 0.0% |
| 7/1 | A12 Westbound (W) | U | N/A | N/A | - | | - | - | - | 664 | Inf | Inf | 0.0% |
| 7/2 | A12 Westbound (W) | U | N/A | N/A | - | | - | - | - | 963 | Inf | Inf | 0.0% |
| 8/1 | A12 Eastbound (E) | U | N/A | N/A | - | | - | - | - | 1346 | Inf | Inf | 0.0% |
| 8/2 | A12 Eastbound (E) | U | N/A | N/A | - | | - | - | - | 441 | Inf | Inf | 0.0% |
| 9/1 | Pettits Lane Southbound exit | U | N/A | N/A | - | | - | - | - | 545 | Inf | Inf | 0.0% |
| 10/1 | Pettits Lane Northbound Exit | U | N/A | N/A | - | | - | - | - | 621 | Inf | Inf | 0.0% |

Full Input Data And Results

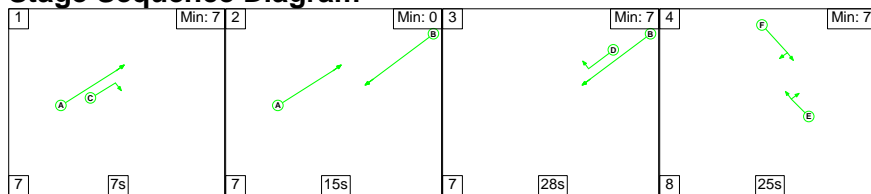
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|---------------------------|----------------|---------------|----------------------------------|------------------------------|-----------------------------|--|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network | - | - | 246 | 500 | 32 | 33.0 | 14.9 | 0.5 | 48.4 | - | - | - | - |
| A12 - Pettits Lane | - | - | 246 | 500 | 32 | 33.0 | 14.9 | 0.5 | 48.4 | - | - | - | - |
| 1/2+1/1 | 488 | 488 | 0 | 54 | 0 | 4.6 | 2.0 | - | 6.6 | 48.7 | 12.5 | 2.0 | 14.5 |
| 1/3 | 476 | 476 | - | - | - | 4.3 | 1.7 | - | 6.0 | 45.2 | 12.4 | 1.7 | 14.1 |
| 1/4+1/5 | 537 | 537 | - | - | - | 6.3 | 2.2 | - | 8.5 | 57.2 | 13.1 | 2.2 | 15.3 |
| 2/2+2/1 | 544 | 544 | 50 | 253 | 0 | 3.1 | 1.7 | - | 4.8 | 31.7 | 6.3 | 1.7 | 8.0 |
| 2/3 | 51 | 51 | 50 | 0 | 1 | 0.5 | 0.2 | 0.1 | 0.7 | 52.5 | 1.2 | 0.2 | 1.4 |
| 3/2+3/1 | 842 | 842 | 39 | 169 | 0 | 3.3 | 1.3 | - | 4.6 | 19.7 | 16.0 | 1.3 | 17.3 |
| 3/3 | 723 | 723 | - | - | - | 3.3 | 0.9 | - | 4.2 | 20.7 | 14.5 | 0.9 | 15.3 |
| 3/4+3/5 | 566 | 566 | - | - | - | 4.2 | 2.2 | - | 6.4 | 40.8 | 12.3 | 2.2 | 14.5 |
| 4/2+4/1 | 220 | 220 | 6 | 24 | 0 | 2.1 | 0.6 | - | 2.7 | 44.3 | 4.9 | 0.6 | 5.5 |
| 4/3 | 133 | 133 | 102 | 0 | 31 | 1.4 | 2.1 | 0.4 | 3.9 | 105.5 | 3.8 | 2.1 | 5.9 |
| 5/1 | 870 | 870 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 476 | 476 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/3 | 441 | 441 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 664 | 664 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 774 | 774 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/3 | 189 | 189 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 664 | 664 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/2 | 963 | 963 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 1346 | 1346 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/2 | 441 | 441 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 545 | 545 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 621 | 621 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): 8.6 | | 8.6 | Total Delay for Signalled Lanes (pcuHr): 48.45 | | 48.45 | Cycle Time (s): 104 | | | | |
| | | | PRC Over All Lanes (%): 8.6 | | 8.6 | Total Delay Over All Lanes(pcuHr): 48.45 | | 48.45 | | | | | |

Full Input Data And Results

Full Input Data And Results

Scenario 2: 'Base Year 2023 PM' (FG2: 'Base Year 2023 PM', Plan 1: 'Network Control Plan 1')

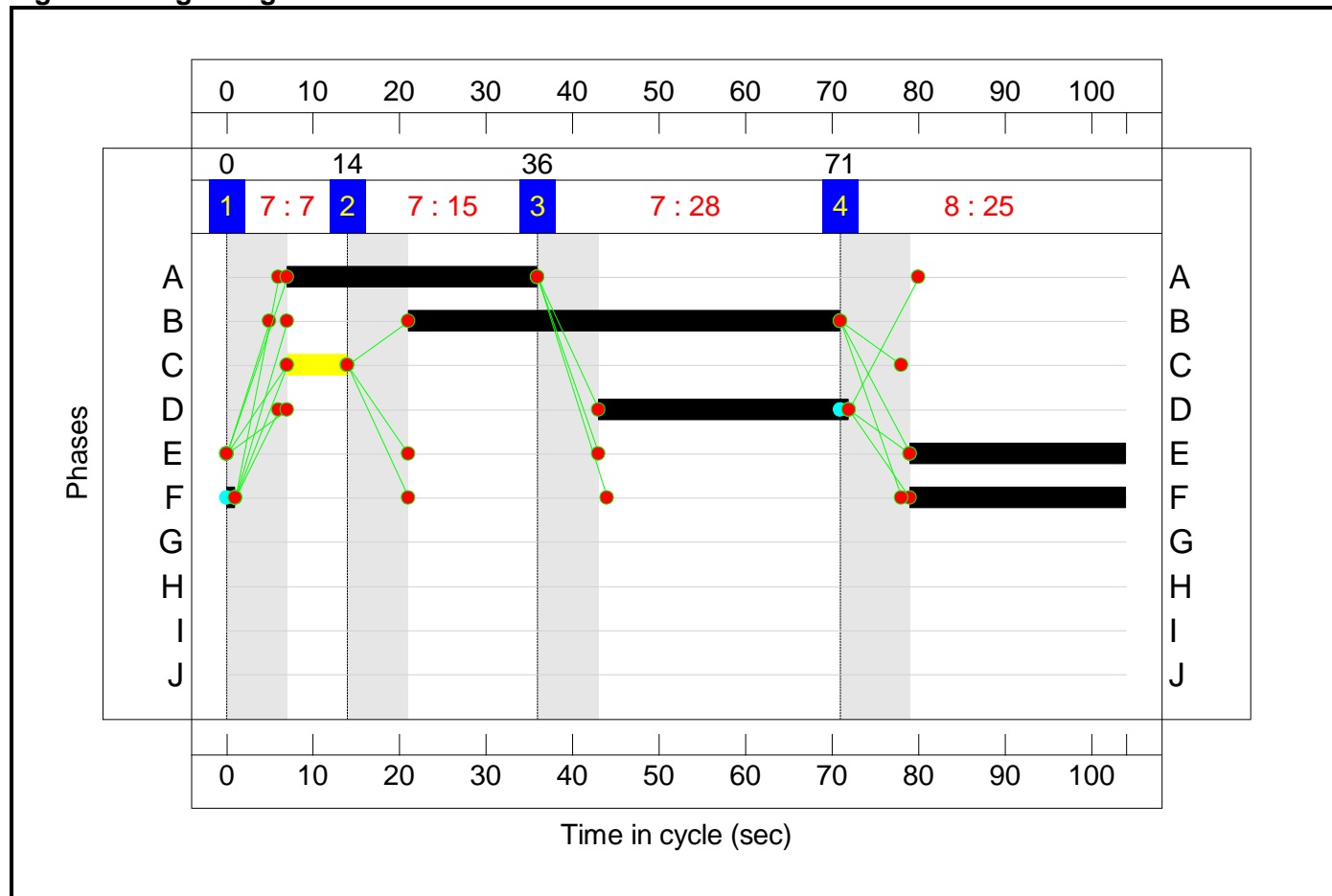
Stage Sequence Diagram



Stage Timings

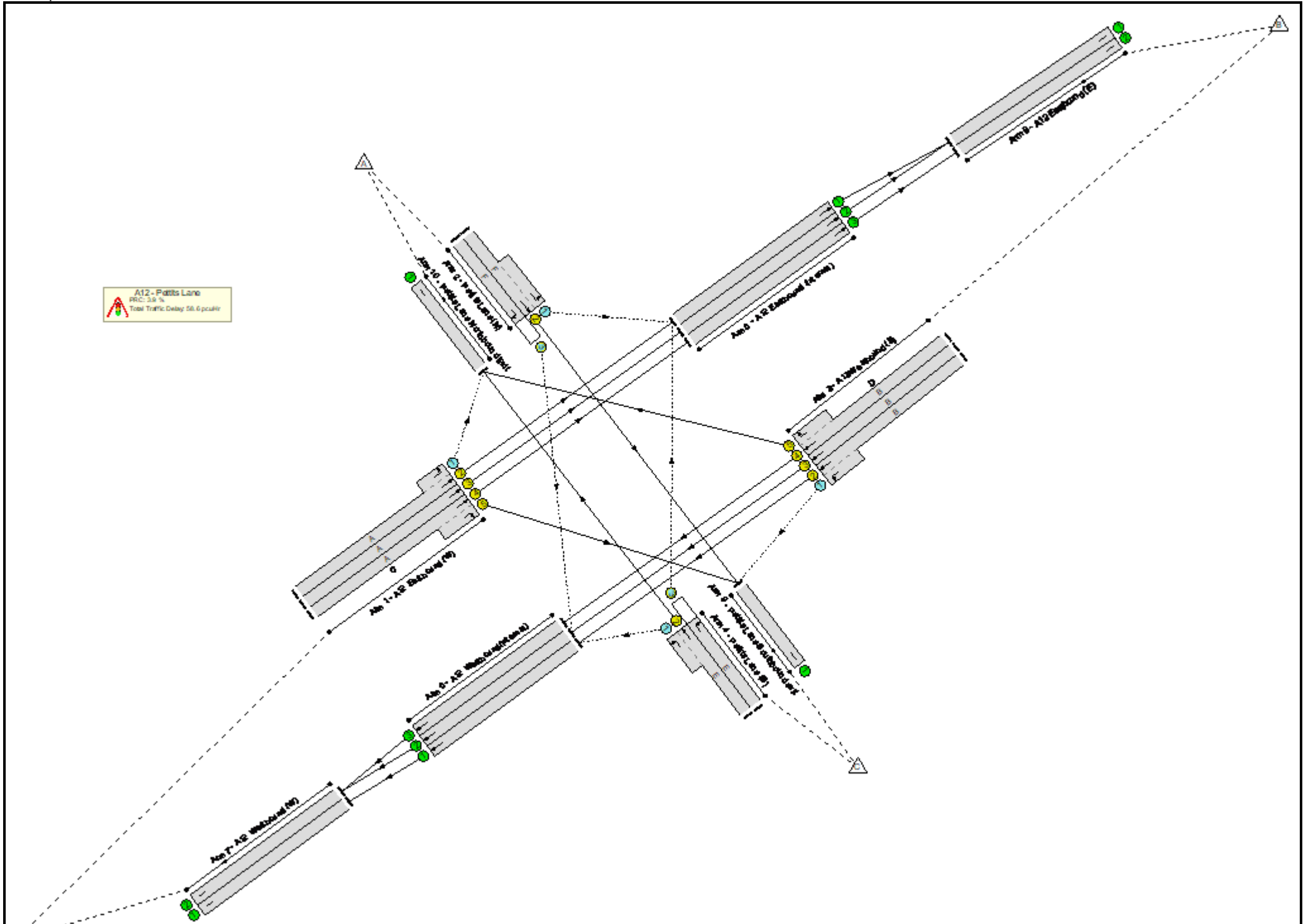
| Stage | 1 | 2 | 3 | 4 |
|--------------|---|----|----|----|
| Duration | 7 | 15 | 28 | 25 |
| Change Point | 0 | 14 | 36 | 71 |

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 | - | - | N/A | - | - | | - | - | - | - | - | - | 86.6% |
| A12 - Pettits Lane | - | - | N/A | - | - | | - | - | - | - | - | - | 86.6% |
| 1/2+1/1 | A12 Eastbound (W) Ahead Left | U+O | N/A | N/A | A - | | 1 | 29 | - | 499 | 1875:1923 | 475+107 | 85.7 : 85.7% |
| 1/3 | A12 Eastbound (W) Ahead | U | N/A | N/A | A | | 1 | 29 | - | 492 | 2005 | 578 | 85.1% |
| 1/4+1/5 | A12 Eastbound (W) Ahead Right | U | N/A | N/A | A C | | 1 | 29:7 | - | 536 | 2005:1955 | 495+124 | 86.6 : 86.6% |
| 2/2+2/1 | Pettits Lane (N) Left Ahead | U+O | N/A | N/A | F - | | 1 | 26 | - | 494 | 1955:1956 | 371+389 | 65.0 : 65.0% |
| 2/3 | Pettits Lane (N) Right | O | N/A | N/A | F | | 1 | 26 | - | 65 | 1955 | 195 | 33.4% |
| 3/2+3/1 | A12 Westbound (E) Ahead Left | U+O | N/A | N/A | B - | | 1 | 50 | - | 806 | 2035:1967 | 848+178 | 78.5 : 78.5% |
| 3/3 | A12 Westbound (E) Ahead | U | N/A | N/A | B | | 1 | 50 | - | 778 | 2065 | 1013 | 76.8% |
| 3/4+3/5 | A12 Westbound (E) Ahead Right | U | N/A | N/A | B D | | 1 | 50:29 | - | 438 | 2065:1772 | 0+511 | 0.0 : 85.7% |
| 4/2+4/1 | Pettits Lane (S) Left Ahead | U+O | N/A | N/A | E - | | 1 | 25 | - | 383 | 1925:2062 | 435+94 | 72.4 : 72.4% |
| 4/3 | Pettits Lane (S) Right | O | N/A | N/A | E | | 1 | 25 | - | 213 | 1965 | 251 | 84.9% |
| 5/1 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 873 | Inf | Inf | 0.0% |
| 5/2 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 492 | Inf | Inf | 0.0% |
| 5/3 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 429 | Inf | Inf | 0.0% |
| 6/1 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 734 | Inf | Inf | 0.0% |
| 6/2 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 843 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|------|-------------------------------|---|-----|-----|---|--|---|---|---|------|-----|-----|------|
| 6/3 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 0 | Inf | Inf | 0.0% |
| 7/1 | A12 Westbound (W) | U | N/A | N/A | - | | - | - | - | 734 | Inf | Inf | 0.0% |
| 7/2 | A12 Westbound (W) | U | N/A | N/A | - | | - | - | - | 843 | Inf | Inf | 0.0% |
| 8/1 | A12 Eastbound (E) | U | N/A | N/A | - | | - | - | - | 1365 | Inf | Inf | 0.0% |
| 8/2 | A12 Eastbound (E) | U | N/A | N/A | - | | - | - | - | 429 | Inf | Inf | 0.0% |
| 9/1 | Pettits Lane Southbound exit | U | N/A | N/A | - | | - | - | - | 488 | Inf | Inf | 0.0% |
| 10/1 | Pettits Lane Northbound Exit | U | N/A | N/A | - | | - | - | - | 845 | Inf | Inf | 0.0% |

Full Input Data And Results

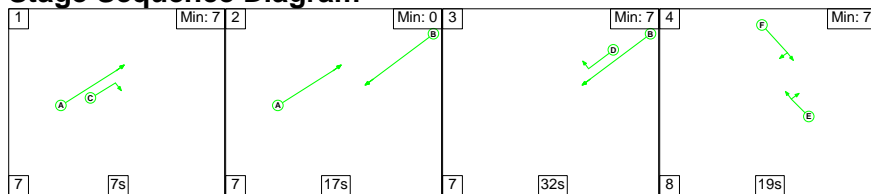
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|---------------------------|----------------|---------------|------------------------------|------------------------------|-----------------------------|--|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network | - | - | 353 | 445 | 33 | 38.2 | 19.7 | 0.7 | 58.6 | - | - | - | - |
| A12 - Pettits Lane | - | - | 353 | 445 | 33 | 38.2 | 19.7 | 0.7 | 58.6 | - | - | - | - |
| 1/2+1/1 | 499 | 499 | 0 | 92 | 0 | 4.8 | 2.8 | - | 7.7 | 55.3 | 12.7 | 2.8 | 15.5 |
| 1/3 | 492 | 492 | - | - | - | 4.8 | 2.7 | - | 7.4 | 54.5 | 13.4 | 2.7 | 16.1 |
| 1/4+1/5 | 536 | 536 | - | - | - | 6.7 | 3.0 | - | 9.7 | 65.0 | 13.3 | 3.0 | 16.4 |
| 2/2+2/1 | 494 | 494 | 51 | 202 | 0 | 2.6 | 0.9 | - | 3.5 | 25.4 | 5.8 | 0.9 | 6.7 |
| 2/3 | 65 | 65 | 64 | 0 | 1 | 0.5 | 0.2 | 0.3 | 1.0 | 57.5 | 1.4 | 0.2 | 1.7 |
| 3/2+3/1 | 806 | 806 | 24 | 116 | 0 | 4.3 | 1.8 | - | 6.1 | 27.4 | 18.2 | 1.8 | 20.0 |
| 3/3 | 778 | 778 | - | - | - | 4.7 | 1.6 | - | 6.3 | 29.2 | 18.4 | 1.6 | 20.0 |
| 3/4+3/5 | 438 | 438 | - | - | - | 4.3 | 2.8 | - | 7.0 | 57.8 | 11.9 | 2.8 | 14.7 |
| 4/2+4/1 | 383 | 383 | 33 | 35 | 0 | 3.4 | 1.3 | - | 4.7 | 44.0 | 8.9 | 1.3 | 10.2 |
| 4/3 | 213 | 213 | 181 | 0 | 32 | 2.2 | 2.5 | 0.5 | 5.2 | 87.4 | 5.9 | 2.5 | 8.3 |
| 5/1 | 873 | 873 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 492 | 492 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/3 | 429 | 429 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 734 | 734 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 843 | 843 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/3 | 0 | 0 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 734 | 734 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/2 | 843 | 843 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 1365 | 1365 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/2 | 429 | 429 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 488 | 488 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 845 | 845 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 3.9 | Total Delay for Signalled Lanes (pcuHr): | | 58.65 | Cycle Time (s): 104 | | | | |
| | | | PRC Over All Lanes (%): | | 3.9 | Total Delay Over All Lanes(pcuHr): | | 58.65 | | | | | |

Full Input Data And Results

Full Input Data And Results

Scenario 3: 'Reference Case 2030 AM' (FG3: 'Reference Case 2030 AM', Plan 1: 'Network Control Plan 1')

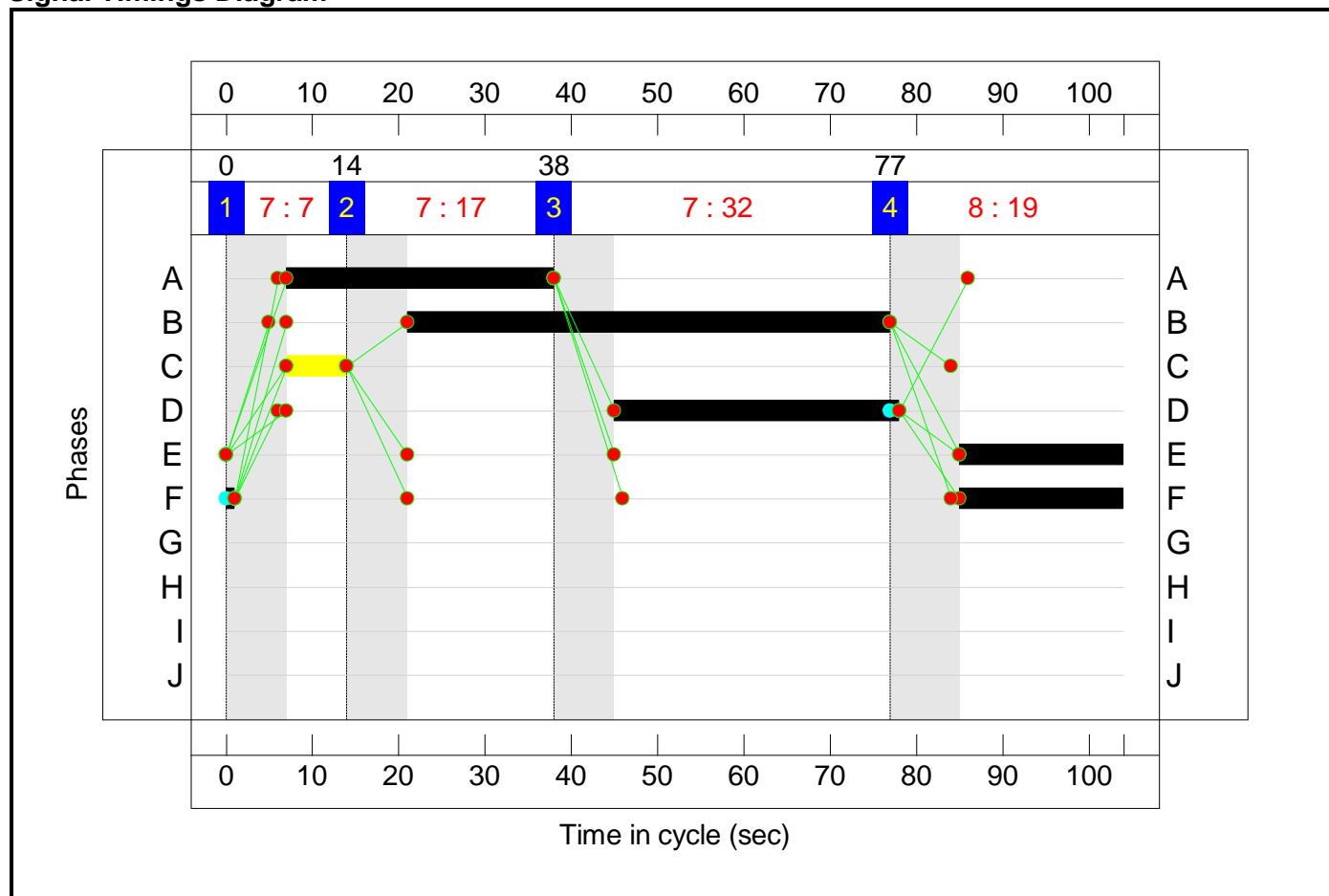
Stage Sequence Diagram



Stage Timings

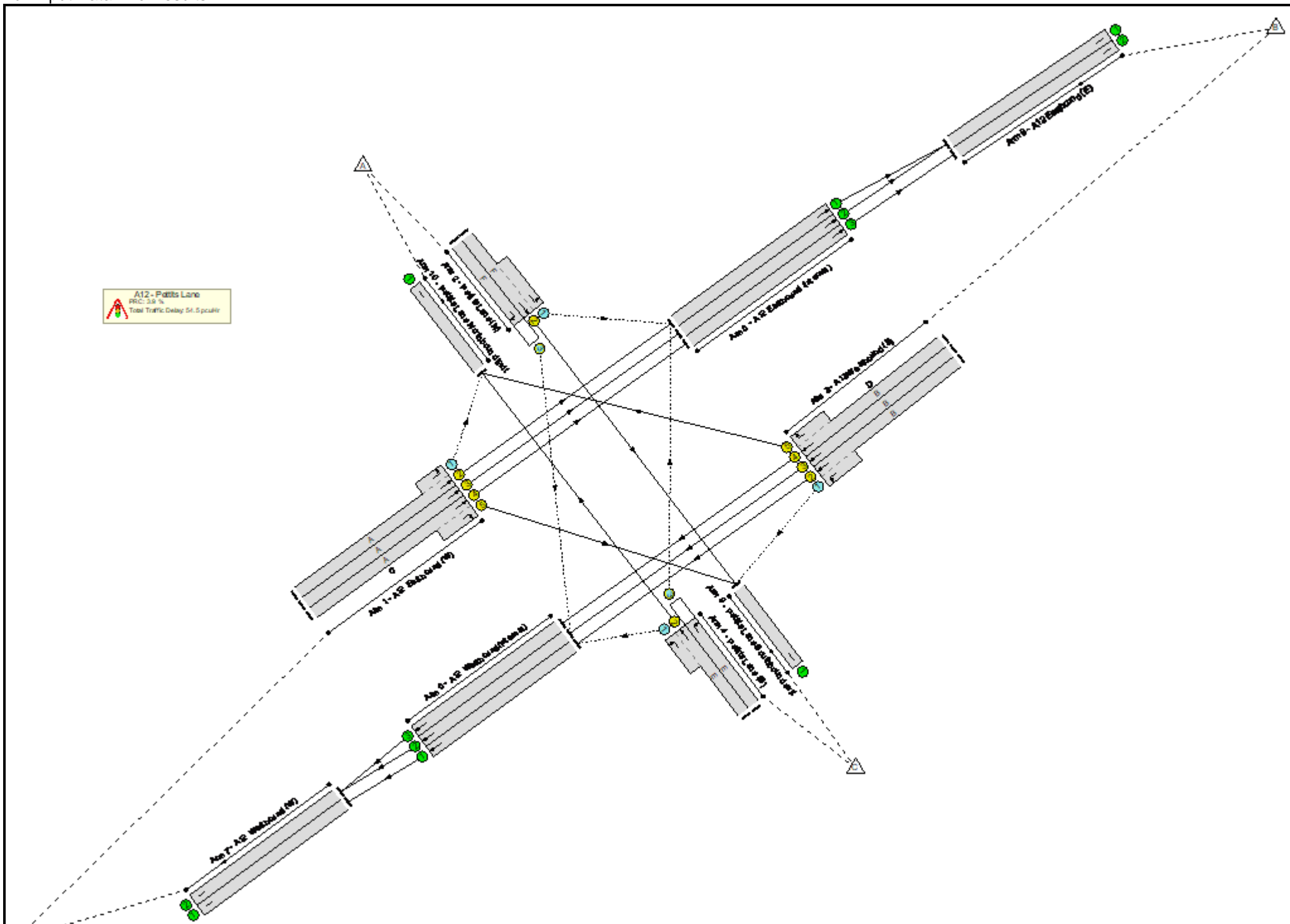
| Stage | 1 | 2 | 3 | 4 |
|--------------|---|----|----|----|
| Duration | 7 | 17 | 32 | 19 |
| Change Point | 0 | 14 | 38 | 77 |

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 | - | - | N/A | - | - | | - | - | - | - | - | - | 86.6% |
| A12 - Pettits Lane | - | - | N/A | - | - | | - | - | - | - | - | - | 86.6% |
| 1/2+1/1 | A12 Eastbound (W) Ahead Left | U+O | N/A | N/A | A - | | 1 | 31 | - | 511 | 1875:1923 | 537+67 | 84.6 : 84.6% |
| 1/3 | A12 Eastbound (W) Ahead | U | N/A | N/A | A | | 1 | 31 | - | 498 | 2005 | 617 | 80.7% |
| 1/4+1/5 | A12 Eastbound (W) Ahead Right | U | N/A | N/A | A C | | 1 | 31:7 | - | 562 | 2005:1955 | 536+116 | 86.2 : 86.2% |
| 2/2+2/1 | Pettits Lane (N) Left Ahead | U+O | N/A | N/A | F - | | 1 | 20 | - | 569 | 1955:1956 | 309+389 | 81.6 : 81.6% |
| 2/3 | Pettits Lane (N) Right | O | N/A | N/A | F | | 1 | 20 | - | 53 | 1955 | 210 | 25.3% |
| 3/2+3/1 | A12 Westbound (E) Ahead Left | U+O | N/A | N/A | B - | | 1 | 56 | - | 878 | 2035:1967 | 873+288 | 75.6 : 75.6% |
| 3/3 | A12 Westbound (E) Ahead | U | N/A | N/A | B | | 1 | 56 | - | 753 | 2065 | 1132 | 66.5% |
| 3/4+3/5 | A12 Westbound (E) Ahead Right | U | N/A | N/A | B D | | 1 | 56:33 | - | 600 | 2065:1772 | 237+456 | 86.6 : 86.6% |
| 4/2+4/1 | Pettits Lane (S) Left Ahead | U+O | N/A | N/A | E - | | 1 | 19 | - | 230 | 1925:2062 | 351+55 | 56.7 : 56.7% |
| 4/3 | Pettits Lane (S) Right | O | N/A | N/A | E | | 1 | 19 | - | 139 | 1965 | 161 | 86.6% |
| 5/1 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 910 | Inf | Inf | 0.0% |
| 5/2 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 498 | Inf | Inf | 0.0% |
| 5/3 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 462 | Inf | Inf | 0.0% |
| 6/1 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 691 | Inf | Inf | 0.0% |
| 6/2 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 806 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|------|-------------------------------|---|-----|-----|---|--|---|---|---|------|-----|-----|------|
| 6/3 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 205 | Inf | Inf | 0.0% |
| 7/1 | A12 Westbound (W) | U | N/A | N/A | - | | - | - | - | 691 | Inf | Inf | 0.0% |
| 7/2 | A12 Westbound (W) | U | N/A | N/A | - | | - | - | - | 1011 | Inf | Inf | 0.0% |
| 8/1 | A12 Eastbound (E) | U | N/A | N/A | - | | - | - | - | 1408 | Inf | Inf | 0.0% |
| 8/2 | A12 Eastbound (E) | U | N/A | N/A | - | | - | - | - | 462 | Inf | Inf | 0.0% |
| 9/1 | Pettits Lane Southbound exit | U | N/A | N/A | - | | - | - | - | 570 | Inf | Inf | 0.0% |
| 10/1 | Pettits Lane Northbound Exit | U | N/A | N/A | - | | - | - | - | 651 | Inf | Inf | 0.0% |

Full Input Data And Results

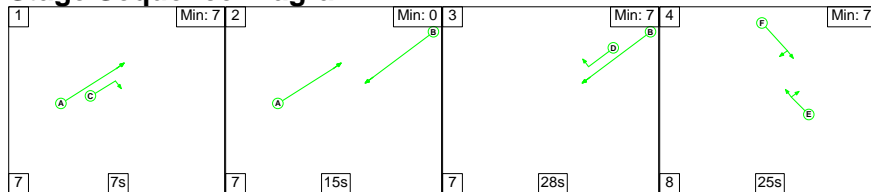
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|---------------------------|----------------|---------------|------------------------------|------------------------------|-----------------------------|--|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network | - | - | 246 | 525 | 44 | 35.3 | 18.7 | 0.5 | 54.5 | - | - | - | - |
| A12 - Pettits Lane | - | - | 246 | 525 | 44 | 35.3 | 18.7 | 0.5 | 54.5 | - | - | - | - |
| 1/2+1/1 | 511 | 511 | 0 | 57 | 0 | 4.9 | 2.6 | - | 7.5 | 52.7 | 13.2 | 2.6 | 15.8 |
| 1/3 | 498 | 498 | - | - | - | 4.6 | 2.0 | - | 6.6 | 47.8 | 13.1 | 2.0 | 15.2 |
| 1/4+1/5 | 562 | 562 | - | - | - | 6.7 | 2.9 | - | 9.6 | 61.7 | 14.1 | 2.9 | 17.0 |
| 2/2+2/1 | 569 | 569 | 54 | 263 | 0 | 3.2 | 2.1 | - | 5.4 | 33.9 | 6.7 | 2.1 | 8.8 |
| 2/3 | 53 | 53 | 52 | 0 | 1 | 0.5 | 0.2 | 0.1 | 0.8 | 54.0 | 1.3 | 0.2 | 1.4 |
| 3/2+3/1 | 878 | 878 | 38 | 180 | 0 | 3.6 | 1.5 | - | 5.1 | 21.0 | 17.4 | 1.5 | 19.0 |
| 3/3 | 753 | 753 | - | - | - | 3.5 | 1.0 | - | 4.5 | 21.4 | 15.3 | 1.0 | 16.3 |
| 3/4+3/5 | 600 | 600 | - | - | - | 4.6 | 3.0 | - | 7.6 | 45.7 | 13.4 | 3.0 | 16.4 |
| 4/2+4/1 | 230 | 230 | 6 | 25 | 0 | 2.2 | 0.7 | - | 2.9 | 45.1 | 5.2 | 0.7 | 5.8 |
| 4/3 | 139 | 139 | 96 | 0 | 43 | 1.5 | 2.6 | 0.4 | 4.5 | 116.8 | 3.9 | 2.6 | 6.5 |
| 5/1 | 910 | 910 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 498 | 498 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/3 | 462 | 462 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 691 | 691 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 806 | 806 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/3 | 205 | 205 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 691 | 691 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/2 | 1011 | 1011 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 1408 | 1408 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/2 | 462 | 462 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 570 | 570 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 651 | 651 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 3.9 | Total Delay for Signalled Lanes (pcuHr): | | 54.49 | Cycle Time (s): 104 | | | | |
| | | | PRC Over All Lanes (%): | | 3.9 | Total Delay Over All Lanes(pcuHr): | | 54.49 | | | | | |

Full Input Data And Results

Full Input Data And Results

Scenario 4: 'Reference Case 2030 PM' (FG4: 'Reference Case 2030 PM', Plan 1: 'Network Control Plan 1')

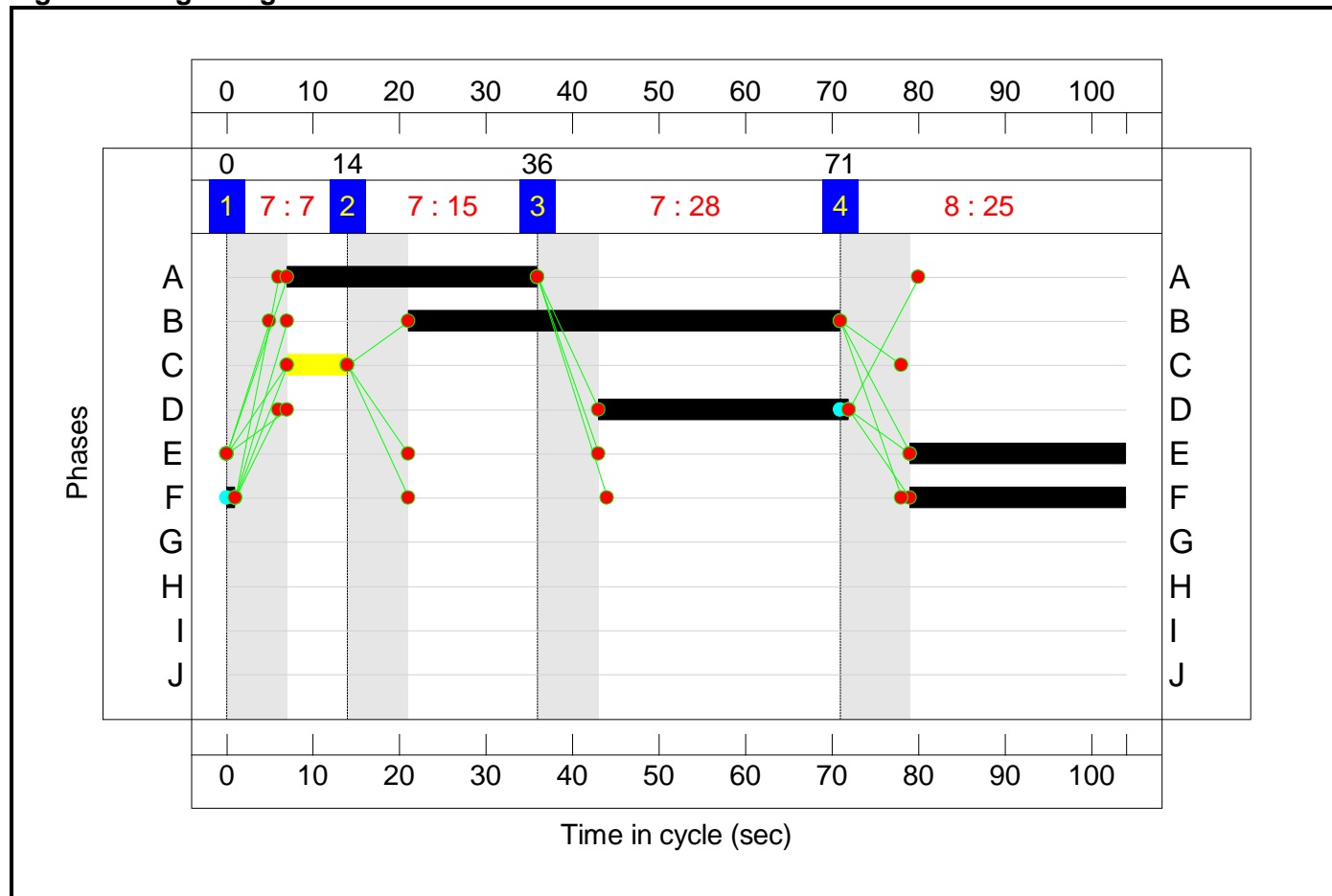
Stage Sequence Diagram



Stage Timings

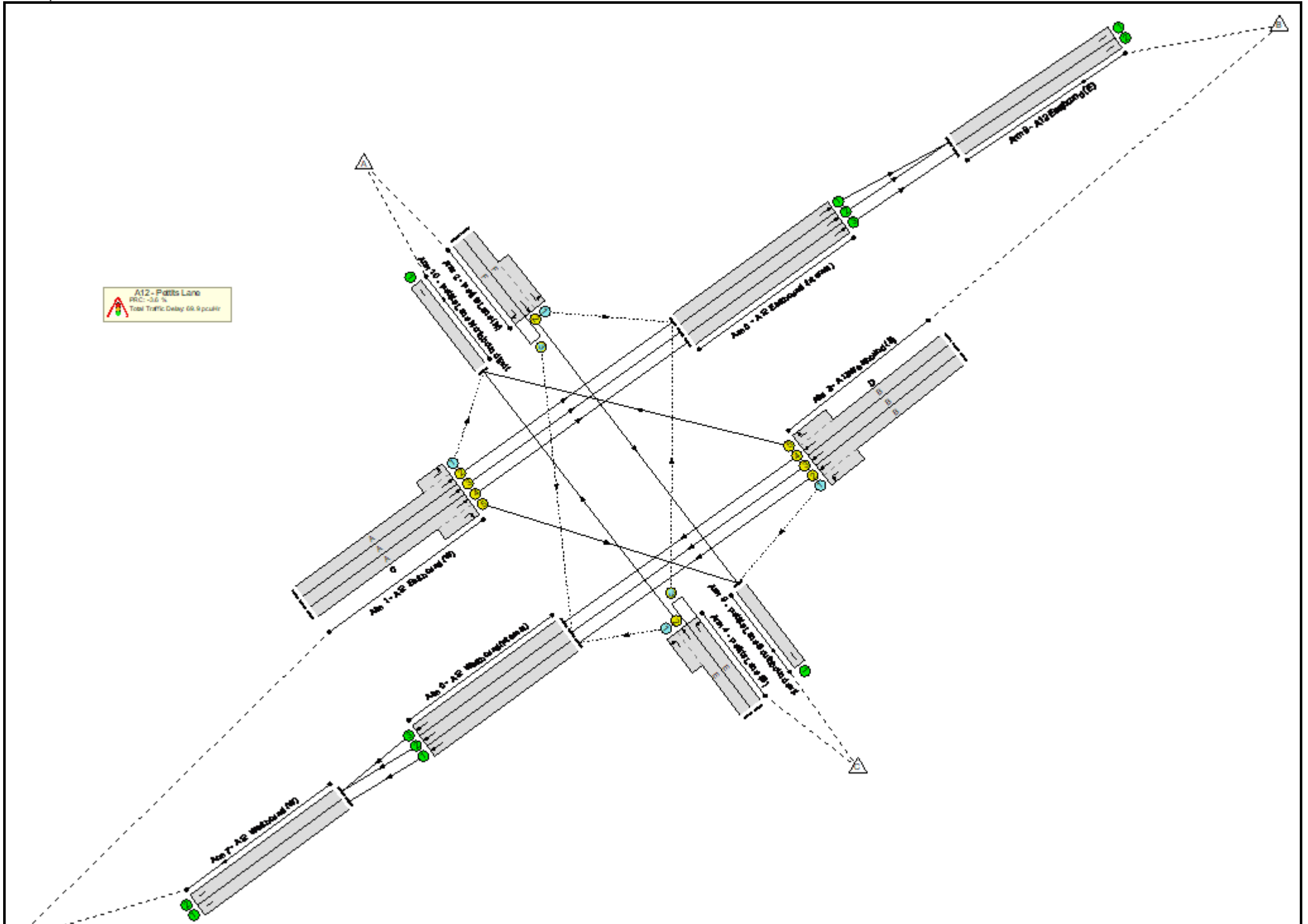
| Stage | 1 | 2 | 3 | 4 |
|--------------|---|----|----|----|
| Duration | 7 | 15 | 28 | 25 |
| Change Point | 0 | 14 | 36 | 71 |

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 | - | - | N/A | - | - | | - | - | - | - | - | - | 93.2% |
| A12 - Pettits Lane | - | - | N/A | - | - | | - | - | - | - | - | - | 93.2% |
| 1/2+1/1 | A12 Eastbound (W) Ahead Left | U+O | N/A | N/A | A - | | 1 | 29 | - | 525 | 1875:1923 | 475+108 | 90.2 : 90.2% |
| 1/3 | A12 Eastbound (W) Ahead | U | N/A | N/A | A | | 1 | 29 | - | 519 | 2005 | 578 | 89.7% |
| 1/4+1/5 | A12 Eastbound (W) Ahead Right | U | N/A | N/A | A C | | 1 | 29:7 | - | 563 | 2005:1955 | 495+124 | 90.9 : 90.9% |
| 2/2+2/1 | Pettits Lane (N) Left Ahead | U+O | N/A | N/A | F - | | 1 | 26 | - | 520 | 1955:1956 | 371+388 | 68.5 : 68.5% |
| 2/3 | Pettits Lane (N) Right | O | N/A | N/A | F | | 1 | 26 | - | 68 | 1955 | 180 | 37.8% |
| 3/2+3/1 | A12 Westbound (E) Ahead Left | U+O | N/A | N/A | B - | | 1 | 50 | - | 845 | 2035:1967 | 848+179 | 82.3 : 82.3% |
| 3/3 | A12 Westbound (E) Ahead | U | N/A | N/A | B | | 1 | 50 | - | 821 | 2065 | 1013 | 81.1% |
| 3/4+3/5 | A12 Westbound (E) Ahead Right | U | N/A | N/A | B D | | 1 | 50:29 | - | 461 | 2065:1772 | 0+511 | 0.0 : 90.2% |
| 4/2+4/1 | Pettits Lane (S) Left Ahead | U+O | N/A | N/A | E - | | 1 | 25 | - | 403 | 1925:2062 | 435+95 | 76.2 : 76.2% |
| 4/3 | Pettits Lane (S) Right | O | N/A | N/A | E | | 1 | 25 | - | 224 | 1965 | 240 | 93.2% |
| 5/1 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 918 | Inf | Inf | 0.0% |
| 5/2 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 519 | Inf | Inf | 0.0% |
| 5/3 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 450 | Inf | Inf | 0.0% |
| 6/1 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 770 | Inf | Inf | 0.0% |
| 6/2 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 889 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|------|-------------------------------|---|-----|-----|---|--|---|---|---|------|-----|-----|------|
| 6/3 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 0 | Inf | Inf | 0.0% |
| 7/1 | A12 Westbound (W) | U | N/A | N/A | - | | - | - | - | 770 | Inf | Inf | 0.0% |
| 7/2 | A12 Westbound (W) | U | N/A | N/A | - | | - | - | - | 889 | Inf | Inf | 0.0% |
| 8/1 | A12 Eastbound (E) | U | N/A | N/A | - | | - | - | - | 1437 | Inf | Inf | 0.0% |
| 8/2 | A12 Eastbound (E) | U | N/A | N/A | - | | - | - | - | 450 | Inf | Inf | 0.0% |
| 9/1 | Pettits Lane Southbound exit | U | N/A | N/A | - | | - | - | - | 514 | Inf | Inf | 0.0% |
| 10/1 | Pettits Lane Northbound Exit | U | N/A | N/A | - | | - | - | - | 889 | Inf | Inf | 0.0% |

Full Input Data And Results

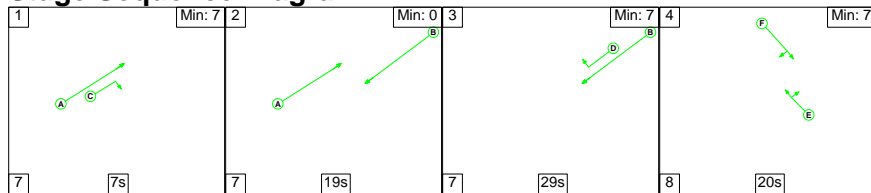
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|---------------------------|----------------|---------------|------------------------------|------------------------------|--|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network | - | - | 352 | 466 | 55 | 41.2 | 28.0 | 0.8 | 69.9 | - | - | - | - |
| A12 - Pettits Lane | - | - | 352 | 466 | 55 | 41.2 | 28.0 | 0.8 | 69.9 | - | - | - | - |
| 1/2+1/1 | 525 | 525 | 0 | 97 | 0 | 5.2 | 4.0 | - | 9.3 | 63.6 | 13.7 | 4.0 | 17.7 |
| 1/3 | 519 | 519 | - | - | - | 5.1 | 3.9 | - | 9.0 | 62.3 | 14.3 | 3.9 | 18.1 |
| 1/4+1/5 | 563 | 563 | - | - | - | 7.2 | 4.3 | - | 11.5 | 73.4 | 14.2 | 4.3 | 18.6 |
| 2/2+2/1 | 520 | 520 | 56 | 210 | 0 | 2.7 | 1.1 | - | 3.8 | 26.3 | 6.2 | 1.1 | 7.3 |
| 2/3 | 68 | 68 | 67 | 0 | 1 | 0.6 | 0.3 | 0.3 | 1.2 | 61.0 | 1.5 | 0.3 | 1.8 |
| 3/2+3/1 | 845 | 845 | 24 | 123 | 0 | 4.7 | 2.3 | - | 7.0 | 29.8 | 19.6 | 2.3 | 21.8 |
| 3/3 | 821 | 821 | - | - | - | 5.1 | 2.1 | - | 7.2 | 31.6 | 19.8 | 2.1 | 21.9 |
| 3/4+3/5 | 461 | 461 | - | - | - | 4.6 | 4.0 | - | 8.5 | 66.6 | 12.8 | 4.0 | 16.8 |
| 4/2+4/1 | 403 | 403 | 36 | 36 | 0 | 3.6 | 1.6 | - | 5.2 | 46.2 | 9.6 | 1.6 | 11.1 |
| 4/3 | 224 | 224 | 170 | 0 | 54 | 2.4 | 4.5 | 0.5 | 7.4 | 118.2 | 6.3 | 4.5 | 10.8 |
| 5/1 | 918 | 918 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 519 | 519 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/3 | 450 | 450 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 770 | 770 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 889 | 889 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/3 | 0 | 0 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 770 | 770 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/2 | 889 | 889 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 1437 | 1437 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/2 | 450 | 450 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 514 | 514 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 889 | 889 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | -3.6 | Total Delay for Signalled Lanes (pcuHr): | | | 69.94 | Cycle Time (s): 104 | | | | |
| | | | PRC Over All Lanes (%): | -3.6 | Total Delay Over All Lanes(pcuHr): | | | 69.94 | | | | | |

Full Input Data And Results

Full Input Data And Results

Scenario 5: 'Do Something 2030 + LTC AM' (FG7: 'Do Something 2030 + LTC AM', Plan 1: 'Network Control Plan 1')

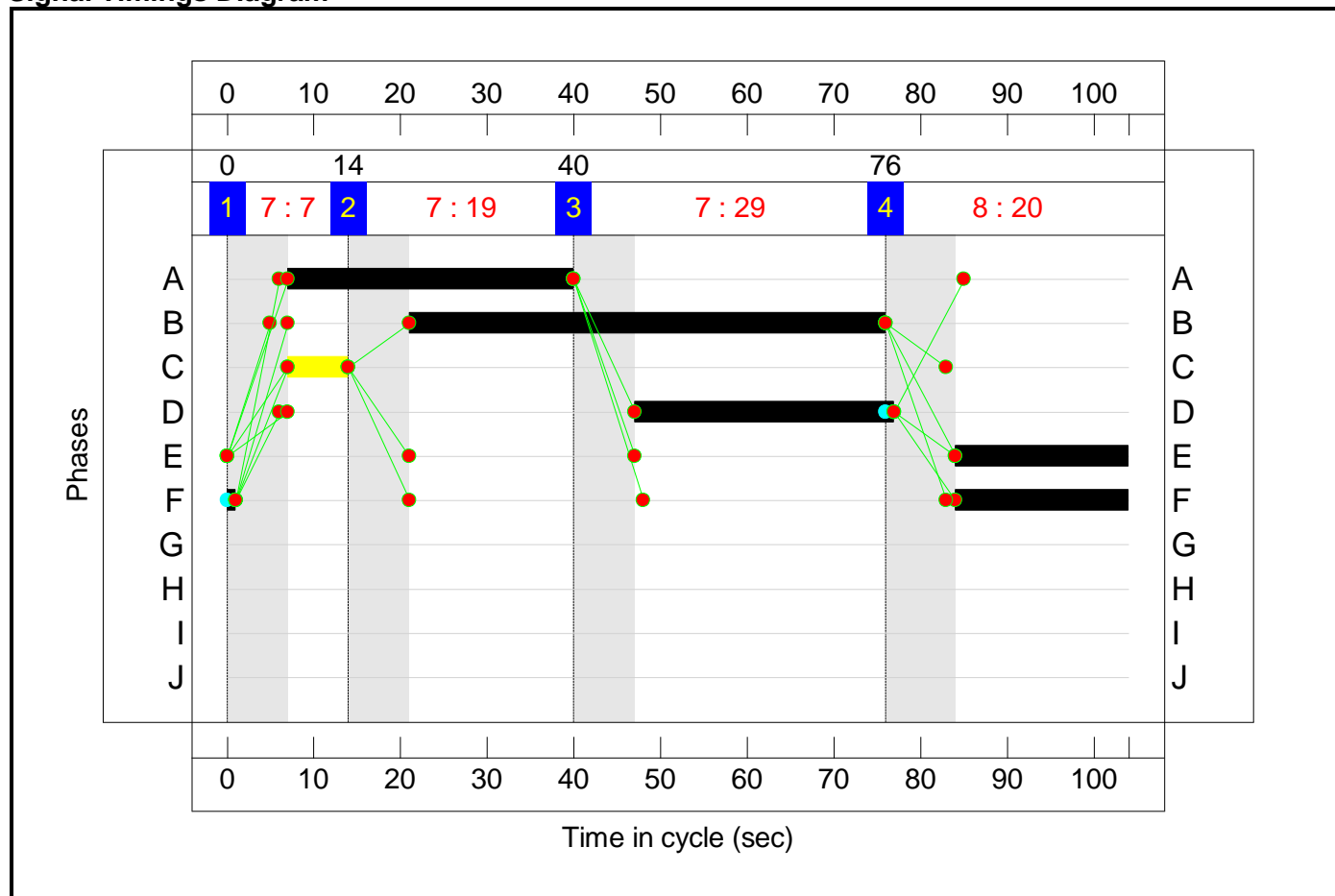
Stage Sequence Diagram



Stage Timings

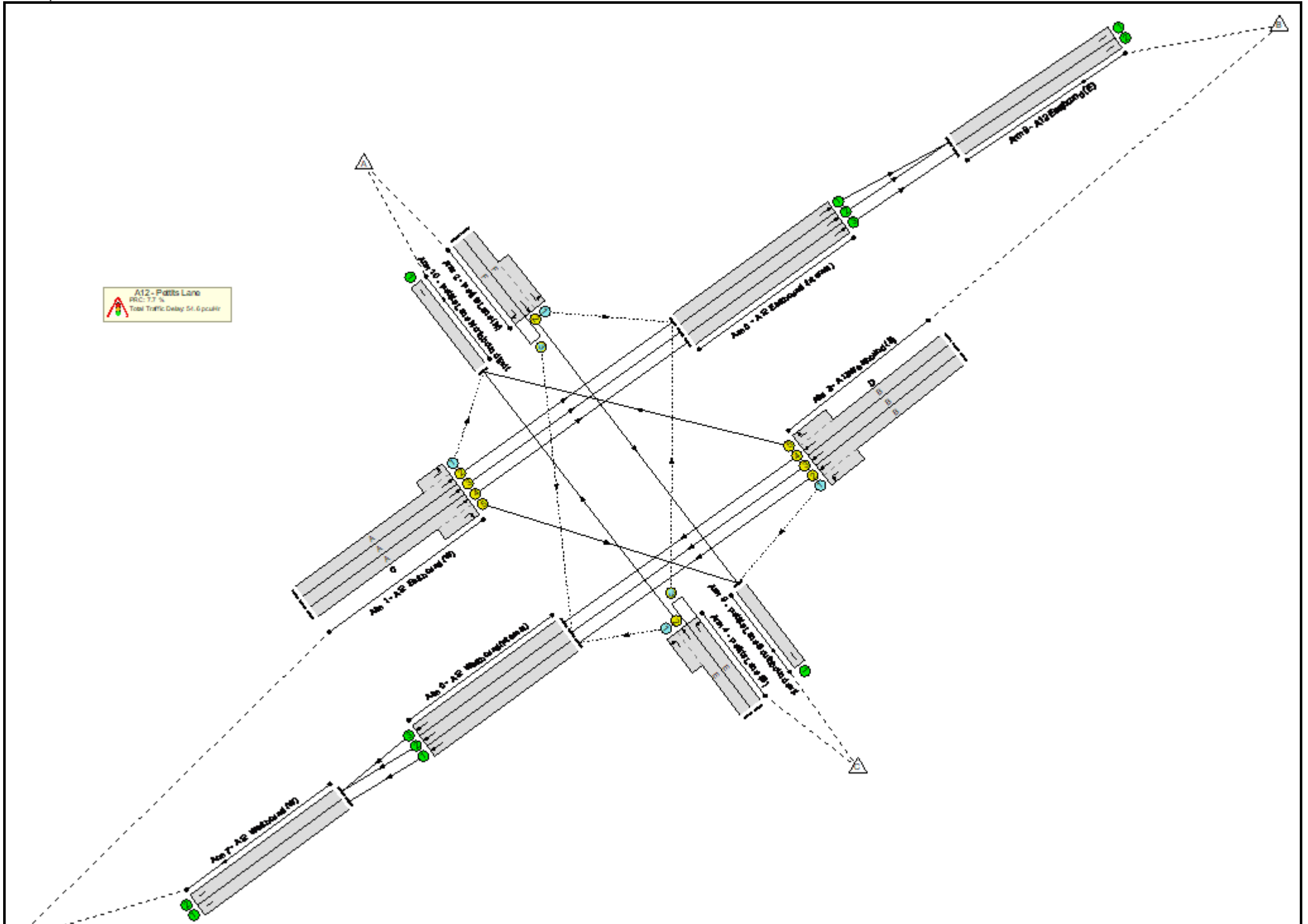
| Stage | 1 | 2 | 3 | 4 |
|--------------|---|----|----|----|
| Duration | 7 | 19 | 29 | 20 |
| Change Point | 0 | 14 | 40 | 76 |

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 | - | - | N/A | - | - | | - | - | - | - | - | - | 83.5% |
| A12 - Pettits Lane | - | - | N/A | - | - | | - | - | - | - | - | - | 83.5% |
| 1/2+1/1 | A12 Eastbound (W) Ahead Left | U+O | N/A | N/A | A - | | 1 | 33 | - | 512 | 1875:1923 | 570+70 | 80.0 : 80.0% |
| 1/3 | A12 Eastbound (W) Ahead | U | N/A | N/A | A | | 1 | 33 | - | 524 | 2005 | 655 | 79.9% |
| 1/4+1/5 | A12 Eastbound (W) Ahead Right | U | N/A | N/A | A C | | 1 | 33:7 | - | 555 | 2005:1955 | 580+105 | 81.1 : 81.1% |
| 2/2+2/1 | Pettits Lane (N) Left Ahead | U+O | N/A | N/A | F - | | 1 | 21 | - | 630 | 1955:1956 | 310+468 | 81.0 : 81.0% |
| 2/3 | Pettits Lane (N) Right | O | N/A | N/A | F | | 1 | 21 | - | 39 | 1955 | 216 | 18.0% |
| 3/2+3/1 | A12 Westbound (E) Ahead Left | U+O | N/A | N/A | B - | | 1 | 55 | - | 950 | 2035:1967 | 875+262 | 83.5 : 83.5% |
| 3/3 | A12 Westbound (E) Ahead | U | N/A | N/A | B | | 1 | 55 | - | 905 | 2065 | 1112 | 81.4% |
| 3/4+3/5 | A12 Westbound (E) Ahead Right | U | N/A | N/A | B D | | 1 | 55:30 | - | 440 | 2065:1772 | 7+527 | 82.4 : 82.4% |
| 4/2+4/1 | Pettits Lane (S) Left Ahead | U+O | N/A | N/A | E - | | 1 | 20 | - | 242 | 1925:2062 | 368+54 | 57.3 : 57.3% |
| 4/3 | Pettits Lane (S) Right | O | N/A | N/A | E | | 1 | 20 | - | 144 | 1965 | 179 | 80.3% |
| 5/1 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 979 | Inf | Inf | 0.0% |
| 5/2 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 524 | Inf | Inf | 0.0% |
| 5/3 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 470 | Inf | Inf | 0.0% |
| 6/1 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 762 | Inf | Inf | 0.0% |
| 6/2 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 944 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|------|-------------------------------|---|-----|-----|---|--|---|---|---|------|-----|-----|------|
| 6/3 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 6 | Inf | Inf | 0.0% |
| 7/1 | A12 Westbound (W) | U | N/A | N/A | - | | - | - | - | 762 | Inf | Inf | 0.0% |
| 7/2 | A12 Westbound (W) | U | N/A | N/A | - | | - | - | - | 950 | Inf | Inf | 0.0% |
| 8/1 | A12 Eastbound (E) | U | N/A | N/A | - | | - | - | - | 1503 | Inf | Inf | 0.0% |
| 8/2 | A12 Eastbound (E) | U | N/A | N/A | - | | - | - | - | 470 | Inf | Inf | 0.0% |
| 9/1 | Pettits Lane Southbound exit | U | N/A | N/A | - | | - | - | - | 555 | Inf | Inf | 0.0% |
| 10/1 | Pettits Lane Northbound Exit | U | N/A | N/A | - | | - | - | - | 701 | Inf | Inf | 0.0% |

Full Input Data And Results

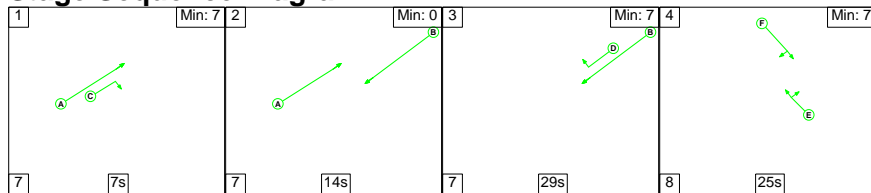
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|---------------------------|----------------|---------------|----------------------------------|------------------------------|-----------------------------|--|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network | - | - | 252 | 582 | 34 | 36.6 | 17.5 | 0.5 | 54.6 | - | - | - | - |
| A12 - Pettits Lane | - | - | 252 | 582 | 34 | 36.6 | 17.5 | 0.5 | 54.6 | - | - | - | - |
| 1/2+1/1 | 512 | 512 | 0 | 56 | 0 | 4.6 | 1.9 | - | 6.6 | 46.2 | 13.0 | 1.9 | 15.0 |
| 1/3 | 524 | 524 | - | - | - | 4.6 | 1.9 | - | 6.6 | 45.2 | 13.7 | 1.9 | 15.6 |
| 1/4+1/5 | 555 | 555 | - | - | - | 6.1 | 2.1 | - | 8.2 | 53.2 | 13.6 | 2.1 | 15.7 |
| 2/2+2/1 | 630 | 630 | 64 | 315 | 0 | 3.4 | 2.1 | - | 5.5 | 31.3 | 6.6 | 2.1 | 8.6 |
| 2/3 | 39 | 39 | 38 | 0 | 1 | 0.4 | 0.1 | 0.1 | 0.6 | 51.6 | 0.9 | 0.1 | 1.0 |
| 3/2+3/1 | 950 | 950 | 33 | 186 | 0 | 4.5 | 2.5 | - | 7.0 | 26.4 | 21.1 | 2.5 | 23.6 |
| 3/3 | 905 | 905 | - | - | - | 5.0 | 2.1 | - | 7.1 | 28.2 | 21.4 | 2.1 | 23.5 |
| 3/4+3/5 | 440 | 440 | - | - | - | 4.1 | 2.2 | - | 6.4 | 52.1 | 11.7 | 2.2 | 13.9 |
| 4/2+4/1 | 242 | 242 | 7 | 24 | 0 | 2.3 | 0.7 | - | 3.0 | 44.3 | 5.5 | 0.7 | 6.1 |
| 4/3 | 144 | 144 | 111 | 0 | 33 | 1.5 | 1.8 | 0.4 | 3.8 | 94.4 | 4.0 | 1.8 | 5.9 |
| 5/1 | 979 | 979 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 524 | 524 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/3 | 470 | 470 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 762 | 762 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 944 | 944 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/3 | 6 | 6 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 762 | 762 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/2 | 950 | 950 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 1503 | 1503 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/2 | 470 | 470 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 555 | 555 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 701 | 701 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): 7.7 | | 7.7 | Total Delay for Signalled Lanes (pcuHr): 54.57 | | 54.57 | Cycle Time (s): 104 | | | | |
| | | | PRC Over All Lanes (%): 7.7 | | 7.7 | Total Delay Over All Lanes(pcuHr): 54.57 | | 54.57 | | | | | |

Full Input Data And Results

Full Input Data And Results

Scenario 6: 'Do Something 2030 + LTC PM' (FG8: 'Do Something 2030 + LTC PM', Plan 1: 'Network Control Plan 1')

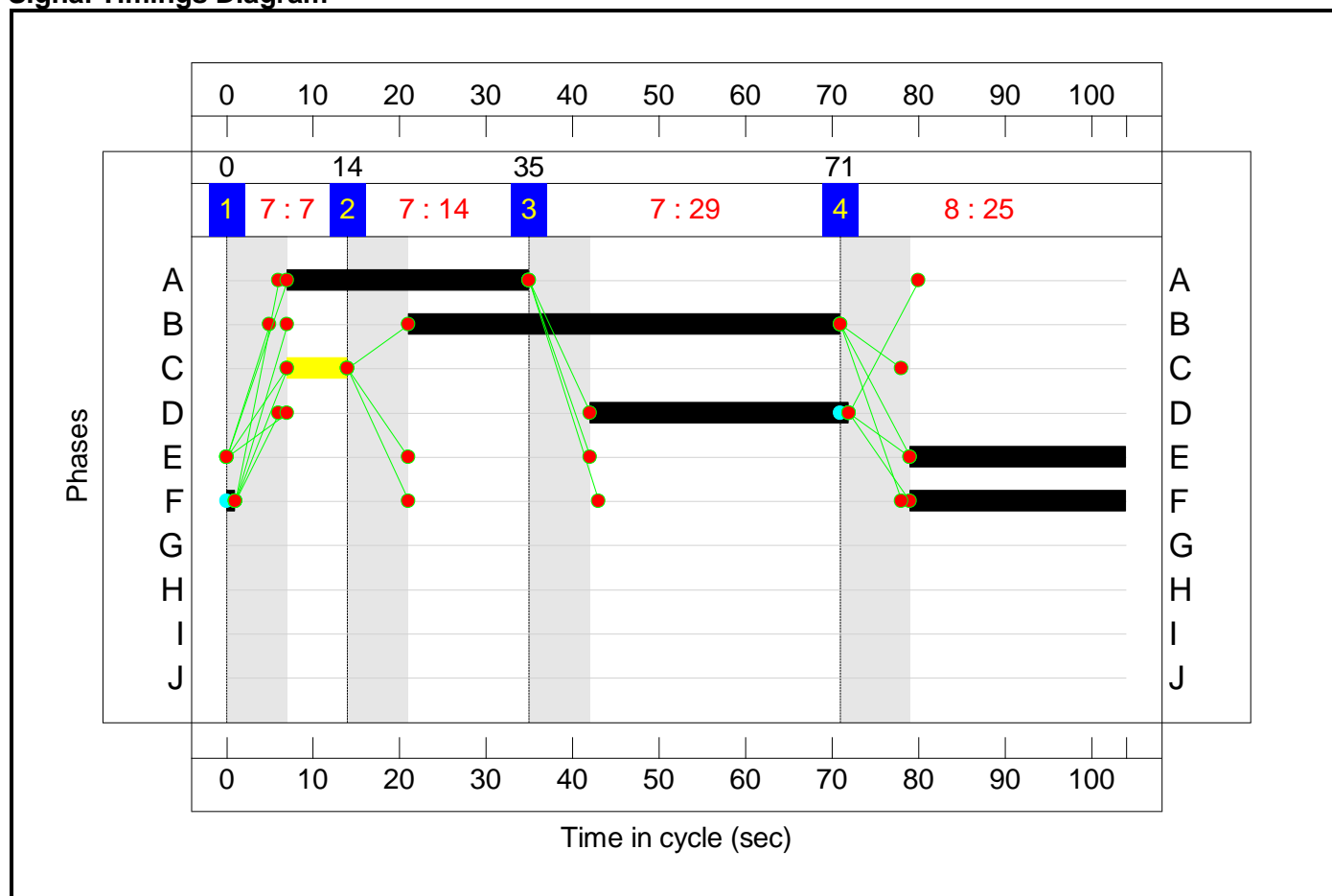
Stage Sequence Diagram



Stage Timings

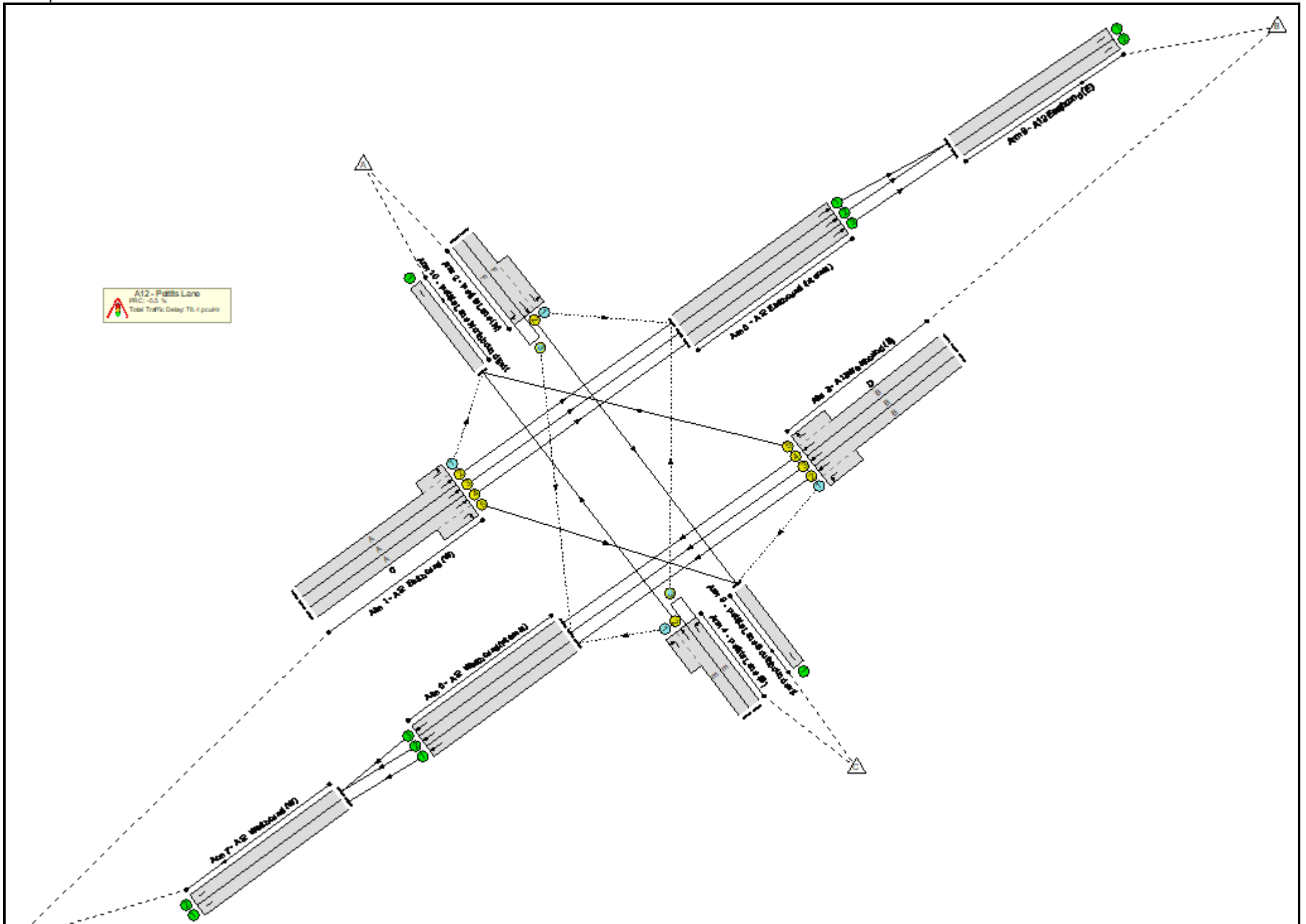
| Stage | 1 | 2 | 3 | 4 |
|--------------|---|----|----|----|
| Duration | 7 | 14 | 29 | 25 |
| Change Point | 0 | 14 | 35 | 71 |

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 | - | - | N/A | - | - | | - | - | - | - | - | - | 94.9% |
| A12 - Pettits Lane | - | - | N/A | - | - | | - | - | - | - | - | - | 94.9% |
| 1/2+1/1 | A12 Eastbound (W) Ahead Left | U+O | N/A | N/A | A - | | 1 | 28 | - | 531 | 1875:1923 | 461+102 | 94.3 : 94.3% |
| 1/3 | A12 Eastbound (W) Ahead | U | N/A | N/A | A | | 1 | 28 | - | 525 | 2005 | 559 | 93.9% |
| 1/4+1/5 | A12 Eastbound (W) Ahead Right | U | N/A | N/A | A C | | 1 | 28:7 | - | 568 | 2005:1955 | 482+116 | 94.9 : 94.9% |
| 2/2+2/1 | Pettits Lane (N) Left Ahead | U+O | N/A | N/A | F - | | 1 | 26 | - | 542 | 1955:1956 | 365+417 | 69.3 : 69.3% |
| 2/3 | Pettits Lane (N) Right | O | N/A | N/A | F | | 1 | 26 | - | 69 | 1955 | 178 | 38.8% |
| 3/2+3/1 | A12 Westbound (E) Ahead Left | U+O | N/A | N/A | B - | | 1 | 50 | - | 842 | 2035:1967 | 847+179 | 82.0 : 82.0% |
| 3/3 | A12 Westbound (E) Ahead | U | N/A | N/A | B | | 1 | 50 | - | 816 | 2065 | 1013 | 80.6% |
| 3/4+3/5 | A12 Westbound (E) Ahead Right | U | N/A | N/A | B D | | 1 | 50:30 | - | 492 | 2065:1772 | 0+528 | 0.0 : 93.1% |
| 4/2+4/1 | Pettits Lane (S) Left Ahead | U+O | N/A | N/A | E - | | 1 | 25 | - | 408 | 1925:2062 | 432+99 | 76.8 : 76.8% |
| 4/3 | Pettits Lane (S) Right | O | N/A | N/A | E | | 1 | 25 | - | 226 | 1965 | 241 | 93.7% |
| 5/1 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 950 | Inf | Inf | 0.0% |
| 5/2 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 525 | Inf | Inf | 0.0% |
| 5/3 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 458 | Inf | Inf | 0.0% |
| 6/1 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 771 | Inf | Inf | 0.0% |
| 6/2 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 885 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|------|-------------------------------|---|-----|-----|---|--|---|---|---|------|-----|-----|------|
| 6/3 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 0 | Inf | Inf | 0.0% |
| 7/1 | A12 Westbound (W) | U | N/A | N/A | - | | - | - | - | 771 | Inf | Inf | 0.0% |
| 7/2 | A12 Westbound (W) | U | N/A | N/A | - | | - | - | - | 885 | Inf | Inf | 0.0% |
| 8/1 | A12 Eastbound (E) | U | N/A | N/A | - | | - | - | - | 1475 | Inf | Inf | 0.0% |
| 8/2 | A12 Eastbound (E) | U | N/A | N/A | - | | - | - | - | 458 | Inf | Inf | 0.0% |
| 9/1 | Pettits Lane Southbound exit | U | N/A | N/A | - | | - | - | - | 510 | Inf | Inf | 0.0% |
| 10/1 | Pettits Lane Northbound Exit | U | N/A | N/A | - | | - | - | - | 920 | Inf | Inf | 0.0% |

Full Input Data And Results

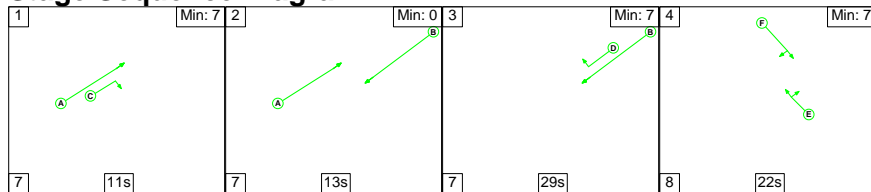
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|---------------------------|----------------|---------------|-----------------------------------|------------------------------|------------------------------|-----------------------|--|------------------------------------|--|---------------------------|----------------------------------|----------------------------|----------------------|
| Network | - | - | 360 | 487 | 56 | 42.1 | 35.5 | 0.8 | 78.4 | - | - | - | - |
| A12 - Pettits Lane | - | - | 360 | 487 | 56 | 42.1 | 35.5 | 0.8 | 78.4 | - | - | - | - |
| 1/2+1/1 | 531 | 531 | 0 | 96 | 0 | 5.5 | 6.0 | - | 11.5 | 77.9 | 14.1 | 6.0 | 20.1 |
| 1/3 | 525 | 525 | - | - | - | 5.3 | 5.8 | - | 11.1 | 76.1 | 14.7 | 5.8 | 20.5 |
| 1/4+1/5 | 568 | 568 | - | - | - | 7.4 | 6.5 | - | 13.9 | 88.1 | 14.7 | 6.5 | 21.3 |
| 2/2+2/1 | 542 | 542 | 59 | 230 | 0 | 2.7 | 1.1 | - | 3.9 | 25.6 | 6.2 | 1.1 | 7.3 |
| 2/3 | 69 | 69 | 68 | 0 | 1 | 0.6 | 0.3 | 0.3 | 1.2 | 61.7 | 1.5 | 0.3 | 1.8 |
| 3/2+3/1 | 842 | 842 | 24 | 123 | 0 | 4.7 | 2.2 | - | 6.9 | 29.5 | 19.5 | 2.2 | 21.7 |
| 3/3 | 816 | 816 | - | - | - | 5.1 | 2.0 | - | 7.1 | 31.3 | 19.7 | 2.0 | 21.8 |
| 3/4+3/5 | 492 | 492 | - | - | - | 4.8 | 5.3 | - | 10.1 | 74.0 | 13.8 | 5.3 | 19.1 |
| 4/2+4/1 | 408 | 408 | 39 | 37 | 0 | 3.6 | 1.6 | - | 5.3 | 46.4 | 9.6 | 1.6 | 11.3 |
| 4/3 | 226 | 226 | 171 | 0 | 55 | 2.4 | 4.6 | 0.5 | 7.5 | 120.0 | 6.4 | 4.6 | 11.0 |
| 5/1 | 950 | 950 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 525 | 525 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/3 | 458 | 458 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 771 | 771 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 885 | 885 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/3 | 0 | 0 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 771 | 771 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/2 | 885 | 885 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 1475 | 1475 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/2 | 458 | 458 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 510 | 510 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 920 | 920 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): -5.5 | | PRC Over All Lanes (%): -5.5 | | Total Delay for Signalled Lanes (pcuHr): 78.43 | | Total Delay Over All Lanes(pcuHr): 78.43 | | Cycle Time (s): 104 | | |

Full Input Data And Results

Full Input Data And Results

Scenario 7: '2023 Surveyed Peak Hour AM' (FG9: '2023 Surveyed Peak Hour AM', Plan 1: 'Network Control Plan 1')

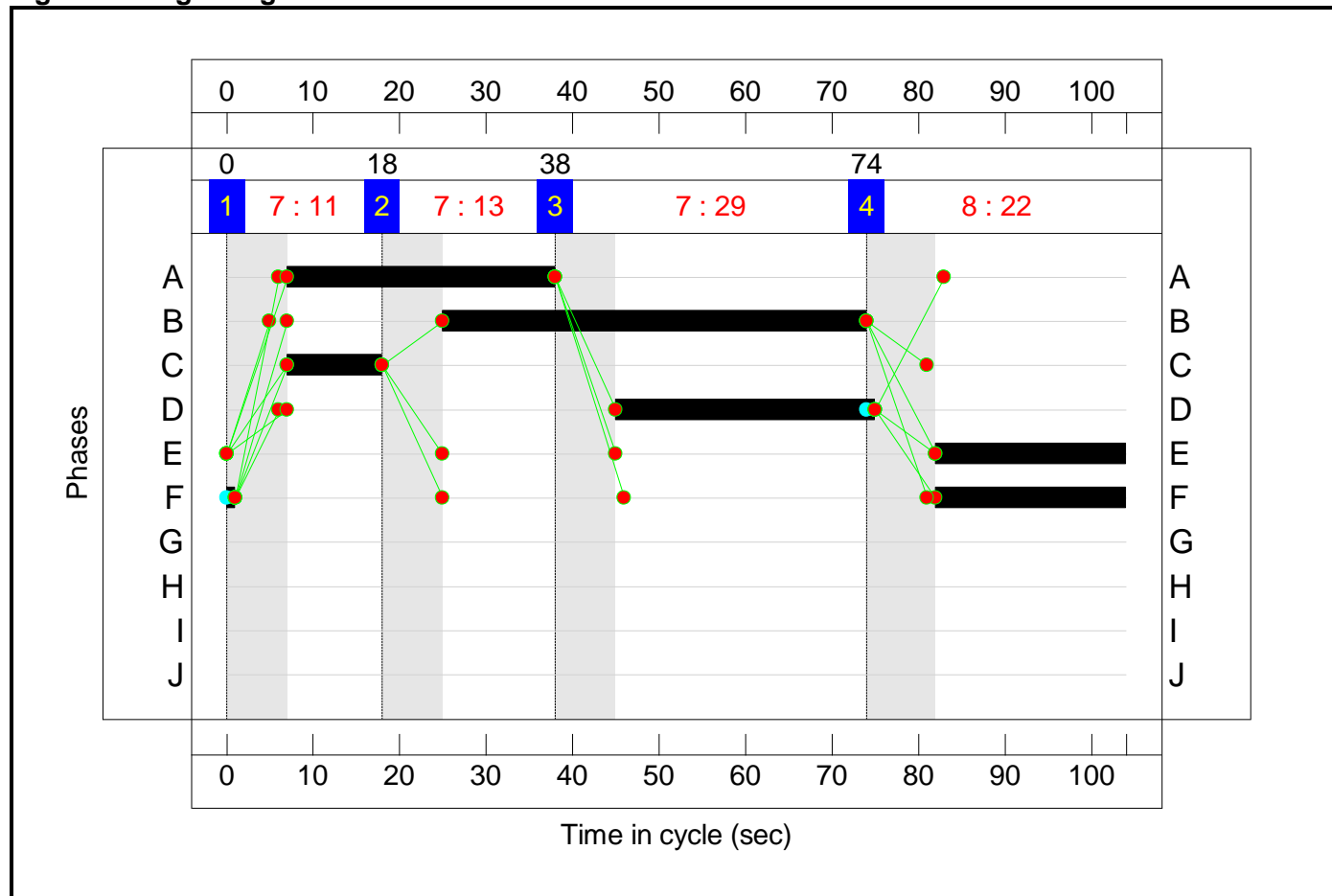
Stage Sequence Diagram



Stage Timings

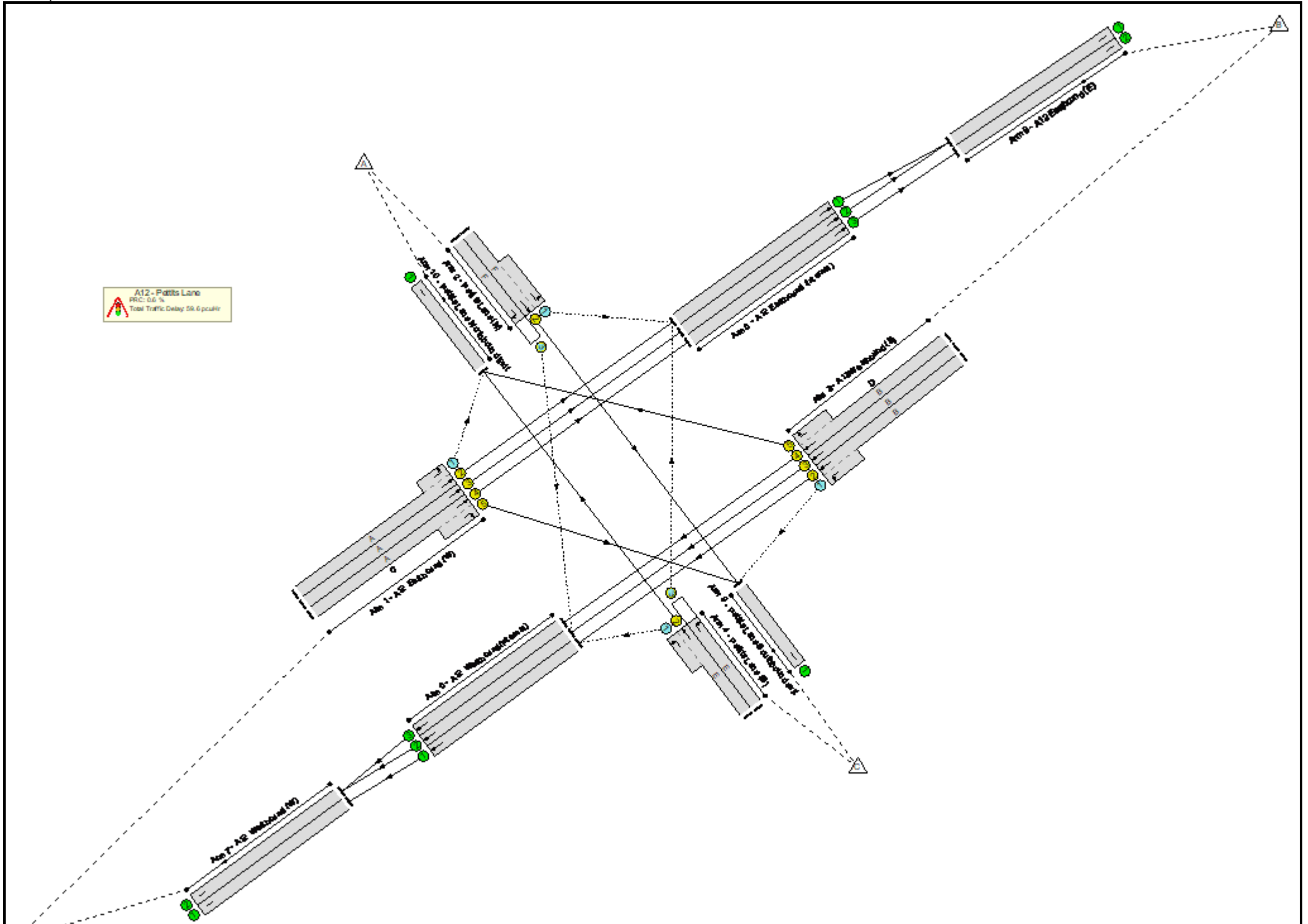
| Stage | 1 | 2 | 3 | 4 |
|--------------|----|----|----|----|
| Duration | 11 | 13 | 29 | 22 |
| Change Point | 0 | 18 | 38 | 74 |

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 | - | - | N/A | - | - | | - | - | - | - | - | - | 89.5% |
| A12 - Pettits Lane | - | - | N/A | - | - | | - | - | - | - | - | - | 89.5% |
| 1/2+1/1 | A12 Eastbound (W) Ahead Left | U+O | N/A | N/A | A - | | 1 | 31 | - | 516 | 1875:1923 | 526+83 | 84.8 : 84.8% |
| 1/3 | A12 Eastbound (W) Ahead | U | N/A | N/A | A | | 1 | 31 | - | 495 | 2005 | 617 | 80.2% |
| 1/4+1/5 | A12 Eastbound (W) Ahead Right | U | N/A | N/A | A C | | 1 | 31:11 | - | 608 | 2005:1955 | 492+188 | 89.5 : 89.5% |
| 2/2+2/1 | Pettits Lane (N) Left Ahead | U+O | N/A | N/A | F - | | 1 | 23 | - | 497 | 1955:1956 | 367+243 | 81.5 : 81.5% |
| 2/3 | Pettits Lane (N) Right | O | N/A | N/A | F | | 1 | 23 | - | 66 | 1955 | 209 | 31.6% |
| 3/2+3/1 | A12 Westbound (E) Ahead Left | U+O | N/A | N/A | B - | | 1 | 49 | - | 879 | 2035:1967 | 718+328 | 84.0 : 84.0% |
| 3/3 | A12 Westbound (E) Ahead | U | N/A | N/A | B | | 1 | 49 | - | 709 | 2065 | 993 | 71.4% |
| 3/4+3/5 | A12 Westbound (E) Ahead Right | U | N/A | N/A | B D | | 1 | 49:30 | - | 479 | 2065:1772 | 44+506 | 87.1 : 87.1% |
| 4/2+4/1 | Pettits Lane (S) Left Ahead | U+O | N/A | N/A | E - | | 1 | 22 | - | 307 | 1925:2062 | 388+85 | 64.9 : 64.9% |
| 4/3 | Pettits Lane (S) Right | O | N/A | N/A | E | | 1 | 22 | - | 134 | 1965 | 162 | 82.6% |
| 5/1 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 778 | Inf | Inf | 0.0% |
| 5/2 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 495 | Inf | Inf | 0.0% |
| 5/3 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 440 | Inf | Inf | 0.0% |
| 6/1 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 658 | Inf | Inf | 0.0% |
| 6/2 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 775 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|------|-------------------------------|---|-----|-----|---|--|---|---|---|------|-----|-----|------|
| 6/3 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 38 | Inf | Inf | 0.0% |
| 7/1 | A12 Westbound (W) | U | N/A | N/A | - | | - | - | - | 658 | Inf | Inf | 0.0% |
| 7/2 | A12 Westbound (W) | U | N/A | N/A | - | | - | - | - | 813 | Inf | Inf | 0.0% |
| 8/1 | A12 Eastbound (E) | U | N/A | N/A | - | | - | - | - | 1273 | Inf | Inf | 0.0% |
| 8/2 | A12 Eastbound (E) | U | N/A | N/A | - | | - | - | - | 440 | Inf | Inf | 0.0% |
| 9/1 | Pettits Lane Southbound exit | U | N/A | N/A | - | | - | - | - | 743 | Inf | Inf | 0.0% |
| 10/1 | Pettits Lane Northbound Exit | U | N/A | N/A | - | | - | - | - | 763 | Inf | Inf | 0.0% |

Full Input Data And Results

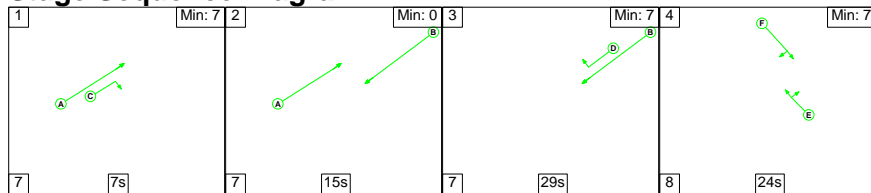
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|---------------------------|----------------|---------------|------------------------------|------------------------------|-----------------------------|--|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network | - | - | 273 | 481 | 45 | 38.2 | 20.7 | 0.7 | 59.6 | - | - | - | - |
| A12 - Pettits Lane | - | - | 273 | 481 | 45 | 38.2 | 20.7 | 0.7 | 59.6 | - | - | - | - |
| 1/2+1/1 | 516 | 516 | 0 | 70 | 0 | 4.8 | 2.6 | - | 7.4 | 51.7 | 13.3 | 2.6 | 15.9 |
| 1/3 | 495 | 495 | - | - | - | 4.6 | 2.0 | - | 6.5 | 47.4 | 13.1 | 2.0 | 15.0 |
| 1/4+1/5 | 608 | 608 | - | - | - | 7.7 | 3.8 | - | 11.5 | 68.3 | 14.6 | 3.8 | 18.5 |
| 2/2+2/1 | 497 | 497 | 44 | 154 | 0 | 3.4 | 2.1 | - | 5.5 | 39.8 | 8.5 | 2.1 | 10.6 |
| 2/3 | 66 | 66 | 65 | 0 | 1 | 0.6 | 0.2 | 0.2 | 1.0 | 55.3 | 1.5 | 0.2 | 1.7 |
| 3/2+3/1 | 879 | 879 | 55 | 221 | 0 | 4.5 | 2.6 | - | 7.1 | 28.9 | 19.4 | 2.6 | 22.0 |
| 3/3 | 709 | 709 | - | - | - | 4.2 | 1.2 | - | 5.4 | 27.6 | 16.1 | 1.2 | 17.4 |
| 3/4+3/5 | 479 | 479 | - | - | - | 4.5 | 3.1 | - | 7.6 | 56.9 | 12.6 | 3.1 | 15.7 |
| 4/2+4/1 | 307 | 307 | 19 | 36 | 0 | 2.8 | 0.9 | - | 3.7 | 43.1 | 6.9 | 0.9 | 7.8 |
| 4/3 | 134 | 134 | 90 | 0 | 44 | 1.3 | 2.1 | 0.5 | 3.9 | 105.2 | 3.8 | 2.1 | 5.8 |
| 5/1 | 778 | 778 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 495 | 495 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/3 | 440 | 440 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 658 | 658 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 775 | 775 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/3 | 38 | 38 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 658 | 658 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/2 | 813 | 813 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 1273 | 1273 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/2 | 440 | 440 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 743 | 743 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 763 | 763 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 0.6 | Total Delay for Signalled Lanes (pcuHr): | | 59.62 | Cycle Time (s): 104 | | | | |
| | | | PRC Over All Lanes (%): | | 0.6 | Total Delay Over All Lanes(pcuHr): | | 59.62 | | | | | |

Full Input Data And Results

Full Input Data And Results

Scenario 8: '2023 Surveyed Peak Hour PM' (FG10: '2023 Surveyed Peak Hour PM', Plan 1: 'Network Control Plan 1')

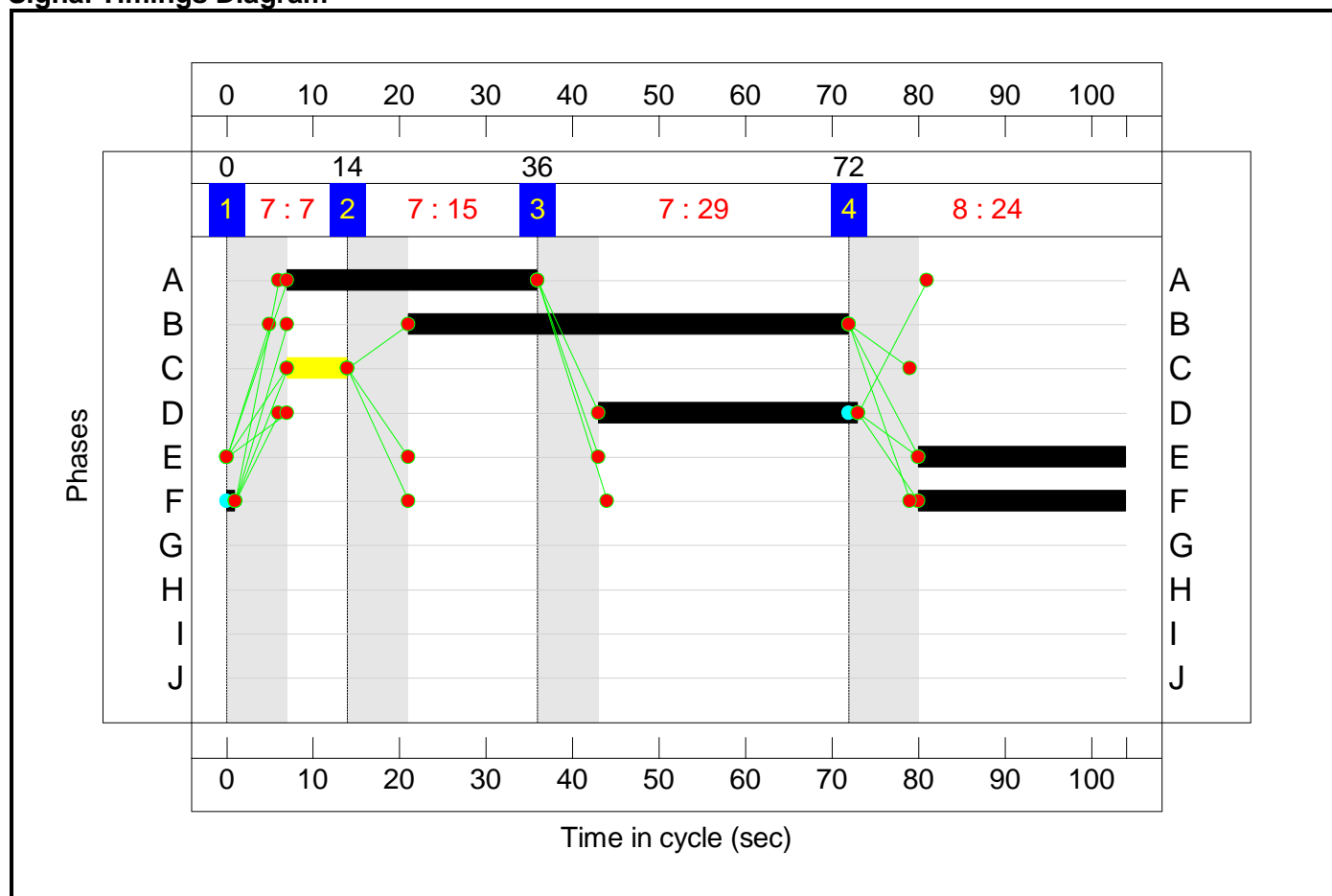
Stage Sequence Diagram



Stage Timings

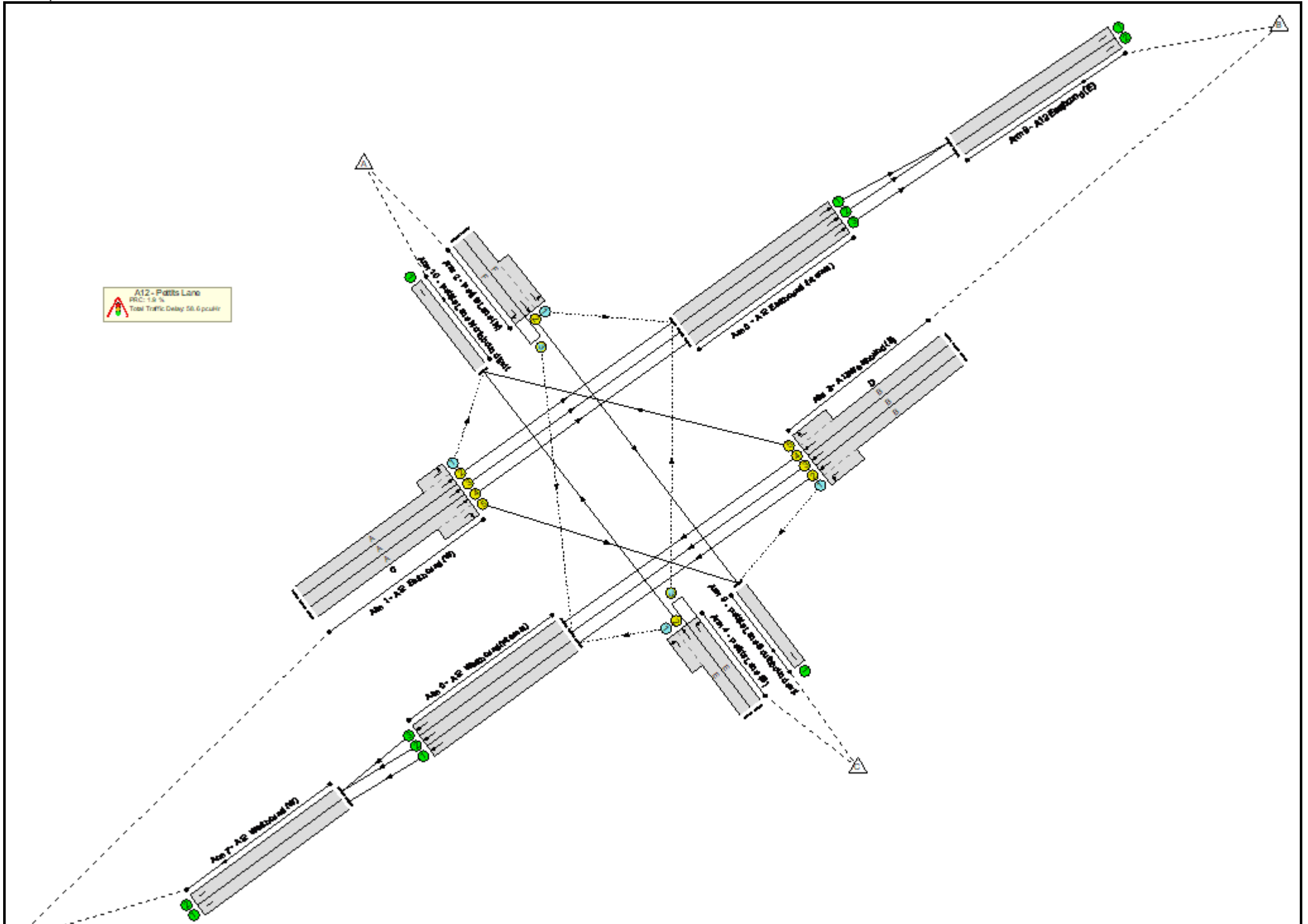
| Stage | 1 | 2 | 3 | 4 |
|--------------|---|----|----|----|
| Duration | 7 | 15 | 29 | 24 |
| Change Point | 0 | 14 | 36 | 72 |

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 | - | - | N/A | - | - | | - | - | - | - | - | - | 88.3% |
| A12 - Pettits Lane | - | - | N/A | - | - | | - | - | - | - | - | - | 88.3% |
| 1/2+1/1 | A12 Eastbound (W) Ahead Left | U+O | N/A | N/A | A - | | 1 | 29 | - | 513 | 1875:1923 | 477+104 | 88.3 : 88.3% |
| 1/3 | A12 Eastbound (W) Ahead | U | N/A | N/A | A | | 1 | 29 | - | 479 | 2005 | 578 | 82.8% |
| 1/4+1/5 | A12 Eastbound (W) Ahead Right | U | N/A | N/A | A C | | 1 | 29:7 | - | 536 | 2005:1955 | 508+104 | 87.6 : 87.6% |
| 2/2+2/1 | Pettits Lane (N) Left Ahead | U+O | N/A | N/A | F - | | 1 | 25 | - | 488 | 1955:1956 | 363+375 | 66.2 : 66.2% |
| 2/3 | Pettits Lane (N) Right | O | N/A | N/A | F | | 1 | 25 | - | 70 | 1955 | 186 | 37.7% |
| 3/2+3/1 | A12 Westbound (E) Ahead Left | U+O | N/A | N/A | B - | | 1 | 51 | - | 794 | 2035:1967 | 873+171 | 76.1 : 76.1% |
| 3/3 | A12 Westbound (E) Ahead | U | N/A | N/A | B | | 1 | 51 | - | 731 | 2065 | 1032 | 70.8% |
| 3/4+3/5 | A12 Westbound (E) Ahead Right | U | N/A | N/A | B D | | 1 | 51:30 | - | 482 | 2065:1772 | 59+498 | 86.6 : 86.6% |
| 4/2+4/1 | Pettits Lane (S) Left Ahead | U+O | N/A | N/A | E - | | 1 | 24 | - | 378 | 1925:2062 | 419+92 | 74.0 : 74.0% |
| 4/3 | Pettits Lane (S) Right | O | N/A | N/A | E | | 1 | 24 | - | 209 | 1965 | 240 | 87.2% |
| 5/1 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 878 | Inf | Inf | 0.0% |
| 5/2 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 479 | Inf | Inf | 0.0% |
| 5/3 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 445 | Inf | Inf | 0.0% |
| 6/1 | A12 Westbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 732 | Inf | Inf | 0.0% |
| 6/2 | A12 Westbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 801 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|------|-------------------------------|---|-----|-----|---|--|---|---|---|------|-----|-----|------|
| 6/3 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 51 | Inf | Inf | 0.0% |
| 7/1 | A12 Westbound (W) | U | N/A | N/A | - | | - | - | - | 732 | Inf | Inf | 0.0% |
| 7/2 | A12 Westbound (W) | U | N/A | N/A | - | | - | - | - | 852 | Inf | Inf | 0.0% |
| 8/1 | A12 Eastbound (E) | U | N/A | N/A | - | | - | - | - | 1357 | Inf | Inf | 0.0% |
| 8/2 | A12 Eastbound (E) | U | N/A | N/A | - | | - | - | - | 445 | Inf | Inf | 0.0% |
| 9/1 | Pettits Lane Southbound exit | U | N/A | N/A | - | | - | - | - | 461 | Inf | Inf | 0.0% |
| 10/1 | Pettits Lane Northbound Exit | U | N/A | N/A | - | | - | - | - | 833 | Inf | Inf | 0.0% |

Full Input Data And Results

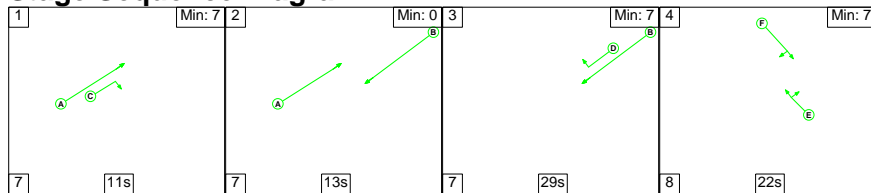
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|---------------------------|----------------|---------------|------------------------------|------------------------------|-----------------------------|--|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network | - | - | 342 | 434 | 41 | 37.6 | 20.3 | 0.8 | 58.6 | - | - | - | - |
| A12 - Pettits Lane | - | - | 342 | 434 | 41 | 37.6 | 20.3 | 0.8 | 58.6 | - | - | - | - |
| 1/2+1/1 | 513 | 513 | 0 | 92 | 0 | 5.1 | 3.4 | - | 8.5 | 59.7 | 13.2 | 3.4 | 16.6 |
| 1/3 | 479 | 479 | - | - | - | 4.6 | 2.3 | - | 6.9 | 51.9 | 12.9 | 2.3 | 15.2 |
| 1/4+1/5 | 536 | 536 | - | - | - | 6.5 | 3.3 | - | 9.8 | 65.6 | 13.6 | 3.3 | 16.8 |
| 2/2+2/1 | 488 | 488 | 49 | 199 | 0 | 2.6 | 1.0 | - | 3.6 | 26.4 | 5.9 | 1.0 | 6.8 |
| 2/3 | 70 | 70 | 69 | 0 | 1 | 0.6 | 0.3 | 0.3 | 1.2 | 60.1 | 1.6 | 0.3 | 1.9 |
| 3/2+3/1 | 794 | 794 | 23 | 107 | 0 | 4.1 | 1.6 | - | 5.7 | 25.7 | 17.1 | 1.6 | 18.7 |
| 3/3 | 731 | 731 | - | - | - | 4.1 | 1.2 | - | 5.3 | 26.0 | 16.2 | 1.2 | 17.4 |
| 3/4+3/5 | 482 | 482 | - | - | - | 4.4 | 3.0 | - | 7.4 | 55.3 | 12.5 | 3.0 | 15.5 |
| 4/2+4/1 | 378 | 378 | 32 | 36 | 0 | 3.4 | 1.4 | - | 4.8 | 45.8 | 8.9 | 1.4 | 10.3 |
| 4/3 | 209 | 209 | 170 | 0 | 39 | 2.2 | 2.9 | 0.5 | 5.5 | 95.5 | 5.8 | 2.9 | 8.7 |
| 5/1 | 878 | 878 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 479 | 479 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/3 | 445 | 445 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 732 | 732 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 801 | 801 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/3 | 51 | 51 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 732 | 732 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/2 | 852 | 852 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 1357 | 1357 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/2 | 445 | 445 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 461 | 461 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 833 | 833 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 1.9 | Total Delay for Signalled Lanes (pcuHr): | | 58.64 | Cycle Time (s): 104 | | | | |
| | | | PRC Over All Lanes (%): | | 1.9 | Total Delay Over All Lanes(pcuHr): | | 58.64 | | | | | |

Full Input Data And Results

Full Input Data And Results

Scenario 9: '2030 Surveyed Peak Hour AM' (FG11: 'Copy of Reference Case 2030 AM', Plan 1: 'Network Control Plan 1')

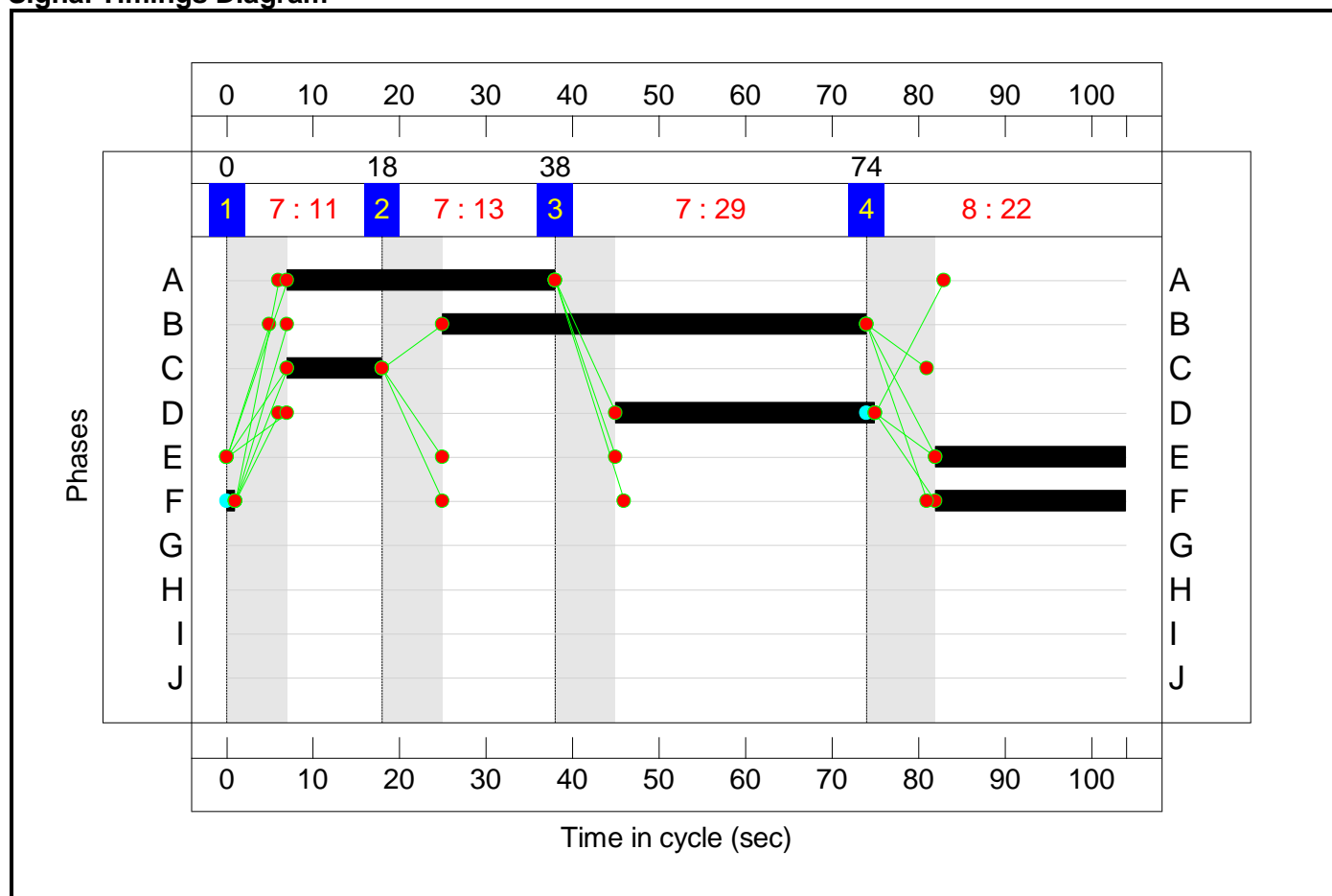
Stage Sequence Diagram



Stage Timings

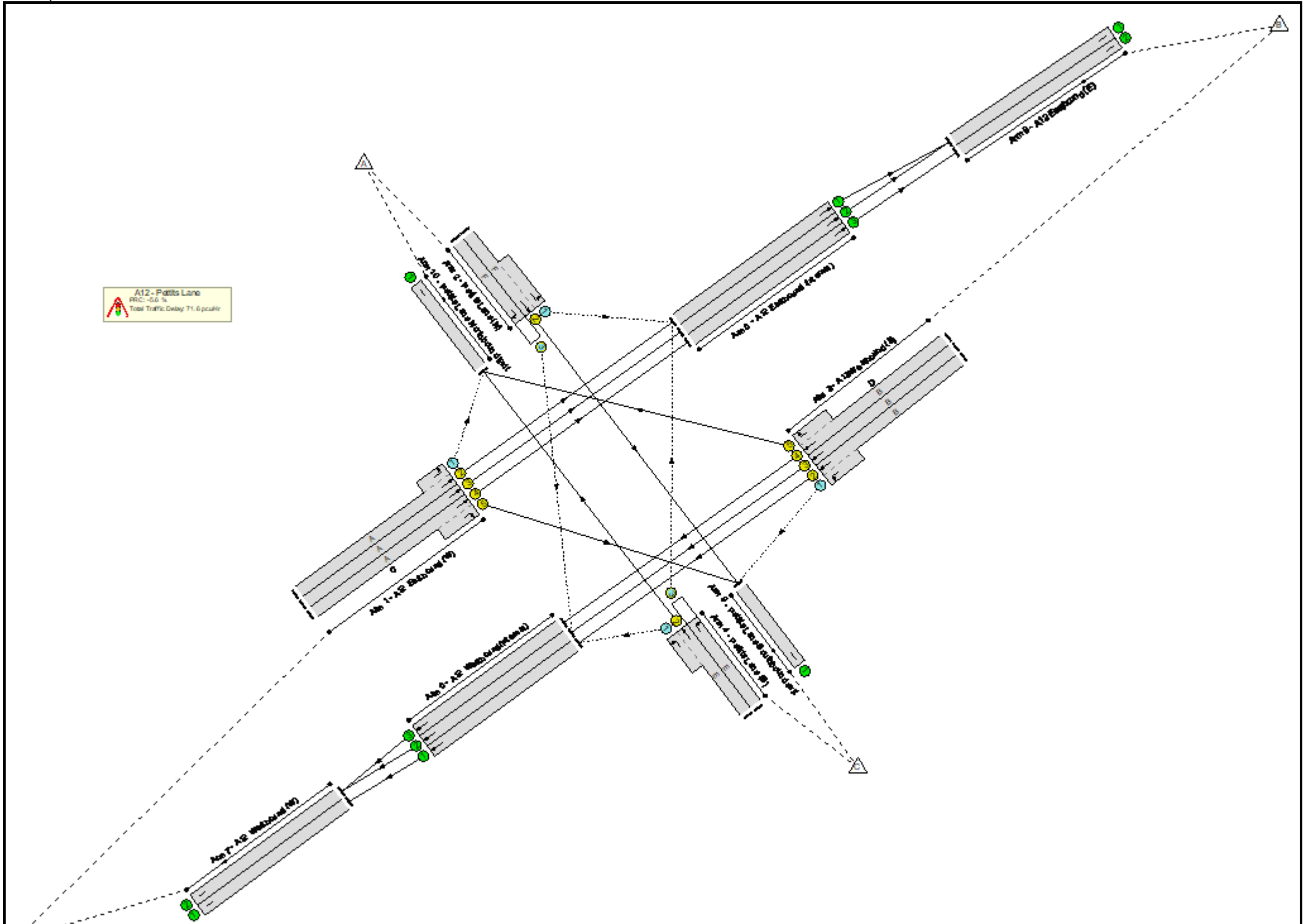
| Stage | 1 | 2 | 3 | 4 |
|--------------|----|----|----|----|
| Duration | 11 | 13 | 29 | 22 |
| Change Point | 0 | 18 | 38 | 74 |

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 | - | - | N/A | - | - | | - | - | - | - | - | - | 95.0% |
| A12 - Pettits Lane | - | - | N/A | - | - | | - | - | - | - | - | - | 95.0% |
| 1/2+1/1 | A12 Eastbound (W) Ahead Left | U+O | N/A | N/A | A - | | 1 | 31 | - | 540 | 1875:1923 | 526+82 | 88.8 : 88.8% |
| 1/3 | A12 Eastbound (W) Ahead | U | N/A | N/A | A | | 1 | 31 | - | 518 | 2005 | 617 | 84.0% |
| 1/4+1/5 | A12 Eastbound (W) Ahead Right | U | N/A | N/A | A C | | 1 | 31:11 | - | 636 | 2005:1955 | 492+188 | 93.6 : 93.6% |
| 2/2+2/1 | Pettits Lane (N) Left Ahead | U+O | N/A | N/A | F - | | 1 | 23 | - | 520 | 1955:1956 | 367+243 | 85.3 : 85.3% |
| 2/3 | Pettits Lane (N) Right | O | N/A | N/A | F | | 1 | 23 | - | 69 | 1955 | 199 | 34.7% |
| 3/2+3/1 | A12 Westbound (E) Ahead Left | U+O | N/A | N/A | B - | | 1 | 49 | - | 915 | 2035:1967 | 716+331 | 87.4 : 87.4% |
| 3/3 | A12 Westbound (E) Ahead | U | N/A | N/A | B | | 1 | 49 | - | 738 | 2065 | 993 | 74.3% |
| 3/4+3/5 | A12 Westbound (E) Ahead Right | U | N/A | N/A | B D | | 1 | 49:30 | - | 511 | 2065:1772 | 53+501 | 92.2 : 92.2% |
| 4/2+4/1 | Pettits Lane (S) Left Ahead | U+O | N/A | N/A | E - | | 1 | 22 | - | 322 | 1925:2062 | 388+85 | 68.0 : 68.0% |
| 4/3 | Pettits Lane (S) Right | O | N/A | N/A | E | | 1 | 22 | - | 140 | 1965 | 147 | 95.0% |
| 5/1 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 814 | Inf | Inf | 0.0% |
| 5/2 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 518 | Inf | Inf | 0.0% |
| 5/3 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 460 | Inf | Inf | 0.0% |
| 6/1 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 684 | Inf | Inf | 0.0% |
| 6/2 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 807 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|------|-------------------------------------|---|-----|-----|---|--|---|---|---|------|-----|-----|------|
| 6/3 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 49 | Inf | Inf | 0.0% |
| 7/1 | A12 Westbound (W) | U | N/A | N/A | - | | - | - | - | 684 | Inf | Inf | 0.0% |
| 7/2 | A12 Westbound (W) | U | N/A | N/A | - | | - | - | - | 856 | Inf | Inf | 0.0% |
| 8/1 | A12 Eastbound (E) | U | N/A | N/A | - | | - | - | - | 1332 | Inf | Inf | 0.0% |
| 8/2 | A12 Eastbound (E) | U | N/A | N/A | - | | - | - | - | 460 | Inf | Inf | 0.0% |
| 9/1 | Pettits Lane Southbound exit | U | N/A | N/A | - | | - | - | - | 778 | Inf | Inf | 0.0% |
| 10/1 | Pettits Lane Northbound Exit | U | N/A | N/A | - | | - | - | - | 799 | Inf | Inf | 0.0% |

Full Input Data And Results

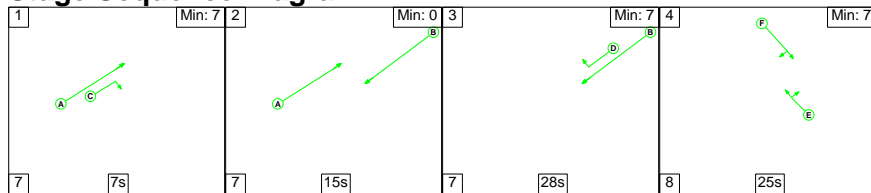
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|---------------------------|----------------|---------------|-----------------------------------|------------------------------|------------------------------|-----------------------|--|------------------------------------|--|---------------------------|----------------------------------|----------------------------|----------------------|
| Network | - | - | 268 | 502 | 66 | 40.9 | 29.8 | 0.8 | 71.6 | - | - | - | - |
| A12 - Pettits Lane | - | - | 268 | 502 | 66 | 40.9 | 29.8 | 0.8 | 71.6 | - | - | - | - |
| 1/2+1/1 | 540 | 540 | 0 | 73 | 0 | 5.1 | 3.6 | - | 8.7 | 57.9 | 14.2 | 3.6 | 17.7 |
| 1/3 | 518 | 518 | - | - | - | 4.8 | 2.5 | - | 7.3 | 50.9 | 14.0 | 2.5 | 16.4 |
| 1/4+1/5 | 636 | 636 | - | - | - | 8.2 | 5.8 | - | 14.0 | 79.3 | 15.8 | 5.8 | 21.5 |
| 2/2+2/1 | 520 | 520 | 49 | 158 | 0 | 3.6 | 2.7 | - | 6.3 | 43.8 | 9.5 | 2.7 | 12.2 |
| 2/3 | 69 | 69 | 68 | 0 | 1 | 0.6 | 0.3 | 0.2 | 1.1 | 57.5 | 1.6 | 0.3 | 1.8 |
| 3/2+3/1 | 915 | 915 | 55 | 234 | 0 | 4.9 | 3.3 | - | 8.2 | 32.3 | 21.0 | 3.3 | 24.3 |
| 3/3 | 738 | 738 | - | - | - | 4.5 | 1.4 | - | 5.9 | 28.8 | 17.2 | 1.4 | 18.7 |
| 3/4+3/5 | 511 | 511 | - | - | - | 4.8 | 4.8 | - | 9.7 | 68.2 | 13.7 | 4.8 | 18.5 |
| 4/2+4/1 | 322 | 322 | 22 | 36 | 0 | 2.9 | 1.0 | - | 4.0 | 44.4 | 7.3 | 1.0 | 8.4 |
| 4/3 | 140 | 140 | 75 | 0 | 65 | 1.4 | 4.4 | 0.6 | 6.3 | 163.0 | 4.0 | 4.4 | 8.4 |
| 5/1 | 814 | 814 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 518 | 518 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/3 | 460 | 460 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 684 | 684 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 807 | 807 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/3 | 49 | 49 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 684 | 684 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/2 | 856 | 856 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 1332 | 1332 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/2 | 460 | 460 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 778 | 778 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 799 | 799 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): -5.6 | | PRC Over All Lanes (%): -5.6 | | Total Delay for Signalled Lanes (pcuHr): 71.56 | | Total Delay Over All Lanes(pcuHr): 71.56 | | Cycle Time (s): 104 | | |

Full Input Data And Results

Full Input Data And Results

Scenario 10: '2030 Surveyed Peak Hour PM' (FG12: 'Copy of Reference Case 2030 PM', Plan 1: 'Network Control Plan 1')

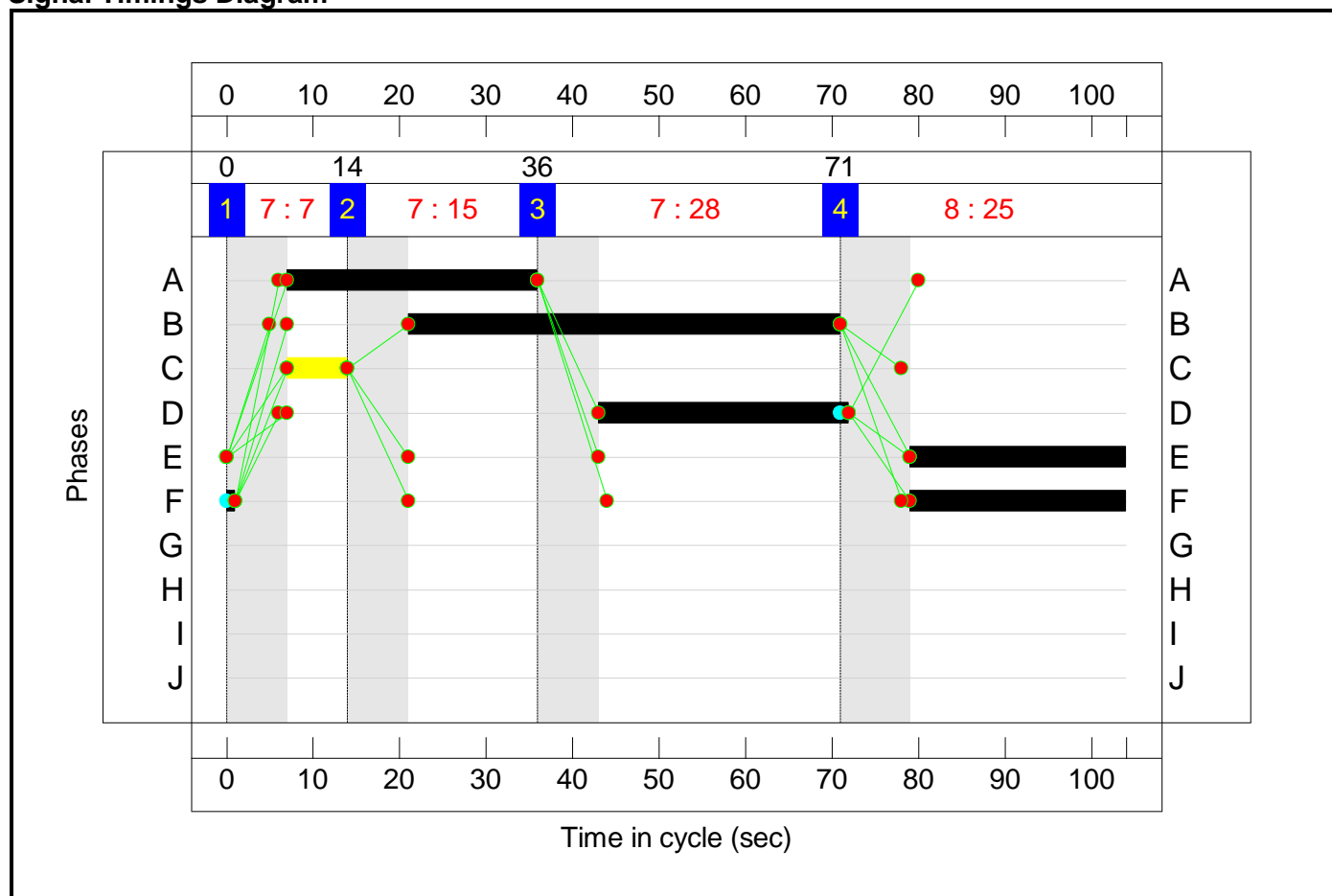
Stage Sequence Diagram



Stage Timings

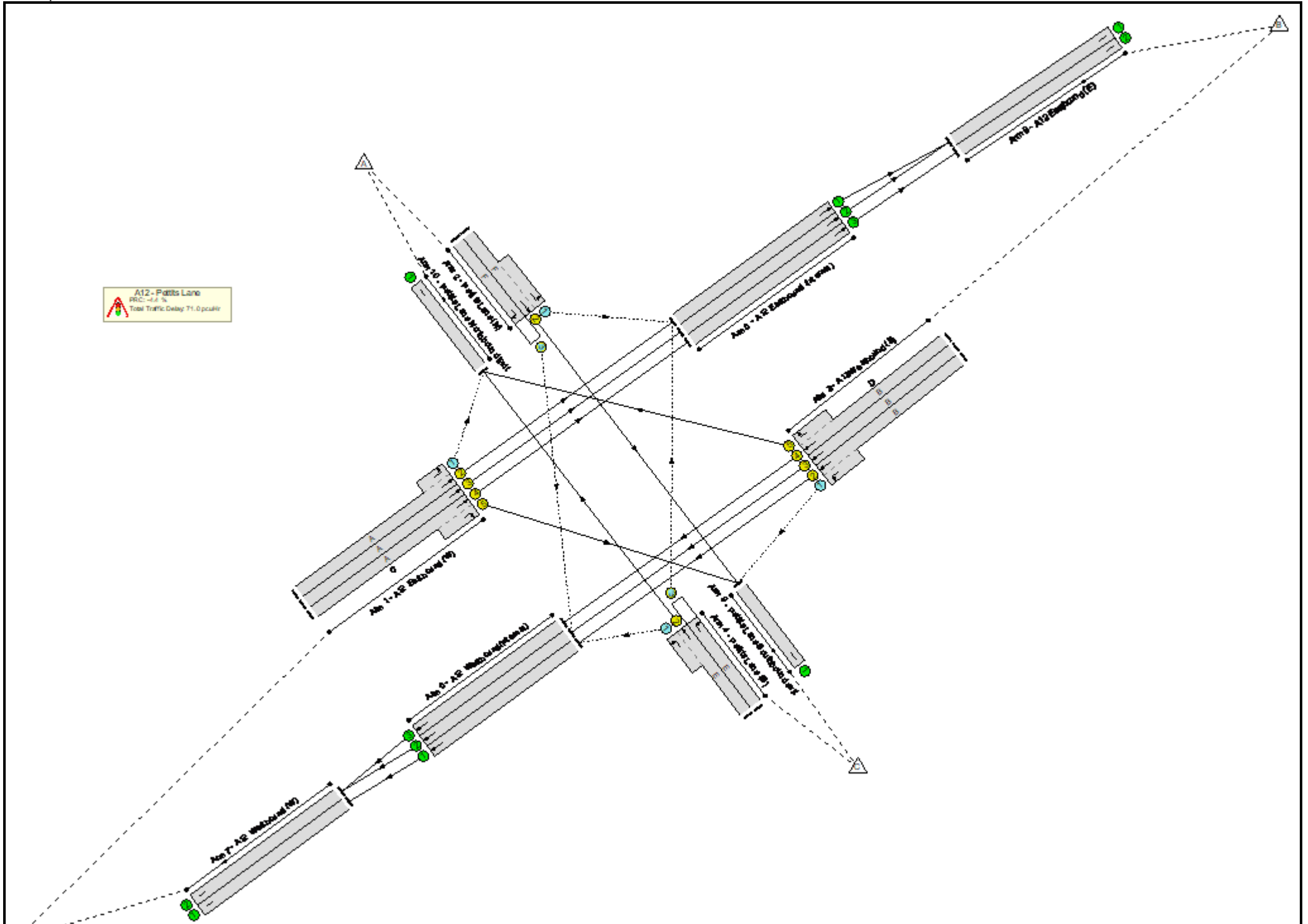
| Stage | 1 | 2 | 3 | 4 |
|--------------|---|----|----|----|
| Duration | 7 | 15 | 28 | 25 |
| Change Point | 0 | 14 | 36 | 71 |

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results



A12- Peblis Lane
PRC=4.1%
Total Traffic Delay 71.0 sec/hr

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 | - | - | | - | - | - | - | - | - | 93.9% |
| A12 - Pettits Lane | - | - | N/A | - | - | | - | - | - | - | - | - | 93.9% |
| 1/2+1/1 | A12 Eastbound (W) Ahead Left | U+O | N/A | N/A | A - | | 1 | 29 | - | 540 | 1875:1923 | 477+104 | 92.9 : 92.9% |
| 1/3 | A12 Eastbound (W) Ahead | U | N/A | N/A | A | | 1 | 29 | - | 503 | 2005 | 578 | 87.0% |
| 1/4+1/5 | A12 Eastbound (W) Ahead Right | U | N/A | N/A | A C | | 1 | 29:7 | - | 565 | 2005:1955 | 508+104 | 92.4 : 92.4% |
| 2/2+2/1 | Pettits Lane (N) Left Ahead | U+O | N/A | N/A | F - | | 1 | 26 | - | 514 | 1955:1956 | 372+384 | 68.0 : 68.0% |
| 2/3 | Pettits Lane (N) Right | O | N/A | N/A | F | | 1 | 26 | - | 74 | 1955 | 185 | 40.0% |
| 3/2+3/1 | A12 Westbound (E) Ahead Left | U+O | N/A | N/A | B - | | 1 | 50 | - | 835 | 2035:1967 | 856+168 | 81.5 : 81.5% |
| 3/3 | A12 Westbound (E) Ahead | U | N/A | N/A | B | | 1 | 50 | - | 769 | 2065 | 1013 | 75.9% |
| 3/4+3/5 | A12 Westbound (E) Ahead Right | U | N/A | N/A | B D | | 1 | 50:29 | - | 507 | 2065:1772 | 57+482 | 93.9 : 93.9% |
| 4/2+4/1 | Pettits Lane (S) Left Ahead | U+O | N/A | N/A | E - | | 1 | 25 | - | 398 | 1925:2062 | 434+96 | 75.1 : 75.1% |
| 4/3 | Pettits Lane (S) Right | O | N/A | N/A | E | | 1 | 25 | - | 220 | 1965 | 241 | 91.2% |
| 5/1 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 924 | Inf | Inf | 0.0% |
| 5/2 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 503 | Inf | Inf | 0.0% |
| 5/3 | A12 Eastbound (Internal) Ahead | U | N/A | N/A | - | | - | - | - | 469 | Inf | Inf | 0.0% |
| 6/1 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 770 | Inf | Inf | 0.0% |
| 6/2 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 843 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|------|-------------------------------------|---|-----|-----|---|--|---|---|---|------|-----|-----|------|
| 6/3 | A12 Westbound(Internal) Ahead | U | N/A | N/A | - | | - | - | - | 54 | Inf | Inf | 0.0% |
| 7/1 | A12 Westbound (W) | U | N/A | N/A | - | | - | - | - | 770 | Inf | Inf | 0.0% |
| 7/2 | A12 Westbound (W) | U | N/A | N/A | - | | - | - | - | 897 | Inf | Inf | 0.0% |
| 8/1 | A12 Eastbound (E) | U | N/A | N/A | - | | - | - | - | 1427 | Inf | Inf | 0.0% |
| 8/2 | A12 Eastbound (E) | U | N/A | N/A | - | | - | - | - | 469 | Inf | Inf | 0.0% |
| 9/1 | Pettits Lane Southbound exit | U | N/A | N/A | - | | - | - | - | 486 | Inf | Inf | 0.0% |
| 10/1 | Pettits Lane Northbound Exit | U | N/A | N/A | - | | - | - | - | 876 | Inf | Inf | 0.0% |

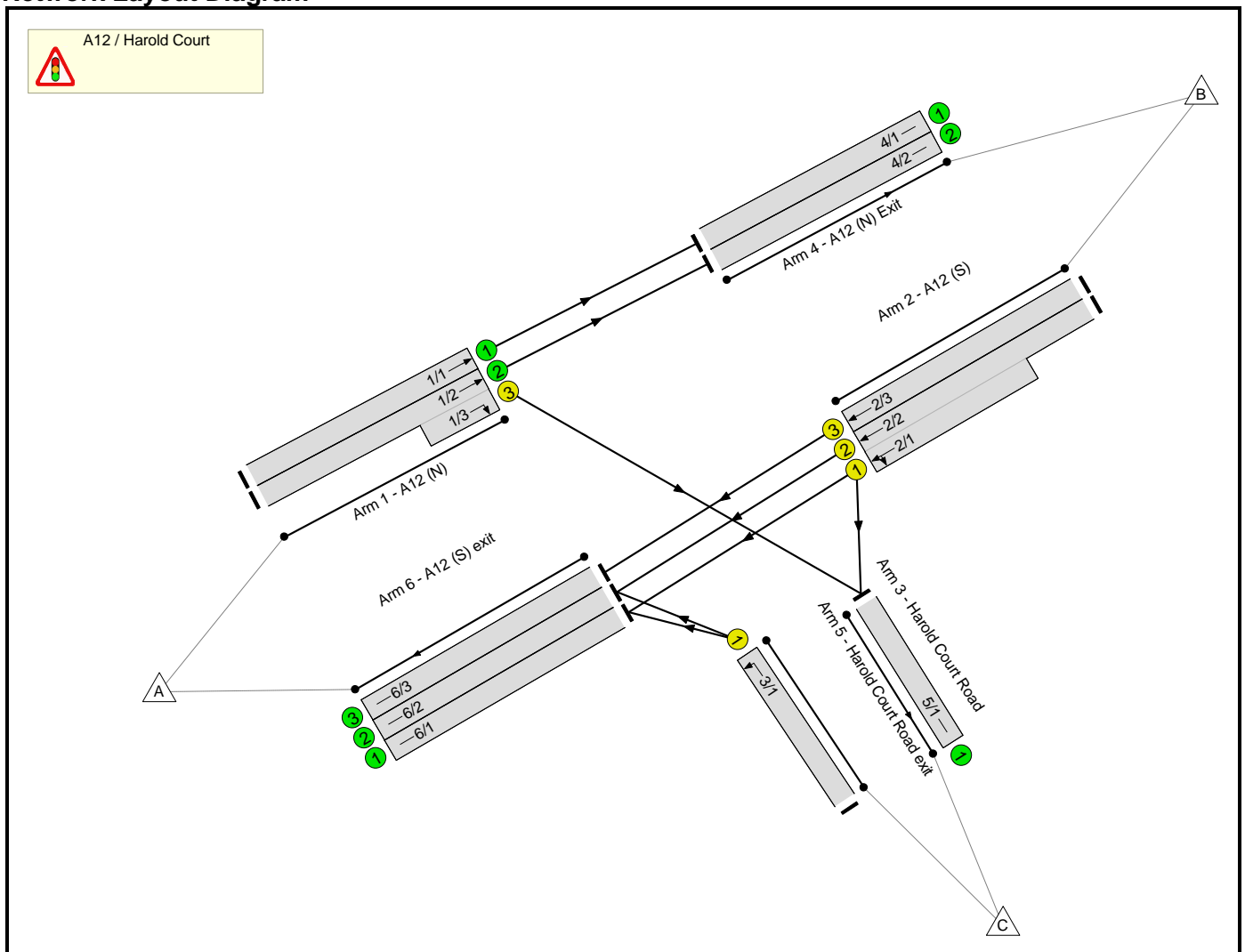
Full Input Data And Results

Full Input Data And Results
Full Input Data And Results

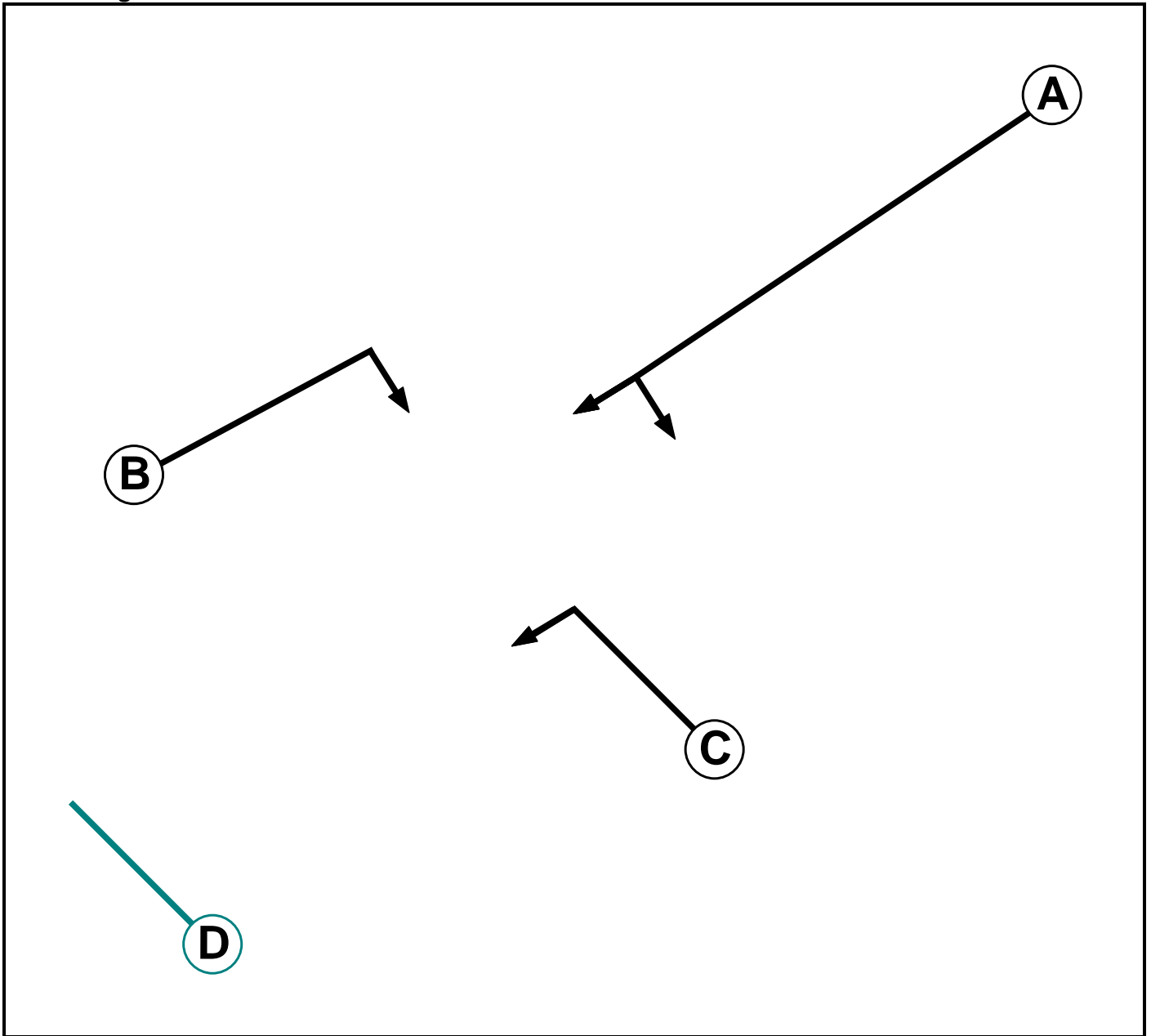
User and Project Details

| | |
|---------------------------|-----------------------------------|
| Project: | |
| Title: | |
| Location: | |
| Additional detail: | |
| File name: | 3 - A12 - Harold Court Road.lsg3x |
| Author: | |
| Company: | |
| Address: | |

Network Layout Diagram



Phase Diagram



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 | Dummy | | 7 | 7 |

Full Input Data And Results

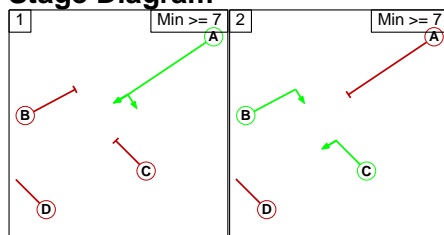
Phase Intergrens Matrix

| | | | | | |
|-------------------|---|----------------|---|---|---|
| | | Starting Phase | | | |
| | | A | B | C | D |
| Terminating Phase | A | 9 | 9 | 3 | |
| | B | 7 | - | 3 | |
| | C | 5 | - | 3 | |
| | D | 2 | 2 | 2 | |

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1 | A |
| 2 | B C |

Stage Diagram



Phase Delays

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

Prohibited Stage Change

| | | | |
|------------|---|----------|---|
| | | To Stage | |
| | | 1 | 2 |
| From Stage | 1 | 9 | |
| | 2 | 7 | |

Full Input Data And Results

Give-Way Lane Input Data

Junction: A12 / Harold Court

There are no Opposed Lanes in this Junction

Full Input Data And Results

Lane Input Data

| Junction: A12 / Harold Court | | | | | | | | | | | | |
|---------------------------------|-----------|--------|-------------|-----------|-----------------------|---------------|-----------------------------------|----------------|----------|---------------|-------------|--------------------|
| 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 (A12 (N)) | U | | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf |
| 1/2 (A12 (N)) | U | | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf |
| 1/3 (A12 (N)) | U | B | 2 | 3 | 5.0 | Geom | - | 3.65 | 0.00 | Y | Arm 5 Right | 15.00 |
| 2/1 (A12 (S)) | U | A | 2 | 3 | 12.0 | Geom | - | 3.00 | 0.00 | Y | Arm 5 Left | Inf |
| | | | | | | | | | | | Arm 6 Ahead | Inf |
| 2/2 (A12 (S)) | U | A | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | N | Arm 6 Ahead | Inf |
| 2/3 (A12 (S)) | U | A | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | N | Arm 6 Ahead | Inf |
| 3/1 (Harold Court Road) | U | C | 2 | 3 | 60.0 | Geom | - | 3.60 | 0.00 | Y | Arm 6 Left | 15.00 |
| 4/1 (A12 (N) Exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 4/2 (A12 (N) Exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 5/1 (Harold Court Road exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 6/1 (A12 (S) exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 6/2 (A12 (S) exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 6/3 (A12 (S) exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |

Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---------------------------------|------------|----------|----------|-------------|
| 1: 'Base Year 2023 AM' | 08:00 | 09:00 | 01:00 | |
| 2: 'Base Year 2023 PM' | 17:00 | 18:00 | 01:00 | |
| 3: 'Reference Case 2030 AM' | 08:00 | 09:00 | 01:00 | F1 * 1.0466 |
| 4: 'Reference Case 2030 PM' | 17:00 | 18:00 | 01:00 | F2 * 1.0521 |
| 7: 'Do Something 2030 + LTC AM' | 08:00 | 09:00 | 01:00 | F3+F5 |
| 8: 'Do Something 2030 + LTC PM' | 17:00 | 18:00 | 01:00 | F4+F6 |

Full Input Data And Results

Scenario 1: '2023 AM' (FG1: 'Base Year 2023 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | |
|--------|------|-------------|------|-----|------|
| | | A | B | C | Tot. |
| Origin | A | 0 | 1597 | 123 | 1720 |
| | B | 2125 | 0 | 56 | 2181 |
| | C | 151 | 0 | 0 | 151 |
| | Tot. | 2276 | 1597 | 179 | 4052 |

Traffic Lane Flows

| Lane | Scenario 1: 2023 AM |
|-------------------------------------|------------------------|
| Junction: A12 / Harold Court | |
| 1/1 | 1597 |
| 1/2 (with short) | 123(In) 0(Out) |
| 1/3 (short) | 123 |
| 2/1 (short) | 646 |
| 2/2 (with short) | 1336(In) 690(Out) |
| 2/3 | 845 |
| 3/1 | 151 |
| 4/1 | 1597 |
| 4/2 | 0 |
| 5/1 | 179 |
| 6/1 | 665 |
| 6/2 | 766 |
| 6/3 | 845 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 / Harold Court | | | | | | | | |
|--|--------------------------|----------|---------------|---------------------------|--------------------|-----------------|-------------------|--------------------------|
| 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 (A12 (N)) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 1/2 (A12 (N)) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 0.0 % | 1965 | 1965 |
| 1/3 (A12 (N)) | 3.65 | 0.00 | Y | Arm 5 Right | 15.00 | 100.0 % | 1800 | 1800 |
| 2/1 (A12 (S)) | 3.00 | 0.00 | Y | Arm 5 Left Arm 6 Ahead | Inf Inf | 8.7 % 91.3 % | 1915 | 1915 |
| 2/2 (A12 (S)) | 3.00 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 2/3 (A12 (S)) | 3.00 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 3/1 (Harold Court Road) | 3.60 | 0.00 | Y | Arm 6 Left | 15.00 | 100.0 % | 1795 | 1795 |
| 4/1 (A12 (N) Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 (A12 (N) Exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (Harold Court Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A12 (S) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A12 (S) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 (A12 (S) exit Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |

Scenario 2: '2023 PM' (FG2: 'Base Year 2023 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | |
|--------|-------------|------|------|------|------|
| | A | B | C | Tot. | |
| Origin | A | 0 | 1507 | 136 | 1643 |
| | B | 1995 | 0 | 63 | 2058 |
| | C | 206 | 0 | 0 | 206 |
| | Tot. | 2201 | 1507 | 199 | 3907 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 2: 2023 PM |
|-------------------------------------|------------------------|
| Junction: A12 / Harold Court | |
| 1/1 | 1507 |
| 1/2 (with short) | 136(In) 0(Out) |
| 1/3 (short) | 136 |
| 2/1 (short) | 623 |
| 2/2 (with short) | 1291(In) 668(Out) |
| 2/3 | 767 |
| 3/1 | 206 |
| 4/1 | 1507 |
| 4/2 | 0 |
| 5/1 | 199 |
| 6/1 | 663 |
| 6/2 | 771 |
| 6/3 | 767 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 / Harold Court | | | | | | | | |
|--|--------------------------|----------|---------------|---------------------------|--------------------|------------------|-------------------|--------------------------|
| 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 (A12 (N)) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 1/2 (A12 (N)) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 0.0 % | 1965 | 1965 |
| 1/3 (A12 (N)) | 3.65 | 0.00 | Y | Arm 5 Right | 15.00 | 100.0 % | 1800 | 1800 |
| 2/1 (A12 (S)) | 3.00 | 0.00 | Y | Arm 5 Left Arm 6 Ahead | Inf Inf | 10.1 % 89.9 % | 1915 | 1915 |
| 2/2 (A12 (S)) | 3.00 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 2/3 (A12 (S)) | 3.00 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 3/1 (Harold Court Road) | 3.60 | 0.00 | Y | Arm 6 Left | 15.00 | 100.0 % | 1795 | 1795 |
| 4/1 (A12 (N) Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 (A12 (N) Exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (Harold Court Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A12 (S) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A12 (S) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 (A12 (S) exit Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |

Scenario 3: '2030 AM' (FG3: 'Reference Case 2030 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | |
|--------|-------------|------|------|------|------|
| | A | B | C | Tot. | |
| Origin | A | 0 | 1671 | 129 | 1800 |
| | B | 2224 | 0 | 59 | 2283 |
| | C | 158 | 0 | 0 | 158 |
| | Tot. | 2382 | 1671 | 188 | 4241 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 3: 2030 AM |
|-------------------------------------|------------------------|
| Junction: A12 / Harold Court | |
| 1/1 | 1671 |
| 1/2 (with short) | 129(In) 0(Out) |
| 1/3 (short) | 129 |
| 2/1 (short) | 669 |
| 2/2 (with short) | 1387(In) 718(Out) |
| 2/3 | 896 |
| 3/1 | 158 |
| 4/1 | 1671 |
| 4/2 | 0 |
| 5/1 | 188 |
| 6/1 | 689 |
| 6/2 | 797 |
| 6/3 | 896 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 / Harold Court | | | | | | | | |
|--|--------------------------|----------|---------------|---------------------------|--------------------|-----------------|-------------------|--------------------------|
| 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 (A12 (N)) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 1/2 (A12 (N)) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 0.0 % | 1965 | 1965 |
| 1/3 (A12 (N)) | 3.65 | 0.00 | Y | Arm 5 Right | 15.00 | 100.0 % | 1800 | 1800 |
| 2/1 (A12 (S)) | 3.00 | 0.00 | Y | Arm 5 Left Arm 6 Ahead | Inf Inf | 8.8 % 91.2 % | 1915 | 1915 |
| 2/2 (A12 (S)) | 3.00 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 2/3 (A12 (S)) | 3.00 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 3/1 (Harold Court Road) | 3.60 | 0.00 | Y | Arm 6 Left | 15.00 | 100.0 % | 1795 | 1795 |
| 4/1 (A12 (N) Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 (A12 (N) Exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (Harold Court Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A12 (S) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A12 (S) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 (A12 (S) exit Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |

Scenario 4: '2030 PM' (FG4: 'Reference Case 2030 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | |
|--------|-------------|------|------|------|------|
| | A | B | C | Tot. | |
| Origin | A | 0 | 1586 | 143 | 1729 |
| | B | 2099 | 0 | 66 | 2165 |
| | C | 217 | 0 | 0 | 217 |
| | Tot. | 2316 | 1586 | 209 | 4111 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 4: 2030 PM |
|-------------------------------------|------------------------|
| Junction: A12 / Harold Court | |
| 1/1 | 1586 |
| 1/2 (with short) | 143(In) 0(Out) |
| 1/3 (short) | 143 |
| 2/1 (short) | 650 |
| 2/2 (with short) | 1348(In) 698(Out) |
| 2/3 | 817 |
| 3/1 | 217 |
| 4/1 | 1586 |
| 4/2 | 0 |
| 5/1 | 209 |
| 6/1 | 692 |
| 6/2 | 807 |
| 6/3 | 817 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 / Harold Court | | | | | | | | |
|--|--------------------------|----------|---------------|---------------------------|--------------------|------------------|-------------------|--------------------------|
| 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 (A12 (N)) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 1/2 (A12 (N)) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 0.0 % | 1965 | 1965 |
| 1/3 (A12 (N)) | 3.65 | 0.00 | Y | Arm 5 Right | 15.00 | 100.0 % | 1800 | 1800 |
| 2/1 (A12 (S)) | 3.00 | 0.00 | Y | Arm 5 Left Arm 6 Ahead | Inf Inf | 10.2 % 89.8 % | 1915 | 1915 |
| 2/2 (A12 (S)) | 3.00 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 2/3 (A12 (S)) | 3.00 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 3/1 (Harold Court Road) | 3.60 | 0.00 | Y | Arm 6 Left | 15.00 | 100.0 % | 1795 | 1795 |
| 4/1 (A12 (N) Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 (A12 (N) Exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (Harold Court Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A12 (S) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A12 (S) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 (A12 (S) exit Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |

Scenario 5: '2030 + LTC AM' (FG7: 'Do Something 2030 + LTC AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | |
|--------|-------------|------|------|------|------|
| | A | B | C | Tot. | |
| Origin | A | 0 | 1368 | 129 | 1497 |
| | B | 2330 | 0 | 97 | 2427 |
| | C | 141 | 0 | 0 | 141 |
| | Tot. | 2471 | 1368 | 226 | 4065 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 5: 2030 + LTC AM |
|-------------------------------------|------------------------------|
| Junction: A12 / Harold Court | |
| 1/1 | 1368 |
| 1/2 (with short) | 129(In) 0(Out) |
| 1/3 (short) | 129 |
| 2/1 (short) | 700 |
| 2/2 (with short) | 1458(In) 758(Out) |
| 2/3 | 969 |
| 3/1 | 141 |
| 4/1 | 1368 |
| 4/2 | 0 |
| 5/1 | 226 |
| 6/1 | 673 |
| 6/2 | 829 |
| 6/3 | 969 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 / Harold Court | | | | | | | | |
|--|--------------------------|----------|---------------|---------------------------|--------------------|------------------|-------------------|--------------------------|
| 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 (A12 (N)) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 1/2 (A12 (N)) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 0.0 % | 1965 | 1965 |
| 1/3 (A12 (N)) | 3.65 | 0.00 | Y | Arm 5 Right | 15.00 | 100.0 % | 1800 | 1800 |
| 2/1 (A12 (S)) | 3.00 | 0.00 | Y | Arm 5 Left Arm 6 Ahead | Inf Inf | 13.9 % 86.1 % | 1915 | 1915 |
| 2/2 (A12 (S)) | 3.00 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 2/3 (A12 (S)) | 3.00 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 3/1 (Harold Court Road) | 3.60 | 0.00 | Y | Arm 6 Left | 15.00 | 100.0 % | 1795 | 1795 |
| 4/1 (A12 (N) Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 (A12 (N) Exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (Harold Court Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A12 (S) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A12 (S) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 (A12 (S) exit Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |

Scenario 6: '2030 + LTC PM' (FG8: 'Do Something 2030 + LTC PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | |
|--------|-------------|------|------|------|------|
| | A | B | C | Tot. | |
| Origin | A | 0 | 1541 | 144 | 1685 |
| | B | 2070 | 0 | 66 | 2136 |
| | C | 226 | 0 | 0 | 226 |
| | Tot. | 2296 | 1541 | 210 | 4047 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 6: 2030 + LTC PM |
|-------------------------------------|------------------------------|
| Junction: A12 / Harold Court | |
| 1/1 | 1541 |
| 1/2 (with short) | 144(In) 0(Out) |
| 1/3 (short) | 144 |
| 2/1 (short) | 643 |
| 2/2 (with short) | 1333(In) 690(Out) |
| 2/3 | 803 |
| 3/1 | 226 |
| 4/1 | 1541 |
| 4/2 | 0 |
| 5/1 | 210 |
| 6/1 | 690 |
| 6/2 | 803 |
| 6/3 | 803 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 / Harold Court | | | | | | | | |
|--|--------------------------|----------|---------------|---------------------------|--------------------|------------------|-------------------|--------------------------|
| 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 (A12 (N)) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 1/2 (A12 (N)) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 0.0 % | 1965 | 1965 |
| 1/3 (A12 (N)) | 3.65 | 0.00 | Y | Arm 5 Right | 15.00 | 100.0 % | 1800 | 1800 |
| 2/1 (A12 (S)) | 3.00 | 0.00 | Y | Arm 5 Left Arm 6 Ahead | Inf Inf | 10.3 % 89.7 % | 1915 | 1915 |
| 2/2 (A12 (S)) | 3.00 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 2/3 (A12 (S)) | 3.00 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 3/1 (Harold Court Road) | 3.60 | 0.00 | Y | Arm 6 Left | 15.00 | 100.0 % | 1795 | 1795 |
| 4/1 (A12 (N) Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 (A12 (N) Exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (Harold Court Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A12 (S) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A12 (S) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 (A12 (S) exit Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |

Scenario 7: 'New Scenario' (FG9: '2023 Surveyed Peak Hour AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | |
|--------|-------------|------|------|------|------|
| | A | B | C | Tot. | |
| Origin | A | 0 | 1594 | 100 | 1694 |
| | B | 2161 | 0 | 68 | 2229 |
| | C | 178 | 0 | 0 | 178 |
| | Tot. | 2339 | 1594 | 168 | 4101 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 7: New Scenario |
|-------------------------------------|-----------------------------|
| Junction: A12 / Harold Court | |
| 1/1 | 1594 |
| 1/2 (with short) | 100(In) 0(Out) |
| 1/3 (short) | 100 |
| 2/1 (short) | 665 |
| 2/2 (with short) | 1377(In) 712(Out) |
| 2/3 | 852 |
| 3/1 | 178 |
| 4/1 | 1594 |
| 4/2 | 0 |
| 5/1 | 168 |
| 6/1 | 686 |
| 6/2 | 801 |
| 6/3 | 852 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 / Harold Court | | | | | | | | |
|--|--------------------------|----------|---------------|---------------------------|--------------------|------------------|-------------------|--------------------------|
| 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 (A12 (N)) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 1/2 (A12 (N)) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 0.0 % | 1965 | 1965 |
| 1/3 (A12 (N)) | 3.65 | 0.00 | Y | Arm 5 Right | 15.00 | 100.0 % | 1800 | 1800 |
| 2/1 (A12 (S)) | 3.00 | 0.00 | Y | Arm 5 Left Arm 6 Ahead | Inf Inf | 10.2 % 89.8 % | 1915 | 1915 |
| 2/2 (A12 (S)) | 3.00 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 2/3 (A12 (S)) | 3.00 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 3/1 (Harold Court Road) | 3.60 | 0.00 | Y | Arm 6 Left | 15.00 | 100.0 % | 1795 | 1795 |
| 4/1 (A12 (N) Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 (A12 (N) Exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (Harold Court Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A12 (S) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A12 (S) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 (A12 (S) exit Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |

Scenario 8: 'New Scenario' (FG10: '2023 Surveyed Peak Hour PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | |
|--------|-------------|------|------|------|------|
| | A | B | C | Tot. | |
| Origin | A | 0 | 1509 | 91 | 1600 |
| | B | 2037 | 0 | 65 | 2102 |
| | C | 205 | 0 | 0 | 205 |
| | Tot. | 2242 | 1509 | 156 | 3907 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 8: New Scenario |
|-------------------------------------|-----------------------------|
| Junction: A12 / Harold Court | |
| 1/1 | 1509 |
| 1/2 (with short) | 91(In) 0(Out) |
| 1/3 (short) | 91 |
| 2/1 (short) | 631 |
| 2/2 (with short) | 1309(In) 678(Out) |
| 2/3 | 793 |
| 3/1 | 205 |
| 4/1 | 1509 |
| 4/2 | 0 |
| 5/1 | 156 |
| 6/1 | 668 |
| 6/2 | 781 |
| 6/3 | 793 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 / Harold Court | | | | | | | | |
|--|--------------------------|----------|---------------|---------------------------|--------------------|------------------|-------------------|--------------------------|
| 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 (A12 (N)) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 1/2 (A12 (N)) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 0.0 % | 1965 | 1965 |
| 1/3 (A12 (N)) | 3.65 | 0.00 | Y | Arm 5 Right | 15.00 | 100.0 % | 1800 | 1800 |
| 2/1 (A12 (S)) | 3.00 | 0.00 | Y | Arm 5 Left Arm 6 Ahead | Inf Inf | 10.3 % 89.7 % | 1915 | 1915 |
| 2/2 (A12 (S)) | 3.00 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 2/3 (A12 (S)) | 3.00 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 3/1 (Harold Court Road) | 3.60 | 0.00 | Y | Arm 6 Left | 15.00 | 100.0 % | 1795 | 1795 |
| 4/1 (A12 (N) Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 (A12 (N) Exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (Harold Court Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A12 (S) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A12 (S) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 (A12 (S) exit Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |

Scenario 9: 'New Scenario' (FG11: '2030 Surveyed Peak Hour AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | |
|--------|-------------|------|------|------|------|
| | A | B | C | Tot. | |
| Origin | A | 0 | 1668 | 105 | 1773 |
| | B | 2262 | 0 | 71 | 2333 |
| | C | 186 | 0 | 0 | 186 |
| | Tot. | 2448 | 1668 | 176 | 4292 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 9: New Scenario |
|-------------------------------------|-----------------------------|
| Junction: A12 / Harold Court | |
| 1/1 | 1668 |
| 1/2 (with short) | 105(In) 0(Out) |
| 1/3 (short) | 105 |
| 2/1 (short) | 690 |
| 2/2 (with short) | 1431(In) 741(Out) |
| 2/3 | 902 |
| 3/1 | 186 |
| 4/1 | 1668 |
| 4/2 | 0 |
| 5/1 | 176 |
| 6/1 | 712 |
| 6/2 | 834 |
| 6/3 | 902 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 / Harold Court | | | | | | | | |
|--|--------------------------|----------|---------------|---------------------------|--------------------|------------------|-------------------|--------------------------|
| 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 (A12 (N)) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 1/2 (A12 (N)) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 0.0 % | 1965 | 1965 |
| 1/3 (A12 (N)) | 3.65 | 0.00 | Y | Arm 5 Right | 15.00 | 100.0 % | 1800 | 1800 |
| 2/1 (A12 (S)) | 3.00 | 0.00 | Y | Arm 5 Left Arm 6 Ahead | Inf Inf | 10.3 % 89.7 % | 1915 | 1915 |
| 2/2 (A12 (S)) | 3.00 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 2/3 (A12 (S)) | 3.00 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 3/1 (Harold Court Road) | 3.60 | 0.00 | Y | Arm 6 Left | 15.00 | 100.0 % | 1795 | 1795 |
| 4/1 (A12 (N) Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 (A12 (N) Exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (Harold Court Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A12 (S) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A12 (S) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 (A12 (S) exit Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |

Scenario 10: 'New Scenario' (FG12: '2030 Surveyed Peak Hour PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | |
|--------|-------------|------|------|-----|------|
| | | A | B | C | Tot. |
| Origin | A | 0 | 1588 | 96 | 1684 |
| | B | 2143 | 0 | 68 | 2211 |
| | C | 216 | 0 | 0 | 216 |
| | Tot. | 2359 | 1588 | 164 | 4111 |

Full Input Data And Results

Traffic Lane Flows

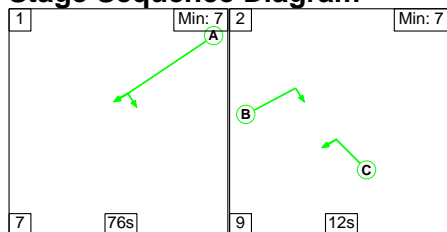
| Lane | Scenario 10: New Scenario |
|-------------------------------------|------------------------------|
| Junction: A12 / Harold Court | |
| 1/1 | 1588 |
| 1/2 (with short) | 96(In) 0(Out) |
| 1/3 (short) | 96 |
| 2/1 (short) | 659 |
| 2/2 (with short) | 1367(In) 708(Out) |
| 2/3 | 844 |
| 3/1 | 216 |
| 4/1 | 1588 |
| 4/2 | 0 |
| 5/1 | 164 |
| 6/1 | 699 |
| 6/2 | 816 |
| 6/3 | 844 |

Lane Saturation Flows

| Junction: A12 / Harold Court | | | | | | | | |
|--|--------------------------|----------|---------------|---------------------------|--------------------|------------------|-------------------|--------------------------|
| 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 (A12 (N)) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 1/2 (A12 (N)) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 0.0 % | 1965 | 1965 |
| 1/3 (A12 (N)) | 3.65 | 0.00 | Y | Arm 5 Right | 15.00 | 100.0 % | 1800 | 1800 |
| 2/1 (A12 (S)) | 3.00 | 0.00 | Y | Arm 5 Left Arm 6 Ahead | Inf Inf | 10.3 % 89.7 % | 1915 | 1915 |
| 2/2 (A12 (S)) | 3.00 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 2/3 (A12 (S)) | 3.00 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 3/1 (Harold Court Road) | 3.60 | 0.00 | Y | Arm 6 Left | 15.00 | 100.0 % | 1795 | 1795 |
| 4/1 (A12 (N) Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 (A12 (N) Exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (Harold Court Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A12 (S) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A12 (S) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 (A12 (S) exit Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |

Scenario 1: '2023 AM' (FG1: 'Base Year 2023 AM', Plan 1: 'Network Control Plan 1')

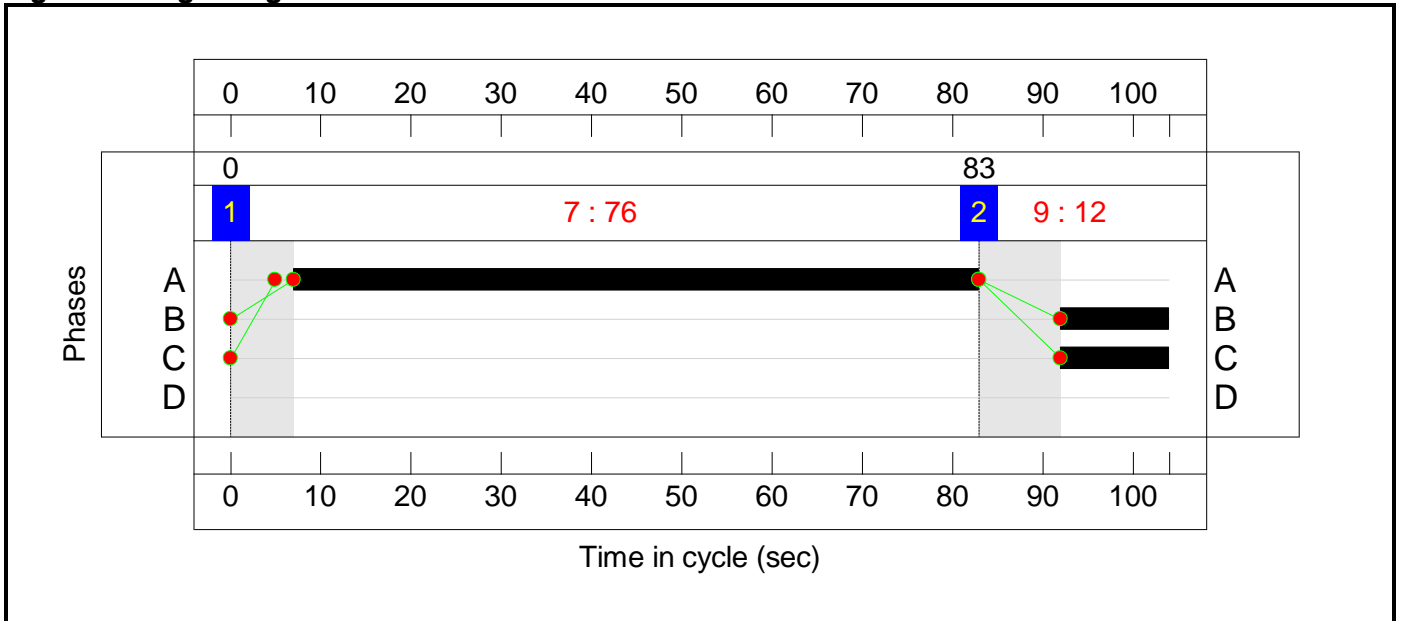
Stage Sequence Diagram



Stage Timings

| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 76 | 12 |
| Change Point | 0 | 83 |

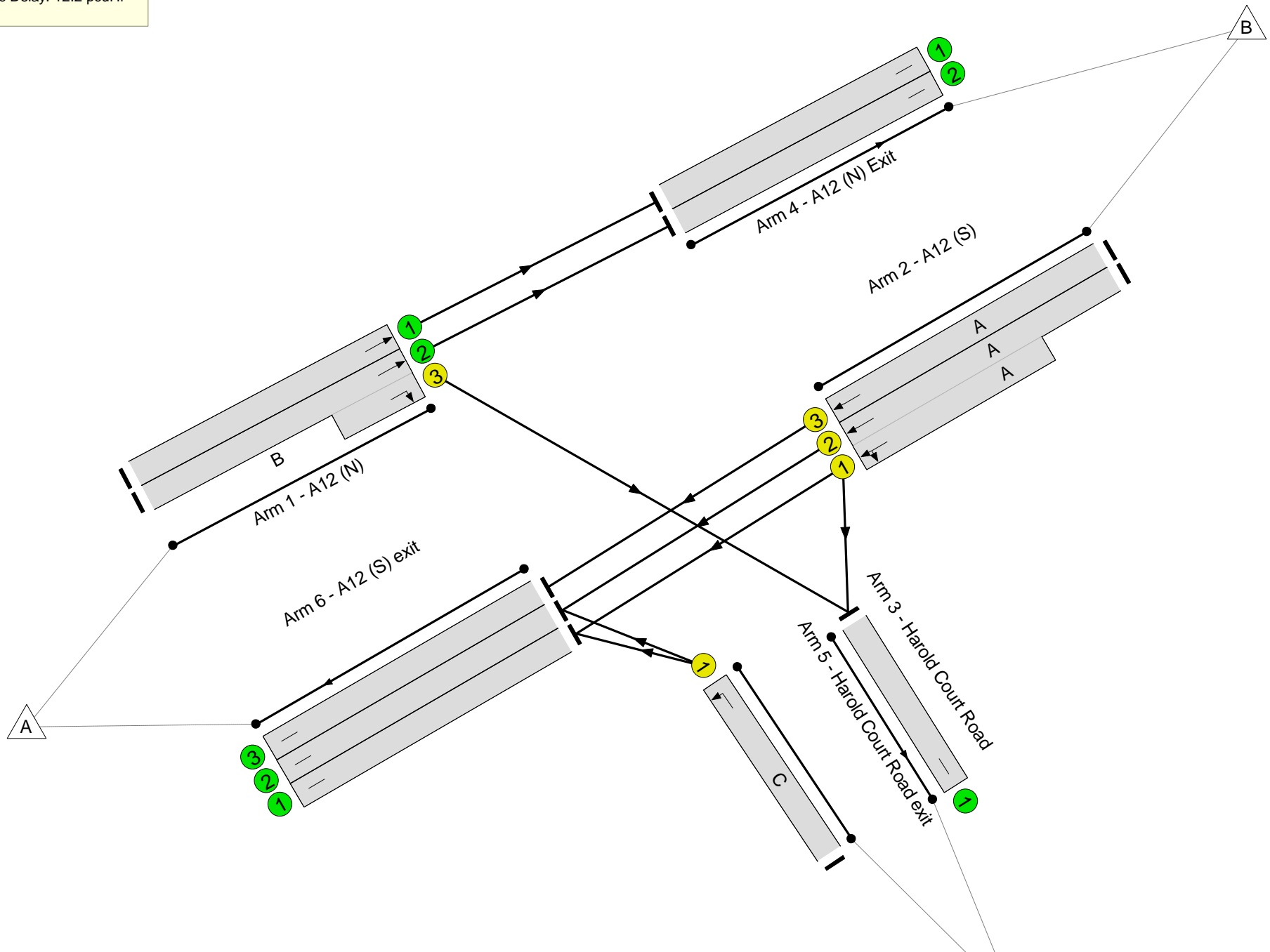

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

A12 / Harold Court
PRC: 10.7 %
Total Traffic Delay: 12.2 pcuHr



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 | - | - | | - | - | - | - | - | - | 81.3% |
| A12 / Harold Court | - | - | N/A | - | - | | - | - | - | - | - | - | 81.3% |
| 1/1 | A12 (N) Ahead | U | N/A | N/A | - | | - | - | - | 1597 | 1965 | 1965 | 81.3% |
| 1/2+1/3 | A12 (N) Ahead Right | U | N/A | N/A | - B | | - | - | - | 123 | 1965:1800 | 0+225 | 0.0 : 54.7% |
| 2/2+2/1 | A12 (S) Left Ahead | U | N/A | N/A | A | | 1 | 76 | - | 1336 | 2055:1915 | 967+906 | 71.3 : 71.3% |
| 2/3 | A12 (S) Ahead | U | N/A | N/A | A | | 1 | 76 | - | 845 | 2055 | 1521 | 55.5% |
| 3/1 | Harold Court Road Left | U | N/A | N/A | C | | 1 | 12 | - | 151 | 1795 | 224 | 67.3% |
| 4/1 | A12 (N) Exit | U | N/A | N/A | - | | - | - | - | 1597 | Inf | Inf | 0.0% |
| 4/2 | A12 (N) Exit | U | N/A | N/A | - | | - | - | - | 0 | Inf | Inf | 0.0% |
| 5/1 | Harold Court Road exit | U | N/A | N/A | - | | - | - | - | 179 | Inf | Inf | 0.0% |
| 6/1 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 665 | Inf | Inf | 0.0% |
| 6/2 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 766 | Inf | Inf | 0.0% |
| 6/3 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 845 | Inf | Inf | 0.0% |

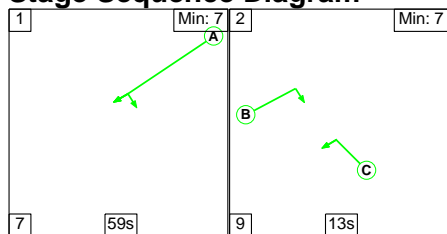
Full Input Data And Results

| 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 | 6.6 | 5.6 | 0.0 | 12.2 | - | - | - | - |
| A12 / Harold Court | - | - | 0 | 0 | 0 | 6.6 | 5.6 | 0.0 | 12.2 | - | - | - | - |
| 1/1 | 1597 | 1597 | - | - | - | 0.0 | 2.1 | - | 2.1 | 4.8 | 0.0 | 2.1 | 2.1 |
| 1/2+1/3 | 123 | 123 | - | - | - | 1.5 | 0.6 | - | 2.1 | 60.2 | 3.3 | 0.6 | 3.9 |
| 2/2+2/1 | 1336 | 1336 | - | - | - | 2.0 | 1.2 | - | 3.2 | 8.6 | 7.7 | 1.2 | 8.9 |
| 2/3 | 845 | 845 | - | - | - | 1.4 | 0.6 | - | 2.0 | 8.6 | 10.6 | 0.6 | 11.2 |
| 3/1 | 151 | 151 | - | - | - | 1.8 | 1.0 | - | 2.8 | 67.4 | 4.2 | 1.0 | 5.2 |
| 4/1 | 1597 | 1597 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4/2 | 0 | 0 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 179 | 179 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 665 | 665 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 766 | 766 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/3 | 845 | 845 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 26.2 | Total Delay for Signalled Lanes (pcuHr): | | 8.05 | Cycle Time (s): 104 | | | | |
| | | | PRC Over All Lanes (%): | | 10.7 | Total Delay Over All Lanes(pcuHr): | | 12.25 | | | | | |

Full Input Data And Results

Scenario 2: '2023 PM' (FG2: 'Base Year 2023 PM', Plan 1: 'Network Control Plan 1')

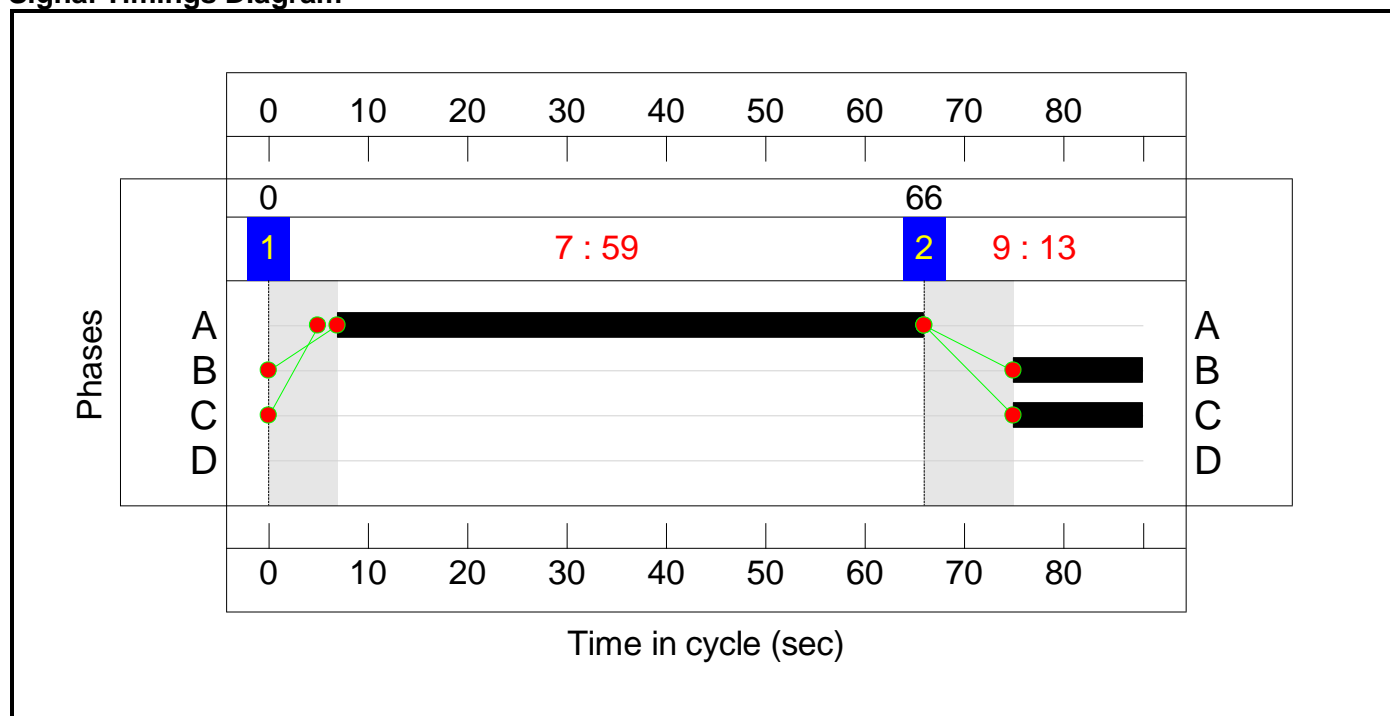
Stage Sequence Diagram



Stage Timings

| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 59 | 13 |
| Change Point | 0 | 66 |

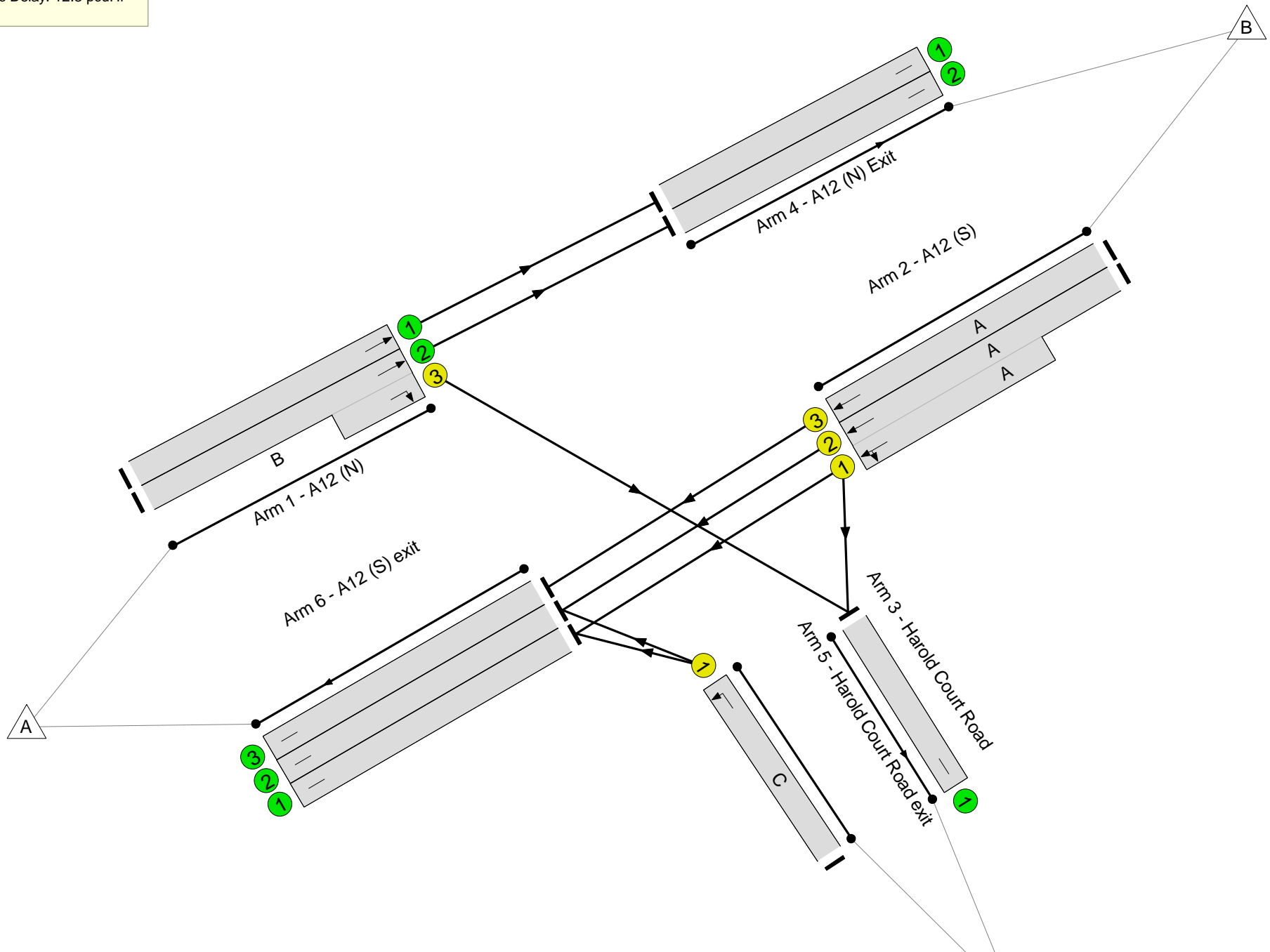
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

A12 / Harold Court
PRC: 17.4 %
Total Traffic Delay: 12.3 pcuHr



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 | - | - | | - | - | - | - | - | - | 76.7% |
| A12 / Harold Court | - | - | N/A | - | - | | - | - | - | - | - | - | 76.7% |
| 1/1 | A12 (N) Ahead | U | N/A | N/A | - | | - | - | - | 1507 | 1965 | 1965 | 76.7% |
| 1/2+1/3 | A12 (N) Ahead Right | U | N/A | N/A | - B | | - | - | - | 136 | 1965:1800 | 0+286 | 0.0 : 47.5% |
| 2/2+2/1 | A12 (S) Left Ahead | U | N/A | N/A | A | | 1 | 59 | - | 1291 | 2055:1915 | 946+882 | 70.6 : 70.6% |
| 2/3 | A12 (S) Ahead | U | N/A | N/A | A | | 1 | 59 | - | 767 | 2055 | 1401 | 54.7% |
| 3/1 | Harold Court Road Left | U | N/A | N/A | C | | 1 | 13 | - | 206 | 1795 | 286 | 72.1% |
| 4/1 | A12 (N) Exit | U | N/A | N/A | - | | - | - | - | 1507 | Inf | Inf | 0.0% |
| 4/2 | A12 (N) Exit | U | N/A | N/A | - | | - | - | - | 0 | Inf | Inf | 0.0% |
| 5/1 | Harold Court Road exit | U | N/A | N/A | - | | - | - | - | 199 | Inf | Inf | 0.0% |
| 6/1 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 663 | Inf | Inf | 0.0% |
| 6/2 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 771 | Inf | Inf | 0.0% |
| 6/3 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 767 | Inf | Inf | 0.0% |

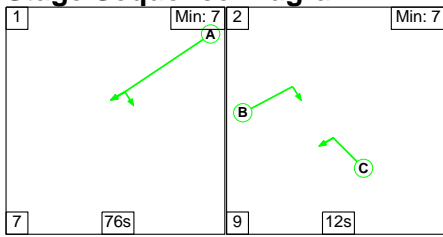
Full Input Data And Results

| 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 | 7.2 | 5.1 | 0.0 | 12.3 | - | - | - | - |
| A12 / Harold Court | - | - | 0 | 0 | 0 | 7.2 | 5.1 | 0.0 | 12.3 | - | - | - | - |
| 1/1 | 1507 | 1507 | - | - | - | 0.0 | 1.6 | - | 1.6 | 3.9 | 0.0 | 1.6 | 1.6 |
| 1/2+1/3 | 136 | 136 | - | - | - | 1.3 | 0.4 | - | 1.7 | 45.6 | 3.0 | 0.4 | 3.5 |
| 2/2+2/1 | 1291 | 1291 | - | - | - | 2.4 | 1.2 | - | 3.6 | 9.9 | 7.6 | 1.2 | 8.8 |
| 2/3 | 767 | 767 | - | - | - | 1.5 | 0.6 | - | 2.1 | 9.9 | 9.4 | 0.6 | 10.0 |
| 3/1 | 206 | 206 | - | - | - | 2.0 | 1.3 | - | 3.3 | 57.1 | 4.7 | 1.3 | 6.0 |
| 4/1 | 1507 | 1507 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4/2 | 0 | 0 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 199 | 199 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 663 | 663 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 771 | 771 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/3 | 767 | 767 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <p>C1 PRC for Signalled Lanes (%): 24.8 Total Delay for Signalled Lanes (pcuHr): 8.95 Cycle Time (s): 88 PRC Over All Lanes (%): 17.4 Total Delay Over All Lanes(pcuHr): 12.30</p> | | | | | | | | | | | | | |

Full Input Data And Results

Scenario 3: '2030 AM' (FG3: 'Reference Case 2030 AM', Plan 1: 'Network Control Plan 1')

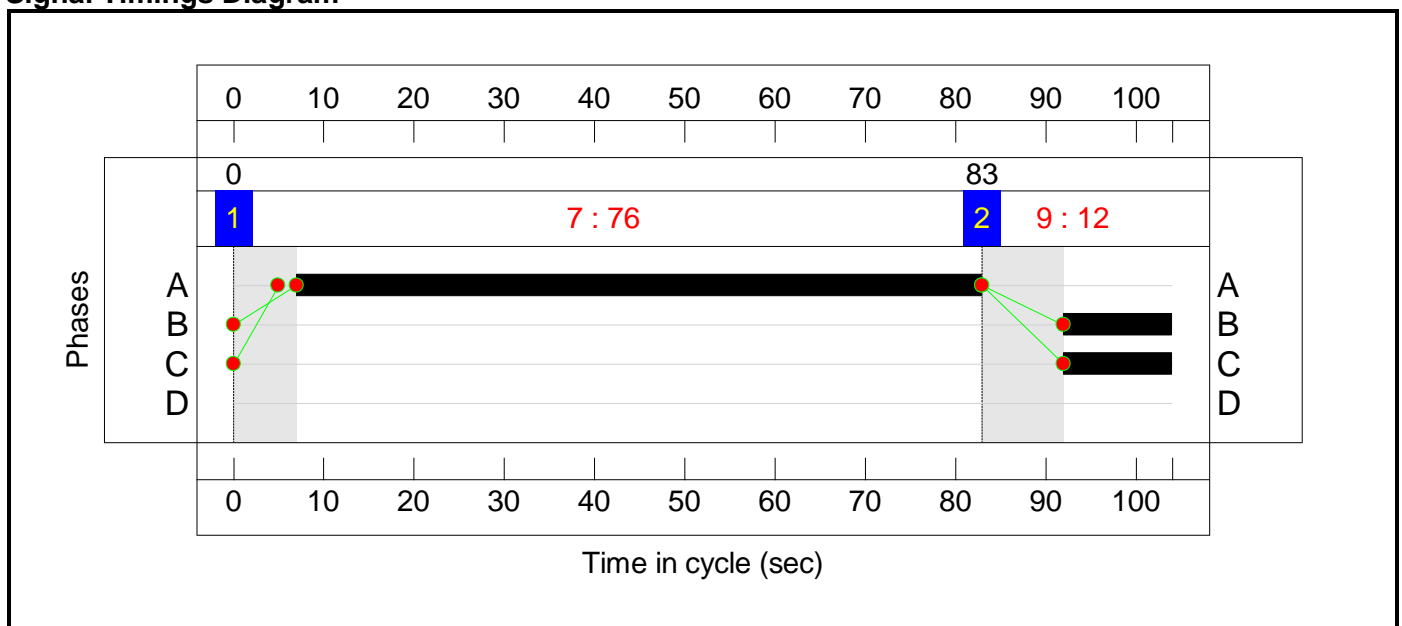
Stage Sequence Diagram



Stage Timings

| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 76 | 12 |
| Change Point | 0 | 83 |

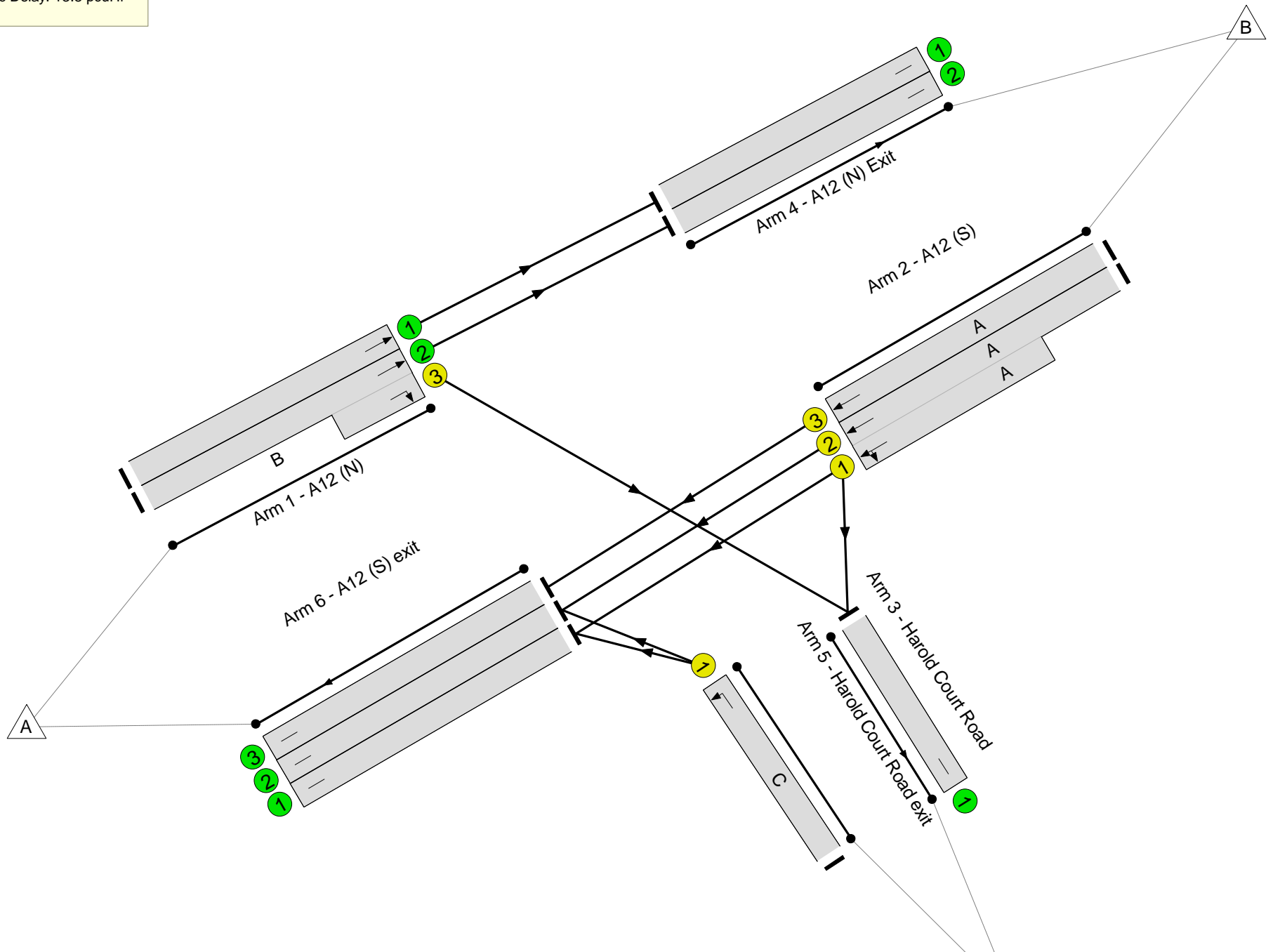

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

A12 / Harold Court
PRC: 5.8 %
Total Traffic Delay: 13.8 pcuHr



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% |
| A12 / Harold Court | - | - | N/A | - | - | | - | - | - | - | - | - | 85.0% |
| 1/1 | A12 (N) Ahead | U | N/A | N/A | - | | - | - | - | 1671 | 1965 | 1965 | 85.0% |
| 1/2+1/3 | A12 (N) Ahead Right | U | N/A | N/A | - B | | - | - | - | 129 | 1965:1800 | 0+225 | 0.0 : 57.3% |
| 2/2+2/1 | A12 (S) Left Ahead | U | N/A | N/A | A | | 1 | 76 | - | 1387 | 2055:1915 | 969+903 | 74.1 : 74.1% |
| 2/3 | A12 (S) Ahead | U | N/A | N/A | A | | 1 | 76 | - | 896 | 2055 | 1521 | 58.9% |
| 3/1 | Harold Court Road Left | U | N/A | N/A | C | | 1 | 12 | - | 158 | 1795 | 224 | 70.4% |
| 4/1 | A12 (N) Exit | U | N/A | N/A | - | | - | - | - | 1671 | Inf | Inf | 0.0% |
| 4/2 | A12 (N) Exit | U | N/A | N/A | - | | - | - | - | 0 | Inf | Inf | 0.0% |
| 5/1 | Harold Court Road exit | U | N/A | N/A | - | | - | - | - | 188 | Inf | Inf | 0.0% |
| 6/1 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 689 | Inf | Inf | 0.0% |
| 6/2 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 797 | Inf | Inf | 0.0% |
| 6/3 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 896 | Inf | Inf | 0.0% |

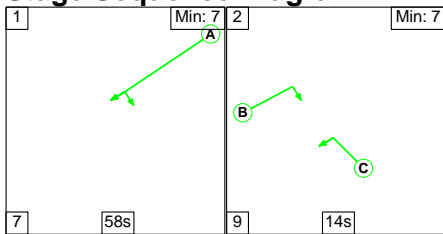
Full Input Data And Results

| 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 | 7.1 | 6.7 | 0.0 | 13.8 | - | - | - | - |
| A12 / Harold Court | - | - | 0 | 0 | 0 | 7.1 | 6.7 | 0.0 | 13.8 | - | - | - | - |
| 1/1 | 1671 | 1671 | - | - | - | 0.0 | 2.8 | - | 2.8 | 6.0 | 0.0 | 2.8 | 2.8 |
| 1/2+1/3 | 129 | 129 | - | - | - | 1.5 | 0.7 | - | 2.2 | 61.4 | 3.5 | 0.7 | 4.2 |
| 2/2+2/1 | 1387 | 1387 | - | - | - | 2.1 | 1.4 | - | 3.5 | 9.1 | 8.2 | 1.4 | 9.6 |
| 2/3 | 896 | 896 | - | - | - | 1.5 | 0.7 | - | 2.3 | 9.1 | 11.7 | 0.7 | 12.4 |
| 3/1 | 158 | 158 | - | - | - | 1.9 | 1.2 | - | 3.1 | 69.9 | 4.3 | 1.2 | 5.5 |
| 4/1 | 1671 | 1671 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4/2 | 0 | 0 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 188 | 188 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 689 | 689 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 797 | 797 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/3 | 896 | 896 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 21.4 | Total Delay for Signalled Lanes (pcuHr): | | 8.83 | Cycle Time (s): 104 | | | | |
| | | | PRC Over All Lanes (%): | | 5.8 | Total Delay Over All Lanes(pcuHr): | | 13.82 | | | | | |

Full Input Data And Results

Scenario 4: '2030 PM' (FG4: 'Reference Case 2030 PM', Plan 1: 'Network Control Plan 1')

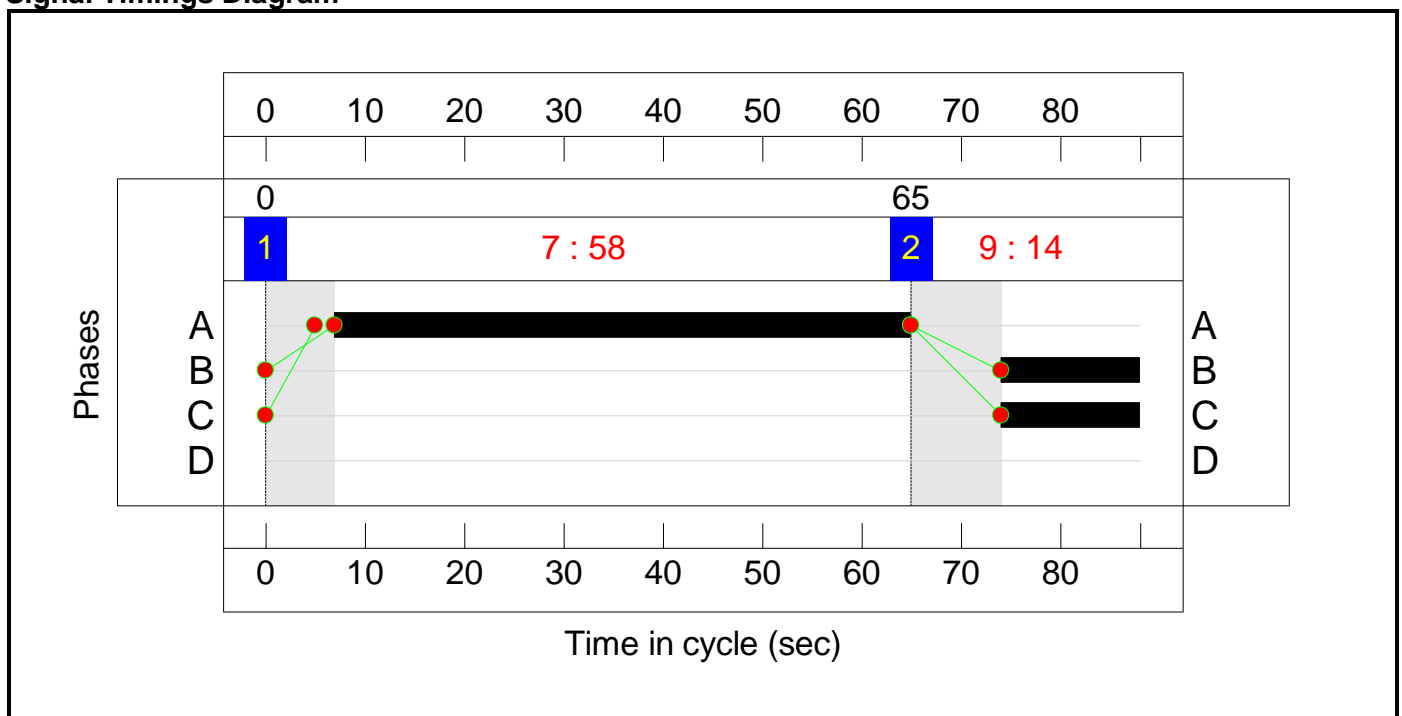
Stage Sequence Diagram



Stage Timings

| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 58 | 14 |
| Change Point | 0 | 65 |

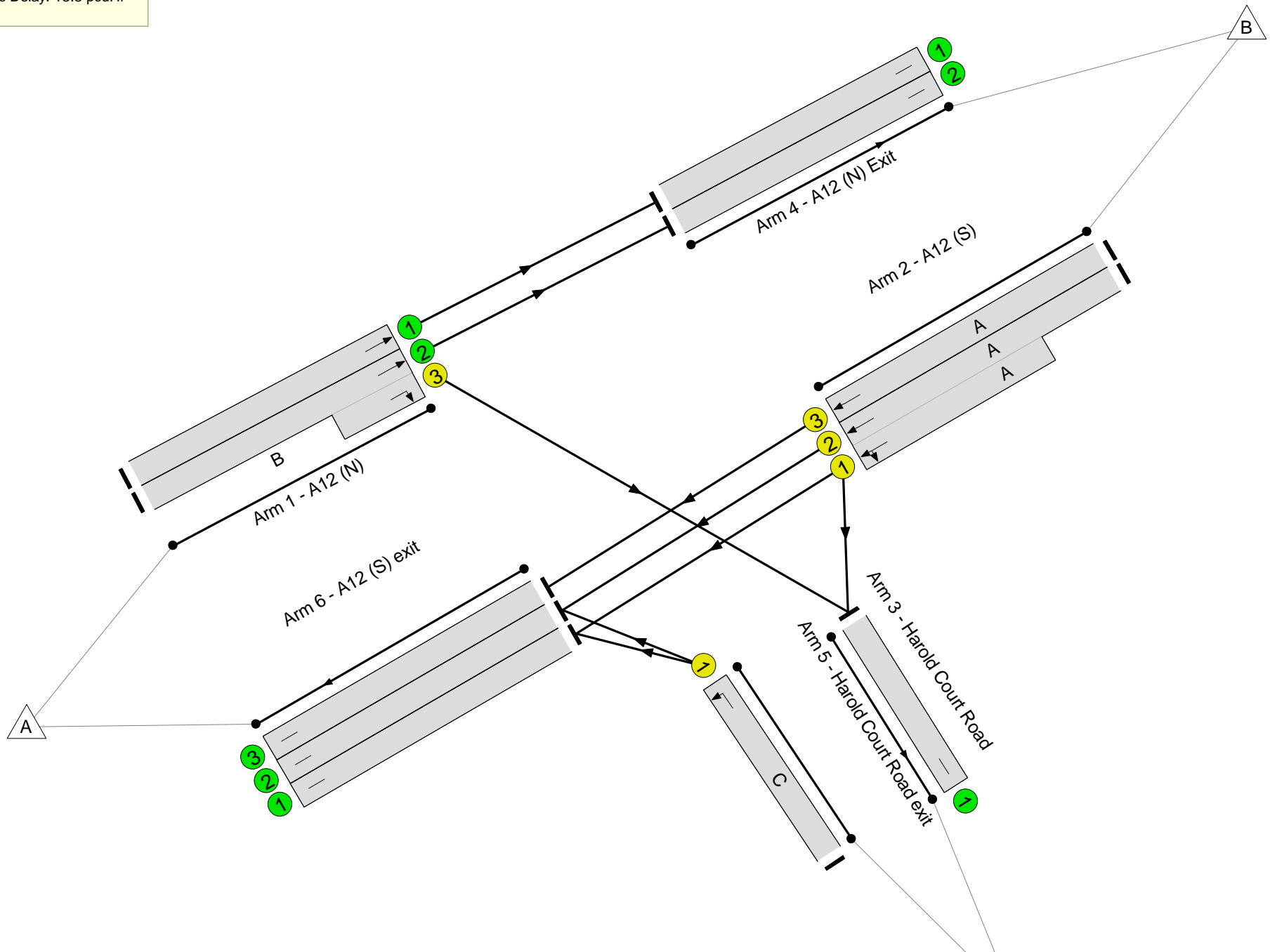
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

A12 / Harold Court
PRC: 11.5 %
Total Traffic Delay: 13.8 pcuHr



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 | - | - | | - | - | - | - | - | - | 80.7% |
| A12 / Harold Court | - | - | N/A | - | - | | - | - | - | - | - | - | 80.7% |
| 1/1 | A12 (N) Ahead | U | N/A | N/A | - | | - | - | - | 1586 | 1965 | 1965 | 80.7% |
| 1/2+1/3 | A12 (N) Ahead Right | U | N/A | N/A | - B | | - | - | - | 143 | 1965:1800 | 0+307 | 0.0 : 46.6% |
| 2/2+2/1 | A12 (S) Left Ahead | U | N/A | N/A | A | | 1 | 58 | - | 1348 | 2055:1915 | 935+870 | 74.7 : 74.7% |
| 2/3 | A12 (S) Ahead | U | N/A | N/A | A | | 1 | 58 | - | 817 | 2055 | 1378 | 59.3% |
| 3/1 | Harold Court Road Left | U | N/A | N/A | C | | 1 | 14 | - | 217 | 1795 | 306 | 70.9% |
| 4/1 | A12 (N) Exit | U | N/A | N/A | - | | - | - | - | 1586 | Inf | Inf | 0.0% |
| 4/2 | A12 (N) Exit | U | N/A | N/A | - | | - | - | - | 0 | Inf | Inf | 0.0% |
| 5/1 | Harold Court Road exit | U | N/A | N/A | - | | - | - | - | 209 | Inf | Inf | 0.0% |
| 6/1 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 692 | Inf | Inf | 0.0% |
| 6/2 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 807 | Inf | Inf | 0.0% |
| 6/3 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 817 | Inf | Inf | 0.0% |

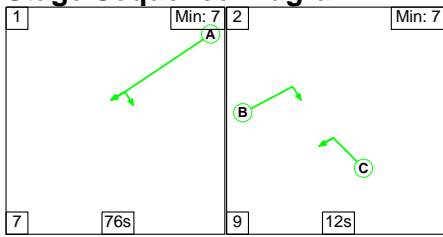
Full Input Data And Results

| 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 | 7.9 | 5.9 | 0.0 | 13.8 | - | - | - | - |
| A12 / Harold Court | - | - | 0 | 0 | 0 | 7.9 | 5.9 | 0.0 | 13.8 | - | - | - | - |
| 1/1 | 1586 | 1586 | - | - | - | 0.0 | 2.1 | - | 2.1 | 4.7 | 0.0 | 2.1 | 2.1 |
| 1/2+1/3 | 143 | 143 | - | - | - | 1.3 | 0.4 | - | 1.7 | 43.8 | 3.1 | 0.4 | 3.6 |
| 2/2+2/1 | 1348 | 1348 | - | - | - | 2.7 | 1.5 | - | 4.2 | 11.1 | 8.3 | 1.5 | 9.8 |
| 2/3 | 817 | 817 | - | - | - | 1.8 | 0.7 | - | 2.5 | 11.1 | 10.9 | 0.7 | 11.6 |
| 3/1 | 217 | 217 | - | - | - | 2.1 | 1.2 | - | 3.3 | 54.1 | 5.0 | 1.2 | 6.2 |
| 4/1 | 1586 | 1586 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4/2 | 0 | 0 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 209 | 209 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 692 | 692 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 807 | 807 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/3 | 817 | 817 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 20.5 | Total Delay for Signalled Lanes (pcuHr): | | | 9.97 | Cycle Time (s): 88 | | | |
| | | | PRC Over All Lanes (%): | | 11.5 | Total Delay Over All Lanes(pcuHr): | | | 13.78 | | | | |

Full Input Data And Results

Scenario 5: '2030 + LTC AM' (FG7: 'Do Something 2030 + LTC AM', Plan 1: 'Network Control Plan 1')

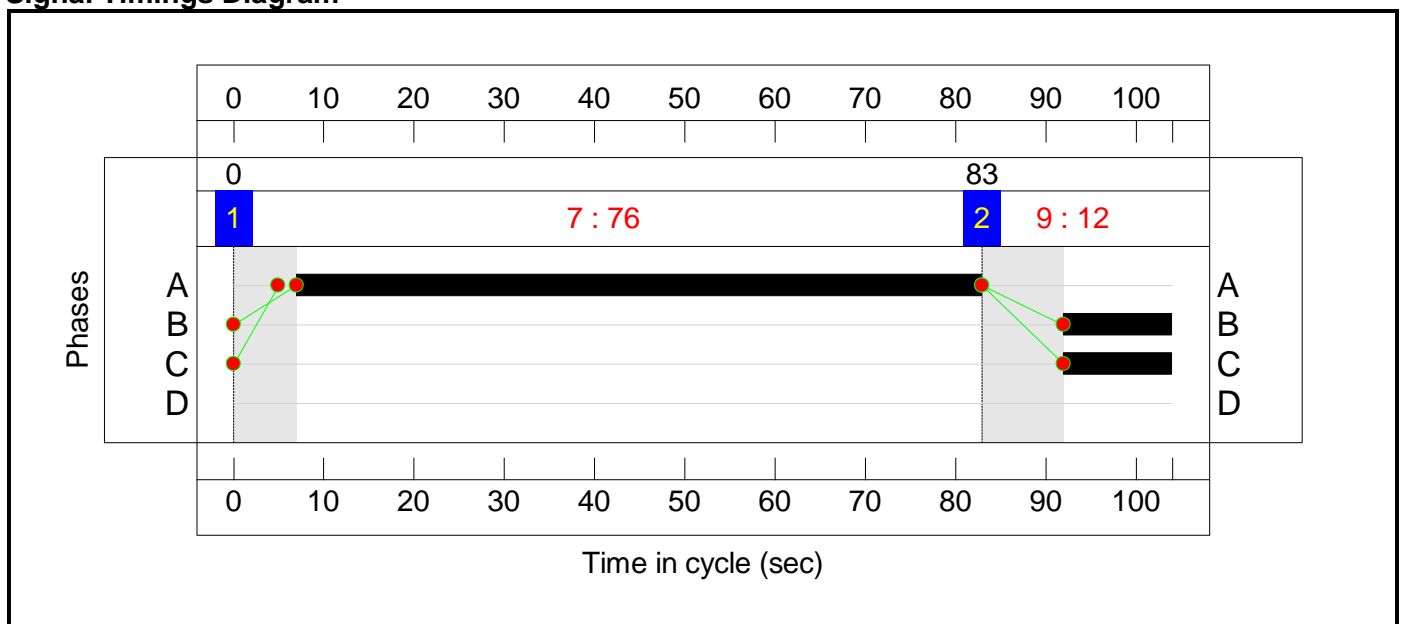
Stage Sequence Diagram



Stage Timings

| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 76 | 12 |
| Change Point | 0 | 83 |

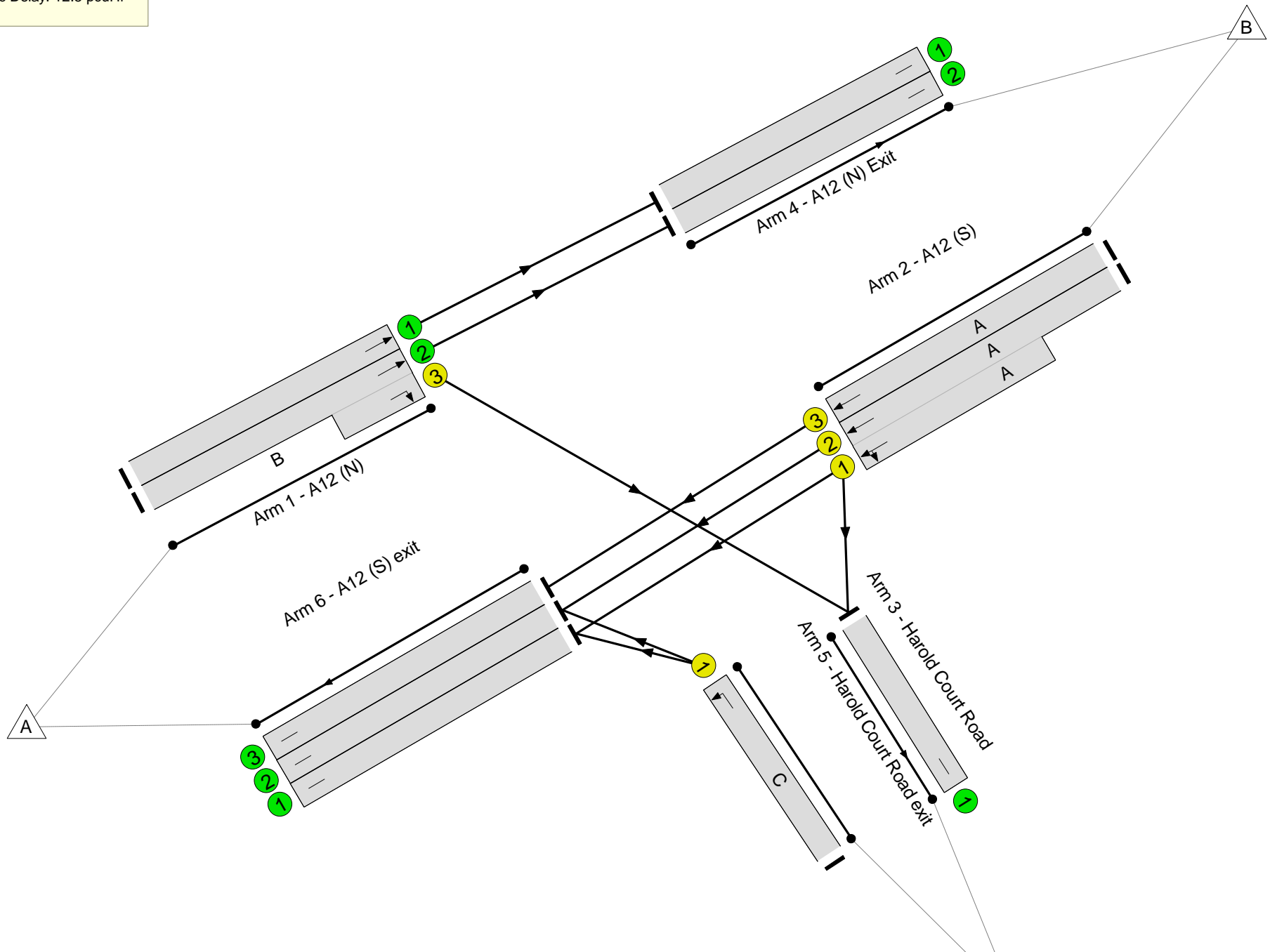

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

A12 / Harold Court
PRC: 15.3 %
Total Traffic Delay: 12.5 pcuHr



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 | - | - | | - | - | - | - | - | - | 78.1% |
| A12 / Harold Court | - | - | N/A | - | - | | - | - | - | - | - | - | 78.1% |
| 1/1 | A12 (N) Ahead | U | N/A | N/A | - | | - | - | - | 1368 | 1965 | 1965 | 69.6% |
| 1/2+1/3 | A12 (N) Ahead Right | U | N/A | N/A | - B | | - | - | - | 129 | 1965:1800 | 0+225 | 0.0 : 57.3% |
| 2/2+2/1 | A12 (S) Left Ahead | U | N/A | N/A | A | | 1 | 76 | - | 1458 | 2055:1915 | 971+897 | 78.1 : 78.1% |
| 2/3 | A12 (S) Ahead | U | N/A | N/A | A | | 1 | 76 | - | 969 | 2055 | 1521 | 63.7% |
| 3/1 | Harold Court Road Left | U | N/A | N/A | C | | 1 | 12 | - | 141 | 1795 | 224 | 62.8% |
| 4/1 | A12 (N) Exit | U | N/A | N/A | - | | - | - | - | 1368 | Inf | Inf | 0.0% |
| 4/2 | A12 (N) Exit | U | N/A | N/A | - | | - | - | - | 0 | Inf | Inf | 0.0% |
| 5/1 | Harold Court Road exit | U | N/A | N/A | - | | - | - | - | 226 | Inf | Inf | 0.0% |
| 6/1 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 673 | Inf | Inf | 0.0% |
| 6/2 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 829 | Inf | Inf | 0.0% |
| 6/3 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 969 | Inf | Inf | 0.0% |

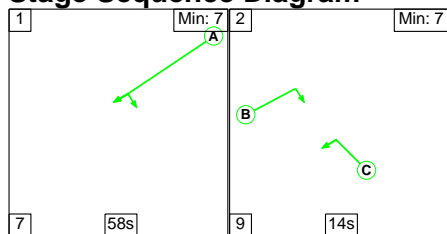
Full Input Data And Results

| 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 | 7.3 | 5.3 | 0.0 | 12.5 | - | - | - | - |
| A12 / Harold Court | - | - | 0 | 0 | 0 | 7.3 | 5.3 | 0.0 | 12.5 | - | - | - | - |
| 1/1 | 1368 | 1368 | - | - | - | 0.0 | 1.1 | - | 1.1 | 3.0 | 0.0 | 1.1 | 1.1 |
| 1/2+1/3 | 129 | 129 | - | - | - | 1.5 | 0.7 | - | 2.2 | 61.4 | 3.5 | 0.7 | 4.2 |
| 2/2+2/1 | 1458 | 1458 | - | - | - | 2.2 | 1.8 | - | 4.0 | 9.9 | 8.8 | 1.8 | 10.6 |
| 2/3 | 969 | 969 | - | - | - | 1.8 | 0.9 | - | 2.7 | 9.9 | 13.7 | 0.9 | 14.6 |
| 3/1 | 141 | 141 | - | - | - | 1.7 | 0.8 | - | 2.5 | 64.4 | 3.8 | 0.8 | 4.7 |
| 4/1 | 1368 | 1368 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4/2 | 0 | 0 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 226 | 226 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 673 | 673 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 829 | 829 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/3 | 969 | 969 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 15.3 | Total Delay for Signalled Lanes (pcuHr): | | 9.19 | Cycle Time (s): 104 | | | | |
| | | | PRC Over All Lanes (%): | | 15.3 | Total Delay Over All Lanes(pcuHr): | | 12.53 | | | | | |

Full Input Data And Results

Scenario 6: '2030 + LTC PM' (FG8: 'Do Something 2030 + LTC PM', Plan 1: 'Network Control Plan 1')

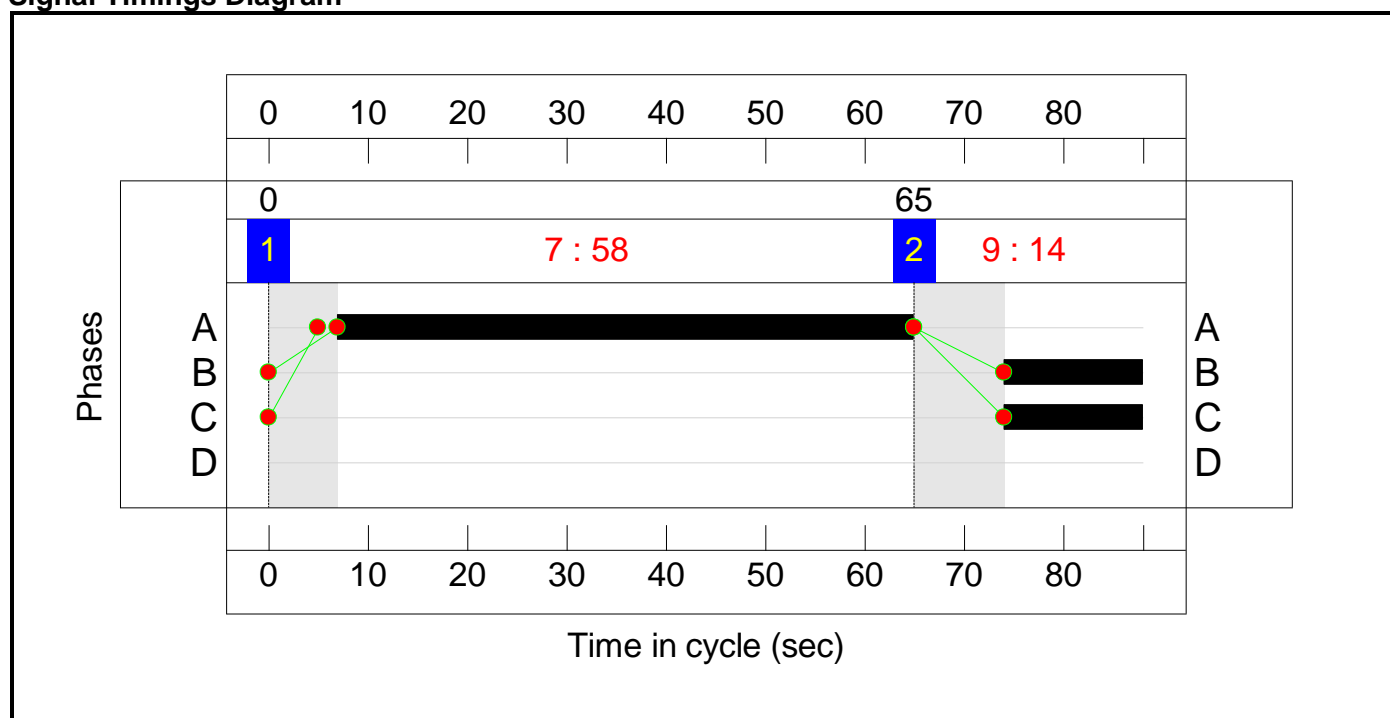
Stage Sequence Diagram



Stage Timings

| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 58 | 14 |
| Change Point | 0 | 65 |

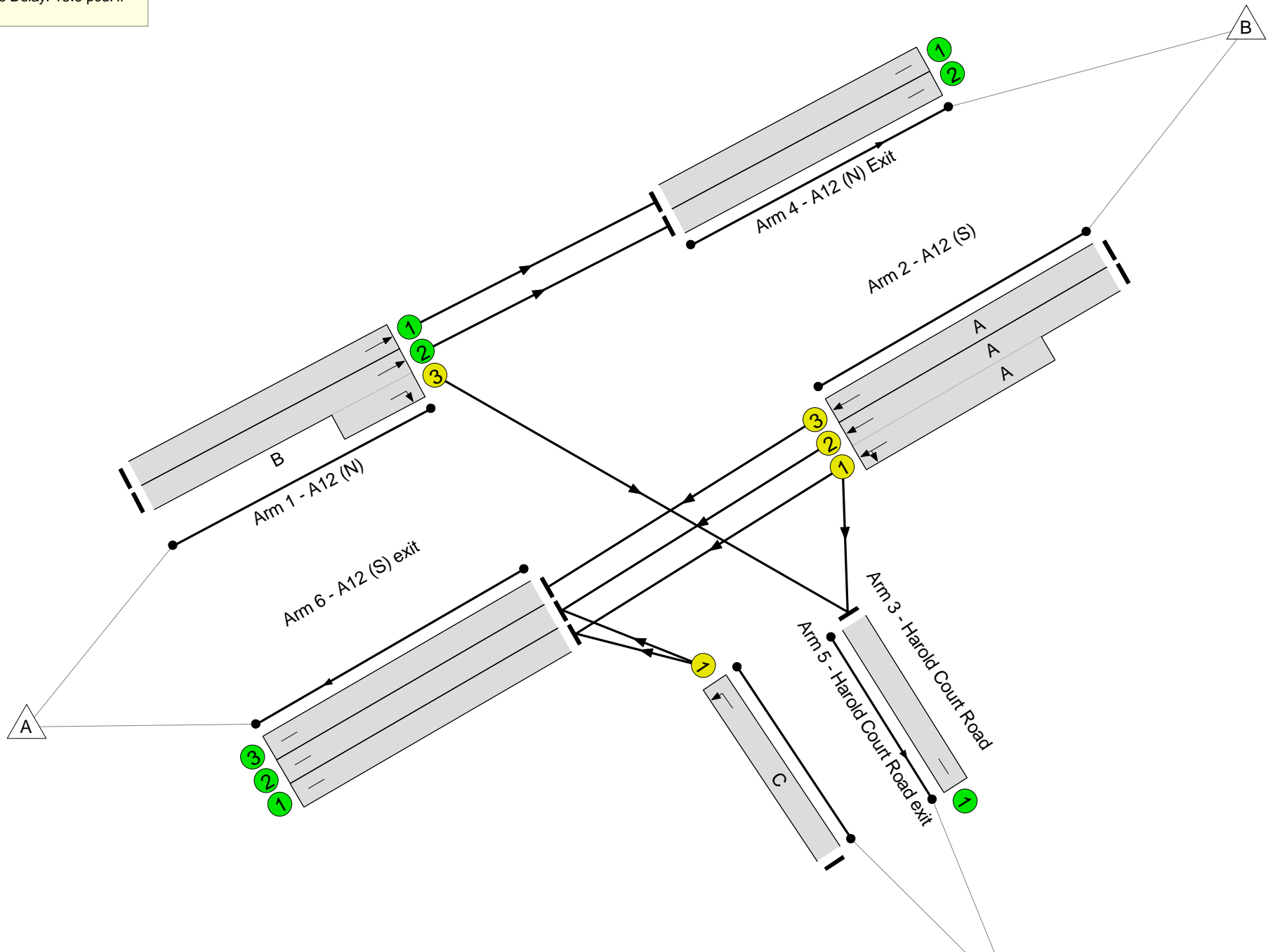
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

A12 / Harold Court
PRC: 14.8 %
Total Traffic Delay: 13.6 pcuHr



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 | - | - | | - | - | - | - | - | - | 78.4% |
| A12 / Harold Court | - | - | N/A | - | - | | - | - | - | - | - | - | 78.4% |
| 1/1 | A12 (N) Ahead | U | N/A | N/A | - | | - | - | - | 1541 | 1965 | 1965 | 78.4% |
| 1/2+1/3 | A12 (N) Ahead Right | U | N/A | N/A | - B | | - | - | - | 144 | 1965:1800 | 0+307 | 0.0 : 46.9% |
| 2/2+2/1 | A12 (S) Left Ahead | U | N/A | N/A | A | | 1 | 58 | - | 1333 | 2055:1915 | 935+871 | 73.8 : 73.8% |
| 2/3 | A12 (S) Ahead | U | N/A | N/A | A | | 1 | 58 | - | 803 | 2055 | 1378 | 58.3% |
| 3/1 | Harold Court Road Left | U | N/A | N/A | C | | 1 | 14 | - | 226 | 1795 | 306 | 73.9% |
| 4/1 | A12 (N) Exit | U | N/A | N/A | - | | - | - | - | 1541 | Inf | Inf | 0.0% |
| 4/2 | A12 (N) Exit | U | N/A | N/A | - | | - | - | - | 0 | Inf | Inf | 0.0% |
| 5/1 | Harold Court Road exit | U | N/A | N/A | - | | - | - | - | 210 | Inf | Inf | 0.0% |
| 6/1 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 690 | Inf | Inf | 0.0% |
| 6/2 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 803 | Inf | Inf | 0.0% |
| 6/3 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 803 | Inf | Inf | 0.0% |

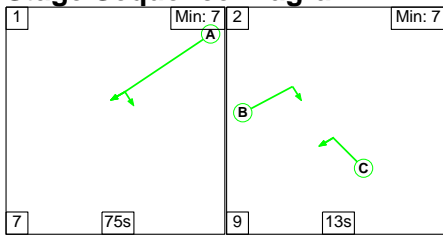
Full Input Data And Results

| 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 | 7.9 | 5.7 | 0.0 | 13.6 | - | - | - | - |
| A12 / Harold Court | - | - | 0 | 0 | 0 | 7.9 | 5.7 | 0.0 | 13.6 | - | - | - | - |
| 1/1 | 1541 | 1541 | - | - | - | 0.0 | 1.8 | - | 1.8 | 4.2 | 0.0 | 1.8 | 1.8 |
| 1/2+1/3 | 144 | 144 | - | - | - | 1.3 | 0.4 | - | 1.8 | 43.9 | 3.2 | 0.4 | 3.6 |
| 2/2+2/1 | 1333 | 1333 | - | - | - | 2.7 | 1.4 | - | 4.1 | 11.0 | 8.2 | 1.4 | 9.6 |
| 2/3 | 803 | 803 | - | - | - | 1.7 | 0.7 | - | 2.4 | 11.0 | 10.5 | 0.7 | 11.2 |
| 3/1 | 226 | 226 | - | - | - | 2.2 | 1.4 | - | 3.5 | 56.4 | 5.2 | 1.4 | 6.6 |
| 4/1 | 1541 | 1541 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4/2 | 0 | 0 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 210 | 210 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 690 | 690 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 803 | 803 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/3 | 803 | 803 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <p>C1 PRC for Signalled Lanes (%): 21.8 Total Delay for Signalled Lanes (pcuHr): 10.06 Cycle Time (s): 88</p> <p> PRC Over All Lanes (%): 14.8 Total Delay Over All Lanes(pcuHr): 13.61</p> | | | | | | | | | | | | | |

Full Input Data And Results

Scenario 7: 'New Scenario' (FG9: '2023 Surveyed Peak Hour AM', Plan 1: 'Network Control Plan 1')

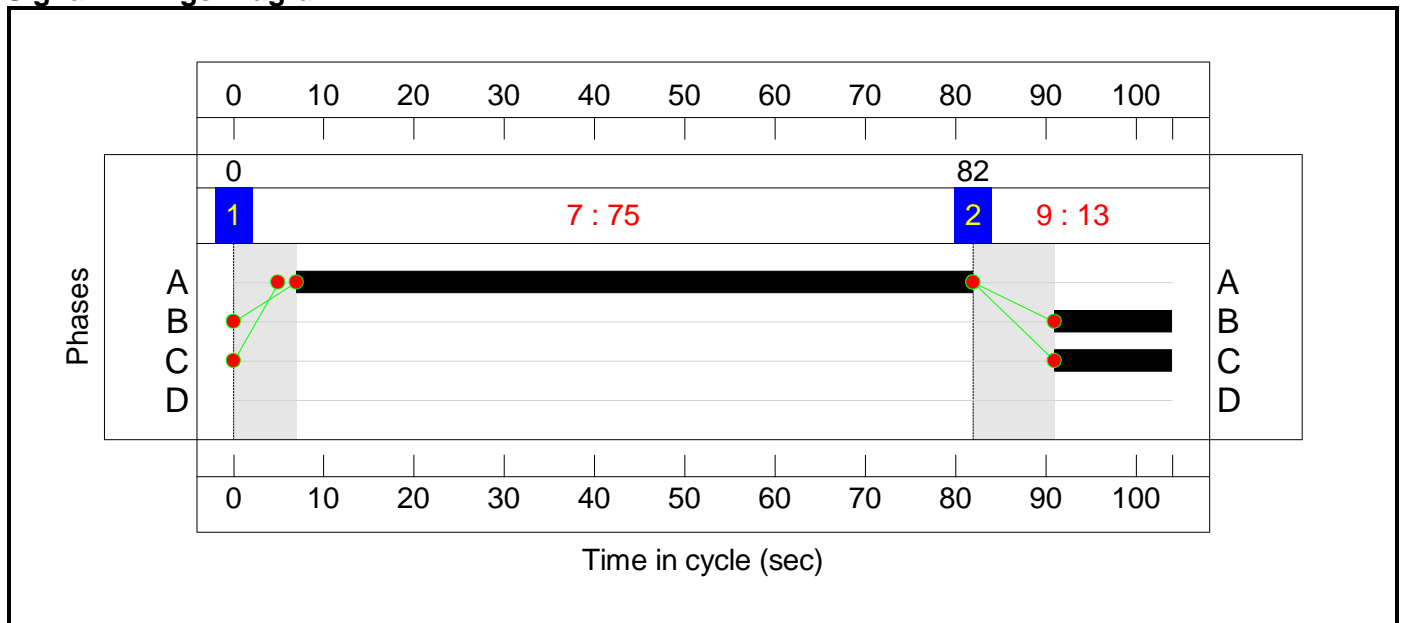
Stage Sequence Diagram



Stage Timings

| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 75 | 13 |
| Change Point | 0 | 82 |

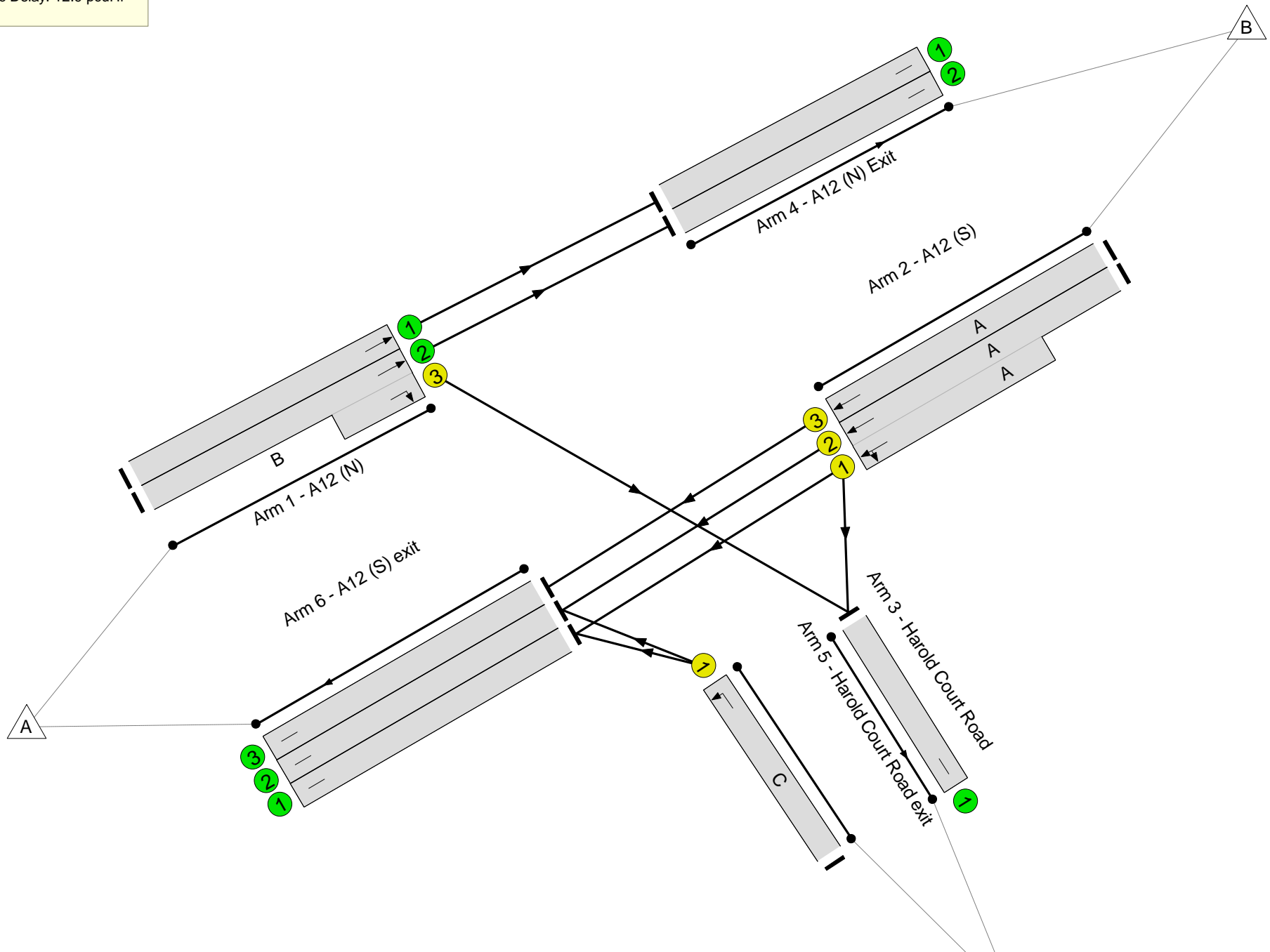
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

A12 / Harold Court
PRC: 10.9 %
Total Traffic Delay: 12.9 pcuHr



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 | - | - | | - | - | - | - | - | - | 81.1% |
| A12 / Harold Court | - | - | N/A | - | - | | - | - | - | - | - | - | 81.1% |
| 1/1 | A12 (N) Ahead | U | N/A | N/A | - | | - | - | - | 1594 | 1965 | 1965 | 81.1% |
| 1/2+1/3 | A12 (N) Ahead Right | U | N/A | N/A | - B | | - | - | - | 100 | 1965:1800 | 0+242 | 0.0 : 41.3% |
| 2/2+2/1 | A12 (S) Left Ahead | U | N/A | N/A | A | | 1 | 75 | - | 1377 | 2055:1915 | 958+895 | 74.3 : 74.3% |
| 2/3 | A12 (S) Ahead | U | N/A | N/A | A | | 1 | 75 | - | 852 | 2055 | 1502 | 56.7% |
| 3/1 | Harold Court Road Left | U | N/A | N/A | C | | 1 | 13 | - | 178 | 1795 | 242 | 73.7% |
| 4/1 | A12 (N) Exit | U | N/A | N/A | - | | - | - | - | 1594 | Inf | Inf | 0.0% |
| 4/2 | A12 (N) Exit | U | N/A | N/A | - | | - | - | - | 0 | Inf | Inf | 0.0% |
| 5/1 | Harold Court Road exit | U | N/A | N/A | - | | - | - | - | 168 | Inf | Inf | 0.0% |
| 6/1 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 686 | Inf | Inf | 0.0% |
| 6/2 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 801 | Inf | Inf | 0.0% |
| 6/3 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 852 | Inf | Inf | 0.0% |

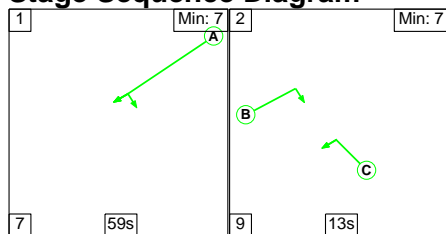
Full Input Data And Results

| 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 | 7.0 | 5.9 | 0.0 | 12.9 | - | - | - | - |
| A12 / Harold Court | - | - | 0 | 0 | 0 | 7.0 | 5.9 | 0.0 | 12.9 | - | - | - | - |
| 1/1 | 1594 | 1594 | - | - | - | 0.0 | 2.1 | - | 2.1 | 4.8 | 0.0 | 2.1 | 2.1 |
| 1/2+1/3 | 100 | 100 | - | - | - | 1.1 | 0.3 | - | 1.5 | 53.8 | 2.6 | 0.3 | 3.0 |
| 2/2+2/1 | 1377 | 1377 | - | - | - | 2.2 | 1.4 | - | 3.6 | 9.5 | 8.3 | 1.4 | 9.7 |
| 2/3 | 852 | 852 | - | - | - | 1.5 | 0.7 | - | 2.2 | 9.2 | 11.1 | 0.7 | 11.8 |
| 3/1 | 178 | 178 | - | - | - | 2.1 | 1.3 | - | 3.5 | 70.4 | 4.9 | 1.3 | 6.2 |
| 4/1 | 1594 | 1594 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4/2 | 0 | 0 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 168 | 168 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 686 | 686 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 801 | 801 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/3 | 852 | 852 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 21.1 | Total Delay for Signalled Lanes (pcuHr): | | 9.30 | Cycle Time (s): 104 | | | | |
| | | | PRC Over All Lanes (%): | | 10.9 | Total Delay Over All Lanes(pcuHr): | | 12.92 | | | | | |

Full Input Data And Results

Scenario 8: 'New Scenario' (FG10: '2023 Surveyed Peak Hour PM', Plan 1: 'Network Control Plan 1')

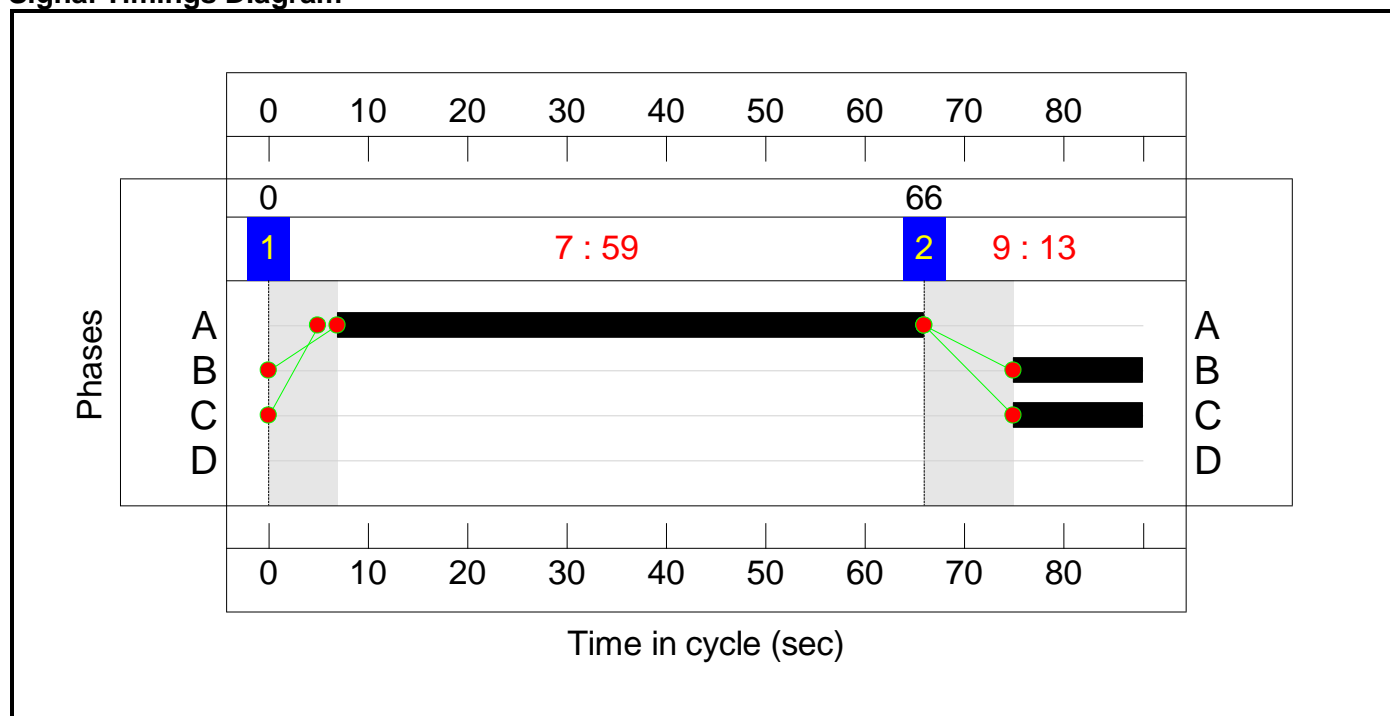
Stage Sequence Diagram



Stage Timings

| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 59 | 13 |
| Change Point | 0 | 66 |

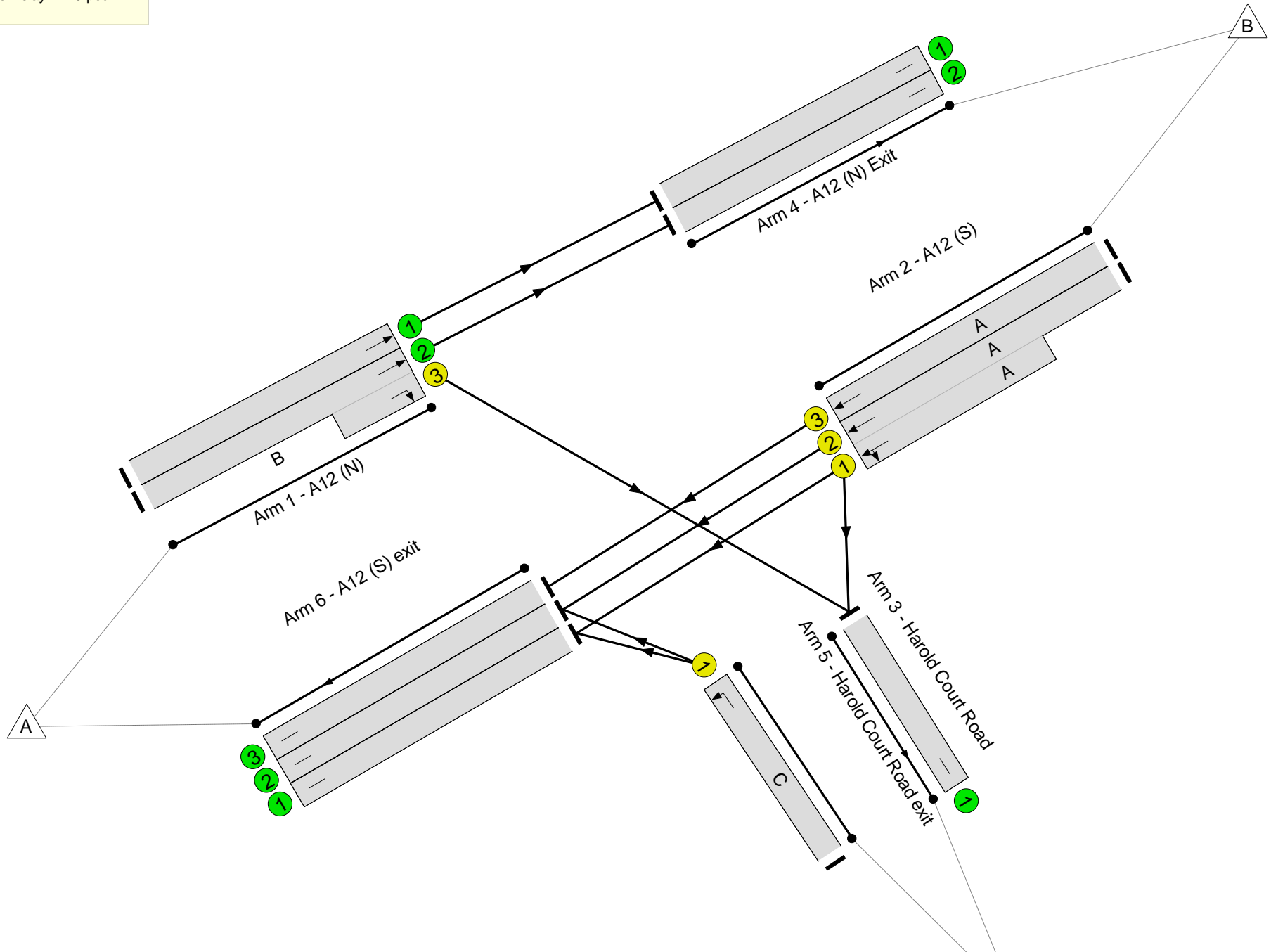
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

A12 / Harold Court
PRC: 17.2 %
Total Traffic Delay: 11.9 pcuHr



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 | - | - | | - | - | - | - | - | - | 76.8% |
| A12 / Harold Court | - | - | N/A | - | - | | - | - | - | - | - | - | 76.8% |
| 1/1 | A12 (N) Ahead | U | N/A | N/A | - | | - | - | - | 1509 | 1965 | 1965 | 76.8% |
| 1/2+1/3 | A12 (N) Ahead Right | U | N/A | N/A | - B | | - | - | - | 91 | 1965:1800 | 0+286 | 0.0 : 31.8% |
| 2/2+2/1 | A12 (S) Left Ahead | U | N/A | N/A | A | | 1 | 59 | - | 1309 | 2055:1915 | 947+881 | 71.6 : 71.6% |
| 2/3 | A12 (S) Ahead | U | N/A | N/A | A | | 1 | 59 | - | 793 | 2055 | 1401 | 56.6% |
| 3/1 | Harold Court Road Left | U | N/A | N/A | C | | 1 | 13 | - | 205 | 1795 | 286 | 71.8% |
| 4/1 | A12 (N) Exit | U | N/A | N/A | - | | - | - | - | 1509 | Inf | Inf | 0.0% |
| 4/2 | A12 (N) Exit | U | N/A | N/A | - | | - | - | - | 0 | Inf | Inf | 0.0% |
| 5/1 | Harold Court Road exit | U | N/A | N/A | - | | - | - | - | 156 | Inf | Inf | 0.0% |
| 6/1 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 668 | Inf | Inf | 0.0% |
| 6/2 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 781 | Inf | Inf | 0.0% |
| 6/3 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 793 | Inf | Inf | 0.0% |

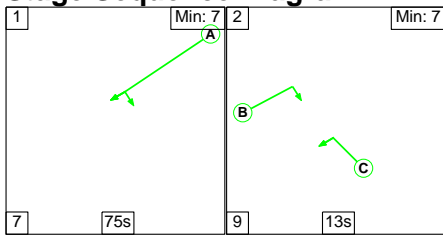
Full Input Data And Results

| 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 | 6.8 | 5.0 | 0.0 | 11.9 | - | - | - | - |
| A12 / Harold Court | - | - | 0 | 0 | 0 | 6.8 | 5.0 | 0.0 | 11.9 | - | - | - | - |
| 1/1 | 1509 | 1509 | - | - | - | 0.0 | 1.6 | - | 1.6 | 3.9 | 0.0 | 1.6 | 1.6 |
| 1/2+1/3 | 91 | 91 | - | - | - | 0.8 | 0.2 | - | 1.1 | 42.0 | 1.9 | 0.2 | 2.2 |
| 2/2+2/1 | 1309 | 1309 | - | - | - | 2.4 | 1.3 | - | 3.7 | 10.1 | 7.7 | 1.3 | 9.0 |
| 2/3 | 793 | 793 | - | - | - | 1.6 | 0.7 | - | 2.2 | 10.2 | 9.9 | 0.7 | 10.6 |
| 3/1 | 205 | 205 | - | - | - | 2.0 | 1.2 | - | 3.2 | 56.8 | 4.7 | 1.2 | 6.0 |
| 4/1 | 1509 | 1509 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4/2 | 0 | 0 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 156 | 156 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 668 | 668 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 781 | 781 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/3 | 793 | 793 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 25.4 | Total Delay for Signalled Lanes (pcuHr): | | 9.16 | Cycle Time (s): | | 88 | | |
| | | | PRC Over All Lanes (%): | | 17.2 | Total Delay Over All Lanes(pcuHr): | | 11.86 | | | | | |

Full Input Data And Results

Scenario 9: 'New Scenario' (FG11: '2030 Surveyed Peak Hour AM', Plan 1: 'Network Control Plan 1')

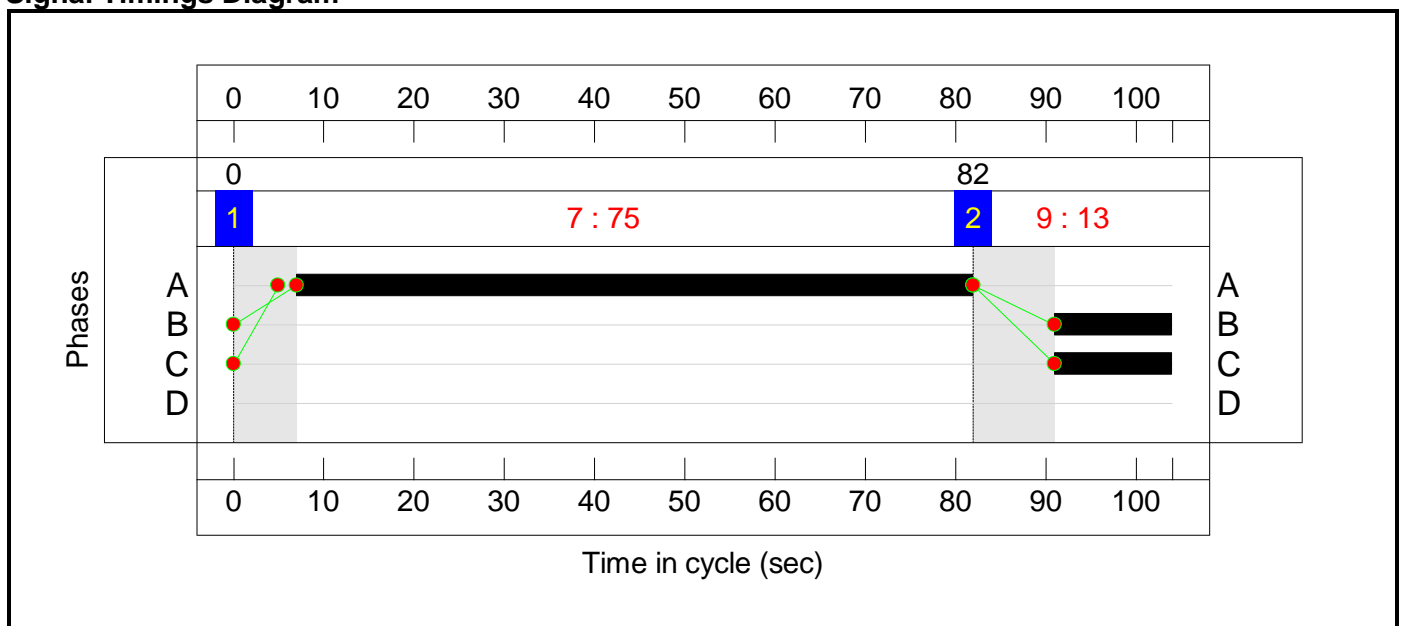
Stage Sequence Diagram



Stage Timings

| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 75 | 13 |
| Change Point | 0 | 82 |

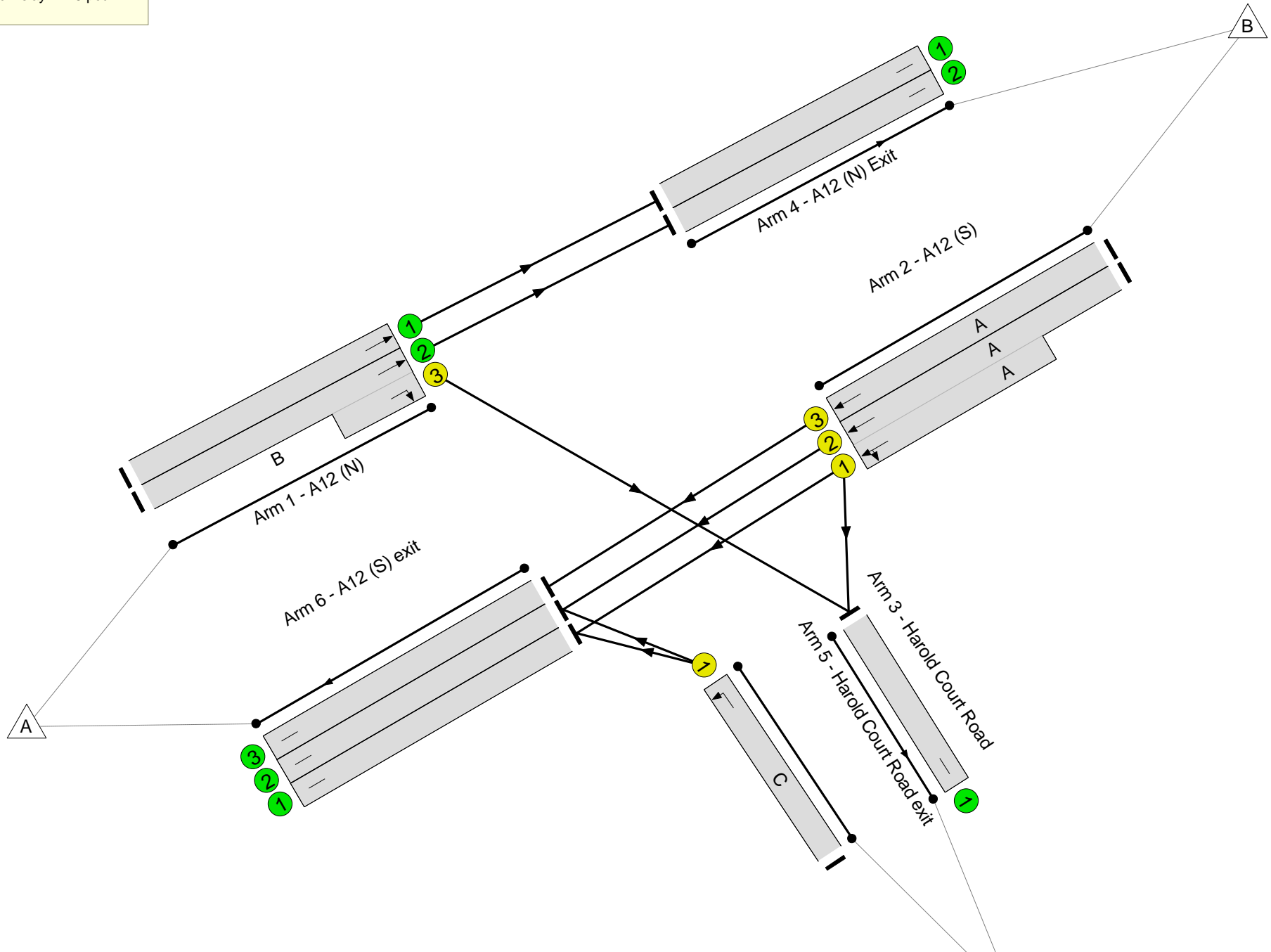

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

A12 / Harold Court
PRC: 6.0 %
Total Traffic Delay: 14.6 pcuHr



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 | - | - | | - | - | - | - | - | - | 84.9% |
| A12 / Harold Court | - | - | N/A | - | - | | - | - | - | - | - | - | 84.9% |
| 1/1 | A12 (N) Ahead | U | N/A | N/A | - | | - | - | - | 1668 | 1965 | 1965 | 84.9% |
| 1/2+1/3 | A12 (N) Ahead Right | U | N/A | N/A | - B | | - | - | - | 105 | 1965:1800 | 0+242 | 0.0 : 43.3% |
| 2/2+2/1 | A12 (S) Left Ahead | U | N/A | N/A | A | | 1 | 75 | - | 1431 | 2055:1915 | 959+893 | 77.3 : 77.3% |
| 2/3 | A12 (S) Ahead | U | N/A | N/A | A | | 1 | 75 | - | 902 | 2055 | 1502 | 60.1% |
| 3/1 | Harold Court Road Left | U | N/A | N/A | C | | 1 | 13 | - | 186 | 1795 | 242 | 77.0% |
| 4/1 | A12 (N) Exit | U | N/A | N/A | - | | - | - | - | 1668 | Inf | Inf | 0.0% |
| 4/2 | A12 (N) Exit | U | N/A | N/A | - | | - | - | - | 0 | Inf | Inf | 0.0% |
| 5/1 | Harold Court Road exit | U | N/A | N/A | - | | - | - | - | 176 | Inf | Inf | 0.0% |
| 6/1 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 712 | Inf | Inf | 0.0% |
| 6/2 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 834 | Inf | Inf | 0.0% |
| 6/3 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 902 | Inf | Inf | 0.0% |

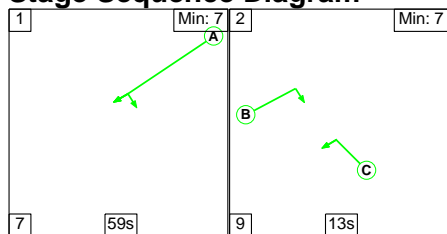
Full Input Data And Results

| 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 | 7.5 | 7.2 | 0.0 | 14.6 | - | - | - | - |
| A12 / Harold Court | - | - | 0 | 0 | 0 | 7.5 | 7.2 | 0.0 | 14.6 | - | - | - | - |
| 1/1 | 1668 | 1668 | - | - | - | 0.0 | 2.8 | - | 2.8 | 6.0 | 0.0 | 2.8 | 2.8 |
| 1/2+1/3 | 105 | 105 | - | - | - | 1.2 | 0.4 | - | 1.6 | 54.4 | 2.8 | 0.4 | 3.2 |
| 2/2+2/1 | 1431 | 1431 | - | - | - | 2.3 | 1.7 | - | 4.0 | 10.1 | 8.9 | 1.7 | 10.5 |
| 2/3 | 902 | 902 | - | - | - | 1.7 | 0.8 | - | 2.4 | 9.7 | 12.3 | 0.8 | 13.0 |
| 3/1 | 186 | 186 | - | - | - | 2.2 | 1.6 | - | 3.8 | 74.1 | 5.2 | 1.6 | 6.7 |
| 4/1 | 1668 | 1668 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4/2 | 0 | 0 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 176 | 176 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 712 | 712 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 834 | 834 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/3 | 902 | 902 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 16.5 | Total Delay for Signalled Lanes (pcuHr): | | 10.29 | Cycle Time (s): 104 | | | | |
| | | | PRC Over All Lanes (%): | | 6.0 | Total Delay Over All Lanes(pcuHr): | | 14.63 | | | | | |

Full Input Data And Results

Scenario 10: 'New Scenario' (FG12: '2030 Surveyed Peak Hour PM', Plan 1: 'Network Control Plan 1')

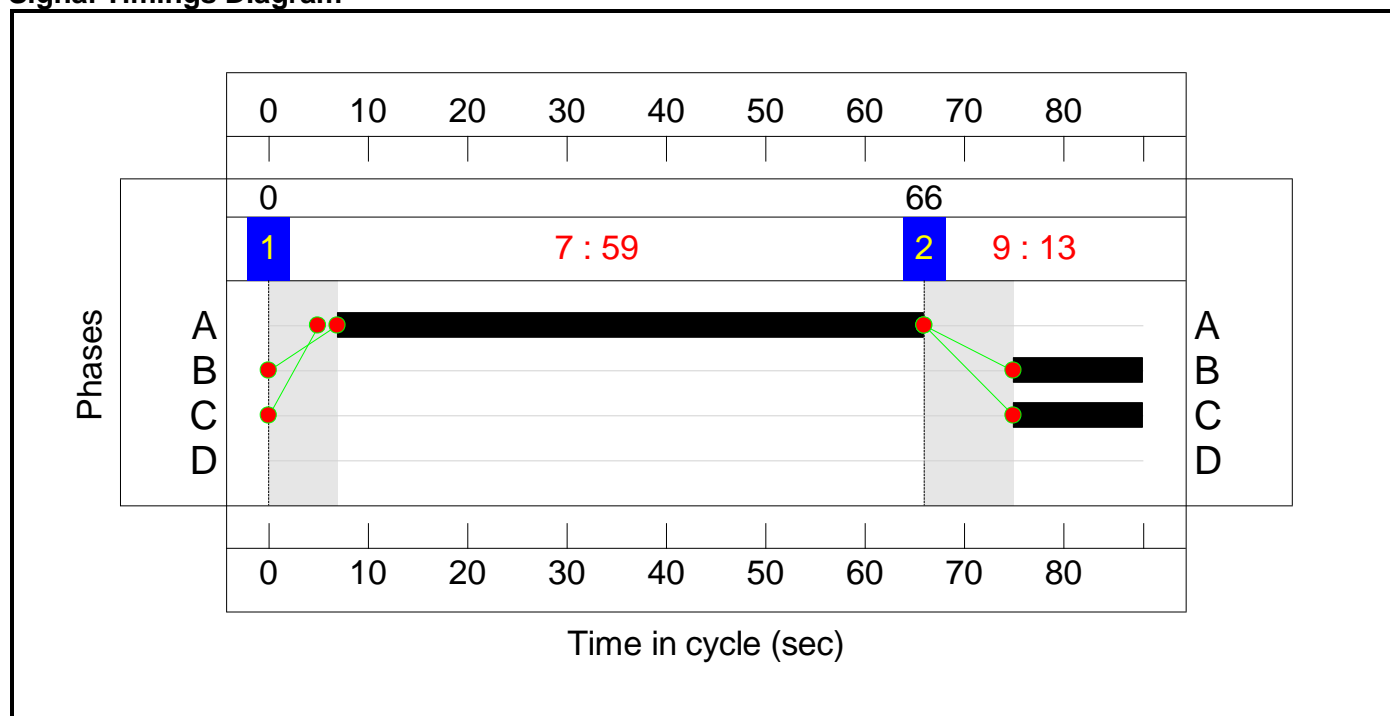
Stage Sequence Diagram



Stage Timings

| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 59 | 13 |
| Change Point | 0 | 66 |

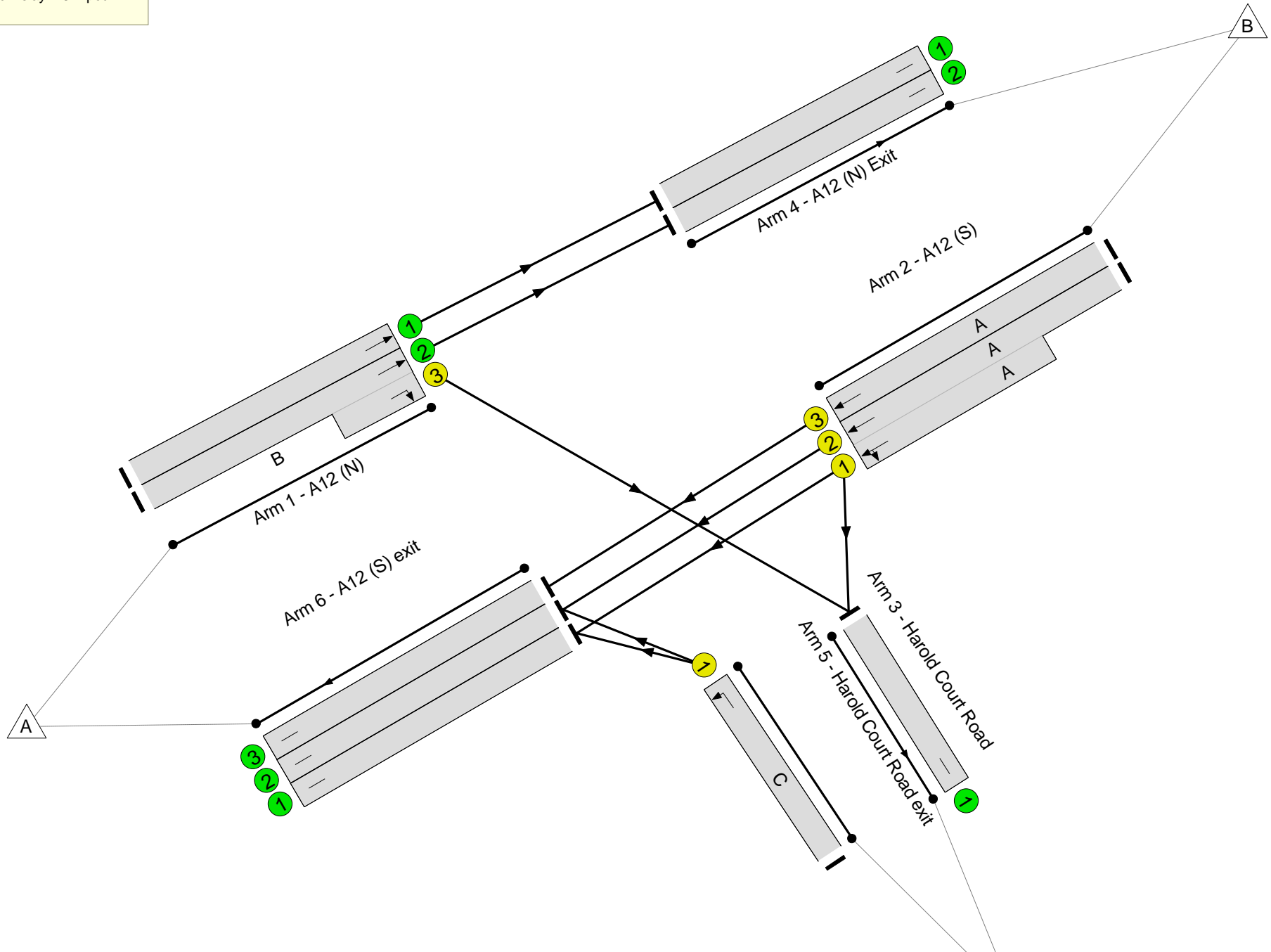
Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results

A12 / Harold Court
PRC: 11.4 %
Total Traffic Delay: 13.4 pcuHr



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 | - | - | | - | - | - | - | - | - | 80.8% |
| A12 / Harold Court | - | - | N/A | - | - | | - | - | - | - | - | - | 80.8% |
| 1/1 | A12 (N) Ahead | U | N/A | N/A | - | | - | - | - | 1588 | 1965 | 1965 | 80.8% |
| 1/2+1/3 | A12 (N) Ahead Right | U | N/A | N/A | - B | | - | - | - | 96 | 1965:1800 | 0+286 | 0.0 : 33.5% |
| 2/2+2/1 | A12 (S) Left Ahead | U | N/A | N/A | A | | 1 | 59 | - | 1367 | 2055:1915 | 947+881 | 74.8 : 74.8% |
| 2/3 | A12 (S) Ahead | U | N/A | N/A | A | | 1 | 59 | - | 844 | 2055 | 1401 | 60.2% |
| 3/1 | Harold Court Road Left | U | N/A | N/A | C | | 1 | 13 | - | 216 | 1795 | 286 | 75.6% |
| 4/1 | A12 (N) Exit | U | N/A | N/A | - | | - | - | - | 1588 | Inf | Inf | 0.0% |
| 4/2 | A12 (N) Exit | U | N/A | N/A | - | | - | - | - | 0 | Inf | Inf | 0.0% |
| 5/1 | Harold Court Road exit | U | N/A | N/A | - | | - | - | - | 164 | Inf | Inf | 0.0% |
| 6/1 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 699 | Inf | Inf | 0.0% |
| 6/2 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 816 | Inf | Inf | 0.0% |
| 6/3 | A12 (S) exit | U | N/A | N/A | - | | - | - | - | 844 | Inf | Inf | 0.0% |

Full Input Data And Results

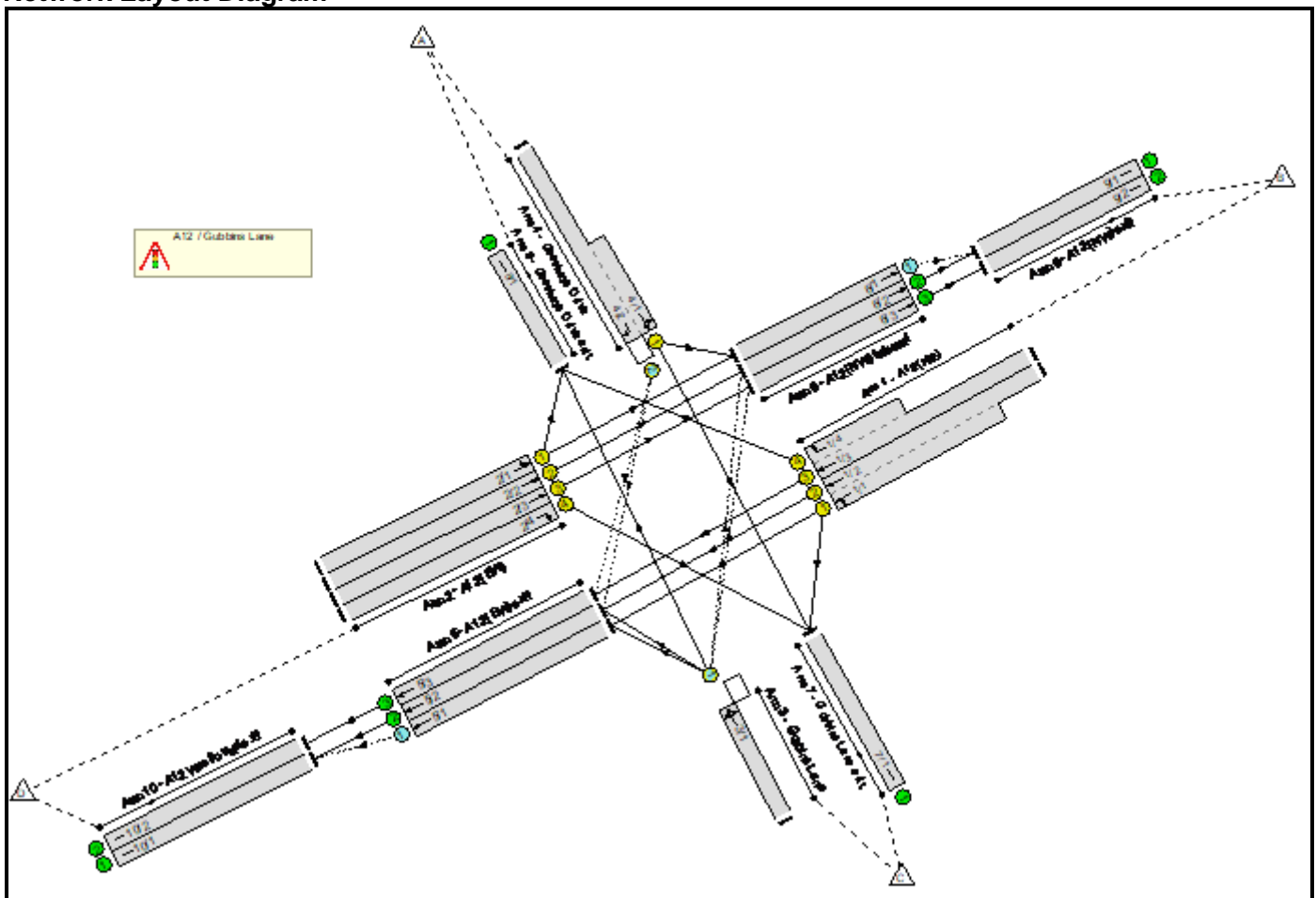
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|---------------------------|----------------|---------------|------------------------------|------------------------------|-----------------------------|--|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network | - | - | 0 | 0 | 0 | 7.4 | 6.1 | 0.0 | 13.4 | - | - | - | - |
| A12 / Harold Court | - | - | 0 | 0 | 0 | 7.4 | 6.1 | 0.0 | 13.4 | - | - | - | - |
| 1/1 | 1588 | 1588 | - | - | - | 0.0 | 2.1 | - | 2.1 | 4.7 | 0.0 | 2.1 | 2.1 |
| 1/2+1/3 | 96 | 96 | - | - | - | 0.9 | 0.3 | - | 1.1 | 42.3 | 2.1 | 0.3 | 2.3 |
| 2/2+2/1 | 1367 | 1367 | - | - | - | 2.6 | 1.5 | - | 4.1 | 10.7 | 8.3 | 1.5 | 9.7 |
| 2/3 | 844 | 844 | - | - | - | 1.8 | 0.8 | - | 2.5 | 10.8 | 11.0 | 0.8 | 11.8 |
| 3/1 | 216 | 216 | - | - | - | 2.1 | 1.5 | - | 3.6 | 60.2 | 5.0 | 1.5 | 6.5 |
| 4/1 | 1588 | 1588 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 4/2 | 0 | 0 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 164 | 164 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 699 | 699 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 816 | 816 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/3 | 844 | 844 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 19.0 | Total Delay for Signalled Lanes (pcuHr): | | 10.19 | Cycle Time (s): | | 88 | | |
| | | | PRC Over All Lanes (%): | | 11.4 | Total Delay Over All Lanes(pcuHr): | | 13.41 | | | | | |

Full Input Data And Results
Full Input Data And Results

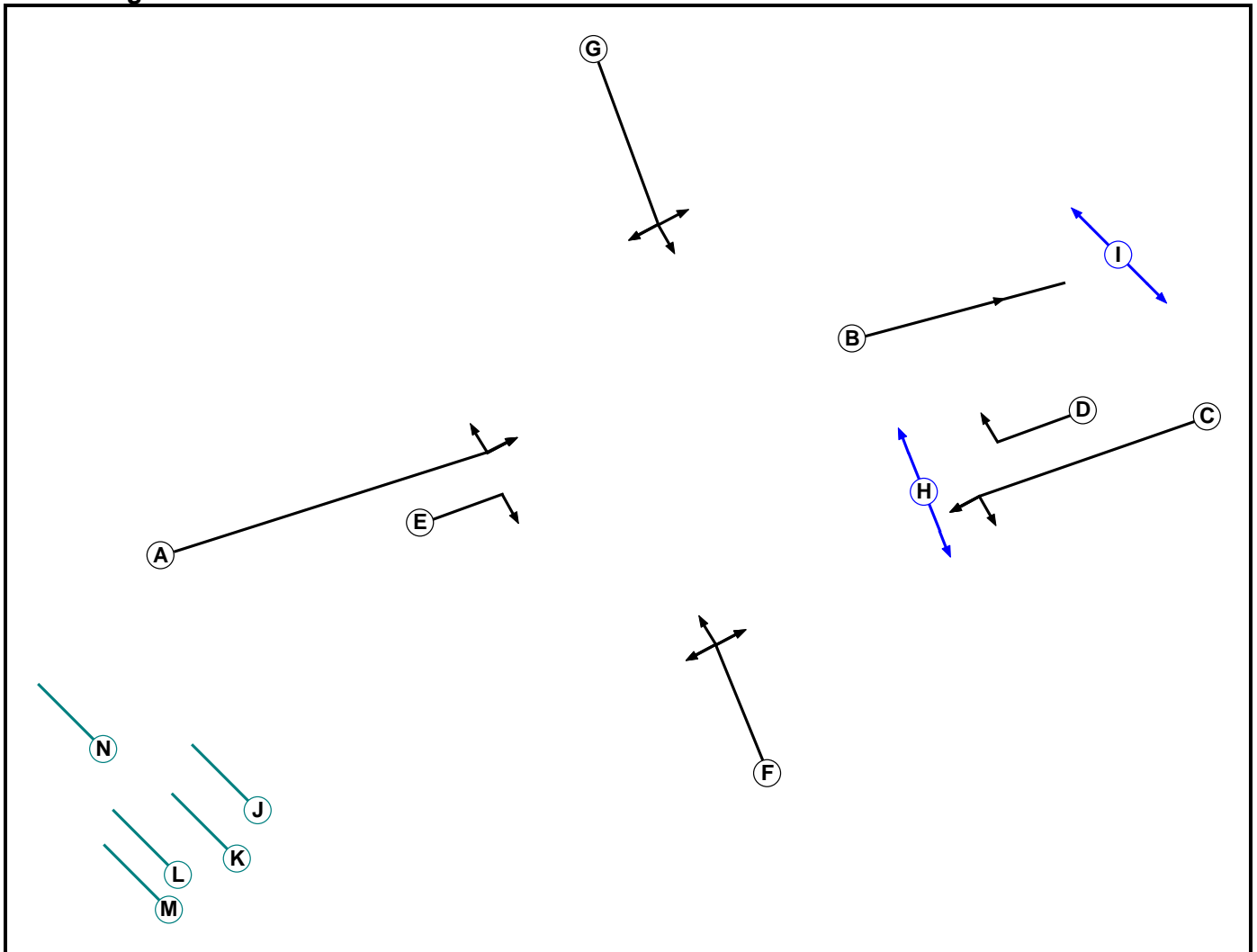
User and Project Details

| | |
|--------------------|------------------------------|
| Project: | |
| Title: | |
| Location: | |
| Additional detail: | |
| File name: | 4 - A12 - Gubbins Lane.lsg3x |
| Author: | |
| Company: | |
| Address: | |

Network Layout Diagram



Phase Diagram



Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|------------|------------|--------------|--------------|------------|----------|
| A | Traffic | 1 | | 7 | 7 |
| B | Traffic | 2 | | 7 | 7 |
| C | Traffic | 1 | | 7 | 7 |
| D | Traffic | 1 | | 7 | 7 |
| E | Traffic | 1 | | 7 | 7 |
| F | Traffic | 1 | | 7 | 7 |
| G | Traffic | 1 | | 7 | 7 |
| H | Pedestrian | 1 | | 6 | 6 |
| I | Pedestrian | 2 | | 6 | 6 |
| J | Dummy | 1 | | 1 | 1 |
| K | Dummy | 1 | | 1 | 1 |
| L | Dummy | 1 | | 1 | 1 |
| M | Dummy | 1 | | 3 | 3 |
| N | Dummy | | | 3 | 3 |

Full Input Data And Results

Phase Intergrens Matrix

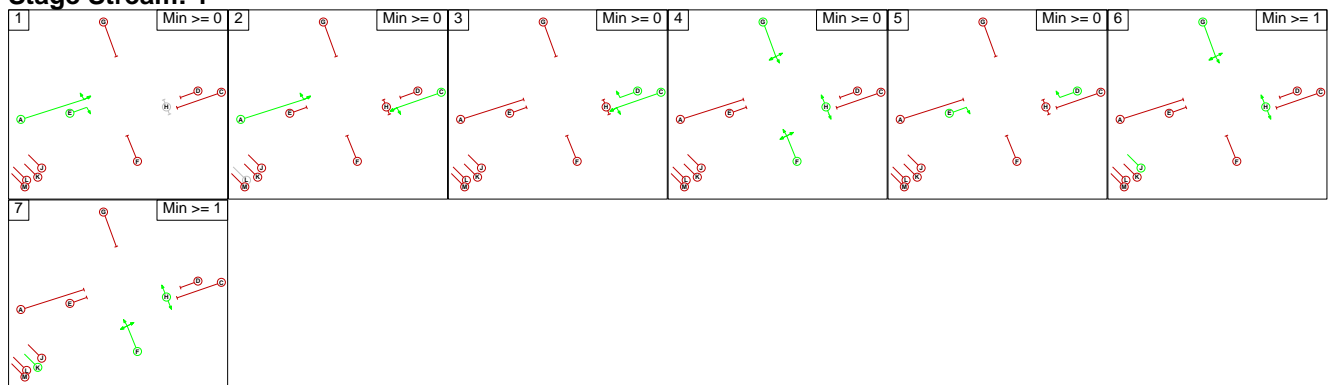
| | Starting Phase | | | | | | | | | | | | | |
|---|----------------|----|----|----|---|----|---|---|---|----|----|----|---|---|
| | A | B | C | D | E | F | G | H | I | J | K | L | M | N |
| A | - | - | 7 | - | 7 | 8 | - | - | 8 | 7 | - | 3 | - | |
| B | - | - | - | - | - | - | - | 7 | - | - | - | - | 3 | |
| C | - | - | - | 7 | 8 | 7 | 7 | - | 7 | 8 | - | 3 | - | |
| D | 9 | - | - | - | 7 | 7 | 7 | - | 7 | 7 | 9 | 3 | - | |
| E | - | - | 9 | - | - | 7 | 7 | - | - | 7 | 7 | 9 | 3 | |
| F | 7 | - | 5 | 5 | 7 | - | - | - | 9 | - | 7 | 3 | - | |
| G | 7 | - | 8 | 6 | 7 | - | - | - | - | 10 | 8 | 3 | - | |
| H | - | - | 16 | 16 | - | - | - | - | - | - | 16 | 7 | - | |
| I | - | 10 | - | - | - | - | - | - | - | - | - | - | 4 | |
| J | 7 | - | 16 | 16 | 7 | 10 | - | - | - | 10 | 16 | 7 | - | |
| K | 7 | - | 16 | 16 | 7 | - | 9 | - | - | 8 | - | 16 | 7 | |
| L | - | - | - | 7 | 7 | 8 | 8 | 7 | - | 8 | 8 | - | 3 | |
| M | 2 | - | 2 | 2 | 2 | 2 | 2 | 2 | - | 2 | 2 | - | - | |
| N | - | 2 | - | - | - | - | - | - | 2 | - | - | - | - | |

Phases in Stage

| Stream | Stage No. | Phases in Stage |
|--------|-----------|-----------------|
| 1 | 1 | A E |
| 1 | 2 | A C |
| 1 | 3 | C D |
| 1 | 4 | F G H |
| 1 | 5 | D E |
| 1 | 6 | G H J |
| 1 | 7 | F H K |
| 2 | 1 | B |
| 2 | 2 | I |

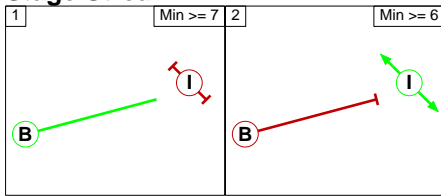
Stage Diagram

Stage Stream: 1



Full Input Data And Results

Stage Stream: 2



Phase Delays

Stage Stream: 1

| Term. Stage | Start Stage | Phase | Type | Value | Cont value |
|-------------|-------------|-------|--------|-------|------------|
| 1 | 3 | A | Losing | 2 | 2 |
| 1 | 4 | E | Losing | 1 | 1 |
| 1 | 6 | E | Losing | 1 | 1 |
| 2 | 6 | C | Losing | 1 | 1 |
| 2 | 7 | A | Losing | 1 | 1 |
| 3 | 1 | C | Losing | 2 | 2 |
| 3 | 4 | D | Losing | 1 | 1 |
| 3 | 7 | D | Losing | 1 | 1 |
| 4 | 2 | F | Losing | 9 | 9 |
| 4 | 2 | G | Losing | 8 | 8 |
| 4 | 3 | F | Losing | 8 | 8 |
| 4 | 3 | G | Losing | 8 | 8 |
| 4 | 5 | F | Losing | 9 | 9 |
| 4 | 5 | G | Losing | 9 | 9 |
| 6 | 2 | G | Losing | 8 | 8 |
| 6 | 3 | G | Losing | 8 | 8 |
| 6 | 5 | G | Losing | 9 | 9 |
| 7 | 2 | F | Losing | 9 | 9 |
| 7 | 3 | F | Losing | 11 | 11 |
| 7 | 5 | F | Losing | 9 | 9 |

Stage Stream: 2

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

Full Input Data And Results

Prohibited Stage Change

Stage Stream: 1

| | | To Stage | | | | | | |
|------------|---|----------|----|----|----|----|---|----|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| From Stage | 1 | ■ | 9 | 9 | 8 | 7 | 8 | 7 |
| | 2 | 7 | ■ | 7 | 8 | 7 | 8 | 8 |
| | 3 | 9 | 9 | ■ | 8 | 7 | 7 | 8 |
| | 4 | 7 | 16 | 16 | ■ | 16 | 9 | 10 |
| | 5 | 9 | 9 | 9 | 7 | ■ | 7 | 7 |
| | 6 | 7 | 16 | 16 | 10 | 16 | ■ | 10 |
| | 7 | 7 | 16 | 16 | 9 | 16 | 9 | ■ |

Stage Stream: 2

| | | To Stage | |
|------------|---|----------|---|
| From Stage | 1 | 1 | 2 |
| | 2 | ■ | 7 |
| | 2 | 10 | ■ |

Full Input Data And Results

Give-Way Lane Input Data

| Junction: A12 / Gubbins 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) |
| 3/1 (Gubbins Lane) | 6/2 (Right) | 1439 | 0 | 4/1 | 1.09 | All | 2.00 | 2.00 | 0.50 | 2 | 2.00 |
| | 6/3 (Right) | 1439 | 0 | 4/1 | 1.09 | All | | | | | |
| 4/2 (Gooshays Drive) | 5/2 (Right) | 1439 | 0 | 3/1 | 1.09 | To 5/1 (Left) To 5/2 (Left) To 8/1 (Ahead) | 2.00 | - | 0.50 | 2 | 2.00 |
| | 5/3 (Right) | 1439 | 0 | 3/1 | 1.09 | To 5/1 (Left) To 5/2 (Left) To 8/1 (Ahead) | | | | | |
| 5/1 (A12 (SW) exit) | 10/1 (Ahead) | 1439 | 0 | 5/2 | 1.09 | All | - | - | - | - | - |
| 6/1 (A12 (NW) internal) | 9/1 (Ahead) | 1439 | 0 | 9/2 | 1.09 | All | - | - | - | - | - |

Full Input Data And Results

Lane Input Data

| Junction: A12 / Gubbins 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 (A12 (NE)) | U | C | 2 | 3 | 20.6 | Geom | - | 3.40 | 0.00 | Y | Arm 5 Ahead | Inf |
| | | | | | | | | | | | Arm 7 Left | 12.00 |
| 1/2 (A12 (NE)) | U | C | 2 | 3 | 60.0 | Geom | - | 3.40 | 0.00 | Y | Arm 5 Ahead | Inf |
| 1/3 (A12 (NE)) | U | C | 2 | 3 | 60.0 | Geom | - | 3.60 | 0.00 | N | Arm 5 Ahead | Inf |
| 1/4 (A12 (NE)) | U | D | 2 | 3 | 9.1 | Geom | - | 3.20 | 0.00 | Y | Arm 8 Right | 13.50 |
| 2/1 (A12 (SW)) | U | A | 2 | 3 | 60.0 | Geom | - | 2.60 | 0.00 | Y | Arm 6 Ahead | Inf |
| | | | | | | | | | | | Arm 8 Left | 17.30 |
| 2/2 (A12 (SW)) | U | A | 2 | 3 | 60.0 | Geom | - | 3.20 | 0.00 | N | Arm 6 Ahead | Inf |
| 2/3 (A12 (SW)) | U | A | 2 | 3 | 60.0 | Geom | - | 3.20 | 0.00 | N | Arm 6 Ahead | Inf |
| 2/4 (A12 (SW)) | U | E | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 7 Right | 15.60 |
| 3/1 (Gubbins Lane) | O | F | 2 | 3 | 60.0 | Geom | - | 3.60 | 0.00 | Y | Arm 5 Left | 11.90 |
| | | | | | | | | | | | Arm 6 Right | 13.30 |
| | | | | | | | | | | | Arm 8 Ahead | Inf |
| 4/1 (Gooshays Drive) | U | G | 2 | 3 | 9.0 | Geom | - | 3.40 | 0.00 | Y | Arm 6 Left | 14.20 |
| | | | | | | | | | | | Arm 7 Ahead | Inf |
| 4/2 (Gooshays Drive) | O | G | 2 | 3 | 60.0 | Geom | - | 3.40 | 0.00 | Y | Arm 5 Right | 15.40 |
| 5/1 (A12 (SW) exit) | O | | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 10 Ahead | Inf |
| 5/2 (A12 (SW) exit) | U | | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | N | Arm 10 Ahead | Inf |
| 5/3 (A12 (SW) exit) | U | | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | N | Arm 10 Ahead | Inf |
| 6/1 (A12 (NW) internal) | O | | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | Y | Arm 9 Ahead | Inf |
| 6/2 (A12 (NW) internal) | U | | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | N | Arm 9 Ahead | Inf |

Full Input Data And Results

| | | | | | | | | | | | | |
|------------------------------------|---|--|---|---|------|------|---|------|------|---|----------------|-----|
| 6/3 (A12 (NW) internal) | U | | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | N | Arm 9 Ahead | Inf |
| 7/1 (Gubbins Lane exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 8/1 (Gooshays Drive exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 9/1 (A12 (NW) exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 9/2 (A12 (NW) exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 10/1 (A12 Westbound exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 10/2 (A12 Westbound exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |

Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|----------------------------------|------------|----------|----------|--------------|
| 1: 'Base Year 2023 AM' | 08:00 | 09:00 | 01:00 | |
| 2: 'Base Year 2023 PM' | 17:00 | 18:00 | 01:00 | |
| 3: 'Reference Case 2030 AM' | 08:00 | 09:00 | 01:00 | F1 * 1.0466 |
| 4: 'Reference Case 2030 PM' | 17:00 | 18:00 | 01:00 | F2 * 1.0521 |
| 7: 'Do Something 2030 + LTC AM' | 08:00 | 09:00 | 01:00 | F3+F5 |
| 8: 'Do Something 2030 + LTC PM' | 17:00 | 18:00 | 01:00 | F4+F6 |
| 9: '2023 Surveyed Peak Hour AM' | 08:00 | 09:00 | 01:00 | |
| 10: '2023 Surveyed Peak Hour PM' | 17:00 | 18:00 | 01:00 | |
| 11: '2030 Surveyed Peak Hour AM' | 08:00 | 09:00 | 01:00 | F9 * 1.0466 |
| 12: '2030 Surveyed Peak Hour PM' | 17:00 | 18:00 | 01:00 | F10 * 1.0521 |

Full Input Data And Results

Scenario 1: 'Base Year 2023 AM' (FG1: 'Base Year 2023 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|------|-----|------|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 45 | 405 | 89 | 539 |
| | B | 311 | 0 | 104 | 1464 | 1879 |
| | C | 254 | 95 | 0 | 94 | 443 |
| | D | 132 | 920 | 126 | 0 | 1178 |
| | Tot. | 697 | 1060 | 635 | 1647 | 4039 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 1: Base Year 2023 AM |
|-------------------------------------|-------------------------------------|
| Junction: A12 / Gubbins Lane | |
| 1/1 (short) | 494 |
| 1/2 (with short) | 1010(In) 516(Out) |
| 1/3 (with short) | 869(In) 558(Out) |
| 1/4 (short) | 311 |
| 2/1 | 319 |
| 2/2 | 367 |
| 2/3 | 366 |
| 2/4 | 126 |
| 3/1 | 443 |
| 4/1 (short) | 450 |
| 4/2 (with short) | 539(In) 89(Out) |
| 5/1 | 390 |
| 5/2 | 611 |
| 5/3 | 646 |
| 6/1 | 232 |
| 6/2 | 414 |
| 6/3 | 414 |
| 7/1 | 635 |
| 8/1 | 697 |
| 9/1 | 646 |
| 9/2 | 414 |
| 10/1 | 1001 |
| 10/2 | 646 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 / Gubbins 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 (A12 (NE)) | 3.40 | 0.00 | Y | Arm 5 Ahead | Inf | 78.9 % | 1905 | 1905 |
| | | | | Arm 7 Left | 12.00 | 21.1 % | | |
| 1/2 (A12 (NE)) | 3.40 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1955 | 1955 |
| 1/3 (A12 (NE)) | 3.60 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2115 | 2115 |
| 1/4 (A12 (NE)) | 3.20 | 0.00 | Y | Arm 8 Right | 13.50 | 100.0 % | 1742 | 1742 |
| 2/1 (A12 (SW)) | 2.60 | 0.00 | Y | Arm 6 Ahead | Inf | 58.6 % | 1810 | 1810 |
| | | | | Arm 8 Left | 17.30 | 41.4 % | | |
| 2/2 (A12 (SW)) | 3.20 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2075 | 2075 |
| 2/3 (A12 (SW)) | 3.20 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2075 | 2075 |
| 2/4 (A12 (SW)) | 3.50 | 0.00 | Y | Arm 7 Right | 15.60 | 100.0 % | 1793 | 1793 |
| 3/1 (Gubbins Lane) | 3.60 | 0.00 | Y | Arm 5 Left | 11.90 | 21.2 % | 1879 | 1879 |
| | | | | Arm 6 Right | 13.30 | 21.4 % | | |
| | | | | Arm 8 Ahead | Inf | 57.3 % | | |
| 4/1 (Gooshays Drive) | 3.40 | 0.00 | Y | Arm 6 Left | 14.20 | 10.0 % | 1935 | 1935 |
| | | | | Arm 7 Ahead | Inf | 90.0 % | | |
| 4/2 (Gooshays Drive) | 3.40 | 0.00 | Y | Arm 5 Right | 15.40 | 100.0 % | 1781 | 1781 |
| 5/1 (A12 (SW) exit) | 3.50 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 5/2 (A12 (SW) exit) | 3.00 | 0.00 | N | Arm 10 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 5/3 (A12 (SW) exit) | 3.00 | 0.00 | N | Arm 10 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 6/1 (A12 (NW) internal) | 3.00 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1915 | 1915 |
| 6/2 (A12 (NW) internal) | 3.00 | 0.00 | N | Arm 9 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 6/3 (A12 (NW) internal) | 3.00 | 0.00 | N | Arm 9 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 7/1 (Gubbins Lane exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Gooshays Drive exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 (A12 (NW) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 (A12 (NW) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 (A12 Westbound exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

| | | | |
|-------------------------------------|--------------------------|-----|-----|
| 10/2 (A12 Westbound exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
|-------------------------------------|--------------------------|-----|-----|

Scenario 2: 'Base Year 2023 PM' (FG2: 'Base Year 2023 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|------|-----|------|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 59 | 385 | 128 | 572 |
| | B | 375 | 0 | 159 | 1189 | 1723 |
| | C | 305 | 71 | 0 | 108 | 484 |
| | D | 218 | 870 | 247 | 0 | 1335 |
| | Tot. | 898 | 1000 | 791 | 1425 | 4114 |

Traffic Lane Flows

| Lane | Scenario 2: Base Year 2023 PM |
|-------------------------------------|-------------------------------------|
| Junction: A12 / Gubbins Lane | |
| 1/1 (short) | 420 |
| 1/2 (with short) | 866(In) 446(Out) |
| 1/3 (with short) | 857(In) 482(Out) |
| 1/4 (short) | 375 |
| 2/1 | 325 |
| 2/2 | 381 |
| 2/3 | 382 |
| 2/4 | 247 |
| 3/1 | 484 |
| 4/1 (short) | 444 |
| 4/2 (with short) | 572(In) 128(Out) |
| 5/1 | 261 |
| 5/2 | 555 |
| 5/3 | 609 |
| 6/1 | 166 |
| 6/2 | 416 |
| 6/3 | 418 |
| 7/1 | 791 |
| 8/1 | 898 |
| 9/1 | 582 |
| 9/2 | 418 |
| 10/1 | 816 |
| 10/2 | 609 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 / Gubbins 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 (A12 (NE)) | 3.40 | 0.00 | Y | Arm 5 Ahead | Inf | 62.1 % | 1867 | 1867 |
| | | | | Arm 7 Left | 12.00 | 37.9 % | | |
| 1/2 (A12 (NE)) | 3.40 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1955 | 1955 |
| 1/3 (A12 (NE)) | 3.60 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2115 | 2115 |
| 1/4 (A12 (NE)) | 3.20 | 0.00 | Y | Arm 8 Right | 13.50 | 100.0 % | 1742 | 1742 |
| 2/1 (A12 (SW)) | 2.60 | 0.00 | Y | Arm 6 Ahead | Inf | 32.9 % | 1772 | 1772 |
| | | | | Arm 8 Left | 17.30 | 67.1 % | | |
| 2/2 (A12 (SW)) | 3.20 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2075 | 2075 |
| 2/3 (A12 (SW)) | 3.20 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2075 | 2075 |
| 2/4 (A12 (SW)) | 3.50 | 0.00 | Y | Arm 7 Right | 15.60 | 100.0 % | 1793 | 1793 |
| 3/1 (Gubbins Lane) | 3.60 | 0.00 | Y | Arm 5 Left | 11.90 | 22.3 % | 1891 | 1891 |
| | | | | Arm 6 Right | 13.30 | 14.7 % | | |
| | | | | Arm 8 Ahead | Inf | 63.0 % | | |
| 4/1 (Gooshays Drive) | 3.40 | 0.00 | Y | Arm 6 Left | 14.20 | 13.3 % | 1928 | 1928 |
| | | | | Arm 7 Ahead | Inf | 86.7 % | | |
| 4/2 (Gooshays Drive) | 3.40 | 0.00 | Y | Arm 5 Right | 15.40 | 100.0 % | 1781 | 1781 |
| 5/1 (A12 (SW) exit) | 3.50 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 5/2 (A12 (SW) exit) | 3.00 | 0.00 | N | Arm 10 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 5/3 (A12 (SW) exit) | 3.00 | 0.00 | N | Arm 10 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 6/1 (A12 (NW) internal) | 3.00 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1915 | 1915 |
| 6/2 (A12 (NW) internal) | 3.00 | 0.00 | N | Arm 9 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 6/3 (A12 (NW) internal) | 3.00 | 0.00 | N | Arm 9 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 7/1 (Gubbins Lane exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Gooshays Drive exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 (A12 (NW) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 (A12 (NW) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 (A12 Westbound exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

| | | | |
|-------------------------------------|--------------------------|-----|-----|
| 10/2 (A12 Westbound exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
|-------------------------------------|--------------------------|-----|-----|

Scenario 3: 'Reference Case 2030 AM' (FG3: 'Reference Case 2030 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|------|-----|------|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 47 | 424 | 93 | 564 |
| | B | 325 | 0 | 109 | 1532 | 1966 |
| | C | 266 | 99 | 0 | 98 | 463 |
| | D | 138 | 963 | 132 | 0 | 1233 |
| | Tot. | 729 | 1109 | 665 | 1723 | 4226 |

Traffic Lane Flows

| Lane | Scenario 3: Reference Case 2030 AM |
|-------------------------------------|--|
| Junction: A12 / Gubbins Lane | |
| 1/1 (short) | 517 |
| 1/2 (with short) | 1057(In) 540(Out) |
| 1/3 (with short) | 909(In) 584(Out) |
| 1/4 (short) | 325 |
| 2/1 | 334 |
| 2/2 | 383 |
| 2/3 | 384 |
| 2/4 | 132 |
| 3/1 | 463 |
| 4/1 (short) | 471 |
| 4/2 (with short) | 564(In) 93(Out) |
| 5/1 | 408 |
| 5/2 | 639 |
| 5/3 | 676 |
| 6/1 | 243 |
| 6/2 | 432 |
| 6/3 | 434 |
| 7/1 | 665 |
| 8/1 | 729 |
| 9/1 | 675 |
| 9/2 | 434 |
| 10/1 | 1047 |
| 10/2 | 676 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 / Gubbins 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 (A12 (NE)) | 3.40 | 0.00 | Y | Arm 5 Ahead | Inf | 78.9 % | 1905 | 1905 |
| | | | | Arm 7 Left | 12.00 | 21.1 % | | |
| 1/2 (A12 (NE)) | 3.40 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1955 | 1955 |
| 1/3 (A12 (NE)) | 3.60 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2115 | 2115 |
| 1/4 (A12 (NE)) | 3.20 | 0.00 | Y | Arm 8 Right | 13.50 | 100.0 % | 1742 | 1742 |
| 2/1 (A12 (SW)) | 2.60 | 0.00 | Y | Arm 6 Ahead | Inf | 58.7 % | 1810 | 1810 |
| | | | | Arm 8 Left | 17.30 | 41.3 % | | |
| 2/2 (A12 (SW)) | 3.20 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2075 | 2075 |
| 2/3 (A12 (SW)) | 3.20 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2075 | 2075 |
| 2/4 (A12 (SW)) | 3.50 | 0.00 | Y | Arm 7 Right | 15.60 | 100.0 % | 1793 | 1793 |
| 3/1 (Gubbins Lane) | 3.60 | 0.00 | Y | Arm 5 Left | 11.90 | 21.2 % | 1880 | 1880 |
| | | | | Arm 6 Right | 13.30 | 21.4 % | | |
| | | | | Arm 8 Ahead | Inf | 57.5 % | | |
| 4/1 (Gooshays Drive) | 3.40 | 0.00 | Y | Arm 6 Left | 14.20 | 10.0 % | 1935 | 1935 |
| | | | | Arm 7 Ahead | Inf | 90.0 % | | |
| 4/2 (Gooshays Drive) | 3.40 | 0.00 | Y | Arm 5 Right | 15.40 | 100.0 % | 1781 | 1781 |
| 5/1 (A12 (SW) exit) | 3.50 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 5/2 (A12 (SW) exit) | 3.00 | 0.00 | N | Arm 10 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 5/3 (A12 (SW) exit) | 3.00 | 0.00 | N | Arm 10 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 6/1 (A12 (NW) internal) | 3.00 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1915 | 1915 |
| 6/2 (A12 (NW) internal) | 3.00 | 0.00 | N | Arm 9 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 6/3 (A12 (NW) internal) | 3.00 | 0.00 | N | Arm 9 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 7/1 (Gubbins Lane exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Gooshays Drive exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 (A12 (NW) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 (A12 (NW) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 (A12 Westbound exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

| | | | |
|-------------------------------------|--------------------------|-----|-----|
| 10/2 (A12 Westbound exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
|-------------------------------------|--------------------------|-----|-----|

Scenario 4: 'Reference Case 2030 PM' (FG4: 'Reference Case 2030 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|------|-----|------|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 62 | 405 | 135 | 602 |
| | B | 395 | 0 | 167 | 1251 | 1813 |
| | C | 321 | 75 | 0 | 114 | 510 |
| | D | 229 | 915 | 260 | 0 | 1404 |
| | Tot. | 945 | 1052 | 832 | 1500 | 4329 |

Traffic Lane Flows

| Lane | Scenario 4: Reference Case 2030 PM |
|-------------------------------------|--|
| Junction: A12 / Gubbins Lane | |
| 1/1 (short) | 442 |
| 1/2 (with short) | 911(In) 469(Out) |
| 1/3 (with short) | 902(In) 507(Out) |
| 1/4 (short) | 395 |
| 2/1 | 342 |
| 2/2 | 401 |
| 2/3 | 401 |
| 2/4 | 260 |
| 3/1 | 510 |
| 4/1 (short) | 467 |
| 4/2 (with short) | 602(In) 135(Out) |
| 5/1 | 275 |
| 5/2 | 583 |
| 5/3 | 642 |
| 6/1 | 175 |
| 6/2 | 438 |
| 6/3 | 439 |
| 7/1 | 832 |
| 8/1 | 945 |
| 9/1 | 613 |
| 9/2 | 439 |
| 10/1 | 858 |
| 10/2 | 642 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 / Gubbins 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 (A12 (NE)) | 3.40 | 0.00 | Y | Arm 5 Ahead | Inf | 62.2 % | 1867 | 1867 |
| | | | | Arm 7 Left | 12.00 | 37.8 % | | |
| 1/2 (A12 (NE)) | 3.40 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1955 | 1955 |
| 1/3 (A12 (NE)) | 3.60 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2115 | 2115 |
| 1/4 (A12 (NE)) | 3.20 | 0.00 | Y | Arm 8 Right | 13.50 | 100.0 % | 1742 | 1742 |
| 2/1 (A12 (SW)) | 2.60 | 0.00 | Y | Arm 6 Ahead | Inf | 33.0 % | 1772 | 1772 |
| | | | | Arm 8 Left | 17.30 | 67.0 % | | |
| 2/2 (A12 (SW)) | 3.20 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2075 | 2075 |
| 2/3 (A12 (SW)) | 3.20 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2075 | 2075 |
| 2/4 (A12 (SW)) | 3.50 | 0.00 | Y | Arm 7 Right | 15.60 | 100.0 % | 1793 | 1793 |
| 3/1 (Gubbins Lane) | 3.60 | 0.00 | Y | Arm 5 Left | 11.90 | 22.4 % | 1890 | 1890 |
| | | | | Arm 6 Right | 13.30 | 14.7 % | | |
| | | | | Arm 8 Ahead | Inf | 62.9 % | | |
| 4/1 (Gooshays Drive) | 3.40 | 0.00 | Y | Arm 6 Left | 14.20 | 13.3 % | 1928 | 1928 |
| | | | | Arm 7 Ahead | Inf | 86.7 % | | |
| 4/2 (Gooshays Drive) | 3.40 | 0.00 | Y | Arm 5 Right | 15.40 | 100.0 % | 1781 | 1781 |
| 5/1 (A12 (SW) exit) | 3.50 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 5/2 (A12 (SW) exit) | 3.00 | 0.00 | N | Arm 10 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 5/3 (A12 (SW) exit) | 3.00 | 0.00 | N | Arm 10 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 6/1 (A12 (NW) internal) | 3.00 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1915 | 1915 |
| 6/2 (A12 (NW) internal) | 3.00 | 0.00 | N | Arm 9 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 6/3 (A12 (NW) internal) | 3.00 | 0.00 | N | Arm 9 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 7/1 (Gubbins Lane exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Gooshays Drive exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 (A12 (NW) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 (A12 (NW) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 (A12 Westbound exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

| | | | |
|-------------------------------------|--------------------------|-----|-----|
| 10/2 (A12 Westbound exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
|-------------------------------------|--------------------------|-----|-----|

Scenario 5: 'Do Something 2030 + LTC AM' (FG7: 'Do Something 2030 + LTC AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|-----|-----|------|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 88 | 406 | 95 | 589 |
| | B | 344 | 0 | 134 | 1570 | 2048 |
| | C | 268 | 82 | 0 | 97 | 447 |
| | D | 138 | 742 | 132 | 0 | 1012 |
| | Tot. | 750 | 912 | 672 | 1762 | 4096 |

Traffic Lane Flows

| Lane | Scenario 5: Do Something 2030 + LTC AM |
|-------------------------------------|--|
| Junction: A12 / Gubbins Lane | |
| 1/1 (short) | 535 |
| 1/2 (with short) | 1097(In) 562(Out) |
| 1/3 (with short) | 951(In) 607(Out) |
| 1/4 (short) | 344 |
| 2/1 | 271 |
| 2/2 | 305 |
| 2/3 | 304 |
| 2/4 | 132 |
| 3/1 | 447 |
| 4/1 (short) | 494 |
| 4/2 (with short) | 589(In) 95(Out) |
| 5/1 | 401 |
| 5/2 | 664 |
| 5/3 | 697 |
| 6/1 | 221 |
| 6/2 | 346 |
| 6/3 | 345 |
| 7/1 | 672 |
| 8/1 | 750 |
| 9/1 | 567 |
| 9/2 | 345 |
| 10/1 | 1065 |
| 10/2 | 697 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 / Gubbins 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 (A12 (NE)) | 3.40 | 0.00 | Y | Arm 5 Ahead | Inf | 75.0 % | 1896 | 1896 |
| | | | | Arm 7 Left | 12.00 | 25.0 % | | |
| 1/2 (A12 (NE)) | 3.40 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1955 | 1955 |
| 1/3 (A12 (NE)) | 3.60 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2115 | 2115 |
| 1/4 (A12 (NE)) | 3.20 | 0.00 | Y | Arm 8 Right | 13.50 | 100.0 % | 1742 | 1742 |
| 2/1 (A12 (SW)) | 2.60 | 0.00 | Y | Arm 6 Ahead | Inf | 49.1 % | 1796 | 1796 |
| | | | | Arm 8 Left | 17.30 | 50.9 % | | |
| 2/2 (A12 (SW)) | 3.20 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2075 | 2075 |
| 2/3 (A12 (SW)) | 3.20 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2075 | 2075 |
| 2/4 (A12 (SW)) | 3.50 | 0.00 | Y | Arm 7 Right | 15.60 | 100.0 % | 1793 | 1793 |
| 3/1 (Gubbins Lane) | 3.60 | 0.00 | Y | Arm 5 Left | 11.90 | 21.7 % | 1884 | 1884 |
| | | | | Arm 6 Right | 13.30 | 18.3 % | | |
| | | | | Arm 8 Ahead | Inf | 60.0 % | | |
| 4/1 (Gooshays Drive) | 3.40 | 0.00 | Y | Arm 6 Left | 14.20 | 17.8 % | 1919 | 1919 |
| | | | | Arm 7 Ahead | Inf | 82.2 % | | |
| 4/2 (Gooshays Drive) | 3.40 | 0.00 | Y | Arm 5 Right | 15.40 | 100.0 % | 1781 | 1781 |
| 5/1 (A12 (SW) exit) | 3.50 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 5/2 (A12 (SW) exit) | 3.00 | 0.00 | N | Arm 10 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 5/3 (A12 (SW) exit) | 3.00 | 0.00 | N | Arm 10 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 6/1 (A12 (NW) internal) | 3.00 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1915 | 1915 |
| 6/2 (A12 (NW) internal) | 3.00 | 0.00 | N | Arm 9 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 6/3 (A12 (NW) internal) | 3.00 | 0.00 | N | Arm 9 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 7/1 (Gubbins Lane exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Gooshays Drive exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 (A12 (NW) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 (A12 (NW) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 (A12 Westbound exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

| | | | |
|-------------------------------------|--------------------------|-----|-----|
| 10/2 (A12 Westbound exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
|-------------------------------------|--------------------------|-----|-----|

Scenario 6: 'Do Something 2030 + LTC PM' (FG8: 'Do Something 2030 + LTC PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|-----|-----|------|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 79 | 371 | 128 | 578 |
| | B | 396 | 0 | 144 | 1253 | 1793 |
| | C | 330 | 88 | 0 | 102 | 520 |
| | D | 229 | 830 | 260 | 0 | 1319 |
| | Tot. | 955 | 997 | 775 | 1483 | 4210 |

Traffic Lane Flows

| Lane | Scenario 6: Do Something 2030 + LTC PM |
|-------------------------------------|--|
| Junction: A12 / Gubbins Lane | |
| 1/1 (short) | 612 |
| 1/2 (with short) | 1256(In) 644(Out) |
| 1/3 (with short) | 537(In) 141(Out) |
| 1/4 (short) | 396 |
| 2/1 | 315 |
| 2/2 | 372 |
| 2/3 | 372 |
| 2/4 | 260 |
| 3/1 | 520 |
| 4/1 (short) | 450 |
| 4/2 (with short) | 578(In) 128(Out) |
| 5/1 | 468 |
| 5/2 | 756 |
| 5/3 | 259 |
| 6/1 | 165 |
| 6/2 | 416 |
| 6/3 | 416 |
| 7/1 | 775 |
| 8/1 | 955 |
| 9/1 | 581 |
| 9/2 | 416 |
| 10/1 | 1224 |
| 10/2 | 259 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A12 / Gubbins 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 (A12 (NE)) | 3.40 | 0.00 | Y | Arm 5 Ahead | Inf | 76.5 % | 1899 | 1899 |
| | | | | Arm 7 Left | 12.00 | 23.5 % | | |
| 1/2 (A12 (NE)) | 3.40 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1955 | 1955 |
| 1/3 (A12 (NE)) | 3.60 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2115 | 2115 |
| 1/4 (A12 (NE)) | 3.20 | 0.00 | Y | Arm 8 Right | 13.50 | 100.0 % | 1742 | 1742 |
| 2/1 (A12 (SW)) | 2.60 | 0.00 | Y | Arm 6 Ahead | Inf | 27.3 % | 1764 | 1764 |
| | | | | Arm 8 Left | 17.30 | 72.7 % | | |
| 2/2 (A12 (SW)) | 3.20 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2075 | 2075 |
| 2/3 (A12 (SW)) | 3.20 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2075 | 2075 |
| 2/4 (A12 (SW)) | 3.50 | 0.00 | Y | Arm 7 Right | 15.60 | 100.0 % | 1793 | 1793 |
| 3/1 (Gubbins Lane) | 3.60 | 0.00 | Y | Arm 5 Left | 11.90 | 19.6 % | 1892 | 1892 |
| | | | | Arm 6 Right | 13.30 | 16.9 % | | |
| | | | | Arm 8 Ahead | Inf | 63.5 % | | |
| 4/1 (Gooshays Drive) | 3.40 | 0.00 | Y | Arm 6 Left | 14.20 | 17.6 % | 1919 | 1919 |
| | | | | Arm 7 Ahead | Inf | 82.4 % | | |
| 4/2 (Gooshays Drive) | 3.40 | 0.00 | Y | Arm 5 Right | 15.40 | 100.0 % | 1781 | 1781 |
| 5/1 (A12 (SW) exit) | 3.50 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 5/2 (A12 (SW) exit) | 3.00 | 0.00 | N | Arm 10 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 5/3 (A12 (SW) exit) | 3.00 | 0.00 | N | Arm 10 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 6/1 (A12 (NW) internal) | 3.00 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1915 | 1915 |
| 6/2 (A12 (NW) internal) | 3.00 | 0.00 | N | Arm 9 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 6/3 (A12 (NW) internal) | 3.00 | 0.00 | N | Arm 9 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 7/1 (Gubbins Lane exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Gooshays Drive exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 (A12 (NW) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 (A12 (NW) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 (A12 Westbound exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

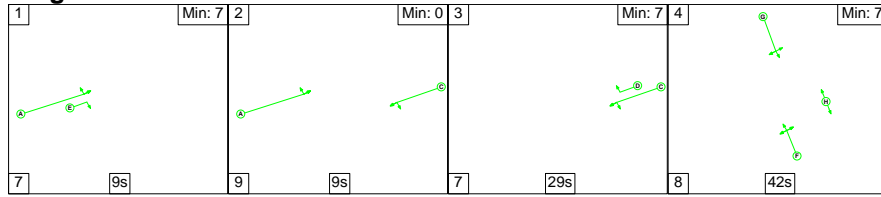
Full Input Data And Results

| | | | |
|-------------------------------------|--------------------------|-----|-----|
| 10/2 (A12 Westbound exit Lane 2) | Infinite Saturation Flow | Inf | Inf |
|-------------------------------------|--------------------------|-----|-----|

Scenario 1: 'Base Year 2023 AM' (FG1: 'Base Year 2023 AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

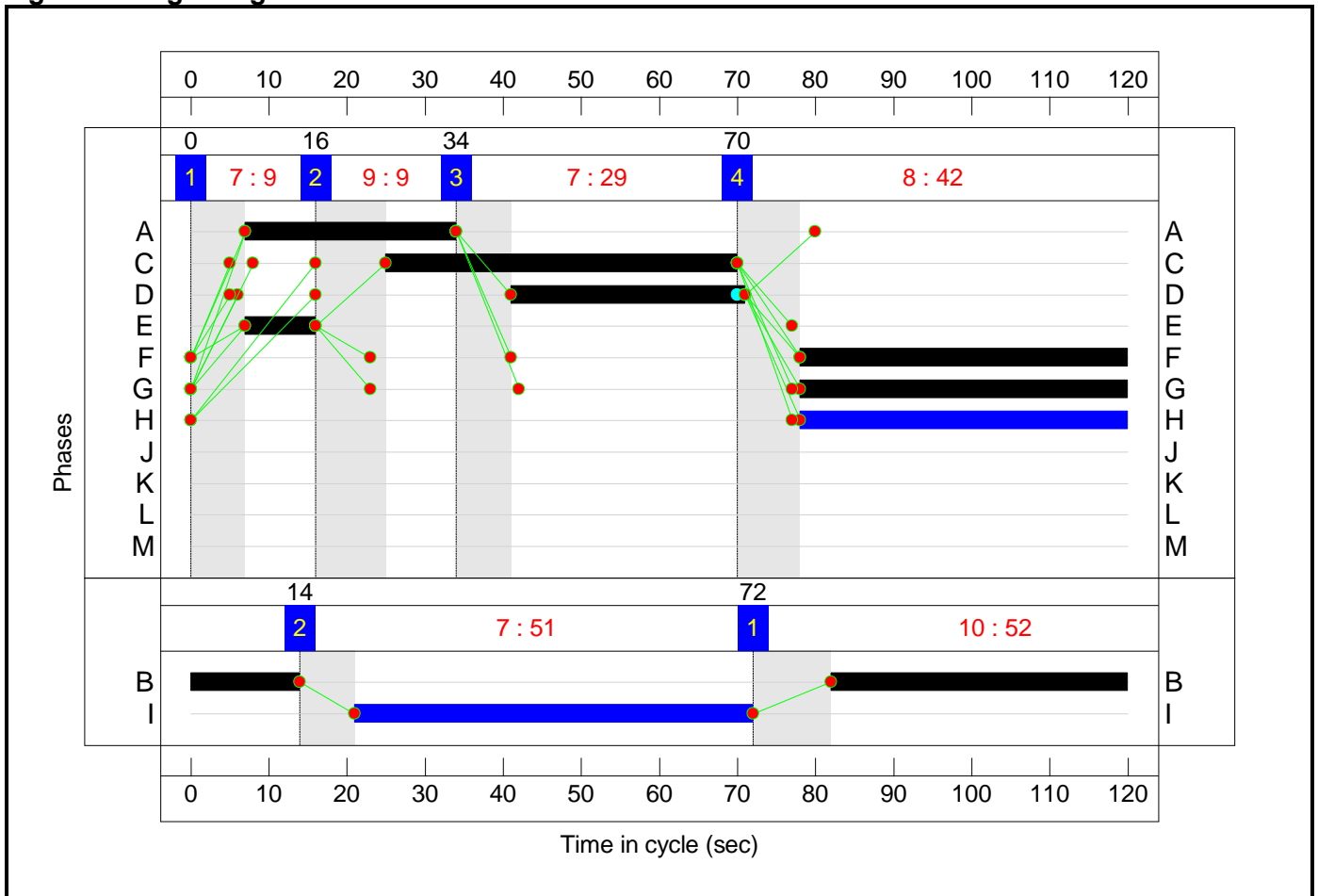
Stage Stream: 1

| Stage | 1 | 2 | 3 | 4 |
|--------------|---|----|----|----|
| Duration | 9 | 9 | 29 | 42 |
| Change Point | 0 | 16 | 34 | 70 |

Stage Stream: 2

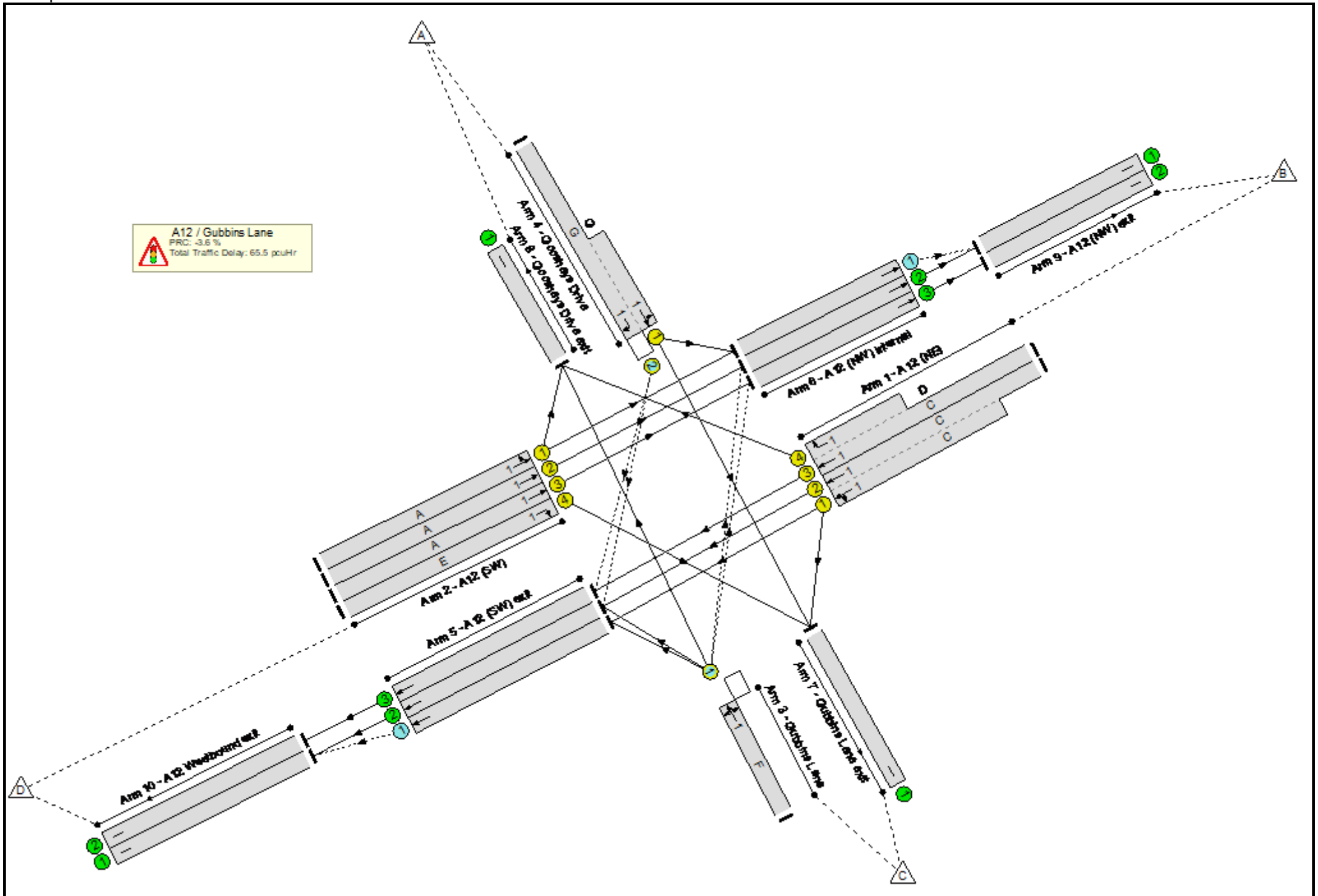
| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 52 | 51 |
| Change Point | 72 | 14 |

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 | - | - | N/A | - | - | | - | - | - | - | - | - | 93.3% |
| A12 / Gubbins Lane | - | - | N/A | - | - | | - | - | - | - | - | - | 93.3% |
| 1/2+1/1 | A12 (NE) Ahead Left | U | 1 | N/A | C | | 1 | 45 | - | 1010 | 1955:1905 | 688+659 | 75.0 : 75.0% |
| 1/3+1/4 | A12 (NE) Ahead Right | U | 1 | N/A | C D | | 1 | 45:30 | - | 869 | 2115:1742 | 598+333 | 93.3 : 93.3% |
| 2/1 | A12 (SW) Ahead Left | U | 1 | N/A | A | | 1 | 27 | - | 319 | 1810 | 422 | 75.5% |
| 2/2 | A12 (SW) Ahead | U | 1 | N/A | A | | 1 | 27 | - | 367 | 2075 | 484 | 75.8% |
| 2/3 | A12 (SW) Ahead | U | 1 | N/A | A | | 1 | 27 | - | 366 | 2075 | 484 | 75.6% |
| 2/4 | A12 (SW) Right | U | 1 | N/A | E | | 1 | 9 | - | 126 | 1793 | 149 | 84.3% |
| 3/1 | Gubbins Lane Left Right Ahead | O | 1 | N/A | F | | 1 | 42 | - | 443 | 1879 | 491 | 90.2% |
| 4/2+4/1 | Gooshays Drive Right Left Ahead | O+U | 1 | N/A | G | | 1 | 42 | - | 539 | 1781:1935 | 122+615 | 73.2 : 73.2% |
| 5/1 | A12 (SW) exit Ahead | O | N/A | N/A | - | | - | - | - | 390 | 1965 | 914 | 42.7% |
| 5/2 | A12 (SW) exit Ahead | U | N/A | N/A | - | | - | - | - | 611 | 2055 | 2055 | 29.7% |
| 5/3 | A12 (SW) exit Ahead | U | N/A | N/A | - | | - | - | - | 646 | 2055 | 2055 | 31.4% |
| 6/1 | A12 (NW) internal Ahead | O | N/A | N/A | - | | - | - | - | 232 | 1915 | 1439 | 16.1% |
| 6/2 | A12 (NW) internal Ahead | U | N/A | N/A | - | | - | - | - | 414 | 2055 | 2055 | 20.1% |
| 6/3 | A12 (NW) internal Ahead | U | N/A | N/A | - | | - | - | - | 414 | 2055 | 2055 | 20.1% |
| 7/1 | Gubbins Lane exit | U | N/A | N/A | - | | - | - | - | 635 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|------|---------------------|---|-----|-----|---|--|---|---|---|------|-----|-----|------|
| 8/1 | Gooshays Drive exit | U | N/A | N/A | - | | - | - | - | 697 | Inf | Inf | 0.0% |
| 9/1 | A12 (NW) exit | U | N/A | N/A | - | | - | - | - | 646 | Inf | Inf | 0.0% |
| 9/2 | A12 (NW) exit | U | N/A | N/A | - | | - | - | - | 414 | Inf | Inf | 0.0% |
| 10/1 | A12 Westbound exit | U | N/A | N/A | - | | - | - | - | 1001 | Inf | Inf | 0.0% |
| 10/2 | A12 Westbound exit | U | N/A | N/A | - | | - | - | - | 646 | Inf | Inf | 0.0% |

Full Input Data And Results

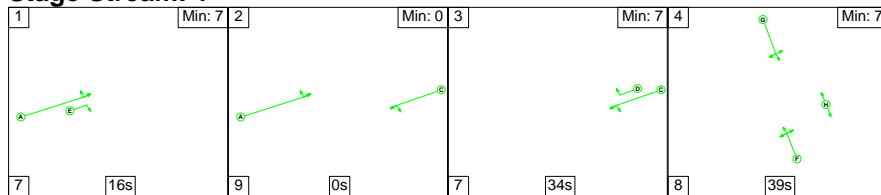
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|---------------------------|----------------|---------------|---|------------------------------|--|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network | - | - | 574 | 232 | 0 | 44.3 | 20.6 | 0.6 | 65.5 | - | - | - | - |
| A12 / Gubbins Lane | - | - | 574 | 232 | 0 | 44.3 | 20.6 | 0.6 | 65.5 | - | - | - | - |
| 1/2+1/1 | 1010 | 1010 | - | - | - | 8.7 | 1.5 | - | 10.2 | 36.2 | 14.3 | 1.5 | 15.8 |
| 1/3+1/4 | 869 | 869 | - | - | - | 8.5 | 5.8 | - | 14.4 | 59.6 | 22.2 | 5.8 | 28.1 |
| 2/1 | 319 | 319 | - | - | - | 3.8 | 1.5 | - | 5.3 | 59.7 | 9.8 | 1.5 | 11.3 |
| 2/2 | 367 | 367 | - | - | - | 4.4 | 1.5 | - | 5.9 | 57.8 | 11.3 | 1.5 | 12.8 |
| 2/3 | 366 | 366 | - | - | - | 4.4 | 1.5 | - | 5.9 | 57.7 | 11.3 | 1.5 | 12.8 |
| 2/4 | 126 | 126 | - | - | - | 1.9 | 2.3 | - | 4.2 | 118.7 | 4.1 | 2.3 | 6.4 |
| 3/1 | 443 | 443 | 95 | 0 | 0 | 4.4 | 4.0 | 0.3 | 8.7 | 70.4 | 14.2 | 4.0 | 18.1 |
| 4/2+4/1 | 539 | 539 | 89 | 0 | 0 | 4.8 | 1.3 | 0.3 | 6.4 | 42.9 | 13.5 | 1.3 | 14.8 |
| 5/1 | 390 | 390 | 390 | 0 | 0 | 3.5 | 0.4 | - | 3.9 | 35.8 | 12.4 | 0.4 | 12.8 |
| 5/2 | 611 | 611 | - | - | - | 0.0 | 0.2 | - | 0.2 | 1.2 | 0.0 | 0.2 | 0.2 |
| 5/3 | 646 | 646 | - | - | - | 0.0 | 0.2 | - | 0.2 | 1.3 | 7.5 | 0.2 | 7.7 |
| 6/1 | 232 | 232 | 0 | 232 | 0 | 0.0 | 0.1 | - | 0.1 | 1.5 | 0.0 | 0.1 | 0.1 |
| 6/2 | 414 | 414 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.1 | 8.6 | 0.1 | 8.7 |
| 6/3 | 414 | 414 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.1 | 8.1 | 0.1 | 8.2 |
| 7/1 | 635 | 635 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 697 | 697 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 646 | 646 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 414 | 414 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 1001 | 1001 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/2 | 646 | 646 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | C1 Stream: 1 PRC for Signalled Lanes (%): | -3.6 | Total Delay for Signalled Lanes (pcuHr): | | | 60.85 | Cycle Time (s): 120 | | | | |
| | | | C1 Stream: 2 PRC for Signalled Lanes (%): | 0.0 | Total Delay for Signalled Lanes (pcuHr): | | | 0.00 | Cycle Time (s): 120 | | | | |
| | | | PRC Over All Lanes (%): | -3.6 | Total Delay Over All Lanes (pcuHr): | | | 65.54 | | | | | |

Full Input Data And Results

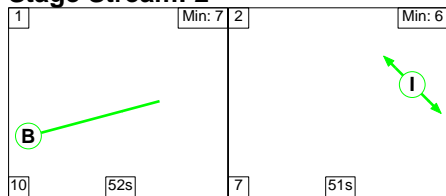
Scenario 2: 'Base Year 2023 PM' (FG2: 'Base Year 2023 PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

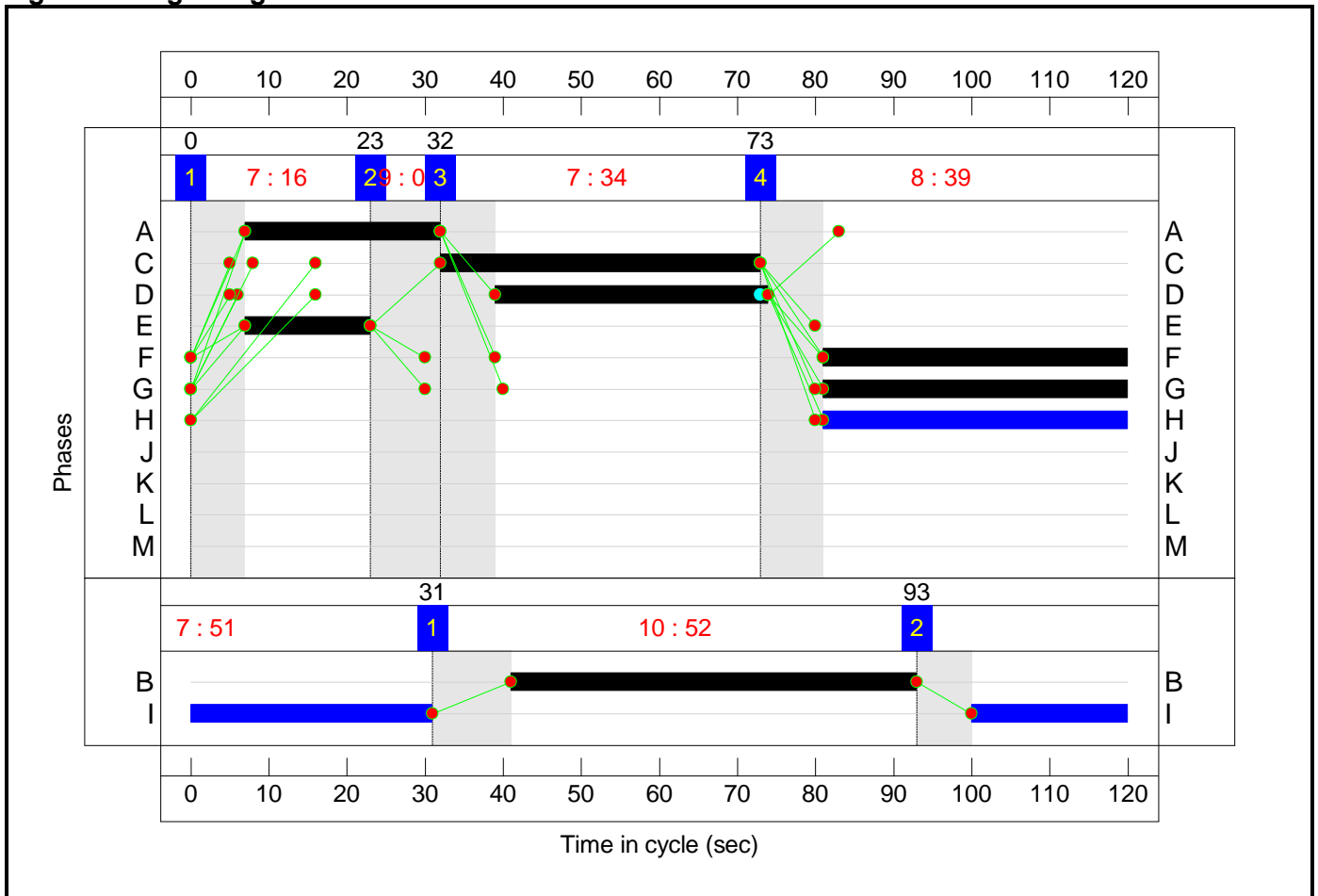
Stage Stream: 1

| Stage | 1 | 2 | 3 | 4 |
|--------------|----|----|----|----|
| Duration | 16 | 0 | 34 | 39 |
| Change Point | 0 | 23 | 32 | 73 |

Stage Stream: 2

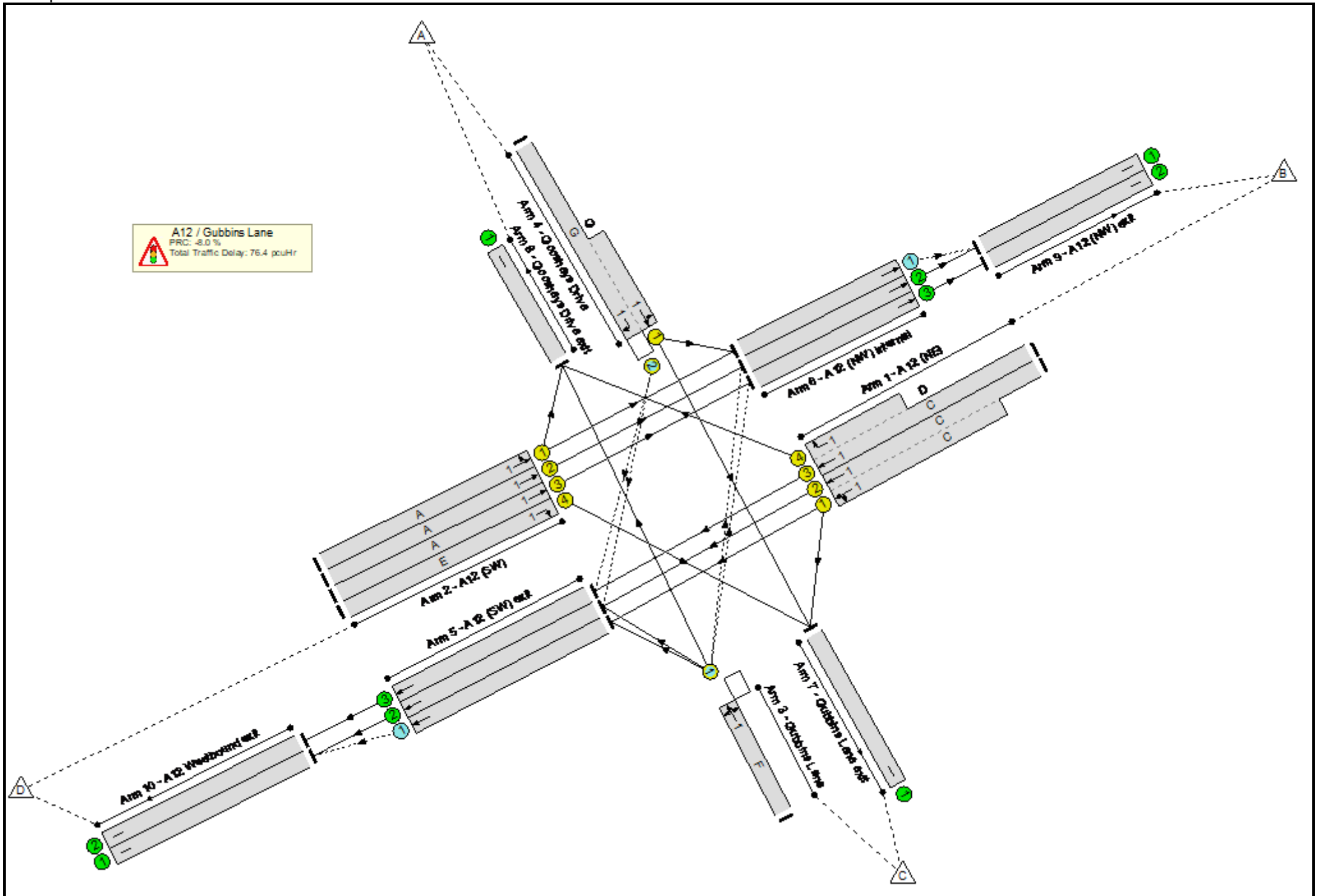
| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 52 | 51 |
| Change Point | 31 | 93 |

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 | - | - | N/A | - | - | | - | - | - | - | - | - | 97.2% |
| A12 / Gubbins Lane | - | - | N/A | - | - | | - | - | - | - | - | - | 97.2% |
| 1/2+1/1 | A12 (NE) Ahead Left | U | 1 | N/A | C | | 1 | 41 | - | 866 | 1955:1867 | 655+617 | 68.0 : 68.0% |
| 1/3+1/4 | A12 (NE) Ahead Right | U | 1 | N/A | C D | | 1 | 41:35 | - | 857 | 2115:1742 | 504+392 | 95.6 : 95.6% |
| 2/1 | A12 (SW) Ahead Left | U | 1 | N/A | A | | 1 | 25 | - | 325 | 1772 | 384 | 84.7% |
| 2/2 | A12 (SW) Ahead | U | 1 | N/A | A | | 1 | 25 | - | 381 | 2075 | 450 | 84.7% |
| 2/3 | A12 (SW) Ahead | U | 1 | N/A | A | | 1 | 25 | - | 382 | 2075 | 450 | 85.0% |
| 2/4 | A12 (SW) Right | U | 1 | N/A | E | | 1 | 16 | - | 247 | 1793 | 254 | 97.2% |
| 3/1 | Gubbins Lane Left Right Ahead | O | 1 | N/A | F | | 1 | 39 | - | 484 | 1891 | 551 | 87.9% |
| 4/2+4/1 | Gooshays Drive Right Left Ahead | O+U | 1 | N/A | G | | 1 | 39 | - | 572 | 1781:1928 | 140+535 | 91.2 : 83.0% |
| 5/1 | A12 (SW) exit Ahead | O | N/A | N/A | - | | - | - | - | 261 | 1965 | 956 | 27.3% |
| 5/2 | A12 (SW) exit Ahead | U | N/A | N/A | - | | - | - | - | 555 | 2055 | 2055 | 27.0% |
| 5/3 | A12 (SW) exit Ahead | U | N/A | N/A | - | | - | - | - | 609 | 2055 | 2055 | 29.6% |
| 6/1 | A12 (NW) internal Ahead | O | N/A | N/A | - | | - | - | - | 166 | 1915 | 1439 | 11.5% |
| 6/2 | A12 (NW) internal Ahead | U | N/A | N/A | - | | - | - | - | 416 | 2055 | 2055 | 20.2% |
| 6/3 | A12 (NW) internal Ahead | U | N/A | N/A | - | | - | - | - | 418 | 2055 | 2055 | 20.3% |
| 7/1 | Gubbins Lane exit | U | N/A | N/A | - | | - | - | - | 791 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|------|---------------------|---|-----|-----|---|--|---|---|---|-----|-----|-----|------|
| 8/1 | Gooshays Drive exit | U | N/A | N/A | - | | - | - | - | 898 | Inf | Inf | 0.0% |
| 9/1 | A12 (NW) exit | U | N/A | N/A | - | | - | - | - | 582 | Inf | Inf | 0.0% |
| 9/2 | A12 (NW) exit | U | N/A | N/A | - | | - | - | - | 418 | Inf | Inf | 0.0% |
| 10/1 | A12 Westbound exit | U | N/A | N/A | - | | - | - | - | 816 | Inf | Inf | 0.0% |
| 10/2 | A12 Westbound exit | U | N/A | N/A | - | | - | - | - | 609 | Inf | Inf | 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 | - | - | 429 | 166 | 31 | 45.8 | 29.7 | 0.9 | 76.4 | - | - | - | - |
| A12 / Gubbins Lane | - | - | 429 | 166 | 31 | 45.8 | 29.7 | 0.9 | 76.4 | - | - | - | - |
| 1/2+1/1 | 866 | 866 | - | - | - | 7.9 | 1.1 | - | 8.9 | 37.2 | 12.5 | 1.1 | 13.6 |
| 1/3+1/4 | 857 | 857 | - | - | - | 8.5 | 7.7 | - | 16.3 | 68.3 | 19.8 | 7.7 | 27.6 |
| 2/1 | 325 | 325 | - | - | - | 4.1 | 2.5 | - | 6.6 | 73.2 | 10.4 | 2.5 | 12.9 |
| 2/2 | 381 | 381 | - | - | - | 4.8 | 2.6 | - | 7.4 | 69.5 | 12.2 | 2.6 | 14.8 |
| 2/3 | 382 | 382 | - | - | - | 4.8 | 2.6 | - | 7.4 | 69.8 | 12.2 | 2.6 | 14.8 |
| 2/4 | 247 | 247 | - | - | - | 3.5 | 6.3 | - | 9.8 | 143.1 | 8.2 | 6.3 | 14.5 |
| 3/1 | 484 | 484 | 71 | 0 | 0 | 4.9 | 3.3 | 0.3 | 8.5 | 63.1 | 15.3 | 3.3 | 18.6 |
| 4/2+4/1 | 572 | 572 | 97 | 0 | 31 | 5.7 | 2.6 | 0.6 | 8.9 | 56.1 | 14.4 | 2.6 | 17.0 |
| 5/1 | 261 | 261 | 261 | 0 | 0 | 1.7 | 0.2 | - | 1.9 | 25.8 | 8.2 | 0.2 | 8.4 |
| 5/2 | 555 | 555 | - | - | - | 0.0 | 0.2 | - | 0.2 | 1.2 | 0.0 | 0.2 | 0.2 |
| 5/3 | 609 | 609 | - | - | - | 0.0 | 0.2 | - | 0.2 | 1.3 | 7.4 | 0.2 | 7.7 |
| 6/1 | 166 | 166 | 0 | 166 | 0 | 0.0 | 0.1 | - | 0.1 | 1.4 | 0.0 | 0.1 | 0.1 |
| 6/2 | 416 | 416 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.1 | 9.2 | 0.1 | 9.3 |
| 6/3 | 418 | 418 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.1 | 9.2 | 0.1 | 9.3 |
| 7/1 | 791 | 791 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 898 | 898 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 582 | 582 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 418 | 418 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 816 | 816 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/2 | 609 | 609 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

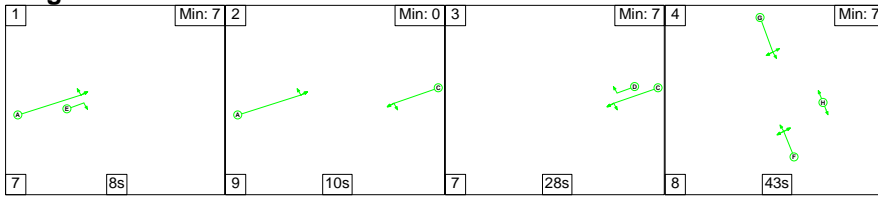
| | | | | | | |
|----|--|------|--|-------|-----------------|-----|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -8.0 | Total Delay for Signalled Lanes (pcuHr): | 73.81 | Cycle Time (s): | 120 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | 0.0 | Total Delay for Signalled Lanes (pcuHr): | 0.00 | Cycle Time (s): | 120 |
| | PRC Over All Lanes (%): | -8.0 | Total Delay Over All Lanes (pcuHr): | 76.42 | | |

Full Input Data And Results

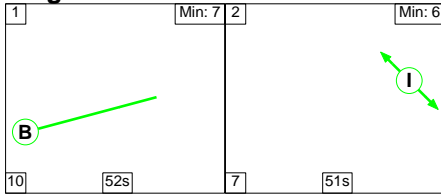
Scenario 3: 'Reference Case 2030 AM' (FG3: 'Reference Case 2030 AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

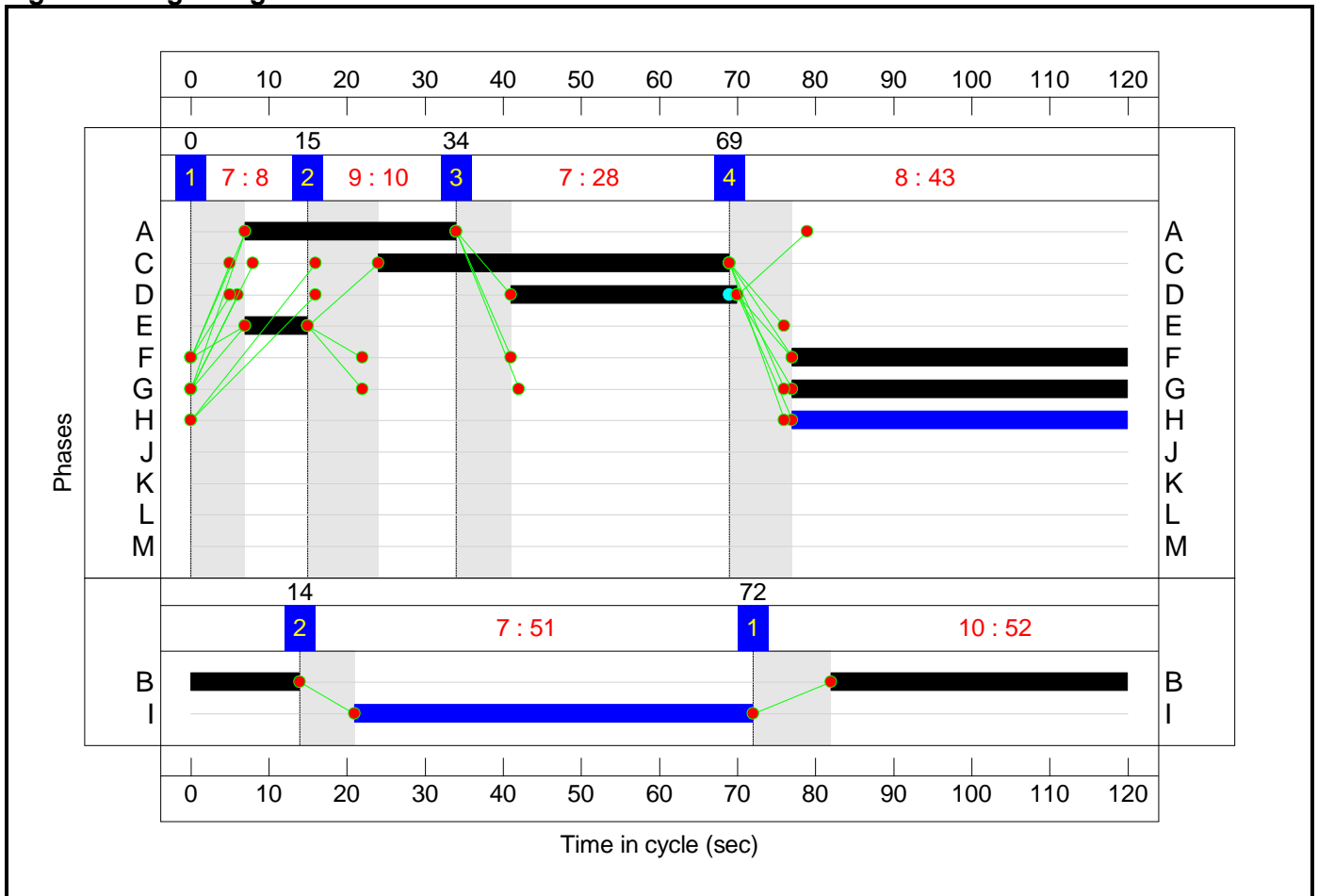
Stage Stream: 1

| Stage | 1 | 2 | 3 | 4 |
|--------------|---|----|----|----|
| Duration | 8 | 10 | 28 | 43 |
| Change Point | 0 | 15 | 34 | 69 |

Stage Stream: 2

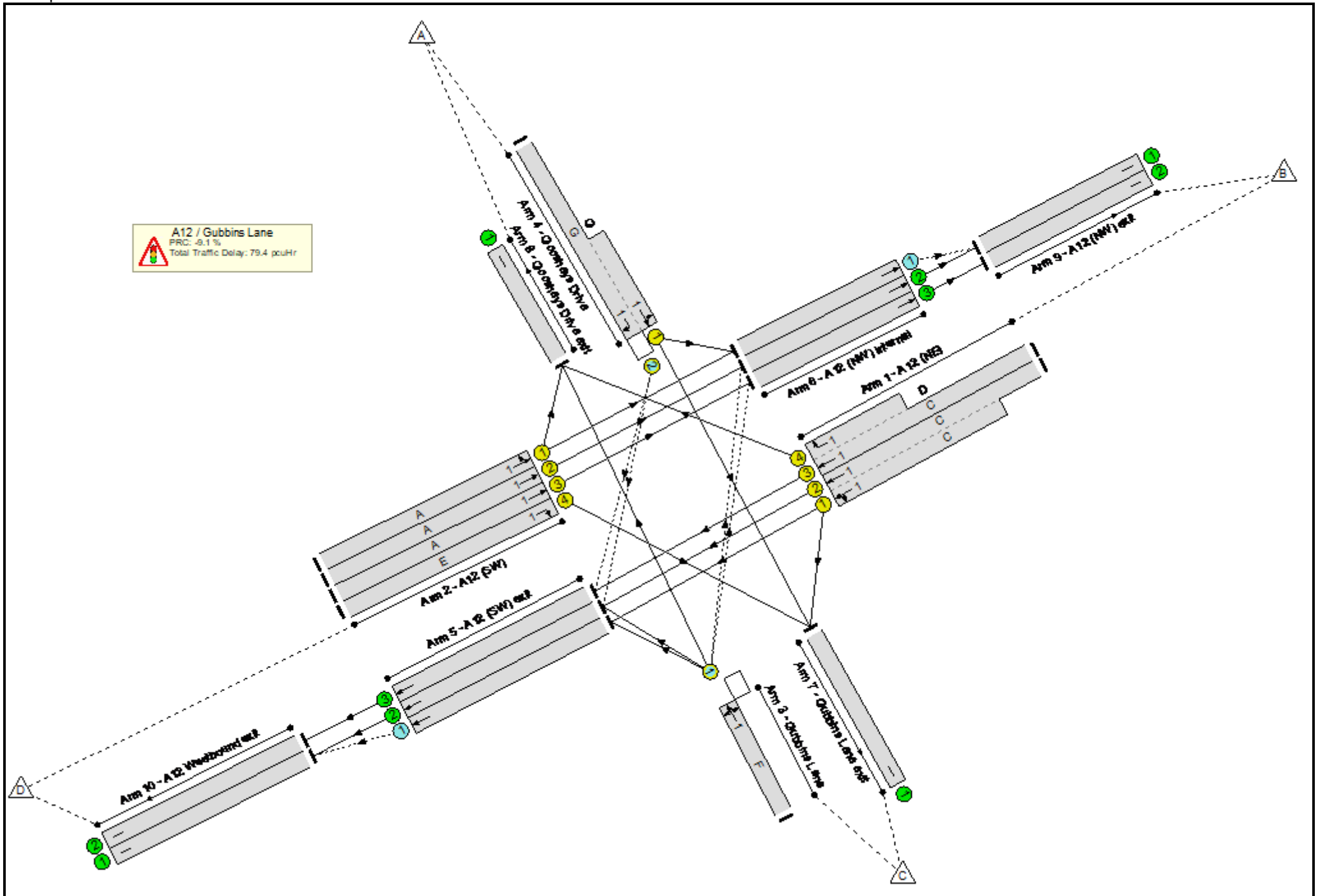
| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 52 | 51 |
| Change Point | 72 | 14 |

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 | - | - | N/A | - | - | | - | - | - | - | - | - | 98.2% |
| A12 / Gubbins Lane | - | - | N/A | - | - | | - | - | - | - | - | - | 98.2% |
| 1/2+1/1 | A12 (NE) Ahead Left | U | 1 | N/A | C | | 1 | 45 | - | 1057 | 1955:1905 | 688+659 | 78.4 : 78.4% |
| 1/3+1/4 | A12 (NE) Ahead Right | U | 1 | N/A | C D | | 1 | 45:29 | - | 909 | 2115:1742 | 598+333 | 97.6 : 97.6% |
| 2/1 | A12 (SW) Ahead Left | U | 1 | N/A | A | | 1 | 27 | - | 334 | 1810 | 422 | 79.1% |
| 2/2 | A12 (SW) Ahead | U | 1 | N/A | A | | 1 | 27 | - | 383 | 2075 | 484 | 79.1% |
| 2/3 | A12 (SW) Ahead | U | 1 | N/A | A | | 1 | 27 | - | 384 | 2075 | 484 | 79.3% |
| 2/4 | A12 (SW) Right | U | 1 | N/A | E | | 1 | 8 | - | 132 | 1793 | 134 | 98.2% |
| 3/1 | Gubbins Lane Left Right Ahead | O | 1 | N/A | F | | 1 | 43 | - | 463 | 1880 | 492 | 94.1% |
| 4/2+4/1 | Gooshays Drive Right Left Ahead | O+U | 1 | N/A | G | | 1 | 43 | - | 564 | 1781:1935 | 124+628 | 74.9 : 74.9% |
| 5/1 | A12 (SW) exit Ahead | O | N/A | N/A | - | | - | - | - | 408 | 1965 | 893 | 45.7% |
| 5/2 | A12 (SW) exit Ahead | U | N/A | N/A | - | | - | - | - | 639 | 2055 | 2055 | 31.1% |
| 5/3 | A12 (SW) exit Ahead | U | N/A | N/A | - | | - | - | - | 676 | 2055 | 2055 | 32.9% |
| 6/1 | A12 (NW) internal Ahead | O | N/A | N/A | - | | - | - | - | 243 | 1915 | 1439 | 16.9% |
| 6/2 | A12 (NW) internal Ahead | U | N/A | N/A | - | | - | - | - | 432 | 2055 | 2055 | 21.0% |
| 6/3 | A12 (NW) internal Ahead | U | N/A | N/A | - | | - | - | - | 434 | 2055 | 2055 | 21.1% |
| 7/1 | Gubbins Lane exit | U | N/A | N/A | - | | - | - | - | 665 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|------|---------------------|---|-----|-----|---|--|---|---|---|------|-----|-----|------|
| 8/1 | Gooshays Drive exit | U | N/A | N/A | - | | - | - | - | 729 | Inf | Inf | 0.0% |
| 9/1 | A12 (NW) exit | U | N/A | N/A | - | | - | - | - | 675 | Inf | Inf | 0.0% |
| 9/2 | A12 (NW) exit | U | N/A | N/A | - | | - | - | - | 434 | Inf | Inf | 0.0% |
| 10/1 | A12 Westbound exit | U | N/A | N/A | - | | - | - | - | 1047 | Inf | Inf | 0.0% |
| 10/2 | A12 Westbound exit | U | N/A | N/A | - | | - | - | - | 676 | Inf | Inf | 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 | - | - | 600 | 243 | 0 | 47.3 | 31.5 | 0.7 | 79.4 | - | - | - | - |
| A12 / Gubbins Lane | - | - | 600 | 243 | 0 | 47.3 | 31.5 | 0.7 | 79.4 | - | - | - | - |
| 1/2+1/1 | 1057 | 1057 | - | - | - | 9.2 | 1.8 | - | 11.0 | 37.5 | 15.3 | 1.8 | 17.1 |
| 1/3+1/4 | 909 | 909 | - | - | - | 9.3 | 10.5 | - | 19.8 | 78.5 | 24.5 | 10.5 | 35.0 |
| 2/1 | 334 | 334 | - | - | - | 4.0 | 1.8 | - | 5.8 | 62.8 | 10.4 | 1.8 | 12.2 |
| 2/2 | 383 | 383 | - | - | - | 4.6 | 1.8 | - | 6.4 | 60.4 | 11.9 | 1.8 | 13.7 |
| 2/3 | 384 | 384 | - | - | - | 4.6 | 1.8 | - | 6.5 | 60.6 | 11.9 | 1.8 | 13.8 |
| 2/4 | 132 | 132 | - | - | - | 2.0 | 5.2 | - | 7.2 | 196.1 | 4.4 | 5.2 | 9.5 |
| 3/1 | 463 | 463 | 99 | 0 | 0 | 4.6 | 5.7 | 0.4 | 10.7 | 83.2 | 15.0 | 5.7 | 20.8 |
| 4/2+4/1 | 564 | 564 | 93 | 0 | 0 | 5.0 | 1.5 | 0.3 | 6.7 | 43.0 | 14.4 | 1.5 | 15.8 |
| 5/1 | 408 | 408 | 408 | 0 | 0 | 3.9 | 0.4 | - | 4.4 | 38.4 | 13.0 | 0.4 | 13.4 |
| 5/2 | 639 | 639 | - | - | - | 0.0 | 0.2 | - | 0.2 | 1.3 | 0.0 | 0.2 | 0.2 |
| 5/3 | 676 | 676 | - | - | - | 0.0 | 0.2 | - | 0.3 | 1.4 | 7.5 | 0.2 | 7.7 |
| 6/1 | 243 | 243 | 0 | 243 | 0 | 0.0 | 0.1 | - | 0.1 | 1.5 | 0.0 | 0.1 | 0.1 |
| 6/2 | 432 | 432 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.2 | 9.2 | 0.1 | 9.3 |
| 6/3 | 434 | 434 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.2 | 9.2 | 0.1 | 9.3 |
| 7/1 | 665 | 665 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 729 | 729 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 675 | 675 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 434 | 434 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 1047 | 1047 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/2 | 676 | 676 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

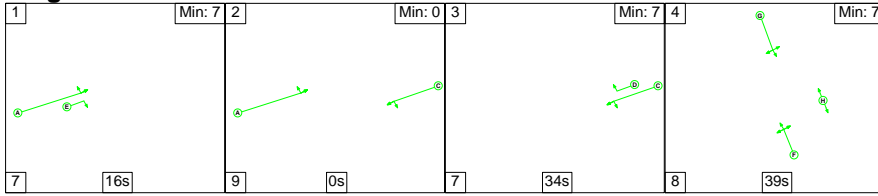
| | | | | | | |
|----|--|------|--|-------|-----------------|-----|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -9.1 | Total Delay for Signalled Lanes (pcuHr): | 74.20 | Cycle Time (s): | 120 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | 0.0 | Total Delay for Signalled Lanes (pcuHr): | 0.00 | Cycle Time (s): | 120 |
| | PRC Over All Lanes (%): | -9.1 | Total Delay Over All Lanes (pcuHr): | 79.41 | | |

Full Input Data And Results

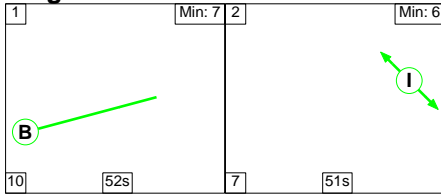
Scenario 4: 'Reference Case 2030 PM' (FG4: 'Reference Case 2030 PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

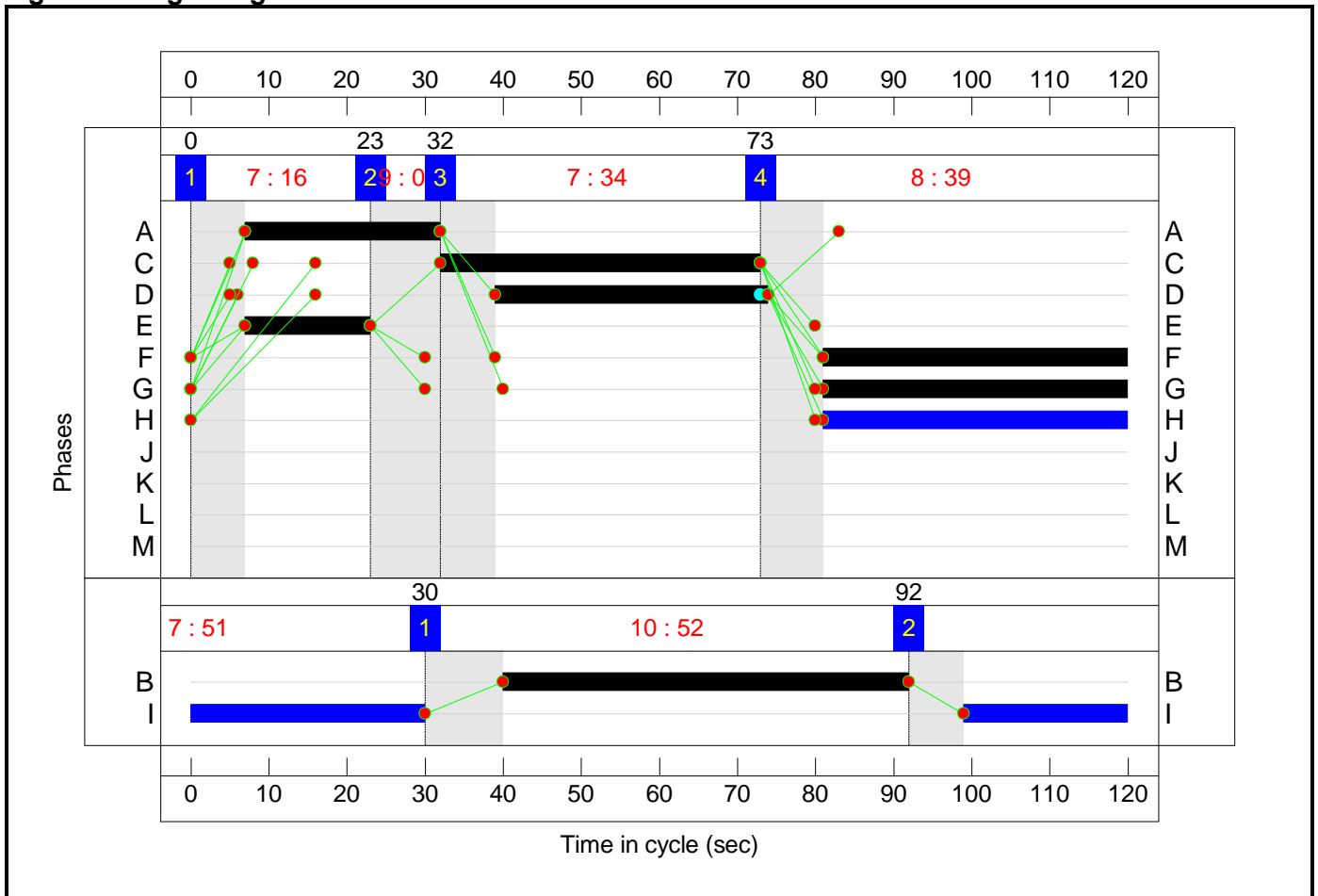
Stage Stream: 1

| Stage | 1 | 2 | 3 | 4 |
|--------------|----|----|----|----|
| Duration | 16 | 0 | 34 | 39 |
| Change Point | 0 | 23 | 32 | 73 |

Stage Stream: 2

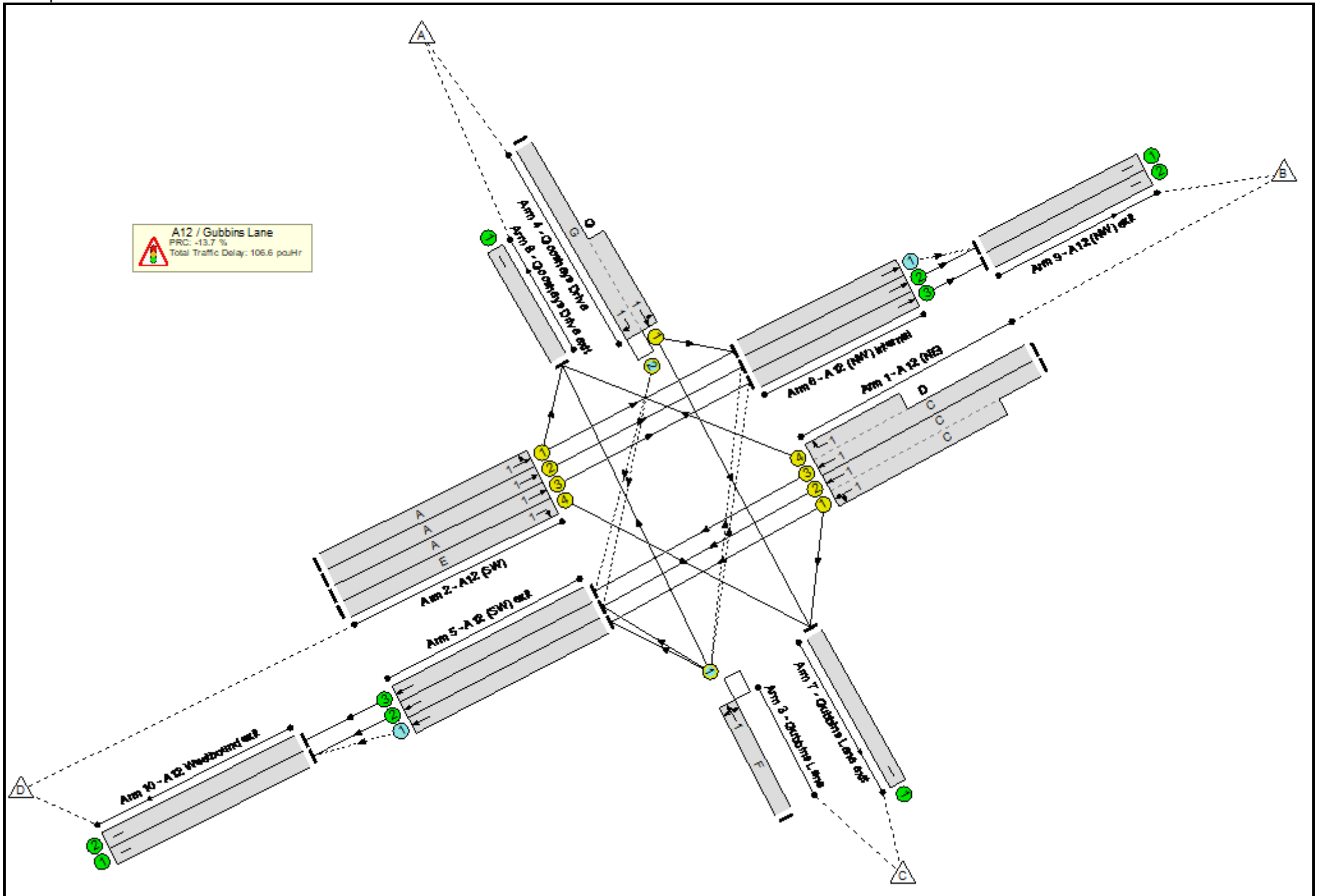
| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 52 | 51 |
| Change Point | 30 | 92 |

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 | - | - | N/A | - | - | | - | - | - | - | - | - | 102.4% |
| A12 / Gubbins Lane | - | - | N/A | - | - | | - | - | - | - | - | - | 102.4% |
| 1/2+1/1 | A12 (NE) Ahead Left | U | 1 | N/A | C | | 1 | 41 | - | 911 | 1955:1867 | 655+618 | 71.6 : 71.6% |
| 1/3+1/4 | A12 (NE) Ahead Right | U | 1 | N/A | C D | | 1 | 41:35 | - | 902 | 2115:1742 | 504+393 | 100.6 : 100.6% |
| 2/1 | A12 (SW) Ahead Left | U | 1 | N/A | A | | 1 | 25 | - | 342 | 1772 | 384 | 89.1% |
| 2/2 | A12 (SW) Ahead | U | 1 | N/A | A | | 1 | 25 | - | 401 | 2075 | 450 | 89.2% |
| 2/3 | A12 (SW) Ahead | U | 1 | N/A | A | | 1 | 25 | - | 401 | 2075 | 450 | 89.2% |
| 2/4 | A12 (SW) Right | U | 1 | N/A | E | | 1 | 16 | - | 260 | 1793 | 254 | 102.4% |
| 3/1 | Gubbins Lane Left Right Ahead | O | 1 | N/A | F | | 1 | 39 | - | 510 | 1890 | 502 | 101.5% |
| 4/2+4/1 | Gooshays Drive Right Left Ahead | O+U | 1 | N/A | G | | 1 | 39 | - | 602 | 1781:1928 | 147+551 | 91.6 : 84.7% |
| 5/1 | A12 (SW) exit Ahead | O | N/A | N/A | - | | - | - | - | 275 | 1965 | 936 | 29.4% |
| 5/2 | A12 (SW) exit Ahead | U | N/A | N/A | - | | - | - | - | 583 | 2055 | 2055 | 28.3% |
| 5/3 | A12 (SW) exit Ahead | U | N/A | N/A | - | | - | - | - | 642 | 2055 | 2055 | 31.2% |
| 6/1 | A12 (NW) internal Ahead | O | N/A | N/A | - | | - | - | - | 175 | 1915 | 1439 | 12.2% |
| 6/2 | A12 (NW) internal Ahead | U | N/A | N/A | - | | - | - | - | 438 | 2055 | 2055 | 21.3% |
| 6/3 | A12 (NW) internal Ahead | U | N/A | N/A | - | | - | - | - | 439 | 2055 | 2055 | 21.3% |
| 7/1 | Gubbins Lane exit | U | N/A | N/A | - | | - | - | - | 832 | Inf | Inf | 0.0% |

Full Input Data And Results

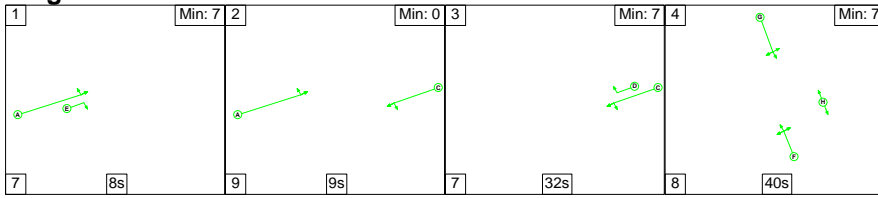
| | | | | | | | | | | | | | |
|------|---------------------|---|-----|-----|---|--|---|---|---|-----|-----|-----|------|
| 8/1 | Gooshays Drive exit | U | N/A | N/A | - | | - | - | - | 945 | Inf | Inf | 0.0% |
| 9/1 | A12 (NW) exit | U | N/A | N/A | - | | - | - | - | 613 | Inf | Inf | 0.0% |
| 9/2 | A12 (NW) exit | U | N/A | N/A | - | | - | - | - | 439 | Inf | Inf | 0.0% |
| 10/1 | A12 Westbound exit | U | N/A | N/A | - | | - | - | - | 858 | Inf | Inf | 0.0% |
| 10/2 | A12 Westbound exit | U | N/A | N/A | - | | - | - | - | 642 | Inf | Inf | 0.0% |

Full Input Data And Results

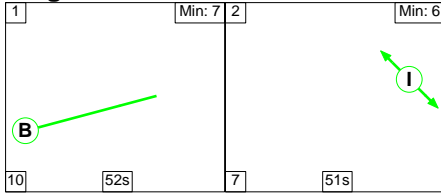
Scenario 5: 'Do Something 2030 + LTC AM' (FG7: 'Do Something 2030 + LTC AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

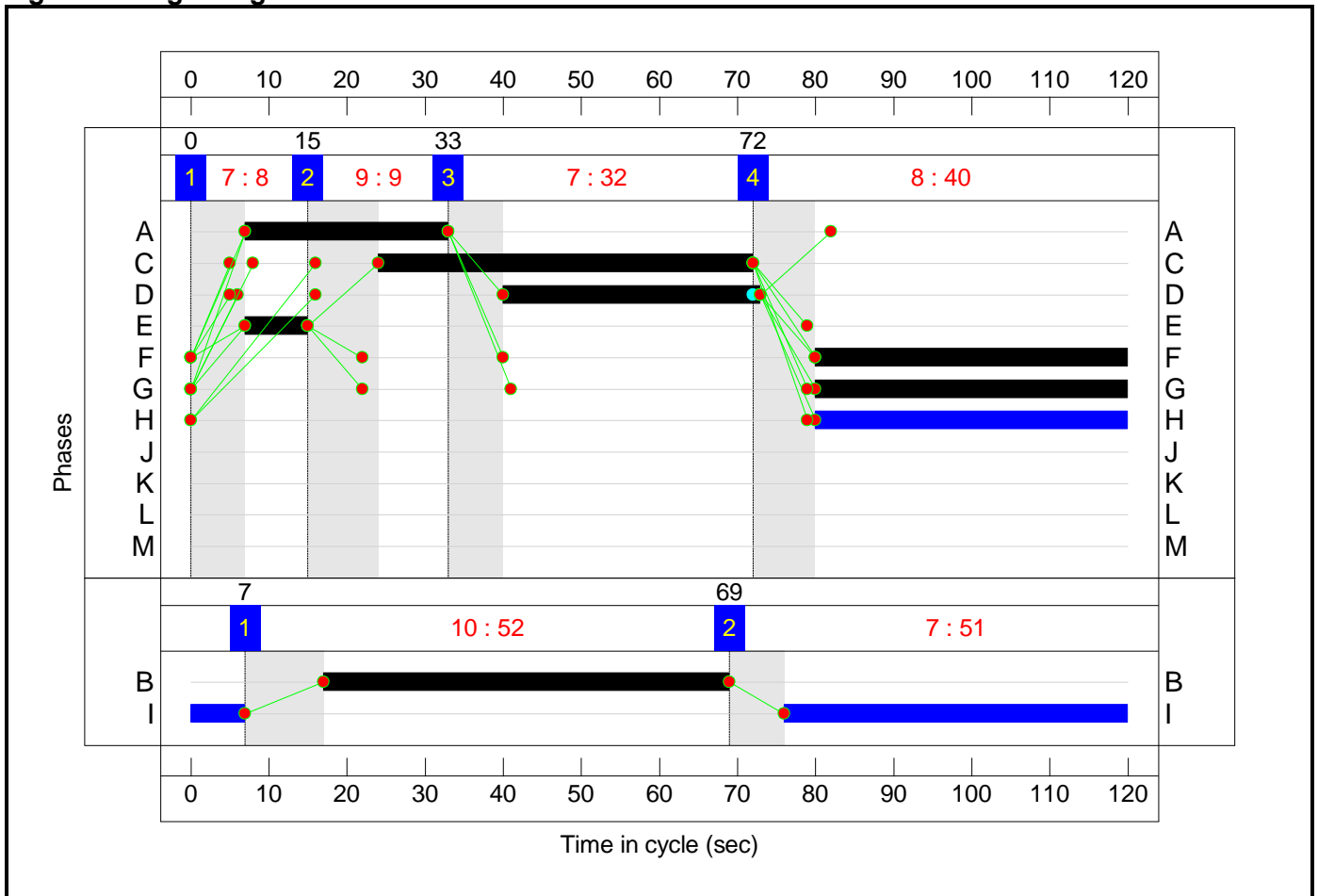
Stage Stream: 1

| Stage | 1 | 2 | 3 | 4 |
|--------------|---|----|----|----|
| Duration | 8 | 9 | 32 | 40 |
| Change Point | 0 | 15 | 33 | 72 |

Stage Stream: 2

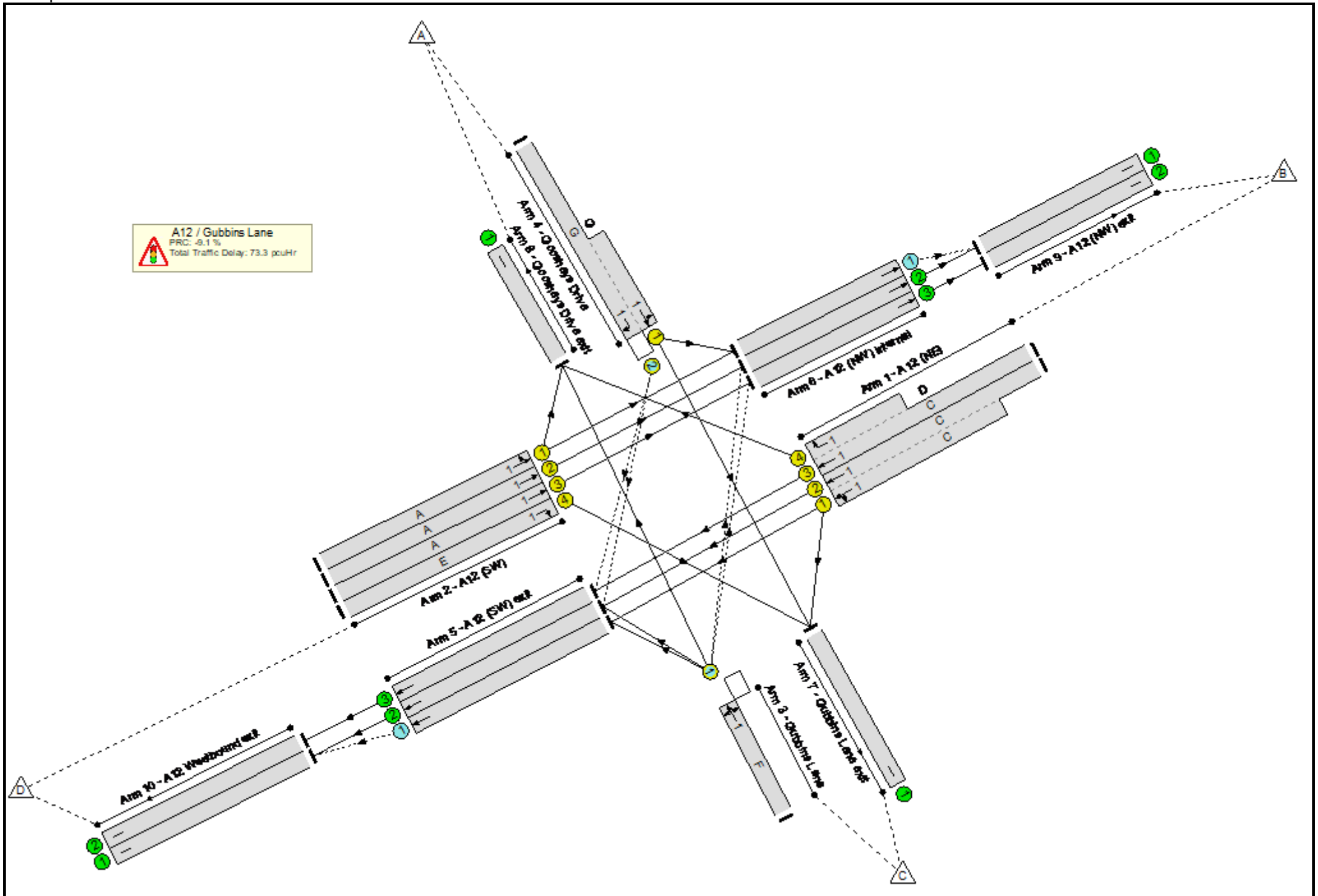
| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 52 | 51 |
| Change Point | 7 | 69 |

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 | - | - | N/A | - | - | | - | - | - | - | - | - | 98.2% |
| A12 / Gubbins Lane | - | - | N/A | - | - | | - | - | - | - | - | - | 98.2% |
| 1/2+1/1 | A12 (NE) Ahead Left | U | 1 | N/A | C | | 1 | 48 | - | 1097 | 1955:1896 | 713+679 | 78.8 : 78.8% |
| 1/3+1/4 | A12 (NE) Ahead Right | U | 1 | N/A | C D | | 1 | 48:33 | - | 951 | 2115:1742 | 627+356 | 96.8 : 96.8% |
| 2/1 | A12 (SW) Ahead Left | U | 1 | N/A | A | | 1 | 26 | - | 271 | 1796 | 404 | 67.1% |
| 2/2 | A12 (SW) Ahead | U | 1 | N/A | A | | 1 | 26 | - | 305 | 2075 | 467 | 65.3% |
| 2/3 | A12 (SW) Ahead | U | 1 | N/A | A | | 1 | 26 | - | 304 | 2075 | 467 | 65.1% |
| 2/4 | A12 (SW) Right | U | 1 | N/A | E | | 1 | 8 | - | 132 | 1793 | 134 | 98.2% |
| 3/1 | Gubbins Lane Left Right Ahead | O | 1 | N/A | F | | 1 | 40 | - | 447 | 1884 | 481 | 93.0% |
| 4/2+4/1 | Gooshays Drive Right Left Ahead | O+U | 1 | N/A | G | | 1 | 40 | - | 589 | 1781:1919 | 113+588 | 84.0 : 84.0% |
| 5/1 | A12 (SW) exit Ahead | O | N/A | N/A | - | | - | - | - | 401 | 1965 | 869 | 46.2% |
| 5/2 | A12 (SW) exit Ahead | U | N/A | N/A | - | | - | - | - | 664 | 2055 | 2055 | 32.3% |
| 5/3 | A12 (SW) exit Ahead | U | N/A | N/A | - | | - | - | - | 697 | 2055 | 2055 | 33.9% |
| 6/1 | A12 (NW) internal Ahead | O | N/A | N/A | - | | - | - | - | 221 | 1915 | 1439 | 15.4% |
| 6/2 | A12 (NW) internal Ahead | U | N/A | N/A | - | | - | - | - | 346 | 2055 | 2055 | 16.8% |
| 6/3 | A12 (NW) internal Ahead | U | N/A | N/A | - | | - | - | - | 345 | 2055 | 2055 | 16.8% |
| 7/1 | Gubbins Lane exit | U | N/A | N/A | - | | - | - | - | 672 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|------|---------------------|---|-----|-----|---|--|---|---|---|------|-----|-----|------|
| 8/1 | Gooshays Drive exit | U | N/A | N/A | - | | - | - | - | 750 | Inf | Inf | 0.0% |
| 9/1 | A12 (NW) exit | U | N/A | N/A | - | | - | - | - | 567 | Inf | Inf | 0.0% |
| 9/2 | A12 (NW) exit | U | N/A | N/A | - | | - | - | - | 345 | Inf | Inf | 0.0% |
| 10/1 | A12 Westbound exit | U | N/A | N/A | - | | - | - | - | 1065 | Inf | Inf | 0.0% |
| 10/2 | A12 Westbound exit | U | N/A | N/A | - | | - | - | - | 697 | Inf | Inf | 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 | - | - | 578 | 221 | 0 | 44.5 | 28.1 | 0.7 | 73.3 | - | - | - | - |
| A12 / Gubbins Lane | - | - | 578 | 221 | 0 | 44.5 | 28.1 | 0.7 | 73.3 | - | - | - | - |
| 1/2+1/1 | 1097 | 1097 | - | - | - | 9.0 | 1.8 | - | 10.8 | 35.4 | 15.5 | 1.8 | 17.3 |
| 1/3+1/4 | 951 | 951 | - | - | - | 9.1 | 9.4 | - | 18.5 | 69.9 | 25.5 | 9.4 | 34.9 |
| 2/1 | 271 | 271 | - | - | - | 3.2 | 1.0 | - | 4.2 | 55.8 | 8.2 | 1.0 | 9.2 |
| 2/2 | 305 | 305 | - | - | - | 3.6 | 0.9 | - | 4.5 | 53.2 | 9.2 | 0.9 | 10.2 |
| 2/3 | 304 | 304 | - | - | - | 3.6 | 0.9 | - | 4.5 | 53.2 | 9.1 | 0.9 | 10.0 |
| 2/4 | 132 | 132 | - | - | - | 2.0 | 5.2 | - | 7.2 | 196.1 | 4.4 | 5.2 | 9.5 |
| 3/1 | 447 | 447 | 82 | 0 | 0 | 4.5 | 5.1 | 0.4 | 9.9 | 79.9 | 14.5 | 5.1 | 19.6 |
| 4/2+4/1 | 589 | 589 | 95 | 0 | 0 | 5.8 | 2.5 | 0.4 | 8.6 | 52.7 | 16.1 | 2.5 | 18.6 |
| 5/1 | 401 | 401 | 401 | 0 | 0 | 3.9 | 0.4 | - | 4.3 | 38.5 | 12.8 | 0.4 | 13.2 |
| 5/2 | 664 | 664 | - | - | - | 0.0 | 0.2 | - | 0.2 | 1.3 | 0.0 | 0.2 | 0.2 |
| 5/3 | 697 | 697 | - | - | - | 0.0 | 0.3 | - | 0.3 | 1.4 | 7.5 | 0.3 | 7.8 |
| 6/1 | 221 | 221 | 0 | 221 | 0 | 0.0 | 0.1 | - | 0.1 | 1.5 | 0.0 | 0.1 | 0.1 |
| 6/2 | 346 | 346 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.1 | 6.9 | 0.1 | 7.0 |
| 6/3 | 345 | 345 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.1 | 6.9 | 0.1 | 7.0 |
| 7/1 | 672 | 672 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 750 | 750 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 567 | 567 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 345 | 345 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 1065 | 1065 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/2 | 697 | 697 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

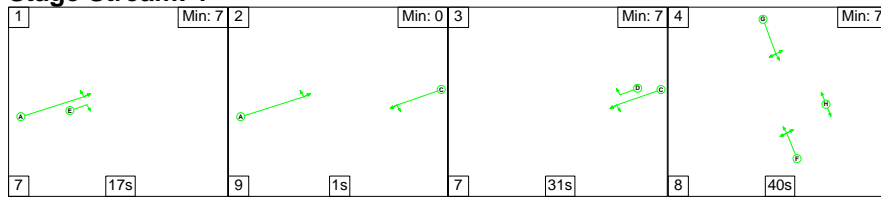
| | | | | | | |
|----|--|------|--|-------|-----------------|-----|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -9.1 | Total Delay for Signalled Lanes (pcuHr): | 68.19 | Cycle Time (s): | 120 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | 0.0 | Total Delay for Signalled Lanes (pcuHr): | 0.00 | Cycle Time (s): | 120 |
| | PRC Over All Lanes (%): | -9.1 | Total Delay Over All Lanes (pcuHr): | 73.28 | | |

Full Input Data And Results

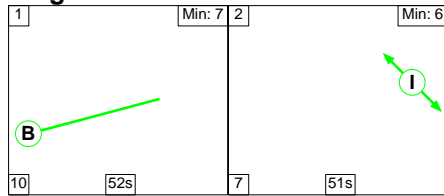
Scenario 6: 'Do Something 2030 + LTC PM' (FG8: 'Do Something 2030 + LTC PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

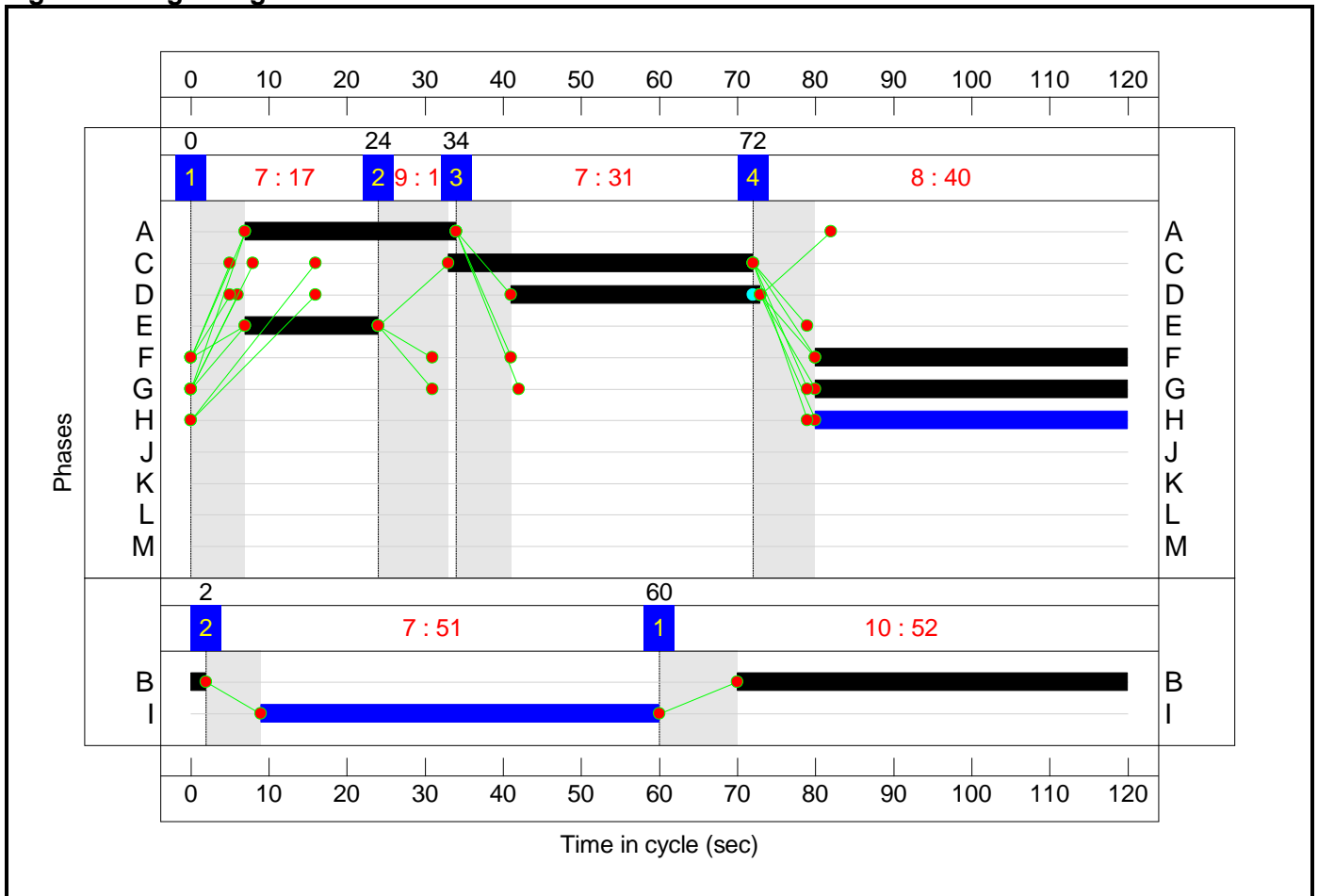
Stage Stream: 1

| Stage | 1 | 2 | 3 | 4 |
|--------------|----|----|----|----|
| Duration | 17 | 1 | 31 | 40 |
| Change Point | 0 | 24 | 34 | 72 |

Stage Stream: 2

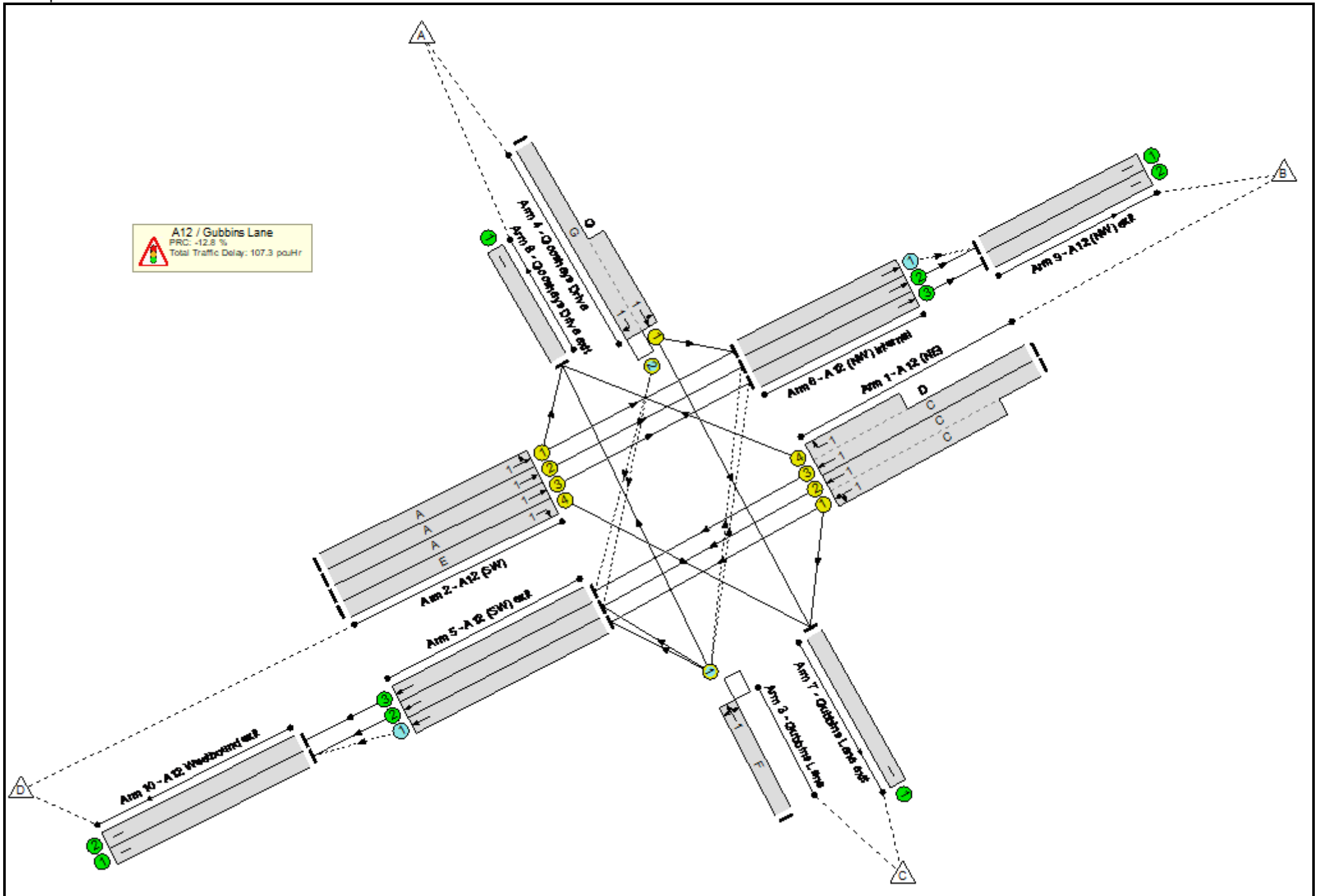
| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 52 | 51 |
| Change Point | 60 | 2 |

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 | - | - | N/A | - | - | | - | - | - | - | - | - | 101.5% |
| A12 / Gubbins Lane | - | - | N/A | - | - | | - | - | - | - | - | - | 101.5% |
| 1/2+1/1 | A12 (NE) Ahead Left | U | 1 | N/A | C | | 1 | 39 | - | 1256 | 1955:1899 | 639+607 | 100.8 : 100.8% |
| 1/3+1/4 | A12 (NE) Ahead Right | U | 1 | N/A | C D | | 1 | 39:32 | - | 537 | 2115:1742 | 153+429 | 92.3 : 92.3% |
| 2/1 | A12 (SW) Ahead Left | U | 1 | N/A | A | | 1 | 27 | - | 315 | 1764 | 412 | 76.5% |
| 2/2 | A12 (SW) Ahead | U | 1 | N/A | A | | 1 | 27 | - | 372 | 2075 | 484 | 76.8% |
| 2/3 | A12 (SW) Ahead | U | 1 | N/A | A | | 1 | 27 | - | 372 | 2075 | 484 | 76.8% |
| 2/4 | A12 (SW) Right | U | 1 | N/A | E | | 1 | 17 | - | 260 | 1793 | 269 | 96.7% |
| 3/1 | Gubbins Lane Left Right Ahead | O | 1 | N/A | F | | 1 | 40 | - | 520 | 1892 | 512 | 101.5% |
| 4/2+4/1 | Gooshays Drive Right Left Ahead | O+U | 1 | N/A | G | | 1 | 40 | - | 578 | 1781:1919 | 155+564 | 82.4 : 79.8% |
| 5/1 | A12 (SW) exit Ahead | O | N/A | N/A | - | | - | - | - | 468 | 1965 | 833 | 55.8% |
| 5/2 | A12 (SW) exit Ahead | U | N/A | N/A | - | | - | - | - | 756 | 2055 | 2055 | 36.5% |
| 5/3 | A12 (SW) exit Ahead | U | N/A | N/A | - | | - | - | - | 259 | 2055 | 2055 | 12.6% |
| 6/1 | A12 (NW) internal Ahead | O | N/A | N/A | - | | - | - | - | 165 | 1915 | 1439 | 11.5% |
| 6/2 | A12 (NW) internal Ahead | U | N/A | N/A | - | | - | - | - | 416 | 2055 | 2055 | 20.2% |
| 6/3 | A12 (NW) internal Ahead | U | N/A | N/A | - | | - | - | - | 416 | 2055 | 2055 | 20.2% |
| 7/1 | Gubbins Lane exit | U | N/A | N/A | - | | - | - | - | 775 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|------|---------------------|---|-----|-----|---|--|---|---|---|------|-----|-----|------|
| 8/1 | Gooshays Drive exit | U | N/A | N/A | - | | - | - | - | 955 | Inf | Inf | 0.0% |
| 9/1 | A12 (NW) exit | U | N/A | N/A | - | | - | - | - | 581 | Inf | Inf | 0.0% |
| 9/2 | A12 (NW) exit | U | N/A | N/A | - | | - | - | - | 416 | Inf | Inf | 0.0% |
| 10/1 | A12 Westbound exit | U | N/A | N/A | - | | - | - | - | 1224 | Inf | Inf | 0.0% |
| 10/2 | A12 Westbound exit | U | N/A | N/A | - | | - | - | - | 259 | Inf | Inf | 0.0% |

Full Input Data And Results

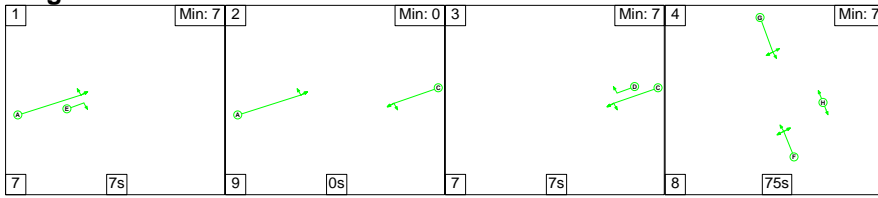
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) | |
|---------------------------|----------------|---------------|-----------------------|--|-----------------------------|-----------------------|--|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|--|
| Network | - | - | 645 | 165 | 34 | 53.5 | 52.9 | 0.9 | 107.3 | - | - | - | - | |
| A12 / Gubbins Lane | - | - | 645 | 165 | 34 | 53.5 | 52.9 | 0.9 | 107.3 | - | - | - | - | |
| 1/2+1/1 | 1256 | 1247 | - | - | - | 14.3 | 20.2 | - | 34.5 | 99.0 | 24.1 | 20.2 | 44.3 | |
| 1/3+1/4 | 537 | 537 | - | - | - | 5.8 | 4.9 | - | 10.7 | 71.5 | 13.9 | 4.9 | 18.8 | |
| 2/1 | 315 | 315 | - | - | - | 3.8 | 1.6 | - | 5.3 | 61.0 | 9.7 | 1.6 | 11.3 | |
| 2/2 | 372 | 372 | - | - | - | 4.4 | 1.6 | - | 6.1 | 58.6 | 11.6 | 1.6 | 13.2 | |
| 2/3 | 372 | 372 | - | - | - | 4.4 | 1.6 | - | 6.1 | 58.6 | 11.6 | 1.6 | 13.2 | |
| 2/4 | 260 | 260 | - | - | - | 3.7 | 6.1 | - | 9.8 | 135.6 | 8.6 | 6.1 | 14.7 | |
| 3/1 | 520 | 512 | 87 | 0 | 0 | 6.0 | 13.5 | 0.3 | 19.9 | 137.7 | 17.6 | 13.5 | 31.1 | |
| 4/2+4/1 | 578 | 578 | 94 | 0 | 34 | 5.6 | 2.0 | 0.5 | 8.1 | 50.4 | 14.5 | 2.0 | 16.5 | |
| 5/1 | 465 | 465 | 465 | 0 | 0 | 5.5 | 0.6 | - | 6.1 | 47.6 | 14.9 | 0.6 | 15.5 | |
| 5/2 | 750 | 750 | - | - | - | 0.0 | 0.3 | - | 0.3 | 1.4 | 0.0 | 0.3 | 0.3 | |
| 5/3 | 259 | 259 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.0 | 0.6 | 0.1 | 0.7 | |
| 6/1 | 165 | 165 | 0 | 165 | 0 | 0.0 | 0.1 | - | 0.1 | 1.4 | 0.0 | 0.1 | 0.1 | |
| 6/2 | 415 | 415 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.1 | 9.2 | 0.1 | 9.3 | |
| 6/3 | 415 | 415 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.1 | 9.2 | 0.1 | 9.3 | |
| 7/1 | 774 | 774 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 8/1 | 950 | 950 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 9/1 | 580 | 580 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 9/2 | 415 | 415 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 10/1 | 1214 | 1214 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| 10/2 | 259 | 259 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | |
| | | | C1 | Stream: 1 PRC for Signalled Lanes (%): | | -12.8 | Total Delay for Signalled Lanes (pcuHr): | | 100.42 | Cycle Time (s): | | 120 | | |
| | | | C1 | Stream: 2 PRC for Signalled Lanes (%): | | 0.0 | Total Delay for Signalled Lanes (pcuHr): | | 0.00 | Cycle Time (s): | | 120 | | |
| | | | | PRC Over All Lanes (%): | | -12.8 | Total Delay Over All Lanes (pcuHr): | | 107.25 | | | | | |

Full Input Data And Results

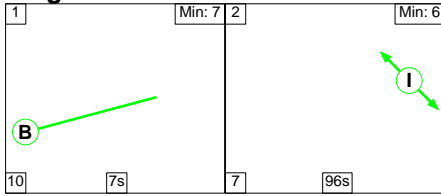
Scenario 7: '2023 Surveyed Peak Hour AM' (FG9: '2023 Surveyed Peak Hour AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

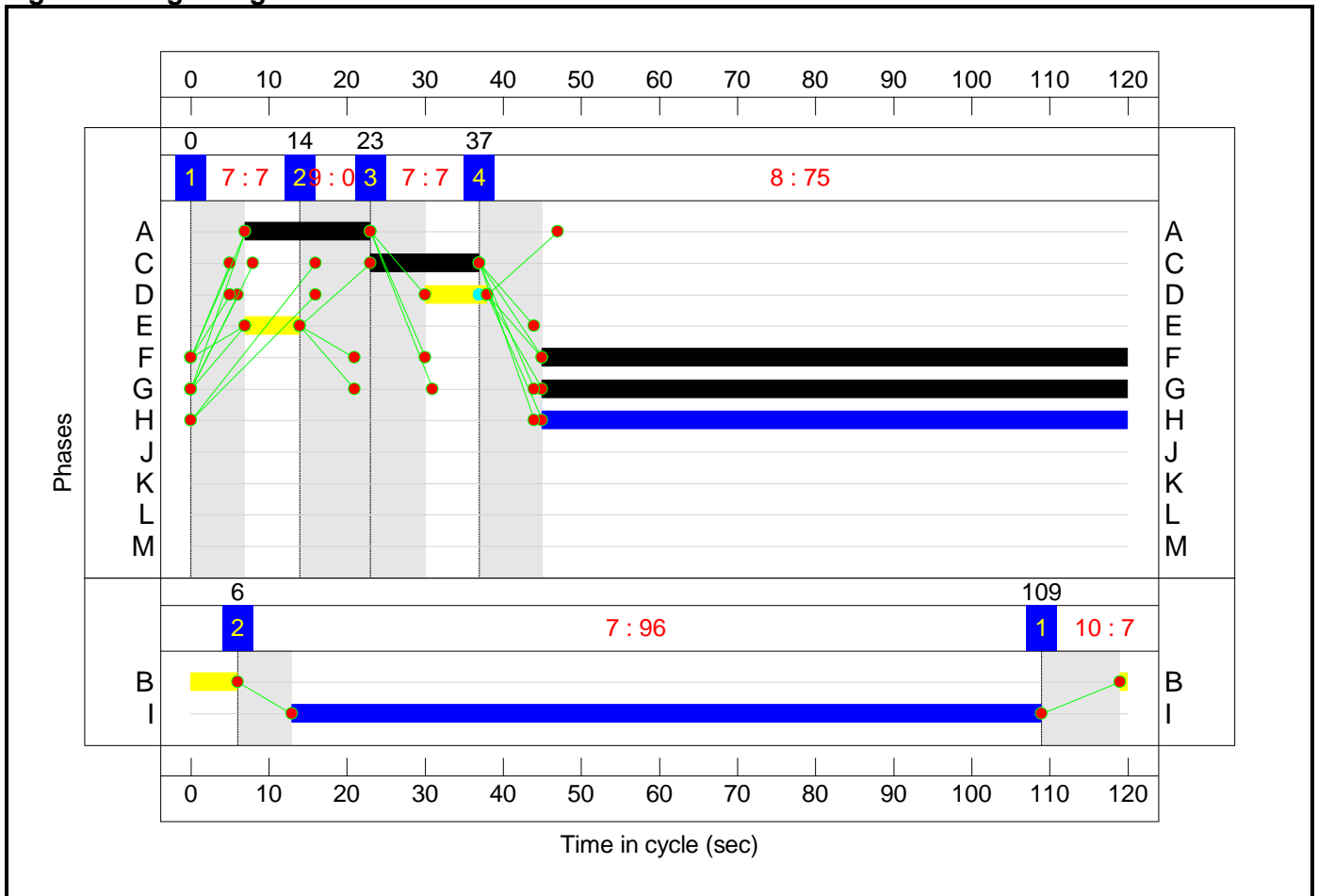
Stage Stream: 1

| Stage | 1 | 2 | 3 | 4 |
|--------------|---|----|----|----|
| Duration | 7 | 0 | 7 | 75 |
| Change Point | 0 | 14 | 23 | 37 |

Stage Stream: 2

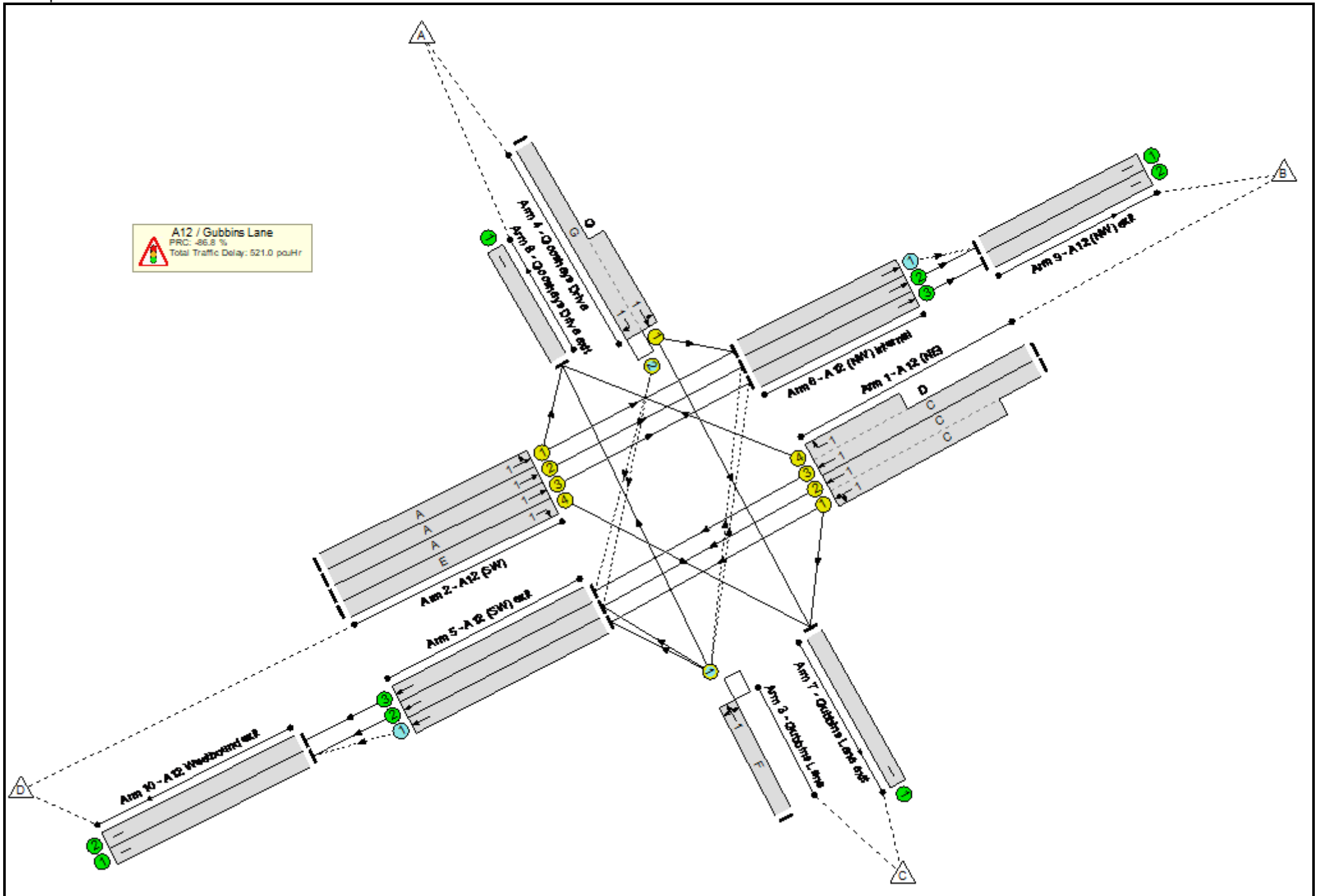
| Stage | 1 | 2 |
|--------------|-----|----|
| Duration | 7 | 96 |
| Change Point | 109 | 6 |

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 | - | - | N/A | - | - | | - | - | - | - | - | - | 168.1% |
| A12 / Gubbins Lane | - | - | N/A | - | - | | - | - | - | - | - | - | 168.1% |
| 1/2+1/1 | A12 (NE) Ahead Left | U | 1 | N/A | C | | 1 | 14 | - | 252 | 1955:1778 | 244+67 | 81.0 : 81.0% |
| 1/3+1/4 | A12 (NE) Ahead Right | U | 1 | N/A | C D | | 1 | 14:8 | - | 351 | 2115:1742 | 264+101 | 96.1 : 96.1% |
| 2/1 | A12 (SW) Ahead Left | U | 1 | N/A | A | | 1 | 16 | - | 118 | 1725 | 244 | 48.3% |
| 2/2 | A12 (SW) Ahead | U | 1 | N/A | A | | 1 | 16 | - | 149 | 2075 | 294 | 50.7% |
| 2/3 | A12 (SW) Ahead | U | 1 | N/A | A | | 1 | 16 | - | 149 | 2075 | 294 | 50.7% |
| 2/4 | A12 (SW) Right | U | 1 | N/A | E | | 1 | 7 | - | 70 | 1793 | 120 | 58.6% |
| 3/1 | Gubbins Lane Left Right Ahead | O | 1 | N/A | F | | 1 | 75 | - | 1828 | 1918 | 1088 | 168.1% |
| 4/2+4/1 | Gooshays Drive Right Left Ahead | O+U | 1 | N/A | G | | 1 | 75 | - | 1275 | 1781:1921 | 147+1058 | 135.0 : 101.8% |
| 5/1 | A12 (SW) exit Ahead | O | N/A | N/A | - | | - | - | - | 11 | 1965 | 1214 | 0.9% |
| 5/2 | A12 (SW) exit Ahead | U | N/A | N/A | - | | - | - | - | 300 | 2055 | 2055 | 12.6% |
| 5/3 | A12 (SW) exit Ahead | U | N/A | N/A | - | | - | - | - | 452 | 2055 | 2055 | 19.5% |
| 6/1 | A12 (NW) internal Ahead | O | N/A | N/A | - | | - | - | - | 181 | 1915 | 1439 | 12.4% |
| 6/2 | A12 (NW) internal Ahead | U | N/A | N/A | - | | - | - | - | 335 | 2055 | 2055 | 12.6% |
| 6/3 | A12 (NW) internal Ahead | U | N/A | N/A | - | | - | - | - | 335 | 2055 | 2055 | 12.6% |
| 7/1 | Gubbins Lane exit | U | N/A | N/A | - | | - | - | - | 1009 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|------|---------------------|---|-----|-----|---|--|---|---|---|------|-----|-----|------|
| 8/1 | Gooshays Drive exit | U | N/A | N/A | - | | - | - | - | 1569 | Inf | Inf | 0.0% |
| 9/1 | A12 (NW) exit | U | N/A | N/A | - | | - | - | - | 516 | Inf | Inf | 0.0% |
| 9/2 | A12 (NW) exit | U | N/A | N/A | - | | - | - | - | 335 | Inf | Inf | 0.0% |
| 10/1 | A12 Westbound exit | U | N/A | N/A | - | | - | - | - | 311 | Inf | Inf | 0.0% |
| 10/2 | A12 Westbound exit | U | N/A | N/A | - | | - | - | - | 452 | Inf | Inf | 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 | - | - | 309 | 178 | 70 | 94.5 | 425.0 | 1.5 | 521.0 | - | - | - | - |
| A12 / Gubbins Lane | - | - | 309 | 178 | 70 | 94.5 | 425.0 | 1.5 | 521.0 | - | - | - | - |
| 1/2+1/1 | 252 | 252 | - | - | - | 3.5 | 2.0 | - | 5.5 | 78.9 | 6.4 | 2.0 | 8.4 |
| 1/3+1/4 | 351 | 351 | - | - | - | 5.1 | 6.4 | - | 11.6 | 118.9 | 8.4 | 6.4 | 14.8 |
| 2/1 | 118 | 118 | - | - | - | 1.6 | 0.5 | - | 2.0 | 61.6 | 3.6 | 0.5 | 4.1 |
| 2/2 | 149 | 149 | - | - | - | 2.0 | 0.5 | - | 2.5 | 60.0 | 4.6 | 0.5 | 5.1 |
| 2/3 | 149 | 149 | - | - | - | 2.0 | 0.5 | - | 2.5 | 60.0 | 4.6 | 0.5 | 5.1 |
| 2/4 | 70 | 70 | - | - | - | 1.1 | 0.7 | - | 1.7 | 89.8 | 2.3 | 0.7 | 2.9 |
| 3/1 | 1828 | 1088 | 212 | 0 | 10 | 67.9 | 371.4 | 0.3 | 439.7 | 865.9 | 108.8 | 371.4 | 480.2 |
| 4/2+4/1 | 1275 | 1205 | 87 | 0 | 60 | 11.3 | 42.5 | 1.2 | 55.0 | 155.4 | 42.3 | 42.5 | 84.8 |
| 5/1 | 11 | 11 | 11 | 0 | 0 | 0.0 | 0.0 | - | 0.0 | 6.1 | 0.2 | 0.0 | 0.2 |
| 5/2 | 259 | 259 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.0 | 0.0 | 0.1 | 0.1 |
| 5/3 | 401 | 401 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.1 | 5.9 | 0.1 | 6.0 |
| 6/1 | 178 | 178 | 0 | 178 | 0 | 0.0 | 0.1 | - | 0.1 | 1.4 | 0.0 | 0.1 | 0.1 |
| 6/2 | 260 | 260 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.0 | 2.3 | 0.1 | 2.4 |
| 6/3 | 260 | 260 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.0 | 2.3 | 0.1 | 2.4 |
| 7/1 | 993 | 993 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 1021 | 1021 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 438 | 438 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 260 | 260 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 270 | 270 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/2 | 401 | 401 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

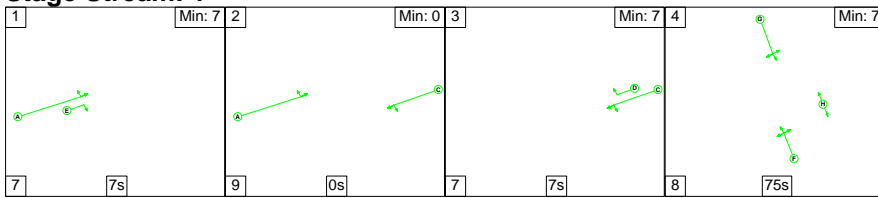
| | | | | | | |
|----|--|-------|--|--------|-----------------|-----|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -86.8 | Total Delay for Signalled Lanes (pcuHr): | 520.57 | Cycle Time (s): | 120 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | 0.0 | Total Delay for Signalled Lanes (pcuHr): | 0.00 | Cycle Time (s): | 120 |
| | PRC Over All Lanes (%): | -86.8 | Total Delay Over All Lanes(pcuHr): | 521.01 | | |

Full Input Data And Results

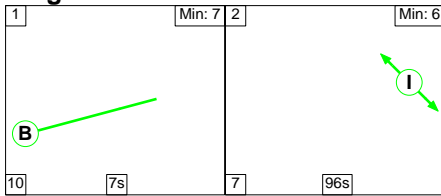
Scenario 8: '2023 Surveyed Peak Hour PM' (FG10: '2023 Surveyed Peak Hour PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

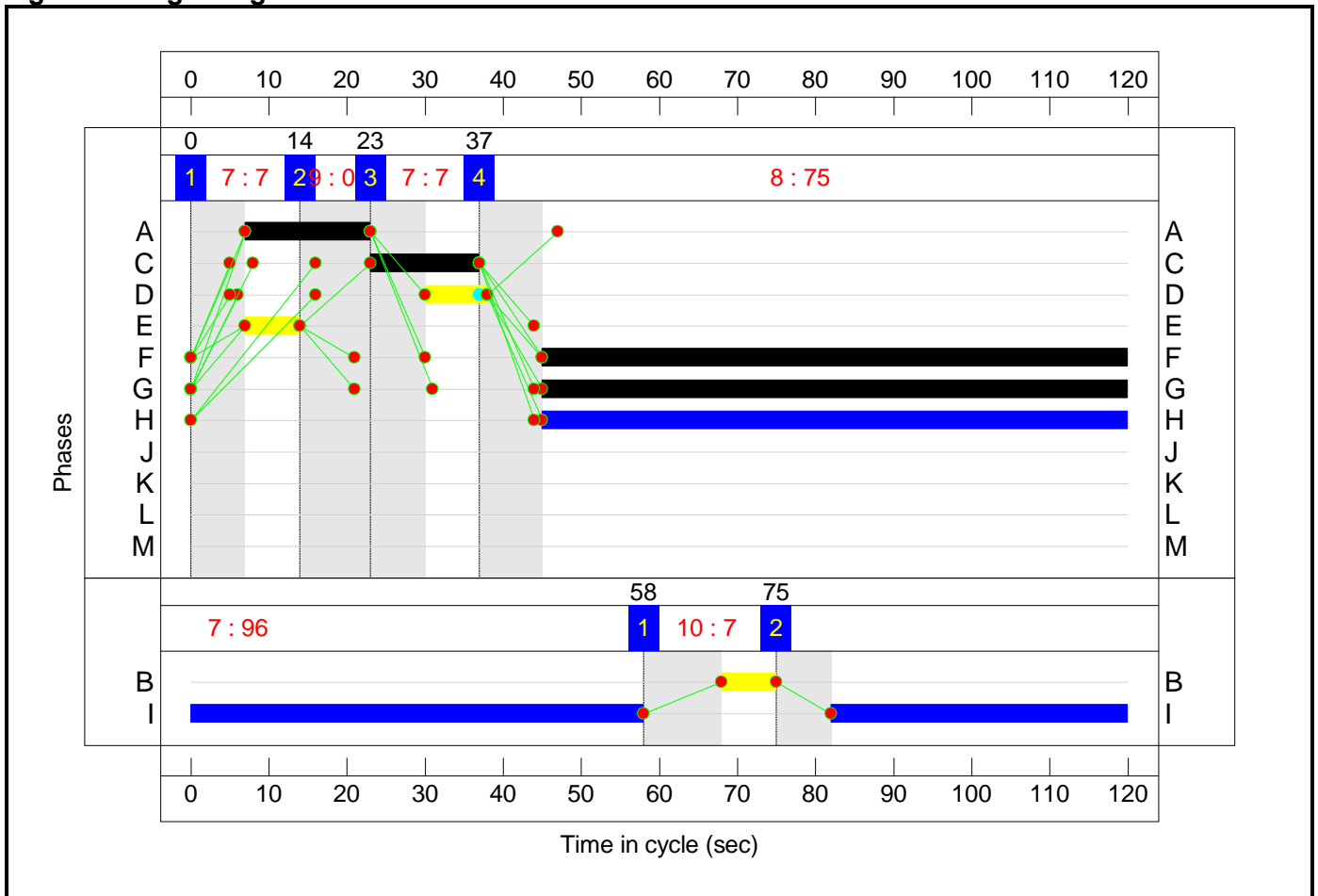
Stage Stream: 1

| Stage | 1 | 2 | 3 | 4 |
|--------------|---|----|----|----|
| Duration | 7 | 0 | 7 | 75 |
| Change Point | 0 | 14 | 23 | 37 |

Stage Stream: 2

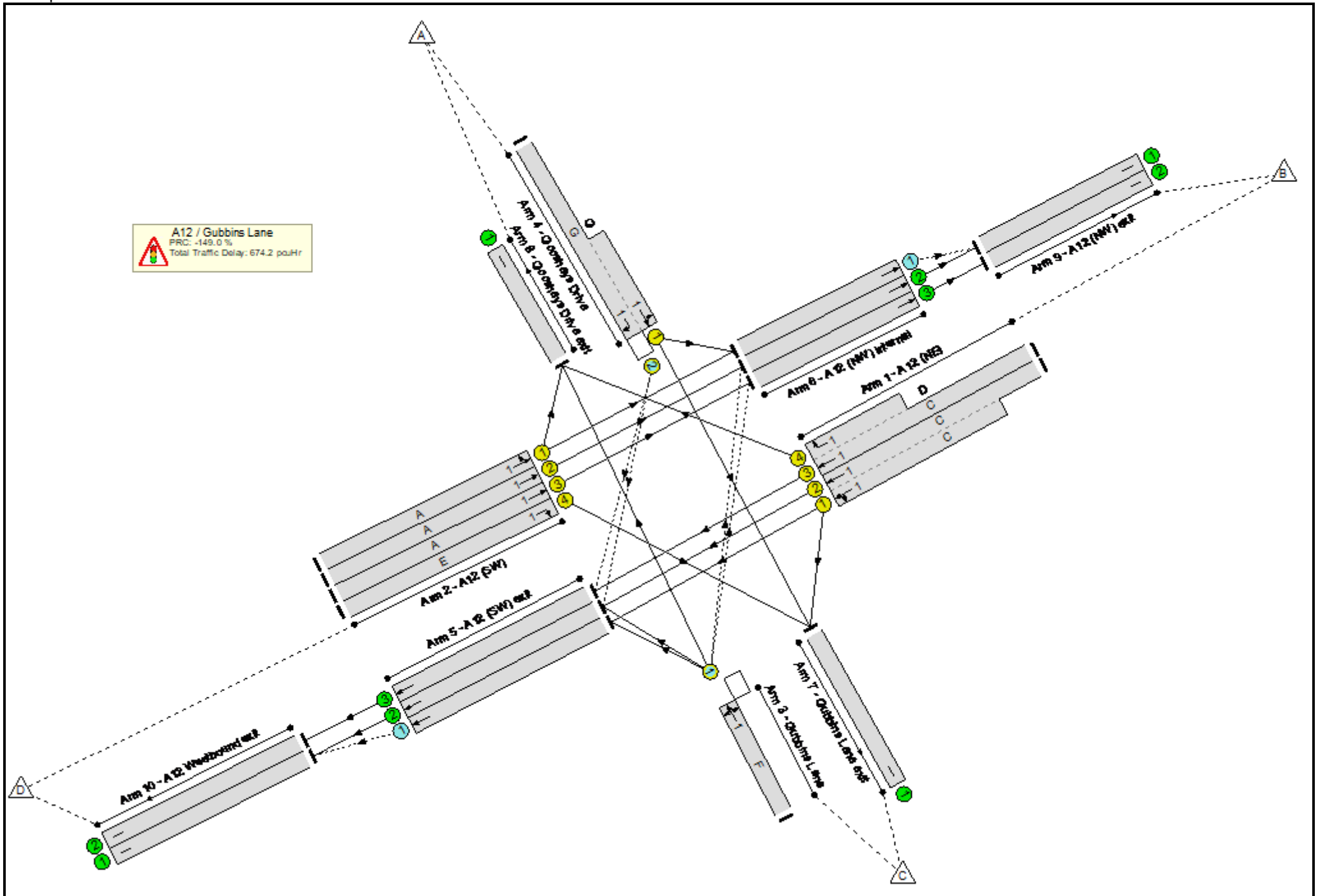
| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 7 | 96 |
| Change Point | 58 | 75 |

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 | - | - | N/A | - | - | | - | - | - | - | - | - | 224.1% |
| A12 / Gubbins Lane | - | - | N/A | - | - | | - | - | - | - | - | - | 224.1% |
| 1/2+1/1 | A12 (NE) Ahead Left | U | 1 | N/A | C | | 1 | 14 | - | 243 | 1955:1768 | 244+148 | 70.4 : 47.9% |
| 1/3+1/4 | A12 (NE) Ahead Right | U | 1 | N/A | C D | | 1 | 14:8 | - | 325 | 2115:1742 | 264+131 | 74.5 : 98.0% |
| 2/1 | A12 (SW) Ahead Left | U | 1 | N/A | A | | 1 | 16 | - | 107 | 1725 | 244 | 43.8% |
| 2/2 | A12 (SW) Ahead | U | 1 | N/A | A | | 1 | 16 | - | 152 | 2075 | 294 | 51.7% |
| 2/3 | A12 (SW) Ahead | U | 1 | N/A | A | | 1 | 16 | - | 152 | 2075 | 294 | 51.7% |
| 2/4 | A12 (SW) Right | U | 1 | N/A | E | | 1 | 7 | - | 71 | 1793 | 120 | 59.4% |
| 3/1 | Gubbins Lane Left Right Ahead | O | 1 | N/A | F | | 1 | 75 | - | 1730 | 1908 | 1136 | 152.3% |
| 4/2+4/1 | Gooshays Drive Right Left Ahead | O+U | 1 | N/A | G | | 1 | 75 | - | 1337 | 1781:1915 | 107+683 | 224.1 : 160.7% |
| 5/1 | A12 (SW) exit Ahead | O | N/A | N/A | - | | - | - | - | 11 | 1965 | 1179 | 0.9% |
| 5/2 | A12 (SW) exit Ahead | U | N/A | N/A | - | | - | - | - | 339 | 2055 | 2055 | 13.7% |
| 5/3 | A12 (SW) exit Ahead | U | N/A | N/A | - | | - | - | - | 436 | 2055 | 2055 | 14.8% |
| 6/1 | A12 (NW) internal Ahead | O | N/A | N/A | - | | - | - | - | 219 | 1915 | 1439 | 9.5% |
| 6/2 | A12 (NW) internal Ahead | U | N/A | N/A | - | | - | - | - | 326 | 2055 | 2055 | 13.0% |
| 6/3 | A12 (NW) internal Ahead | U | N/A | N/A | - | | - | - | - | 327 | 2055 | 2055 | 13.0% |
| 7/1 | Gubbins Lane exit | U | N/A | N/A | - | | - | - | - | 1010 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|------|---------------------|---|-----|-----|---|--|---|---|---|------|-----|-----|------|
| 8/1 | Gooshays Drive exit | U | N/A | N/A | - | | - | - | - | 1449 | Inf | Inf | 0.0% |
| 9/1 | A12 (NW) exit | U | N/A | N/A | - | | - | - | - | 545 | Inf | Inf | 0.0% |
| 9/2 | A12 (NW) exit | U | N/A | N/A | - | | - | - | - | 327 | Inf | Inf | 0.0% |
| 10/1 | A12 Westbound exit | U | N/A | N/A | - | | - | - | - | 350 | Inf | Inf | 0.0% |
| 10/2 | A12 Westbound exit | U | N/A | N/A | - | | - | - | - | 436 | Inf | Inf | 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 | - | - | 287 | 136 | 60 | 93.9 | 578.9 | 1.5 | 674.2 | - | - | - | - |
| A12 / Gubbins Lane | - | - | 287 | 136 | 60 | 93.9 | 578.9 | 1.5 | 674.2 | - | - | - | - |
| 1/2+1/1 | 243 | 243 | - | - | - | 3.4 | 0.8 | - | 4.2 | 61.6 | 5.5 | 0.8 | 6.3 |
| 1/3+1/4 | 325 | 325 | - | - | - | 4.7 | 2.2 | - | 6.9 | 76.7 | 6.3 | 2.2 | 8.5 |
| 2/1 | 107 | 107 | - | - | - | 1.4 | 0.4 | - | 1.8 | 60.2 | 3.2 | 0.4 | 3.6 |
| 2/2 | 152 | 152 | - | - | - | 2.0 | 0.5 | - | 2.5 | 60.3 | 4.7 | 0.5 | 5.2 |
| 2/3 | 152 | 152 | - | - | - | 2.0 | 0.5 | - | 2.5 | 60.3 | 4.7 | 0.5 | 5.2 |
| 2/4 | 71 | 71 | - | - | - | 1.1 | 0.7 | - | 1.8 | 90.5 | 2.3 | 0.7 | 3.0 |
| 3/1 | 1730 | 1136 | 229 | 0 | 0 | 56.1 | 298.6 | 0.3 | 355.0 | 738.6 | 95.8 | 298.6 | 394.4 |
| 4/2+4/1 | 1337 | 790 | 47 | 0 | 60 | 23.1 | 274.8 | 1.2 | 299.1 | 805.5 | 49.2 | 274.8 | 324.0 |
| 5/1 | 11 | 11 | 11 | 0 | 0 | 0.0 | 0.0 | - | 0.0 | 6.1 | 0.3 | 0.0 | 0.3 |
| 5/2 | 282 | 282 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.0 | 0.0 | 0.1 | 0.1 |
| 5/3 | 304 | 304 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.1 | 4.0 | 0.1 | 4.1 |
| 6/1 | 136 | 136 | 0 | 136 | 0 | 0.0 | 0.1 | - | 0.1 | 1.4 | 0.0 | 0.1 | 0.1 |
| 6/2 | 266 | 266 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.0 | 1.7 | 0.1 | 1.8 |
| 6/3 | 267 | 267 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.0 | 1.7 | 0.1 | 1.8 |
| 7/1 | 678 | 678 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 1032 | 1032 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 402 | 402 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 267 | 267 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 293 | 293 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/2 | 304 | 304 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

C1 Stream: 1 PRC for Signalled Lanes (%): -149.0
 C1 Stream: 2 PRC for Signalled Lanes (%): 0.0
 PRC Over All Lanes (%): -149.0

Total Delay for Signalled Lanes (pcuHr): 673.85
 Total Delay for Signalled Lanes (pcuHr): 0.00
 Total Delay Over All Lanes(pcuHr): 674.24

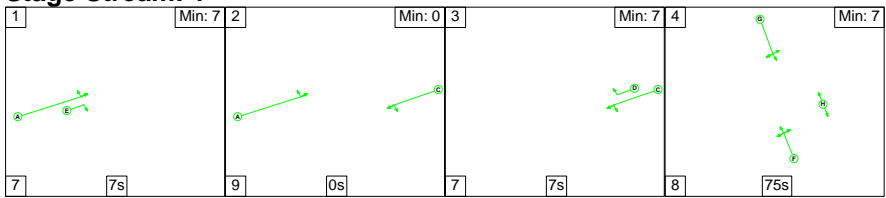
Cycle Time (s): 120
 Cycle Time (s): 120

Full Input Data And Results

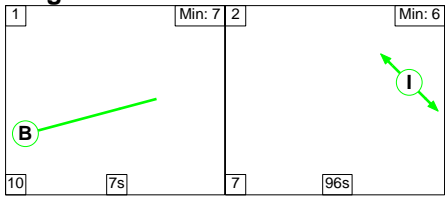
Scenario 9: '2030 Surveyed Peak Hour AM' (FG11: '2030 Surveyed Peak Hour AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

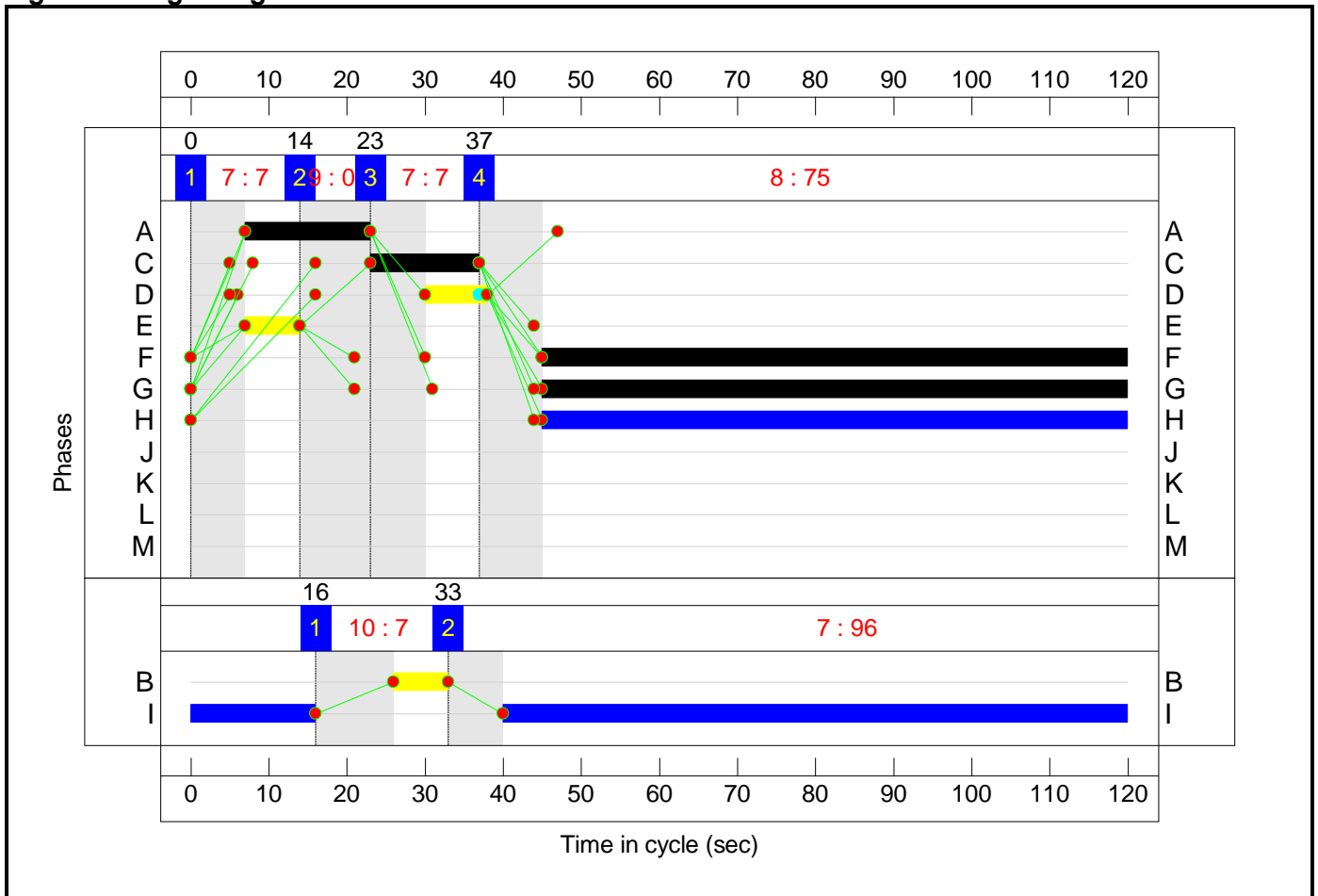
Stage Stream: 1

| Stage | 1 | 2 | 3 | 4 |
|--------------|---|----|----|----|
| Duration | 7 | 0 | 7 | 75 |
| Change Point | 0 | 14 | 23 | 37 |

Stage Stream: 2

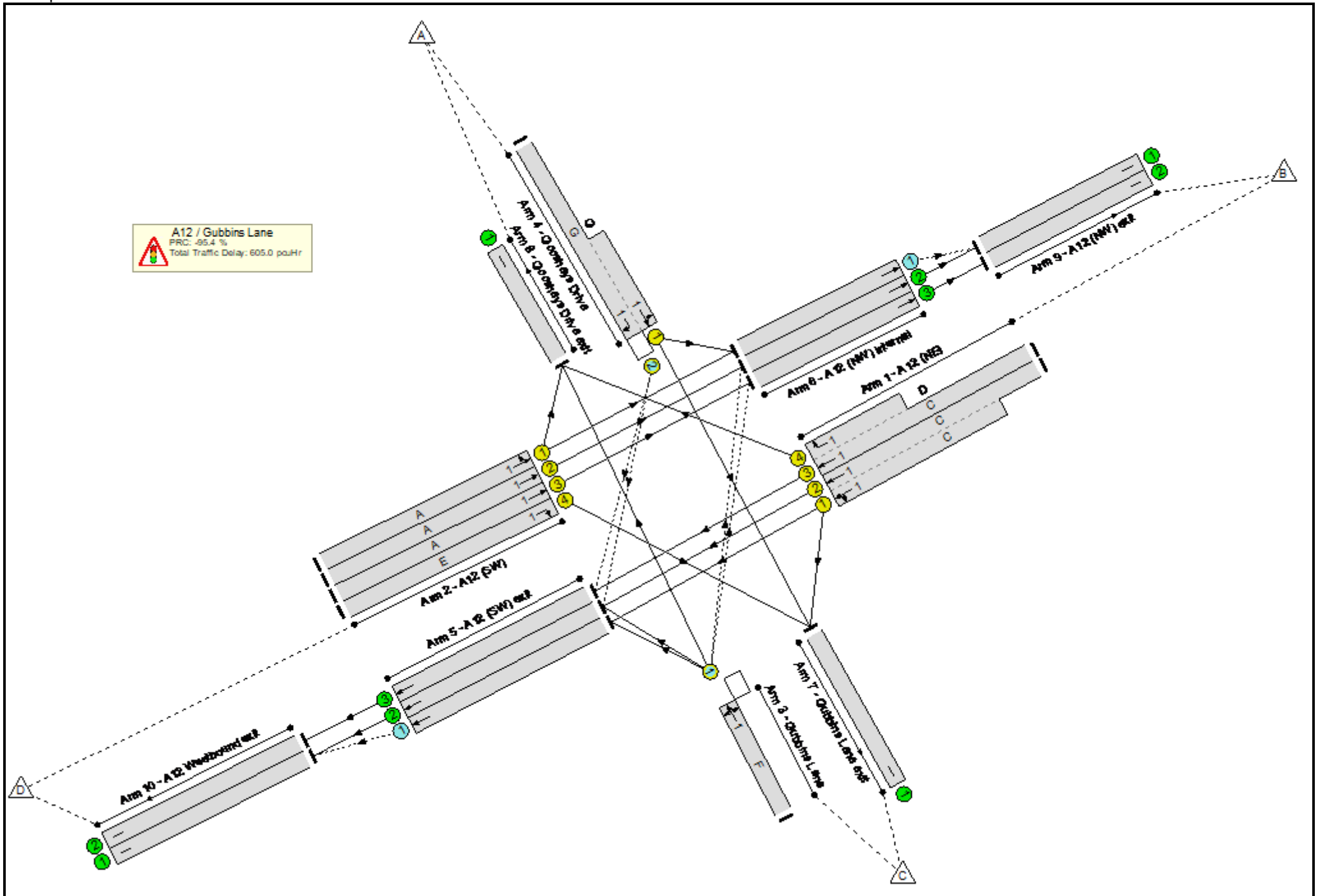
| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 7 | 96 |
| Change Point | 16 | 33 |

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 | - | - | N/A | - | - | | - | - | - | - | - | - | 175.9% |
| A12 / Gubbins Lane | - | - | N/A | - | - | | - | - | - | - | - | - | 175.9% |
| 1/2+1/1 | A12 (NE) Ahead Left | U | 1 | N/A | C | | 1 | 14 | - | 270 | 1955:1771 | 244+61 | 88.4 : 88.4% |
| 1/3+1/4 | A12 (NE) Ahead Right | U | 1 | N/A | C D | | 1 | 14:8 | - | 362 | 2115:1742 | 264+104 | 98.3 : 98.3% |
| 2/1 | A12 (SW) Ahead Left | U | 1 | N/A | A | | 1 | 16 | - | 123 | 1725 | 244 | 50.3% |
| 2/2 | A12 (SW) Ahead | U | 1 | N/A | A | | 1 | 16 | - | 156 | 2075 | 294 | 53.1% |
| 2/3 | A12 (SW) Ahead | U | 1 | N/A | A | | 1 | 16 | - | 156 | 2075 | 294 | 53.1% |
| 2/4 | A12 (SW) Right | U | 1 | N/A | E | | 1 | 7 | - | 73 | 1793 | 120 | 61.1% |
| 3/1 | Gubbins Lane Left Right Ahead | O | 1 | N/A | F | | 1 | 75 | - | 1913 | 1918 | 1088 | 175.9% |
| 4/2+4/1 | Gooshays Drive Right Left Ahead | O+U | 1 | N/A | G | | 1 | 75 | - | 1334 | 1781:1921 | 147+1058 | 141.2 : 106.5% |
| 5/1 | A12 (SW) exit Ahead | O | N/A | N/A | - | | - | - | - | 9 | 1965 | 1201 | 0.7% |
| 5/2 | A12 (SW) exit Ahead | U | N/A | N/A | - | | - | - | - | 323 | 2055 | 2055 | 13.5% |
| 5/3 | A12 (SW) exit Ahead | U | N/A | N/A | - | | - | - | - | 467 | 2055 | 2055 | 19.8% |
| 6/1 | A12 (NW) internal Ahead | O | N/A | N/A | - | | - | - | - | 189 | 1915 | 1439 | 12.3% |
| 6/2 | A12 (NW) internal Ahead | U | N/A | N/A | - | | - | - | - | 350 | 2055 | 2055 | 13.0% |
| 6/3 | A12 (NW) internal Ahead | U | N/A | N/A | - | | - | - | - | 351 | 2055 | 2055 | 13.0% |
| 7/1 | Gubbins Lane exit | U | N/A | N/A | - | | - | - | - | 1056 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|------|---------------------|---|-----|-----|---|--|---|---|---|------|-----|-----|------|
| 8/1 | Gooshays Drive exit | U | N/A | N/A | - | | - | - | - | 1642 | Inf | Inf | 0.0% |
| 9/1 | A12 (NW) exit | U | N/A | N/A | - | | - | - | - | 539 | Inf | Inf | 0.0% |
| 9/2 | A12 (NW) exit | U | N/A | N/A | - | | - | - | - | 351 | Inf | Inf | 0.0% |
| 10/1 | A12 Westbound exit | U | N/A | N/A | - | | - | - | - | 332 | Inf | Inf | 0.0% |
| 10/2 | A12 Westbound exit | U | N/A | N/A | - | | - | - | - | 467 | Inf | Inf | 0.0% |

Full Input Data And Results

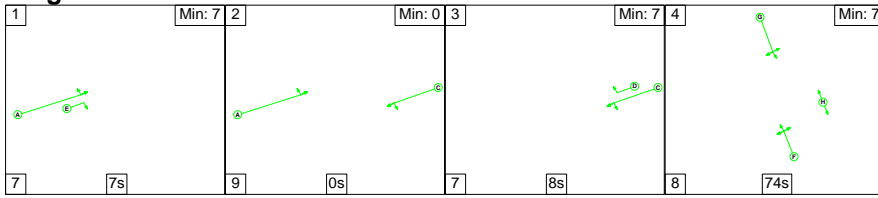
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|---------------------------|----------------|---------------|-----------------------|--|-----------------------------|-----------------------|--|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network | - | - | 308 | 177 | 68 | 106.2 | 497.3 | 1.5 | 605.0 | - | - | - | - |
| A12 / Gubbins Lane | - | - | 308 | 177 | 68 | 106.2 | 497.3 | 1.5 | 605.0 | - | - | - | - |
| 1/2+1/1 | 270 | 270 | - | - | - | 3.8 | 3.2 | - | 7.0 | 93.7 | 7.1 | 3.2 | 10.3 |
| 1/3+1/4 | 362 | 362 | - | - | - | 5.3 | 8.1 | - | 13.4 | 133.7 | 8.6 | 8.1 | 16.7 |
| 2/1 | 123 | 123 | - | - | - | 1.6 | 0.5 | - | 2.1 | 62.3 | 3.8 | 0.5 | 4.3 |
| 2/2 | 156 | 156 | - | - | - | 2.1 | 0.6 | - | 2.6 | 60.8 | 4.8 | 0.6 | 5.4 |
| 2/3 | 156 | 156 | - | - | - | 2.1 | 0.6 | - | 2.6 | 60.8 | 4.8 | 0.6 | 5.4 |
| 2/4 | 73 | 73 | - | - | - | 1.1 | 0.8 | - | 1.9 | 92.0 | 2.4 | 0.8 | 3.1 |
| 3/1 | 1913 | 1088 | 213 | 0 | 8 | 75.0 | 413.8 | 0.3 | 489.1 | 920.4 | 117.2 | 413.8 | 531.0 |
| 4/2+4/1 | 1334 | 1205 | 87 | 0 | 60 | 15.2 | 69.3 | 1.2 | 85.8 | 231.4 | 46.6 | 69.3 | 116.0 |
| 5/1 | 9 | 9 | 9 | 0 | 0 | 0.0 | 0.0 | - | 0.0 | 6.2 | 0.2 | 0.0 | 0.2 |
| 5/2 | 277 | 277 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.0 | 0.0 | 0.1 | 0.1 |
| 5/3 | 407 | 407 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.2 | 6.4 | 0.1 | 6.5 |
| 6/1 | 177 | 177 | 0 | 177 | 0 | 0.0 | 0.1 | - | 0.1 | 1.4 | 0.0 | 0.1 | 0.1 |
| 6/2 | 266 | 266 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.0 | 2.3 | 0.1 | 2.4 |
| 6/3 | 267 | 267 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.0 | 2.3 | 0.1 | 2.4 |
| 7/1 | 999 | 999 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 1031 | 1031 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 444 | 444 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 267 | 267 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 286 | 286 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/2 | 407 | 407 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | | | C1 | Stream: 1 PRC for Signalled Lanes (%): | | -95.4 | Total Delay for Signalled Lanes (pcuHr): | | 604.60 | Cycle Time (s): | | 120 | |
| | | | C1 | Stream: 2 PRC for Signalled Lanes (%): | | 0.0 | Total Delay for Signalled Lanes (pcuHr): | | 0.00 | Cycle Time (s): | | 120 | |
| | | | | PRC Over All Lanes (%): | | -95.4 | Total Delay Over All Lanes (pcuHr): | | 605.04 | | | | |

Full Input Data And Results

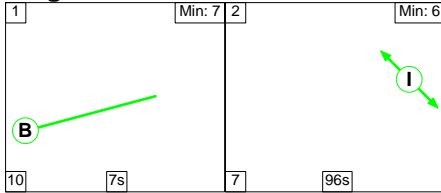
Scenario 10: '2030 Surveyed Peak Hour PM' (FG12: '2030 Surveyed Peak Hour PM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1



Stage Stream: 2



Stage Timings

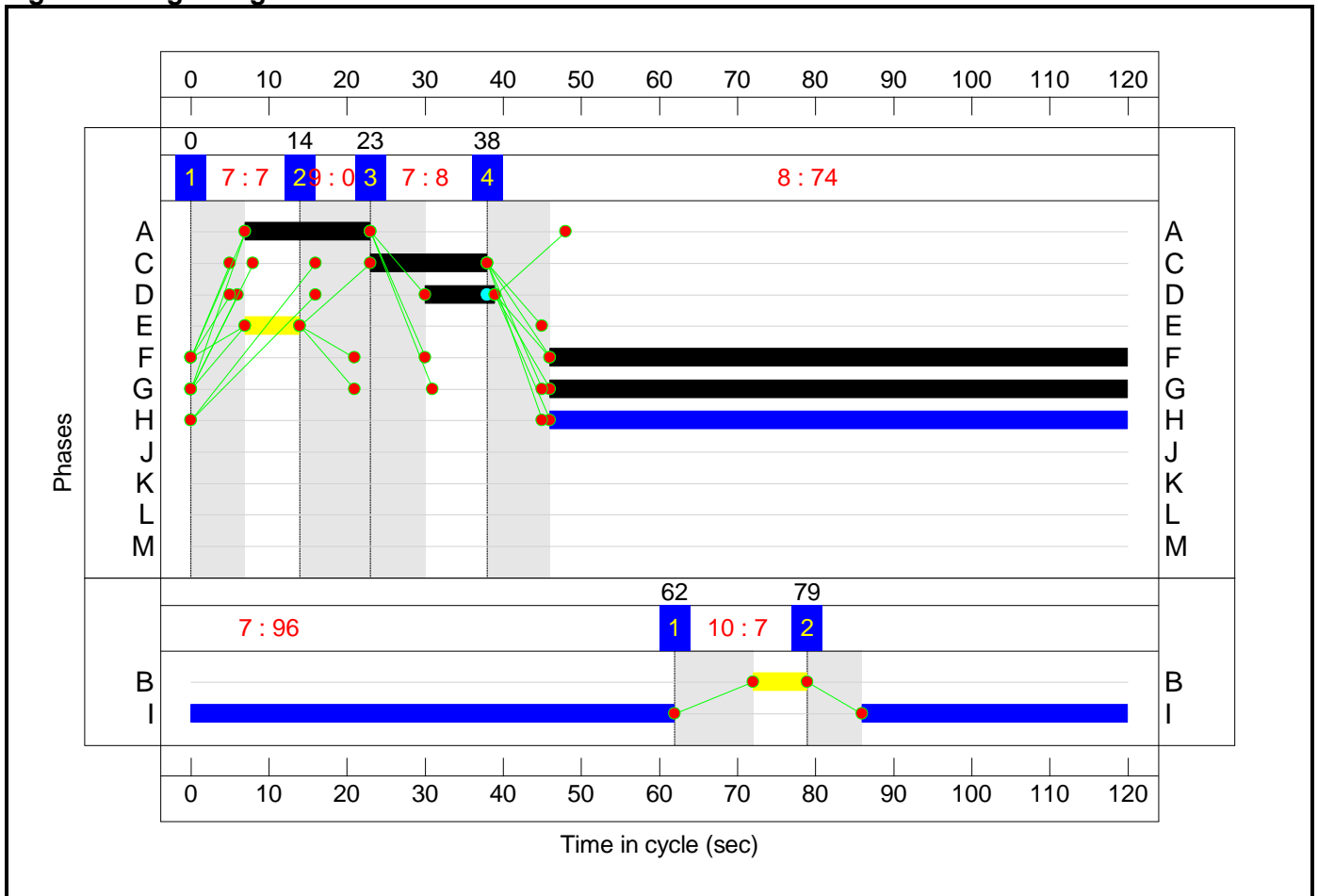
Stage Stream: 1

| Stage | 1 | 2 | 3 | 4 |
|--------------|---|----|----|----|
| Duration | 7 | 0 | 8 | 74 |
| Change Point | 0 | 14 | 23 | 38 |

Stage Stream: 2

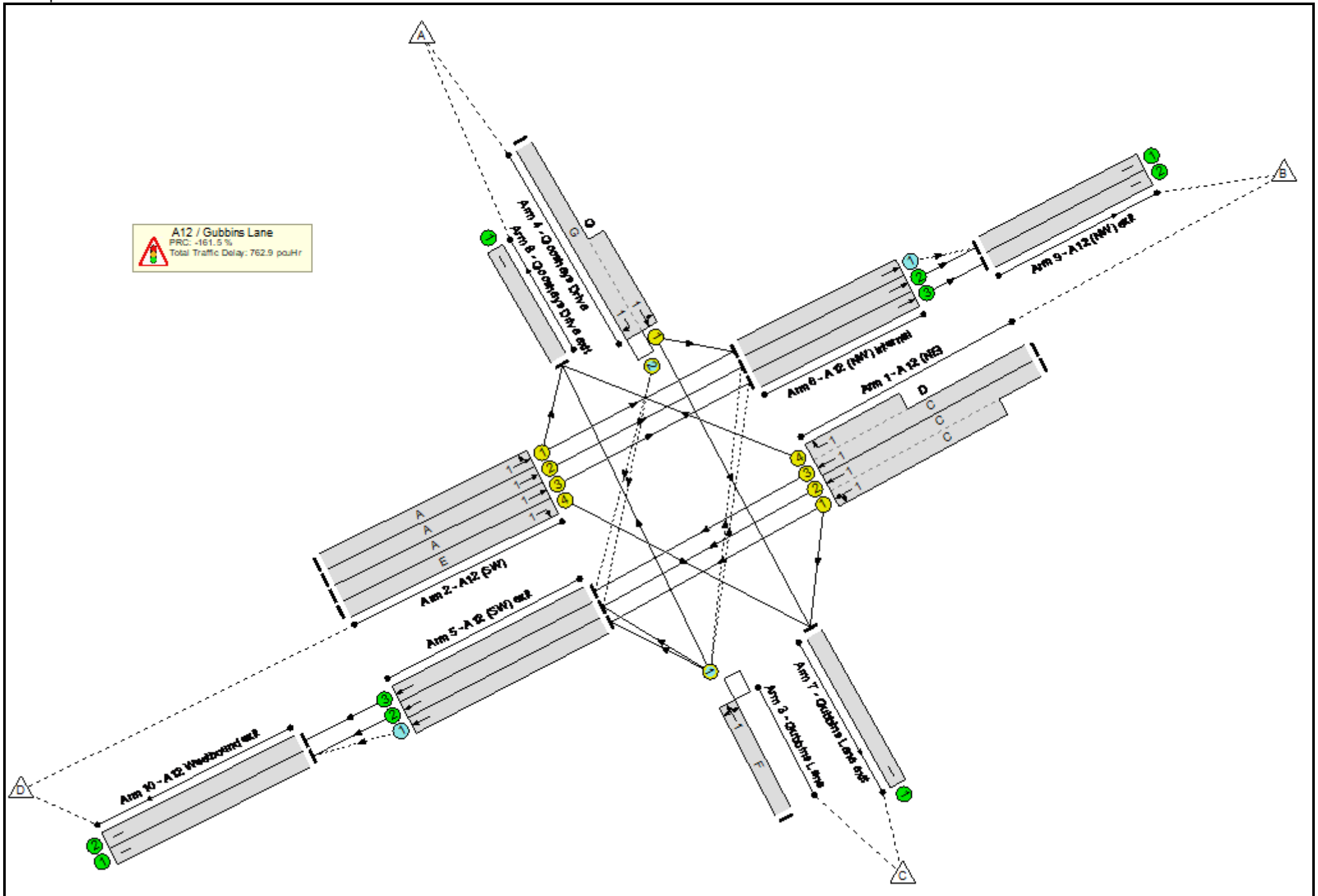
| Stage | 1 | 2 |
|--------------|----|----|
| Duration | 7 | 96 |
| Change Point | 62 | 79 |

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 | - | - | N/A | - | - | | - | - | - | - | - | - | 235.3% |
| A12 / Gubbins Lane | - | - | N/A | - | - | | - | - | - | - | - | - | 235.3% |
| 1/2+1/1 | A12 (NE) Ahead Left | U | 1 | N/A | C | | 1 | 15 | - | 243 | 1955:1738 | 261+91 | 69.1 : 69.1% |
| 1/3+1/4 | A12 (NE) Ahead Right | U | 1 | N/A | C D | | 1 | 15:9 | - | 355 | 2115:1742 | 282+145 | 78.0 : 93.0% |
| 2/1 | A12 (SW) Ahead Left | U | 1 | N/A | A | | 1 | 16 | - | 113 | 1725 | 244 | 46.2% |
| 2/2 | A12 (SW) Ahead | U | 1 | N/A | A | | 1 | 16 | - | 160 | 2075 | 294 | 54.4% |
| 2/3 | A12 (SW) Ahead | U | 1 | N/A | A | | 1 | 16 | - | 160 | 2075 | 294 | 54.4% |
| 2/4 | A12 (SW) Right | U | 1 | N/A | E | | 1 | 7 | - | 75 | 1793 | 120 | 62.7% |
| 3/1 | Gubbins Lane Left Right Ahead | O | 1 | N/A | F | | 1 | 74 | - | 1820 | 1908 | 1120 | 162.5% |
| 4/2+4/1 | Gooshays Drive Right Left Ahead | O+U | 1 | N/A | G | | 1 | 74 | - | 1406 | 1781:1915 | 107+713 | 235.3 : 162.0% |
| 5/1 | A12 (SW) exit Ahead | O | N/A | N/A | - | | - | - | - | 0 | 1965 | 1173 | 0.0% |
| 5/2 | A12 (SW) exit Ahead | U | N/A | N/A | - | | - | - | - | 356 | 2055 | 2055 | 14.0% |
| 5/3 | A12 (SW) exit Ahead | U | N/A | N/A | - | | - | - | - | 471 | 2055 | 2055 | 15.9% |
| 6/1 | A12 (NW) internal Ahead | O | N/A | N/A | - | | - | - | - | 230 | 1915 | 1439 | 9.9% |
| 6/2 | A12 (NW) internal Ahead | U | N/A | N/A | - | | - | - | - | 343 | 2055 | 2055 | 13.3% |
| 6/3 | A12 (NW) internal Ahead | U | N/A | N/A | - | | - | - | - | 344 | 2055 | 2055 | 13.3% |
| 7/1 | Gubbins Lane exit | U | N/A | N/A | - | | - | - | - | 1063 | Inf | Inf | 0.0% |

Full Input Data And Results

| | | | | | | | | | | | | | |
|------|---------------------|---|-----|-----|---|--|---|---|---|------|-----|-----|------|
| 8/1 | Gooshays Drive exit | U | N/A | N/A | - | | - | - | - | 1525 | Inf | Inf | 0.0% |
| 9/1 | A12 (NW) exit | U | N/A | N/A | - | | - | - | - | 573 | Inf | Inf | 0.0% |
| 9/2 | A12 (NW) exit | U | N/A | N/A | - | | - | - | - | 344 | Inf | Inf | 0.0% |
| 10/1 | A12 Westbound exit | U | N/A | N/A | - | | - | - | - | 356 | Inf | Inf | 0.0% |
| 10/2 | A12 Westbound exit | U | N/A | N/A | - | | - | - | - | 471 | Inf | Inf | 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 | - | - | 272 | 142 | 60 | 109.5 | 652.0 | 1.5 | 762.9 | - | - | - | - |
| A12 / Gubbins Lane | - | - | 272 | 142 | 60 | 109.5 | 652.0 | 1.5 | 762.9 | - | - | - | - |
| 1/2+1/1 | 243 | 243 | - | - | - | 3.3 | 1.1 | - | 4.4 | 65.1 | 5.7 | 1.1 | 6.8 |
| 1/3+1/4 | 355 | 355 | - | - | - | 5.1 | 2.3 | - | 7.4 | 75.4 | 7.1 | 2.3 | 9.4 |
| 2/1 | 113 | 113 | - | - | - | 1.5 | 0.4 | - | 1.9 | 60.9 | 3.5 | 0.4 | 3.9 |
| 2/2 | 160 | 160 | - | - | - | 2.1 | 0.6 | - | 2.7 | 61.2 | 4.9 | 0.6 | 5.5 |
| 2/3 | 160 | 160 | - | - | - | 2.1 | 0.6 | - | 2.7 | 61.2 | 4.9 | 0.6 | 5.5 |
| 2/4 | 75 | 75 | - | - | - | 1.1 | 0.8 | - | 1.9 | 93.6 | 2.4 | 0.8 | 3.2 |
| 3/1 | 1820 | 1120 | 226 | 0 | 0 | 64.9 | 351.4 | 0.3 | 416.6 | 824.0 | 105.8 | 351.4 | 457.2 |
| 4/2+4/1 | 1406 | 820 | 47 | 0 | 60 | 29.3 | 294.3 | 1.2 | 324.8 | 831.7 | 55.8 | 294.3 | 350.2 |
| 5/1 | 0 | 0 | 0 | 0 | 0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 288 | 288 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.0 | 0.0 | 0.1 | 0.1 |
| 5/3 | 327 | 327 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.1 | 4.7 | 0.1 | 4.8 |
| 6/1 | 142 | 142 | 0 | 142 | 0 | 0.0 | 0.1 | - | 0.1 | 1.4 | 0.0 | 0.1 | 0.1 |
| 6/2 | 273 | 273 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.0 | 1.7 | 0.1 | 1.8 |
| 6/3 | 273 | 273 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.0 | 1.7 | 0.1 | 1.8 |
| 7/1 | 709 | 709 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 1034 | 1034 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 415 | 415 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 273 | 273 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/1 | 288 | 288 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10/2 | 327 | 327 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

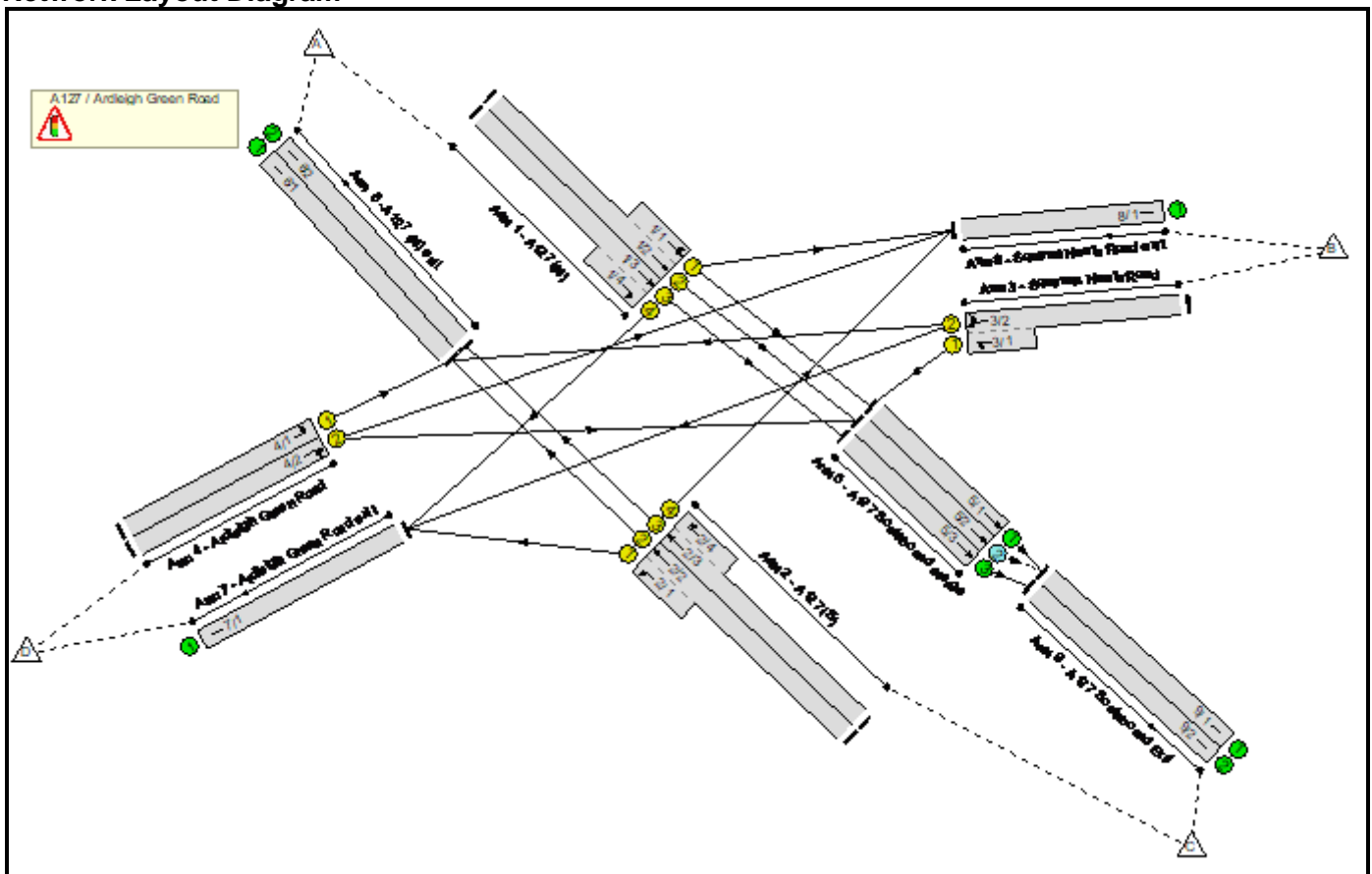
| | | | | | | |
|----|--|--------|--|--------|-----------------|-----|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -161.5 | Total Delay for Signalled Lanes (pcuHr): | 762.56 | Cycle Time (s): | 120 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | 0.0 | Total Delay for Signalled Lanes (pcuHr): | 0.00 | Cycle Time (s): | 120 |
| | PRC Over All Lanes (%): | -161.5 | Total Delay Over All Lanes(pcuHr): | 762.94 | | |

Full Input Data And Results
Full Input Data And Results

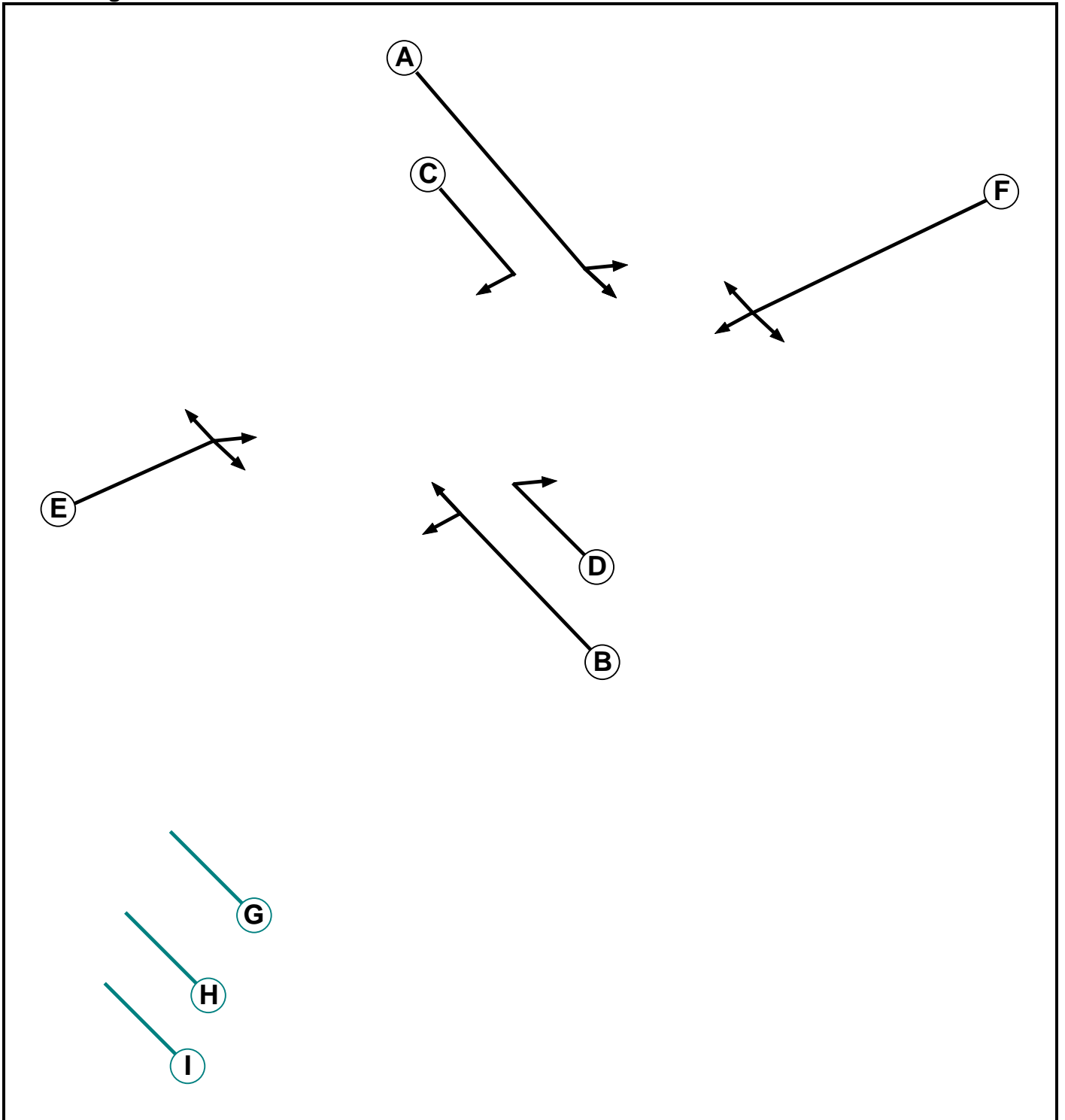
User and Project Details

| | |
|--------------------|--------------------------------------|
| Project: | |
| Title: | |
| Location: | |
| Additional detail: | |
| File name: | 5 - A127 - Ardleigh Green Road.lsg3x |
| Author: | |
| Company: | |
| Address: | |

Network Layout Diagram



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 | Dummy | | 3 | 3 |
| H | Dummy | | 1 | 1 |
| I | Dummy | | 1 | 1 |

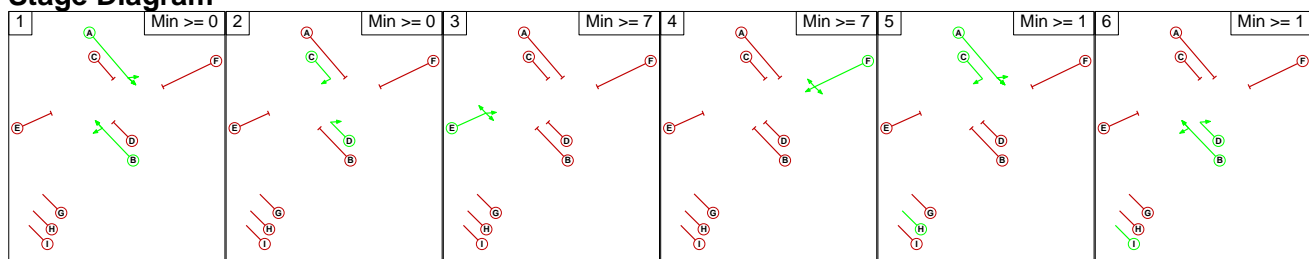
Phase Intergreens Matrix

| | Starting Phase | | | | | | | | |
|-------------------|----------------|---|---|---|---|----|---|---|---|
| | A | B | C | D | E | F | G | H | I |
| Terminating Phase | A | - | - | 8 | 7 | 10 | 3 | - | 8 |
| B | - | | 8 | - | 9 | 7 | 3 | 8 | - |
| C | - | 7 | | - | 7 | 7 | 3 | - | 7 |
| D | 7 | - | - | | 7 | 7 | 3 | 7 | - |
| E | 6 | 5 | 6 | 8 | | 10 | 3 | 6 | 8 |
| F | 5 | 7 | 7 | 6 | 9 | | 3 | 7 | 7 |
| G | 2 | 2 | 2 | 2 | 2 | 2 | | 2 | 2 |
| H | - | 7 | - | 8 | 7 | 10 | 3 | | 8 |
| I | 7 | - | 8 | - | 9 | 7 | 3 | 8 | |

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1 | A B |
| 2 | C D |
| 3 | E |
| 4 | F |
| 5 | A C H |
| 6 | B D I |

Stage Diagram



Full Input Data And Results

Phase Delays

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

Prohibited Stage Change

| | | To Stage | | | | | |
|------------|---|----------|---|---|----|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 |
| From Stage | 1 | | 8 | 9 | 10 | 8 | 8 |
| | 2 | 7 | | 7 | 7 | 7 | 7 |
| | 3 | 6 | 8 | | 10 | 6 | 8 |
| | 4 | 7 | 7 | 9 | | 7 | 7 |
| | 5 | 7 | 8 | 7 | 10 | | 8 |
| | 6 | 7 | 8 | 9 | 7 | 8 | |

Full Input Data And Results

Give-Way Lane Input Data

| Junction: A127 / Ardleigh Green Road | | | | | | | | | | | |
|--------------------------------------|-------------|-----------------------------------|-----------------------------------|---------------|------------------|--------------|--------------------------|----------------------------|-----|------------------------|-------------------------------|
| 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) |
| 5/2 (A127 Southbound merge) | 9/1 (Ahead) | 1439 | 0 | 5/1 | 1.09 | All | - | - | - | - | - |

Full Input Data And Results

Lane Input Data

| Junction: A127 / Ardleigh Green Road | | | | | | | | | | | | |
|--------------------------------------|-----------|--------|-------------|-----------|-----------------------|---------------|-----------------------------------|----------------|----------|---------------|-------------|--------------------|
| 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 (A127 (N)) | U | A | 2 | 3 | 5.0 | Geom | - | 2.80 | 0.00 | Y | Arm 5 Ahead | Inf |
| | | | | | | | | | | | Arm 8 Left | 10.10 |
| 1/2 (A127 (N)) | U | A | 2 | 3 | 60.0 | Geom | - | 3.20 | 0.00 | N | Arm 5 Ahead | Inf |
| 1/3 (A127 (N)) | U | A | 2 | 3 | 60.0 | Geom | - | 3.30 | 0.00 | N | Arm 5 Ahead | Inf |
| 1/4 (A127 (N)) | U | C | 2 | 3 | 5.0 | Geom | - | 2.60 | 0.00 | Y | Arm 7 Right | 8.80 |
| 2/1 (A127 (S)) | U | B | 2 | 3 | 5.0 | Geom | - | 2.70 | 0.00 | Y | Arm 7 Left | 20.30 |
| 2/2 (A127 (S)) | U | B | 2 | 3 | 60.0 | Geom | - | 3.70 | 0.00 | Y | Arm 6 Ahead | Inf |
| 2/3 (A127 (S)) | U | B | 2 | 3 | 60.0 | Geom | - | 3.30 | 0.00 | N | Arm 6 Ahead | Inf |
| 2/4 (A127 (S)) | U | D | 2 | 3 | 5.0 | Geom | - | 3.40 | 0.00 | Y | Arm 8 Right | 7.50 |
| 3/1 (Squirrels Heath Road) | U | F | 2 | 3 | 5.0 | Geom | - | 3.50 | 0.00 | Y | Arm 5 Left | 7.90 |
| 3/2 (Squirrels Heath Road) | U | F | 2 | 3 | 60.0 | Geom | - | 3.30 | 0.00 | Y | Arm 6 Right | 22.20 |
| | | | | | | | | | | | Arm 7 Ahead | Inf |
| 4/1 (Ardleigh Green Road) | U | E | 2 | 3 | 60.0 | Geom | - | 3.10 | 0.00 | Y | Arm 6 Left | 8.00 |
| 4/2 (Ardleigh Green Road) | U | E | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | Y | Arm 5 Right | 21.70 |
| | | | | | | | | | | | Arm 8 Ahead | Inf |
| 5/1 (A127 Southbound merge) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 5/2 (A127 Southbound merge) | O | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 5/3 (A127 Southbound merge) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 6/1 (A127 (N) exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 6/2 (A127 (N) exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |

Full Input Data And Results

| | | | | | | | | | | | | |
|---|---|--|---|---|------|-----|---|---|---|---|---|---|
| 7/1 (Ardleigh Green Road exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 8/1 (Squirrel Heath Road exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 9/1 (A127 Southbound Exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 9/2 (A127 Southbound Exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |

Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---------------------------------|------------|----------|----------|-------------|
| 1: 'Base Year 2023 AM' | 08:00 | 09:00 | 01:00 | |
| 2: 'Base Year 2023 PM' | 17:00 | 18:00 | 01:00 | |
| 3: 'Reference Case 2030 AM' | 08:00 | 09:00 | 01:00 | F1 *1.0466 |
| 4: 'Reference Case 2030 PM' | 17:00 | 18:00 | 01:00 | F2 * 1.0521 |
| 7: 'Do Something 2030 + LTC AM' | 08:00 | 09:00 | 01:00 | F3+F5 |
| 8: 'Do Something 2030 + LTC PM' | 17:00 | 18:00 | 01:00 | F4+F6 |

Scenario 1: 'Base Year 2023 AM' (FG1: 'Base Year 2023 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|-----|------|-----|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 170 | 1195 | 167 | 1532 |
| | B | 210 | 0 | 18 | 380 | 608 |
| | C | 1145 | 198 | 0 | 127 | 1470 |
| | D | 81 | 262 | 275 | 0 | 618 |
| | Tot. | 1436 | 630 | 1488 | 674 | 4228 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 1: Base Year 2023 AM |
|---|----------------------------------|
| Junction: A127 / Ardleigh Green Road | |
| 1/1 (short) | 523 |
| 1/2 (with short) | 788(In) 265(Out) |
| 1/3 (with short) | 744(In) 577(Out) |
| 1/4 (short) | 167 |
| 2/1 (short) | 127 |
| 2/2 (with short) | 720(In) 593(Out) |
| 2/3 (with short) | 750(In) 552(Out) |
| 2/4 (short) | 198 |
| 3/1 (short) | 18 |
| 3/2 (with short) | 608(In) 590(Out) |
| 4/1 | 81 |
| 4/2 | 537 |
| 5/1 | 371 |
| 5/2 | 540 |
| 5/3 | 577 |
| 6/1 | 884 |
| 6/2 | 552 |
| 7/1 | 674 |
| 8/1 | 630 |
| 9/1 | 911 |
| 9/2 | 577 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A127 / Ardleigh Green Road | | | | | | | | |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (A127 (N)) | 2.80 | 0.00 | Y | Arm 5 Ahead | Inf | 67.5 % | 1808 | 1808 |
| | | | | Arm 8 Left | 10.10 | 32.5 % | | |
| 1/2 (A127 (N)) | 3.20 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2075 | 2075 |
| 1/3 (A127 (N)) | 3.30 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2085 | 2085 |
| 1/4 (A127 (N)) | 2.60 | 0.00 | Y | Arm 7 Right | 8.80 | 100.0 % | 1602 | 1602 |
| 2/1 (A127 (S)) | 2.70 | 0.00 | Y | Arm 7 Left | 20.30 | 100.0 % | 1755 | 1755 |
| 2/2 (A127 (S)) | 3.70 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1985 | 1985 |
| 2/3 (A127 (S)) | 3.30 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2085 | 2085 |
| 2/4 (A127 (S)) | 3.40 | 0.00 | Y | Arm 8 Right | 7.50 | 100.0 % | 1629 | 1629 |
| 3/1 (Squirrels Heath Road) | 3.50 | 0.00 | Y | Arm 5 Left | 7.90 | 100.0 % | 1651 | 1651 |
| 3/2 (Squirrels Heath Road) | 3.30 | 0.00 | Y | Arm 6 Right | 22.20 | 35.6 % | 1899 | 1899 |
| | | | | Arm 7 Ahead | Inf | 64.4 % | | |
| 4/1 (Ardleigh Green Road) | 3.10 | 0.00 | Y | Arm 6 Left | 8.00 | 100.0 % | 1621 | 1621 |
| 4/2 (Ardleigh Green Road) | 3.00 | 0.00 | Y | Arm 5 Right | 21.70 | 51.2 % | 1850 | 1850 |
| | | | | Arm 8 Ahead | Inf | 48.8 % | | |
| 5/1 (A127 Southbound merge Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A127 Southbound merge Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/3 (A127 Southbound merge Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A127 (N) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A127 (N) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Ardleigh Green Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Squirrel Heath Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 (A127 Southbound Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 (A127 Southbound Exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

Scenario 2: 'Base Year 2023 PM' (FG2: 'Base Year 2023 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|-----|------|-----|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 171 | 1130 | 219 | 1520 |
| | B | 157 | 0 | 23 | 424 | 604 |
| | C | 1141 | 218 | 0 | 150 | 1509 |
| | D | 81 | 259 | 275 | 0 | 615 |
| | Tot. | 1379 | 648 | 1428 | 793 | 4248 |

Traffic Lane Flows

| Lane | Scenario 2: Base Year 2023 PM |
|---|----------------------------------|
| Junction: A127 / Ardleigh Green Road | |
| 1/1 (short) | 551 |
| 1/2 (with short) | 715(In) 164(Out) |
| 1/3 (with short) | 805(In) 586(Out) |
| 1/4 (short) | 219 |
| 2/1 (short) | 150 |
| 2/2 (with short) | 739(In) 589(Out) |
| 2/3 (with short) | 770(In) 552(Out) |
| 2/4 (short) | 218 |
| 3/1 (short) | 23 |
| 3/2 (with short) | 604(In) 581(Out) |
| 4/1 | 81 |
| 4/2 | 534 |
| 5/1 | 403 |
| 5/2 | 439 |
| 5/3 | 586 |
| 6/1 | 827 |
| 6/2 | 552 |
| 7/1 | 793 |
| 8/1 | 648 |
| 9/1 | 842 |
| 9/2 | 586 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A127 / Ardleigh Green Road | | | | | | | | |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (A127 (N)) | 2.80 | 0.00 | Y | Arm 5 Ahead | Inf | 69.0 % | 1812 | 1812 |
| | | | | Arm 8 Left | 10.10 | 31.0 % | | |
| 1/2 (A127 (N)) | 3.20 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2075 | 2075 |
| 1/3 (A127 (N)) | 3.30 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2085 | 2085 |
| 1/4 (A127 (N)) | 2.60 | 0.00 | Y | Arm 7 Right | 8.80 | 100.0 % | 1602 | 1602 |
| 2/1 (A127 (S)) | 2.70 | 0.00 | Y | Arm 7 Left | 20.30 | 100.0 % | 1755 | 1755 |
| 2/2 (A127 (S)) | 3.70 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1985 | 1985 |
| 2/3 (A127 (S)) | 3.30 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2085 | 2085 |
| 2/4 (A127 (S)) | 3.40 | 0.00 | Y | Arm 8 Right | 7.50 | 100.0 % | 1629 | 1629 |
| 3/1 (Squirrels Heath Road) | 3.50 | 0.00 | Y | Arm 5 Left | 7.90 | 100.0 % | 1651 | 1651 |
| 3/2 (Squirrels Heath Road) | 3.30 | 0.00 | Y | Arm 6 Right | 22.20 | 27.0 % | 1910 | 1910 |
| | | | | Arm 7 Ahead | Inf | 73.0 % | | |
| 4/1 (Ardleigh Green Road) | 3.10 | 0.00 | Y | Arm 6 Left | 8.00 | 100.0 % | 1621 | 1621 |
| 4/2 (Ardleigh Green Road) | 3.00 | 0.00 | Y | Arm 5 Right | 21.70 | 51.5 % | 1849 | 1849 |
| | | | | Arm 8 Ahead | Inf | 48.5 % | | |
| 5/1 (A127 Southbound merge Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A127 Southbound merge Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/3 (A127 Southbound merge Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A127 (N) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A127 (N) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Ardleigh Green Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Squirrel Heath Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 (A127 Southbound Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 (A127 Southbound Exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

Scenario 3: 'Reference Case 2030 AM' (FG3: 'Reference Case 2030 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|-----|------|-----|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 178 | 1251 | 175 | 1604 |
| | B | 220 | 0 | 19 | 398 | 637 |
| | C | 1198 | 207 | 0 | 133 | 1538 |
| | D | 85 | 274 | 288 | 0 | 647 |
| | Tot. | 1503 | 659 | 1558 | 706 | 4426 |

Traffic Lane Flows

| Lane | Scenario 3: Reference Case 2030 AM |
|---|--|
| Junction: A127 / Ardleigh Green Road | |
| 1/1 (short) | 569 |
| 1/2 (with short) | 806(In) 237(Out) |
| 1/3 (with short) | 798(In) 623(Out) |
| 1/4 (short) | 175 |
| 2/1 (short) | 133 |
| 2/2 (with short) | 753(In) 620(Out) |
| 2/3 (with short) | 785(In) 578(Out) |
| 2/4 (short) | 207 |
| 3/1 (short) | 19 |
| 3/2 (with short) | 637(In) 618(Out) |
| 4/1 | 85 |
| 4/2 | 562 |
| 5/1 | 410 |
| 5/2 | 525 |
| 5/3 | 623 |
| 6/1 | 925 |
| 6/2 | 578 |
| 7/1 | 706 |
| 8/1 | 659 |
| 9/1 | 935 |
| 9/2 | 623 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A127 / Ardleigh Green Road | | | | | | | | |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (A127 (N)) | 2.80 | 0.00 | Y | Arm 5 Ahead | Inf | 68.7 % | 1811 | 1811 |
| | | | | Arm 8 Left | 10.10 | 31.3 % | | |
| 1/2 (A127 (N)) | 3.20 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2075 | 2075 |
| 1/3 (A127 (N)) | 3.30 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2085 | 2085 |
| 1/4 (A127 (N)) | 2.60 | 0.00 | Y | Arm 7 Right | 8.80 | 100.0 % | 1602 | 1602 |
| 2/1 (A127 (S)) | 2.70 | 0.00 | Y | Arm 7 Left | 20.30 | 100.0 % | 1755 | 1755 |
| 2/2 (A127 (S)) | 3.70 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1985 | 1985 |
| 2/3 (A127 (S)) | 3.30 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2085 | 2085 |
| 2/4 (A127 (S)) | 3.40 | 0.00 | Y | Arm 8 Right | 7.50 | 100.0 % | 1629 | 1629 |
| 3/1 (Squirrels Heath Road) | 3.50 | 0.00 | Y | Arm 5 Left | 7.90 | 100.0 % | 1651 | 1651 |
| 3/2 (Squirrels Heath Road) | 3.30 | 0.00 | Y | Arm 6 Right | 22.20 | 35.6 % | 1899 | 1899 |
| | | | | Arm 7 Ahead | Inf | 64.4 % | | |
| 4/1 (Ardleigh Green Road) | 3.10 | 0.00 | Y | Arm 6 Left | 8.00 | 100.0 % | 1621 | 1621 |
| 4/2 (Ardleigh Green Road) | 3.00 | 0.00 | Y | Arm 5 Right | 21.70 | 51.2 % | 1849 | 1849 |
| | | | | Arm 8 Ahead | Inf | 48.8 % | | |
| 5/1 (A127 Southbound merge Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A127 Southbound merge Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/3 (A127 Southbound merge Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A127 (N) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A127 (N) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Ardleigh Green Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Squirrel Heath Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 (A127 Southbound Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 (A127 Southbound Exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

Scenario 4: 'Reference Case 2030 PM' (FG4: 'Reference Case 2030 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|-----|------|-----|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 180 | 1189 | 230 | 1599 |
| | B | 165 | 0 | 24 | 446 | 635 |
| | C | 1200 | 229 | 0 | 158 | 1587 |
| | D | 85 | 272 | 289 | 0 | 646 |
| | Tot. | 1450 | 681 | 1502 | 834 | 4467 |

Traffic Lane Flows

| Lane | Scenario 4: Reference Case 2030 PM |
|---|--|
| Junction: A127 / Ardleigh Green Road | |
| 1/1 (short) | 547 |
| 1/2 (with short) | 782(In) 235(Out) |
| 1/3 (with short) | 817(In) 587(Out) |
| 1/4 (short) | 230 |
| 2/1 (short) | 158 |
| 2/2 (with short) | 778(In) 620(Out) |
| 2/3 (with short) | 809(In) 580(Out) |
| 2/4 (short) | 229 |
| 3/1 (short) | 24 |
| 3/2 (with short) | 635(In) 611(Out) |
| 4/1 | 85 |
| 4/2 | 561 |
| 5/1 | 391 |
| 5/2 | 524 |
| 5/3 | 587 |
| 6/1 | 870 |
| 6/2 | 580 |
| 7/1 | 834 |
| 8/1 | 681 |
| 9/1 | 915 |
| 9/2 | 587 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A127 / Ardleigh Green Road | | | | | | | | |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (A127 (N)) | 2.80 | 0.00 | Y | Arm 5 Ahead | Inf | 67.1 % | 1807 | 1807 |
| | | | | Arm 8 Left | 10.10 | 32.9 % | | |
| 1/2 (A127 (N)) | 3.20 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2075 | 2075 |
| 1/3 (A127 (N)) | 3.30 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2085 | 2085 |
| 1/4 (A127 (N)) | 2.60 | 0.00 | Y | Arm 7 Right | 8.80 | 100.0 % | 1602 | 1602 |
| 2/1 (A127 (S)) | 2.70 | 0.00 | Y | Arm 7 Left | 20.30 | 100.0 % | 1755 | 1755 |
| 2/2 (A127 (S)) | 3.70 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1985 | 1985 |
| 2/3 (A127 (S)) | 3.30 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2085 | 2085 |
| 2/4 (A127 (S)) | 3.40 | 0.00 | Y | Arm 8 Right | 7.50 | 100.0 % | 1629 | 1629 |
| 3/1 (Squirrels Heath Road) | 3.50 | 0.00 | Y | Arm 5 Left | 7.90 | 100.0 % | 1651 | 1651 |
| 3/2 (Squirrels Heath Road) | 3.30 | 0.00 | Y | Arm 6 Right | 22.20 | 27.0 % | 1910 | 1910 |
| | | | | Arm 7 Ahead | Inf | 73.0 % | | |
| 4/1 (Ardleigh Green Road) | 3.10 | 0.00 | Y | Arm 6 Left | 8.00 | 100.0 % | 1621 | 1621 |
| 4/2 (Ardleigh Green Road) | 3.00 | 0.00 | Y | Arm 5 Right | 21.70 | 51.5 % | 1849 | 1849 |
| | | | | Arm 8 Ahead | Inf | 48.5 % | | |
| 5/1 (A127 Southbound merge Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A127 Southbound merge Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/3 (A127 Southbound merge Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A127 (N) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A127 (N) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Ardleigh Green Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Squirrel Heath Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 (A127 Southbound Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 (A127 Southbound Exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

Scenario 5: 'Do Something 2030 + LTC AM' (FG7: 'Do Something 2030 + LTC AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| Origin | Destination | | | | | |
|--------|-------------|-----|------|-----|------|--|
| | A | B | C | D | Tot. | |
| A | 0 | 151 | 1624 | 165 | 1940 | |
| B | 191 | 0 | 19 | 424 | 634 | |
| C | 1242 | 228 | 0 | 164 | 1634 | |
| D | 73 | 233 | 349 | 0 | 655 | |
| Tot. | 1506 | 612 | 1992 | 753 | 4863 | |

Traffic Lane Flows

| Lane | Scenario 5: Do Something 2030 + LTC AM |
|---|--|
| Junction: A127 / Ardleigh Green Road | |
| 1/1 (short) | 910 |
| 1/2 (with short) | 910(In) 0(Out) |
| 1/3 (with short) | 1030(In) 865(Out) |
| 1/4 (short) | 165 |
| 2/1 (short) | 164 |
| 2/2 (with short) | 977(In) 813(Out) |
| 2/3 (with short) | 657(In) 429(Out) |
| 2/4 (short) | 228 |
| 3/1 (short) | 19 |
| 3/2 (with short) | 634(In) 615(Out) |
| 4/1 | 73 |
| 4/2 | 582 |
| 5/1 | 778 |
| 5/2 | 349 |
| 5/3 | 865 |
| 6/1 | 1077 |
| 6/2 | 429 |
| 7/1 | 753 |
| 8/1 | 612 |
| 9/1 | 1127 |
| 9/2 | 865 |

Full Input Data And Results

Lane Saturation Flows

| Junction: A127 / Ardleigh Green Road | | | | | | | | |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (A127 (N)) | 2.80 | 0.00 | Y | Arm 5 Ahead | Inf | 83.4 % | 1849 | 1849 |
| | | | | Arm 8 Left | 10.10 | 16.6 % | | |
| 1/2 (A127 (N)) | 3.20 | 0.00 | N | Arm 5 Ahead | Inf | 0.0 % | 2075 | 2075 |
| 1/3 (A127 (N)) | 3.30 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2085 | 2085 |
| 1/4 (A127 (N)) | 2.60 | 0.00 | Y | Arm 7 Right | 8.80 | 100.0 % | 1602 | 1602 |
| 2/1 (A127 (S)) | 2.70 | 0.00 | Y | Arm 7 Left | 20.30 | 100.0 % | 1755 | 1755 |
| 2/2 (A127 (S)) | 3.70 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1985 | 1985 |
| 2/3 (A127 (S)) | 3.30 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2085 | 2085 |
| 2/4 (A127 (S)) | 3.40 | 0.00 | Y | Arm 8 Right | 7.50 | 100.0 % | 1629 | 1629 |
| 3/1 (Squirrels Heath Road) | 3.50 | 0.00 | Y | Arm 5 Left | 7.90 | 100.0 % | 1651 | 1651 |
| 3/2 (Squirrels Heath Road) | 3.30 | 0.00 | Y | Arm 6 Right | 22.20 | 31.1 % | 1905 | 1905 |
| | | | | Arm 7 Ahead | Inf | 68.9 % | | |
| 4/1 (Ardleigh Green Road) | 3.10 | 0.00 | Y | Arm 6 Left | 8.00 | 100.0 % | 1621 | 1621 |
| 4/2 (Ardleigh Green Road) | 3.00 | 0.00 | Y | Arm 5 Right | 21.70 | 60.0 % | 1839 | 1839 |
| | | | | Arm 8 Ahead | Inf | 40.0 % | | |
| 5/1 (A127 Southbound merge Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A127 Southbound merge Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/3 (A127 Southbound merge Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A127 (N) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A127 (N) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Ardleigh Green Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Squirrel Heath Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 (A127 Southbound Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 (A127 Southbound Exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

Scenario 6: 'Do Something 2030 + LTC PM' (FG8: 'Do Something 2030 + LTC PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | | |
|--------|-------------|------|-----|------|-----|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 169 | 1368 | 230 | 1767 |
| | B | 173 | 0 | 24 | 439 | 636 |
| | C | 1228 | 241 | 0 | 188 | 1657 |
| | D | 54 | 256 | 348 | 0 | 658 |
| | Tot. | 1455 | 666 | 1740 | 857 | 4718 |

Traffic Lane Flows

| Lane | Scenario 6: Do Something 2030 + LTC PM |
|---|--|
| Junction: A127 / Ardleigh Green Road | |
| 1/1 (short) | 818 |
| 1/2 (with short) | 818(In) 0(Out) |
| 1/3 (with short) | 949(In) 719(Out) |
| 1/4 (short) | 230 |
| 2/1 (short) | 188 |
| 2/2 (with short) | 883(In) 695(Out) |
| 2/3 (with short) | 774(In) 533(Out) |
| 2/4 (short) | 241 |
| 3/1 (short) | 24 |
| 3/2 (with short) | 636(In) 612(Out) |
| 4/1 | 54 |
| 4/2 | 604 |
| 5/1 | 673 |
| 5/2 | 348 |
| 5/3 | 719 |
| 6/1 | 922 |
| 6/2 | 533 |
| 7/1 | 857 |
| 8/1 | 666 |
| 9/1 | 1021 |
| 9/2 | 719 |

Full Input Data And Results

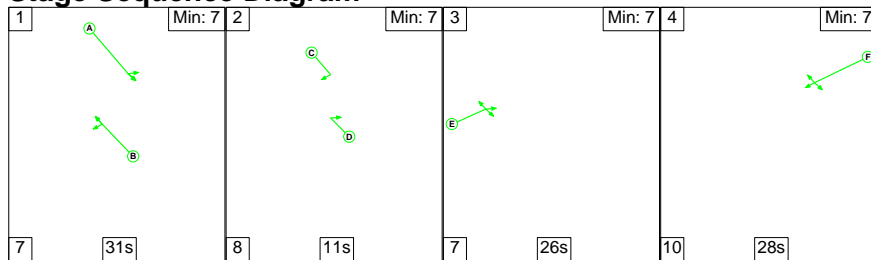
Lane Saturation Flows

| Junction: A127 / Ardleigh Green Road | | | | | | | | |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (A127 (N)) | 2.80 | 0.00 | Y | Arm 5 Ahead | Inf | 79.3 % | 1839 | 1839 |
| | | | | Arm 8 Left | 10.10 | 20.7 % | | |
| 1/2 (A127 (N)) | 3.20 | 0.00 | N | Arm 5 Ahead | Inf | 0.0 % | 2075 | 2075 |
| 1/3 (A127 (N)) | 3.30 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2085 | 2085 |
| 1/4 (A127 (N)) | 2.60 | 0.00 | Y | Arm 7 Right | 8.80 | 100.0 % | 1602 | 1602 |
| 2/1 (A127 (S)) | 2.70 | 0.00 | Y | Arm 7 Left | 20.30 | 100.0 % | 1755 | 1755 |
| 2/2 (A127 (S)) | 3.70 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1985 | 1985 |
| 2/3 (A127 (S)) | 3.30 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2085 | 2085 |
| 2/4 (A127 (S)) | 3.40 | 0.00 | Y | Arm 8 Right | 7.50 | 100.0 % | 1629 | 1629 |
| 3/1 (Squirrels Heath Road) | 3.50 | 0.00 | Y | Arm 5 Left | 7.90 | 100.0 % | 1651 | 1651 |
| 3/2 (Squirrels Heath Road) | 3.30 | 0.00 | Y | Arm 6 Right | 22.20 | 28.3 % | 1909 | 1909 |
| | | | | Arm 7 Ahead | Inf | 71.7 % | | |
| 4/1 (Ardleigh Green Road) | 3.10 | 0.00 | Y | Arm 6 Left | 8.00 | 100.0 % | 1621 | 1621 |
| 4/2 (Ardleigh Green Road) | 3.00 | 0.00 | Y | Arm 5 Right | 21.70 | 57.6 % | 1842 | 1842 |
| | | | | Arm 8 Ahead | Inf | 42.4 % | | |
| 5/1 (A127 Southbound merge Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A127 Southbound merge Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/3 (A127 Southbound merge Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A127 (N) exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A127 (N) exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Ardleigh Green Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Squirrel Heath Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 (A127 Southbound Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 (A127 Southbound Exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

Scenario 1: 'Base Year 2023 AM' (FG1: 'Base Year 2023 AM', Plan 1: 'Network Control Plan 1')

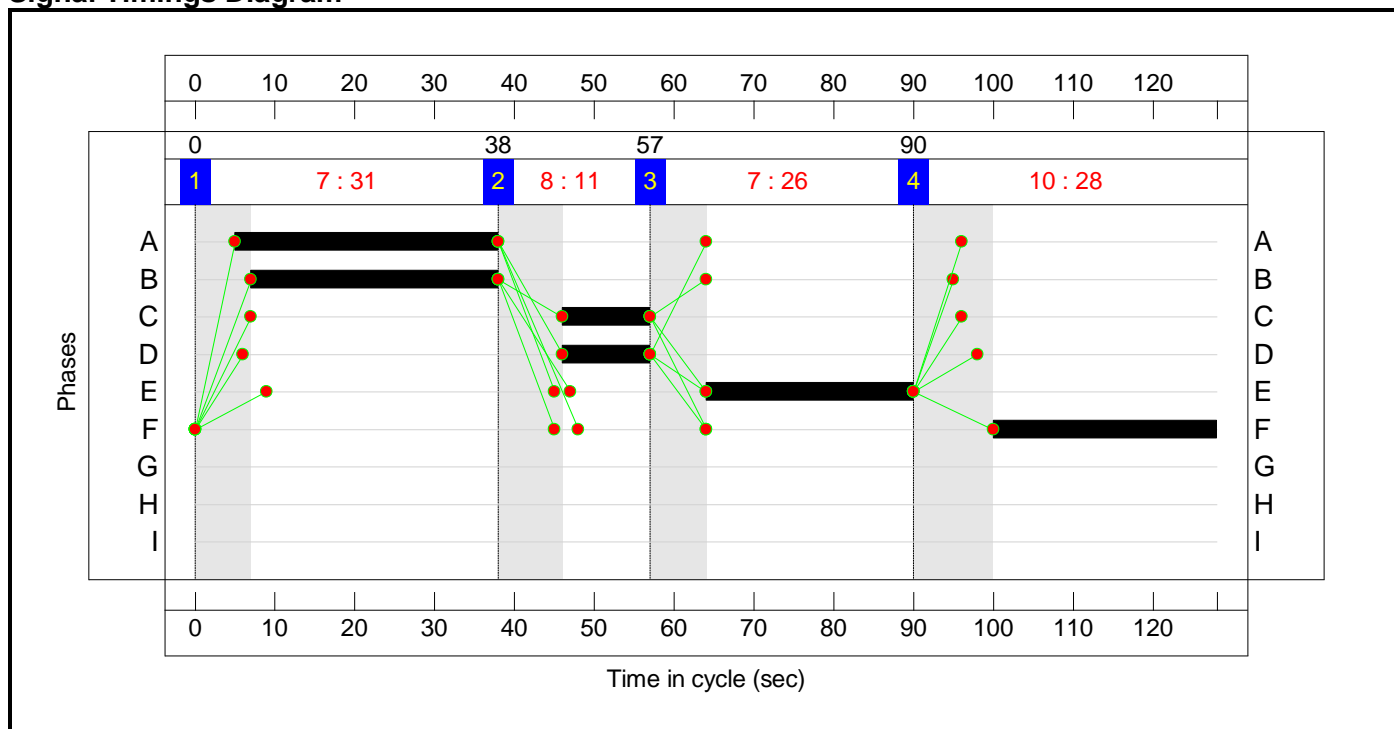
Stage Sequence Diagram



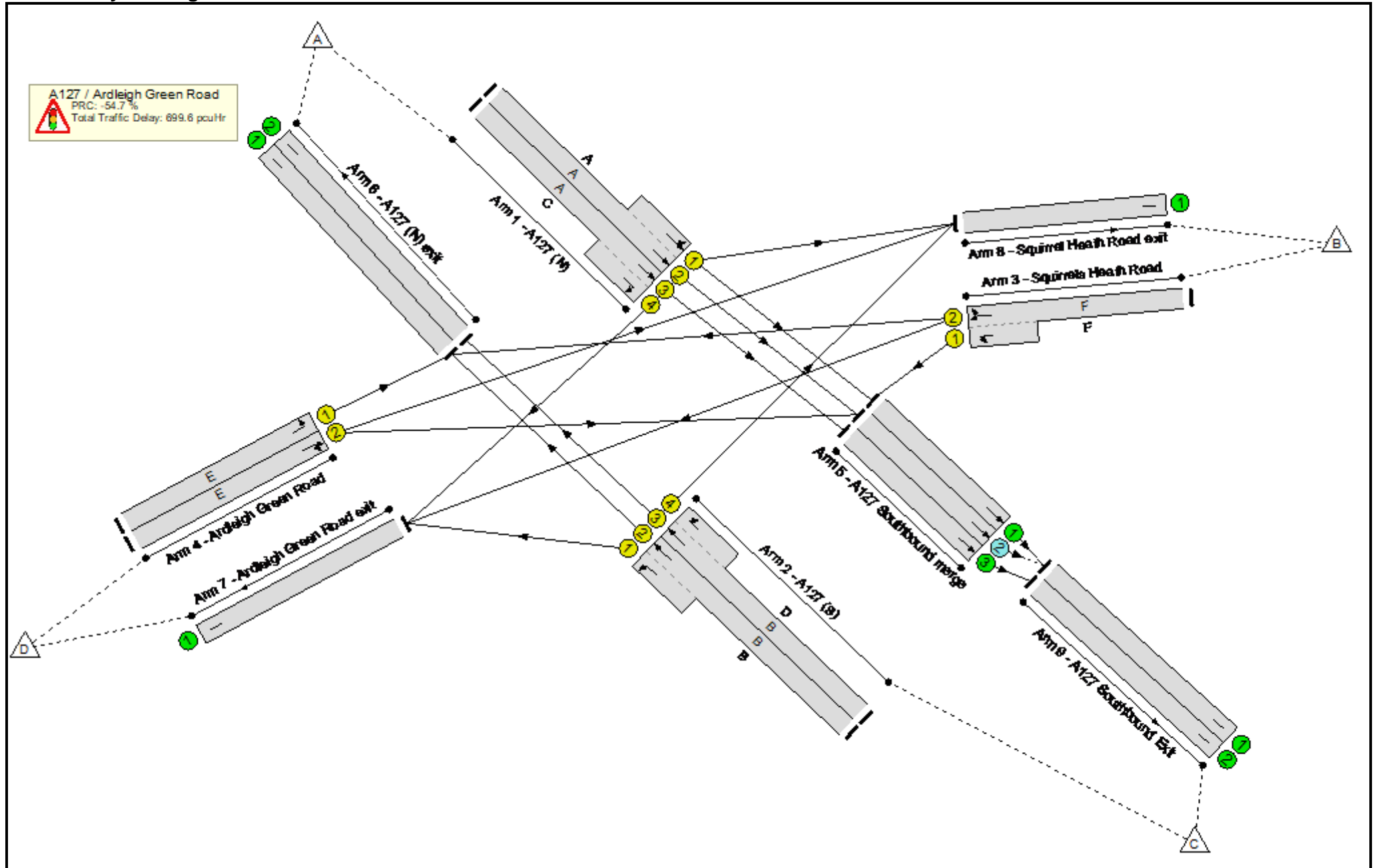
Stage Timings

| Stage | 1 | 2 | 3 | 4 |
|--------------|----|----|----|----|
| Duration | 31 | 11 | 26 | 28 |
| Change Point | 0 | 38 | 57 | 90 |

Signal Timings Diagram



Full Input Data And Results
Network Layout 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 | - | - | | - | - | - | - | - | - | 139.2% |
| A127 / Ardleigh Green Road | - | - | N/A | - | - | | - | - | - | - | - | - | 139.2% |
| 1/2+1/1 | A127 (N) Ahead Left | U | N/A | N/A | A | | 1 | 33 | - | 788 | 2075:1808 | 190+376 | 139.2 : 139.2% |
| 1/3+1/4 | A127 (N) Ahead Right | U | N/A | N/A | A C | | 1 | 33:11 | - | 744 | 2085:1602 | 436+132 | 132.2 : 126.6% |
| 2/2+2/1 | A127 (S) Ahead Left | U | N/A | N/A | B | | 1 | 31 | - | 720 | 1985:1755 | 428+92 | 138.6 : 138.6% |
| 2/3+2/4 | A127 (S) Ahead Right | U | N/A | N/A | B D | | 1 | 31:11 | - | 750 | 2085:1629 | 397+145 | 139.2 : 136.9% |
| 3/2+3/1 | Squirrels Heath Road Left Right Ahead | U | N/A | N/A | F | | 1 | 28 | - | 608 | 1899:1651 | 427+13 | 138.1 : 138.1% |
| 4/1 | Ardleigh Green Road Left | U | N/A | N/A | E | | 1 | 26 | - | 81 | 1621 | 342 | 23.7% |
| 4/2 | Ardleigh Green Road Right Ahead | U | N/A | N/A | E | | 1 | 26 | - | 537 | 1850 | 390 | 137.6% |
| 5/1 | A127 Southbound merge Ahead | U | N/A | N/A | - | | - | - | - | 371 | Inf | Inf | 0.0% |
| 5/2 | A127 Southbound merge Ahead | O | N/A | N/A | - | | - | - | - | 540 | Inf | 1148 | 34.0% |
| 5/3 | A127 Southbound merge Ahead | U | N/A | N/A | - | | - | - | - | 577 | Inf | Inf | 0.0% |
| 6/1 | A127 (N) exit | U | N/A | N/A | - | | - | - | - | 884 | Inf | Inf | 0.0% |
| 6/2 | A127 (N) exit | U | N/A | N/A | - | | - | - | - | 552 | Inf | Inf | 0.0% |
| 7/1 | Ardleigh Green Road exit | U | N/A | N/A | - | | - | - | - | 674 | Inf | Inf | 0.0% |
| 8/1 | Squirrel Heath Road exit | U | N/A | N/A | - | | - | - | - | 630 | Inf | Inf | 0.0% |

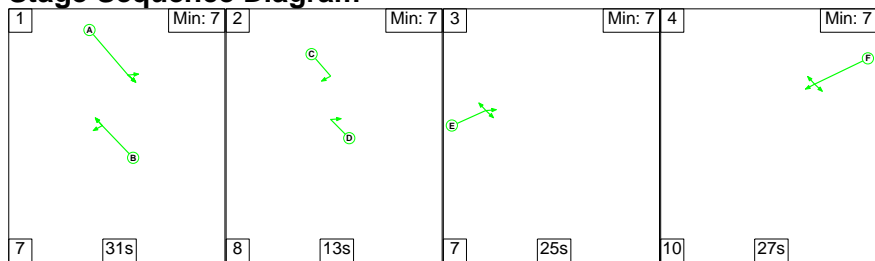
Full Input Data And Results

| 9/1 | A127 Southbound Exit | U | N/A | N/A | - | - | - | - | 911 | Inf | Inf | 0.0% | |
|----------------------------|----------------------|------------------------------------|-----------------------|-------------------------------|-----------------------------|---|------------------------------|---|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| 9/2 | A127 Southbound Exit | U | N/A | N/A | - | - | - | - | 577 | Inf | Inf | 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 | - | - | 390 | 0 | 0 | 127.6 | 572.0 | 0.0 | 699.6 | - | - | - | - |
| A127 / Ardleigh Green Road | - | - | 390 | 0 | 0 | 127.6 | 572.0 | 0.0 | 699.6 | - | - | - | - |
| 1/2+1/1 | 788 | 566 | - | - | - | 24.2 | 112.6 | - | 136.9 | 625.4 | 34.5 | 112.6 | 147.1 |
| 1/3+1/4 | 744 | 564 | - | - | - | 20.8 | 89.9 | - | 110.7 | 535.5 | 32.3 | 89.9 | 122.2 |
| 2/2+2/1 | 720 | 519 | - | - | - | 22.4 | 102.1 | - | 124.5 | 622.5 | 32.5 | 102.1 | 134.5 |
| 2/3+2/4 | 750 | 542 | - | - | - | 23.3 | 106.2 | - | 129.5 | 621.6 | 33.2 | 106.2 | 139.3 |
| 3/2+3/1 | 608 | 440 | - | - | - | 20.7 | 85.6 | - | 106.3 | 629.4 | 32.7 | 85.6 | 118.3 |
| 4/1 | 81 | 81 | - | - | - | 0.9 | 0.2 | - | 1.1 | 48.8 | 2.4 | 0.2 | 2.5 |
| 4/2 | 537 | 390 | - | - | - | 14.7 | 75.2 | - | 89.9 | 602.8 | 24.3 | 75.2 | 99.5 |
| 5/1 | 267 | 267 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 390 | 390 | 390 | 0 | 0 | 0.5 | 0.3 | - | 0.7 | 6.6 | 6.5 | 0.3 | 6.7 |
| 5/3 | 436 | 436 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 661 | 661 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 397 | 397 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 494 | 494 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 457 | 457 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 657 | 657 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 436 | 436 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | PRC for Signalled Lanes (%): -54.7 | | PRC Over All Lanes (%): -54.7 | | Total Delay for Signalled Lanes (pcuHr): 698.88 | | Total Delay Over All Lanes(pcuHr): 699.60 | | Cycle Time (s): 128 | | | |

Full Input Data And Results

Scenario 2: 'Base Year 2023 PM' (FG2: 'Base Year 2023 PM', Plan 1: 'Network Control Plan 1')

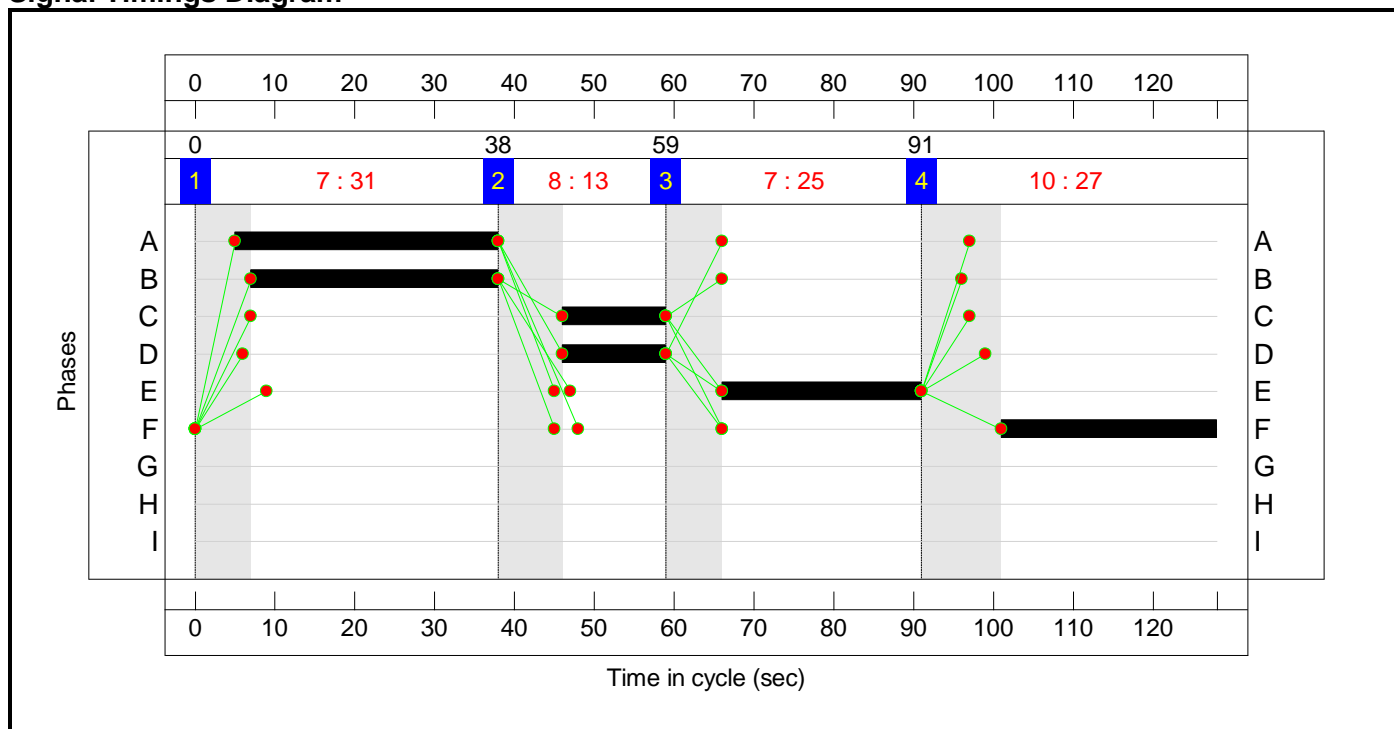
Stage Sequence Diagram



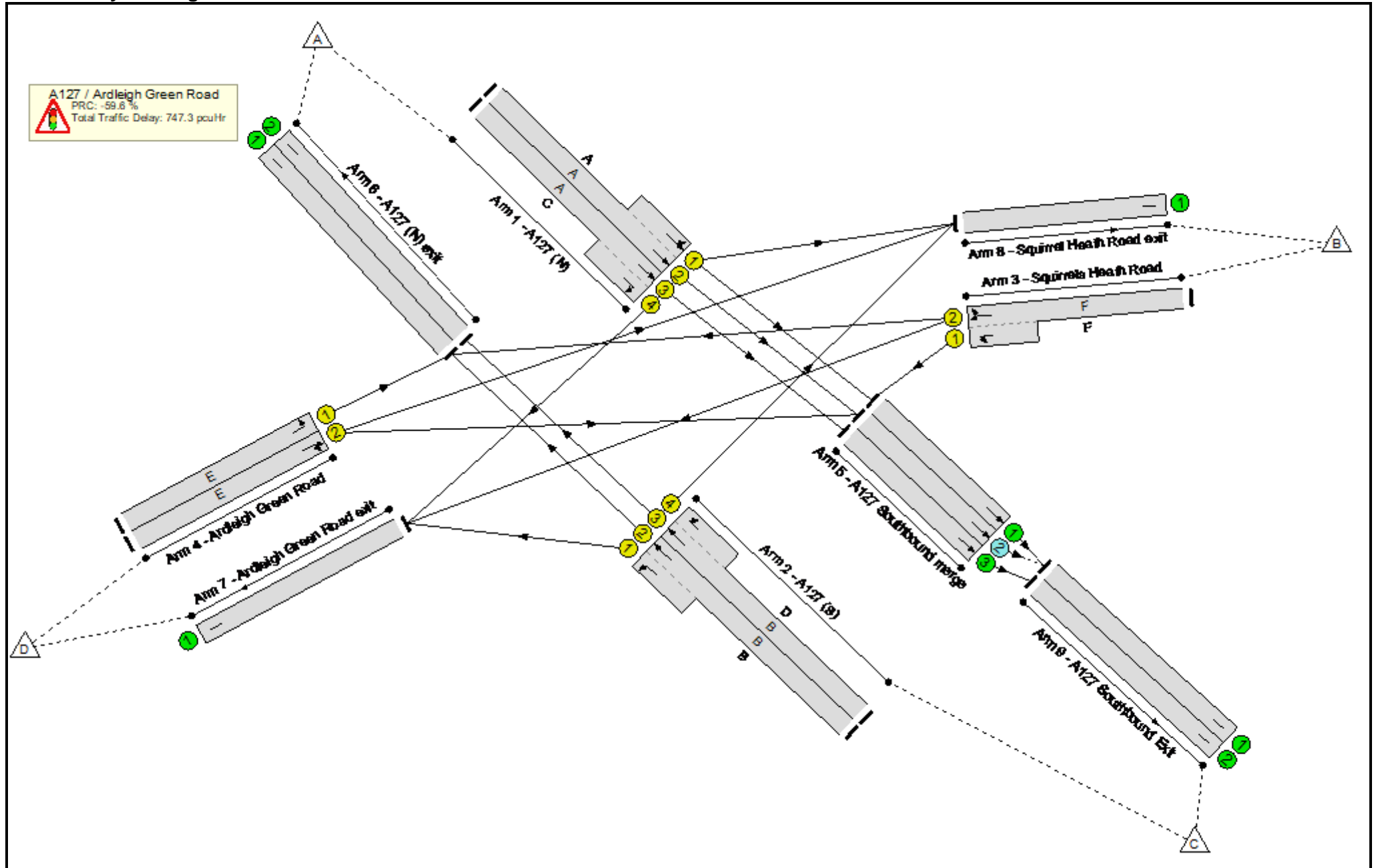
Stage Timings

| Stage | 1 | 2 | 3 | 4 |
|--------------|----|----|----|----|
| Duration | 31 | 13 | 25 | 27 |
| Change Point | 0 | 38 | 59 | 91 |

Signal Timings Diagram



Full Input Data And Results
Network Layout 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 | - | - | | - | - | - | - | - | - | 143.7% |
| A127 / Ardleigh Green Road | - | - | N/A | - | - | | - | - | - | - | - | - | 143.7% |
| 1/2+1/1 | A127 (N) Ahead Left | U | N/A | N/A | A | | 1 | 33 | - | 715 | 2075:1812 | 122+410 | 134.3 : 134.3% |
| 1/3+1/4 | A127 (N) Ahead Right | U | N/A | N/A | A C | | 1 | 33:13 | - | 805 | 2085:1602 | 408+153 | 143.7 : 143.2% |
| 2/2+2/1 | A127 (S) Ahead Left | U | N/A | N/A | B | | 1 | 31 | - | 739 | 1985:1755 | 418+106 | 141.1 : 141.1% |
| 2/3+2/4 | A127 (S) Ahead Right | U | N/A | N/A | B D | | 1 | 31:13 | - | 770 | 2085:1629 | 386+153 | 143.1 : 142.1% |
| 3/2+3/1 | Squirrels Heath Road Left Right Ahead | U | N/A | N/A | F | | 1 | 27 | - | 604 | 1910:1651 | 412+16 | 141.1 : 141.1% |
| 4/1 | Ardleigh Green Road Left | U | N/A | N/A | E | | 1 | 25 | - | 81 | 1621 | 329 | 24.6% |
| 4/2 | Ardleigh Green Road Right Ahead | U | N/A | N/A | E | | 1 | 25 | - | 534 | 1849 | 376 | 142.2% |
| 5/1 | A127 Southbound merge Ahead | U | N/A | N/A | - | | - | - | - | 403 | Inf | Inf | 0.0% |
| 5/2 | A127 Southbound merge Ahead | O | N/A | N/A | - | | - | - | - | 439 | Inf | 1113 | 28.4% |
| 5/3 | A127 Southbound merge Ahead | U | N/A | N/A | - | | - | - | - | 586 | Inf | Inf | 0.0% |
| 6/1 | A127 (N) exit | U | N/A | N/A | - | | - | - | - | 827 | Inf | Inf | 0.0% |
| 6/2 | A127 (N) exit | U | N/A | N/A | - | | - | - | - | 552 | Inf | Inf | 0.0% |
| 7/1 | Ardleigh Green Road exit | U | N/A | N/A | - | | - | - | - | 793 | Inf | Inf | 0.0% |
| 8/1 | Squirrel Heath Road exit | U | N/A | N/A | - | | - | - | - | 648 | Inf | Inf | 0.0% |

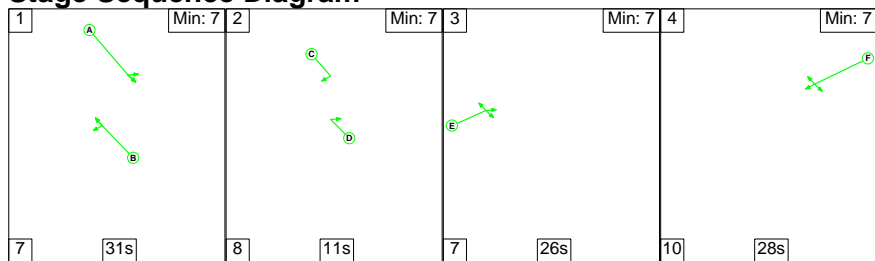
Full Input Data And Results

| 9/1 | A127 Southbound Exit | U | N/A | N/A | - | - | - | - | 842 | Inf | Inf | 0.0% | |
|----------------------------|----------------------|------------------------------|-----------------------|------------------------------|-----------------------------|--|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| 9/2 | A127 Southbound Exit | U | N/A | N/A | - | - | - | - | 586 | Inf | Inf | 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 | - | - | 316 | 0 | 0 | 133.1 | 614.1 | 0.0 | 747.3 | - | - | - | - |
| A127 / Ardleigh Green Road | - | - | 316 | 0 | 0 | 133.1 | 614.1 | 0.0 | 747.3 | - | - | - | - |
| 1/2+1/1 | 715 | 532 | - | - | - | 20.9 | 93.2 | - | 114.1 | 574.5 | 31.4 | 93.2 | 124.6 |
| 1/3+1/4 | 805 | 568 | - | - | - | 25.7 | 123.7 | - | 149.4 | 668.3 | 36.0 | 123.7 | 159.8 |
| 2/2+2/1 | 739 | 524 | - | - | - | 23.6 | 109.3 | - | 132.8 | 647.1 | 33.5 | 109.3 | 142.7 |
| 2/3+2/4 | 770 | 543 | - | - | - | 24.7 | 117.0 | - | 141.7 | 662.7 | 34.3 | 117.0 | 151.4 |
| 3/2+3/1 | 604 | 428 | - | - | - | 21.3 | 89.7 | - | 111.0 | 661.4 | 33.1 | 89.7 | 122.8 |
| 4/1 | 81 | 81 | - | - | - | 1.0 | 0.2 | - | 1.1 | 50.0 | 2.4 | 0.2 | 2.6 |
| 4/2 | 534 | 376 | - | - | - | 15.9 | 80.9 | - | 96.7 | 652.2 | 25.2 | 80.9 | 106.1 |
| 5/1 | 299 | 299 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 316 | 316 | 316 | 0 | 0 | 0.1 | 0.2 | - | 0.3 | 3.8 | 4.1 | 0.2 | 4.3 |
| 5/3 | 415 | 415 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 610 | 610 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 389 | 389 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 560 | 560 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 463 | 463 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 615 | 615 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 415 | 415 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | PRC for Signalled Lanes (%): | | -59.6 | | Total Delay for Signalled Lanes (pcuHr): | | 746.96 | | Cycle Time (s): | | 128 | |
| | | PRC Over All Lanes (%): | | -59.6 | | Total Delay Over All Lanes(pcuHr): | | 747.29 | | | | | |

Full Input Data And Results

Scenario 3: 'Reference Case 2030 AM' (FG3: 'Reference Case 2030 AM', Plan 1: 'Network Control Plan 1')

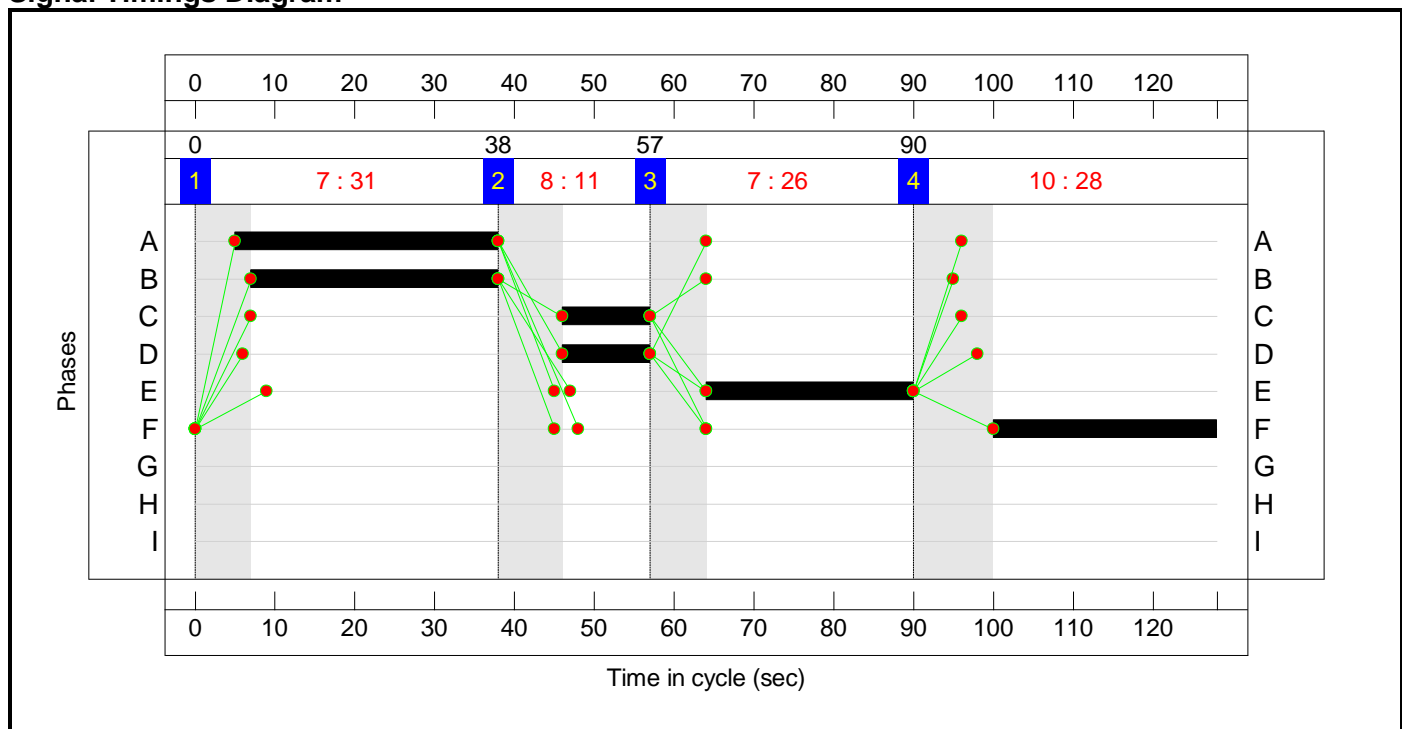
Stage Sequence Diagram



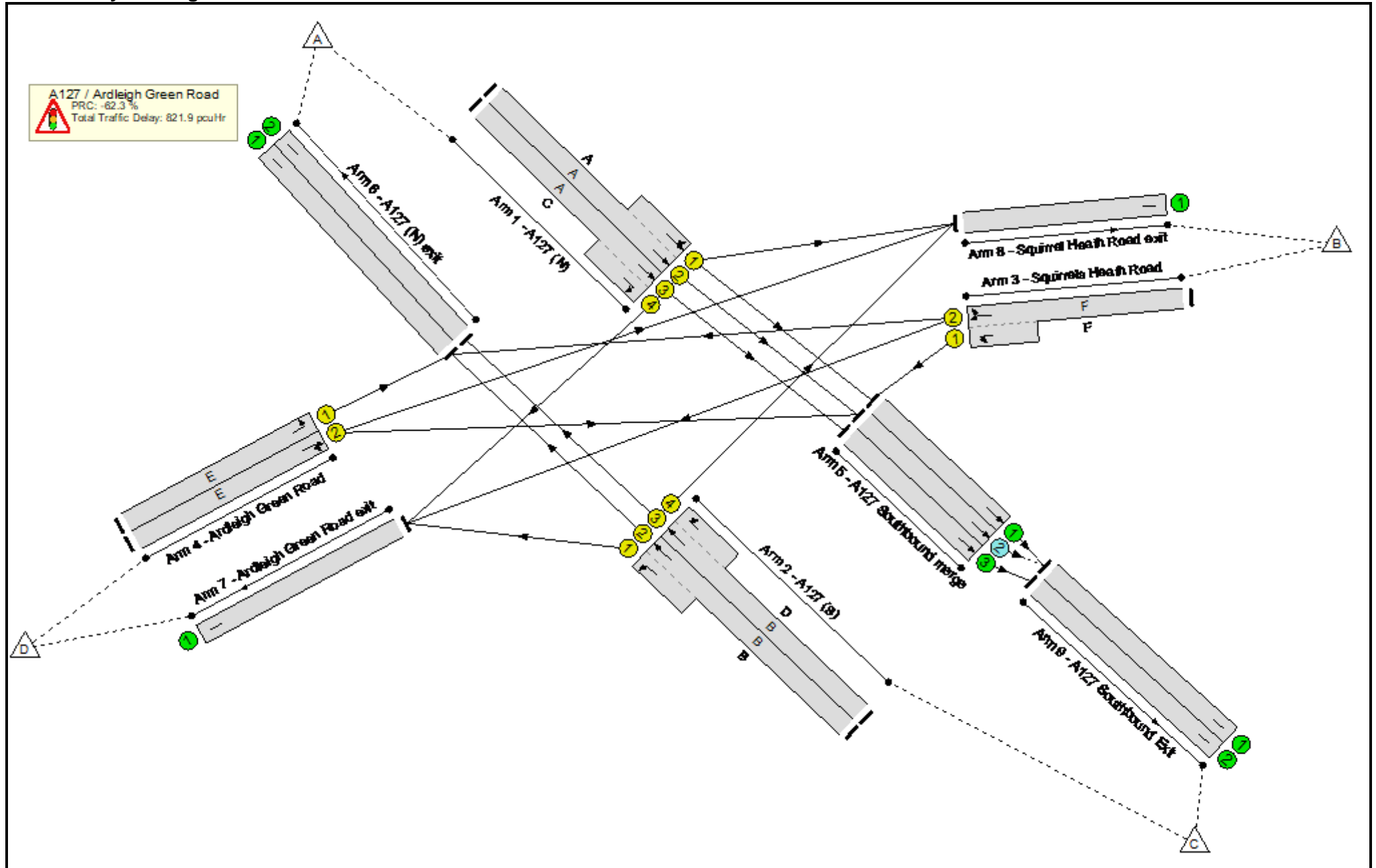
Stage Timings

| Stage | 1 | 2 | 3 | 4 |
|--------------|----|----|----|----|
| Duration | 31 | 11 | 26 | 28 |
| Change Point | 0 | 38 | 57 | 90 |

Signal Timings Diagram



Full Input Data And Results
Network Layout 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 | - | - | | - | - | - | - | - | - | 146.0% |
| A127 / Ardleigh Green Road | - | - | N/A | - | - | | - | - | - | - | - | - | 146.0% |
| 1/2+1/1 | A127 (N) Ahead Left | U | N/A | N/A | A | | 1 | 33 | - | 806 | 2075:1811 | 162+390 | 146.0 : 146.0% |
| 1/3+1/4 | A127 (N) Ahead Right | U | N/A | N/A | A C | | 1 | 33:11 | - | 798 | 2085:1602 | 439+124 | 142.0 : 141.7% |
| 2/2+2/1 | A127 (S) Ahead Left | U | N/A | N/A | B | | 1 | 31 | - | 753 | 1985:1755 | 428+92 | 145.0 : 145.0% |
| 2/3+2/4 | A127 (S) Ahead Right | U | N/A | N/A | B D | | 1 | 31:11 | - | 785 | 2085:1629 | 397+145 | 145.6 : 143.1% |
| 3/2+3/1 | Squirrels Heath Road Left Right Ahead | U | N/A | N/A | F | | 1 | 28 | - | 637 | 1899:1651 | 427+13 | 144.7 : 144.7% |
| 4/1 | Ardleigh Green Road Left | U | N/A | N/A | E | | 1 | 26 | - | 85 | 1621 | 342 | 24.9% |
| 4/2 | Ardleigh Green Road Right Ahead | U | N/A | N/A | E | | 1 | 26 | - | 562 | 1849 | 390 | 144.1% |
| 5/1 | A127 Southbound merge Ahead | U | N/A | N/A | - | | - | - | - | 410 | Inf | Inf | 0.0% |
| 5/2 | A127 Southbound merge Ahead | O | N/A | N/A | - | | - | - | - | 525 | Inf | 1133 | 32.0% |
| 5/3 | A127 Southbound merge Ahead | U | N/A | N/A | - | | - | - | - | 623 | Inf | Inf | 0.0% |
| 6/1 | A127 (N) exit | U | N/A | N/A | - | | - | - | - | 925 | Inf | Inf | 0.0% |
| 6/2 | A127 (N) exit | U | N/A | N/A | - | | - | - | - | 578 | Inf | Inf | 0.0% |
| 7/1 | Ardleigh Green Road exit | U | N/A | N/A | - | | - | - | - | 706 | Inf | Inf | 0.0% |
| 8/1 | Squirrel Heath Road exit | U | N/A | N/A | - | | - | - | - | 659 | Inf | Inf | 0.0% |

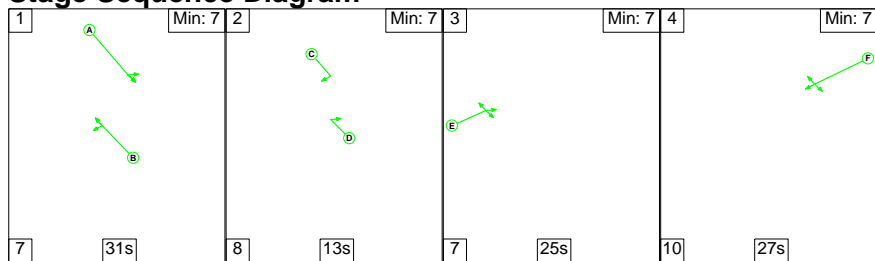
Full Input Data And Results

| 9/1 | A127 Southbound Exit | U | N/A | N/A | - | - | - | - | 935 | Inf | Inf | 0.0% | |
|----------------------------|----------------------|------------------------------|-----------------------|------------------------------|-----------------------------|--|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| 9/2 | A127 Southbound Exit | U | N/A | N/A | - | - | - | - | 623 | Inf | Inf | 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 | - | - | 362 | 0 | 0 | 144.2 | 677.7 | 0.0 | 821.9 | - | - | - | - |
| A127 / Ardleigh Green Road | - | - | 362 | 0 | 0 | 144.2 | 677.7 | 0.0 | 821.9 | - | - | - | - |
| 1/2+1/1 | 806 | 552 | - | - | - | 26.6 | 128.6 | - | 155.2 | 693.2 | 36.7 | 128.6 | 165.3 |
| 1/3+1/4 | 798 | 562 | - | - | - | 25.0 | 119.5 | - | 144.5 | 651.9 | 36.2 | 119.5 | 155.7 |
| 2/2+2/1 | 753 | 519 | - | - | - | 25.0 | 118.4 | - | 143.4 | 685.4 | 34.8 | 118.4 | 153.2 |
| 2/3+2/4 | 785 | 542 | - | - | - | 26.0 | 123.4 | - | 149.4 | 685.0 | 35.7 | 123.4 | 159.1 |
| 3/2+3/1 | 637 | 440 | - | - | - | 23.2 | 99.9 | - | 123.1 | 696.0 | 35.8 | 99.9 | 135.7 |
| 4/1 | 85 | 85 | - | - | - | 1.0 | 0.2 | - | 1.2 | 49.1 | 2.5 | 0.2 | 2.7 |
| 4/2 | 562 | 390 | - | - | - | 17.0 | 87.6 | - | 104.6 | 669.9 | 26.7 | 87.6 | 114.3 |
| 5/1 | 281 | 281 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 362 | 362 | 362 | 0 | 0 | 0.3 | 0.2 | - | 0.6 | 5.7 | 5.5 | 0.2 | 5.7 |
| 5/3 | 439 | 439 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 665 | 665 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 398 | 398 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 490 | 490 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 457 | 457 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 643 | 643 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 439 | 439 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | PRC for Signalled Lanes (%): | | -62.3 | | Total Delay for Signalled Lanes (pcuHr): | | 821.34 | | Cycle Time (s): | | 128 | |
| | | PRC Over All Lanes (%): | | -62.3 | | Total Delay Over All Lanes(pcuHr): | | 821.91 | | | | | |

Full Input Data And Results

Scenario 4: 'Reference Case 2030 PM' (FG4: 'Reference Case 2030 PM', Plan 1: 'Network Control Plan 1')

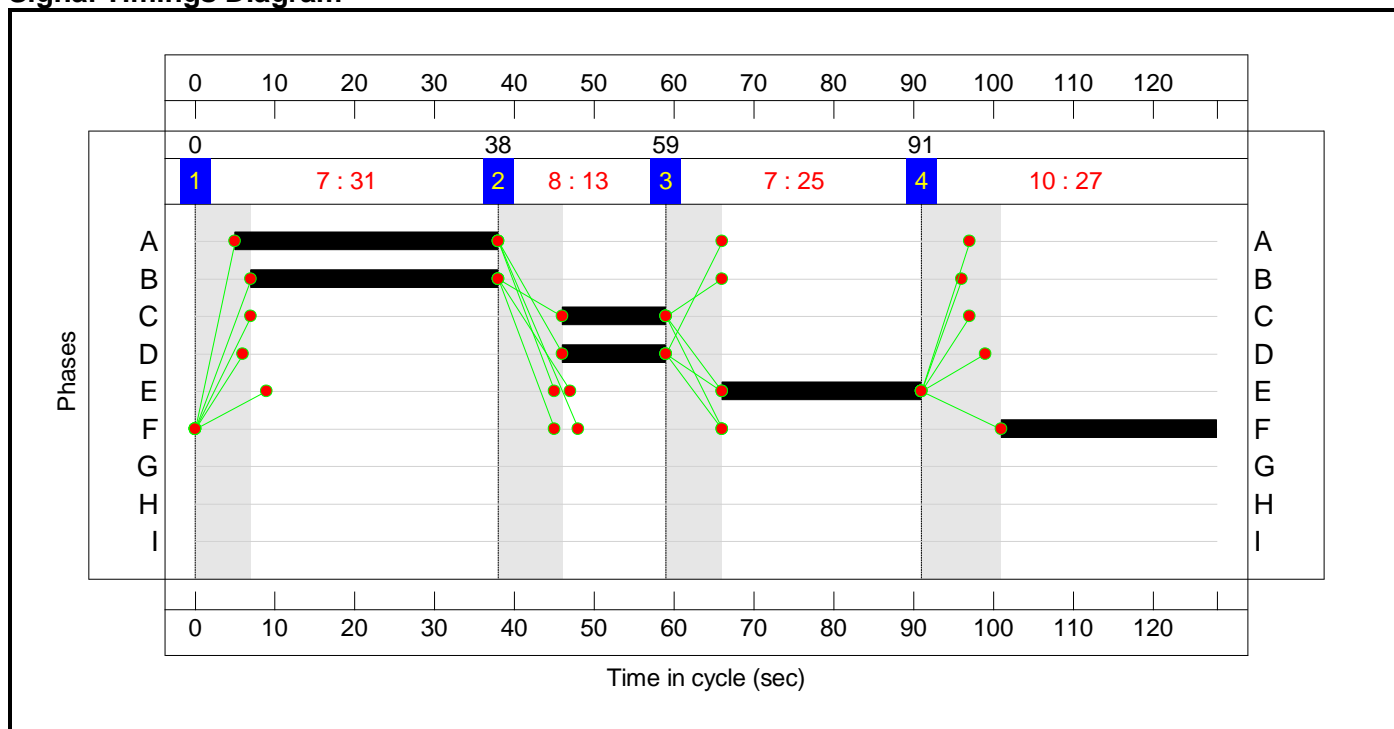
Stage Sequence Diagram



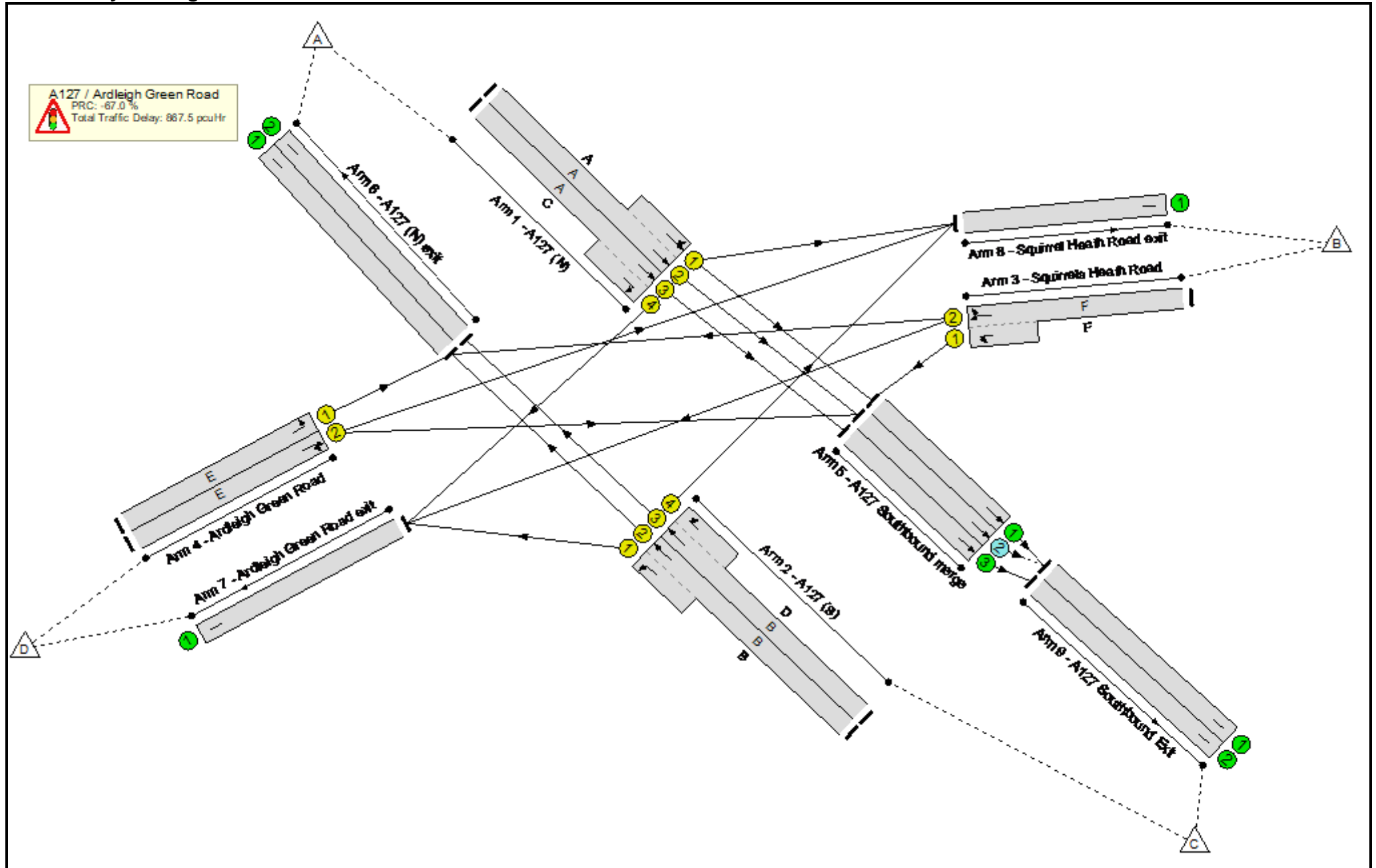
Stage Timings

| Stage | 1 | 2 | 3 | 4 |
|--------------|----|----|----|----|
| Duration | 31 | 13 | 25 | 27 |
| Change Point | 0 | 38 | 59 | 91 |

Signal Timings Diagram



Full Input Data And Results
Network Layout 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 | - | - | | - | - | - | - | - | - | 150.3% |
| A127 / Ardleigh Green Road | - | - | N/A | - | - | | - | - | - | - | - | - | 150.3% |
| 1/2+1/1 | A127 (N) Ahead Left | U | N/A | N/A | A | | 1 | 33 | - | 782 | 2075:1807 | 166+387 | 141.3 : 141.3% |
| 1/3+1/4 | A127 (N) Ahead Right | U | N/A | N/A | A C | | 1 | 33:13 | - | 817 | 2085:1602 | 391+153 | 150.0 : 150.0% |
| 2/2+2/1 | A127 (S) Ahead Left | U | N/A | N/A | B | | 1 | 31 | - | 778 | 1985:1755 | 417+106 | 148.5 : 148.5% |
| 2/3+2/4 | A127 (S) Ahead Right | U | N/A | N/A | B D | | 1 | 31:13 | - | 809 | 2085:1629 | 386+153 | 150.3 : 149.2% |
| 3/2+3/1 | Squirrels Heath Road Left Right Ahead | U | N/A | N/A | F | | 1 | 27 | - | 635 | 1910:1651 | 412+16 | 148.4 : 148.4% |
| 4/1 | Ardleigh Green Road Left | U | N/A | N/A | E | | 1 | 25 | - | 85 | 1621 | 329 | 25.8% |
| 4/2 | Ardleigh Green Road Right Ahead | U | N/A | N/A | E | | 1 | 25 | - | 561 | 1849 | 376 | 149.4% |
| 5/1 | A127 Southbound merge Ahead | U | N/A | N/A | - | | - | - | - | 391 | Inf | Inf | 0.0% |
| 5/2 | A127 Southbound merge Ahead | O | N/A | N/A | - | | - | - | - | 524 | Inf | 1138 | 31.6% |
| 5/3 | A127 Southbound merge Ahead | U | N/A | N/A | - | | - | - | - | 587 | Inf | Inf | 0.0% |
| 6/1 | A127 (N) exit | U | N/A | N/A | - | | - | - | - | 870 | Inf | Inf | 0.0% |
| 6/2 | A127 (N) exit | U | N/A | N/A | - | | - | - | - | 580 | Inf | Inf | 0.0% |
| 7/1 | Ardleigh Green Road exit | U | N/A | N/A | - | | - | - | - | 834 | Inf | Inf | 0.0% |
| 8/1 | Squirrel Heath Road exit | U | N/A | N/A | - | | - | - | - | 681 | Inf | Inf | 0.0% |

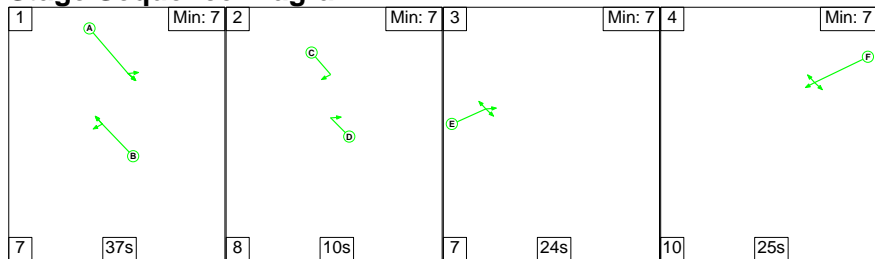
Full Input Data And Results

| 9/1 | A127 Southbound Exit | U | N/A | N/A | - | - | - | - | 915 | Inf | Inf | 0.0% | |
|----------------------------|----------------------|------------------------------|-----------------------|------------------------------|-----------------------------|--|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| 9/2 | A127 Southbound Exit | U | N/A | N/A | - | - | - | - | 587 | Inf | Inf | 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 | - | - | 360 | 0 | 0 | 149.4 | 718.2 | 0.0 | 867.5 | - | - | - | - |
| A127 / Ardleigh Green Road | - | - | 360 | 0 | 0 | 149.4 | 718.2 | 0.0 | 867.5 | - | - | - | - |
| 1/2+1/1 | 782 | 554 | - | - | - | 24.6 | 115.9 | - | 140.6 | 647.1 | 34.9 | 115.9 | 150.8 |
| 1/3+1/4 | 817 | 563 | - | - | - | 26.8 | 137.7 | - | 164.5 | 725.0 | 36.7 | 137.7 | 174.4 |
| 2/2+2/1 | 778 | 524 | - | - | - | 26.6 | 128.6 | - | 155.2 | 718.1 | 36.3 | 128.6 | 164.9 |
| 2/3+2/4 | 809 | 543 | - | - | - | 27.7 | 136.4 | - | 164.0 | 729.8 | 37.1 | 136.4 | 173.5 |
| 3/2+3/1 | 635 | 428 | - | - | - | 24.0 | 105.0 | - | 129.0 | 731.6 | 36.4 | 105.0 | 141.4 |
| 4/1 | 85 | 85 | - | - | - | 1.0 | 0.2 | - | 1.2 | 50.3 | 2.5 | 0.2 | 2.7 |
| 4/2 | 561 | 376 | - | - | - | 18.3 | 94.2 | - | 112.5 | 721.8 | 27.8 | 94.2 | 122.0 |
| 5/1 | 276 | 276 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 360 | 360 | 360 | 0 | 0 | 0.3 | 0.2 | - | 0.5 | 5.5 | 5.6 | 0.2 | 5.9 |
| 5/3 | 410 | 410 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 614 | 614 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 390 | 390 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 560 | 560 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 463 | 463 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 636 | 636 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 410 | 410 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | PRC for Signalled Lanes (%): | | -67.0 | | Total Delay for Signalled Lanes (pcuHr): | | 867.00 | | Cycle Time (s): | | 128 | |
| | | PRC Over All Lanes (%): | | -67.0 | | Total Delay Over All Lanes(pcuHr): | | 867.54 | | | | | |

Full Input Data And Results

Scenario 5: 'Do Something 2030 + LTC AM' (FG7: 'Do Something 2030 + LTC AM', Plan 1: 'Network Control Plan 1')

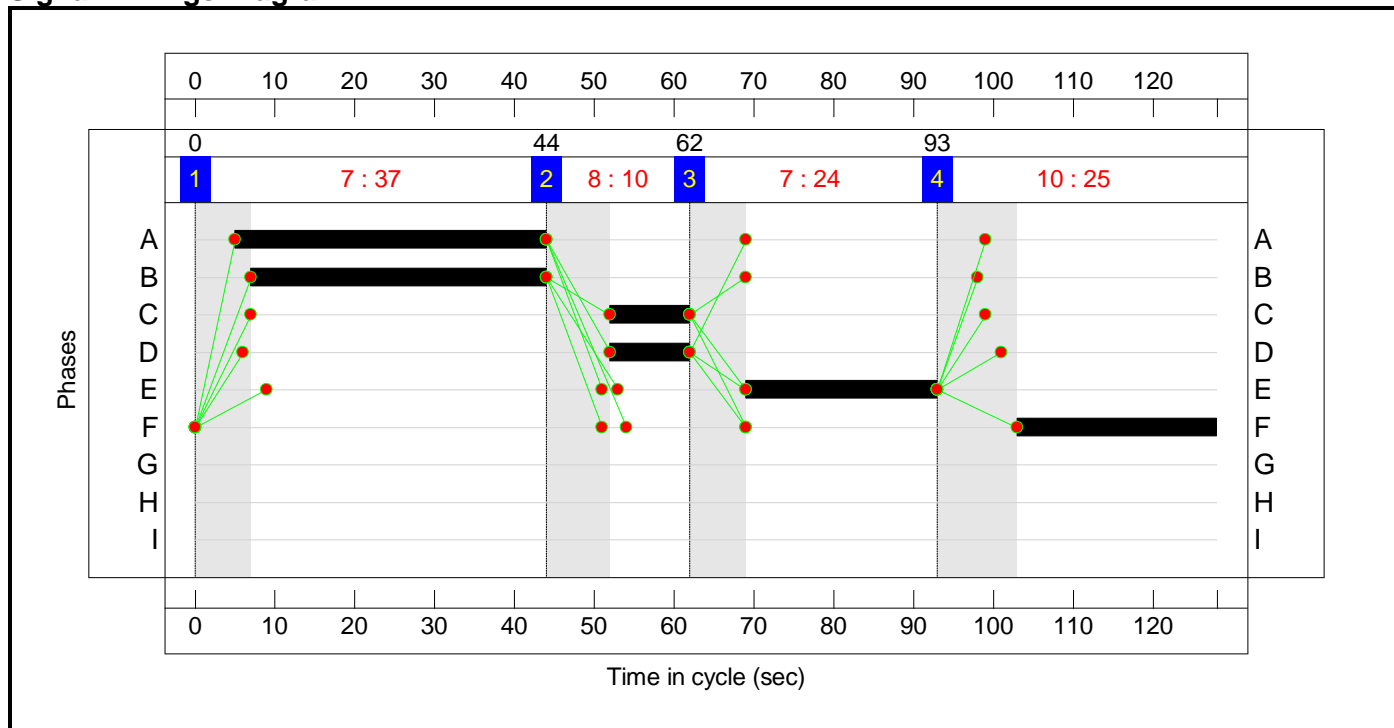
Stage Sequence Diagram



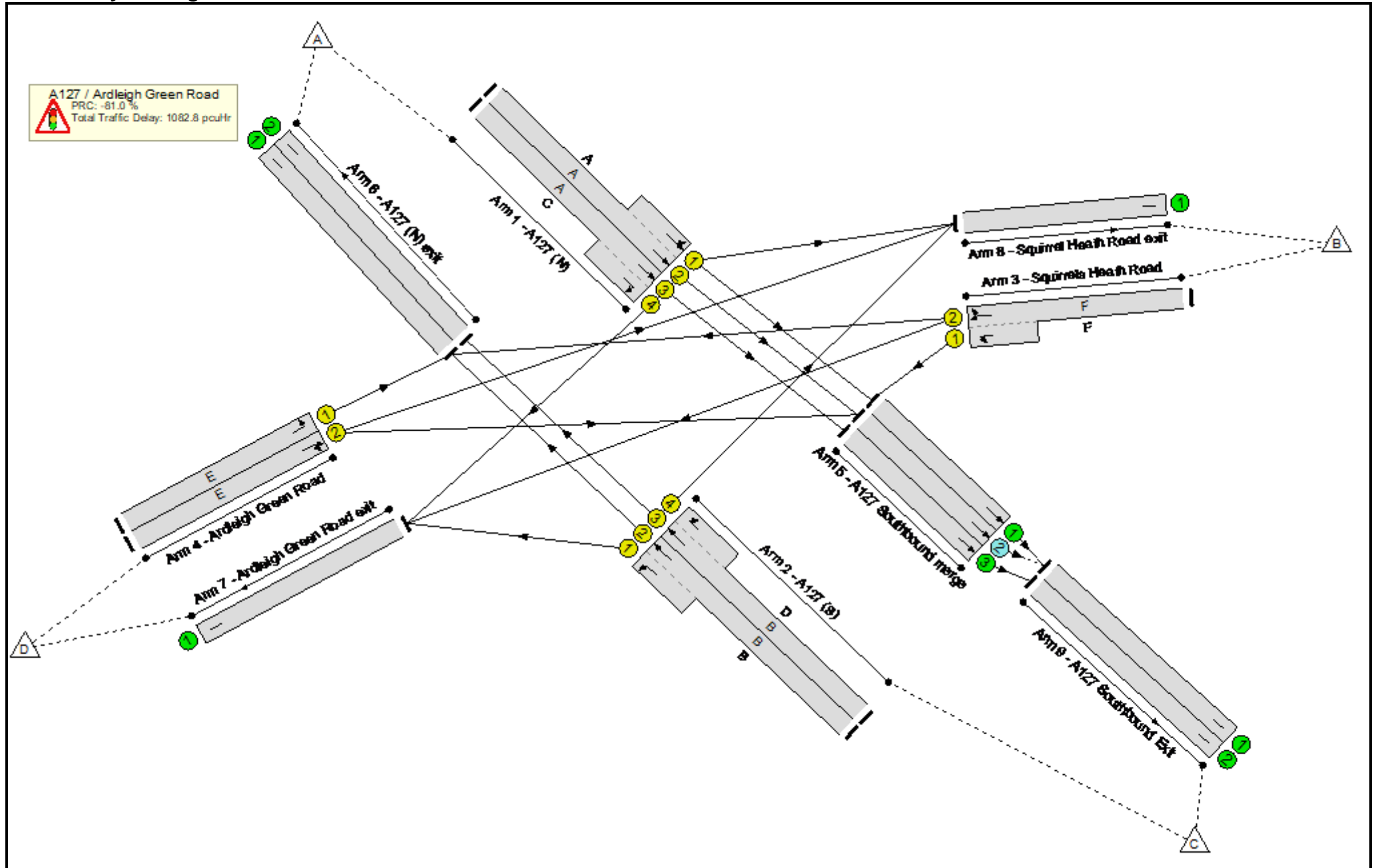
Stage Timings

| Stage | 1 | 2 | 3 | 4 |
|--------------|----|----|----|----|
| Duration | 37 | 10 | 24 | 25 |
| Change Point | 0 | 44 | 62 | 93 |

Signal Timings Diagram



Full Input Data And Results
Network Layout 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 | - | - | | - | - | - | - | - | - | 162.9% |
| A127 / Ardleigh Green Road | - | - | N/A | - | - | | - | - | - | - | - | - | 162.9% |
| 1/2+1/1 | A127 (N) Ahead Left | U | N/A | N/A | A | | 1 | 39 | - | 910 | 2075:1849 | 0+574 | 0.0 : 158.5% |
| 1/3+1/4 | A127 (N) Ahead Right | U | N/A | N/A | A C | | 1 | 39:10 | - | 1030 | 2085:1602 | 545+104 | 158.7 : 158.7% |
| 2/2+2/1 | A127 (S) Ahead Left | U | N/A | N/A | B | | 1 | 37 | - | 977 | 1985:1755 | 507+102 | 160.4 : 160.4% |
| 2/3+2/4 | A127 (S) Ahead Right | U | N/A | N/A | B D | | 1 | 37:10 | - | 657 | 2085:1629 | 263+140 | 162.9 : 162.9% |
| 3/2+3/1 | Squirrels Heath Road Left Right Ahead | U | N/A | N/A | F | | 1 | 25 | - | 634 | 1905:1651 | 385+12 | 159.8 : 159.8% |
| 4/1 | Ardleigh Green Road Left | U | N/A | N/A | E | | 1 | 24 | - | 73 | 1621 | 317 | 23.1% |
| 4/2 | Ardleigh Green Road Right Ahead | U | N/A | N/A | E | | 1 | 24 | - | 582 | 1839 | 359 | 162.0% |
| 5/1 | A127 Southbound merge Ahead | U | N/A | N/A | - | | - | - | - | 778 | Inf | Inf | 0.0% |
| 5/2 | A127 Southbound merge Ahead | O | N/A | N/A | - | | - | - | - | 349 | Inf | 969 | 22.2% |
| 5/3 | A127 Southbound merge Ahead | U | N/A | N/A | - | | - | - | - | 865 | Inf | Inf | 0.0% |
| 6/1 | A127 (N) exit | U | N/A | N/A | - | | - | - | - | 1077 | Inf | Inf | 0.0% |
| 6/2 | A127 (N) exit | U | N/A | N/A | - | | - | - | - | 429 | Inf | Inf | 0.0% |
| 7/1 | Ardleigh Green Road exit | U | N/A | N/A | - | | - | - | - | 753 | Inf | Inf | 0.0% |
| 8/1 | Squirrel Heath Road exit | U | N/A | N/A | - | | - | - | - | 612 | Inf | Inf | 0.0% |

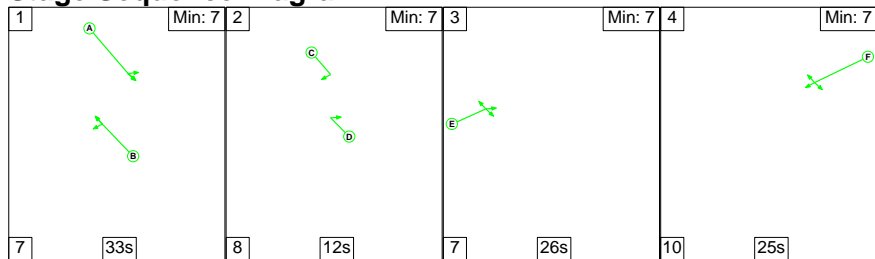
Full Input Data And Results

| 9/1 | A127 Southbound Exit | U | N/A | N/A | - | - | - | - | 1127 | Inf | Inf | 0.0% | |
|----------------------------|----------------------|------------------------------------|-----------------------|------------------------------|-------------------------------|-----------------------|------------------------------|--|---------------------|--|----------------------------------|----------------------------|----------------------|
| 9/2 | A127 Southbound Exit | U | N/A | N/A | - | - | - | - | 865 | Inf | Inf | 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 | - | - | 215 | 0 | 0 | 175.4 | 907.4 | 0.0 | 1082.8 | - | - | - | - |
| A127 / Ardleigh Green Road | - | - | 215 | 0 | 0 | 175.4 | 907.4 | 0.0 | 1082.8 | - | - | - | - |
| 1/2+1/1 | 910 | 574 | - | - | - | 32.6 | 169.4 | - | 201.9 | 798.7 | 45.6 | 169.4 | 214.9 |
| 1/3+1/4 | 1030 | 649 | - | - | - | 36.6 | 191.8 | - | 228.4 | 798.2 | 50.4 | 191.8 | 242.1 |
| 2/2+2/1 | 977 | 609 | - | - | - | 35.5 | 185.3 | - | 220.8 | 813.4 | 47.9 | 185.3 | 233.2 |
| 2/3+2/4 | 657 | 403 | - | - | - | 21.7 | 128.1 | - | 149.8 | 821.0 | 27.5 | 128.1 | 155.5 |
| 3/2+3/1 | 634 | 397 | - | - | - | 26.4 | 119.9 | - | 146.3 | 830.6 | 38.5 | 119.9 | 158.5 |
| 4/1 | 73 | 73 | - | - | - | 0.9 | 0.1 | - | 1.0 | 50.8 | 2.2 | 0.1 | 2.3 |
| 4/2 | 582 | 359 | - | - | - | 21.8 | 112.7 | - | 134.5 | 831.9 | 31.4 | 112.7 | 144.1 |
| 5/1 | 491 | 491 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 215 | 215 | 215 | 0 | 0 | 0.0 | 0.1 | - | 0.1 | 2.4 | 0.0 | 0.1 | 0.1 |
| 5/3 | 545 | 545 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 699 | 699 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 263 | 263 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 472 | 472 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 379 | 379 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 706 | 706 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 545 | 545 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | PRC for Signalled Lanes (%): -81.0 | | | PRC Over All Lanes (%): -81.0 | | | Total Delay for Signalled Lanes (pcuHr): 1082.67 | | Total Delay Over All Lanes(pcuHr): 1082.82 | | Cycle Time (s): 128 | |

Full Input Data And Results

Scenario 6: 'Do Something 2030 + LTC PM' (FG8: 'Do Something 2030 + LTC PM', Plan 1: 'Network Control Plan 1')

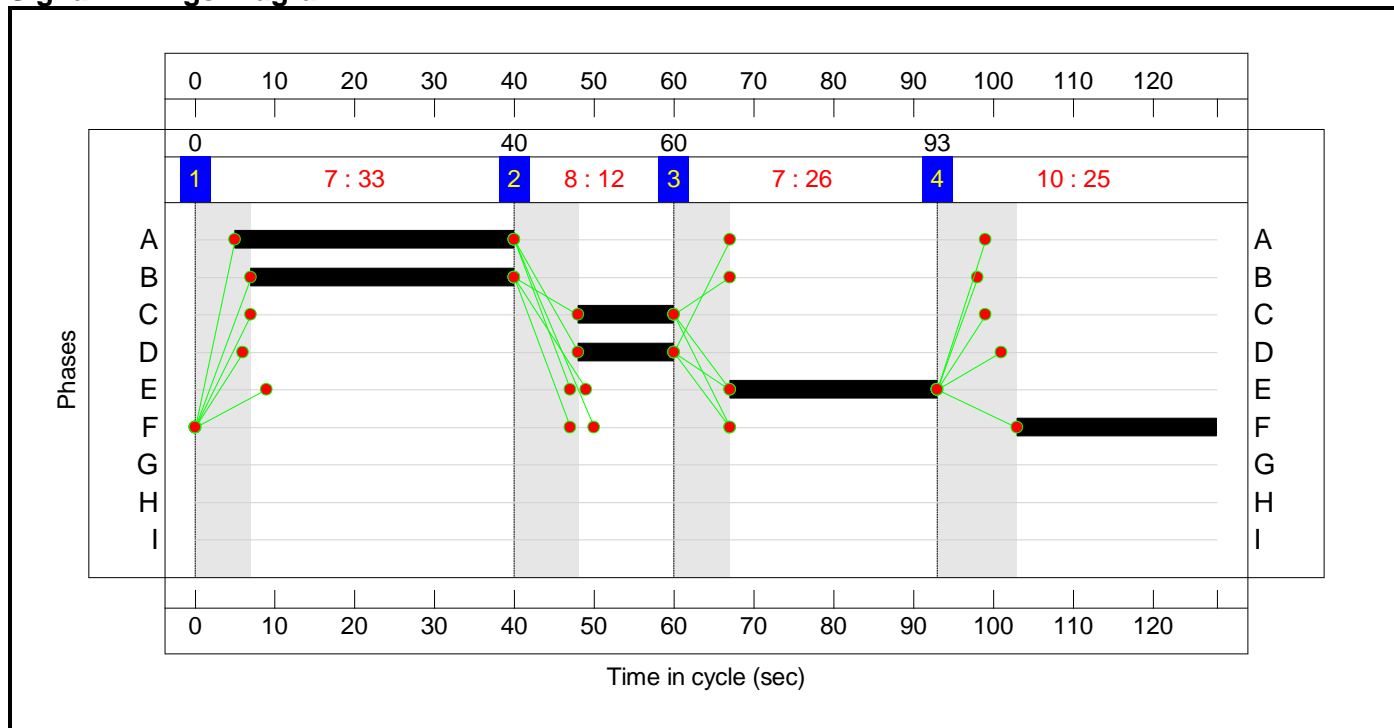
Stage Sequence Diagram



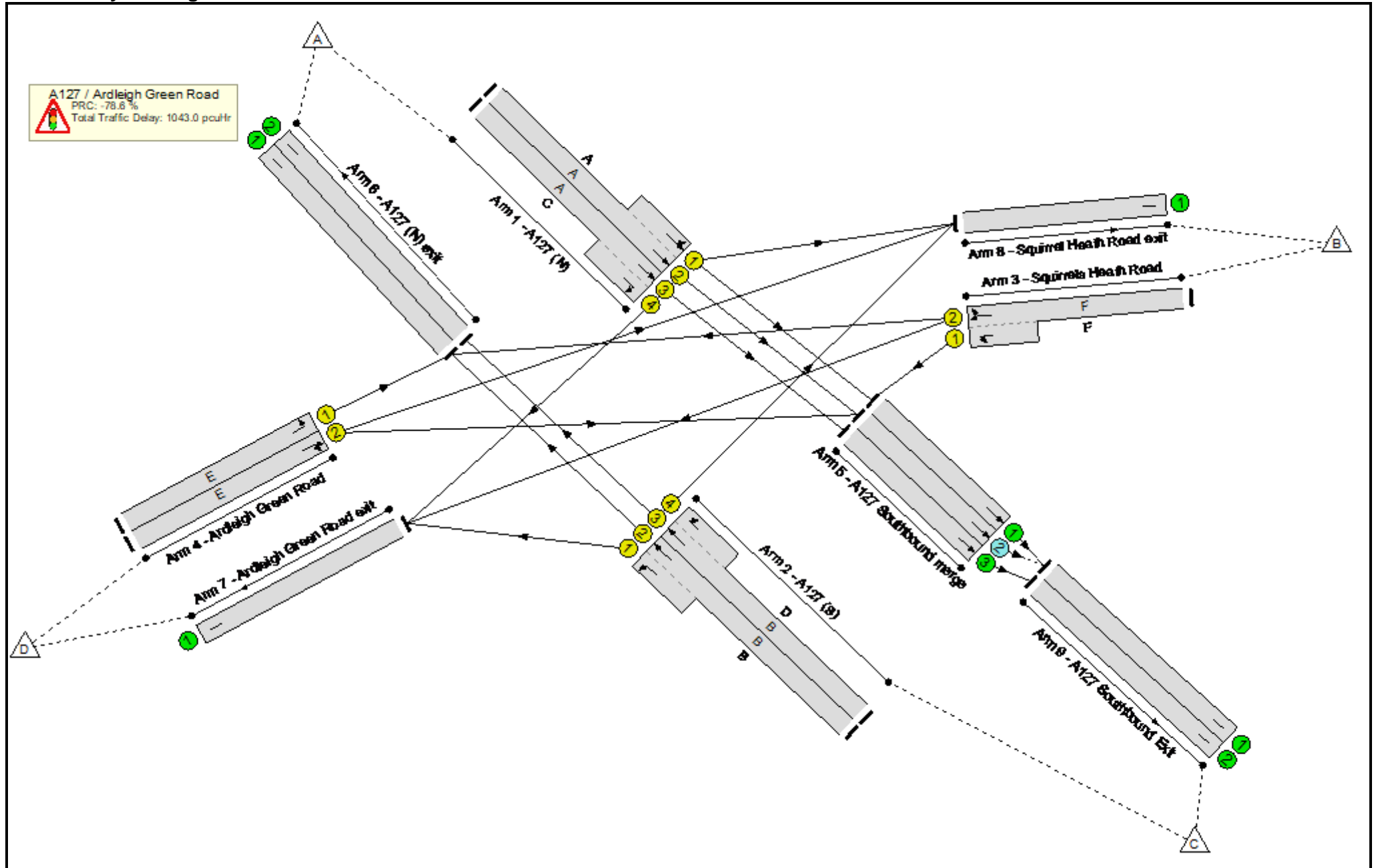
Stage Timings

| Stage | 1 | 2 | 3 | 4 |
|--------------|----|----|----|----|
| Duration | 33 | 12 | 26 | 25 |
| Change Point | 0 | 40 | 60 | 93 |

Signal Timings Diagram



Full Input Data And Results
Network Layout 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 | - | - | | - | - | - | - | - | - | 160.7% |
| A127 / Ardleigh Green Road | - | - | N/A | - | - | | - | - | - | - | - | - | 160.7% |
| 1/2+1/1 | A127 (N) Ahead Left | U | N/A | N/A | A | | 1 | 35 | - | 818 | 2075:1839 | 0+514 | 0.0 : 159.1% |
| 1/3+1/4 | A127 (N) Ahead Right | U | N/A | N/A | A C | | 1 | 35:12 | - | 949 | 2085:1602 | 451+148 | 159.4 : 155.4% |
| 2/2+2/1 | A127 (S) Ahead Left | U | N/A | N/A | B | | 1 | 33 | - | 883 | 1985:1755 | 437+118 | 158.9 : 158.9% |
| 2/3+2/4 | A127 (S) Ahead Right | U | N/A | N/A | B D | | 1 | 33:12 | - | 774 | 2085:1629 | 332+150 | 160.7 : 160.7% |
| 3/2+3/1 | Squirrels Heath Road Left Right Ahead | U | N/A | N/A | F | | 1 | 25 | - | 636 | 1909:1651 | 383+15 | 159.7 : 159.7% |
| 4/1 | Ardleigh Green Road Left | U | N/A | N/A | E | | 1 | 26 | - | 54 | 1621 | 342 | 15.8% |
| 4/2 | Ardleigh Green Road Right Ahead | U | N/A | N/A | E | | 1 | 26 | - | 604 | 1842 | 389 | 155.5% |
| 5/1 | A127 Southbound merge Ahead | U | N/A | N/A | - | | - | - | - | 673 | Inf | Inf | 0.0% |
| 5/2 | A127 Southbound merge Ahead | O | N/A | N/A | - | | - | - | - | 348 | Inf | 1013 | 22.1% |
| 5/3 | A127 Southbound merge Ahead | U | N/A | N/A | - | | - | - | - | 719 | Inf | Inf | 0.0% |
| 6/1 | A127 (N) exit | U | N/A | N/A | - | | - | - | - | 922 | Inf | Inf | 0.0% |
| 6/2 | A127 (N) exit | U | N/A | N/A | - | | - | - | - | 533 | Inf | Inf | 0.0% |
| 7/1 | Ardleigh Green Road exit | U | N/A | N/A | - | | - | - | - | 857 | Inf | Inf | 0.0% |
| 8/1 | Squirrel Heath Road exit | U | N/A | N/A | - | | - | - | - | 666 | Inf | Inf | 0.0% |

Full Input Data And Results

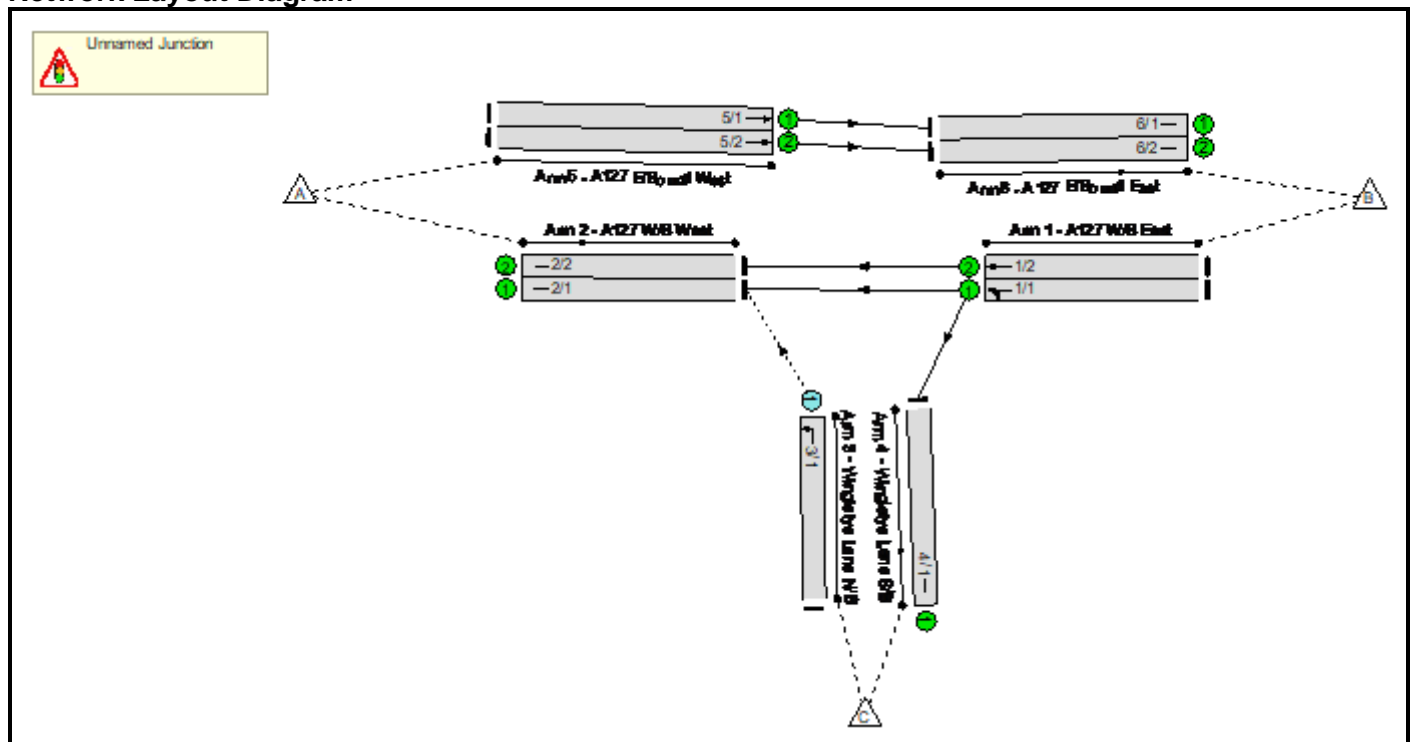
| 9/1 | A127 Southbound Exit | U | N/A | N/A | - | - | - | - | 1021 | Inf | Inf | 0.0% | |
|----------------------------|----------------------|------------------------------------|-----------------------|-------------------------------|-----------------------------|--|------------------------------|--|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| 9/2 | A127 Southbound Exit | U | N/A | N/A | - | - | - | - | 719 | Inf | Inf | 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 | - | - | 224 | 0 | 0 | 171.4 | 871.6 | 0.0 | 1043.0 | - | - | - | - |
| A127 / Ardleigh Green Road | - | - | 224 | 0 | 0 | 171.4 | 871.6 | 0.0 | 1043.0 | - | - | - | - |
| 1/2+1/1 | 818 | 514 | - | - | - | 30.0 | 153.2 | - | 183.2 | 806.5 | 41.1 | 153.2 | 194.4 |
| 1/3+1/4 | 949 | 599 | - | - | - | 34.5 | 176.3 | - | 210.8 | 799.6 | 45.9 | 176.3 | 222.2 |
| 2/2+2/1 | 883 | 556 | - | - | - | 32.4 | 164.9 | - | 197.3 | 804.3 | 42.8 | 164.9 | 207.7 |
| 2/3+2/4 | 774 | 482 | - | - | - | 26.4 | 147.5 | - | 173.9 | 808.8 | 34.0 | 147.5 | 181.5 |
| 3/2+3/1 | 636 | 398 | - | - | - | 26.4 | 120.2 | - | 146.7 | 830.2 | 38.6 | 120.2 | 158.8 |
| 4/1 | 54 | 54 | - | - | - | 0.6 | 0.1 | - | 0.7 | 47.5 | 1.6 | 0.1 | 1.7 |
| 4/2 | 604 | 389 | - | - | - | 21.2 | 109.1 | - | 130.3 | 776.6 | 31.4 | 109.1 | 140.5 |
| 5/1 | 423 | 423 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 224 | 224 | 224 | 0 | 0 | 0.0 | 0.1 | - | 0.1 | 2.3 | 0.0 | 0.1 | 0.1 |
| 5/3 | 451 | 451 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 600 | 600 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 332 | 332 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 541 | 541 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 421 | 421 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/1 | 647 | 647 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 9/2 | 451 | 451 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | PRC for Signalled Lanes (%): -78.6 | | PRC Over All Lanes (%): -78.6 | | Total Delay for Signalled Lanes (pcuHr): 1042.86 | | Total Delay Over All Lanes(pcuHr): 1043.00 | | Cycle Time (s): 128 | | | |

Full Input Data And Results
Full Input Data And Results

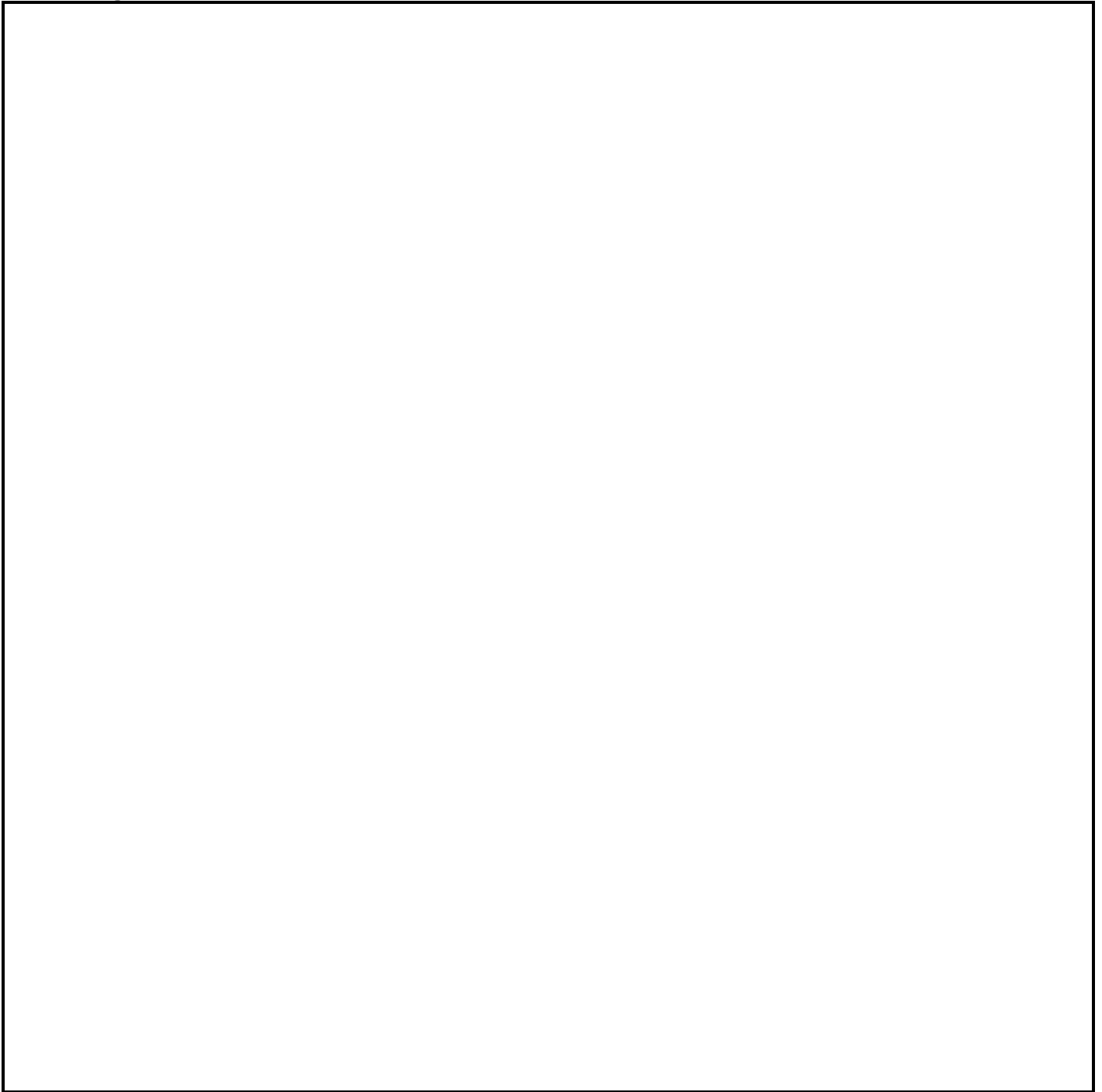
User and Project Details

| | |
|--------------------|---------------------------------|
| Project: | |
| Title: | |
| Location: | |
| Additional detail: | |
| File name: | 6 - A127 - Wingletye Lane.lsg3x |
| Author: | |
| Company: | |
| Address: | |

Network Layout Diagram



Phase Diagram



Phase Input Data

| Phase Name | Phase Type | Assoc. Phase | Street Min | Cont Min |
|------------|------------|--------------|------------|----------|
|------------|------------|--------------|------------|----------|

Phase Intergreens Matrix

| | Starting Phase |
|-------------------|---|
| Terminating Phase | This View cannot be shown as there are currently no Phases defined. |

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
|-----------|-----------------|

Full Input Data And Results

Stage Diagram

There are no Stages to display

Phase Delays

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

Prohibited Stage Change

| | To Stage |
|------------|---|
| From Stage | This View cannot be shown as there are currently no Stages defined. |

Full Input Data And Results

Give-Way Lane Input Data

| Junction: Unnamed Junction | | | | | | | | | | | |
|-----------------------------|------------|-----------------------------------|-----------------------------------|---------------|------------------|----------------|--------------------------|----------------------------|-----|------------------------|-------------------------------|
| 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) |
| 3/1 (Wingletye Lane N/B) | 2/1 (Left) | 715 | 0 | 1/1 | 0.22 | To 2/1 (Ahead) | - | - | - | - | - |

Full Input Data And Results

Lane Input Data

| Junction: Unnamed Junction | | | | | | | | | | | | |
|-----------------------------|-----------|--------|-------------|-----------|-----------------------|---------------|-----------------------------------|----------------|----------|---------------|-------------|--------------------|
| 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 (A127 W/B East) | U | | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | Arm 2 Ahead | Inf |
| | | | | | | | | | | | Arm 4 Left | 15.00 |
| 1/2 (A127 W/B East) | U | | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm 2 Ahead | Inf |
| 2/1 (A127 W/B West) | U | | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | | |
| 2/2 (A127 W/B West) | U | | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | | |
| 3/1 (Wingletye Lane N/B) | O | | 2 | 3 | 60.0 | Geom | - | 3.25 | 0.00 | Y | Arm 2 Left | 15.00 |
| 4/1 (Wingletye Lane S/B) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 5/1 (A127 E/Bound West) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 5/2 (A127 E/Bound West) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 6/1 (A127 E/Bound East) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 6/2 (A127 E/Bound East) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |

Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|--------------------------------------|------------|----------|----------|-----------|
| 1: 'Base Year 2023 AM' | 07:00 | 08:00 | 01:00 | |
| 2: 'Base Year 2023 PM' | 17:00 | 18:00 | 01:00 | |
| 3: 'Reference Case 2030 AM' | 07:00 | 08:00 | 01:00 | F1*1.0466 |
| 4: 'Reference Case 2030 PM' | 17:00 | 18:00 | 01:00 | F2*1.0521 |
| 7: 'Do Something 2030 + LTC AM' | 07:00 | 08:00 | 01:00 | F3+F5 |
| 8: 'Do Something 2030 + LTC PM' | 17:00 | 18:00 | 01:00 | F4+F6 |
| 9: 'Copy of Base Year 2023 AM' | 07:15 | 08:15 | 01:00 | |
| 10: 'Copy of Base Year 2023 PM' | 17:15 | 18:15 | 01:00 | |
| 11: 'Copy of Reference Case 2030 AM' | 07:15 | 08:15 | 01:00 | F1*1.0466 |
| 12: 'Copy of Reference Case 2030 PM' | 17:15 | 18:15 | 01:00 | F2*1.0521 |

Full Input Data And Results

Scenario 1: '2023 AM' (FG1: 'Base Year 2023 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | |
|--------|------|-------------|------|-----|------|
| | | A | B | C | Tot. |
| Origin | A | 0 | 1665 | 0 | 1665 |
| | B | 1152 | 0 | 802 | 1954 |
| | C | 242 | 0 | 0 | 242 |
| | Tot. | 1394 | 1665 | 802 | 3861 |

Traffic Lane Flows

| Lane | Scenario 1: 2023 AM |
|-----------------------------------|------------------------|
| Junction: Unnamed Junction | |
| 1/1 | 1378 |
| 1/2 | 576 |
| 2/1 | 818 |
| 2/2 | 576 |
| 3/1 | 242 |
| 4/1 | 802 |
| 5/1 | 833 |
| 5/2 | 832 |
| 6/1 | 833 |
| 6/2 | 832 |

Full Input Data And Results

Lane Saturation Flows

| Junction: Unnamed Junction | | | | | | | | |
|------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (A127 W/B East) | 3.65 | 0.00 | Y | Arm 2 Ahead | Inf | 41.8 % | 1871 | 1871 |
| | | | | Arm 4 Left | 15.00 | 58.2 % | | |
| 1/2 (A127 W/B East) | 3.65 | 0.00 | N | Arm 2 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 2/1 (A127 W/B West) | 3.65 | 0.00 | Y | | | | 1980 | 1980 |
| 2/2 (A127 W/B West) | 3.65 | 0.00 | N | | | | 2120 | 2120 |
| 3/1 (Wingletye Lane N/B) | 3.25 | 0.00 | Y | Arm 2 Left | 15.00 | 100.0 % | 1764 | 1764 |
| 4/1 (Wingletye Lane S/B Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (A127 E/Bound West Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A127 E/Bound West Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A127 E/Bound East Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A127 E/Bound East Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

Scenario 2: '2023 PM' (FG2: 'Base Year 2023 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | |
|--------|-------------|------|------|-----|------|
| | | A | B | C | Tot. |
| Origin | A | 0 | 1599 | 0 | 1599 |
| | B | 1109 | 0 | 876 | 1985 |
| | C | 242 | 0 | 0 | 242 |
| | Tot. | 1351 | 1599 | 876 | 3826 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 2: 2023 PM |
|-----------------------------------|------------------------|
| Junction: Unnamed Junction | |
| 1/1 | 1430 |
| 1/2 | 555 |
| 2/1 | 796 |
| 2/2 | 555 |
| 3/1 | 242 |
| 4/1 | 876 |
| 5/1 | 800 |
| 5/2 | 799 |
| 6/1 | 800 |
| 6/2 | 799 |

Lane Saturation Flows

| Junction: Unnamed Junction | | | | | | | | | |
|------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|-----|
| 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 (A127 W/B East) | 3.65 | 0.00 | Y | Arm 2 Ahead | Inf | 38.7 % | 1866 | 1866 | |
| | | | | Arm 4 Left | 15.00 | 61.3 % | | | |
| 1/2 (A127 W/B East) | 3.65 | 0.00 | N | Arm 2 Ahead | Inf | 100.0 % | 2120 | 2120 | |
| 2/1 (A127 W/B West) | 3.65 | 0.00 | Y | | | | 1980 | 1980 | |
| 2/2 (A127 W/B West) | 3.65 | 0.00 | N | | | | 2120 | 2120 | |
| 3/1 (Wingletye Lane N/B) | 3.25 | 0.00 | Y | Arm 2 Left | 15.00 | 100.0 % | 1764 | 1764 | |
| 4/1 (Wingletye Lane S/B Lane 1) | Infinite Saturation Flow | | | | | | | Inf | Inf |
| 5/1 (A127 E/Bound West Lane 1) | Infinite Saturation Flow | | | | | | | Inf | Inf |
| 5/2 (A127 E/Bound West Lane 2) | Infinite Saturation Flow | | | | | | | Inf | Inf |
| 6/1 (A127 E/Bound East Lane 1) | Infinite Saturation Flow | | | | | | | Inf | Inf |
| 6/2 (A127 E/Bound East Lane 2) | Infinite Saturation Flow | | | | | | | Inf | Inf |

Full Input Data And Results

Scenario 3: '2030 AM' (FG3: 'Reference Case 2030 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | |
|--------|-------------|------|------|------|------|
| | A | B | C | Tot. | |
| Origin | A | 0 | 1743 | 0 | 1743 |
| | B | 1206 | 0 | 839 | 2045 |
| | C | 253 | 0 | 0 | 253 |
| | Tot. | 1459 | 1743 | 839 | 4041 |

Traffic Lane Flows

| Lane | Scenario 3: 2030 AM |
|-----------------------------------|------------------------|
| Junction: Unnamed Junction | |
| 1/1 | 1442 |
| 1/2 | 603 |
| 2/1 | 856 |
| 2/2 | 603 |
| 3/1 | 253 |
| 4/1 | 839 |
| 5/1 | 872 |
| 5/2 | 871 |
| 6/1 | 872 |
| 6/2 | 871 |

Full Input Data And Results

Lane Saturation Flows

| Junction: Unnamed Junction | | | | | | | | |
|------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (A127 W/B East) | 3.65 | 0.00 | Y | Arm 2 Ahead | Inf | 41.8 % | 1871 | 1871 |
| | | | | Arm 4 Left | 15.00 | 58.2 % | | |
| 1/2 (A127 W/B East) | 3.65 | 0.00 | N | Arm 2 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 2/1 (A127 W/B West) | 3.65 | 0.00 | Y | | | | 1980 | 1980 |
| 2/2 (A127 W/B West) | 3.65 | 0.00 | N | | | | 2120 | 2120 |
| 3/1 (Wingletye Lane N/B) | 3.25 | 0.00 | Y | Arm 2 Left | 15.00 | 100.0 % | 1764 | 1764 |
| 4/1 (Wingletye Lane S/B Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (A127 E/Bound West Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A127 E/Bound West Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A127 E/Bound East Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A127 E/Bound East Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

Scenario 4: '2030 PM' (FG4: 'Reference Case 2030 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | |
|--------|-------------|------|------|-----|------|
| | | A | B | C | Tot. |
| Origin | A | 0 | 1682 | 0 | 1682 |
| | B | 1167 | 0 | 922 | 2089 |
| | C | 255 | 0 | 0 | 255 |
| | Tot. | 1422 | 1682 | 922 | 4026 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 4: 2030 PM |
|-----------------------------------|------------------------|
| Junction: Unnamed Junction | |
| 1/1 | 1505 |
| 1/2 | 584 |
| 2/1 | 838 |
| 2/2 | 584 |
| 3/1 | 255 |
| 4/1 | 922 |
| 5/1 | 841 |
| 5/2 | 841 |
| 6/1 | 841 |
| 6/2 | 841 |

Lane Saturation Flows

| Junction: Unnamed Junction | | | | | | | | |
|------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (A127 W/B East) | 3.65 | 0.00 | Y | Arm 2 Ahead | Inf | 38.7 % | 1866 | 1866 |
| | | | | Arm 4 Left | 15.00 | 61.3 % | | |
| 1/2 (A127 W/B East) | 3.65 | 0.00 | N | Arm 2 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 2/1 (A127 W/B West) | 3.65 | 0.00 | Y | | | | 1980 | 1980 |
| 2/2 (A127 W/B West) | 3.65 | 0.00 | N | | | | 2120 | 2120 |
| 3/1 (Wingletye Lane N/B) | 3.25 | 0.00 | Y | Arm 2 Left | 15.00 | 100.0 % | 1764 | 1764 |
| 4/1 (Wingletye Lane S/B Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (A127 E/Bound West Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A127 E/Bound West Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A127 E/Bound East Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A127 E/Bound East Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

Scenario 5: '2030 AM + LTC' (FG7: 'Do Something 2030 + LTC AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | |
|--------|------|-------------|------|------|------|
| | | A | B | C | Tot. |
| Origin | A | 0 | 1743 | 0 | 1743 |
| | B | 1394 | 0 | 1061 | 2455 |
| | C | 159 | 0 | 0 | 159 |
| | Tot. | 1553 | 1743 | 1061 | 4357 |

Traffic Lane Flows

| Lane | Scenario 5: 2030 AM + LTC |
|-----------------------------------|------------------------------|
| Junction: Unnamed Junction | |
| 1/1 | 1220 |
| 1/2 | 1235 |
| 2/1 | 318 |
| 2/2 | 1235 |
| 3/1 | 159 |
| 4/1 | 1061 |
| 5/1 | 872 |
| 5/2 | 871 |
| 6/1 | 872 |
| 6/2 | 871 |

Full Input Data And Results

Lane Saturation Flows

| Junction: Unnamed Junction | | | | | | | | |
|------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (A127 W/B East) | 3.65 | 0.00 | Y | Arm 2 Ahead | Inf | 13.0 % | 1822 | 1822 |
| | | | | Arm 4 Left | 15.00 | 87.0 % | | |
| 1/2 (A127 W/B East) | 3.65 | 0.00 | N | Arm 2 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 2/1 (A127 W/B West) | 3.65 | 0.00 | Y | | | | 1980 | 1980 |
| 2/2 (A127 W/B West) | 3.65 | 0.00 | N | | | | 2120 | 2120 |
| 3/1 (Wingletye Lane N/B) | 3.25 | 0.00 | Y | Arm 2 Left | 15.00 | 100.0 % | 1764 | 1764 |
| 4/1 (Wingletye Lane S/B Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (A127 E/Bound West Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A127 E/Bound West Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A127 E/Bound East Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A127 E/Bound East Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

Scenario 6: '2030 PM + LTC' (FG8: 'Do Something 2030 + LTC PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | |
|--------|-------------|------|------|------|------|
| | | A | B | C | Tot. |
| Origin | A | 0 | 1682 | 0 | 1682 |
| | B | 1300 | 0 | 1039 | 2339 |
| | C | 193 | 0 | 0 | 193 |
| | Tot. | 1493 | 1682 | 1039 | 4214 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 6: 2030 PM + LTC |
|-----------------------------------|------------------------------|
| Junction: Unnamed Junction | |
| 1/1 | 1161 |
| 1/2 | 1178 |
| 2/1 | 315 |
| 2/2 | 1178 |
| 3/1 | 193 |
| 4/1 | 1039 |
| 5/1 | 841 |
| 5/2 | 841 |
| 6/1 | 841 |
| 6/2 | 841 |

Lane Saturation Flows

| Junction: Unnamed Junction | | | | | | | | |
|------------------------------------|--------------------------|----------|---------------|---------------------------|--------------------|------------------|-------------------|--------------------------|
| 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 (A127 W/B East) | 3.65 | 0.00 | Y | Arm 2 Ahead Arm 4 Left | Inf 15.00 | 10.5 % 89.5 % | 1817 | 1817 |
| 1/2 (A127 W/B East) | 3.65 | 0.00 | N | Arm 2 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 2/1 (A127 W/B West) | 3.65 | 0.00 | Y | | | | 1980 | 1980 |
| 2/2 (A127 W/B West) | 3.65 | 0.00 | N | | | | 2120 | 2120 |
| 3/1 (Wingletye Lane N/B) | 3.25 | 0.00 | Y | Arm 2 Left | 15.00 | 100.0 % | 1764 | 1764 |
| 4/1 (Wingletye Lane S/B Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (A127 E/Bound West Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A127 E/Bound West Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A127 E/Bound East Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A127 E/Bound East Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

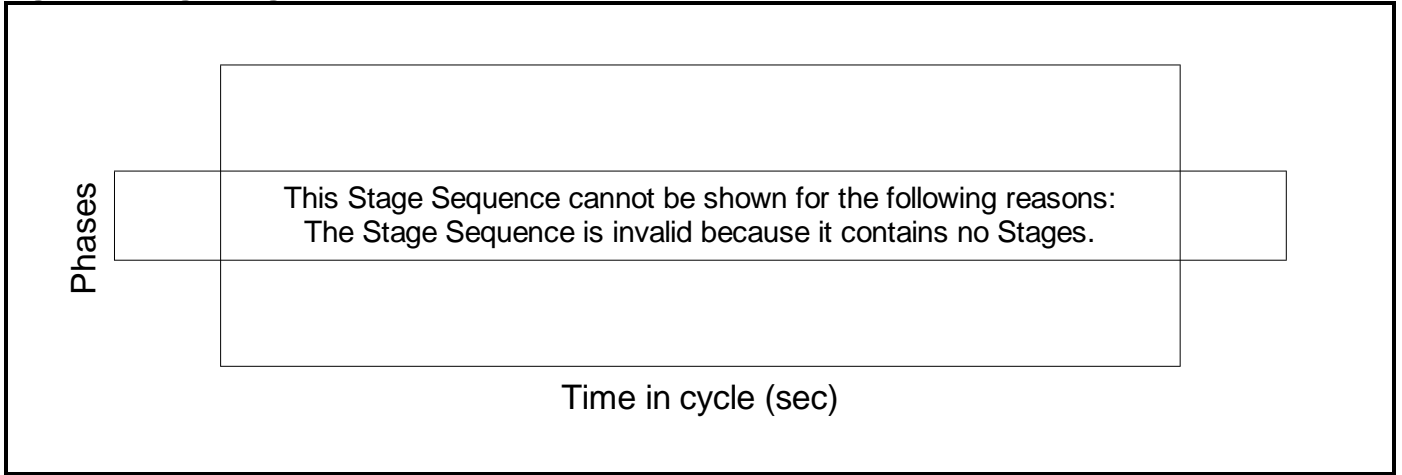
Scenario 1: '2023 AM' (FG1: 'Base Year 2023 AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Timings

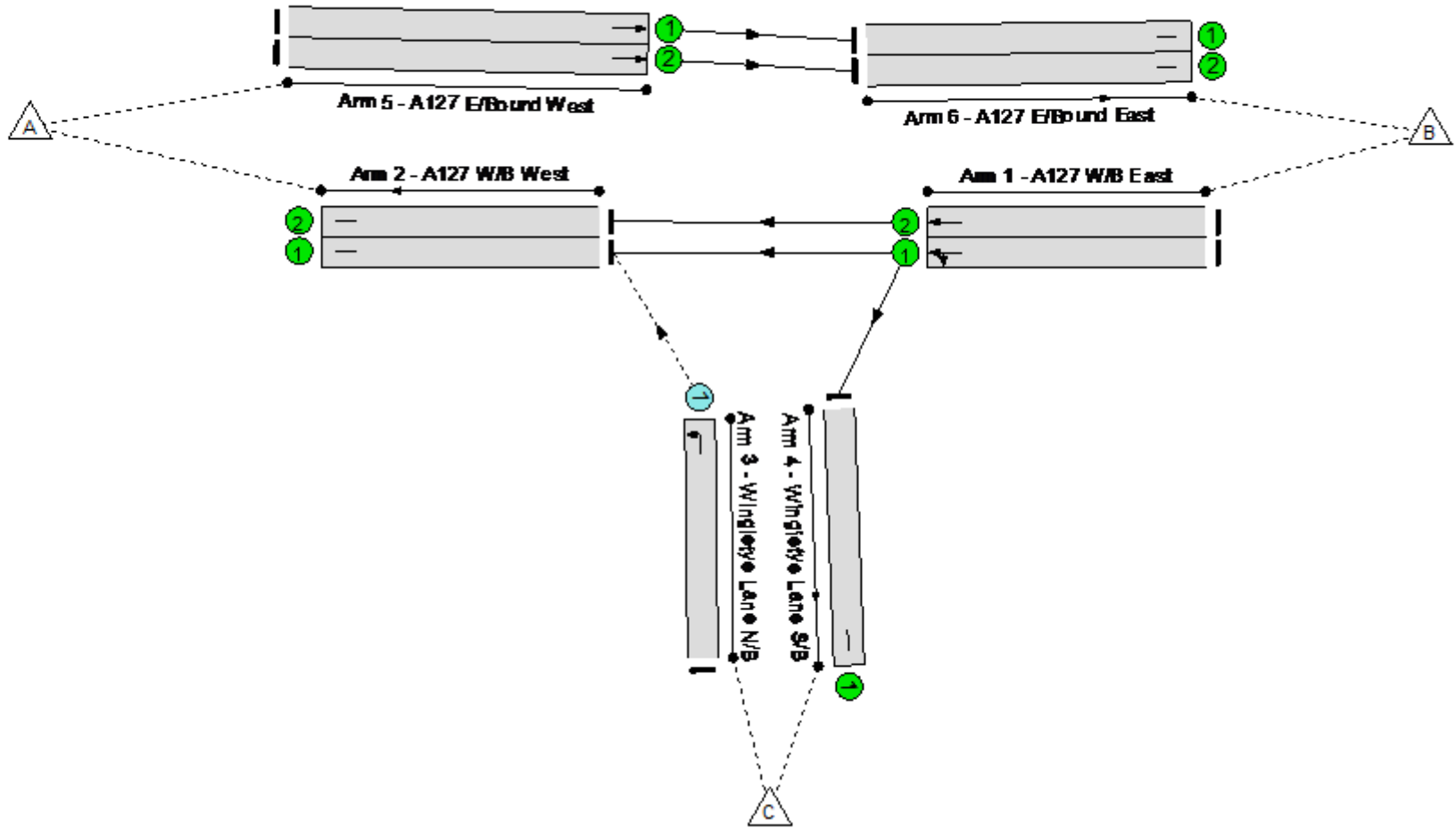

| Stage |
|--------------|
| Duration |
| Change Point |

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Unnamed Junction
PRC: 22.2 %
Total Traffic Delay: 2.5 pu Hr



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 | - | - | | - | - | - | - | - | - | 73.7% |
| Unnamed Junction | - | - | N/A | - | - | | - | - | - | - | - | - | 73.7% |
| 1/1 | A127 W/B East Ahead Left | U | N/A | N/A | - | | - | - | - | 1378 | 1871 | 1871 | 73.7% |
| 1/2 | A127 W/B East Ahead | U | N/A | N/A | - | | - | - | - | 576 | 2120 | 2120 | 27.2% |
| 2/1 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 818 | 1980 | 1980 | 41.3% |
| 2/2 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 576 | 2120 | 2120 | 27.2% |
| 3/1 | Wingletye Lane N/B Left | O | N/A | N/A | - | | - | - | - | 242 | 1764 | 588 | 41.1% |
| 4/1 | Wingletye Lane S/B | U | N/A | N/A | - | | - | - | - | 802 | Inf | Inf | 0.0% |
| 5/1 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 833 | Inf | Inf | 0.0% |
| 5/2 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 832 | Inf | Inf | 0.0% |
| 6/1 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 833 | Inf | Inf | 0.0% |
| 6/2 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 832 | Inf | Inf | 0.0% |

Full Input Data And Results

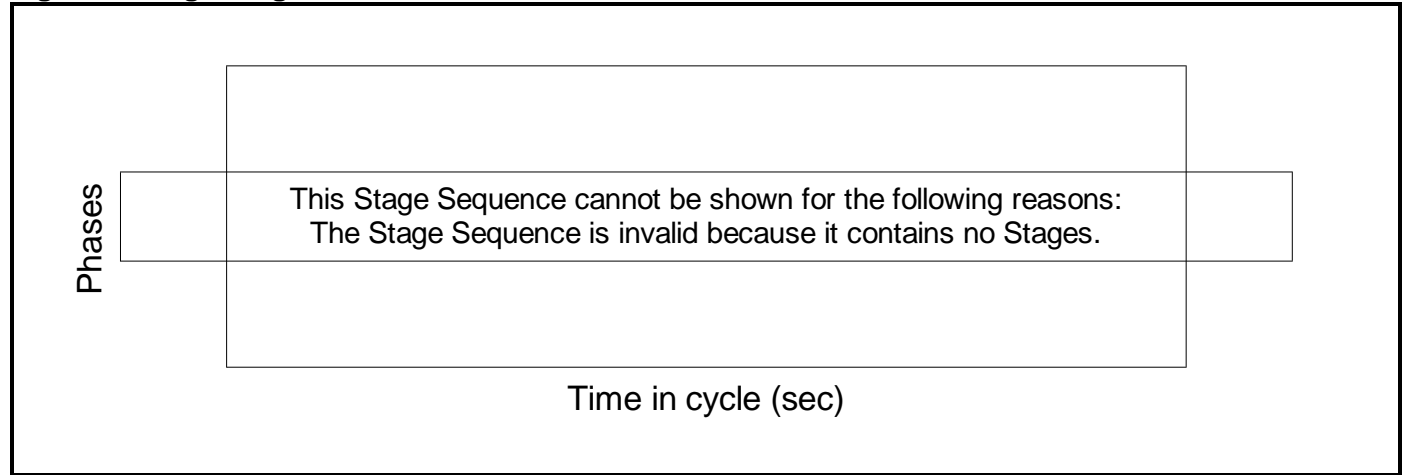
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|-------------------------|----------------|---------------|------------------------------|------------------------------|-----------------------------|--|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network | - | - | 242 | 0 | 0 | 0.0 | 2.5 | 0.0 | 2.5 | - | - | - | - |
| Unnamed Junction | - | - | 242 | 0 | 0 | 0.0 | 2.5 | 0.0 | 2.5 | - | - | - | - |
| 1/1 | 1378 | 1378 | - | - | - | 0.0 | 1.4 | - | 1.4 | 3.6 | 0.0 | 1.4 | 1.4 |
| 1/2 | 576 | 576 | - | - | - | 0.0 | 0.2 | - | 0.2 | 1.2 | 0.0 | 0.2 | 0.2 |
| 2/1 | 818 | 818 | - | - | - | 0.0 | 0.4 | - | 0.4 | 1.5 | 0.0 | 0.4 | 0.4 |
| 2/2 | 576 | 576 | - | - | - | 0.0 | 0.2 | - | 0.2 | 1.2 | 0.0 | 0.2 | 0.2 |
| 3/1 | 242 | 242 | 242 | 0 | 0 | 0.0 | 0.3 | - | 0.3 | 5.2 | 0.0 | 0.3 | 0.3 |
| 4/1 | 802 | 802 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 833 | 833 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 832 | 832 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 833 | 833 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 832 | 832 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 0.0 | Total Delay for Signalled Lanes (pcuHr): | | 0.00 | Cycle Time (s): | | 90 | | |
| | | | PRC Over All Lanes (%): | | 22.2 | Total Delay Over All Lanes(pcuHr): | | 2.46 | | | | | |

Stage Sequence Diagram

Stage Timings

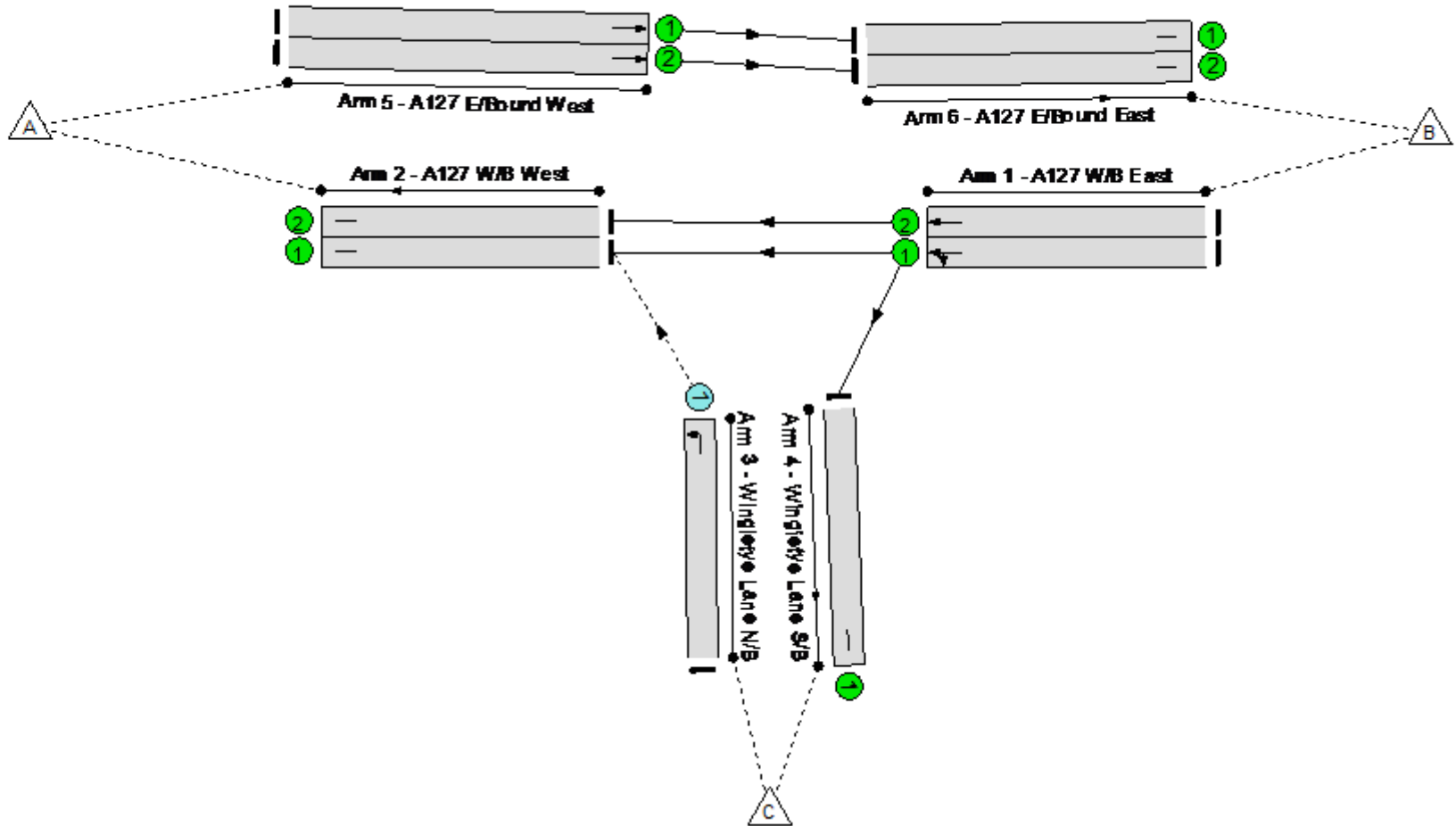
| Stage |
|--------------|
| Duration |
| Change Point |

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Unnamed Junction
PRC: 17.4 %
Total Traffic Delay: 2.7 puHr



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 | - | - | | - | - | - | - | - | - | 76.6% |
| Unnamed Junction | - | - | N/A | - | - | | - | - | - | - | - | - | 76.6% |
| 1/1 | A127 W/B East Ahead Left | U | N/A | N/A | - | | - | - | - | 1430 | 1866 | 1866 | 76.6% |
| 1/2 | A127 W/B East Ahead | U | N/A | N/A | - | | - | - | - | 555 | 2120 | 2120 | 26.2% |
| 2/1 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 796 | 1980 | 1980 | 40.2% |
| 2/2 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 555 | 2120 | 2120 | 26.2% |
| 3/1 | Wingletye Lane N/B Left | O | N/A | N/A | - | | - | - | - | 242 | 1764 | 593 | 40.8% |
| 4/1 | Wingletye Lane S/B | U | N/A | N/A | - | | - | - | - | 876 | Inf | Inf | 0.0% |
| 5/1 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 800 | Inf | Inf | 0.0% |
| 5/2 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 799 | Inf | Inf | 0.0% |
| 6/1 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 800 | Inf | Inf | 0.0% |
| 6/2 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 799 | Inf | Inf | 0.0% |

Full Input Data And Results

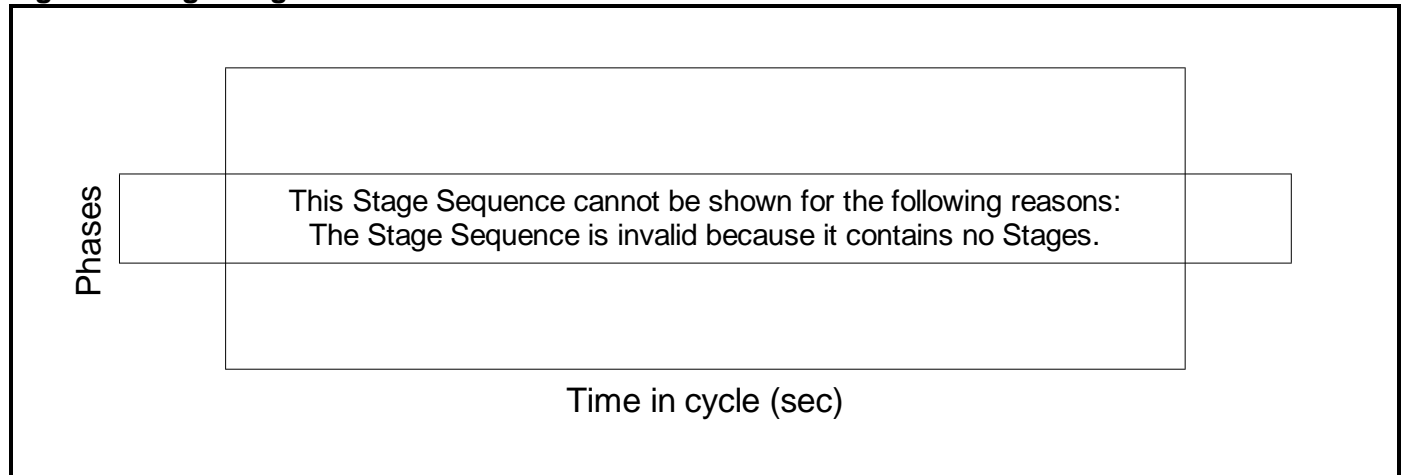
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|-------------------------|----------------|---------------|------------------------------|------------------------------|-----------------------------|--|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network | - | - | 242 | 0 | 0 | 0.0 | 2.7 | 0.0 | 2.7 | - | - | - | - |
| Unnamed Junction | - | - | 242 | 0 | 0 | 0.0 | 2.7 | 0.0 | 2.7 | - | - | - | - |
| 1/1 | 1430 | 1430 | - | - | - | 0.0 | 1.6 | - | 1.6 | 4.1 | 0.0 | 1.6 | 1.6 |
| 1/2 | 555 | 555 | - | - | - | 0.0 | 0.2 | - | 0.2 | 1.1 | 0.0 | 0.2 | 0.2 |
| 2/1 | 796 | 796 | - | - | - | 0.0 | 0.3 | - | 0.3 | 1.5 | 0.0 | 0.3 | 0.3 |
| 2/2 | 555 | 555 | - | - | - | 0.0 | 0.2 | - | 0.2 | 1.1 | 0.0 | 0.2 | 0.2 |
| 3/1 | 242 | 242 | 242 | 0 | 0 | 0.0 | 0.3 | - | 0.3 | 5.1 | 0.0 | 0.3 | 0.3 |
| 4/1 | 876 | 876 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 800 | 800 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 799 | 799 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 800 | 800 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 799 | 799 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 0.0 | Total Delay for Signalled Lanes (pcuHr): | | 0.00 | Cycle Time (s): | | 90 | | |
| | | | PRC Over All Lanes (%): | | 17.4 | Total Delay Over All Lanes(pcuHr): | | 2.66 | | | | | |

Stage Sequence Diagram

Stage Timings

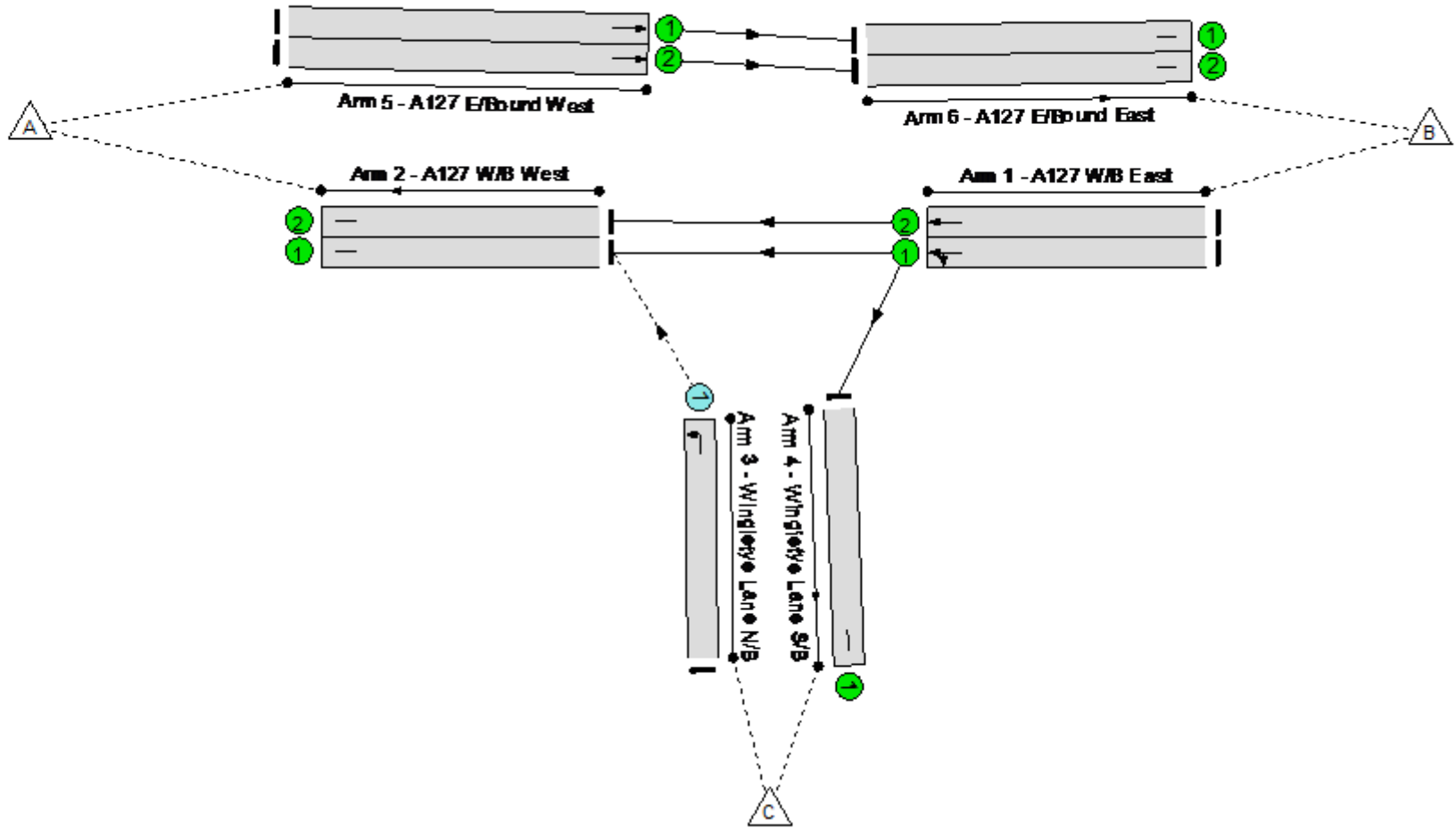
| Stage |
|--------------|
| Duration |
| Change Point |

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Unnamed Junction
PRC: 16.8 %
Total Traffic Delay: 2.8 pcu/Hr



Full Input Data And Results

Network Results

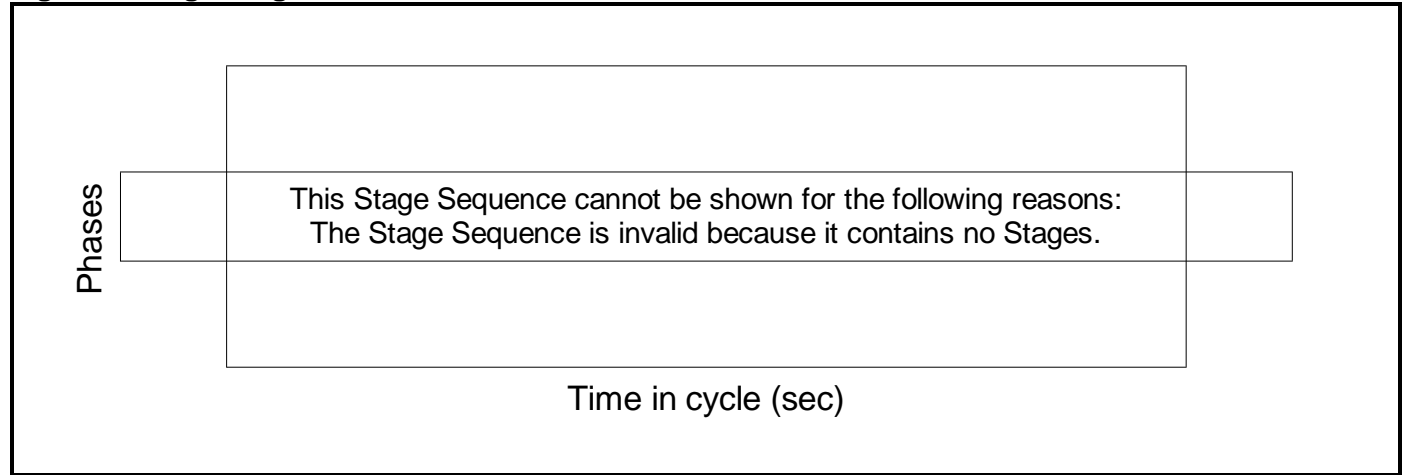
| Item | Lane Description | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|-------------------------|--------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|--------------|
| Network | - | - | N/A | - | - | | - | - | - | - | - | - | 77.1% |
| Unnamed Junction | - | - | N/A | - | - | | - | - | - | - | - | - | 77.1% |
| 1/1 | A127 W/B East Ahead Left | U | N/A | N/A | - | | - | - | - | 1442 | 1871 | 1871 | 77.1% |
| 1/2 | A127 W/B East Ahead | U | N/A | N/A | - | | - | - | - | 603 | 2120 | 2120 | 28.4% |
| 2/1 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 856 | 1980 | 1980 | 43.2% |
| 2/2 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 603 | 2120 | 2120 | 28.4% |
| 3/1 | Wingletye Lane N/B Left | O | N/A | N/A | - | | - | - | - | 253 | 1764 | 582 | 43.4% |
| 4/1 | Wingletye Lane S/B | U | N/A | N/A | - | | - | - | - | 839 | Inf | Inf | 0.0% |
| 5/1 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 872 | Inf | Inf | 0.0% |
| 5/2 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 871 | Inf | Inf | 0.0% |
| 6/1 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 872 | Inf | Inf | 0.0% |
| 6/2 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 871 | Inf | Inf | 0.0% |

Stage Sequence Diagram

Stage Timings

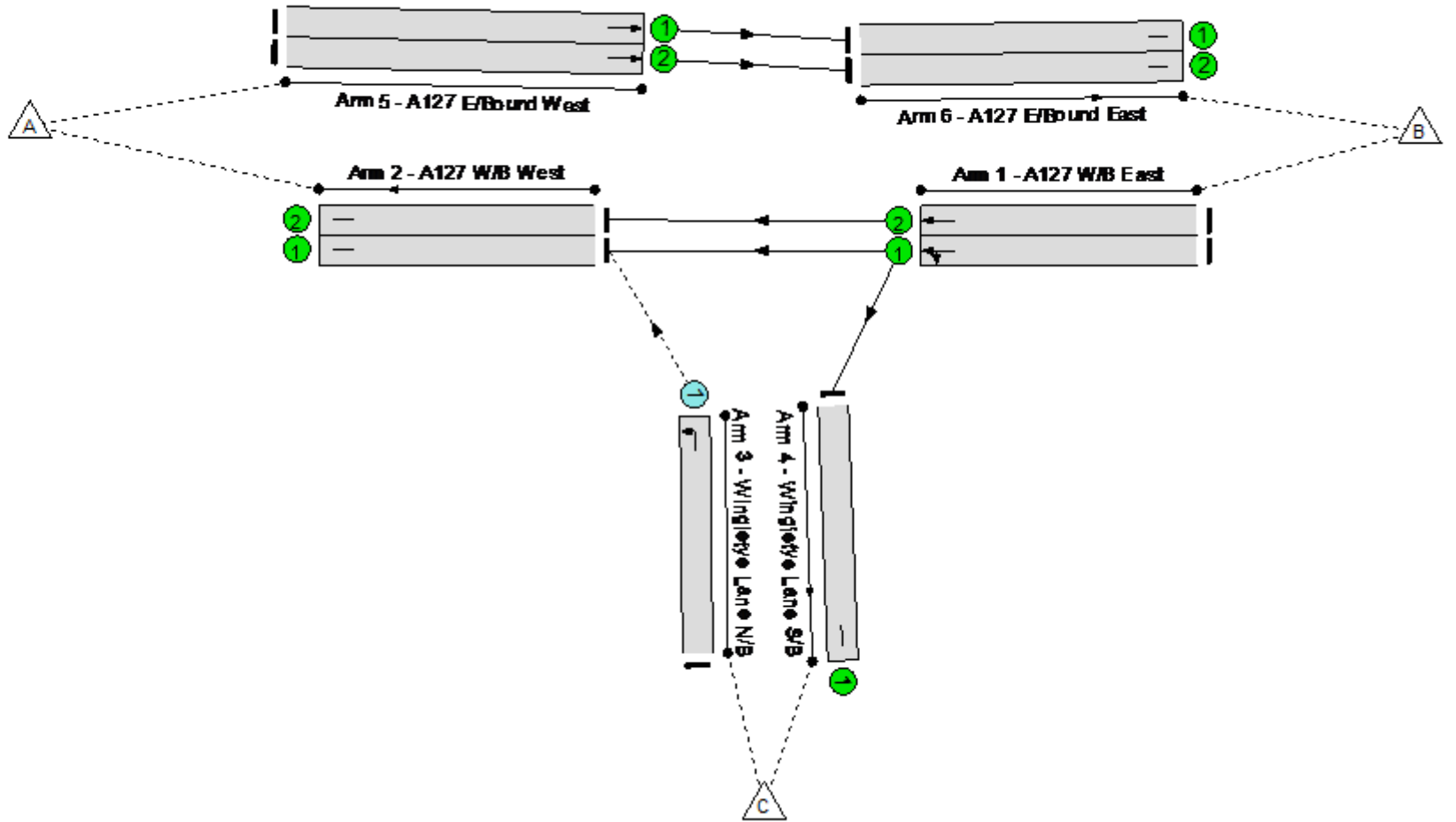

| Stage |
|--------------|
| Duration |
| Change Point |

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Unnamed Junction
PRC: 11.8 %
Total Traffic Delay: 3.2 pcu Hr



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 | - | - | | - | - | - | - | - | - | 80.7% |
| Unnamed Junction | - | - | N/A | - | - | | - | - | - | - | - | - | 80.7% |
| 1/1 | A127 W/B East Ahead Left | U | N/A | N/A | - | | - | - | - | 1505 | 1866 | 1866 | 80.7% |
| 1/2 | A127 W/B East Ahead | U | N/A | N/A | - | | - | - | - | 584 | 2120 | 2120 | 27.5% |
| 2/1 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 838 | 1980 | 1980 | 42.3% |
| 2/2 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 584 | 2120 | 2120 | 27.5% |
| 3/1 | Wingletye Lane N/B Left | O | N/A | N/A | - | | - | - | - | 255 | 1764 | 587 | 43.5% |
| 4/1 | Wingletye Lane S/B | U | N/A | N/A | - | | - | - | - | 922 | Inf | Inf | 0.0% |
| 5/1 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 841 | Inf | Inf | 0.0% |
| 5/2 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 841 | Inf | Inf | 0.0% |
| 6/1 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 841 | Inf | Inf | 0.0% |
| 6/2 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 841 | Inf | Inf | 0.0% |

Full Input Data And Results

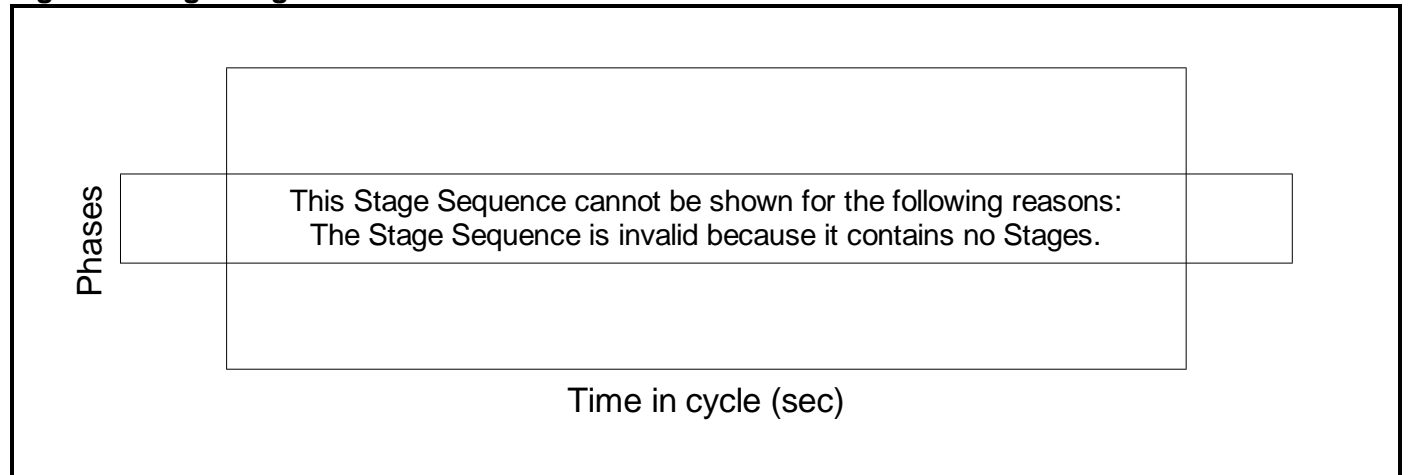
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|-------------------------|----------------|---------------|------------------------------|------------------------------|-----------------------------|--|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network | - | - | 255 | 0 | 0 | 0.0 | 3.2 | 0.0 | 3.2 | - | - | - | - |
| Unnamed Junction | - | - | 255 | 0 | 0 | 0.0 | 3.2 | 0.0 | 3.2 | - | - | - | - |
| 1/1 | 1505 | 1505 | - | - | - | 0.0 | 2.1 | - | 2.1 | 4.9 | 0.0 | 2.1 | 2.1 |
| 1/2 | 584 | 584 | - | - | - | 0.0 | 0.2 | - | 0.2 | 1.2 | 0.0 | 0.2 | 0.2 |
| 2/1 | 838 | 838 | - | - | - | 0.0 | 0.4 | - | 0.4 | 1.6 | 0.0 | 0.4 | 0.4 |
| 2/2 | 584 | 584 | - | - | - | 0.0 | 0.2 | - | 0.2 | 1.2 | 0.0 | 0.2 | 0.2 |
| 3/1 | 255 | 255 | 255 | 0 | 0 | 0.0 | 0.4 | - | 0.4 | 5.4 | 0.0 | 0.4 | 0.4 |
| 4/1 | 922 | 922 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 841 | 841 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 841 | 841 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 841 | 841 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 841 | 841 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 0.0 | Total Delay for Signalled Lanes (pcuHr): | | 0.00 | Cycle Time (s): | | 90 | | |
| | | | PRC Over All Lanes (%): | | 11.6 | Total Delay Over All Lanes(pcuHr): | | 3.19 | | | | | |

Stage Sequence Diagram

Stage Timings

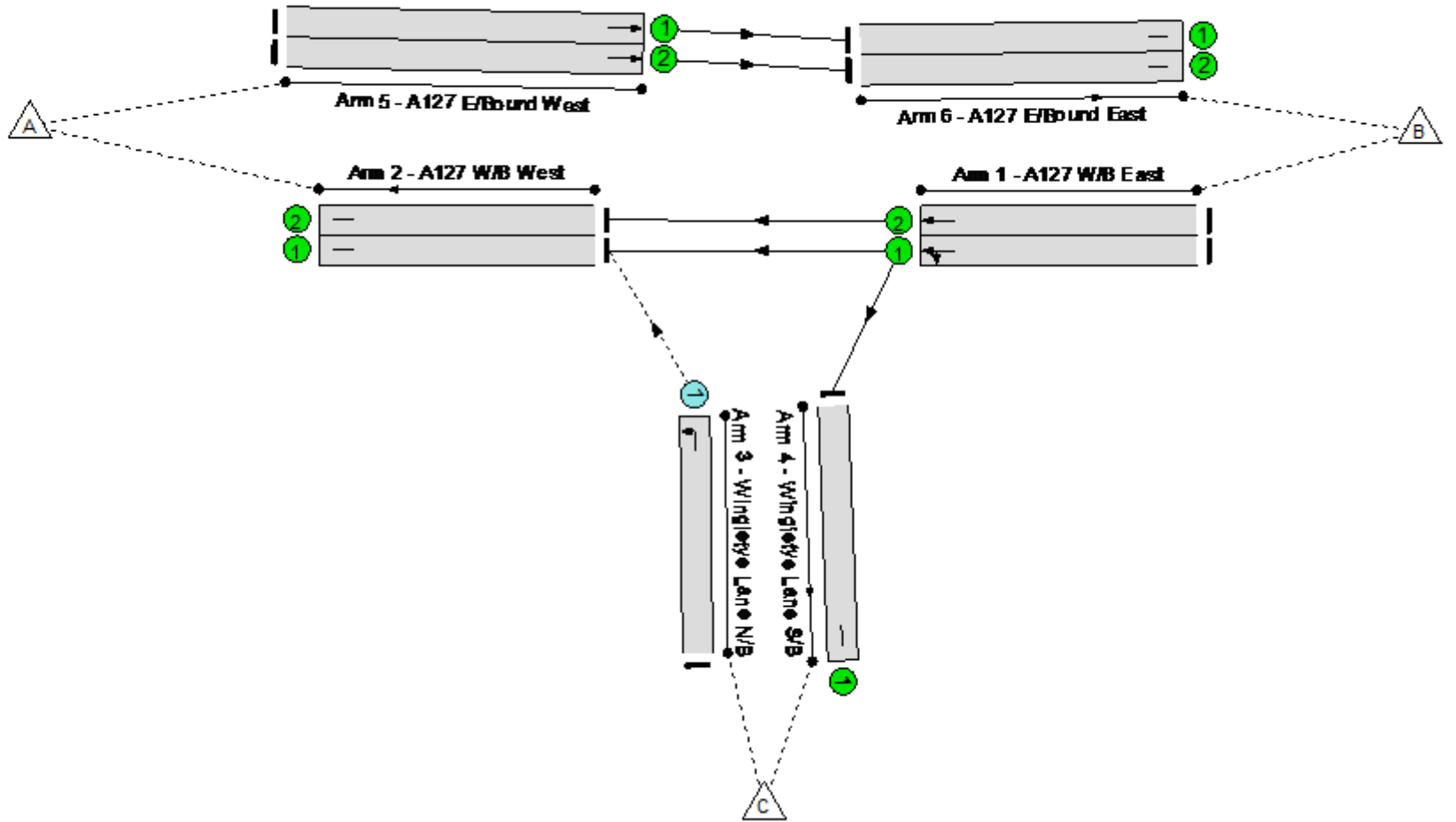

| Stage |
|--------------|
| Duration |
| Change Point |

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Unnamed Junction
PRC: 34.4 %
Total Traffic Delay: 2.7 puHr



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 | - | - | | - | - | - | - | - | - | 67.0% |
| Unnamed Junction | - | - | N/A | - | - | | - | - | - | - | - | - | 67.0% |
| 1/1 | A127 W/B East Ahead Left | U | N/A | N/A | - | | - | - | - | 1220 | 1822 | 1822 | 67.0% |
| 1/2 | A127 W/B East Ahead | U | N/A | N/A | - | | - | - | - | 1235 | 2120 | 2120 | 58.3% |
| 2/1 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 318 | 1980 | 1980 | 16.1% |
| 2/2 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 1235 | 2120 | 2120 | 58.3% |
| 3/1 | Wingletye Lane N/B Left | O | N/A | N/A | - | | - | - | - | 159 | 1764 | 680 | 23.4% |
| 4/1 | Wingletye Lane S/B | U | N/A | N/A | - | | - | - | - | 1061 | Inf | Inf | 0.0% |
| 5/1 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 872 | Inf | Inf | 0.0% |
| 5/2 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 871 | Inf | Inf | 0.0% |
| 6/1 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 872 | Inf | Inf | 0.0% |
| 6/2 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 871 | Inf | Inf | 0.0% |

Full Input Data And Results

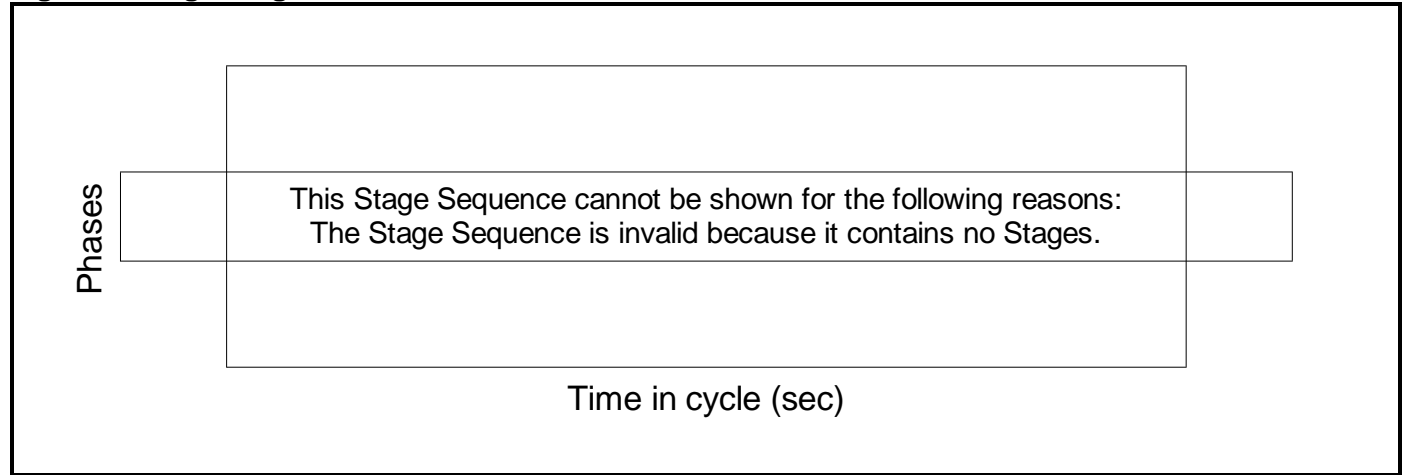
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|-------------------------|----------------|---------------|------------------------------|------------------------------|-----------------------------|--|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network | - | - | 159 | 0 | 0 | 0.0 | 2.7 | 0.0 | 2.7 | - | - | - | - |
| Unnamed Junction | - | - | 159 | 0 | 0 | 0.0 | 2.7 | 0.0 | 2.7 | - | - | - | - |
| 1/1 | 1220 | 1220 | - | - | - | 0.0 | 1.0 | - | 1.0 | 3.0 | 0.0 | 1.0 | 1.0 |
| 1/2 | 1235 | 1235 | - | - | - | 0.0 | 0.7 | - | 0.7 | 2.0 | 0.0 | 0.7 | 0.7 |
| 2/1 | 318 | 318 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.1 | 0.0 | 0.1 | 0.1 |
| 2/2 | 1235 | 1235 | - | - | - | 0.0 | 0.7 | - | 0.7 | 2.0 | 0.0 | 0.7 | 0.7 |
| 3/1 | 159 | 159 | 159 | 0 | 0 | 0.0 | 0.2 | - | 0.2 | 3.5 | 0.0 | 0.2 | 0.2 |
| 4/1 | 1061 | 1061 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 872 | 872 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 871 | 871 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 872 | 872 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 871 | 871 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 0.0 | Total Delay for Signalled Lanes (pcuHr): | | 0.00 | Cycle Time (s): | | 90 | | |
| | | | PRC Over All Lanes (%): | | 34.4 | Total Delay Over All Lanes(pcuHr): | | 2.65 | | | | | |

Stage Sequence Diagram

Stage Timings

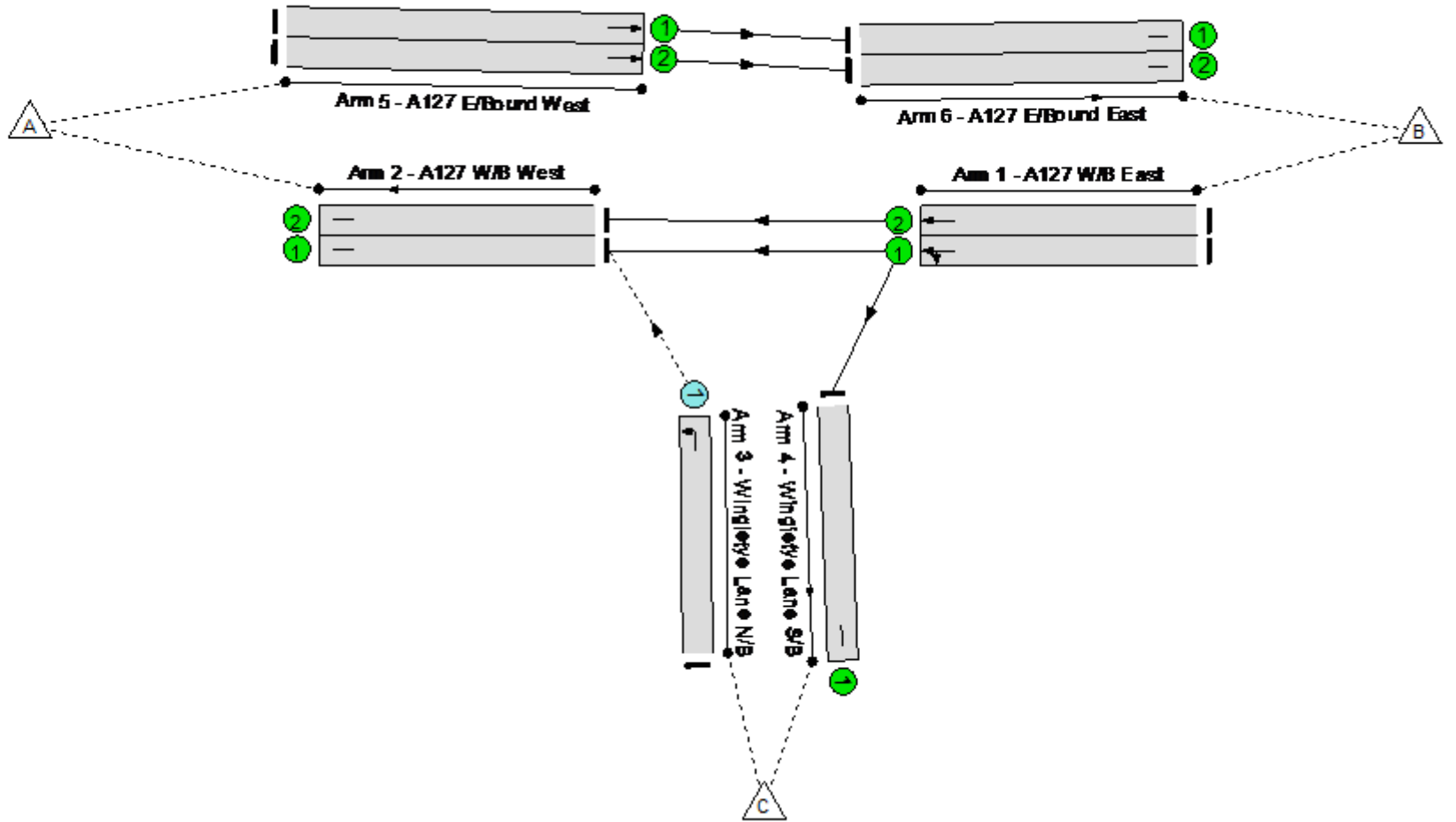
| Stage |
|--------------|
| Duration |
| Change Point |

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Unnamed Junction
PRC: 40.9 %
Total Traffic Delay: 2.4 pouHr



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 | - | - | | - | - | - | - | - | - | 63.9% |
| Unnamed Junction | - | - | N/A | - | - | | - | - | - | - | - | - | 63.9% |
| 1/1 | A127 W/B East Ahead Left | U | N/A | N/A | - | | - | - | - | 1161 | 1817 | 1817 | 63.9% |
| 1/2 | A127 W/B East Ahead | U | N/A | N/A | - | | - | - | - | 1178 | 2120 | 2120 | 55.6% |
| 2/1 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 315 | 1980 | 1980 | 15.9% |
| 2/2 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 1178 | 2120 | 2120 | 55.6% |
| 3/1 | Wingletye Lane N/B Left | O | N/A | N/A | - | | - | - | - | 193 | 1764 | 688 | 28.0% |
| 4/1 | Wingletye Lane S/B | U | N/A | N/A | - | | - | - | - | 1039 | Inf | Inf | 0.0% |
| 5/1 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 841 | Inf | Inf | 0.0% |
| 5/2 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 841 | Inf | Inf | 0.0% |
| 6/1 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 841 | Inf | Inf | 0.0% |
| 6/2 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 841 | Inf | Inf | 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 | - | - | 193 | 0 | 0 | 0.0 | 2.4 | 0.0 | 2.4 | - | - | - | - |
| Unnamed Junction | - | - | 193 | 0 | 0 | 0.0 | 2.4 | 0.0 | 2.4 | - | - | - | - |
| 1/1 | 1161 | 1161 | - | - | - | 0.0 | 0.9 | - | 0.9 | 2.7 | 0.0 | 0.9 | 0.9 |
| 1/2 | 1178 | 1178 | - | - | - | 0.0 | 0.6 | - | 0.6 | 1.9 | 0.0 | 0.6 | 0.6 |
| 2/1 | 315 | 315 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.1 | 0.0 | 0.1 | 0.1 |
| 2/2 | 1178 | 1178 | - | - | - | 0.0 | 0.6 | - | 0.6 | 1.9 | 0.0 | 0.6 | 0.6 |
| 3/1 | 193 | 193 | 193 | 0 | 0 | 0.0 | 0.2 | - | 0.2 | 3.6 | 0.0 | 0.2 | 0.2 |
| 4/1 | 1039 | 1039 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 841 | 841 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 841 | 841 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 841 | 841 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 841 | 841 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 0.0 | Total Delay for Signalled Lanes (pcuHr): | | 0.00 | Cycle Time (s): | | 90 | | |
| | | | PRC Over All Lanes (%): | | 40.9 | Total Delay Over All Lanes(pcuHr): | | 2.42 | | | | | |

| |
|--|
| Junctions 10 |
| PICADY 10 - Priority Intersection Module |
| Version: 10.0.4.1693 © Copyright TRL Software Limited, 2021 |
| For sales and distribution information, program advice and maintenance, contact TRL Software: +44 (0)1344 379777 software@trl.co.uk trlsoftware.com |
| The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution |

Filename: 7A - A127 - Hall Lane (North).j10
 Path: P:\9100s\9190 - Lower Thames Crossing, London Borough of Havering\Junction Analysis\7 - A127 - Hall Lane
 Report generation date: 26/06/2023 10:57:58

- «2030 + LTC, PM
 - »Junction Network
 - »Arms
 - »Traffic Demand
 - »Origin-Destination Data
 - »Vehicle Mix
 - »Results

Summary of junction performance

| | AM | | | | | PM | | | | |
|----------------------|--------|-------------|-----------|------|-----|--------|-------------|-----------|------|-----|
| | Set ID | Queue (PCU) | Delay (s) | RFC | LOS | Set ID | Queue (PCU) | Delay (s) | RFC | LOS |
| 2023 Surveyed | | | | | | | | | | |
| Stream B-AC | D1 | 1.5 | 19.92 | 0.61 | C | D2 | 2.4 | 27.99 | 0.71 | D |
| Stream C-AB | | 0.1 | 6.26 | 0.06 | A | | 0.1 | 6.39 | 0.08 | A |
| 2030 Growthed | | | | | | | | | | |
| Stream B-AC | D3 | 1.8 | 22.80 | 0.65 | C | D4 | 3.2 | 35.75 | 0.77 | E |
| Stream C-AB | | 0.1 | 6.41 | 0.07 | A | | 0.1 | 6.58 | 0.09 | A |
| 2030 + LTC | | | | | | | | | | |
| Stream B-AC | D5 | 12.9 | 119.14 | 0.99 | F | D6 | 4.0 | 45.62 | 0.82 | E |
| Stream C-AB | | 0.1 | 6.47 | 0.09 | A | | 0.1 | 6.40 | 0.08 | A |

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

| | |
|-------------|-----------------|
| Title | |
| Location | |
| Site number | |
| Date | 20/09/2022 |
| Version | |
| Status | (new file) |
| Identifier | |
| Client | |
| Jobnumber | |
| Enumerator | JEGINTL\PIEPRZJ |
| Description | |

Units

| Distance units | Speed units | Traffic units input | Traffic units results | Flow units | Average delay units | Total delay units | Rate of delay units |
|----------------|-------------|---------------------|-----------------------|------------|---------------------|-------------------|---------------------|
| m | kph | PCU | PCU | perHour | s | -Min | perMin |

Analysis Options

| Calculate Queue Percentiles | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|-----------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
| | | 0.85 | 36.00 | 20.00 |

Analysis Set Details

| ID | Network flow scaling factor (%) |
|----|---------------------------------|
| A1 | 100.000 |

Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D6 | 2030 + LTC | PM | ONE HOUR | 16:45 | 18:15 | 15 |

2030 + LTC, PM

Data Errors and Warnings

| Severity | Area | Item | Description |
|----------|-------------|------|--|
| Warning | Vehicle Mix | | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

Junction Network

Junctions

| Junction | Name | Junction type | Arm A Direction | Arm B Direction | Arm C Direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|------------------|---------------|-----------------|-----------------|-----------------|-----------------------|--------------------|--------------|
| 1 | A127 / Hall Lane | T-Junction | Two-way | Two-way | Two-way | | 8.65 | A |

Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|--------------|----------------|-------------------|-------------|
| Left | Normal/unknown | 8.65 | A |

Arms

Arms

| Arm | Name | Description | Arm type |
|-----|-----------------|-------------|----------|
| A | A127 off-slip W | | Major |
| B | Hall Ln N | | Minor |
| C | Hall Ln E | | Major |

Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Width of kerbed central reserve (m) | Has right-turn storage | Width for right-turn storage (m) | Visibility for right turn (m) | Blocks? | Blocking queue (PCU) |
|-----|--------------------------|----------------------------|-------------------------------------|------------------------|----------------------------------|-------------------------------|---------|----------------------|
| C | 7.49 | ✓ | 6.18 | ✓ | 4.45 | 200.0 | ✓ | 20.00 |

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

| Arm | Minor arm type | Lane width (m) | Visibility to left (m) | Visibility to right (m) |
|-----|----------------|----------------|------------------------|-------------------------|
| B | One lane | 3.47 | 129 | 67 |

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

| Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|--------|--------------------|---------------|---------------|---------------|---------------|
| B-A | 659 | 0.099 | 0.249 | 0.157 | 0.356 |
| B-C | 697 | 0.100 | 0.253 | - | - |
| C-B | 859 | 0.311 | 0.311 | - | - |

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages | 2.00 |

Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|-------------------------|--------------------|
| A | | ✓ | 713 | 100.000 |
| B | | ✓ | 307 | 100.000 |
| C | | ✓ | 633 | 100.000 |

Origin-Destination Data

Demand (PCU/hr)

| | To | | | |
|------|----|-----|-----|-----|
| | A | B | C | |
| From | A | 0 | 353 | 360 |
| | B | 280 | 0 | 27 |
| | C | 586 | 47 | 0 |

Vehicle Mix

Heavy Vehicle Percentages

| | To | | | |
|------|----|---|---|---|
| | A | B | C | |
| From | A | 0 | 0 | 0 |
| | B | 0 | 0 | 0 |
| | C | 0 | 0 | 0 |

Results

Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS |
|--------|---------|---------------|-----------------|---------|
| B-AC | 0.82 | 45.62 | 4.0 | E |
| C-AB | 0.08 | 6.40 | 0.1 | A |
| C-A | | | | |
| A-B | | | | |
| A-C | | | | |

Main Results for each time segment

16:45 - 17:00

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-AC | 231 | 492 | 0.470 | 228 | 0.9 | 13.441 | B |
| C-AB | 35 | 692 | 0.051 | 35 | 0.1 | 5.482 | A |
| C-A | 441 | | | 441 | | | |
| A-B | 266 | | | 266 | | | |
| A-C | 271 | | | 271 | | | |

17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-AC | 276 | 459 | 0.602 | 274 | 1.4 | 18.951 | C |
| C-AB | 42 | 659 | 0.064 | 42 | 0.1 | 5.833 | A |
| C-A | 527 | | | 527 | | | |
| A-B | 317 | | | 317 | | | |
| A-C | 324 | | | 324 | | | |

17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-AC | 338 | 413 | 0.819 | 329 | 3.7 | 39.477 | E |
| C-AB | 52 | 614 | 0.084 | 52 | 0.1 | 6.396 | A |
| C-A | 645 | | | 645 | | | |
| A-B | 389 | | | 389 | | | |
| A-C | 396 | | | 396 | | | |

17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-AC | 338 | 412 | 0.819 | 337 | 4.0 | 45.621 | E |
| C-AB | 52 | 614 | 0.084 | 52 | 0.1 | 6.396 | A |
| C-A | 645 | | | 645 | | | |
| A-B | 389 | | | 389 | | | |
| A-C | 396 | | | 396 | | | |

17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-AC | 276 | 459 | 0.602 | 286 | 1.6 | 21.826 | C |
| C-AB | 42 | 659 | 0.064 | 42 | 0.1 | 5.835 | A |
| C-A | 527 | | | 527 | | | |
| A-B | 317 | | | 317 | | | |
| A-C | 324 | | | 324 | | | |

18:00 - 18:15

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-AC | 231 | 492 | 0.470 | 234 | 0.9 | 14.077 | B |
| C-AB | 35 | 692 | 0.051 | 35 | 0.1 | 5.485 | A |
| C-A | 441 | | | 441 | | | |
| A-B | 266 | | | 266 | | | |
| A-C | 271 | | | 271 | | | |

| |
|--|
| Junctions 10 |
| PICADY 10 - Priority Intersection Module |
| Version: 10.0.4.1693 © Copyright TRL Software Limited, 2021 |
| For sales and distribution information, program advice and maintenance, contact TRL Software: +44 (0)1344 379777 software@trl.co.uk trlsoftware.com |
| The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution |

Filename: 7B - A127 - Hall Lane (Southern section).j10
 Path: P:\9100s\9190 - Lower Thames Crossing, London Borough of Havering\Junction Analysis\7 - A127 - Hall Lane
 Report generation date: 26/06/2023 12:01:58

- »2023, AM
- »2023, PM
- »2030, AM
- »2030, PM
- »2030 + LTC, AM
- »2030 + LTC, PM

Summary of junction performance

| | AM | | | | | PM | | | | |
|-------------------|--------|-------------|-----------|------|-----|--------|-------------|-----------|------|-----|
| | Set ID | Queue (PCU) | Delay (s) | RFC | LOS | Set ID | Queue (PCU) | Delay (s) | RFC | LOS |
| 2023 | | | | | | | | | | |
| Stream B-CD | D1 | 0.7 | 13.04 | 0.41 | B | D2 | 0.6 | 11.83 | 0.37 | B |
| Stream B-AD | | 1.6 | 31.47 | 0.63 | D | | 0.7 | 20.87 | 0.41 | C |
| Stream A-BCD | | 0.8 | 6.02 | 0.29 | A | | 1.2 | 6.34 | 0.37 | A |
| Stream D-ABC | | 0.0 | 0.00 | 0.00 | A | | 0.0 | 0.00 | 0.00 | A |
| Stream C-ABD | | 0.0 | 0.00 | 0.00 | A | | 0.0 | 0.00 | 0.00 | A |
| 2030 | | | | | | | | | | |
| Stream B-CD | D3 | 0.8 | 14.50 | 0.45 | B | D4 | 0.7 | 12.82 | 0.40 | B |
| Stream B-AD | | 2.1 | 39.17 | 0.69 | E | | 0.8 | 23.86 | 0.46 | C |
| Stream A-BCD | | 0.9 | 6.21 | 0.32 | A | | 1.4 | 6.67 | 0.41 | A |
| Stream D-ABC | | 0.0 | 0.00 | 0.00 | A | | 0.0 | 0.00 | 0.00 | A |
| Stream C-ABD | | 0.0 | 0.00 | 0.00 | A | | 0.0 | 0.00 | 0.00 | A |
| 2030 + LTC | | | | | | | | | | |
| Stream B-CD | D5 | 1.5 | 21.35 | 0.60 | C | D6 | 1.0 | 17.01 | 0.51 | C |
| Stream B-AD | | 24.5 | 268.69 | 1.13 | F | | 3.2 | 59.25 | 0.79 | F |
| Stream A-BCD | | 0.8 | 6.32 | 0.29 | A | | 1.4 | 6.98 | 0.41 | A |
| Stream D-ABC | | 0.0 | 0.00 | 0.00 | A | | 0.0 | 0.00 | 0.00 | A |
| Stream C-ABD | | 0.0 | 0.00 | 0.00 | A | | 0.0 | 0.00 | 0.00 | A |

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

| | |
|-------------|----------------|
| Title | |
| Location | |
| Site number | |
| Date | 20/09/2022 |
| Version | |
| Status | (new file) |
| Identifier | |
| Client | |
| Jobnumber | |
| Enumerator | JEGINTLPIEPRZJ |
| Description | |

Units

| Distance units | Speed units | Traffic units input | Traffic units results | Flow units | Average delay units | Total delay units | Rate of delay units |
|----------------|-------------|---------------------|-----------------------|------------|---------------------|-------------------|---------------------|
| m | kph | PCU | PCU | perHour | s | -Min | perMin |

Analysis Options

| Calculate Queue Percentiles | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|-----------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
| | | 0.85 | 36.00 | 20.00 |

Demand Set Summary

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D1 | 2023 | AM | ONE HOUR | 06:45 | 08:15 | 15 |
| D2 | 2023 | PM | ONE HOUR | 16:45 | 18:15 | 15 |
| D3 | 2030 | AM | ONE HOUR | 06:45 | 08:15 | 15 |
| D4 | 2030 | PM | ONE HOUR | 16:45 | 18:15 | 15 |
| D5 | 2030 + LTC | AM | ONE HOUR | 06:45 | 08:15 | 15 |
| D6 | 2030 + LTC | PM | ONE HOUR | 16:45 | 18:15 | 15 |

Analysis Set Details

| ID | Network flow scaling factor (%) |
|----|---------------------------------|
| A1 | 100.000 |

2023, AM

Data Errors and Warnings

| Severity | Area | Item | Description |
|----------|-------------------------------|----------------------------|--|
| Warning | Minor arm visibility to right | Arm B - Minor arm geometry | Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section. |
| Warning | Vehicle Mix | | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

Junction Network

Junctions

| Junction | Name | Junction type | Arm A Direction | Arm B Direction | Arm C Direction | Arm D Direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------------|--------------------|--------------|
| 1 | untitled | Crossroads | Two-way | Two-way | Two-way | Two-way | | 5.33 | A |

Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|--------------|----------------|-------------------|-------------|
| Left | Normal/unknown | 5.33 | A |

Arms

Arms

| Arm | Name | Description | Arm type |
|-----|-----------------|-------------|----------|
| A | Hall Ln N | | Major |
| B | A127 slip-off E | | Minor |
| C | Hall Ln S | | Major |
| D | A127 slip-on W | | Minor |

Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Has right-turn storage | Visibility for right turn (m) | Blocks? | Blocking queue (PCU) |
|-----|--------------------------|----------------------------|------------------------|-------------------------------|---------|----------------------|
| A | 7.26 | | | 200.0 | ✓ | 0.00 |
| C | 7.26 | | | 0.0 | ✓ | 0.00 |

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

| Arm | Minor arm type | Lane width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | Visibility to left (m) | Visibility to right (m) |
|-----|----------------|----------------|-----------------------|------------------------|------------------------|-------------------------|
| B | Two lanes | | 3.50 | 3.32 | 162 | 53 |
| D | One lane | 2.20 | | | 0 | 0 |

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

| Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for A-D | Slope for B-A | Slope for B-C | Slope for B-D | Slope for C-A | Slope for C-B | Slope for C-D | Slope for D-A | Slope for D-B | Slope for D-C |
|--------------------|--------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| A-D | 690 | - | - | - | - | - | - | 0.253 | 0.361 | 0.253 | - | - | - |
| B-A | 575 | 0.099 | 0.250 | 0.250 | - | - | - | 0.157 | 0.357 | - | 0.250 | 0.250 | 0.125 |
| B-C | 690 | 0.100 | 0.253 | - | - | - | - | - | - | - | - | - | - |
| B-D, nearside lane | 585 | 0.101 | 0.255 | 0.255 | - | - | - | 0.160 | 0.364 | 0.160 | - | - | - |
| B-D, offside lane | 575 | 0.099 | 0.250 | 0.250 | - | - | - | 0.157 | 0.357 | 0.157 | - | - | - |
| C-B | 574 | 0.210 | 0.210 | 0.300 | - | - | - | - | - | - | - | - | - |
| D-A | 574 | - | - | - | - | - | - | 0.210 | - | 0.083 | - | - | - |
| D-B, nearside lane | 440 | 0.120 | 0.120 | 0.273 | - | - | - | 0.191 | 0.191 | 0.076 | - | - | - |
| D-B, offside lane | 440 | 0.120 | 0.120 | 0.273 | - | - | - | 0.191 | 0.191 | 0.076 | - | - | - |
| D-C | 440 | - | 0.120 | 0.273 | 0.096 | 0.191 | 0.191 | 0.191 | 0.191 | 0.076 | - | - | - |

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D1 | 2023 | AM | ONE HOUR | 06:45 | 08:15 | 15 |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages | 2.00 |

Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|-------------------------|--------------------|
| A | | ✓ | 549 | 100.000 |
| B | | ✓ | 350 | 100.000 |
| C | | ✓ | 782 | 100.000 |
| D | | ✓ | 0 | 100.000 |

Origin-Destination Data

Demand (PCU/hr)

| | | To | | | | |
|------|---|-----|---|-----|-----|--|
| | | A | B | C | D | |
| From | A | 0 | 0 | 460 | 89 | |
| | B | 175 | 0 | 174 | 1 | |
| | C | 673 | 0 | 0 | 109 | |
| | D | 0 | 0 | 0 | 0 | |

Vehicle Mix

Heavy Vehicle Percentages

| | | To | | | | |
|------|---|----|---|---|---|--|
| | | A | B | C | D | |
| From | A | 0 | 0 | 0 | 0 | |
| | B | 0 | 0 | 0 | 0 | |
| | C | 0 | 0 | 0 | 0 | |
| | D | 0 | 0 | 0 | 0 | |

Results

Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS |
|--------|---------|---------------|-----------------|---------|
| B-CD | 0.41 | 13.04 | 0.7 | B |
| B-AD | 0.63 | 31.47 | 1.6 | D |
| A-BCD | 0.29 | 6.02 | 0.8 | A |
| A-B | | | | |
| A-C | | | | |
| D-ABC | 0.00 | 0.00 | 0.0 | A |
| C-ABD | 0.00 | 0.00 | 0.0 | A |
| C-D | | | | |
| C-A | | | | |

Main Results for each time segment

06:45 - 07:00

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 131 | 551 | 0.239 | 130 | 0.3 | 8.538 | A |
| B-AD | 132 | 392 | 0.337 | 130 | 0.5 | 13.651 | B |
| A-BCD | 120 | 783 | 0.153 | 119 | 0.3 | 5.417 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 293 | | | 293 | | | |
| D-ABC | 0 | 294 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 481 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 82 | | | 82 | | | |
| C-A | 507 | | | 507 | | | |

07:00 - 07:15

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 157 | 518 | 0.303 | 157 | 0.4 | 9.936 | A |
| B-AD | 158 | 356 | 0.443 | 156 | 0.8 | 17.944 | C |
| A-BCD | 165 | 808 | 0.204 | 164 | 0.5 | 5.596 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 329 | | | 329 | | | |
| D-ABC | 0 | 258 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 463 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 98 | | | 98 | | | |
| C-A | 605 | | | 605 | | | |

07:15 - 07:30

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 192 | 470 | 0.409 | 191 | 0.7 | 12.870 | B |
| B-AD | 193 | 307 | 0.629 | 190 | 1.6 | 29.982 | D |
| A-BCD | 246 | 847 | 0.290 | 244 | 0.8 | 5.993 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 359 | | | 359 | | | |
| D-ABC | 0 | 207 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 438 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 120 | | | 120 | | | |
| C-A | 741 | | | 741 | | | |

07:30 - 07:45

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 192 | 468 | 0.411 | 192 | 0.7 | 13.041 | B |
| B-AD | 193 | 306 | 0.630 | 193 | 1.6 | 31.470 | D |
| A-BCD | 246 | 847 | 0.291 | 246 | 0.8 | 6.021 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 358 | | | 358 | | | |
| D-ABC | 0 | 207 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 437 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 120 | | | 120 | | | |
| C-A | 741 | | | 741 | | | |

07:45 - 08:00

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 157 | 516 | 0.304 | 158 | 0.4 | 10.081 | B |
| B-AD | 158 | 355 | 0.443 | 161 | 0.8 | 18.774 | C |
| A-BCD | 165 | 809 | 0.204 | 167 | 0.5 | 5.627 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 328 | | | 328 | | | |
| D-ABC | 0 | 258 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 462 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 98 | | | 98 | | | |
| C-A | 605 | | | 605 | | | |

08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 132 | 549 | 0.239 | 132 | 0.3 | 8.641 | A |
| B-AD | 132 | 391 | 0.337 | 133 | 0.5 | 14.012 | B |
| A-BCD | 121 | 784 | 0.154 | 121 | 0.3 | 5.449 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 292 | | | 292 | | | |
| D-ABC | 0 | 294 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 481 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 82 | | | 82 | | | |
| C-A | 507 | | | 507 | | | |

2023, PM

Data Errors and Warnings

| Severity | Area | Item | Description |
|----------|-------------------------------|----------------------------|--|
| Warning | Minor arm visibility to right | Arm B - Minor arm geometry | Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section. |
| Warning | Vehicle Mix | | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

Junction Network

Junctions

| Junction | Name | Junction type | Arm A Direction | Arm B Direction | Arm C Direction | Arm D Direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------------|--------------------|--------------|
| 1 | untitled | Crossroads | Two-way | Two-way | Two-way | Two-way | | 3.52 | A |

Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|--------------|----------------|-------------------|-------------|
| Left | Normal/unknown | 3.52 | A |

Traffic Demand

Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D2 | 2023 | PM | ONE HOUR | 16:45 | 18:15 | 15 |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages | 2.00 |

Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|-------------------------|--------------------|
| A | | ✓ | 638 | 100.000 |
| B | | ✓ | 274 | 100.000 |
| C | | ✓ | 758 | 100.000 |
| D | | ✓ | 0 | 100.000 |

Origin-Destination Data

Demand (PCU/hr)

| | | To | | | |
|------|---|-----|---|-----|-----|
| | | A | B | C | D |
| From | A | 0 | 0 | 530 | 108 |
| | B | 110 | 0 | 164 | 0 |
| | C | 604 | 0 | 0 | 154 |
| | D | 0 | 0 | 0 | 0 |

Vehicle Mix

Heavy Vehicle Percentages

| From | To | | | |
|------|----|---|---|---|
| | A | B | C | D |
| A | 0 | 0 | 0 | 0 |
| B | 0 | 0 | 0 | 0 |
| C | 0 | 0 | 0 | 0 |
| D | 0 | 0 | 0 | 0 |

Results

Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS |
|--------|---------|---------------|-----------------|---------|
| B-CD | 0.37 | 11.83 | 0.6 | B |
| B-AD | 0.41 | 20.87 | 0.7 | C |
| A-BCD | 0.37 | 6.34 | 1.2 | A |
| A-B | | | | |
| A-C | | | | |
| D-ABC | 0.00 | 0.00 | 0.0 | A |
| C-ABD | 0.00 | 0.00 | 0.0 | A |
| C-D | | | | |
| C-A | | | | |

Main Results for each time segment

16:45 - 17:00

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 123 | 558 | 0.221 | 122 | 0.3 | 8.251 | A |
| B-AD | 83 | 383 | 0.216 | 82 | 0.3 | 11.897 | B |
| A-BCD | 158 | 824 | 0.191 | 156 | 0.4 | 5.390 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 323 | | | 323 | | | |
| D-ABC | 0 | 295 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 466 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 116 | | | 116 | | | |
| C-A | 455 | | | 455 | | | |

17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 147 | 528 | 0.279 | 147 | 0.4 | 9.429 | A |
| B-AD | 99 | 346 | 0.286 | 98 | 0.4 | 14.531 | B |
| A-BCD | 220 | 858 | 0.256 | 219 | 0.6 | 5.649 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 354 | | | 354 | | | |
| D-ABC | 0 | 259 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 444 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 138 | | | 138 | | | |
| C-A | 543 | | | 543 | | | |

17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 181 | 486 | 0.372 | 180 | 0.6 | 11.734 | B |
| B-AD | 121 | 294 | 0.412 | 120 | 0.7 | 20.557 | C |
| A-BCD | 336 | 908 | 0.369 | 333 | 1.1 | 6.290 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 367 | | | 367 | | | |
| D-ABC | 0 | 208 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 415 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 170 | | | 170 | | | |
| C-A | 665 | | | 665 | | | |

17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 181 | 485 | 0.372 | 181 | 0.6 | 11.830 | B |
| B-AD | 121 | 293 | 0.413 | 121 | 0.7 | 20.870 | C |
| A-BCD | 337 | 909 | 0.370 | 337 | 1.2 | 6.335 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 366 | | | 366 | | | |
| D-ABC | 0 | 207 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 414 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 170 | | | 170 | | | |
| C-A | 665 | | | 665 | | | |

17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 147 | 527 | 0.280 | 148 | 0.4 | 9.522 | A |
| B-AD | 99 | 345 | 0.287 | 100 | 0.4 | 14.765 | B |
| A-BCD | 221 | 859 | 0.257 | 223 | 0.7 | 5.696 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 353 | | | 353 | | | |
| D-ABC | 0 | 258 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 444 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 138 | | | 138 | | | |
| C-A | 543 | | | 543 | | | |

18:00 - 18:15

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 123 | 556 | 0.222 | 124 | 0.3 | 8.329 | A |
| B-AD | 83 | 383 | 0.216 | 83 | 0.3 | 12.051 | B |
| A-BCD | 159 | 825 | 0.193 | 160 | 0.4 | 5.434 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 321 | | | 321 | | | |
| D-ABC | 0 | 294 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 465 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 116 | | | 116 | | | |
| C-A | 455 | | | 455 | | | |

2030, AM

Data Errors and Warnings

| Severity | Area | Item | Description |
|----------|-------------------------------|----------------------------|--|
| Warning | Minor arm visibility to right | Arm B - Minor arm geometry | Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section. |
| Warning | Vehicle Mix | | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

Junction Network

Junctions

| Junction | Name | Junction type | Arm A Direction | Arm B Direction | Arm C Direction | Arm D Direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------------|--------------------|--------------|
| 1 | untitled | Crossroads | Two-way | Two-way | Two-way | Two-way | | 6.36 | A |

Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|--------------|----------------|-------------------|-------------|
| Left | Normal/unknown | 6.36 | A |

Traffic Demand

Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D3 | 2030 | AM | ONE HOUR | 06:45 | 08:15 | 15 |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages | 2.00 |

Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|-------------------------|--------------------|
| A | | ✓ | 576 | 100.000 |
| B | | ✓ | 369 | 100.000 |
| C | | ✓ | 820 | 100.000 |
| D | | ✓ | 0 | 100.000 |

Origin-Destination Data

Demand (PCU/hr)

| | To | | | | |
|------|----|-----|---|-----|-----|
| | A | B | C | D | |
| From | A | 0 | 0 | 482 | 94 |
| | B | 184 | 0 | 183 | 2 |
| | C | 705 | 0 | 0 | 115 |
| | D | 0 | 0 | 0 | 0 |

Vehicle Mix

Heavy Vehicle Percentages

| | To | | | | |
|------|----|---|---|---|---|
| | A | B | C | D | |
| From | A | 0 | 0 | 0 | 0 |
| | B | 0 | 0 | 0 | 0 |
| | C | 0 | 0 | 0 | 0 |
| | D | 0 | 0 | 0 | 0 |

Results

Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS |
|--------|---------|---------------|-----------------|---------|
| B-CD | 0.45 | 14.50 | 0.8 | B |
| B-AD | 0.69 | 39.17 | 2.1 | E |
| A-BCD | 0.32 | 6.21 | 0.9 | A |
| A-B | | | | |
| A-C | | | | |
| D-ABC | 0.00 | 0.00 | 0.0 | A |
| C-ABD | 0.00 | 0.00 | 0.0 | A |
| C-D | | | | |
| C-A | | | | |

Main Results for each time segment

06:45 - 07:00

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 139 | 542 | 0.256 | 137 | 0.3 | 8.875 | A |
| B-AD | 139 | 383 | 0.363 | 137 | 0.6 | 14.501 | B |
| A-BCD | 131 | 789 | 0.166 | 130 | 0.3 | 5.457 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 303 | | | 303 | | | |
| D-ABC | 0 | 285 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 476 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 87 | | | 87 | | | |
| C-A | 531 | | | 531 | | | |

07:00 - 07:15

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 166 | 507 | 0.327 | 165 | 0.5 | 10.522 | B |
| B-AD | 166 | 345 | 0.480 | 165 | 0.9 | 19.764 | C |
| A-BCD | 181 | 816 | 0.222 | 180 | 0.5 | 5.675 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 337 | | | 337 | | | |
| D-ABC | 0 | 247 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 457 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 103 | | | 103 | | | |
| C-A | 634 | | | 634 | | | |

07:15 - 07:30

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 203 | 454 | 0.448 | 202 | 0.8 | 14.224 | B |
| B-AD | 203 | 294 | 0.691 | 199 | 2.0 | 36.274 | E |
| A-BCD | 274 | 857 | 0.320 | 272 | 0.9 | 6.178 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 360 | | | 360 | | | |
| D-ABC | 0 | 193 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 431 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 127 | | | 127 | | | |
| C-A | 776 | | | 776 | | | |

07:30 - 07:45

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 203 | 451 | 0.451 | 203 | 0.8 | 14.500 | B |
| B-AD | 203 | 293 | 0.692 | 202 | 2.1 | 39.165 | E |
| A-BCD | 275 | 858 | 0.320 | 275 | 0.9 | 6.211 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 359 | | | 359 | | | |
| D-ABC | 0 | 192 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 430 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 127 | | | 127 | | | |
| C-A | 776 | | | 776 | | | |

07:45 - 08:00

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 166 | 504 | 0.329 | 167 | 0.5 | 10.733 | B |
| B-AD | 166 | 345 | 0.481 | 170 | 1.0 | 21.146 | C |
| A-BCD | 182 | 817 | 0.223 | 184 | 0.5 | 5.713 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 336 | | | 336 | | | |
| D-ABC | 0 | 247 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 457 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 103 | | | 103 | | | |
| C-A | 634 | | | 634 | | | |

08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 139 | 540 | 0.257 | 139 | 0.4 | 9.002 | A |
| B-AD | 139 | 382 | 0.364 | 141 | 0.6 | 14.974 | B |
| A-BCD | 132 | 790 | 0.167 | 133 | 0.4 | 5.494 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 302 | | | 302 | | | |
| D-ABC | 0 | 285 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 476 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 87 | | | 87 | | | |
| C-A | 531 | | | 531 | | | |

2030, PM

Data Errors and Warnings

| Severity | Area | Item | Description |
|----------|-------------------------------|----------------------------|--|
| Warning | Minor arm visibility to right | Arm B - Minor arm geometry | Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section. |
| Warning | Vehicle Mix | | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

Junction Network

Junctions

| Junction | Name | Junction type | Arm A Direction | Arm B Direction | Arm C Direction | Arm D Direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------------|--------------------|--------------|
| 1 | untitled | Crossroads | Two-way | Two-way | Two-way | Two-way | | 3.93 | A |

Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|--------------|----------------|-------------------|-------------|
| Left | Normal/unknown | 3.93 | A |

Traffic Demand

Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D4 | 2030 | PM | ONE HOUR | 16:45 | 18:15 | 15 |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages | 2.00 |

Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|-------------------------|--------------------|
| A | | ✓ | 672 | 100.000 |
| B | | ✓ | 289 | 100.000 |
| C | | ✓ | 799 | 100.000 |
| D | | ✓ | 0 | 100.000 |

Origin-Destination Data

Demand (PCU/hr)

| | | To | | | |
|------|---|-----|---|-----|-----|
| | | A | B | C | D |
| From | A | 0 | 0 | 558 | 114 |
| | B | 116 | 0 | 173 | 0 |
| | C | 636 | 0 | 0 | 163 |
| | D | 0 | 0 | 0 | 0 |

Vehicle Mix

Heavy Vehicle Percentages

| | To | | | | |
|------|----|---|---|---|---|
| | A | B | C | D | |
| From | A | 0 | 0 | 0 | 0 |
| | B | 0 | 0 | 0 | 0 |
| | C | 0 | 0 | 0 | 0 |
| | D | 0 | 0 | 0 | 0 |

Results

Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS |
|--------|---------|---------------|-----------------|---------|
| B-CD | 0.40 | 12.82 | 0.7 | B |
| B-AD | 0.46 | 23.86 | 0.8 | C |
| A-BCD | 0.41 | 6.67 | 1.4 | A |
| A-B | | | | |
| A-C | | | | |
| D-ABC | 0.00 | 0.00 | 0.0 | A |
| C-ABD | 0.00 | 0.00 | 0.0 | A |
| C-D | | | | |
| C-A | | | | |

Main Results for each time segment

16:45 - 17:00

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 130 | 550 | 0.237 | 129 | 0.3 | 8.530 | A |
| B-AD | 87 | 373 | 0.234 | 86 | 0.3 | 12.498 | B |
| A-BCD | 173 | 832 | 0.208 | 171 | 0.5 | 5.436 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 333 | | | 333 | | | |
| D-ABC | 0 | 285 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 460 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 123 | | | 123 | | | |
| C-A | 479 | | | 479 | | | |

17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 156 | 519 | 0.300 | 155 | 0.4 | 9.888 | A |
| B-AD | 104 | 333 | 0.313 | 104 | 0.4 | 15.631 | C |
| A-BCD | 244 | 869 | 0.281 | 243 | 0.7 | 5.764 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 360 | | | 360 | | | |
| D-ABC | 0 | 247 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 437 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 147 | | | 147 | | | |
| C-A | 572 | | | 572 | | | |

17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 190 | 472 | 0.403 | 190 | 0.7 | 12.681 | B |
| B-AD | 128 | 279 | 0.458 | 126 | 0.8 | 23.352 | C |
| A-BCD | 379 | 924 | 0.410 | 376 | 1.4 | 6.610 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 361 | | | 361 | | | |
| D-ABC | 0 | 192 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 406 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 179 | | | 179 | | | |
| C-A | 700 | | | 700 | | | |

17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 190 | 471 | 0.404 | 190 | 0.7 | 12.819 | B |
| B-AD | 128 | 278 | 0.459 | 128 | 0.8 | 23.860 | C |
| A-BCD | 380 | 925 | 0.411 | 380 | 1.4 | 6.672 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 360 | | | 360 | | | |
| D-ABC | 0 | 192 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 406 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 179 | | | 179 | | | |
| C-A | 700 | | | 700 | | | |

17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 156 | 517 | 0.301 | 156 | 0.4 | 10.013 | B |
| B-AD | 104 | 332 | 0.314 | 106 | 0.5 | 15.973 | C |
| A-BCD | 246 | 871 | 0.282 | 248 | 0.8 | 5.831 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 358 | | | 358 | | | |
| D-ABC | 0 | 246 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 436 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 147 | | | 147 | | | |
| C-A | 572 | | | 572 | | | |

18:00 - 18:15

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 130 | 549 | 0.237 | 131 | 0.3 | 8.626 | A |
| B-AD | 87 | 372 | 0.235 | 88 | 0.3 | 12.689 | B |
| A-BCD | 175 | 834 | 0.210 | 176 | 0.5 | 5.494 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 331 | | | 331 | | | |
| D-ABC | 0 | 284 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 459 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 123 | | | 123 | | | |
| C-A | 479 | | | 479 | | | |

2030 + LTC, AM

Data Errors and Warnings

| Severity | Area | Item | Description |
|----------|-------------------------------|----------------------------|--|
| Warning | Minor arm visibility to right | Arm B - Minor arm geometry | Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section. |
| Warning | Vehicle Mix | | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

Junction Network

Junctions

| Junction | Name | Junction type | Arm A Direction | Arm B Direction | Arm C Direction | Arm D Direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------------|--------------------|--------------|
| 1 | untitled | Crossroads | Two-way | Two-way | Two-way | Two-way | | 42.45 | E |

Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|--------------|----------------|-------------------|-------------|
| Left | Normal/unknown | 42.45 | E |

Traffic Demand

Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D5 | 2030 + LTC | AM | ONE HOUR | 06:45 | 08:15 | 15 |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages | 2.00 |

Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|-------------------------|--------------------|
| A | | ✓ | 522 | 100.000 |
| B | | ✓ | 519 | 100.000 |
| C | | ✓ | 931 | 100.000 |
| D | | ✓ | 0 | 100.000 |

Origin-Destination Data

Demand (PCU/hr)

| | | To | | | |
|------|---|-----|---|-----|----|
| | | A | B | C | D |
| From | A | 0 | 0 | 441 | 81 |
| | B | 289 | 0 | 228 | 2 |
| | C | 853 | 0 | 0 | 78 |
| | D | 0 | 0 | 0 | 0 |

Vehicle Mix

Heavy Vehicle Percentages

| From | To | | | |
|------|----|---|---|---|
| | A | B | C | D |
| A | 0 | 0 | 0 | 0 |
| B | 0 | 0 | 0 | 0 |
| C | 0 | 0 | 0 | 0 |
| D | 0 | 0 | 0 | 0 |

Results

Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS |
|--------|---------|---------------|-----------------|---------|
| B-CD | 0.60 | 21.35 | 1.5 | C |
| B-AD | 1.13 | 268.69 | 24.5 | F |
| A-BCD | 0.29 | 6.32 | 0.8 | A |
| A-B | | | | |
| A-C | | | | |
| D-ABC | 0.00 | 0.00 | 0.0 | A |
| C-ABD | 0.00 | 0.00 | 0.0 | A |
| C-D | | | | |
| C-A | | | | |

Main Results for each time segment

06:45 - 07:00

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 173 | 516 | 0.335 | 171 | 0.5 | 10.369 | B |
| B-AD | 218 | 376 | 0.580 | 213 | 1.3 | 21.476 | C |
| A-BCD | 109 | 750 | 0.146 | 108 | 0.3 | 5.606 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 284 | | | 284 | | | |
| D-ABC | 0 | 265 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 486 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 59 | | | 59 | | | |
| C-A | 642 | | | 642 | | | |

07:00 - 07:15

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 207 | 471 | 0.439 | 206 | 0.8 | 13.513 | B |
| B-AD | 260 | 337 | 0.772 | 254 | 2.9 | 40.648 | E |
| A-BCD | 151 | 770 | 0.196 | 150 | 0.4 | 5.819 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 318 | | | 318 | | | |
| D-ABC | 0 | 222 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 468 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 70 | | | 70 | | | |
| C-A | 767 | | | 767 | | | |

07:15 - 07:30

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 253 | 422 | 0.601 | 251 | 1.4 | 20.735 | C |
| B-AD | 318 | 283 | 1.125 | 271 | 14.7 | 144.758 | F |
| A-BCD | 228 | 801 | 0.285 | 227 | 0.8 | 6.289 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 346 | | | 346 | | | |
| D-ABC | 0 | 156 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 445 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 86 | | | 86 | | | |
| C-A | 939 | | | 939 | | | |

07:30 - 07:45

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 253 | 421 | 0.601 | 253 | 1.5 | 21.346 | C |
| B-AD | 318 | 283 | 1.126 | 279 | 24.5 | 268.687 | F |
| A-BCD | 229 | 802 | 0.286 | 229 | 0.8 | 6.318 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 346 | | | 346 | | | |
| D-ABC | 0 | 152 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 444 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 86 | | | 86 | | | |
| C-A | 939 | | | 939 | | | |

07:45 - 08:00

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 207 | 439 | 0.471 | 209 | 0.9 | 15.784 | C |
| B-AD | 260 | 336 | 0.773 | 323 | 8.7 | 194.711 | F |
| A-BCD | 152 | 771 | 0.197 | 153 | 0.5 | 5.856 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 318 | | | 318 | | | |
| D-ABC | 0 | 216 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 468 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 70 | | | 70 | | | |
| C-A | 767 | | | 767 | | | |

08:00 - 08:15

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 173 | 502 | 0.345 | 174 | 0.5 | 11.052 | B |
| B-AD | 218 | 375 | 0.581 | 247 | 1.5 | 33.491 | D |
| A-BCD | 110 | 751 | 0.147 | 111 | 0.3 | 5.638 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 283 | | | 283 | | | |
| D-ABC | 0 | 263 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 485 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 59 | | | 59 | | | |
| C-A | 642 | | | 642 | | | |

2030 + LTC, PM

Data Errors and Warnings

| Severity | Area | Item | Description |
|----------|-------------------------------|----------------------------|--|
| Warning | Minor arm visibility to right | Arm B - Minor arm geometry | Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section. |
| Warning | Vehicle Mix | | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

Junction Network

Junctions

| Junction | Name | Junction type | Arm A Direction | Arm B Direction | Arm C Direction | Arm D Direction | Use circulating lanes | Junction Delay (s) | Junction LOS |
|----------|----------|---------------|-----------------|-----------------|-----------------|-----------------|-----------------------|--------------------|--------------|
| 1 | untitled | Crossroads | Two-way | Two-way | Two-way | Two-way | | 8.71 | A |

Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|--------------|----------------|-------------------|-------------|
| Left | Normal/unknown | 8.71 | A |

Traffic Demand

Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D6 | 2030 + LTC | PM | ONE HOUR | 16:45 | 18:15 | 15 |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages | 2.00 |

Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|-----|------------|--------------|-------------------------|--------------------|
| A | | ✓ | 630 | 100.000 |
| B | | ✓ | 392 | 100.000 |
| C | | ✓ | 892 | 100.000 |
| D | | ✓ | 0 | 100.000 |

Origin-Destination Data

Demand (PCU/hr)

| | | To | | | |
|------|---|-----|---|-----|-----|
| | | A | B | C | D |
| From | A | 0 | 0 | 520 | 110 |
| | B | 192 | 0 | 200 | 0 |
| | C | 761 | 0 | 0 | 131 |
| | D | 0 | 0 | 0 | 0 |

Vehicle Mix

Heavy Vehicle Percentages

| | To | | | | |
|------|----|---|---|---|---|
| | A | B | C | D | |
| From | A | 0 | 0 | 0 | 0 |
| | B | 0 | 0 | 0 | 0 |
| | C | 0 | 0 | 0 | 0 |
| | D | 0 | 0 | 0 | 0 |

Results

Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS |
|--------|---------|---------------|-----------------|---------|
| B-CD | 0.51 | 17.01 | 1.0 | C |
| B-AD | 0.79 | 59.25 | 3.2 | F |
| A-BCD | 0.41 | 6.98 | 1.4 | A |
| A-B | | | | |
| A-C | | | | |
| D-ABC | 0.00 | 0.00 | 0.0 | A |
| C-ABD | 0.00 | 0.00 | 0.0 | A |
| C-D | | | | |
| C-A | | | | |

Main Results for each time segment

16:45 - 17:00

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 151 | 533 | 0.283 | 149 | 0.4 | 9.341 | A |
| B-AD | 145 | 366 | 0.395 | 142 | 0.6 | 15.891 | C |
| A-BCD | 162 | 799 | 0.203 | 161 | 0.4 | 5.641 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 312 | | | 312 | | | |
| D-ABC | 0 | 268 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 467 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 99 | | | 99 | | | |
| C-A | 573 | | | 573 | | | |

17:00 - 17:15

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 180 | 495 | 0.363 | 179 | 0.6 | 11.377 | B |
| B-AD | 173 | 325 | 0.531 | 171 | 1.1 | 23.052 | C |
| A-BCD | 228 | 829 | 0.275 | 227 | 0.7 | 5.999 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 338 | | | 338 | | | |
| D-ABC | 0 | 226 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 446 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 118 | | | 118 | | | |
| C-A | 684 | | | 684 | | | |

17:15 - 17:30

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 220 | 436 | 0.505 | 218 | 1.0 | 16.438 | C |
| B-AD | 211 | 269 | 0.786 | 204 | 2.9 | 50.618 | F |
| A-BCD | 354 | 875 | 0.405 | 351 | 1.3 | 6.913 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 340 | | | 340 | | | |
| D-ABC | 0 | 164 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 417 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 144 | | | 144 | | | |
| C-A | 838 | | | 838 | | | |

17:30 - 17:45

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 220 | 431 | 0.510 | 220 | 1.0 | 17.015 | C |
| B-AD | 211 | 268 | 0.788 | 210 | 3.2 | 59.247 | F |
| A-BCD | 355 | 876 | 0.406 | 355 | 1.4 | 6.978 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 338 | | | 338 | | | |
| D-ABC | 0 | 163 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 416 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 144 | | | 144 | | | |
| C-A | 838 | | | 838 | | | |

17:45 - 18:00

| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 180 | 489 | 0.367 | 182 | 0.6 | 11.753 | B |
| B-AD | 173 | 324 | 0.532 | 181 | 1.2 | 26.333 | D |
| A-BCD | 230 | 831 | 0.277 | 232 | 0.7 | 6.069 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 337 | | | 337 | | | |
| D-ABC | 0 | 225 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 445 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 118 | | | 118 | | | |
| C-A | 684 | | | 684 | | | |

18:00 - 18:15

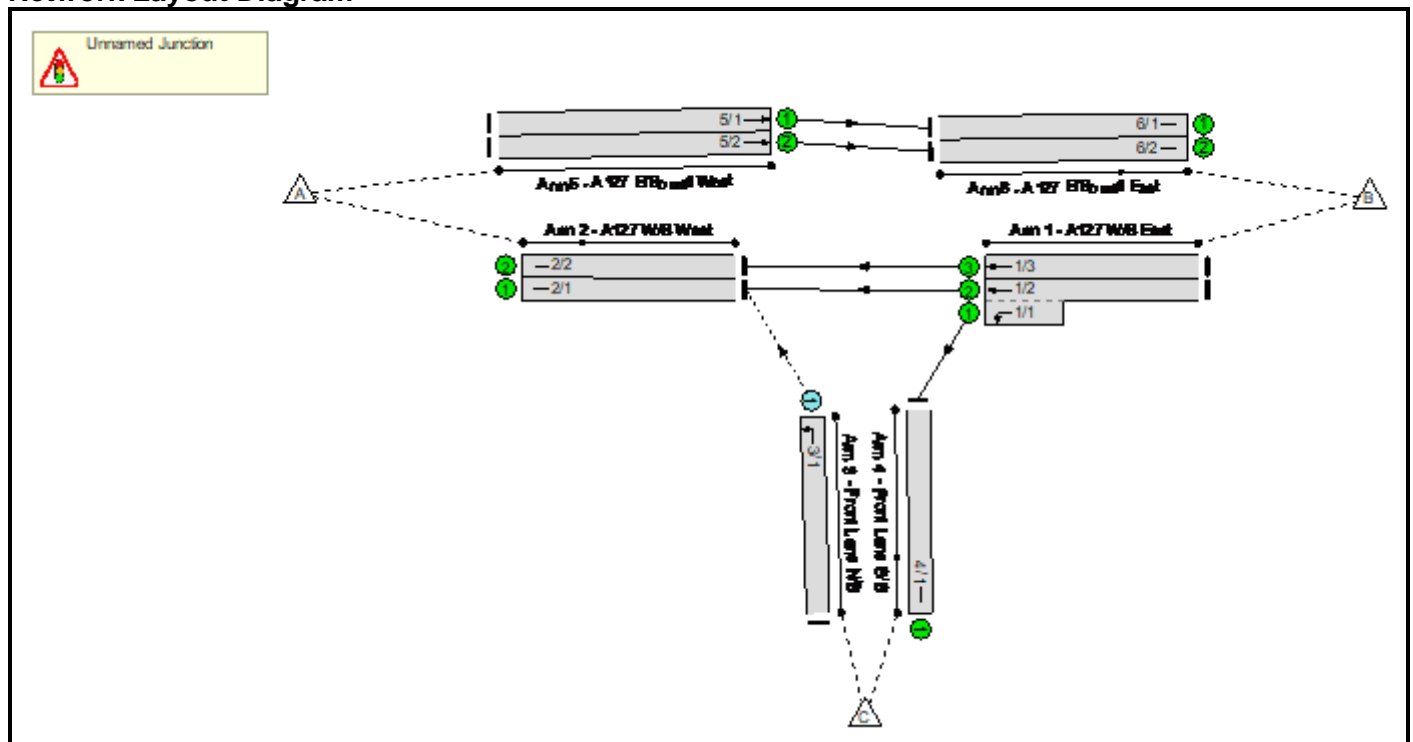
| Stream | Total Demand (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|--------|-----------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| B-CD | 151 | 530 | 0.284 | 151 | 0.4 | 9.513 | A |
| B-AD | 145 | 365 | 0.396 | 147 | 0.7 | 16.608 | C |
| A-BCD | 164 | 800 | 0.205 | 165 | 0.5 | 5.693 | A |
| A-B | 0 | | | 0 | | | |
| A-C | 311 | | | 311 | | | |
| D-ABC | 0 | 267 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-ABD | 0 | 466 | 0.000 | 0 | 0.0 | 0.000 | A |
| C-D | 99 | | | 99 | | | |
| C-A | 573 | | | 573 | | | |

Full Input Data And Results
Full Input Data And Results

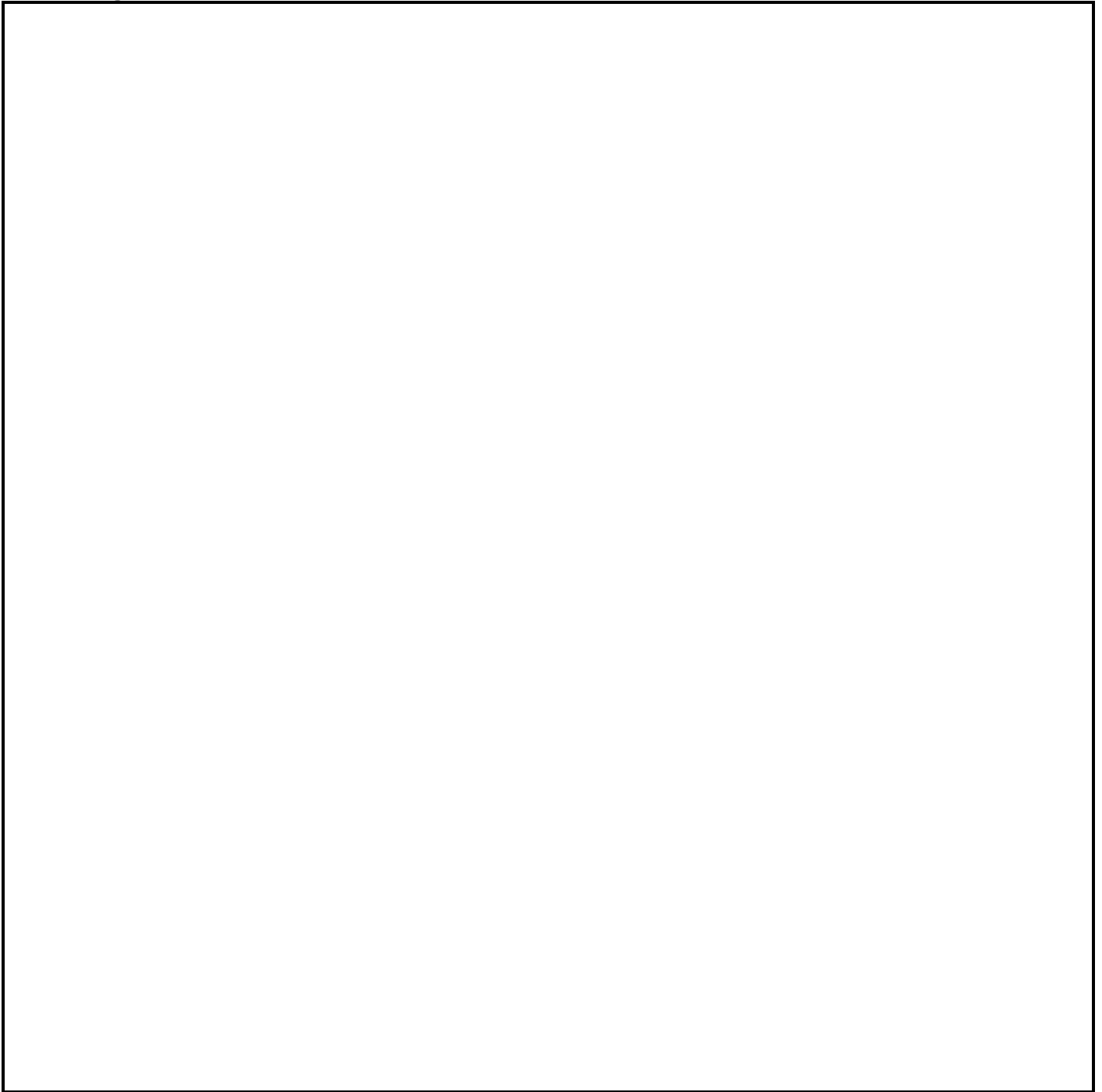
User and Project Details

| | |
|--------------------|-----------------------------|
| Project: | |
| Title: | |
| Location: | |
| Additional detail: | |
| File name: | 8 - A127 - Front Lane.lsg3x |
| Author: | |
| Company: | |
| Address: | |

Network Layout Diagram



Phase Diagram



Phase Input Data

| Phase Name | Phase Type | Assoc. Phase | Street Min | Cont Min |
|------------|------------|--------------|------------|----------|
|------------|------------|--------------|------------|----------|

Phase Intergreens Matrix

| | Starting Phase |
|-------------------|---|
| Terminating Phase | This View cannot be shown as there are currently no Phases defined. |

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
|-----------|-----------------|

Full Input Data And Results

Stage Diagram

There are no Stages to display

Phase Delays

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

Prohibited Stage Change

| | To Stage |
|------------|---|
| From Stage | This View cannot be shown as there are currently no Stages defined. |

Full Input Data And Results

Give-Way Lane Input Data

| Junction: Unnamed Junction | | | | | | | | | | | |
|----------------------------|------------|-----------------------------------|-----------------------------------|---------------|------------------|--------------|--------------------------|----------------------------|-----|------------------------|-------------------------------|
| 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) |
| 3/1 (Front Lane N/B) | 2/1 (Left) | 715 | 0 | 1/2 | 0.22 | All | - | - | - | - | - |

Full Input Data And Results

Lane Input Data

| Junction: Unnamed Junction | | | | | | | | | | | | |
|----------------------------|-----------|--------|-------------|-----------|-----------------------|---------------|-----------------------------------|----------------|----------|---------------|-------------|--------------------|
| 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 (A127 W/B East) | U | | 2 | 3 | 5.0 | Geom | - | 3.65 | 0.00 | Y | Arm 4 Left | 15.00 |
| 1/2 (A127 W/B East) | U | | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | Arm 2 Ahead | Inf |
| 1/3 (A127 W/B East) | U | | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm 2 Ahead | Inf |
| 2/1 (A127 W/B West) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 2/2 (A127 W/B West) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 3/1 (Front Lane N/B) | O | | 2 | 3 | 60.0 | Geom | - | 3.25 | 0.00 | Y | Arm 2 Left | 15.00 |
| 4/1 (Front Lane S/B) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 5/1 (A127 E/Bound West) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 5/2 (A127 E/Bound West) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 6/1 (A127 E/Bound East) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 6/2 (A127 E/Bound East) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |

Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---------------------------------|------------|----------|----------|-----------|
| 1: 'Base Year 2023 AM' | 07:00 | 08:00 | 01:00 | |
| 2: 'Base Year 2023 PM' | 17:00 | 18:00 | 01:00 | |
| 3: 'Reference Case 2030 AM' | 07:00 | 08:00 | 01:00 | F1*1.0466 |
| 4: 'Reference Case 2030 PM' | 17:00 | 18:00 | 01:00 | F2*1.0521 |
| 7: 'Do Something 2030 + LTC AM' | 07:00 | 08:00 | 01:00 | F3+F5 |
| 8: 'Do Something 2030 + LTC PM' | 17:00 | 18:00 | 01:00 | F4+F6 |

Full Input Data And Results

Scenario 1: 'Base 2023 AM' (FG1: 'Base Year 2023 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | |
|--------|------|-------------|------|-----|------|
| | | A | B | C | Tot. |
| Origin | A | 0 | 1766 | 0 | 1766 |
| | B | 2143 | 0 | 198 | 2341 |
| | C | 89 | 0 | 0 | 89 |
| | Tot. | 2232 | 1766 | 198 | 4196 |

Traffic Lane Flows

| Lane | Scenario 1: Base 2023 AM |
|-----------------------------------|-----------------------------|
| Junction: Unnamed Junction | |
| 1/1 (short) | 198 |
| 1/2 (with short) | 1083(In) 885(Out) |
| 1/3 | 1258 |
| 2/1 | 974 |
| 2/2 | 1258 |
| 3/1 | 89 |
| 4/1 | 198 |
| 5/1 | 883 |
| 5/2 | 883 |
| 6/1 | 883 |
| 6/2 | 883 |

Full Input Data And Results

Lane Saturation Flows

| Junction: Unnamed Junction | | | | | | | | |
|-----------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (A127 W/B East) | 3.65 | 0.00 | Y | Arm 4 Left | 15.00 | 100.0 % | 1800 | 1800 |
| 1/2 (A127 W/B East) | 3.65 | 0.00 | Y | Arm 2 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 1/3 (A127 W/B East) | 3.65 | 0.00 | N | Arm 2 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 2/1 (A127 W/B West Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 (A127 W/B West Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 (Front Lane N/B) | 3.25 | 0.00 | Y | Arm 2 Left | 15.00 | 100.0 % | 1764 | 1764 |
| 4/1 (Front Lane S/B Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (A127 E/Bound West Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A127 E/Bound West Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A127 E/Bound East Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A127 E/Bound East Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

Scenario 2: 'Base 2023 PM' (FG2: 'Base Year 2023 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | |
|--------|-------------|------|------|------|------|
| | A | B | C | Tot. | |
| Origin | A | 0 | 1658 | 0 | 1658 |
| | B | 1891 | 0 | 318 | 2209 |
| | C | 93 | 0 | 0 | 93 |
| | Tot. | 1984 | 1658 | 318 | 3960 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 2: Base 2023 PM |
|-----------------------------------|-----------------------------|
| Junction: Unnamed Junction | |
| 1/1 (short) | 318 |
| 1/2 (with short) | 1004(In) 686(Out) |
| 1/3 | 1205 |
| 2/1 | 779 |
| 2/2 | 1205 |
| 3/1 | 93 |
| 4/1 | 318 |
| 5/1 | 829 |
| 5/2 | 829 |
| 6/1 | 829 |
| 6/2 | 829 |

Lane Saturation Flows

| Junction: Unnamed Junction | | | | | | | | |
|-----------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (A127 W/B East) | 3.65 | 0.00 | Y | Arm 4 Left | 15.00 | 100.0 % | 1800 | 1800 |
| 1/2 (A127 W/B East) | 3.65 | 0.00 | Y | Arm 2 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 1/3 (A127 W/B East) | 3.65 | 0.00 | N | Arm 2 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 2/1 (A127 W/B West Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 (A127 W/B West Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 (Front Lane N/B) | 3.25 | 0.00 | Y | Arm 2 Left | 15.00 | 100.0 % | 1764 | 1764 |
| 4/1 (Front Lane S/B Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (A127 E/Bound West Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A127 E/Bound West Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A127 E/Bound East Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A127 E/Bound East Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

Scenario 3: 'Reference Case 2030 AM' (FG3: 'Reference Case 2030 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | |
|--------|------|-------------|------|-----|------|
| | | A | B | C | Tot. |
| Origin | A | 0 | 1848 | 0 | 1848 |
| | B | 2243 | 0 | 207 | 2450 |
| | C | 93 | 0 | 0 | 93 |
| | Tot. | 2336 | 1848 | 207 | 4391 |

Traffic Lane Flows

| Lane | Scenario 3: Reference Case 2030 AM |
|-----------------------------------|--|
| Junction: Unnamed Junction | |
| 1/1 (short) | 207 |
| 1/2 (with short) | 1137(In) 930(Out) |
| 1/3 | 1313 |
| 2/1 | 1023 |
| 2/2 | 1313 |
| 3/1 | 93 |
| 4/1 | 207 |
| 5/1 | 924 |
| 5/2 | 924 |
| 6/1 | 924 |
| 6/2 | 924 |

Full Input Data And Results

Lane Saturation Flows

| Junction: Unnamed Junction | | | | | | | | |
|-----------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (A127 W/B East) | 3.65 | 0.00 | Y | Arm 4 Left | 15.00 | 100.0 % | 1800 | 1800 |
| 1/2 (A127 W/B East) | 3.65 | 0.00 | Y | Arm 2 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 1/3 (A127 W/B East) | 3.65 | 0.00 | N | Arm 2 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 2/1 (A127 W/B West Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 (A127 W/B West Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 (Front Lane N/B) | 3.25 | 0.00 | Y | Arm 2 Left | 15.00 | 100.0 % | 1764 | 1764 |
| 4/1 (Front Lane S/B Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (A127 E/Bound West Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A127 E/Bound West Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A127 E/Bound East Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A127 E/Bound East Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

Scenario 4: 'Reference Case 2030 PM' (FG4: 'Reference Case 2030 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | |
|--------|-------------|------|------|------|------|
| | A | B | C | Tot. | |
| Origin | A | 0 | 1744 | 0 | 1744 |
| | B | 1990 | 0 | 335 | 2325 |
| | C | 98 | 0 | 0 | 98 |
| | Tot. | 2088 | 1744 | 335 | 4167 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 4: Reference Case 2030 PM |
|-----------------------------------|--|
| Junction: Unnamed Junction | |
| 1/1 (short) | 335 |
| 1/2 (with short) | 1062(In) 727(Out) |
| 1/3 | 1263 |
| 2/1 | 825 |
| 2/2 | 1263 |
| 3/1 | 98 |
| 4/1 | 335 |
| 5/1 | 872 |
| 5/2 | 872 |
| 6/1 | 872 |
| 6/2 | 872 |

Lane Saturation Flows

| Junction: Unnamed Junction | | | | | | | | |
|-----------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (A127 W/B East) | 3.65 | 0.00 | Y | Arm 4 Left | 15.00 | 100.0 % | 1800 | 1800 |
| 1/2 (A127 W/B East) | 3.65 | 0.00 | Y | Arm 2 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 1/3 (A127 W/B East) | 3.65 | 0.00 | N | Arm 2 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 2/1 (A127 W/B West Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 (A127 W/B West Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 (Front Lane N/B) | 3.25 | 0.00 | Y | Arm 2 Left | 15.00 | 100.0 % | 1764 | 1764 |
| 4/1 (Front Lane S/B Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (A127 E/Bound West Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A127 E/Bound West Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A127 E/Bound East Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A127 E/Bound East Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

Scenario 5: 'Do Something 2030 + LTC AM' (FG7: 'Do Something 2030 + LTC AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | |
|--------|-------------|------|------|-----|------|
| | | A | B | C | Tot. |
| Origin | A | 0 | 1848 | 0 | 1848 |
| | B | 2793 | 0 | 328 | 3121 |
| | C | 151 | 0 | 0 | 151 |
| | Tot. | 2944 | 1848 | 328 | 5120 |

Traffic Lane Flows

| Lane | Scenario 5: Do Something 2030 + LTC AM |
|-----------------------------------|--|
| Junction: Unnamed Junction | |
| 1/1 (short) | 328 |
| 1/2 (with short) | 1469(In) 1141(Out) |
| 1/3 | 1652 |
| 2/1 | 1292 |
| 2/2 | 1652 |
| 3/1 | 151 |
| 4/1 | 328 |
| 5/1 | 924 |
| 5/2 | 924 |
| 6/1 | 924 |
| 6/2 | 924 |

Full Input Data And Results

Lane Saturation Flows

| Junction: Unnamed Junction | | | | | | | | |
|-----------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (A127 W/B East) | 3.65 | 0.00 | Y | Arm 4 Left | 15.00 | 100.0 % | 1800 | 1800 |
| 1/2 (A127 W/B East) | 3.65 | 0.00 | Y | Arm 2 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 1/3 (A127 W/B East) | 3.65 | 0.00 | N | Arm 2 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 2/1 (A127 W/B West Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 (A127 W/B West Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 (Front Lane N/B) | 3.25 | 0.00 | Y | Arm 2 Left | 15.00 | 100.0 % | 1764 | 1764 |
| 4/1 (Front Lane S/B Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (A127 E/Bound West Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A127 E/Bound West Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A127 E/Bound East Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A127 E/Bound East Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

Scenario 6: 'Do Something 2030 + LTC PM' (FG8: 'Do Something 2030 + LTC PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | |
|--------|-------------|------|------|------|------|
| | A | B | C | Tot. | |
| Origin | A | 0 | 1744 | 0 | 1744 |
| | B | 2322 | 0 | 358 | 2680 |
| | C | 161 | 0 | 0 | 161 |
| | Tot. | 2483 | 1744 | 358 | 4585 |

Traffic Lane Flows

| Scenario 6: Do Something 2030 + LTC PM | |
|--|----------------------|
| Junction: Unnamed Junction | |
| 1/1 (short) | 358 |
| 1/2 (with short) | 1242(In) 884(Out) |
| 1/3 | 1438 |
| 2/1 | 1045 |
| 2/2 | 1438 |
| 3/1 | 161 |
| 4/1 | 358 |
| 5/1 | 872 |
| 5/2 | 872 |
| 6/1 | 872 |
| 6/2 | 872 |

Lane Saturation Flows

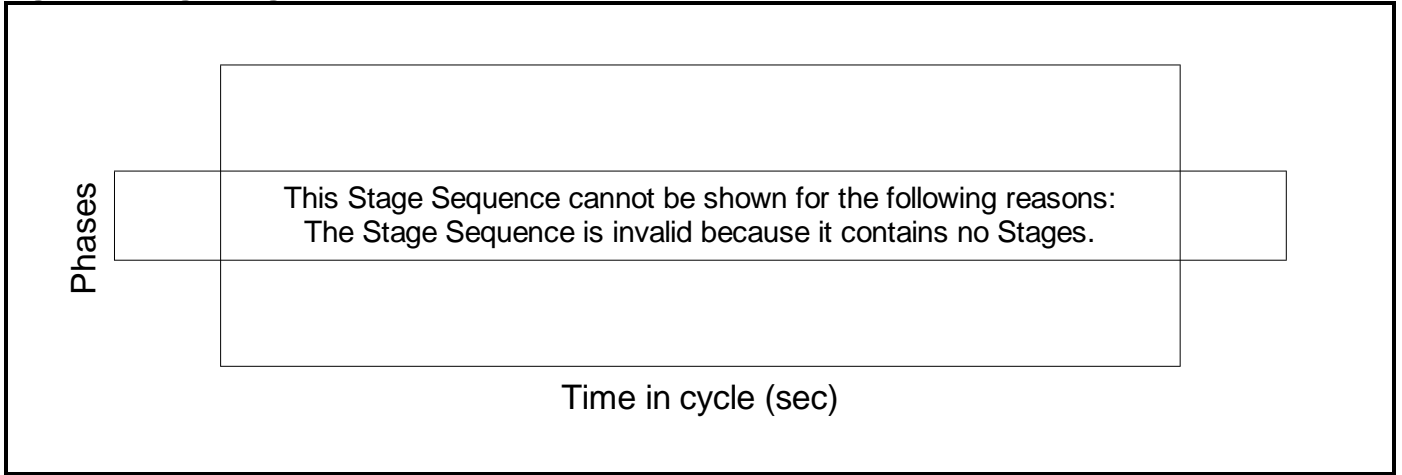
| Junction: Unnamed Junction | | | | | | | | |
|-----------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane | Lane Width (m) | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1 (A127 W/B East) | 3.65 | 0.00 | Y | Arm 4 Left | 15.00 | 100.0 % | 1800 | 1800 |
| 1/2 (A127 W/B East) | 3.65 | 0.00 | Y | Arm 2 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 1/3 (A127 W/B East) | 3.65 | 0.00 | N | Arm 2 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 2/1 (A127 W/B West Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 (A127 W/B West Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 (Front Lane N/B) | 3.25 | 0.00 | Y | Arm 2 Left | 15.00 | 100.0 % | 1764 | 1764 |
| 4/1 (Front Lane S/B Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (A127 E/Bound West Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (A127 E/Bound West Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (A127 E/Bound East Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 (A127 E/Bound East Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |

Scenario 1: 'Base 2023 AM' (FG1: 'Base Year 2023 AM', Plan 1: 'Network Control Plan 1')
Stage Sequence Diagram

Stage Timings

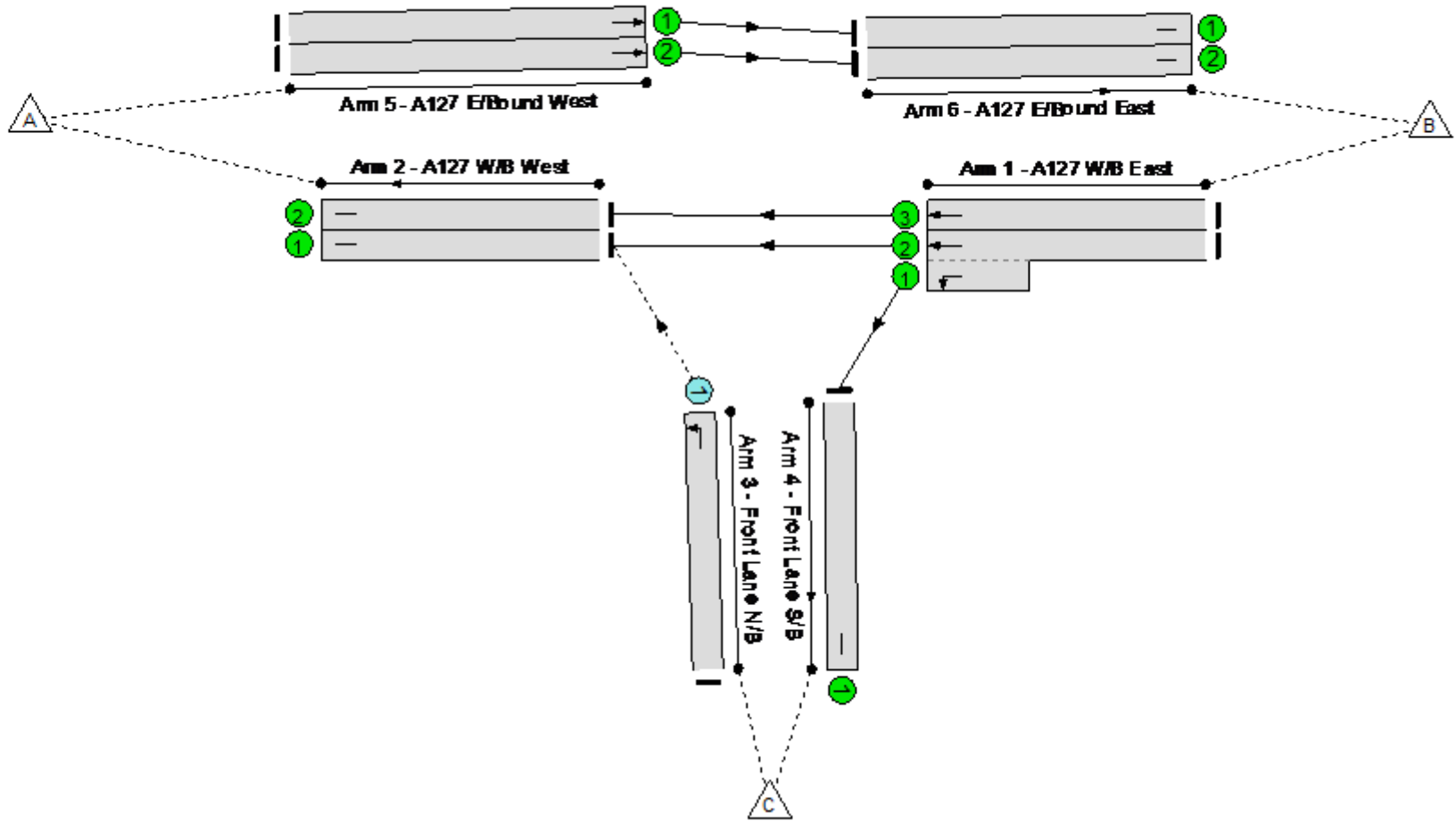
| Stage |
|--------------|
| Duration |
| Change Point |

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Unnamed Junction
PRC: 51.7 %
Total Traffic Delay: 1.5 pou Hr



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 | - | - | | - | - | - | - | - | - | 59.3% |
| Unnamed Junction | - | - | N/A | - | - | | - | - | - | - | - | - | 59.3% |
| 1/2+1/1 | A127 W/B East Ahead Left | U | N/A | N/A | - | | - | - | - | 1083 | 1980:1800 | 1589+355 | 55.7 : 55.7% |
| 1/3 | A127 W/B East Ahead | U | N/A | N/A | - | | - | - | - | 1258 | 2120 | 2120 | 59.3% |
| 2/1 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 974 | Inf | Inf | 0.0% |
| 2/2 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 1258 | Inf | Inf | 0.0% |
| 3/1 | Front Lane N/B Left | O | N/A | N/A | - | | - | - | - | 89 | 1764 | 520 | 17.1% |
| 4/1 | Front Lane S/B | U | N/A | N/A | - | | - | - | - | 198 | Inf | Inf | 0.0% |
| 5/1 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 883 | Inf | Inf | 0.0% |
| 5/2 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 883 | Inf | Inf | 0.0% |
| 6/1 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 883 | Inf | Inf | 0.0% |
| 6/2 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 883 | Inf | Inf | 0.0% |

Full Input Data And Results

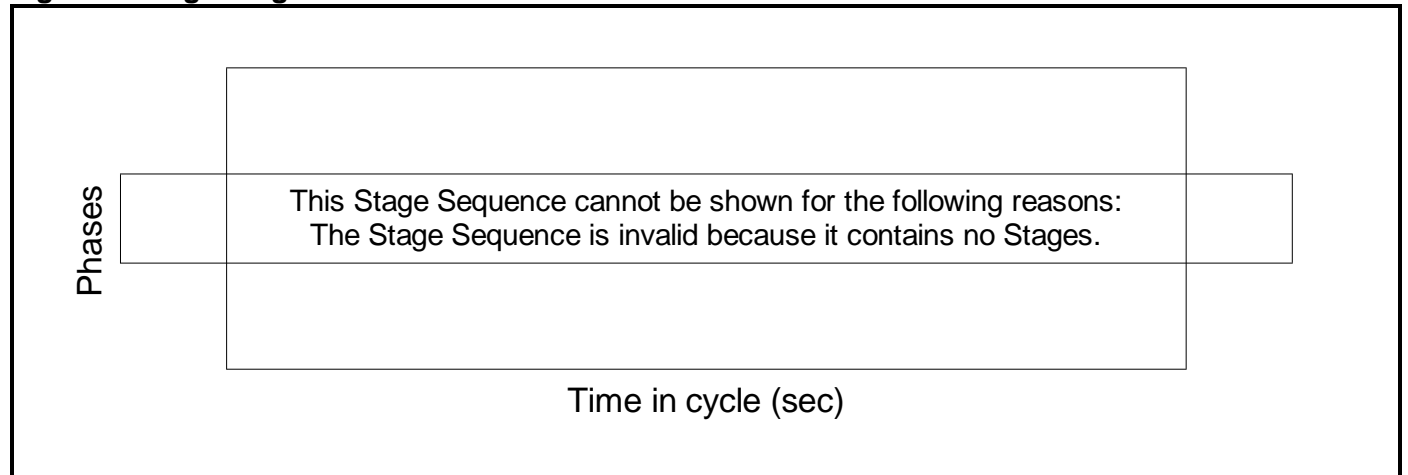
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|-------------------------|----------------|---------------|------------------------------|------------------------------|-----------------------------|--|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network | - | - | 89 | 0 | 0 | 0.0 | 1.5 | 0.0 | 1.5 | - | - | - | - |
| Unnamed Junction | - | - | 89 | 0 | 0 | 0.0 | 1.5 | 0.0 | 1.5 | - | - | - | - |
| 1/2+1/1 | 1083 | 1083 | - | - | - | 0.0 | 0.6 | - | 0.6 | 2.1 | 0.0 | 0.6 | 0.6 |
| 1/3 | 1258 | 1258 | - | - | - | 0.0 | 0.7 | - | 0.7 | 2.1 | 0.0 | 0.7 | 0.7 |
| 2/1 | 974 | 974 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2/2 | 1258 | 1258 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3/1 | 89 | 89 | 89 | 0 | 0 | 0.0 | 0.1 | - | 0.1 | 4.2 | 0.0 | 0.1 | 0.1 |
| 4/1 | 198 | 198 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 883 | 883 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 883 | 883 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 883 | 883 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 883 | 883 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 0.0 | Total Delay for Signalled Lanes (pcuHr): | | | 0.00 | Cycle Time (s): 90 | | | |
| | | | PRC Over All Lanes (%): | | 51.7 | Total Delay Over All Lanes(pcuHr): | | | 1.46 | | | | |

Stage Sequence Diagram

Stage Timings

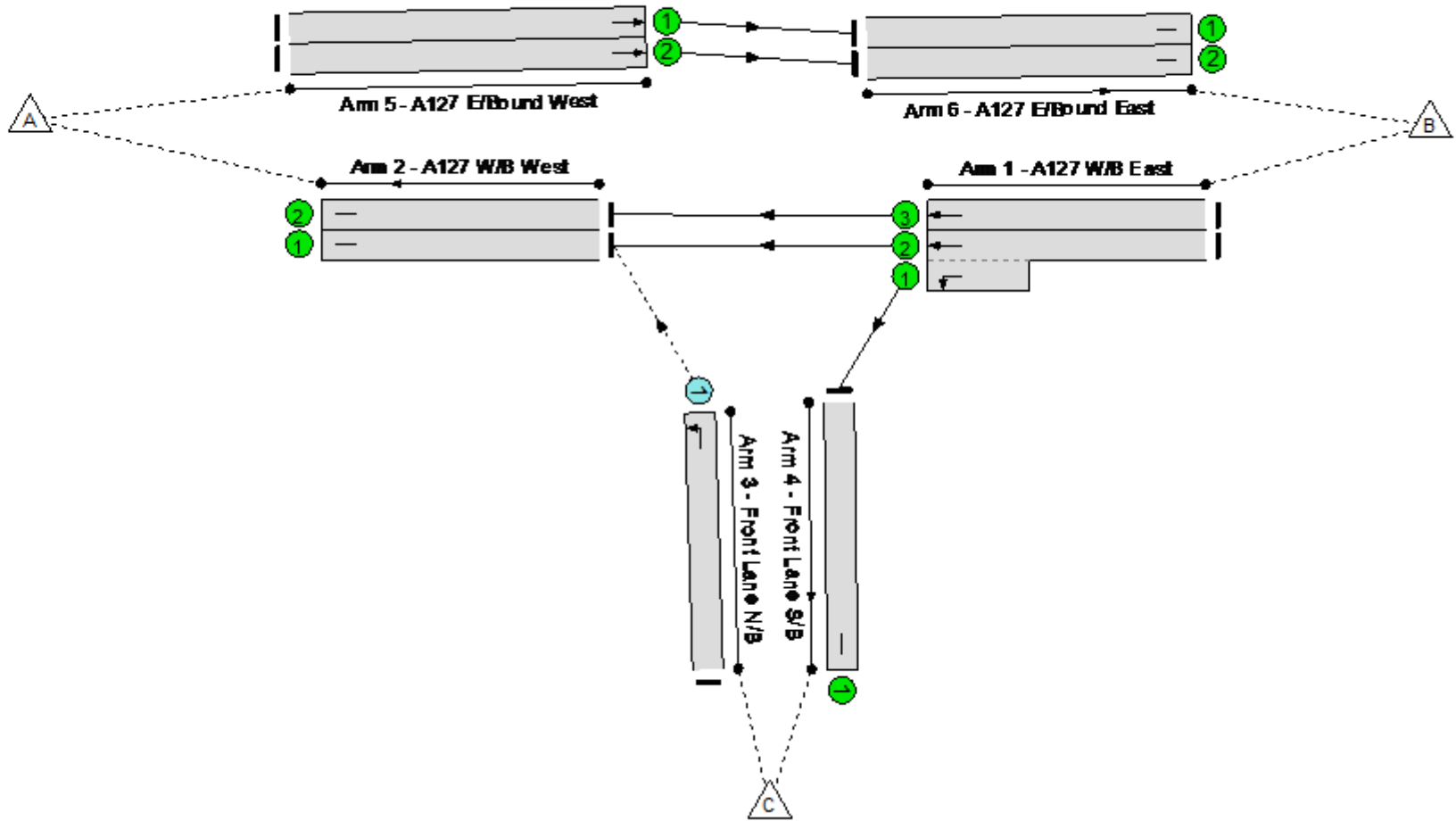

| Stage |
|--------------|
| Duration |
| Change Point |

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Unnamed Junction
PRC: 58.3 %
Total Traffic Delay: 1.3 pouHr



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 | - | - | | - | - | - | - | - | - | 56.8% |
| Unnamed Junction | - | - | N/A | - | - | | - | - | - | - | - | - | 56.8% |
| 1/2+1/1 | A127 W/B East Ahead Left | U | N/A | N/A | - | | - | - | - | 1004 | 1980:1800 | 1311+608 | 52.3 : 52.3% |
| 1/3 | A127 W/B East Ahead | U | N/A | N/A | - | | - | - | - | 1205 | 2120 | 2120 | 56.8% |
| 2/1 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 779 | Inf | Inf | 0.0% |
| 2/2 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 1205 | Inf | Inf | 0.0% |
| 3/1 | Front Lane N/B Left | O | N/A | N/A | - | | - | - | - | 93 | 1764 | 564 | 16.5% |
| 4/1 | Front Lane S/B | U | N/A | N/A | - | | - | - | - | 318 | Inf | Inf | 0.0% |
| 5/1 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 829 | Inf | Inf | 0.0% |
| 5/2 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 829 | Inf | Inf | 0.0% |
| 6/1 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 829 | Inf | Inf | 0.0% |
| 6/2 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 829 | Inf | Inf | 0.0% |

Full Input Data And Results

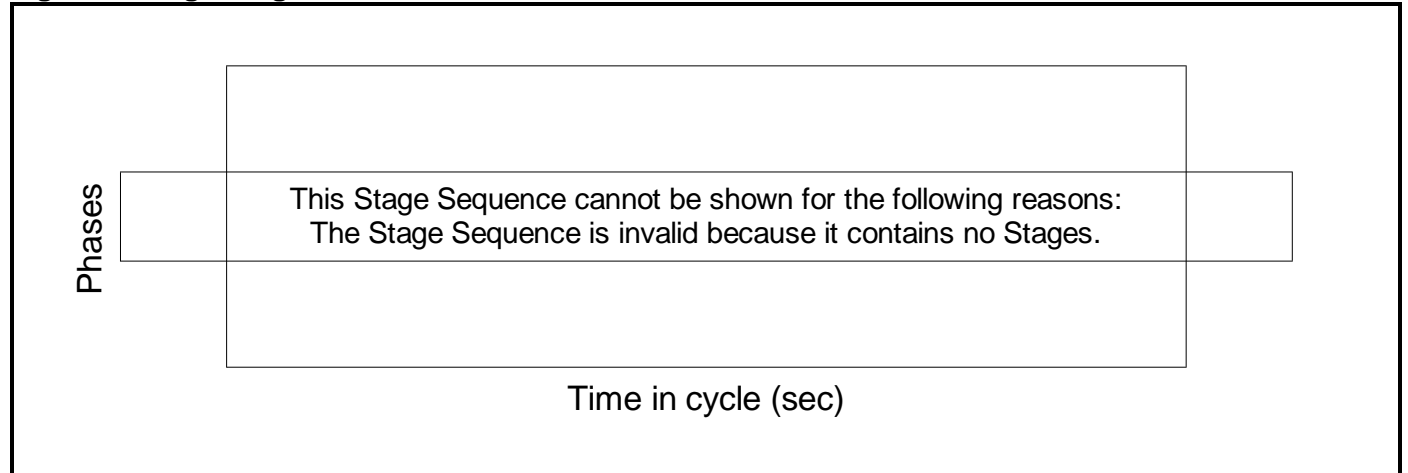
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|-------------------------|----------------|---------------|------------------------------|------------------------------|-----------------------------|--|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network | - | - | 93 | 0 | 0 | 0.0 | 1.3 | 0.0 | 1.3 | - | - | - | - |
| Unnamed Junction | - | - | 93 | 0 | 0 | 0.0 | 1.3 | 0.0 | 1.3 | - | - | - | - |
| 1/2+1/1 | 1004 | 1004 | - | - | - | 0.0 | 0.5 | - | 0.5 | 2.0 | 0.0 | 0.5 | 0.5 |
| 1/3 | 1205 | 1205 | - | - | - | 0.0 | 0.7 | - | 0.7 | 2.0 | 0.0 | 0.7 | 0.7 |
| 2/1 | 779 | 779 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2/2 | 1205 | 1205 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3/1 | 93 | 93 | 93 | 0 | 0 | 0.0 | 0.1 | - | 0.1 | 3.8 | 0.0 | 0.1 | 0.1 |
| 4/1 | 318 | 318 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 829 | 829 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 829 | 829 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 829 | 829 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 829 | 829 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 0.0 | Total Delay for Signalled Lanes (pcuHr): | | 0.00 | Cycle Time (s): | | 90 | | |
| | | | PRC Over All Lanes (%): | | 58.3 | Total Delay Over All Lanes(pcuHr): | | 1.30 | | | | | |

Stage Sequence Diagram

Stage Timings

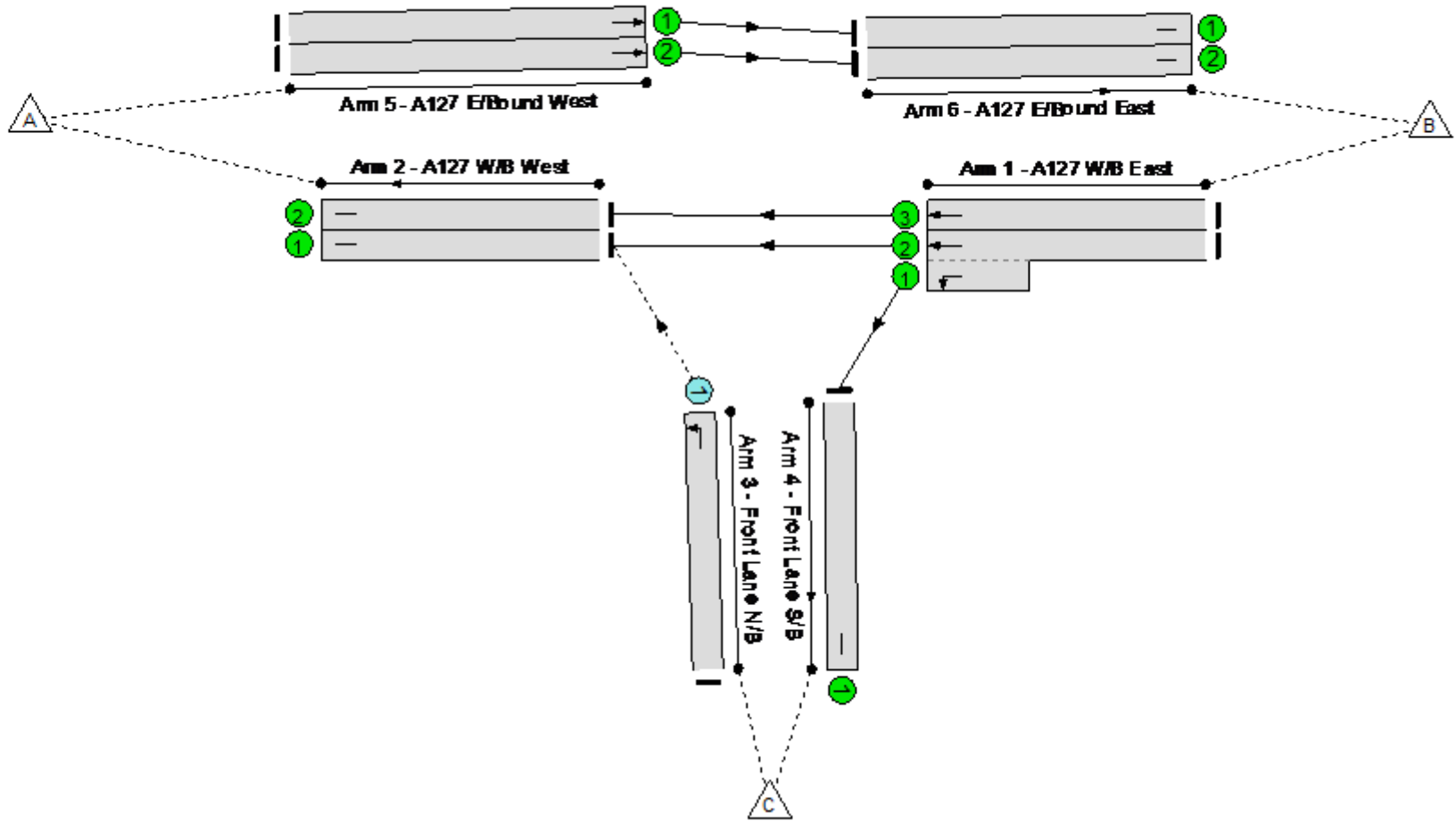

| Stage |
|--------------|
| Duration |
| Change Point |

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Unnamed Junction
PRC: 45.3 %
Total Traffic Delay: 1.8 pou Hr



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 | - | - | | - | - | - | - | - | - | 61.9% |
| Unnamed Junction | - | - | N/A | - | - | | - | - | - | - | - | - | 61.9% |
| 1/2+1/1 | A127 W/B East Ahead Left | U | N/A | N/A | - | | - | - | - | 1137 | 1980:1800 | 1591+354 | 58.5 : 58.5% |
| 1/3 | A127 W/B East Ahead | U | N/A | N/A | - | | - | - | - | 1313 | 2120 | 2120 | 61.9% |
| 2/1 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 1023 | Inf | Inf | 0.0% |
| 2/2 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 1313 | Inf | Inf | 0.0% |
| 3/1 | Front Lane N/B Left | O | N/A | N/A | - | | - | - | - | 93 | 1764 | 510 | 18.2% |
| 4/1 | Front Lane S/B | U | N/A | N/A | - | | - | - | - | 207 | Inf | Inf | 0.0% |
| 5/1 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 924 | Inf | Inf | 0.0% |
| 5/2 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 924 | Inf | Inf | 0.0% |
| 6/1 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 924 | Inf | Inf | 0.0% |
| 6/2 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 924 | Inf | Inf | 0.0% |

Full Input Data And Results

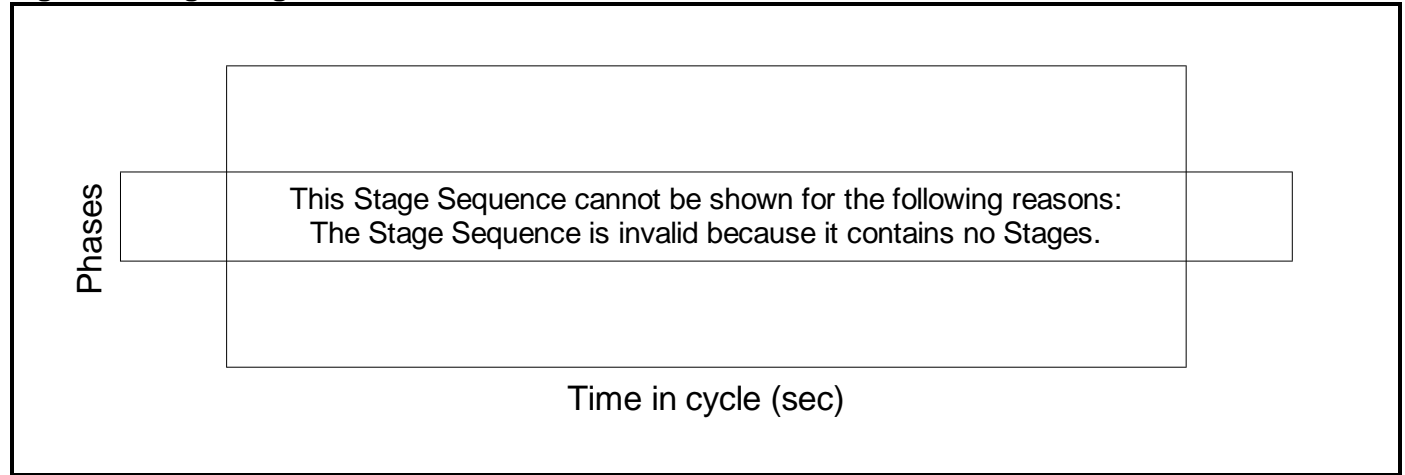
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|--|----------------|---------------|-----------------------|------------------------------|-----------------------------|-----------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network | - | - | 93 | 0 | 0 | 0.0 | 1.6 | 0.0 | 1.6 | - | - | - | - |
| Unnamed Junction | - | - | 93 | 0 | 0 | 0.0 | 1.6 | 0.0 | 1.6 | - | - | - | - |
| 1/2+1/1 | 1137 | 1137 | - | - | - | 0.0 | 0.7 | - | 0.7 | 2.2 | 0.0 | 0.7 | 0.7 |
| 1/3 | 1313 | 1313 | - | - | - | 0.0 | 0.8 | - | 0.8 | 2.2 | 0.0 | 0.8 | 0.8 |
| 2/1 | 1023 | 1023 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2/2 | 1313 | 1313 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3/1 | 93 | 93 | 93 | 0 | 0 | 0.0 | 0.1 | - | 0.1 | 4.3 | 0.0 | 0.1 | 0.1 |
| 4/1 | 207 | 207 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 924 | 924 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 924 | 924 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 924 | 924 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 924 | 924 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| <p>C1 PRC for Signalled Lanes (%): 0.0 Total Delay for Signalled Lanes (pcuHr): 0.00 Cycle Time (s): 90 PRC Over All Lanes (%): 45.3 Total Delay Over All Lanes(pcuHr): 1.63</p> | | | | | | | | | | | | | |

Stage Sequence Diagram

Stage Timings

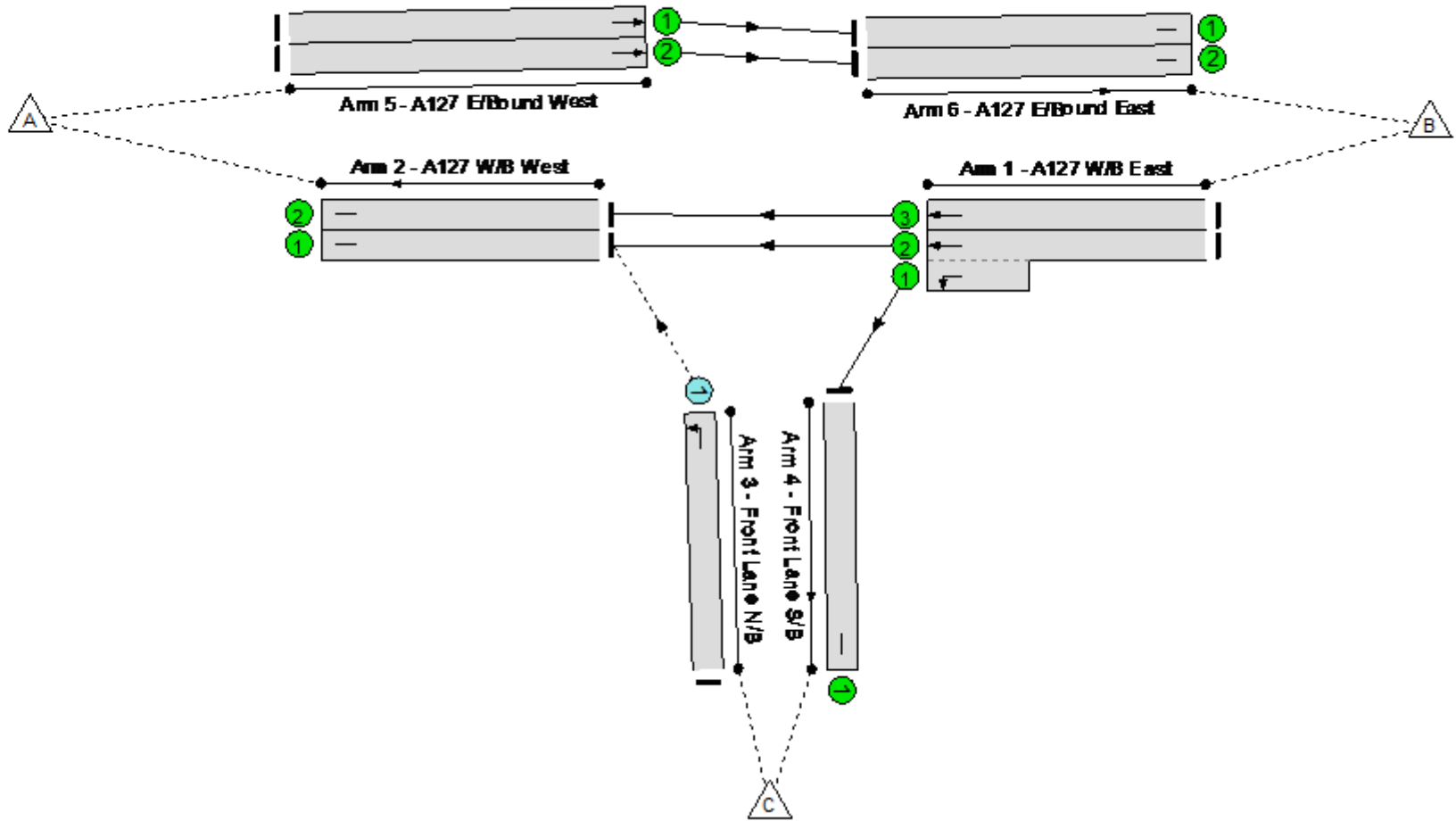

| Stage |
|--------------|
| Duration |
| Change Point |

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Unnamed Junction
PRC: 51.1 %
Total Traffic Delay: 1.5 pouHr



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 | - | - | | - | - | - | - | - | - | 59.6% |
| Unnamed Junction | - | - | N/A | - | - | | - | - | - | - | - | - | 59.6% |
| 1/2+1/1 | A127 W/B East Ahead Left | U | N/A | N/A | - | | - | - | - | 1062 | 1980:1800 | 1314+605 | 55.3 : 55.3% |
| 1/3 | A127 W/B East Ahead | U | N/A | N/A | - | | - | - | - | 1263 | 2120 | 2120 | 59.6% |
| 2/1 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 825 | Inf | Inf | 0.0% |
| 2/2 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 1263 | Inf | Inf | 0.0% |
| 3/1 | Front Lane N/B Left | O | N/A | N/A | - | | - | - | - | 98 | 1764 | 555 | 17.7% |
| 4/1 | Front Lane S/B | U | N/A | N/A | - | | - | - | - | 335 | Inf | Inf | 0.0% |
| 5/1 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 872 | Inf | Inf | 0.0% |
| 5/2 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 872 | Inf | Inf | 0.0% |
| 6/1 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 872 | Inf | Inf | 0.0% |
| 6/2 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 872 | Inf | Inf | 0.0% |

Full Input Data And Results

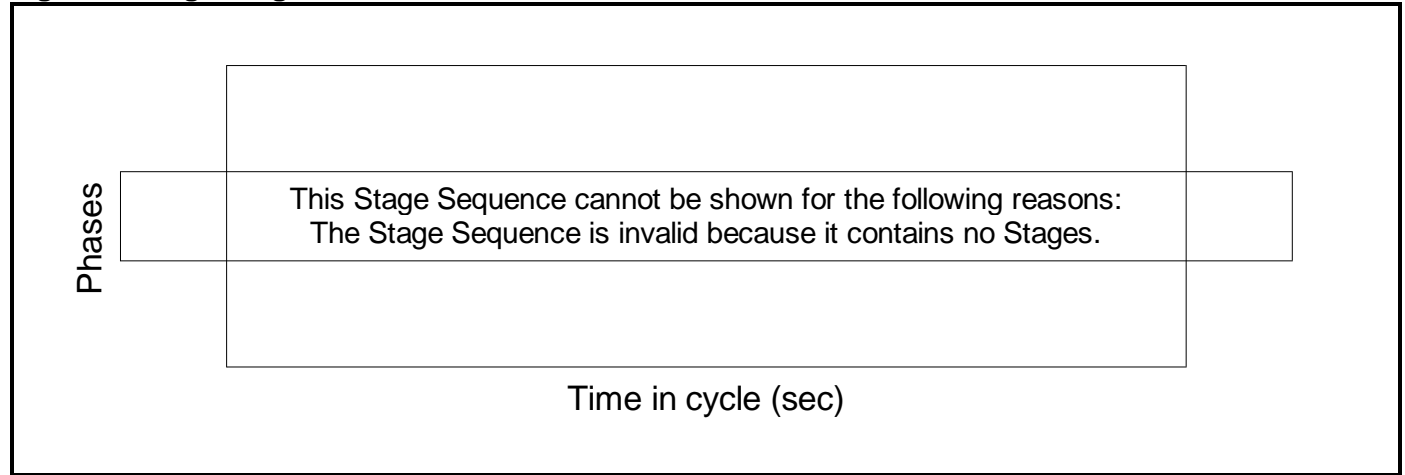
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|-------------------------|----------------|---------------|------------------------------|------------------------------|-----------------------------|--|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network | - | - | 98 | 0 | 0 | 0.0 | 1.5 | 0.0 | 1.5 | - | - | - | - |
| Unnamed Junction | - | - | 98 | 0 | 0 | 0.0 | 1.5 | 0.0 | 1.5 | - | - | - | - |
| 1/2+1/1 | 1062 | 1062 | - | - | - | 0.0 | 0.6 | - | 0.6 | 2.1 | 0.0 | 0.6 | 0.6 |
| 1/3 | 1263 | 1263 | - | - | - | 0.0 | 0.7 | - | 0.7 | 2.1 | 0.0 | 0.7 | 0.7 |
| 2/1 | 825 | 825 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2/2 | 1263 | 1263 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3/1 | 98 | 98 | 98 | 0 | 0 | 0.0 | 0.1 | - | 0.1 | 3.9 | 0.0 | 0.1 | 0.1 |
| 4/1 | 335 | 335 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 872 | 872 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 872 | 872 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 872 | 872 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 872 | 872 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 0.0 | Total Delay for Signalled Lanes (pcuHr): | | 0.00 | Cycle Time (s): | | 90 | | |
| | | | PRC Over All Lanes (%): | | 51.1 | Total Delay Over All Lanes(pcuHr): | | 1.46 | | | | | |

Stage Sequence Diagram

Stage Timings

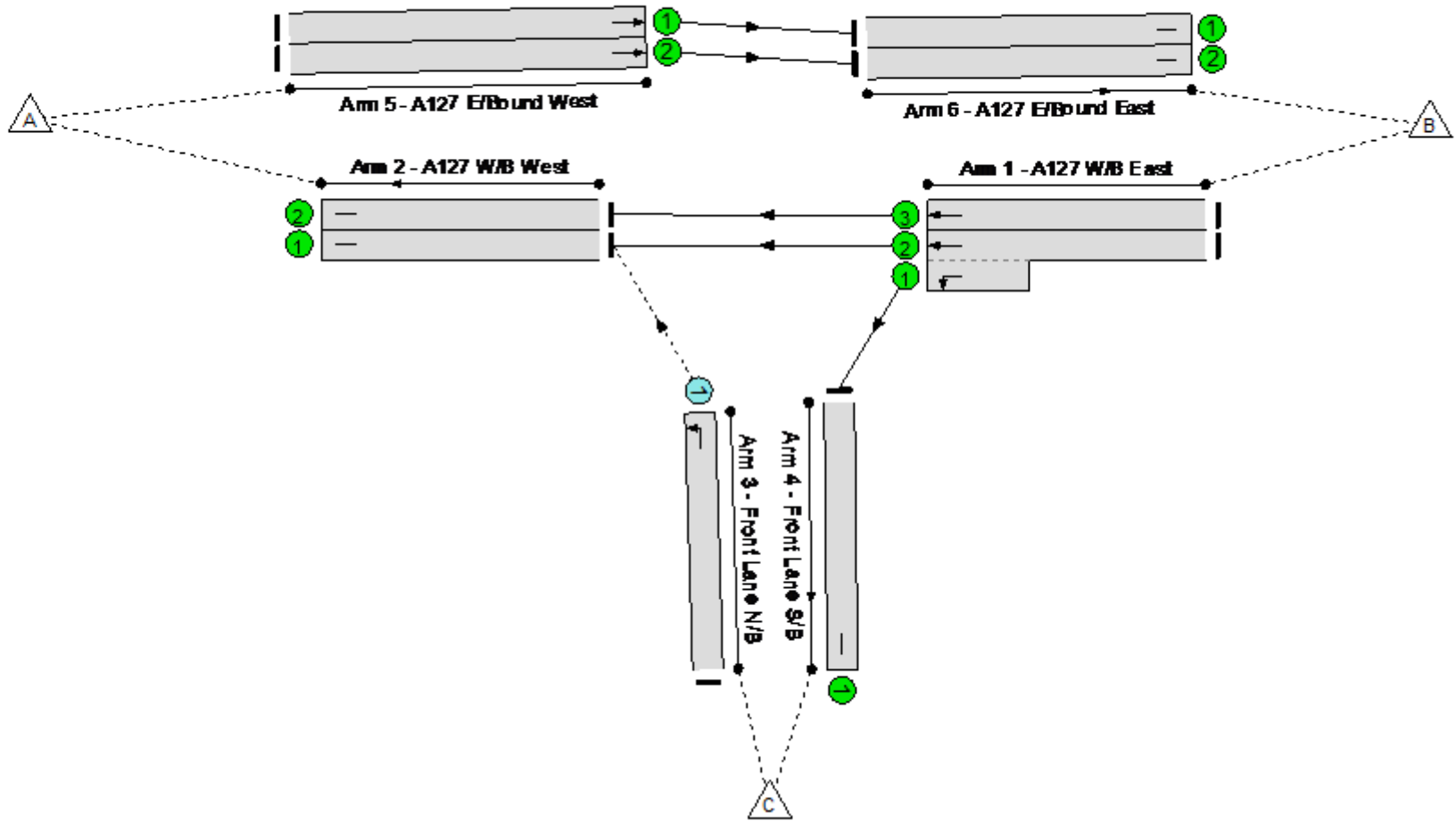
| Stage |
|--------------|
| Duration |
| Change Point |

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Unnamed Junction
PRC: 15.5 %
Total Traffic Delay: 3.8 pou Hr



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 | - | - | | - | - | - | - | - | - | 77.9% |
| Unnamed Junction | - | - | N/A | - | - | | - | - | - | - | - | - | 77.9% |
| 1/2+1/1 | A127 W/B East Ahead Left | U | N/A | N/A | - | | - | - | - | 1469 | 1980:1800 | 1504+432 | 75.8 : 75.8% |
| 1/3 | A127 W/B East Ahead | U | N/A | N/A | - | | - | - | - | 1652 | 2120 | 2120 | 77.9% |
| 2/1 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 1292 | Inf | Inf | 0.0% |
| 2/2 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 1652 | Inf | Inf | 0.0% |
| 3/1 | Front Lane N/B Left | O | N/A | N/A | - | | - | - | - | 151 | 1764 | 464 | 32.5% |
| 4/1 | Front Lane S/B | U | N/A | N/A | - | | - | - | - | 328 | Inf | Inf | 0.0% |
| 5/1 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 924 | Inf | Inf | 0.0% |
| 5/2 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 924 | Inf | Inf | 0.0% |
| 6/1 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 924 | Inf | Inf | 0.0% |
| 6/2 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 924 | Inf | Inf | 0.0% |

Full Input Data And Results

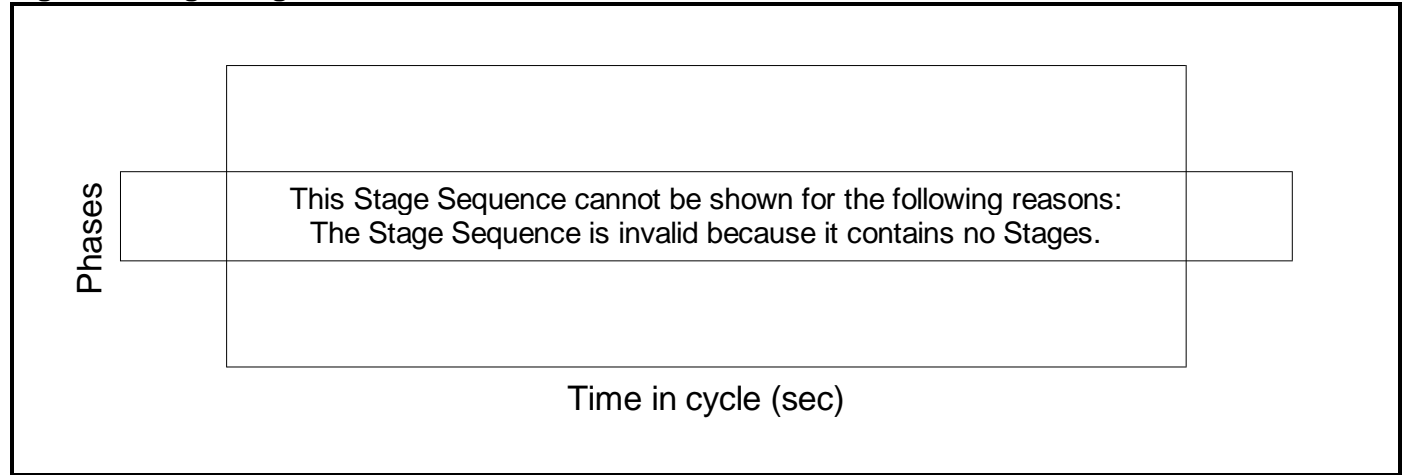
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|-------------------------|----------------|---------------|------------------------------|------------------------------|-----------------------------|--|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network | - | - | 151 | 0 | 0 | 0.0 | 3.6 | 0.0 | 3.6 | - | - | - | - |
| Unnamed Junction | - | - | 151 | 0 | 0 | 0.0 | 3.6 | 0.0 | 3.6 | - | - | - | - |
| 1/2+1/1 | 1469 | 1469 | - | - | - | 0.0 | 1.6 | - | 1.6 | 3.8 | 0.0 | 1.6 | 1.6 |
| 1/3 | 1652 | 1652 | - | - | - | 0.0 | 1.8 | - | 1.8 | 3.8 | 0.0 | 1.8 | 1.8 |
| 2/1 | 1292 | 1292 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2/2 | 1652 | 1652 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3/1 | 151 | 151 | 151 | 0 | 0 | 0.0 | 0.2 | - | 0.2 | 5.7 | 0.0 | 0.2 | 0.2 |
| 4/1 | 328 | 328 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 924 | 924 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 924 | 924 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 924 | 924 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 924 | 924 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 0.0 | Total Delay for Signalled Lanes (pcuHr): | | | 0.00 | Cycle Time (s): 90 | | | |
| | | | PRC Over All Lanes (%): | | 15.5 | Total Delay Over All Lanes (pcuHr): | | | 3.55 | | | | |

Stage Sequence Diagram

Stage Timings

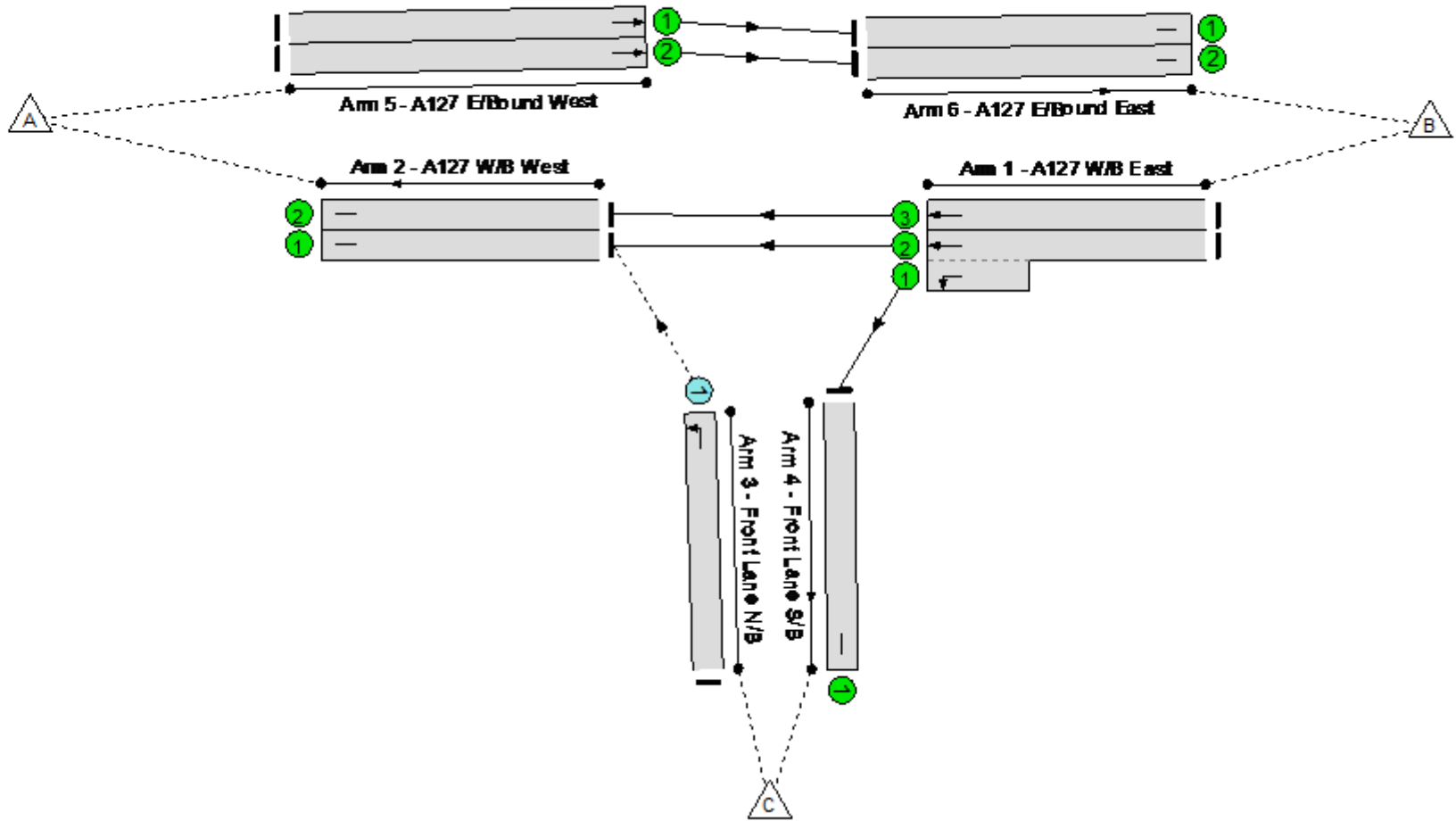
| Stage |
|--------------|
| Duration |
| Change Point |

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Unnamed Junction
PRC: 32.7 %
Total Traffic Delay: 2.2 pouHr



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 | - | - | | - | - | - | - | - | - | 67.8% |
| Unnamed Junction | - | - | N/A | - | - | | - | - | - | - | - | - | 67.8% |
| 1/2+1/1 | A127 W/B East Ahead Left | U | N/A | N/A | - | | - | - | - | 1242 | 1980:1800 | 1370+555 | 64.5 : 64.5% |
| 1/3 | A127 W/B East Ahead | U | N/A | N/A | - | | - | - | - | 1438 | 2120 | 2120 | 67.8% |
| 2/1 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 1045 | Inf | Inf | 0.0% |
| 2/2 | A127 W/B West | U | N/A | N/A | - | | - | - | - | 1438 | Inf | Inf | 0.0% |
| 3/1 | Front Lane N/B Left | O | N/A | N/A | - | | - | - | - | 161 | 1764 | 520 | 30.9% |
| 4/1 | Front Lane S/B | U | N/A | N/A | - | | - | - | - | 358 | Inf | Inf | 0.0% |
| 5/1 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 872 | Inf | Inf | 0.0% |
| 5/2 | A127 E/Bound West Ahead | U | N/A | N/A | - | | - | - | - | 872 | Inf | Inf | 0.0% |
| 6/1 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 872 | Inf | Inf | 0.0% |
| 6/2 | A127 E/Bound East | U | N/A | N/A | - | | - | - | - | 872 | Inf | Inf | 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 | - | - | 161 | 0 | 0 | 0.0 | 2.2 | 0.0 | 2.2 | - | - | - | - |
| Unnamed Junction | - | - | 161 | 0 | 0 | 0.0 | 2.2 | 0.0 | 2.2 | - | - | - | - |
| 1/2+1/1 | 1242 | 1242 | - | - | - | 0.0 | 0.9 | - | 0.9 | 2.6 | 0.0 | 0.9 | 0.9 |
| 1/3 | 1438 | 1438 | - | - | - | 0.0 | 1.1 | - | 1.1 | 2.6 | 0.0 | 1.1 | 1.1 |
| 2/1 | 1045 | 1045 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 2/2 | 1438 | 1438 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 3/1 | 161 | 161 | 161 | 0 | 0 | 0.0 | 0.2 | - | 0.2 | 5.0 | 0.0 | 0.2 | 0.2 |
| 4/1 | 358 | 358 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/1 | 872 | 872 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2 | 872 | 872 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 872 | 872 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/2 | 872 | 872 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | | 0.0 | Total Delay for Signalled Lanes (pcuHr): | | 0.00 | Cycle Time (s): | | 90 | | |
| | | | PRC Over All Lanes (%): | | 32.7 | Total Delay Over All Lanes(pcuHr): | | 2.18 | | | | | |

| |
|--|
| Junctions 10 |
| ARCADY 10 - Roundabout Module |
| Version: 10.0.4.1693 © Copyright TRL Software Limited, 2021 |
| For sales and distribution information, program advice and maintenance, contact TRL Software: +44 (0)1344 379777 software@trl.co.uk trlsoftware.com |
| The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution |

Filename: Junction 10 - A13-A1306 Wennington Rd.j10
Path: P:\9100s\9190 - Lower Thames Crossing, London Borough of Havering\Junction Analysis\10 - A13 - A1306 Wennington Road
Report generation date: 23/06/2023 16:11:50

- »2023, AM
- »2023, PM
- »Reference Case 2030 AM, AM
- »Reference Case 2030 AM, PM
- »Do Something 2030 + LTC, AM
- »Do Something 2030 + LTC, PM

Summary of junction performance

| | AM | | | | | PM | | | | |
|--------------------------------|--------|-------------|-----------|------|-----|--------|-------------|-----------|------|-----|
| | Set ID | Queue (PCU) | Delay (s) | RFC | LOS | Set ID | Queue (PCU) | Delay (s) | RFC | LOS |
| 2023 | | | | | | | | | | |
| Junction 1 - Arm 3 | D1 | 0.7 | 2.58 | 0.42 | A | D2 | 0.9 | 2.80 | 0.47 | A |
| Junction 1 - Arm 4 | | 0.5 | 3.28 | 0.34 | A | | 1.1 | 4.84 | 0.53 | A |
| Junction 1 - Arm 1 | | 0.9 | 2.90 | 0.47 | A | | 0.9 | 3.04 | 0.48 | A |
| Junction 2 - Arm 1 | | 1.1 | 3.12 | 0.52 | A | | 1.1 | 3.18 | 0.53 | A |
| Junction 2 - Arm 3 | | 0.6 | 2.51 | 0.36 | A | | 0.6 | 2.55 | 0.37 | A |
| Junction 2 - Arm 4 | | 0.5 | 2.49 | 0.33 | A | | 0.4 | 2.37 | 0.29 | A |
| Reference Case 2030 AM | | | | | | | | | | |
| Junction 1 - Arm 3 | D3 | 0.8 | 2.67 | 0.44 | A | D4 | 1.0 | 2.93 | 0.49 | A |
| Junction 1 - Arm 4 | | 0.6 | 3.48 | 0.36 | A | | 1.3 | 5.42 | 0.57 | A |
| Junction 1 - Arm 1 | | 1.0 | 3.12 | 0.50 | A | | 1.0 | 3.28 | 0.51 | A |
| Junction 2 - Arm 1 | | 1.2 | 3.38 | 0.55 | A | | 1.3 | 3.45 | 0.56 | A |
| Junction 2 - Arm 3 | | 0.6 | 2.58 | 0.38 | A | | 0.6 | 2.63 | 0.39 | A |
| Junction 2 - Arm 4 | | 0.5 | 2.62 | 0.35 | A | | 0.4 | 2.48 | 0.31 | A |
| Do Something 2030 + LTC | | | | | | | | | | |
| Junction 1 - Arm 3 | D5 | 0.9 | 2.76 | 0.46 | A | D6 | 1.2 | 3.24 | 0.54 | A |
| Junction 1 - Arm 4 | | 0.5 | 3.36 | 0.33 | A | | 1.3 | 5.62 | 0.56 | A |
| Junction 1 - Arm 1 | | 1.0 | 2.98 | 0.49 | A | | 1.1 | 3.49 | 0.53 | A |
| Junction 2 - Arm 1 | | 1.2 | 3.37 | 0.54 | A | | 1.4 | 3.85 | 0.59 | A |
| Junction 2 - Arm 3 | | 0.6 | 2.61 | 0.38 | A | | 0.8 | 2.82 | 0.43 | A |
| Junction 2 - Arm 4 | | 0.6 | 2.72 | 0.37 | A | | 0.6 | 2.86 | 0.38 | A |

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

| | |
|-------------|----------------|
| Title | |
| Location | |
| Site number | |
| Date | 09/09/2022 |
| Version | |
| Status | (new file) |
| Identifier | |
| Client | |
| Jobnumber | |
| Enumerator | JEGINTLPIEPRZJ |
| Description | |

Units

| Distance units | Speed units | Traffic units input | Traffic units results | Flow units | Average delay units | Total delay units | Rate of delay units |
|----------------|-------------|---------------------|-----------------------|------------|---------------------|-------------------|---------------------|
| m | kph | PCU | PCU | perHour | s | -Min | perMin |

Analysis Options

| Calculate Queue Percentiles | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|-----------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
| | | 0.85 | 36.00 | 20.00 |

Demand Set Summary

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|-------------------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D1 | 2023 | AM | ONE HOUR | 06:45 | 08:15 | 15 |
| D2 | 2023 | PM | ONE HOUR | 16:45 | 18:15 | 15 |
| D3 | Reference Case 2030 AM | AM | ONE HOUR | 06:45 | 08:15 | 15 |
| D4 | Reference Case 2030 AM | PM | ONE HOUR | 16:45 | 18:15 | 15 |
| D5 | Do Something 2030 + LTC | AM | ONE HOUR | 06:45 | 08:15 | 15 |
| D6 | Do Something 2030 + LTC | PM | ONE HOUR | 16:45 | 18:15 | 15 |

Analysis Set Details

| ID | Network flow scaling factor (%) |
|----|---------------------------------|
| A1 | 100.000 |

2023, AM

Data Errors and Warnings

| Severity | Area | Item | Description |
|----------|--------------------|---------------------------------|---|
| Warning | Linked Roundabout | Junction 1 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Demand Sets | D3 - Reference Case 2030 AM, AM | Demand Set 3: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Vehicle Mix | Junction 1 | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |
| Warning | Vehicle Mix | Junction 2 | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

Junction Network

Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|----------|------------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1 | North Roundabout | Standard Roundabout | | 2, 3, 4, 1 | 2.86 | A |
| 2 | South Roundabout | Standard Roundabout | | 1, 2, 3, 4 | 2.78 | A |

Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|--------------|----------------|-------------------|-------------|
| Left | Normal/unknown | 2.82 | A |

Arms

Arms

| Junction | Arm | Name | Description | No give-way line |
|----------|-----|--------------------|-------------|------------------|
| 1 | 2 | A13 Entry | | |
| | 3 | A1306 (S) Internal | | |
| | 4 | A13 Off-Slip (N) | | |
| | 1 | A1306 (N) | | |
| 2 | 1 | untitled | | |
| | 2 | untitled | | |
| | 3 | untitled | | |
| | 4 | untitled | | |

Roundabout Geometry

| Junction | Arm | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Entry only | Exit only |
|----------|-----|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|------------|-----------|
| 1 | 2 | | | | | | | | ✓ |
| | 3 | 7.34 | 9.12 | 5.7 | 41.0 | 50.0 | 46.0 | | |
| | 4 | 8.28 | 10.10 | 4.7 | 15.9 | 50.0 | 67.5 | | |
| | 1 | 7.76 | 9.11 | 17.1 | 52.9 | 50.0 | 8.5 | | |
| 2 | 1 | 7.44 | 10.30 | 7.9 | 40.1 | 50.0 | 5.5 | | |
| | 2 | | | | | | | | ✓ |
| | 3 | 7.34 | 8.27 | 1.6 | 25.1 | 50.0 | 39.0 | | |
| | 4 | 7.38 | 10.30 | 20.2 | 15.8 | 50.0 | 24.0 | | |

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

| Junction | Arm | Final slope | Final intercept (PCU/hr) |
|----------|-----|-------------|--------------------------|
| 1 | 2 | | |
| | 3 | 0.736 | 2419 |
| | 4 | 0.693 | 2361 |
| | 1 | 0.877 | 2959 |
| 2 | 1 | 0.876 | 2947 |
| | 2 | | |
| | 3 | 0.711 | 2271 |
| | 4 | 0.831 | 2863 |

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D1 | 2023 | AM | ONE HOUR | 06:45 | 08:15 | 15 |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages | 2.00 |

Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|----------|-----|------------------|-------------|----------------------------|-------------|-----------------------|---------------------|------------------------------|
| 1 | 3 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

Demand overview (Traffic)

| Junction | Arm | Linked arm | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------|-----|------------|--------------|-------------------------|--------------------|
| 1 | 2 | | | | |
| | 3 | ✓ | | | |
| | 4 | | ✓ | 504 | 100.000 |
| | 1 | | ✓ | 1007 | 100.000 |
| 2 | 1 | | ✓ | 1124 | 100.000 |
| | 2 | | | | |
| | 3 | ✓ | | | |
| | 4 | | ✓ | 648 | 100.000 |

Origin-Destination Data

Demand (PCU/hr)

Junction 1

| | | To | | | |
|------|---|-----|-----|---|-----|
| | | 2 | 3 | 4 | 1 |
| From | 2 | 0 | 0 | 0 | 0 |
| | 3 | 279 | 5 | 0 | 635 |
| | 4 | 1 | 345 | 0 | 158 |
| | 1 | 449 | 557 | 0 | 1 |

Demand (PCU/hr)

Junction 2

| | | To | | | |
|------|---|-----|-----|-----|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 40 | 525 | 559 | 0 |
| | 2 | 0 | 0 | 0 | 0 |
| | 3 | 644 | 255 | 3 | 0 |
| | 4 | 280 | 2 | 366 | 0 |

Vehicle Mix

Heavy Vehicle Percentages

Junction 1

| | | To | | | |
|------|---|----|---|---|---|
| | | 2 | 3 | 4 | 1 |
| From | 2 | 0 | 0 | 0 | 0 |
| | 3 | 0 | 0 | 0 | 0 |
| | 4 | 0 | 0 | 0 | 0 |
| | 1 | 0 | 0 | 0 | 0 |

Heavy Vehicle Percentages

Junction 2

| | | To | | | |
|------|---|----|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0 | 0 | 0 | 0 |
| | 2 | 0 | 0 | 0 | 0 |
| | 3 | 0 | 0 | 0 | 0 |
| | 4 | 0 | 0 | 0 | 0 |

Results

Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS |
|----------|-----|---------|---------------|-----------------|---------|
| 1 | 2 | | | | |
| | 3 | 0.42 | 2.58 | 0.7 | A |
| | 4 | 0.34 | 3.28 | 0.5 | A |
| | 1 | 0.47 | 2.90 | 0.9 | A |
| 2 | 1 | 0.52 | 3.12 | 1.1 | A |
| | 2 | | | | |
| | 3 | 0.36 | 2.51 | 0.6 | A |
| | 4 | 0.33 | 2.49 | 0.5 | A |

Main Results for each time segment

06:45 - 07:00

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 682 | | | | | | |
| | 3 | 697 | 0.75 | 2418 | 0.288 | 695 | 0.4 | 2.087 | A |
| | 4 | 379 | 696 | 1879 | 0.202 | 378 | 0.3 | 2.398 | A |
| | 1 | 758 | 475 | 2543 | 0.298 | 756 | 0.4 | 2.013 | A |
| 2 | 1 | 846 | 433 | 2568 | 0.330 | 844 | 0.5 | 2.087 | A |
| | 2 | | 727 | | | | | | |
| | 3 | 549 | 30 | 2250 | 0.244 | 548 | 0.3 | 2.114 | A |
| | 4 | 488 | 578 | 2383 | 0.205 | 487 | 0.3 | 1.898 | A |

07:00 - 07:15

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 816 | | | | | | |
| | 3 | 833 | 0.90 | 2418 | 0.345 | 833 | 0.5 | 2.271 | A |
| | 4 | 453 | 834 | 1783 | 0.254 | 453 | 0.3 | 2.705 | A |
| | 1 | 905 | 568 | 2461 | 0.368 | 905 | 0.6 | 2.311 | A |
| 2 | 1 | 1010 | 518 | 2493 | 0.405 | 1010 | 0.7 | 2.426 | A |
| | 2 | | 869 | | | | | | |
| | 3 | 657 | 36 | 2246 | 0.293 | 657 | 0.4 | 2.265 | A |
| | 4 | 583 | 693 | 2288 | 0.255 | 582 | 0.3 | 2.110 | A |

07:15 - 07:30

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 999 | | | | | | |
| | 3 | 1020 | 1 | 2418 | 0.422 | 1019 | 0.7 | 2.572 | A |
| | 4 | 555 | 1020 | 1654 | 0.336 | 554 | 0.5 | 3.272 | A |
| | 1 | 1109 | 695 | 2349 | 0.472 | 1107 | 0.9 | 2.896 | A |
| 2 | 1 | 1238 | 635 | 2391 | 0.518 | 1236 | 1.1 | 3.113 | A |
| | 2 | | 1064 | | | | | | |
| | 3 | 804 | 44 | 2240 | 0.359 | 804 | 0.6 | 2.505 | A |
| | 4 | 713 | 848 | 2159 | 0.330 | 713 | 0.5 | 2.487 | A |

07:30 - 07:45

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 1000 | | | | | | |
| | 3 | 1021 | 1 | 2418 | 0.422 | 1021 | 0.7 | 2.576 | A |
| | 4 | 555 | 1022 | 1653 | 0.336 | 555 | 0.5 | 3.278 | A |
| | 1 | 1109 | 697 | 2348 | 0.472 | 1109 | 0.9 | 2.903 | A |
| 2 | 1 | 1238 | 636 | 2390 | 0.518 | 1238 | 1.1 | 3.122 | A |
| | 2 | | 1065 | | | | | | |
| | 3 | 805 | 44 | 2240 | 0.360 | 805 | 0.6 | 2.509 | A |
| | 4 | 713 | 849 | 2158 | 0.331 | 713 | 0.5 | 2.492 | A |

07:45 - 08:00

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 817 | | | | | | |
| | 3 | 835 | 0.90 | 2418 | 0.345 | 836 | 0.5 | 2.275 | A |
| | 4 | 453 | 837 | 1781 | 0.254 | 454 | 0.3 | 2.714 | A |
| | 1 | 905 | 570 | 2460 | 0.368 | 906 | 0.6 | 2.321 | A |
| 2 | 1 | 1010 | 520 | 2492 | 0.406 | 1012 | 0.7 | 2.435 | A |
| | 2 | | 871 | | | | | | |
| | 3 | 659 | 36 | 2246 | 0.293 | 659 | 0.4 | 2.270 | A |
| | 4 | 583 | 695 | 2286 | 0.255 | 583 | 0.3 | 2.116 | A |

08:00 - 08:15

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 684 | | | | | | |
| | 3 | 699 | 0.75 | 2418 | 0.289 | 699 | 0.4 | 2.094 | A |
| | 4 | 379 | 700 | 1876 | 0.202 | 380 | 0.3 | 2.408 | A |
| | 1 | 758 | 477 | 2541 | 0.298 | 759 | 0.4 | 2.021 | A |
| 2 | 1 | 846 | 435 | 2566 | 0.330 | 847 | 0.5 | 2.094 | A |
| | 2 | | 729 | | | | | | |
| | 3 | 551 | 30 | 2250 | 0.245 | 552 | 0.3 | 2.120 | A |
| | 4 | 488 | 582 | 2380 | 0.205 | 488 | 0.3 | 1.905 | A |

2023, PM

Data Errors and Warnings

| Severity | Area | Item | Description |
|----------|--------------------|---------------------------------|---|
| Warning | Linked Roundabout | Junction 1 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Demand Sets | D3 - Reference Case 2030 AM, AM | Demand Set 3: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Vehicle Mix | Junction 1 | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |
| Warning | Vehicle Mix | Junction 2 | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

Junction Network

Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|----------|------------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1 | North Roundabout | Standard Roundabout | | 2, 3, 4, 1 | 3.44 | A |
| 2 | South Roundabout | Standard Roundabout | | 1, 2, 3, 4 | 2.80 | A |

Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|--------------|----------------|-------------------|-------------|
| Left | Normal/unknown | 3.14 | A |

Traffic Demand

Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D2 | 2023 | PM | ONE HOUR | 16:45 | 18:15 | 15 |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages | 2.00 |

Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|----------|-----|------------------|-------------|----------------------------|-------------|-----------------------|---------------------|------------------------------|
| 1 | 3 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

Demand overview (Traffic)

| Junction | Arm | Linked arm | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------|-----|------------|--------------|-------------------------|--------------------|
| 1 | 2 | | | | |
| | 3 | ✓ | | | |
| | 4 | | ✓ | 753 | 100.000 |
| | 1 | | ✓ | 991 | 100.000 |
| 2 | 1 | | ✓ | 1171 | 100.000 |
| | 2 | | | | |
| | 3 | ✓ | | | |
| | 4 | | ✓ | 565 | 100.000 |

Origin-Destination Data

Demand (PCU/hr)

| | | To | | | | |
|------------|------|----|-----|-----|---|-----|
| | | 2 | 3 | 4 | 1 | |
| Junction 1 | From | 2 | 0 | 0 | 0 | 0 |
| | | 3 | 302 | 11 | 0 | 719 |
| | | 4 | 1 | 397 | 0 | 355 |
| | | 1 | 453 | 526 | 0 | 12 |
| | | | | | | |

Demand (PCU/hr)

| | | To | | | | |
|------------|------|----|-----|-----|-----|---|
| | | 1 | 2 | 3 | 4 | |
| Junction 2 | From | 1 | 37 | 466 | 668 | 0 |
| | | 2 | 0 | 0 | 0 | 0 |
| | | 3 | 687 | 230 | 5 | 0 |
| | | 4 | 212 | 4 | 349 | 0 |
| | | | | | | |

Vehicle Mix

Heavy Vehicle Percentages

| | | To | | | | |
|------------|------|----|---|---|---|---|
| | | 2 | 3 | 4 | 1 | |
| Junction 1 | From | 2 | 0 | 0 | 0 | 0 |
| | | 3 | 0 | 0 | 0 | 0 |
| | | 4 | 0 | 0 | 0 | 0 |
| | | 1 | 0 | 0 | 0 | 0 |
| | | | | | | |

Heavy Vehicle Percentages

| | | To | | | | |
|------------|------|----|---|---|---|---|
| | | 1 | 2 | 3 | 4 | |
| Junction 2 | From | 1 | 0 | 0 | 0 | 0 |
| | | 2 | 0 | 0 | 0 | 0 |
| | | 3 | 0 | 0 | 0 | 0 |
| | | 4 | 0 | 0 | 0 | 0 |
| | | | | | | |

Results

Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS |
|----------|-----|---------|---------------|-----------------|---------|
| 1 | 2 | | | | |
| | 3 | 0.47 | 2.80 | 0.9 | A |
| | 4 | 0.53 | 4.84 | 1.1 | A |
| | 1 | 0.48 | 3.04 | 0.9 | A |
| 2 | 1 | 0.53 | 3.18 | 1.1 | A |
| | 2 | | | | |
| | 3 | 0.37 | 2.55 | 0.6 | A |
| | 4 | 0.29 | 2.37 | 0.4 | A |

Main Results for each time segment

16:45 - 17:00

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 710 | | | | | | |
| | 3 | 767 | 9 | 2412 | 0.318 | 765 | 0.5 | 2.184 | A |
| | 4 | 567 | 774 | 1824 | 0.311 | 565 | 0.4 | 2.855 | A |
| | 1 | 746 | 531 | 2494 | 0.299 | 744 | 0.4 | 2.056 | A |
| 2 | 1 | 882 | 409 | 2589 | 0.341 | 880 | 0.5 | 2.103 | A |
| | 2 | | 795 | | | | | | |
| | 3 | 565 | 28 | 2251 | 0.251 | 564 | 0.3 | 2.130 | A |
| | 4 | 425 | 591 | 2372 | 0.179 | 424 | 0.2 | 1.848 | A |

17:00 - 17:15

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 850 | | | | | | |
| | 3 | 917 | 11 | 2411 | 0.381 | 917 | 0.6 | 2.408 | A |
| | 4 | 677 | 927 | 1718 | 0.394 | 676 | 0.6 | 3.453 | A |
| | 1 | 891 | 635 | 2402 | 0.371 | 890 | 0.6 | 2.380 | A |
| 2 | 1 | 1053 | 489 | 2518 | 0.418 | 1052 | 0.7 | 2.454 | A |
| | 2 | | 951 | | | | | | |
| | 3 | 676 | 33 | 2247 | 0.301 | 676 | 0.4 | 2.290 | A |
| | 4 | 508 | 709 | 2274 | 0.223 | 508 | 0.3 | 2.037 | A |

17:15 - 17:30

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 1040 | | | | | | |
| | 3 | 1123 | 13 | 2409 | 0.466 | 1122 | 0.9 | 2.794 | A |
| | 4 | 829 | 1135 | 1574 | 0.527 | 827 | 1.1 | 4.807 | A |
| | 1 | 1091 | 778 | 2277 | 0.479 | 1090 | 0.9 | 3.029 | A |
| 2 | 1 | 1289 | 599 | 2422 | 0.532 | 1288 | 1.1 | 3.169 | A |
| | 2 | | 1164 | | | | | | |
| | 3 | 828 | 41 | 2242 | 0.369 | 827 | 0.6 | 2.542 | A |
| | 4 | 622 | 868 | 2142 | 0.290 | 622 | 0.4 | 2.367 | A |

17:30 - 17:45

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 1041 | | | | | | |
| | 3 | 1124 | 13 | 2409 | 0.467 | 1124 | 0.9 | 2.801 | A |
| | 4 | 829 | 1137 | 1573 | 0.527 | 829 | 1.1 | 4.840 | A |
| | 1 | 1091 | 779 | 2276 | 0.479 | 1091 | 0.9 | 3.037 | A |
| 2 | 1 | 1289 | 600 | 2421 | 0.532 | 1289 | 1.1 | 3.178 | A |
| | 2 | | 1165 | | | | | | |
| | 3 | 829 | 41 | 2242 | 0.370 | 829 | 0.6 | 2.546 | A |
| | 4 | 622 | 870 | 2141 | 0.291 | 622 | 0.4 | 2.369 | A |

17:45 - 18:00

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 852 | | | | | | |
| | 3 | 919 | 11 | 2411 | 0.381 | 920 | 0.6 | 2.416 | A |
| | 4 | 677 | 931 | 1716 | 0.395 | 679 | 0.7 | 3.479 | A |
| | 1 | 891 | 638 | 2400 | 0.371 | 892 | 0.6 | 2.391 | A |
| 2 | 1 | 1053 | 491 | 2517 | 0.418 | 1054 | 0.7 | 2.465 | A |
| | 2 | | 952 | | | | | | |
| | 3 | 678 | 33 | 2247 | 0.302 | 679 | 0.4 | 2.297 | A |
| | 4 | 508 | 712 | 2272 | 0.224 | 508 | 0.3 | 2.041 | A |

18:00 - 18:15

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 713 | | | | | | |
| | 3 | 769 | 9 | 2412 | 0.319 | 770 | 0.5 | 2.194 | A |
| | 4 | 567 | 779 | 1821 | 0.311 | 568 | 0.5 | 2.875 | A |
| | 1 | 746 | 534 | 2491 | 0.299 | 747 | 0.4 | 2.065 | A |
| 2 | 1 | 882 | 411 | 2587 | 0.341 | 882 | 0.5 | 2.112 | A |
| | 2 | | 797 | | | | | | |
| | 3 | 567 | 28 | 2251 | 0.252 | 568 | 0.3 | 2.138 | A |
| | 4 | 425 | 596 | 2368 | 0.180 | 426 | 0.2 | 1.855 | A |

Reference Case 2030 AM, AM

Data Errors and Warnings

| Severity | Area | Item | Description |
|----------|--------------------|---------------------------------|---|
| Warning | Linked Roundabout | Junction 1 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Demand Sets | D3 - Reference Case 2030 AM, AM | Demand Set 3: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Vehicle Mix | Junction 1 | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |
| Warning | Vehicle Mix | Junction 2 | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

Junction Network

Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|----------|------------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1 | North Roundabout | Standard Roundabout | | 2, 3, 4, 1 | 3.02 | A |
| 2 | South Roundabout | Standard Roundabout | | 1, 2, 3, 4 | 2.95 | A |

Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|--------------|----------------|-------------------|-------------|
| Left | Normal/unknown | 2.99 | A |

Traffic Demand

Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|------------------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D3 | Reference Case 2030 AM | AM | ONE HOUR | 06:45 | 08:15 | 15 |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages | 2.00 |

Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|----------|-----|------------------|-------------|----------------------------|-------------|-----------------------|---------------------|------------------------------|
| 1 | 3 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

Demand overview (Traffic)

| Junction | Arm | Linked arm | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------|-----|------------|--------------|-------------------------|--------------------|
| 1 | 2 | | | | |
| | 3 | ✓ | | | |
| | 4 | | ✓ | 530 | 100.000 |
| | 1 | | ✓ | 1055 | 100.000 |
| 2 | 1 | | ✓ | 1178 | 100.000 |
| | 2 | | | | |
| | 3 | ✓ | | | |
| | 4 | | ✓ | 681 | 100.000 |

Origin-Destination Data

Demand (PCU/hr)

| | | To | | | | |
|------------|------|----|-----|-----|---|-----|
| | | 2 | 3 | 4 | 1 | |
| Junction 1 | From | 2 | 0 | 0 | 0 | 0 |
| | | 3 | 293 | 6 | 0 | 665 |
| | | 4 | 2 | 362 | 0 | 166 |
| | | 1 | 470 | 583 | 0 | 2 |
| | | | | | | |

Demand (PCU/hr)

| | | To | | | | |
|------------|------|----|-----|-----|-----|---|
| | | 1 | 2 | 3 | 4 | |
| Junction 2 | From | 1 | 42 | 550 | 586 | 0 |
| | | 2 | 0 | 0 | 0 | 0 |
| | | 3 | 675 | 267 | 4 | 0 |
| | | 4 | 294 | 3 | 384 | 0 |
| | | | | | | |

Vehicle Mix

Heavy Vehicle Percentages

| | | To | | | | |
|------------|------|----|---|---|---|---|
| | | 2 | 3 | 4 | 1 | |
| Junction 1 | From | 2 | 0 | 0 | 0 | 0 |
| | | 3 | 0 | 0 | 0 | 0 |
| | | 4 | 0 | 0 | 0 | 0 |
| | | 1 | 0 | 0 | 0 | 0 |
| | | | | | | |

Heavy Vehicle Percentages

| | | To | | | | |
|------------|------|----|---|---|---|---|
| | | 1 | 2 | 3 | 4 | |
| Junction 2 | From | 1 | 0 | 0 | 0 | 0 |
| | | 2 | 0 | 0 | 0 | 0 |
| | | 3 | 0 | 0 | 0 | 0 |
| | | 4 | 0 | 0 | 0 | 0 |
| | | | | | | |

Results

Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS |
|----------|-----|---------|---------------|-----------------|---------|
| 1 | 2 | | | | |
| | 3 | 0.44 | 2.67 | 0.8 | A |
| | 4 | 0.36 | 3.48 | 0.6 | A |
| | 1 | 0.50 | 3.12 | 1.0 | A |
| 2 | 1 | 0.55 | 3.38 | 1.2 | A |
| | 2 | | | | |
| | 3 | 0.38 | 2.58 | 0.6 | A |
| | 4 | 0.35 | 2.62 | 0.5 | A |

Main Results for each time segment

06:45 - 07:00

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 716 | | | | | | |
| | 3 | 731 | 2 | 2418 | 0.302 | 729 | 0.4 | 2.130 | A |
| | 4 | 399 | 731 | 1854 | 0.215 | 398 | 0.3 | 2.471 | A |
| | 1 | 794 | 499 | 2521 | 0.315 | 792 | 0.5 | 2.081 | A |
| 2 | 1 | 887 | 455 | 2548 | 0.348 | 885 | 0.5 | 2.161 | A |
| | 2 | | 763 | | | | | | |
| | 3 | 576 | 32 | 2249 | 0.256 | 575 | 0.3 | 2.148 | A |
| | 4 | 513 | 606 | 2360 | 0.217 | 512 | 0.3 | 1.947 | A |

07:00 - 07:15

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 856 | | | | | | |
| | 3 | 874 | 2 | 2417 | 0.362 | 874 | 0.6 | 2.332 | A |
| | 4 | 476 | 876 | 1754 | 0.272 | 476 | 0.4 | 2.816 | A |
| | 1 | 948 | 598 | 2435 | 0.390 | 948 | 0.6 | 2.419 | A |
| 2 | 1 | 1059 | 545 | 2469 | 0.429 | 1058 | 0.7 | 2.549 | A |
| | 2 | | 912 | | | | | | |
| | 3 | 690 | 38 | 2244 | 0.307 | 689 | 0.4 | 2.315 | A |
| | 4 | 612 | 727 | 2259 | 0.271 | 612 | 0.4 | 2.185 | A |

07:15 - 07:30

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 1048 | | | | | | |
| | 3 | 1070 | 2 | 2417 | 0.443 | 1069 | 0.8 | 2.670 | A |
| | 4 | 584 | 1072 | 1618 | 0.361 | 583 | 0.6 | 3.475 | A |
| | 1 | 1162 | 732 | 2317 | 0.501 | 1160 | 1.0 | 3.106 | A |
| 2 | 1 | 1297 | 667 | 2362 | 0.549 | 1295 | 1.2 | 3.367 | A |
| | 2 | | 1116 | | | | | | |
| | 3 | 844 | 46 | 2238 | 0.377 | 843 | 0.6 | 2.579 | A |
| | 4 | 750 | 890 | 2124 | 0.353 | 749 | 0.5 | 2.616 | A |

07:30 - 07:45

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 1049 | | | | | | |
| | 3 | 1072 | 2 | 2417 | 0.443 | 1072 | 0.8 | 2.674 | A |
| | 4 | 584 | 1074 | 1617 | 0.361 | 584 | 0.6 | 3.482 | A |
| | 1 | 1162 | 733 | 2316 | 0.501 | 1162 | 1.0 | 3.116 | A |
| 2 | 1 | 1297 | 668 | 2362 | 0.549 | 1297 | 1.2 | 3.380 | A |
| | 2 | | 1118 | | | | | | |
| | 3 | 845 | 46 | 2238 | 0.378 | 845 | 0.6 | 2.584 | A |
| | 4 | 750 | 892 | 2123 | 0.353 | 750 | 0.5 | 2.621 | A |

07:45 - 08:00

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 858 | | | | | | |
| | 3 | 876 | 2 | 2417 | 0.362 | 877 | 0.6 | 2.340 | A |
| | 4 | 476 | 879 | 1752 | 0.272 | 477 | 0.4 | 2.825 | A |
| | 1 | 948 | 600 | 2433 | 0.390 | 950 | 0.6 | 2.430 | A |
| 2 | 1 | 1059 | 547 | 2468 | 0.429 | 1061 | 0.8 | 2.562 | A |
| | 2 | | 914 | | | | | | |
| | 3 | 692 | 38 | 2244 | 0.308 | 692 | 0.4 | 2.320 | A |
| | 4 | 612 | 730 | 2257 | 0.271 | 613 | 0.4 | 2.192 | A |

08:00 - 08:15

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 718 | | | | | | |
| | 3 | 733 | 2 | 2418 | 0.303 | 734 | 0.4 | 2.138 | A |
| | 4 | 399 | 735 | 1851 | 0.216 | 399 | 0.3 | 2.479 | A |
| | 1 | 794 | 502 | 2519 | 0.315 | 795 | 0.5 | 2.088 | A |
| 2 | 1 | 887 | 457 | 2546 | 0.348 | 888 | 0.5 | 2.171 | A |
| | 2 | | 765 | | | | | | |
| | 3 | 579 | 32 | 2249 | 0.257 | 579 | 0.3 | 2.158 | A |
| | 4 | 513 | 611 | 2356 | 0.218 | 513 | 0.3 | 1.953 | A |

Reference Case 2030 AM, PM

Data Errors and Warnings

| Severity | Area | Item | Description |
|----------|--------------------|---------------------------------|---|
| Warning | Linked Roundabout | Junction 1 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Demand Sets | D3 - Reference Case 2030 AM, AM | Demand Set 3: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Vehicle Mix | Junction 1 | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |
| Warning | Vehicle Mix | Junction 2 | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

Junction Network

Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|----------|------------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1 | North Roundabout | Standard Roundabout | | 2, 3, 4, 1 | 3.73 | A |
| 2 | South Roundabout | Standard Roundabout | | 1, 2, 3, 4 | 2.98 | A |

Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|--------------|----------------|-------------------|-------------|
| Left | Normal/unknown | 3.38 | A |

Traffic Demand

Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|------------------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D4 | Reference Case 2030 AM | PM | ONE HOUR | 16:45 | 18:15 | 15 |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages | 2.00 |

Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|----------|-----|------------------|-------------|----------------------------|-------------|-----------------------|---------------------|------------------------------|
| 1 | 3 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

Demand overview (Traffic)

| Junction | Arm | Linked arm | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------|-----|------------|--------------|-------------------------|--------------------|
| 1 | 2 | | | | |
| | 3 | ✓ | | | |
| | 4 | | ✓ | 790 | 100.000 |
| | 1 | | ✓ | 1039 | 100.000 |
| 2 | 1 | | ✓ | 1227 | 100.000 |
| | 2 | | | | |
| | 3 | ✓ | | | |
| | 4 | | ✓ | 593 | 100.000 |

Origin-Destination Data

Demand (PCU/hr)

| | | To | | | | |
|------------|------|----|-----|-----|---|-----|
| | | 2 | 3 | 4 | 1 | |
| Junction 1 | From | 2 | 0 | 0 | 0 | 0 |
| | | 3 | 317 | 12 | 0 | 753 |
| | | 4 | 2 | 416 | 0 | 372 |
| | | 1 | 475 | 551 | 0 | 13 |
| | | | | | | |

Demand (PCU/hr)

| | | To | | | | |
|------------|------|----|-----|-----|-----|---|
| | | 1 | 2 | 3 | 4 | |
| Junction 2 | From | 1 | 39 | 488 | 700 | 0 |
| | | 2 | 0 | 0 | 0 | 0 |
| | | 3 | 720 | 241 | 6 | 0 |
| | | 4 | 222 | 5 | 366 | 0 |
| | | | | | | |

Vehicle Mix

Heavy Vehicle Percentages

| | | To | | | | |
|------------|------|----|---|---|---|---|
| | | 2 | 3 | 4 | 1 | |
| Junction 1 | From | 2 | 0 | 0 | 0 | 0 |
| | | 3 | 0 | 0 | 0 | 0 |
| | | 4 | 0 | 0 | 0 | 0 |
| | | 1 | 0 | 0 | 0 | 0 |
| | | | | | | |

Heavy Vehicle Percentages

| | | To | | | | |
|------------|------|----|---|---|---|---|
| | | 1 | 2 | 3 | 4 | |
| Junction 2 | From | 1 | 0 | 0 | 0 | 0 |
| | | 2 | 0 | 0 | 0 | 0 |
| | | 3 | 0 | 0 | 0 | 0 |
| | | 4 | 0 | 0 | 0 | 0 |
| | | | | | | |

Results

Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS |
|----------|-----|---------|---------------|-----------------|---------|
| 1 | 2 | | | | |
| | 3 | 0.49 | 2.93 | 1.0 | A |
| | 4 | 0.57 | 5.42 | 1.3 | A |
| | 1 | 0.51 | 3.28 | 1.0 | A |
| 2 | 1 | 0.56 | 3.45 | 1.3 | A |
| | 2 | | | | |
| | 3 | 0.39 | 2.63 | 0.6 | A |
| | 4 | 0.31 | 2.48 | 0.4 | A |

Main Results for each time segment

16:45 - 17:00

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 745 | | | | | | |
| | 3 | 804 | 10 | 2412 | 0.334 | 802 | 0.5 | 2.234 | A |
| | 4 | 595 | 812 | 1798 | 0.331 | 593 | 0.5 | 2.981 | A |
| | 1 | 782 | 558 | 2470 | 0.317 | 780 | 0.5 | 2.129 | A |
| 2 | 1 | 924 | 430 | 2570 | 0.359 | 922 | 0.6 | 2.180 | A |
| | 2 | | 834 | | | | | | |
| | 3 | 593 | 29 | 2250 | 0.264 | 592 | 0.4 | 2.168 | A |
| | 4 | 446 | 621 | 2347 | 0.190 | 446 | 0.2 | 1.892 | A |

17:00 - 17:15

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 891 | | | | | | |
| | 3 | 962 | 12 | 2410 | 0.399 | 961 | 0.7 | 2.483 | A |
| | 4 | 710 | 973 | 1687 | 0.421 | 709 | 0.7 | 3.680 | A |
| | 1 | 934 | 668 | 2374 | 0.393 | 933 | 0.6 | 2.498 | A |
| 2 | 1 | 1103 | 515 | 2496 | 0.442 | 1102 | 0.8 | 2.581 | A |
| | 2 | | 997 | | | | | | |
| | 3 | 710 | 35 | 2246 | 0.316 | 710 | 0.5 | 2.343 | A |
| | 4 | 533 | 745 | 2245 | 0.238 | 533 | 0.3 | 2.103 | A |

17:15 - 17:30

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 1090 | | | | | | |
| | 3 | 1178 | 14 | 2408 | 0.489 | 1176 | 1.0 | 2.920 | A |
| | 4 | 870 | 1191 | 1536 | 0.566 | 868 | 1.3 | 5.368 | A |
| | 1 | 1144 | 817 | 2243 | 0.510 | 1142 | 1.0 | 3.267 | A |
| 2 | 1 | 1351 | 630 | 2395 | 0.564 | 1349 | 1.3 | 3.436 | A |
| | 2 | | 1220 | | | | | | |
| | 3 | 869 | 43 | 2241 | 0.388 | 868 | 0.6 | 2.622 | A |
| | 4 | 653 | 911 | 2106 | 0.310 | 652 | 0.4 | 2.476 | A |

17:30 - 17:45

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 1092 | | | | | | |
| | 3 | 1179 | 14 | 2408 | 0.490 | 1179 | 1.0 | 2.928 | A |
| | 4 | 870 | 1193 | 1534 | 0.567 | 870 | 1.3 | 5.419 | A |
| | 1 | 1144 | 819 | 2241 | 0.510 | 1144 | 1.0 | 3.280 | A |
| 2 | 1 | 1351 | 631 | 2394 | 0.564 | 1351 | 1.3 | 3.449 | A |
| | 2 | | 1222 | | | | | | |
| | 3 | 871 | 43 | 2241 | 0.389 | 871 | 0.6 | 2.627 | A |
| | 4 | 653 | 914 | 2104 | 0.310 | 653 | 0.4 | 2.479 | A |

17:45 - 18:00

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 894 | | | | | | |
| | 3 | 964 | 12 | 2410 | 0.400 | 965 | 0.7 | 2.495 | A |
| | 4 | 710 | 977 | 1684 | 0.422 | 712 | 0.7 | 3.713 | A |
| | 1 | 934 | 670 | 2371 | 0.394 | 936 | 0.7 | 2.509 | A |
| 2 | 1 | 1103 | 516 | 2495 | 0.442 | 1105 | 0.8 | 2.595 | A |
| | 2 | | 999 | | | | | | |
| | 3 | 712 | 35 | 2246 | 0.317 | 713 | 0.5 | 2.350 | A |
| | 4 | 533 | 748 | 2242 | 0.238 | 534 | 0.3 | 2.107 | A |

18:00 - 18:15

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 748 | | | | | | |
| | 3 | 807 | 10 | 2411 | 0.335 | 808 | 0.5 | 2.246 | A |
| | 4 | 595 | 817 | 1794 | 0.331 | 596 | 0.5 | 3.004 | A |
| | 1 | 782 | 561 | 2467 | 0.317 | 783 | 0.5 | 2.137 | A |
| 2 | 1 | 924 | 432 | 2569 | 0.360 | 925 | 0.6 | 2.190 | A |
| | 2 | | 836 | | | | | | |
| | 3 | 596 | 29 | 2250 | 0.265 | 596 | 0.4 | 2.178 | A |
| | 4 | 446 | 626 | 2343 | 0.191 | 447 | 0.2 | 1.900 | A |

Do Something 2030 + LTC, AM

Data Errors and Warnings

| Severity | Area | Item | Description |
|----------|--------------------|---------------------------------|---|
| Warning | Linked Roundabout | Junction 1 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Demand Sets | D3 - Reference Case 2030 AM, AM | Demand Set 3: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Vehicle Mix | Junction 1 | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |
| Warning | Vehicle Mix | Junction 2 | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

Junction Network

Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|----------|------------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1 | North Roundabout | Standard Roundabout | | 2, 3, 4, 1 | 2.96 | A |
| 2 | South Roundabout | Standard Roundabout | | 1, 2, 3, 4 | 2.96 | A |

Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|--------------|----------------|-------------------|-------------|
| Left | Normal/unknown | 2.96 | A |

Traffic Demand

Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|-------------------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D5 | Do Something 2030 + LTC | AM | ONE HOUR | 06:45 | 08:15 | 15 |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages | 2.00 |

Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|----------|-----|------------------|-------------|----------------------------|-------------|-----------------------|---------------------|------------------------------|
| 1 | 3 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

Demand overview (Traffic)

| Junction | Arm | Linked arm | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------|-----|------------|--------------|-------------------------|--------------------|
| 1 | 2 | | | | |
| | 3 | ✓ | | | |
| | 4 | | ✓ | 471 | 100.000 |
| | 1 | | ✓ | 1048 | 100.000 |
| 2 | 1 | | ✓ | 1124 | 100.000 |
| | 2 | | | | |
| | 3 | ✓ | | | |
| | 4 | | ✓ | 718 | 100.000 |

Origin-Destination Data

Demand (PCU/hr)

| | | To | | | | |
|------------|------|----|-----|-----|---|-----|
| | | 2 | 3 | 4 | 1 | |
| Junction 1 | From | 2 | 0 | 0 | 0 | 0 |
| | | 3 | 304 | 6 | 0 | 691 |
| | | 4 | 2 | 303 | 0 | 166 |
| | | 1 | 470 | 576 | 0 | 2 |
| | | | | | | |

Demand (PCU/hr)

| | | To | | | | |
|------------|------|----|-----|-----|-----|---|
| | | 1 | 2 | 3 | 4 | |
| Junction 2 | From | 1 | 42 | 496 | 586 | 0 |
| | | 2 | 0 | 0 | 0 | 0 |
| | | 3 | 609 | 267 | 4 | 0 |
| | | 4 | 294 | 3 | 421 | 0 |
| | | | | | | |

Vehicle Mix

Heavy Vehicle Percentages

| | | To | | | | |
|------------|------|----|---|---|---|---|
| | | 2 | 3 | 4 | 1 | |
| Junction 1 | From | 2 | 0 | 0 | 0 | 0 |
| | | 3 | 0 | 0 | 0 | 0 |
| | | 4 | 0 | 0 | 0 | 0 |
| | | 1 | 0 | 0 | 0 | 0 |
| | | | | | | |

Heavy Vehicle Percentages

| | | To | | | | |
|------------|------|----|---|---|---|---|
| | | 1 | 2 | 3 | 4 | |
| Junction 2 | From | 1 | 0 | 0 | 0 | 0 |
| | | 2 | 0 | 0 | 0 | 0 |
| | | 3 | 0 | 0 | 0 | 0 |
| | | 4 | 0 | 0 | 0 | 0 |
| | | | | | | |

Results

Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS |
|----------|-----|---------|---------------|-----------------|---------|
| 1 | 2 | | | | |
| | 3 | 0.46 | 2.76 | 0.9 | A |
| | 4 | 0.33 | 3.36 | 0.5 | A |
| | 1 | 0.49 | 2.98 | 1.0 | A |
| 2 | 1 | 0.54 | 3.37 | 1.2 | A |
| | 2 | | | | |
| | 3 | 0.38 | 2.61 | 0.6 | A |
| | 4 | 0.37 | 2.72 | 0.6 | A |

Main Results for each time segment

06:45 - 07:00

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 666 | | | | | | |
| | 3 | 759 | 2 | 2418 | 0.314 | 757 | 0.5 | 2.166 | A |
| | 4 | 355 | 759 | 1835 | 0.193 | 354 | 0.2 | 2.429 | A |
| | 1 | 789 | 463 | 2553 | 0.309 | 787 | 0.4 | 2.037 | A |
| 2 | 1 | 846 | 498 | 2511 | 0.337 | 844 | 0.5 | 2.157 | A |
| | 2 | | 791 | | | | | | |
| | 3 | 584 | 32 | 2249 | 0.260 | 583 | 0.4 | 2.159 | A |
| | 4 | 541 | 615 | 2353 | 0.230 | 539 | 0.3 | 1.984 | A |

07:00 - 07:15

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 797 | | | | | | |
| | 3 | 908 | 2 | 2417 | 0.376 | 907 | 0.6 | 2.384 | A |
| | 4 | 423 | 909 | 1731 | 0.245 | 423 | 0.3 | 2.752 | A |
| | 1 | 942 | 555 | 2473 | 0.381 | 941 | 0.6 | 2.350 | A |
| 2 | 1 | 1010 | 596 | 2425 | 0.417 | 1010 | 0.7 | 2.543 | A |
| | 2 | | 946 | | | | | | |
| | 3 | 700 | 38 | 2244 | 0.312 | 699 | 0.5 | 2.330 | A |
| | 4 | 645 | 737 | 2251 | 0.287 | 645 | 0.4 | 2.241 | A |

07:15 - 07:30

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 976 | | | | | | |
| | 3 | 1111 | 2 | 2417 | 0.460 | 1110 | 0.8 | 2.754 | A |
| | 4 | 519 | 1112 | 1590 | 0.326 | 518 | 0.5 | 3.356 | A |
| | 1 | 1154 | 679 | 2364 | 0.488 | 1153 | 0.9 | 2.970 | A |
| 2 | 1 | 1238 | 730 | 2308 | 0.536 | 1236 | 1.1 | 3.352 | A |
| | 2 | | 1157 | | | | | | |
| | 3 | 856 | 46 | 2238 | 0.383 | 856 | 0.6 | 2.602 | A |
| | 4 | 791 | 902 | 2114 | 0.374 | 790 | 0.6 | 2.717 | A |

07:30 - 07:45

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 977 | | | | | | |
| | 3 | 1113 | 2 | 2417 | 0.460 | 1113 | 0.9 | 2.759 | A |
| | 4 | 519 | 1115 | 1588 | 0.326 | 519 | 0.5 | 3.364 | A |
| | 1 | 1154 | 680 | 2363 | 0.488 | 1154 | 1.0 | 2.977 | A |
| 2 | 1 | 1238 | 731 | 2307 | 0.537 | 1238 | 1.2 | 3.366 | A |
| | 2 | | 1159 | | | | | | |
| | 3 | 858 | 46 | 2238 | 0.383 | 858 | 0.6 | 2.606 | A |
| | 4 | 791 | 904 | 2112 | 0.374 | 791 | 0.6 | 2.722 | A |

07:45 - 08:00

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 799 | | | | | | |
| | 3 | 910 | 2 | 2417 | 0.376 | 911 | 0.6 | 2.390 | A |
| | 4 | 423 | 913 | 1729 | 0.245 | 424 | 0.3 | 2.760 | A |
| | 1 | 942 | 557 | 2471 | 0.381 | 943 | 0.6 | 2.358 | A |
| 2 | 1 | 1010 | 598 | 2423 | 0.417 | 1012 | 0.7 | 2.555 | A |
| | 2 | | 948 | | | | | | |
| | 3 | 702 | 38 | 2244 | 0.313 | 702 | 0.5 | 2.336 | A |
| | 4 | 645 | 740 | 2249 | 0.287 | 646 | 0.4 | 2.249 | A |

08:00 - 08:15

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 668 | | | | | | |
| | 3 | 761 | 2 | 2418 | 0.315 | 762 | 0.5 | 2.174 | A |
| | 4 | 355 | 764 | 1832 | 0.194 | 355 | 0.2 | 2.437 | A |
| | 1 | 789 | 466 | 2551 | 0.309 | 790 | 0.4 | 2.044 | A |
| 2 | 1 | 846 | 500 | 2509 | 0.337 | 847 | 0.5 | 2.168 | A |
| | 2 | | 793 | | | | | | |
| | 3 | 587 | 32 | 2249 | 0.261 | 587 | 0.4 | 2.169 | A |
| | 4 | 541 | 619 | 2349 | 0.230 | 541 | 0.3 | 1.991 | A |

Do Something 2030 + LTC, PM

Data Errors and Warnings

| Severity | Area | Item | Description |
|----------|--------------------|---------------------------------|---|
| Warning | Linked Roundabout | Junction 1 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 1 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked roundabouts | Junction 2 | U-turns on linked arms may cause sporadic locking up of junctions and/or unreliable results. |
| Warning | Demand Sets | D3 - Reference Case 2030 AM, AM | Demand Set 3: Scenario Name includes Time Period Name ('AM'). Are you sure this is correct? |
| Warning | Vehicle Mix | Junction 1 | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |
| Warning | Vehicle Mix | Junction 2 | HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning. |

Junction Network

Junctions

| Junction | Name | Junction type | Use circulating lanes | Arm order | Junction Delay (s) | Junction LOS |
|----------|------------------|---------------------|-----------------------|------------|--------------------|--------------|
| 1 | North Roundabout | Standard Roundabout | | 2, 3, 4, 1 | 3.92 | A |
| 2 | South Roundabout | Standard Roundabout | | 1, 2, 3, 4 | 3.28 | A |

Junction Network

| Driving side | Lighting | Network delay (s) | Network LOS |
|--------------|----------------|-------------------|-------------|
| Left | Normal/unknown | 3.61 | A |

Traffic Demand

Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|-------------------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D6 | Do Something 2030 + LTC | PM | ONE HOUR | 16:45 | 18:15 | 15 |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages | 2.00 |

Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type | Flow source | Uniform flow (PCU/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|----------|-----|------------------|-------------|----------------------------|-------------|-----------------------|---------------------|------------------------------|
| 1 | 3 | 2 | 3 | Simple (vertical queueing) | Normal | 0 | 100.00 | |
| 2 | 3 | 1 | 2 | Simple (vertical queueing) | Normal | 0 | 100.00 | |

Demand overview (Traffic)

| Junction | Arm | Linked arm | Use O-D data | Average Demand (PCU/hr) | Scaling Factor (%) |
|----------|-----|------------|--------------|-------------------------|--------------------|
| 1 | 2 | | | | |
| | 3 | ✓ | | | |
| | 4 | | ✓ | 738 | 100.000 |
| | 1 | | ✓ | 1069 | 100.000 |
| 2 | 1 | | ✓ | 1208 | 100.000 |
| | 2 | | | | |
| | 3 | ✓ | | | |
| | 4 | | ✓ | 699 | 100.000 |

Origin-Destination Data

Demand (PCU/hr)

| | | To | | | | |
|------------|------|----|-----|-----|---|-----|
| | | 2 | 3 | 4 | 1 | |
| Junction 1 | From | 2 | 0 | 0 | 0 | 0 |
| | | 3 | 403 | 12 | 0 | 773 |
| | | 4 | 2 | 364 | 0 | 372 |
| | | 1 | 475 | 581 | 0 | 13 |
| | | | | | | |

Demand (PCU/hr)

| | | To | | | | |
|------------|------|----|-----|-----|-----|---|
| | | 1 | 2 | 3 | 4 | |
| Junction 2 | From | 1 | 39 | 469 | 700 | 0 |
| | | 2 | 0 | 0 | 0 | 0 |
| | | 3 | 653 | 228 | 6 | 0 |
| | | 4 | 222 | 5 | 472 | 0 |
| | | | | | | |

Vehicle Mix

Heavy Vehicle Percentages

| | | To | | | | |
|------------|------|----|---|---|---|---|
| | | 2 | 3 | 4 | 1 | |
| Junction 1 | From | 2 | 0 | 0 | 0 | 0 |
| | | 3 | 0 | 0 | 0 | 0 |
| | | 4 | 0 | 0 | 0 | 0 |
| | | 1 | 0 | 0 | 0 | 0 |
| | | | | | | |

Heavy Vehicle Percentages

| | | To | | | | |
|------------|------|----|---|---|---|---|
| | | 1 | 2 | 3 | 4 | |
| Junction 2 | From | 1 | 0 | 0 | 0 | 0 |
| | | 2 | 0 | 0 | 0 | 0 |
| | | 3 | 0 | 0 | 0 | 0 |
| | | 4 | 0 | 0 | 0 | 0 |
| | | | | | | |

Results

Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS |
|----------|-----|---------|---------------|-----------------|---------|
| 1 | 2 | | | | |
| | 3 | 0.54 | 3.24 | 1.2 | A |
| | 4 | 0.56 | 5.62 | 1.3 | A |
| | 1 | 0.53 | 3.49 | 1.1 | A |
| 2 | 1 | 0.59 | 3.85 | 1.4 | A |
| | 2 | | | | |
| | 3 | 0.43 | 2.82 | 0.8 | A |
| | 4 | 0.38 | 2.86 | 0.6 | A |

Main Results for each time segment

16:45 - 17:00

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 728 | | | | | | |
| | 3 | 885 | 10 | 2412 | 0.367 | 882 | 0.6 | 2.351 | A |
| | 4 | 556 | 892 | 1743 | 0.319 | 554 | 0.5 | 3.028 | A |
| | 1 | 805 | 583 | 2448 | 0.329 | 803 | 0.5 | 2.185 | A |
| 2 | 1 | 909 | 531 | 2482 | 0.366 | 907 | 0.6 | 2.284 | A |
| | 2 | | 914 | | | | | | |
| | 3 | 658 | 29 | 2250 | 0.292 | 656 | 0.4 | 2.256 | A |
| | 4 | 526 | 685 | 2294 | 0.229 | 525 | 0.3 | 2.034 | A |

17:00 - 17:15

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 871 | | | | | | |
| | 3 | 1058 | 12 | 2410 | 0.439 | 1057 | 0.8 | 2.659 | A |
| | 4 | 663 | 1069 | 1620 | 0.409 | 663 | 0.7 | 3.755 | A |
| | 1 | 961 | 698 | 2347 | 0.409 | 960 | 0.7 | 2.594 | A |
| 2 | 1 | 1086 | 636 | 2390 | 0.454 | 1085 | 0.8 | 2.759 | A |
| | 2 | | 1093 | | | | | | |
| | 3 | 787 | 35 | 2246 | 0.350 | 787 | 0.5 | 2.466 | A |
| | 4 | 628 | 822 | 2181 | 0.288 | 628 | 0.4 | 2.318 | A |

17:15 - 17:30

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 1066 | | | | | | |
| | 3 | 1295 | 14 | 2408 | 0.538 | 1294 | 1.2 | 3.225 | A |
| | 4 | 813 | 1308 | 1455 | 0.559 | 810 | 1.2 | 5.567 | A |
| | 1 | 1177 | 854 | 2211 | 0.532 | 1175 | 1.1 | 3.471 | A |
| 2 | 1 | 1330 | 779 | 2265 | 0.587 | 1328 | 1.4 | 3.832 | A |
| | 2 | | 1338 | | | | | | |
| | 3 | 963 | 43 | 2241 | 0.430 | 962 | 0.7 | 2.815 | A |
| | 4 | 770 | 1005 | 2028 | 0.379 | 769 | 0.6 | 2.857 | A |

17:30 - 17:45

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 1068 | | | | | | |
| | 3 | 1297 | 14 | 2408 | 0.539 | 1297 | 1.2 | 3.238 | A |
| | 4 | 813 | 1311 | 1452 | 0.559 | 813 | 1.3 | 5.625 | A |
| | 1 | 1177 | 856 | 2209 | 0.533 | 1177 | 1.1 | 3.489 | A |
| 2 | 1 | 1330 | 780 | 2264 | 0.587 | 1330 | 1.4 | 3.854 | A |
| | 2 | | 1340 | | | | | | |
| | 3 | 965 | 43 | 2241 | 0.431 | 965 | 0.8 | 2.821 | A |
| | 4 | 770 | 1008 | 2026 | 0.380 | 770 | 0.6 | 2.865 | A |

17:45 - 18:00

| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 874 | | | | | | |
| | 3 | 1061 | 12 | 2410 | 0.440 | 1062 | 0.8 | 2.675 | A |
| | 4 | 663 | 1074 | 1617 | 0.410 | 666 | 0.7 | 3.796 | A |
| | 1 | 961 | 701 | 2344 | 0.410 | 963 | 0.7 | 2.608 | A |
| 2 | 1 | 1086 | 638 | 2388 | 0.455 | 1088 | 0.8 | 2.773 | A |
| | 2 | | 1096 | | | | | | |
| | 3 | 790 | 35 | 2246 | 0.352 | 791 | 0.5 | 2.476 | A |
| | 4 | 628 | 826 | 2177 | 0.289 | 629 | 0.4 | 2.326 | A |

18:00 - 18:15

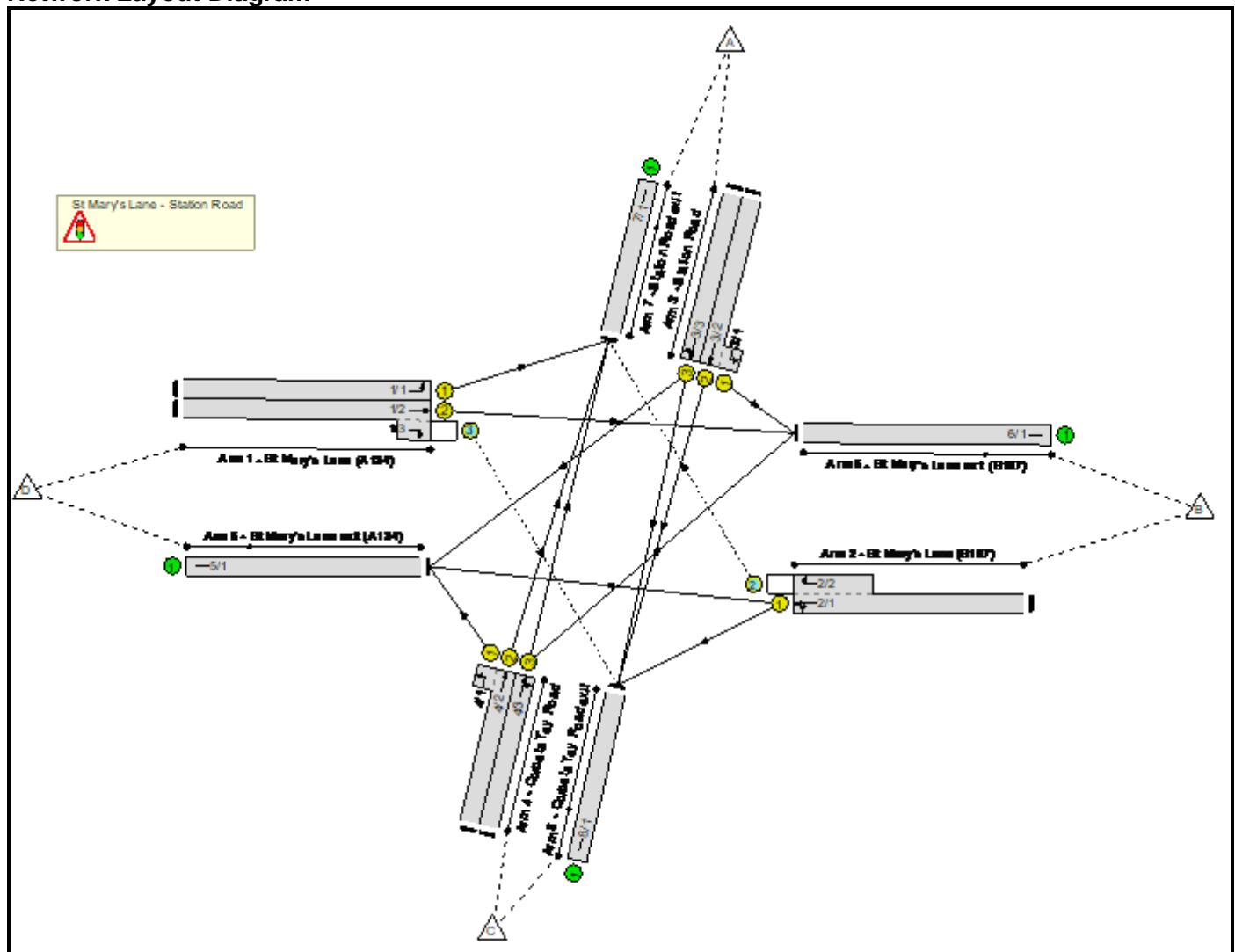
| Junction | Arm | Total Demand (PCU/hr) | Circulating flow (PCU/hr) | Capacity (PCU/hr) | RFC | Throughput (PCU/hr) | End queue (PCU) | Delay (s) | Unsignalised level of service |
|----------|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-------------------------------|
| 1 | 2 | | 731 | | | | | | |
| | 3 | 888 | 10 | 2411 | 0.368 | 889 | 0.6 | 2.366 | A |
| | 4 | 556 | 898 | 1738 | 0.320 | 557 | 0.5 | 3.047 | A |
| | 1 | 805 | 586 | 2445 | 0.329 | 806 | 0.5 | 2.198 | A |
| 2 | 1 | 909 | 534 | 2479 | 0.367 | 910 | 0.6 | 2.295 | A |
| | 2 | | 917 | | | | | | |
| | 3 | 661 | 29 | 2250 | 0.294 | 661 | 0.4 | 2.267 | A |
| | 4 | 526 | 691 | 2289 | 0.230 | 527 | 0.3 | 2.044 | A |

Full Input Data And Results
Full Input Data And Results

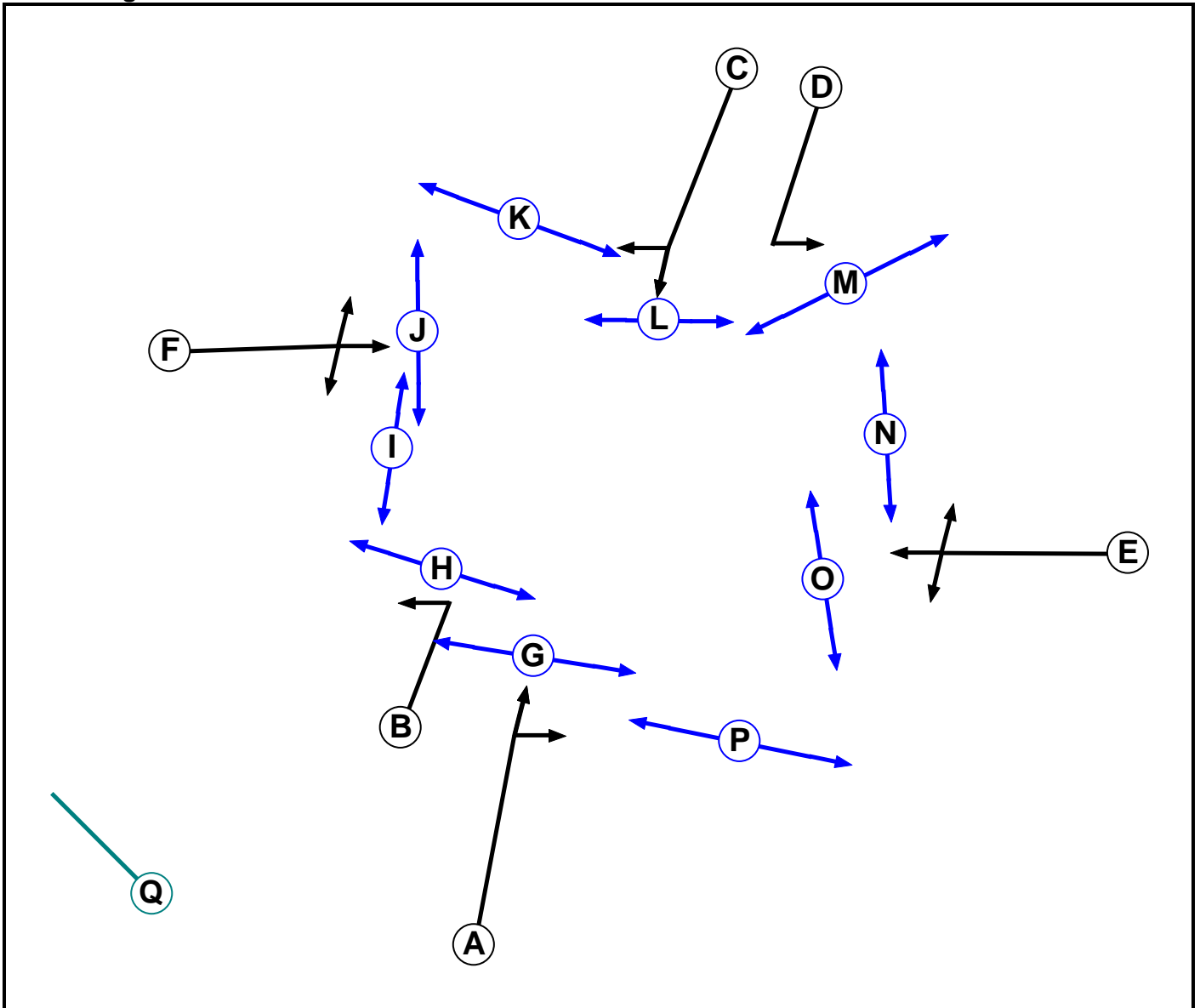
User and Project Details

| | |
|--------------------|--|
| Project: | |
| Title: | |
| Location: | |
| Additional detail: | |
| File name: | 11 - St Mary's Lane - Station Road.lsg3x |
| Author: | |
| Company: | |
| Address: | |

Network Layout Diagram



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 | | 7 | 7 |
| H | Pedestrian | | 7 | 7 |
| I | Pedestrian | | 7 | 7 |
| J | Pedestrian | | 7 | 7 |
| K | Pedestrian | | 7 | 7 |
| L | Pedestrian | | 7 | 7 |
| M | Pedestrian | | 7 | 7 |
| N | Pedestrian | | 7 | 7 |
| O | Pedestrian | | 7 | 7 |
| P | Pedestrian | | 7 | 7 |
| Q | Dummy | | 7 | 7 |

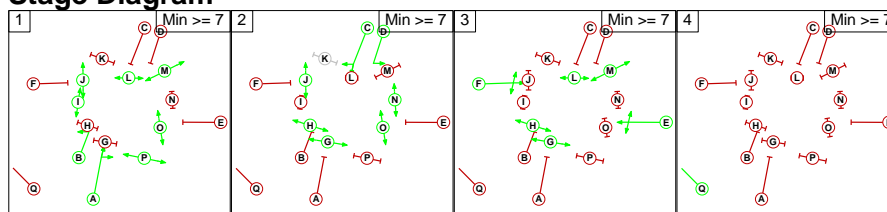
Phase Intergrens Matrix

| | | Starting Phase | | | | | | | | | | | | | | | | |
|-------------------|---|----------------|----|---|----|---|----|---|---|----|---|----|---|---|----|---|----|---|
| | | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q |
| Terminating Phase | A | - | - | 7 | 10 | 5 | 5 | 5 | - | - | - | 8 | - | - | 11 | - | - | 3 |
| | B | - | - | 5 | - | 5 | - | - | 5 | - | - | - | - | - | - | - | - | 3 |
| | C | 8 | 10 | - | - | 5 | 5 | - | - | 11 | - | - | 5 | - | - | - | 9 | 3 |
| | D | 5 | - | - | - | - | 5 | - | - | - | - | - | - | 5 | - | - | - | 3 |
| | E | 7 | 9 | 5 | - | - | - | - | - | 9 | - | 11 | - | - | - | 5 | 9 | 3 |
| | F | 5 | - | 7 | 9 | - | - | - | - | - | 5 | 9 | - | - | 9 | - | 10 | 3 |
| | G | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 3 |
| | H | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 3 |
| | I | - | - | 8 | - | 8 | - | - | - | - | - | - | - | - | - | - | - | 3 |
| | J | - | - | - | - | - | 10 | - | - | - | - | - | - | - | - | - | - | 4 |
| | K | 9 | - | - | - | 9 | 9 | - | - | - | - | - | - | - | - | - | - | 4 |
| | L | - | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | - | 3 |
| | M | - | - | - | 8 | - | - | - | - | - | - | - | - | - | - | - | - | 3 |
| | N | 8 | - | - | - | - | 8 | - | - | - | - | - | - | - | - | - | - | 3 |
| | O | - | - | - | - | 8 | - | - | - | - | - | - | - | - | - | - | - | 3 |
| | P | - | - | 8 | - | 8 | 8 | - | - | - | - | - | - | - | - | - | - | 3 |
| Q | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | |

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1 | AB IJLMOP |
| 2 | CDGHJNO |
| 3 | EFGHLM |
| 4 | Q |

Stage Diagram



Full Input Data And Results

Phase Delays

| Term. Stage | Start Stage | Phase | Type | Value | Cont value |
|-------------|-------------|-------|--------|-------|------------|
| 1 | 2 | B | Losing | 5 | 5 |
| 1 | 2 | I | Losing | 2 | 2 |
| 1 | 2 | L | Losing | 2 | 2 |
| 1 | 2 | M | Losing | 2 | 2 |
| 1 | 2 | P | Losing | 2 | 2 |
| 1 | 3 | A | Losing | 5 | 5 |
| 1 | 3 | B | Losing | 5 | 5 |
| 1 | 3 | I | Losing | 2 | 2 |
| 1 | 3 | O | Losing | 2 | 2 |
| 1 | 3 | P | Losing | 2 | 2 |
| 2 | 1 | D | Losing | 5 | 5 |
| 2 | 1 | G | Losing | 2 | 2 |
| 2 | 1 | H | Losing | 2 | 2 |
| 2 | 1 | N | Losing | 2 | 2 |
| 2 | 3 | C | Losing | 5 | 5 |
| 2 | 3 | D | Losing | 5 | 5 |
| 2 | 3 | N | Losing | 2 | 2 |
| 2 | 3 | O | Losing | 2 | 2 |
| 3 | 1 | E | Losing | 1 | 1 |
| 3 | 1 | G | Losing | 2 | 2 |
| 3 | 1 | H | Losing | 2 | 2 |
| 3 | 2 | L | Losing | 1 | 1 |
| 3 | 2 | M | Losing | 1 | 1 |

Prohibited Stage Change

| | | To Stage | | | |
|------------|---|----------|----|----|---|
| | | 1 | 2 | 3 | 4 |
| From Stage | 1 | | 11 | 10 | 4 |
| | 2 | 11 | | 10 | 4 |
| | 3 | 10 | 9 | | 3 |
| | 4 | 2 | 2 | 2 | |

Full Input Data And Results

Give-Way Lane Input Data

| Junction: St Mary's Lane - Station Road | | | | | | | | | | | |
|---|-------------|-----------------------------------|-----------------------------------|---------------|------------------|--------------|--------------------------|----------------------------|------|------------------------|-------------------------------|
| 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) |
| 1/3 (St Mary's Lane (A124)) | 8/1 (Right) | 1439 | 0 | 2/1 | 1.09 | All | 2.00 | - | 0.50 | 2 | 2.00 |
| 2/2 (St Mary's Lane (B187)) | 7/1 (Right) | 1439 | 0 | 1/1 | 1.09 | All | 2.00 | - | 0.50 | 2 | 2.00 |
| | | | | 1/2 | 1.09 | All | | | | | |

Full Input Data And Results

Lane Input Data

| Junction: St Mary's Lane - Station Road | | | | | | | | | | | | |
|---|-----------|--------|-------------|-----------|-----------------------|---------------|-----------------------------------|----------------|----------|---------------|-------------|--------------------|
| 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 (St Mary's Lane (A124)) | U | F | 2 | 3 | 60.0 | Geom | - | 3.10 | 0.00 | Y | Arm 7 Left | 22.80 |
| 1/2 (St Mary's Lane (A124)) | U | F | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | Y | Arm 6 Ahead | Inf |
| 1/3 (St Mary's Lane (A124)) | O | F | 2 | 3 | 2.6 | Geom | - | 3.00 | 0.00 | Y | Arm 8 Right | Inf |
| 2/1 (St Mary's Lane (B187)) | U | E | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 5 Ahead | Inf |
| | | | | | | | | | | | Arm 8 Left | 16.50 |
| 2/2 (St Mary's Lane (B187)) | O | E | 2 | 3 | 6.0 | Geom | - | 3.10 | 0.00 | Y | Arm 7 Right | 9.00 |
| 3/1 (Station Road) | U | D | 2 | 3 | 1.7 | Geom | - | 3.00 | 0.00 | Y | Arm 6 Left | 18.60 |
| 3/2 (Station Road) | U | C | 2 | 3 | 60.0 | Geom | - | 3.10 | 0.00 | Y | Arm 8 Ahead | Inf |
| 3/3 (Station Road) | U | C | 2 | 3 | 60.0 | Geom | - | 3.10 | 0.00 | Y | Arm 5 Right | 16.00 |
| | | | | | | | | | | | Arm 8 Ahead | Inf |
| 4/1 (Corbets Tey Road) | U | B | 2 | 3 | 1.7 | Geom | - | 4.00 | 0.00 | Y | Arm 5 Left | 12.80 |
| 4/2 (Corbets Tey Road) | U | A | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | Y | Arm 7 Ahead | Inf |
| 4/3 (Corbets Tey Road) | U | A | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | Y | Arm 6 Right | 22.80 |
| | | | | | | | | | | | Arm 7 Ahead | Inf |
| 5/1 (St Mary's Lane exit (A124)) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 6/1 (St Mary's Lane exit (B187)) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 7/1 (Station Road exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 8/1 (Corbets Tey Road exit) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |

Full Input Data And Results

Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---------------------------------|------------|----------|----------|----------|
| 1: 'Base Year 2023 AM' | 08:00 | 09:00 | 01:00 | |
| 2: 'Base Year 2023 PM' | 17:00 | 18:00 | 01:00 | |
| 3: 'Reference Case 2030 AM' | 08:00 | 09:00 | 01:00 | F1 * 1.2 |
| 4: 'Reference Case 2030 PM' | 08:00 | 09:00 | 01:00 | F2 * 1.2 |
| 7: 'Do Something 2030 + LTC AM' | 08:00 | 09:00 | 01:00 | F3+F5 |
| 8: 'Do Something 2030 + LTC PM' | 17:00 | 18:00 | 01:00 | F4+F6 |

Scenario 1: '2023 AM' (FG1: 'Base Year 2023 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | Destination | | | | | |
|--------|-------------|-----|-----|-----|------|------|
| | A | B | C | D | Tot. | |
| Origin | A | 0 | 54 | 299 | 237 | 590 |
| | B | 53 | 0 | 76 | 230 | 359 |
| | C | 294 | 83 | 0 | 51 | 428 |
| | D | 343 | 227 | 34 | 0 | 604 |
| | Tot. | 690 | 364 | 409 | 518 | 1981 |

Full Input Data And Results

Traffic Lane Flows

| Lane | Scenario 1: 2023 AM |
|--|------------------------|
| Junction: St Mary's Lane - Station Road | |
| 1/1 | 343 |
| 1/2 (with short) | 261(In) 227(Out) |
| 1/3 (short) | 34 |
| 2/1 (with short) | 359(In) 306(Out) |
| 2/2 (short) | 53 |
| 3/1 (short) | 54 |
| 3/2 (with short) | 325(In) 271(Out) |
| 3/3 | 265 |
| 4/1 (short) | 51 |
| 4/2 (with short) | 234(In) 183(Out) |
| 4/3 | 194 |
| 5/1 | 518 |
| 6/1 | 364 |
| 7/1 | 690 |
| 8/1 | 409 |

Full Input Data And Results

Lane Saturation Flows

| Junction: St Mary's Lane - Station Road | | | | | | | | |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (St Mary's Lane (A124)) | 3.10 | 0.00 | Y | Arm 7 Left | 22.80 | 100.0 % | 1806 | 1806 |
| 1/2 (St Mary's Lane (A124)) | 3.00 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1915 | 1915 |
| 1/3 (St Mary's Lane (A124)) | 3.00 | 0.00 | Y | Arm 8 Right | Inf | 100.0 % | 1915 | 1915 |
| 2/1 (St Mary's Lane (B187)) | 3.50 | 0.00 | Y | Arm 5 Ahead | Inf | 75.2 % | 1922 | 1922 |
| | | | | Arm 8 Left | 16.50 | 24.8 % | | |
| 2/2 (St Mary's Lane (B187)) | 3.10 | 0.00 | Y | Arm 7 Right | 9.00 | 100.0 % | 1650 | 1650 |
| 3/1 (Station Road) | 3.00 | 0.00 | Y | Arm 6 Left | 18.60 | 100.0 % | 1772 | 1772 |
| 3/2 (Station Road) | 3.10 | 0.00 | Y | Arm 8 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 3/3 (Station Road) | 3.10 | 0.00 | Y | Arm 5 Right | 16.00 | 89.4 % | 1776 | 1776 |
| | | | | Arm 8 Ahead | Inf | 10.6 % | | |
| 4/1 (Corbets Tey Road) | 4.00 | 0.00 | Y | Arm 5 Left | 12.80 | 100.0 % | 1804 | 1804 |
| 4/2 (Corbets Tey Road) | 3.00 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1915 | 1915 |
| 4/3 (Corbets Tey Road) | 3.00 | 0.00 | Y | Arm 6 Right | 22.80 | 42.8 % | 1863 | 1863 |
| | | | | Arm 7 Ahead | Inf | 57.2 % | | |
| 5/1 (St Mary's Lane exit (A124) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (St Mary's Lane exit (B187) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Station Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Corbets Tey Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

Scenario 2: '2023 PM' (FG2: 'Base Year 2023 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|-----|-----|-----|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 80 | 333 | 264 | 677 |
| | B | 81 | 0 | 123 | 239 | 443 |
| | C | 264 | 146 | 0 | 78 | 488 |
| | D | 353 | 342 | 56 | 0 | 751 |
| | Tot. | 698 | 568 | 512 | 581 | 2359 |

Traffic Lane Flows

| Lane | Scenario 2: 2023 PM |
|--|------------------------|
| Junction: St Mary's Lane - Station Road | |
| 1/1 | 353 |
| 1/2 (with short) | 398(In) 342(Out) |
| 1/3 (short) | 56 |
| 2/1 (with short) | 443(In) 362(Out) |
| 2/2 (short) | 81 |
| 3/1 (short) | 80 |
| 3/2 (with short) | 370(In) 290(Out) |
| 3/3 | 307 |
| 4/1 (short) | 78 |
| 4/2 (with short) | 271(In) 193(Out) |
| 4/3 | 217 |
| 5/1 | 581 |
| 6/1 | 568 |
| 7/1 | 698 |
| 8/1 | 512 |

Full Input Data And Results

Lane Saturation Flows

| Junction: St Mary's Lane - Station Road | | | | | | | | |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (St Mary's Lane (A124)) | 3.10 | 0.00 | Y | Arm 7 Left | 22.80 | 100.0 % | 1806 | 1806 |
| 1/2 (St Mary's Lane (A124)) | 3.00 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1915 | 1915 |
| 1/3 (St Mary's Lane (A124)) | 3.00 | 0.00 | Y | Arm 8 Right | Inf | 100.0 % | 1915 | 1915 |
| 2/1 (St Mary's Lane (B187)) | 3.50 | 0.00 | Y | Arm 5 Ahead | Inf | 66.0 % | 1906 | 1906 |
| | | | | Arm 8 Left | 16.50 | 34.0 % | | |
| 2/2 (St Mary's Lane (B187)) | 3.10 | 0.00 | Y | Arm 7 Right | 9.00 | 100.0 % | 1650 | 1650 |
| 3/1 (Station Road) | 3.00 | 0.00 | Y | Arm 6 Left | 18.60 | 100.0 % | 1772 | 1772 |
| 3/2 (Station Road) | 3.10 | 0.00 | Y | Arm 8 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 3/3 (Station Road) | 3.10 | 0.00 | Y | Arm 5 Right | 16.00 | 86.0 % | 1781 | 1781 |
| | | | | Arm 8 Ahead | Inf | 14.0 % | | |
| 4/1 (Corbets Tey Road) | 4.00 | 0.00 | Y | Arm 5 Left | 12.80 | 100.0 % | 1804 | 1804 |
| 4/2 (Corbets Tey Road) | 3.00 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1915 | 1915 |
| 4/3 (Corbets Tey Road) | 3.00 | 0.00 | Y | Arm 6 Right | 22.80 | 67.3 % | 1834 | 1834 |
| | | | | Arm 7 Ahead | Inf | 32.7 % | | |
| 5/1 (St Mary's Lane exit (A124) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (St Mary's Lane exit (B187) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Station Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Corbets Tey Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

Scenario 3: '2030 AM' (FG3: 'Reference Case 2030 AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|-----|-----|-----|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 65 | 359 | 284 | 708 |
| | B | 64 | 0 | 91 | 276 | 431 |
| | C | 353 | 100 | 0 | 61 | 514 |
| | D | 412 | 272 | 41 | 0 | 725 |
| | Tot. | 829 | 437 | 491 | 621 | 2378 |

Traffic Lane Flows

| Lane | Scenario 3: 2030 AM |
|--|------------------------|
| Junction: St Mary's Lane - Station Road | |
| 1/1 | 412 |
| 1/2 (with short) | 313(In) 272(Out) |
| 1/3 (short) | 41 |
| 2/1 (with short) | 431(In) 367(Out) |
| 2/2 (short) | 64 |
| 3/1 (short) | 65 |
| 3/2 (with short) | 383(In) 318(Out) |
| 3/3 | 325 |
| 4/1 (short) | 61 |
| 4/2 (with short) | 277(In) 216(Out) |
| 4/3 | 237 |
| 5/1 | 621 |
| 6/1 | 437 |
| 7/1 | 829 |
| 8/1 | 491 |

Full Input Data And Results

Lane Saturation Flows

| Junction: St Mary's Lane - Station Road | | | | | | | | |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (St Mary's Lane (A124)) | 3.10 | 0.00 | Y | Arm 7 Left | 22.80 | 100.0 % | 1806 | 1806 |
| 1/2 (St Mary's Lane (A124)) | 3.00 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1915 | 1915 |
| 1/3 (St Mary's Lane (A124)) | 3.00 | 0.00 | Y | Arm 8 Right | Inf | 100.0 % | 1915 | 1915 |
| 2/1 (St Mary's Lane (B187)) | 3.50 | 0.00 | Y | Arm 5 Ahead | Inf | 75.2 % | 1922 | 1922 |
| | | | | Arm 8 Left | 16.50 | 24.8 % | | |
| 2/2 (St Mary's Lane (B187)) | 3.10 | 0.00 | Y | Arm 7 Right | 9.00 | 100.0 % | 1650 | 1650 |
| 3/1 (Station Road) | 3.00 | 0.00 | Y | Arm 6 Left | 18.60 | 100.0 % | 1772 | 1772 |
| 3/2 (Station Road) | 3.10 | 0.00 | Y | Arm 8 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 3/3 (Station Road) | 3.10 | 0.00 | Y | Arm 5 Right | 16.00 | 87.4 % | 1779 | 1779 |
| | | | | Arm 8 Ahead | Inf | 12.6 % | | |
| 4/1 (Corbets Tey Road) | 4.00 | 0.00 | Y | Arm 5 Left | 12.80 | 100.0 % | 1804 | 1804 |
| 4/2 (Corbets Tey Road) | 3.00 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1915 | 1915 |
| 4/3 (Corbets Tey Road) | 3.00 | 0.00 | Y | Arm 6 Right | 22.80 | 42.2 % | 1863 | 1863 |
| | | | | Arm 7 Ahead | Inf | 57.8 % | | |
| 5/1 (St Mary's Lane exit (A124) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (St Mary's Lane exit (B187) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Station Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Corbets Tey Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

Scenario 4: '2030 PM' (FG4: 'Reference Case 2030 PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|-----|-----|-----|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 96 | 400 | 317 | 813 |
| | B | 97 | 0 | 148 | 287 | 532 |
| | C | 317 | 175 | 0 | 94 | 586 |
| | D | 424 | 410 | 67 | 0 | 901 |
| | Tot. | 838 | 681 | 615 | 698 | 2832 |

Traffic Lane Flows

| Lane | Scenario 4: 2030 PM |
|--|------------------------|
| Junction: St Mary's Lane - Station Road | |
| 1/1 | 424 |
| 1/2 (with short) | 477(In) 410(Out) |
| 1/3 (short) | 67 |
| 2/1 (with short) | 532(In) 435(Out) |
| 2/2 (short) | 97 |
| 3/1 (short) | 96 |
| 3/2 (with short) | 436(In) 340(Out) |
| 3/3 | 377 |
| 4/1 (short) | 94 |
| 4/2 (with short) | 320(In) 226(Out) |
| 4/3 | 266 |
| 5/1 | 698 |
| 6/1 | 681 |
| 7/1 | 838 |
| 8/1 | 615 |

Full Input Data And Results

Lane Saturation Flows

| Junction: St Mary's Lane - Station Road | | | | | | | | |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (St Mary's Lane (A124)) | 3.10 | 0.00 | Y | Arm 7 Left | 22.80 | 100.0 % | 1806 | 1806 |
| 1/2 (St Mary's Lane (A124)) | 3.00 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1915 | 1915 |
| 1/3 (St Mary's Lane (A124)) | 3.00 | 0.00 | Y | Arm 8 Right | Inf | 100.0 % | 1915 | 1915 |
| 2/1 (St Mary's Lane (B187)) | 3.50 | 0.00 | Y | Arm 5 Ahead | Inf | 66.0 % | 1906 | 1906 |
| | | | | Arm 8 Left | 16.50 | 34.0 % | | |
| 2/2 (St Mary's Lane (B187)) | 3.10 | 0.00 | Y | Arm 7 Right | 9.00 | 100.0 % | 1650 | 1650 |
| 3/1 (Station Road) | 3.00 | 0.00 | Y | Arm 6 Left | 18.60 | 100.0 % | 1772 | 1772 |
| 3/2 (Station Road) | 3.10 | 0.00 | Y | Arm 8 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 3/3 (Station Road) | 3.10 | 0.00 | Y | Arm 5 Right | 16.00 | 84.1 % | 1784 | 1784 |
| | | | | Arm 8 Ahead | Inf | 15.9 % | | |
| 4/1 (Corbets Tey Road) | 4.00 | 0.00 | Y | Arm 5 Left | 12.80 | 100.0 % | 1804 | 1804 |
| 4/2 (Corbets Tey Road) | 3.00 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1915 | 1915 |
| 4/3 (Corbets Tey Road) | 3.00 | 0.00 | Y | Arm 6 Right | 22.80 | 65.8 % | 1836 | 1836 |
| | | | | Arm 7 Ahead | Inf | 34.2 % | | |
| 5/1 (St Mary's Lane exit (A124) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (St Mary's Lane exit (B187) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Station Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Corbets Tey Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

Scenario 5: '2030 + LTC AM' (FG7: 'Do Something 2030 + LTC AM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|-----|-----|-----|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 44 | 329 | 287 | 660 |
| | B | 63 | 0 | 74 | 188 | 325 |
| | C | 381 | 105 | 0 | 59 | 545 |
| | D | 457 | 283 | 42 | 0 | 782 |
| | Tot. | 901 | 432 | 445 | 534 | 2312 |

Traffic Lane Flows

| Lane | Scenario 5: 2030 + LTC AM |
|--|------------------------------|
| Junction: St Mary's Lane - Station Road | |
| 1/1 | 457 |
| 1/2 (with short) | 325(In) 283(Out) |
| 1/3 (short) | 42 |
| 2/1 (with short) | 325(In) 262(Out) |
| 2/2 (short) | 63 |
| 3/1 (short) | 44 |
| 3/2 (with short) | 359(In) 315(Out) |
| 3/3 | 301 |
| 4/1 (short) | 59 |
| 4/2 (with short) | 291(In) 232(Out) |
| 4/3 | 254 |
| 5/1 | 534 |
| 6/1 | 432 |
| 7/1 | 901 |
| 8/1 | 445 |

Full Input Data And Results

Lane Saturation Flows

| Junction: St Mary's Lane - Station Road | | | | | | | | |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (St Mary's Lane (A124)) | 3.10 | 0.00 | Y | Arm 7 Left | 22.80 | 100.0 % | 1806 | 1806 |
| 1/2 (St Mary's Lane (A124)) | 3.00 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1915 | 1915 |
| 1/3 (St Mary's Lane (A124)) | 3.00 | 0.00 | Y | Arm 8 Right | Inf | 100.0 % | 1915 | 1915 |
| 2/1 (St Mary's Lane (B187)) | 3.50 | 0.00 | Y | Arm 5 Ahead | Inf | 71.8 % | 1916 | 1916 |
| | | | | Arm 8 Left | 16.50 | 28.2 % | | |
| 2/2 (St Mary's Lane (B187)) | 3.10 | 0.00 | Y | Arm 7 Right | 9.00 | 100.0 % | 1650 | 1650 |
| 3/1 (Station Road) | 3.00 | 0.00 | Y | Arm 6 Left | 18.60 | 100.0 % | 1772 | 1772 |
| 3/2 (Station Road) | 3.10 | 0.00 | Y | Arm 8 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 3/3 (Station Road) | 3.10 | 0.00 | Y | Arm 5 Right | 16.00 | 95.3 % | 1767 | 1767 |
| | | | | Arm 8 Ahead | Inf | 4.7 % | | |
| 4/1 (Corbets Tey Road) | 4.00 | 0.00 | Y | Arm 5 Left | 12.80 | 100.0 % | 1804 | 1804 |
| 4/2 (Corbets Tey Road) | 3.00 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1915 | 1915 |
| 4/3 (Corbets Tey Road) | 3.00 | 0.00 | Y | Arm 6 Right | 22.80 | 41.3 % | 1864 | 1864 |
| | | | | Arm 7 Ahead | Inf | 58.7 % | | |
| 5/1 (St Mary's Lane exit (A124) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (St Mary's Lane exit (B187) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Station Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Corbets Tey Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Full Input Data And Results

Scenario 6: '2030 + LTC PM' (FG8: 'Do Something 2030 + LTC PM', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

| | | Destination | | | | |
|--------|------|-------------|-----|-----|-----|------|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 93 | 355 | 350 | 798 |
| | B | 97 | 0 | 140 | 268 | 505 |
| | C | 327 | 207 | 0 | 96 | 630 |
| | D | 421 | 417 | 77 | 0 | 915 |
| | Tot. | 845 | 717 | 572 | 714 | 2848 |

Traffic Lane Flows

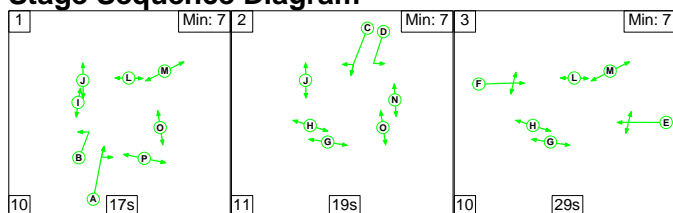
| Lane | Scenario 6: 2030 + LTC PM |
|--|------------------------------|
| Junction: St Mary's Lane - Station Road | |
| 1/1 | 421 |
| 1/2 (with short) | 494(In) 417(Out) |
| 1/3 (short) | 77 |
| 2/1 (with short) | 505(In) 408(Out) |
| 2/2 (short) | 97 |
| 3/1 (short) | 93 |
| 3/2 (with short) | 431(In) 338(Out) |
| 3/3 | 367 |
| 4/1 (short) | 96 |
| 4/2 (with short) | 341(In) 245(Out) |
| 4/3 | 289 |
| 5/1 | 714 |
| 6/1 | 717 |
| 7/1 | 845 |
| 8/1 | 572 |

Lane Saturation Flows

| Junction: St Mary's Lane - Station Road | | | | | | | | |
|--|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| 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 (St Mary's Lane (A124)) | 3.10 | 0.00 | Y | Arm 7 Left | 22.80 | 100.0 % | 1806 | 1806 |
| 1/2 (St Mary's Lane (A124)) | 3.00 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1915 | 1915 |
| 1/3 (St Mary's Lane (A124)) | 3.00 | 0.00 | Y | Arm 8 Right | Inf | 100.0 % | 1915 | 1915 |
| 2/1 (St Mary's Lane (B187)) | 3.50 | 0.00 | Y | Arm 5 Ahead | Inf | 65.7 % | 1906 | 1906 |
| | | | | Arm 8 Left | 16.50 | 34.3 % | | |
| 2/2 (St Mary's Lane (B187)) | 3.10 | 0.00 | Y | Arm 7 Right | 9.00 | 100.0 % | 1650 | 1650 |
| 3/1 (Station Road) | 3.00 | 0.00 | Y | Arm 6 Left | 18.60 | 100.0 % | 1772 | 1772 |
| 3/2 (Station Road) | 3.10 | 0.00 | Y | Arm 8 Ahead | Inf | 100.0 % | 1925 | 1925 |
| 3/3 (Station Road) | 3.10 | 0.00 | Y | Arm 5 Right | 16.00 | 95.4 % | 1767 | 1767 |
| | | | | Arm 8 Ahead | Inf | 4.6 % | | |
| 4/1 (Corbets Tey Road) | 4.00 | 0.00 | Y | Arm 5 Left | 12.80 | 100.0 % | 1804 | 1804 |
| 4/2 (Corbets Tey Road) | 3.00 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1915 | 1915 |
| 4/3 (Corbets Tey Road) | 3.00 | 0.00 | Y | Arm 6 Right | 22.80 | 71.6 % | 1829 | 1829 |
| | | | | Arm 7 Ahead | Inf | 28.4 % | | |
| 5/1 (St Mary's Lane exit (A124) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 (St Mary's Lane exit (B187) Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (Station Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 (Corbets Tey Road exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |

Scenario 1: '2023 AM' (FG1: 'Base Year 2023 AM', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

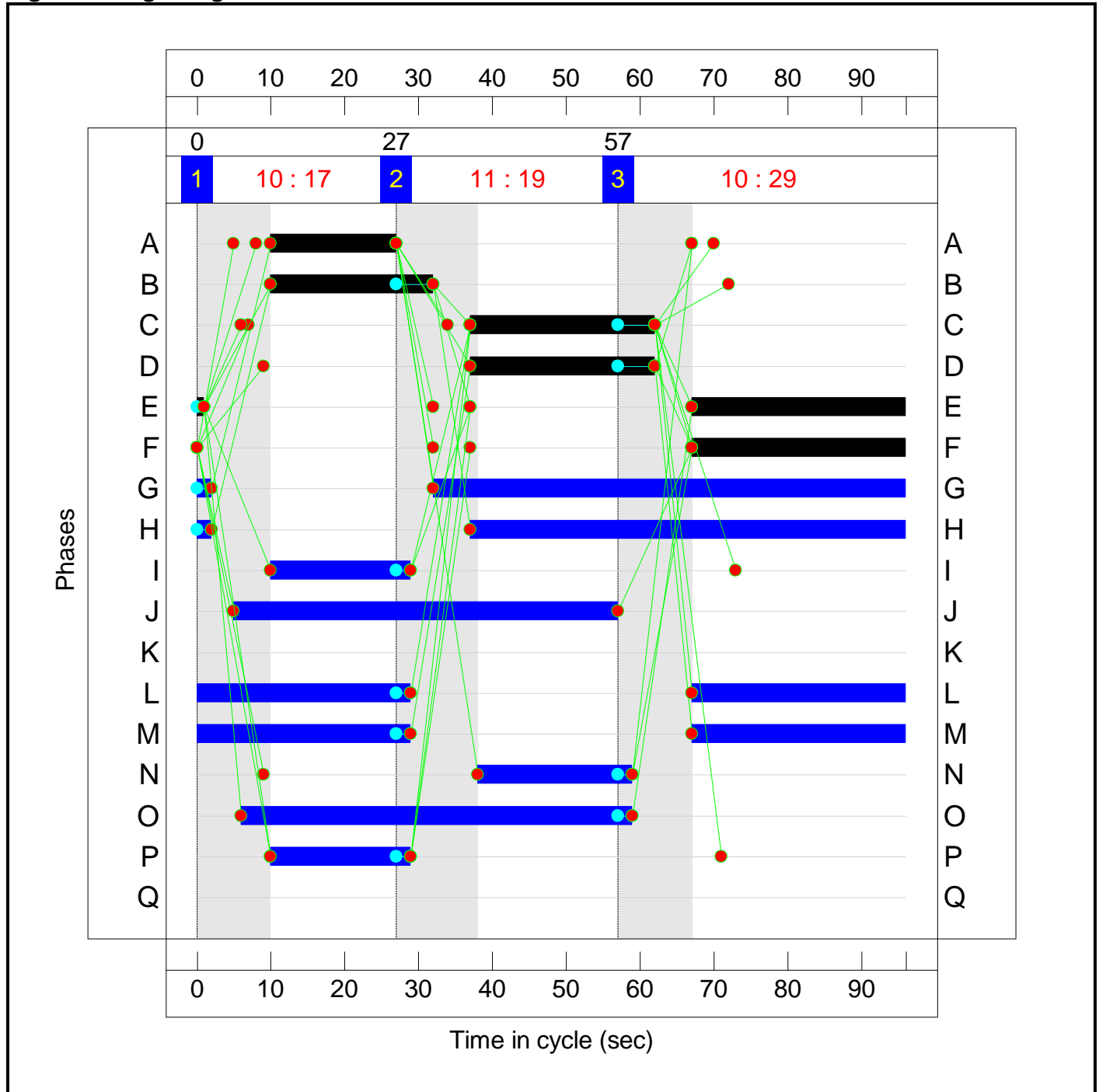


Full Input Data And Results

Stage Timings

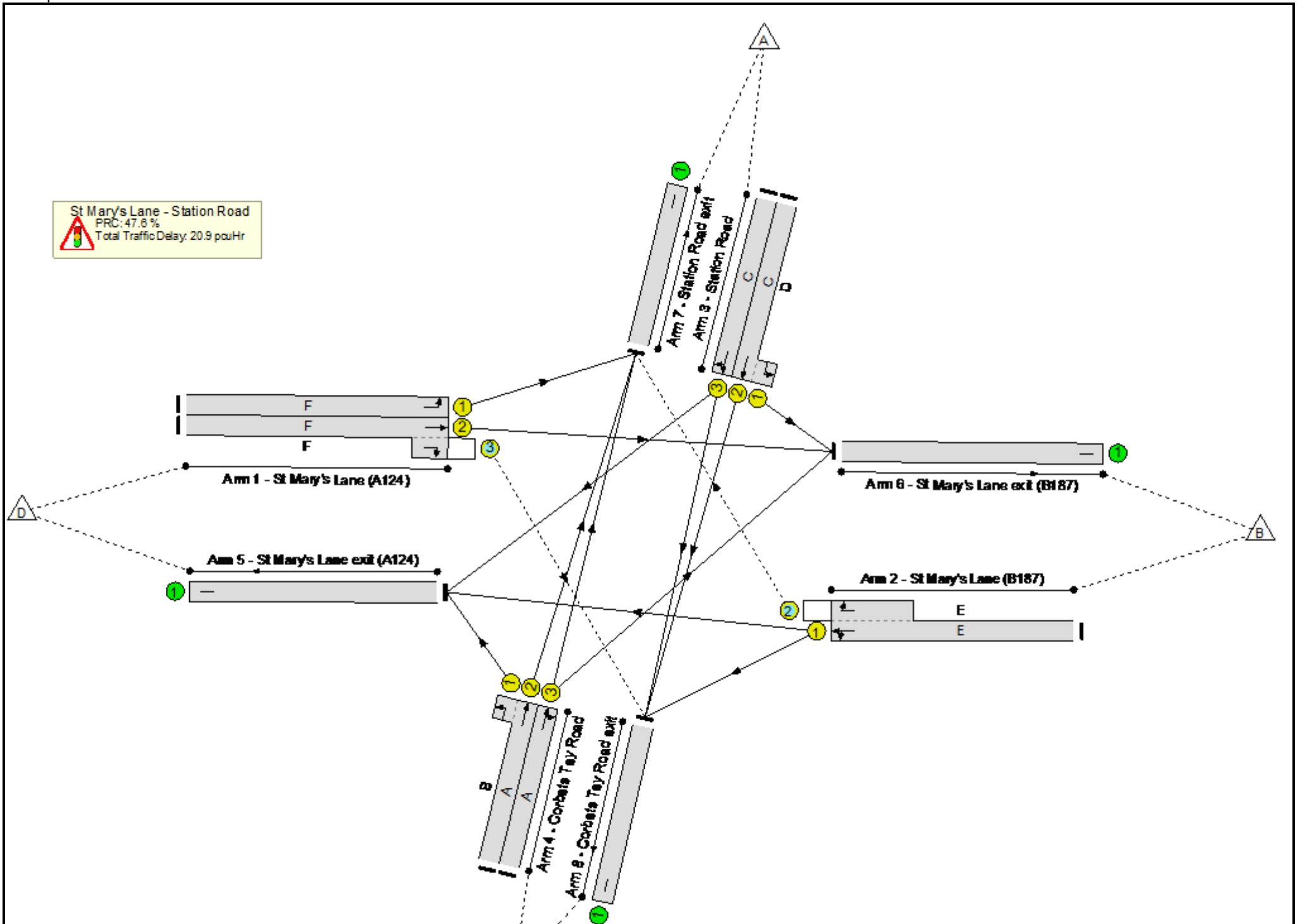
| Stage | 1 | 2 | 3 |
|--------------|----|----|----|
| Duration | 17 | 19 | 29 |
| Change Point | 0 | 27 | 57 |

Signal Timings Diagram



Full Input Data And Results
Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

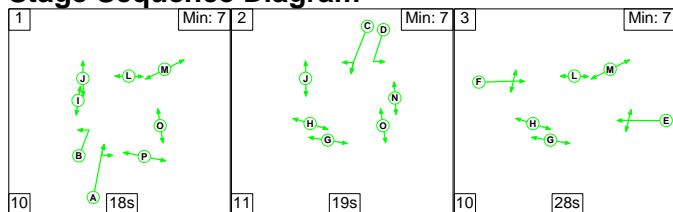
Network Results

| 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 | - | - | | - | - | - | - | - | - | 61.0% |
| St Mary's Lane - Station Road | - | - | N/A | - | - | | - | - | - | - | - | - | 61.0% |
| 1/1 | St Mary's Lane (A124) Left | U | N/A | N/A | F | | 1 | 29 | - | 343 | 1806 | 564 | 60.8% |
| 1/2+1/3 | St Mary's Lane (A124) Ahead Right | U+O | N/A | N/A | F | | 1 | 29 | - | 261 | 1915:1915 | 539+81 | 42.1 : 42.1% |
| 2/1+2/2 | St Mary's Lane (B187) Ahead Right Left | U+O | N/A | N/A | E | | 1 | 30 | - | 359 | 1922:1650 | 558+97 | 54.8 : 54.8% |
| 3/2+3/1 | Station Road Left Ahead | U | N/A | N/A | C D | | 1 | 25 | - | 325 | 1925:1772 | 449+89 | 60.4 : 60.4% |
| 3/3 | Station Road Right Ahead | U | N/A | N/A | C | | 1 | 25 | - | 265 | 1776 | 481 | 55.1% |
| 4/2+4/1 | Corbets Tey Road Left Ahead | U | N/A | N/A | A B | | 1 | 17:22 | - | 234 | 1915:1804 | 300+84 | 61.0 : 61.0% |
| 4/3 | Corbets Tey Road Right Ahead | U | N/A | N/A | A | | 1 | 17 | - | 194 | 1863 | 349 | 55.5% |
| 5/1 | St Mary's Lane exit (A124) | U | N/A | N/A | - | | - | - | - | 518 | Inf | Inf | 0.0% |
| 6/1 | St Mary's Lane exit (B187) | U | N/A | N/A | - | | - | - | - | 364 | Inf | Inf | 0.0% |
| 7/1 | Station Road exit | U | N/A | N/A | - | | - | - | - | 690 | Inf | Inf | 0.0% |
| 8/1 | Corbets Tey Road exit | U | N/A | N/A | - | | - | - | - | 409 | Inf | Inf | 0.0% |

Full Input Data And Results

Scenario 2: '2023 PM' (FG2: 'Base Year 2023 PM', Plan 1: 'Network Control Plan 1')

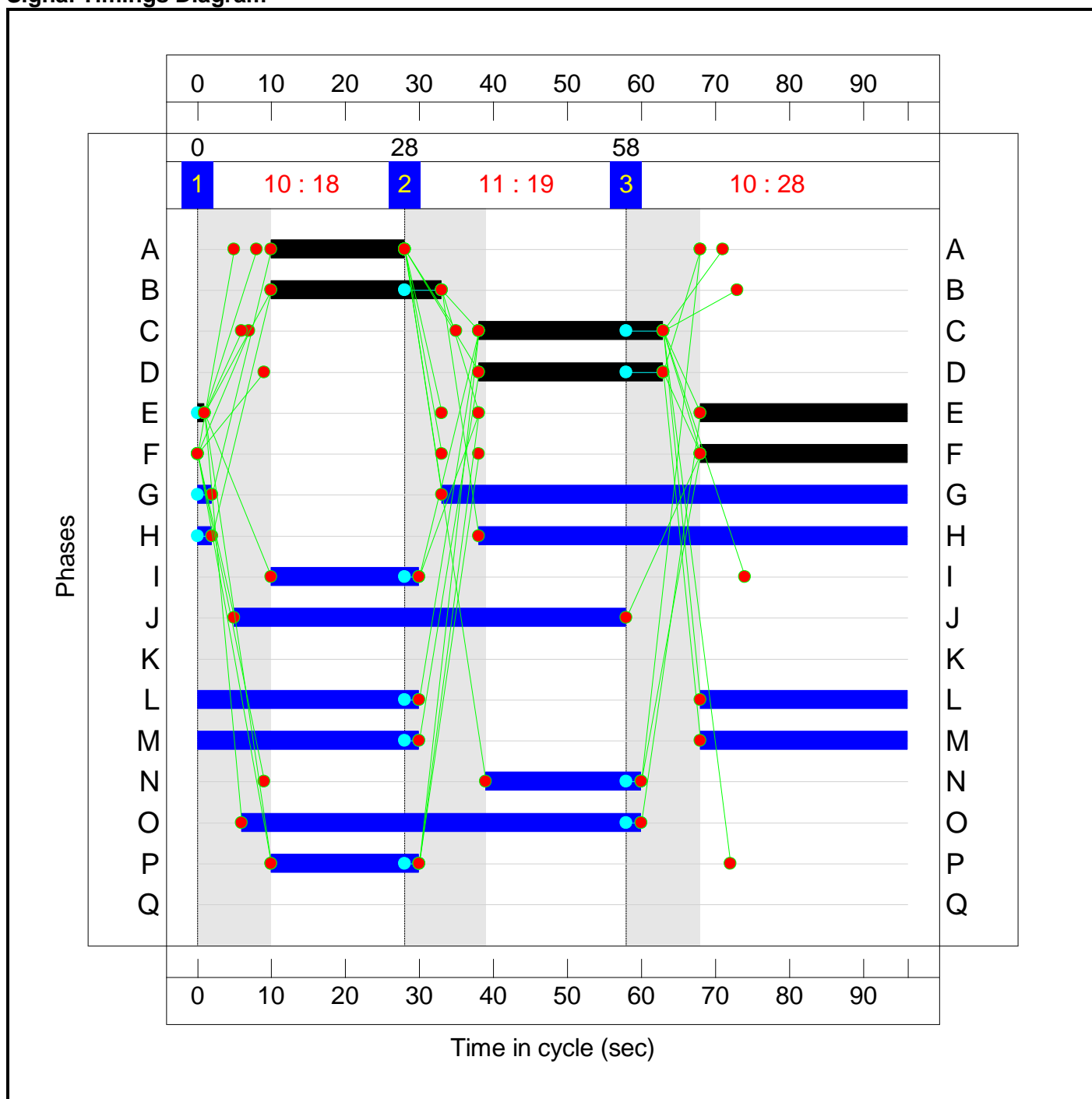
Stage Sequence Diagram



Stage Timings

| Stage | 1 | 2 | 3 |
|--------------|----|----|----|
| Duration | 18 | 19 | 28 |
| Change Point | 0 | 28 | 58 |

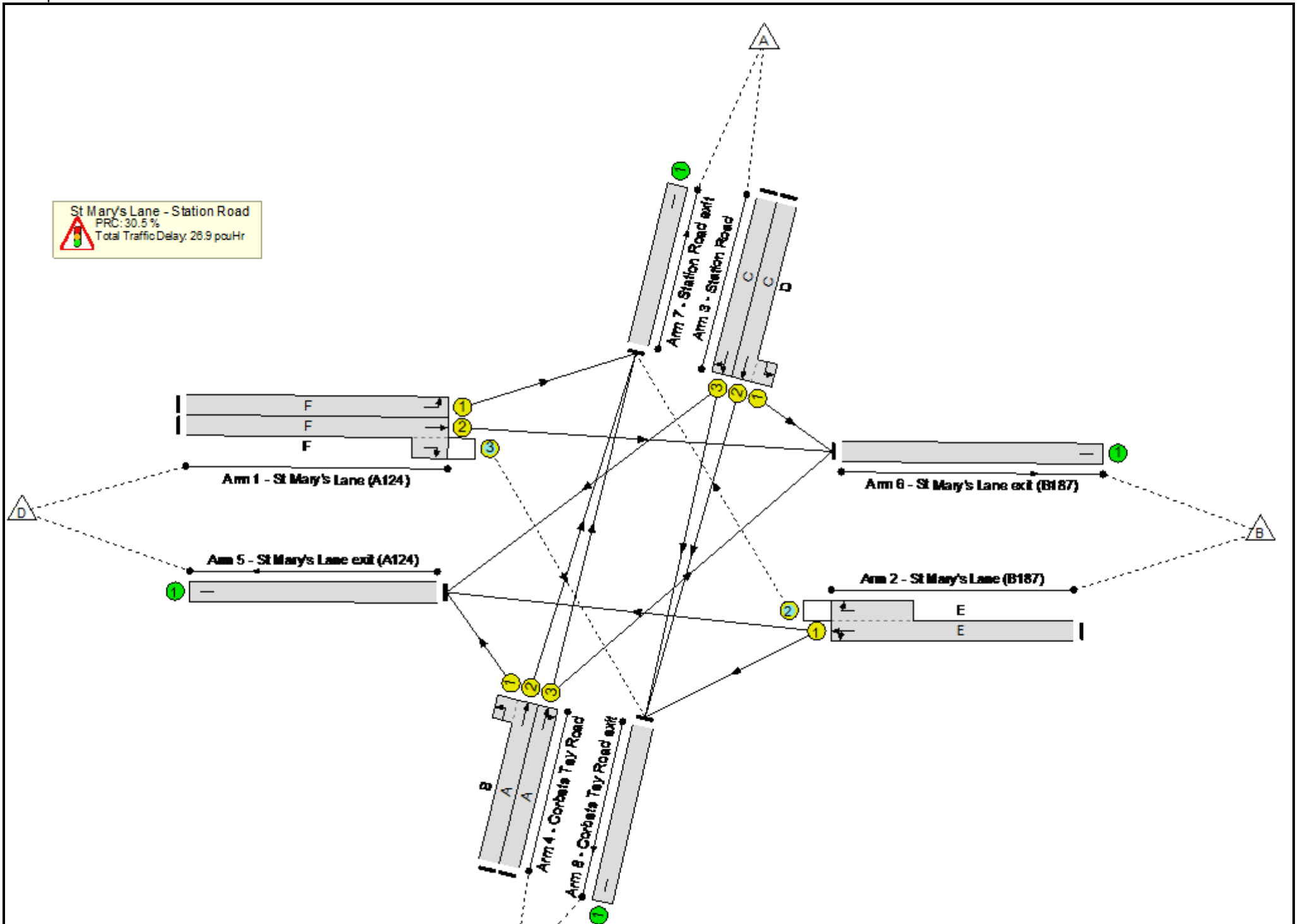
Signal Timings Diagram



Full Input Data And Results

Full Input Data And Results
Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

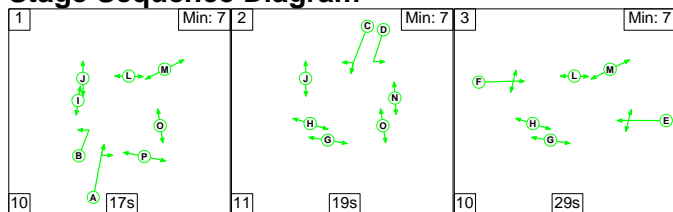
Network Results

| 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 | - | - | | - | - | - | - | - | - | 69.0% |
| St Mary's Lane - Station Road | - | - | N/A | - | - | | - | - | - | - | - | - | 69.0% |
| 1/1 | St Mary's Lane (A124) Left | U | N/A | N/A | F | | 1 | 28 | - | 353 | 1806 | 546 | 64.7% |
| 1/2+1/3 | St Mary's Lane (A124) Ahead Right | U+O | N/A | N/A | F | | 1 | 28 | - | 398 | 1915:1915 | 516+85 | 66.2 : 66.2% |
| 2/1+2/2 | St Mary's Lane (B187) Ahead Right Left | U+O | N/A | N/A | E | | 1 | 29 | - | 443 | 1906:1650 | 525+117 | 69.0 : 69.0% |
| 3/2+3/1 | Station Road Left Ahead | U | N/A | N/A | C D | | 1 | 25 | - | 370 | 1925:1772 | 424+117 | 68.4 : 68.4% |
| 3/3 | Station Road Right Ahead | U | N/A | N/A | C | | 1 | 25 | - | 307 | 1781 | 482 | 63.6% |
| 4/2+4/1 | Corbets Tey Road Left Ahead | U | N/A | N/A | A B | | 1 | 18:23 | - | 271 | 1915:1804 | 292+118 | 66.0 : 66.0% |
| 4/3 | Corbets Tey Road Right Ahead | U | N/A | N/A | A | | 1 | 18 | - | 217 | 1834 | 363 | 59.8% |
| 5/1 | St Mary's Lane exit (A124) | U | N/A | N/A | - | | - | - | - | 581 | Inf | Inf | 0.0% |
| 6/1 | St Mary's Lane exit (B187) | U | N/A | N/A | - | | - | - | - | 568 | Inf | Inf | 0.0% |
| 7/1 | Station Road exit | U | N/A | N/A | - | | - | - | - | 698 | Inf | Inf | 0.0% |
| 8/1 | Corbets Tey Road exit | U | N/A | N/A | - | | - | - | - | 512 | Inf | Inf | 0.0% |

Full Input Data And Results

Scenario 3: '2030 AM' (FG3: 'Reference Case 2030 AM', Plan 1: 'Network Control Plan 1')

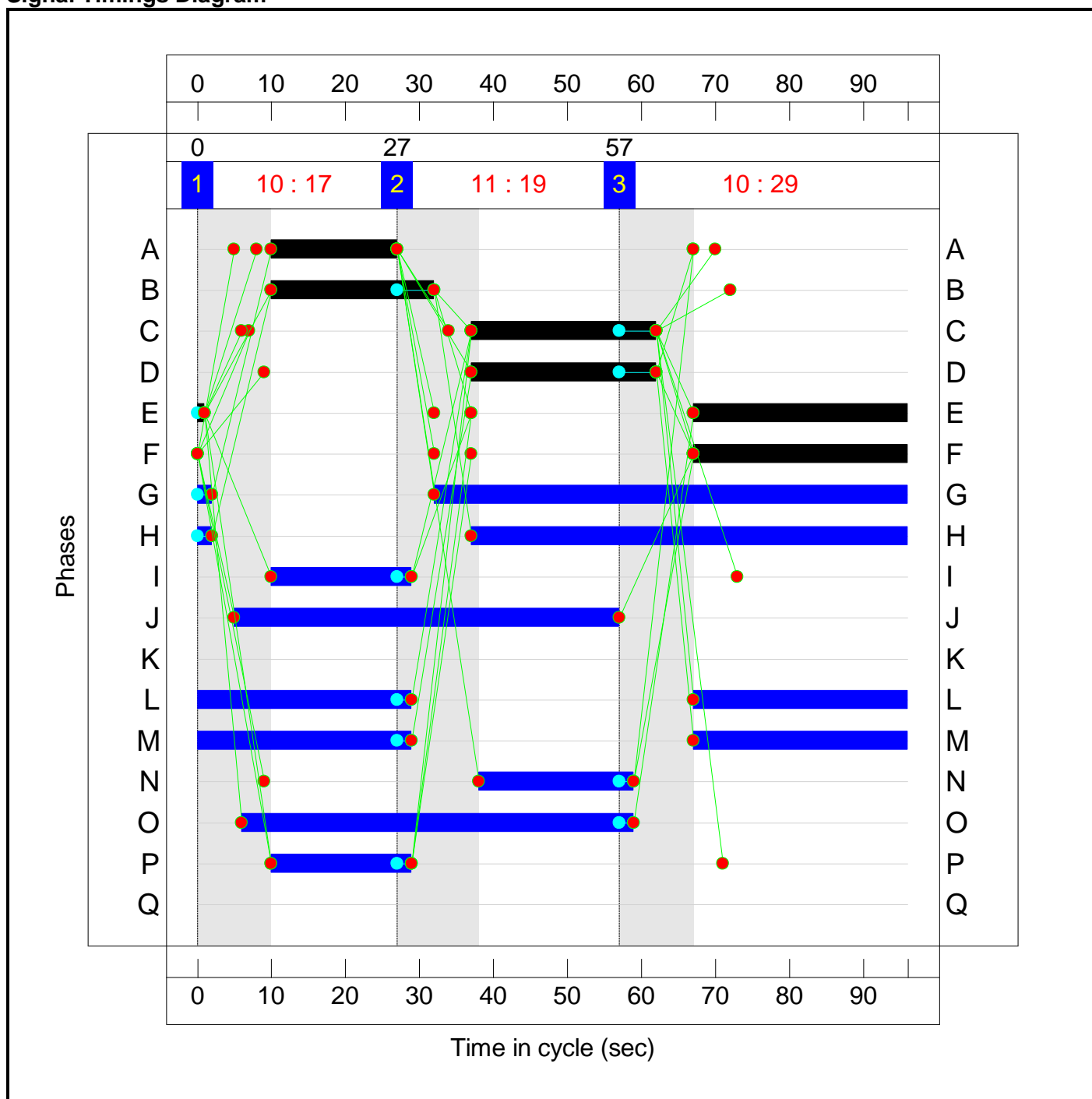
Stage Sequence Diagram



Stage Timings

| Stage | 1 | 2 | 3 |
|--------------|----|----|----|
| Duration | 17 | 19 | 29 |
| Change Point | 0 | 27 | 57 |

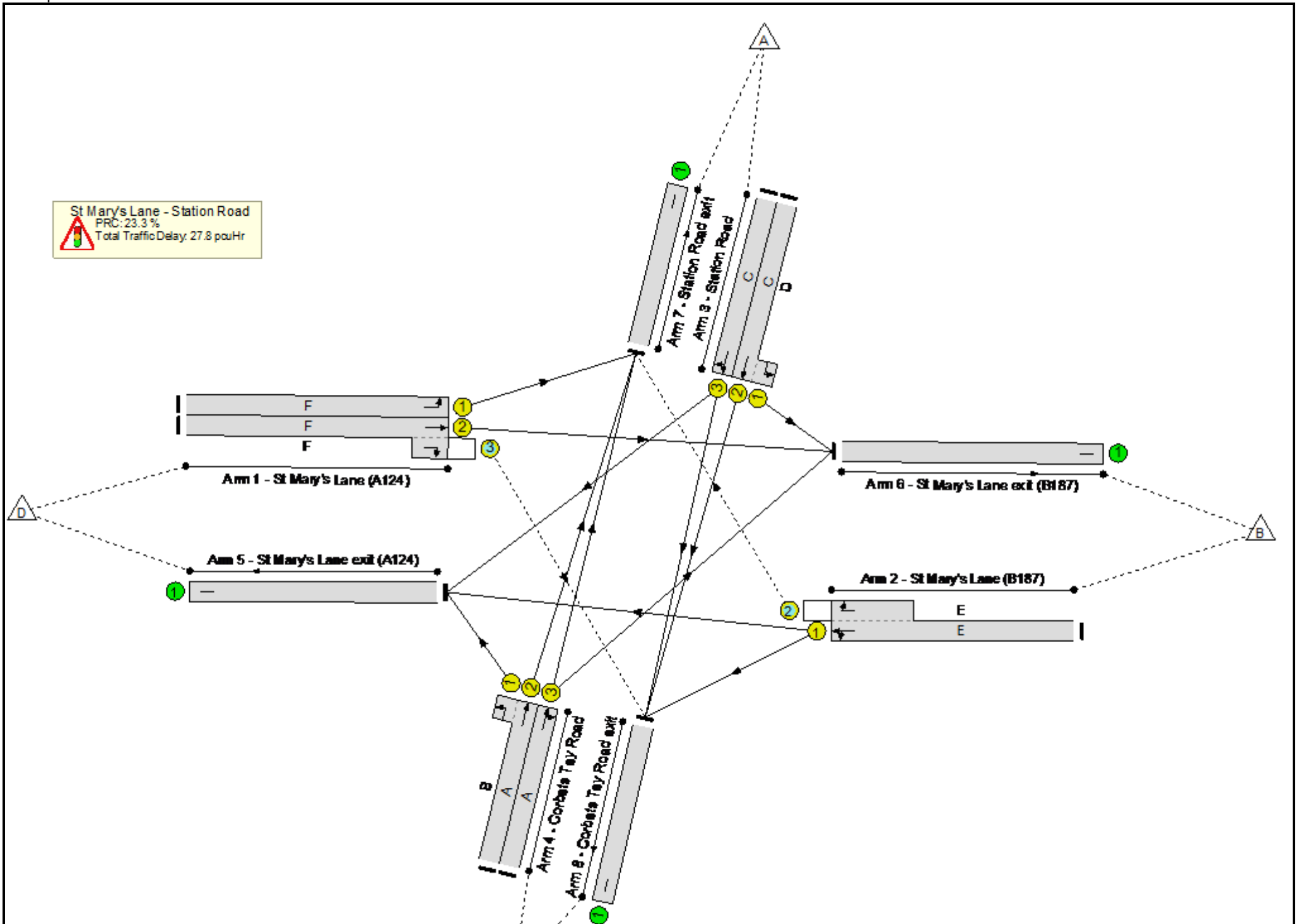
Signal Timings Diagram



Full Input Data And Results

Full Input Data And Results
Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

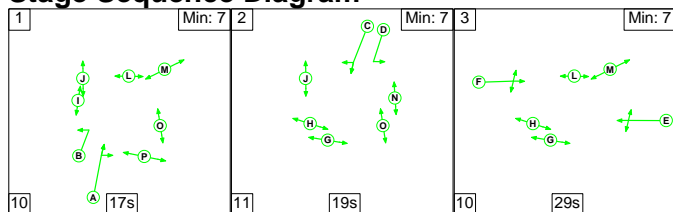
Network Results

| 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 | - | - | | - | - | - | - | - | - | 73.0% |
| St Mary's Lane - Station Road | - | - | N/A | - | - | | - | - | - | - | - | - | 73.0% |
| 1/1 | St Mary's Lane (A124) Left | U | N/A | N/A | F | | 1 | 29 | - | 412 | 1806 | 564 | 73.0% |
| 1/2+1/3 | St Mary's Lane (A124) Ahead Right | U+O | N/A | N/A | F | | 1 | 29 | - | 313 | 1915:1915 | 538+81 | 50.5 : 50.5% |
| 2/1+2/2 | St Mary's Lane (B187) Ahead Right Left | U+O | N/A | N/A | E | | 1 | 30 | - | 431 | 1922:1650 | 558+97 | 65.8 : 65.8% |
| 3/2+3/1 | Station Road Left Ahead | U | N/A | N/A | C D | | 1 | 25 | - | 383 | 1925:1772 | 447+91 | 71.2 : 71.2% |
| 3/3 | Station Road Right Ahead | U | N/A | N/A | C | | 1 | 25 | - | 325 | 1779 | 482 | 67.5% |
| 4/2+4/1 | Corbets Tey Road Left Ahead | U | N/A | N/A | A B | | 1 | 17:22 | - | 277 | 1915:1804 | 299+85 | 72.1 : 72.1% |
| 4/3 | Corbets Tey Road Right Ahead | U | N/A | N/A | A | | 1 | 17 | - | 237 | 1863 | 349 | 67.8% |
| 5/1 | St Mary's Lane exit (A124) | U | N/A | N/A | - | | - | - | - | 621 | Inf | Inf | 0.0% |
| 6/1 | St Mary's Lane exit (B187) | U | N/A | N/A | - | | - | - | - | 437 | Inf | Inf | 0.0% |
| 7/1 | Station Road exit | U | N/A | N/A | - | | - | - | - | 829 | Inf | Inf | 0.0% |
| 8/1 | Corbets Tey Road exit | U | N/A | N/A | - | | - | - | - | 491 | Inf | Inf | 0.0% |

Full Input Data And Results

Scenario 4: '2030 PM' (FG4: 'Reference Case 2030 PM', Plan 1: 'Network Control Plan 1')

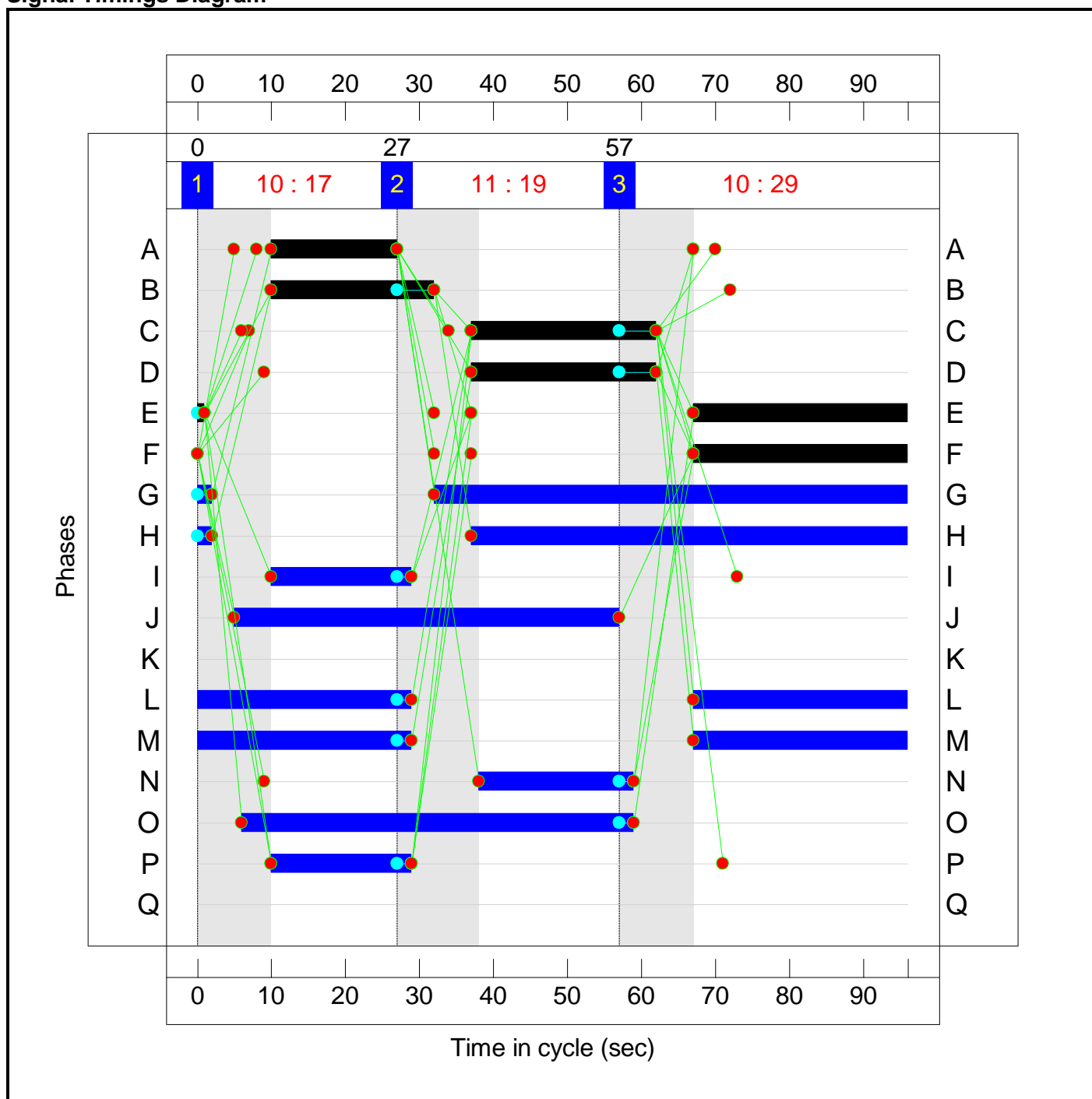
Stage Sequence Diagram



Stage Timings

| Stage | 1 | 2 | 3 |
|--------------|----|----|----|
| Duration | 17 | 19 | 29 |
| Change Point | 0 | 27 | 57 |

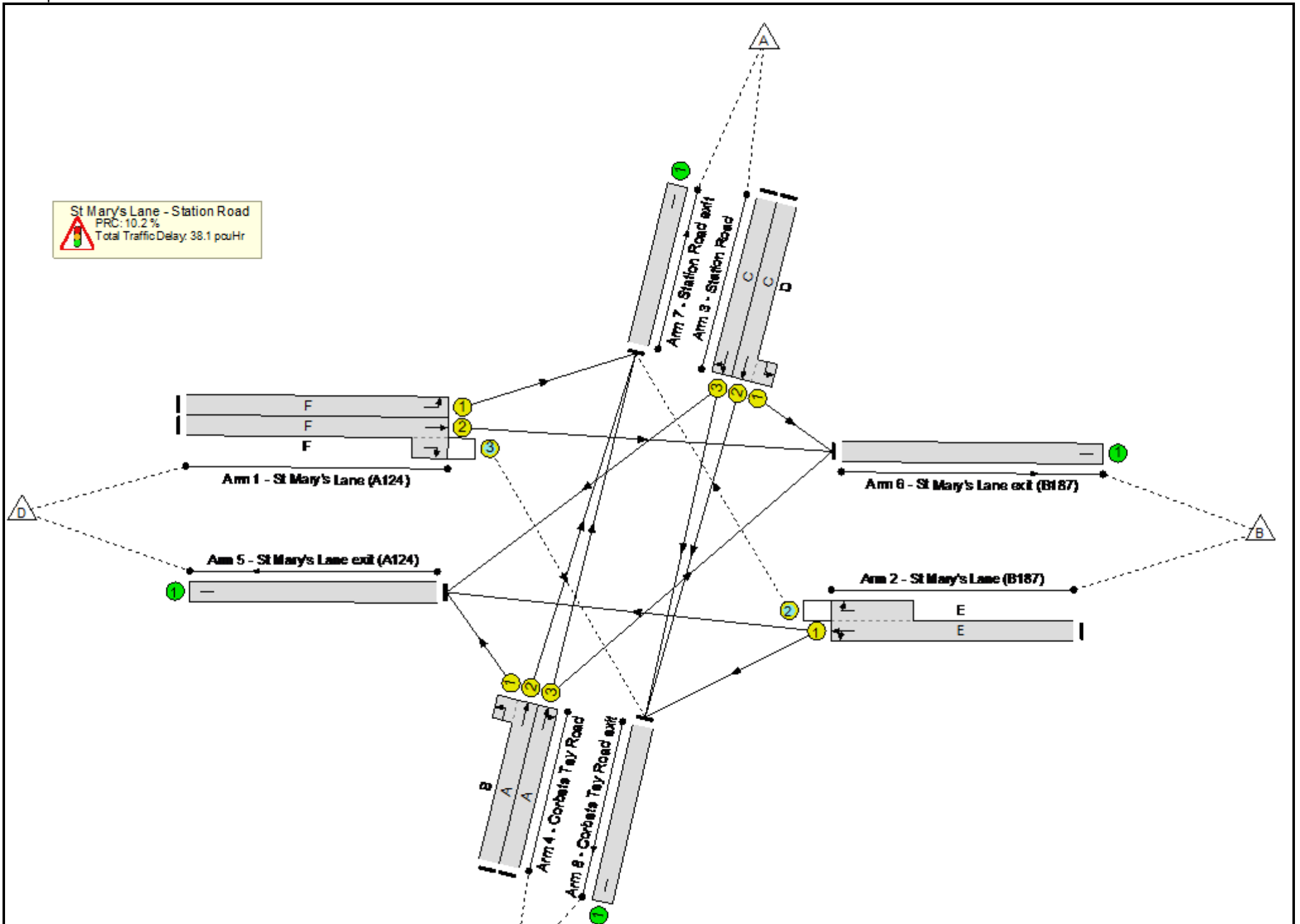
Signal Timings Diagram



Full Input Data And Results

Full Input Data And Results
Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

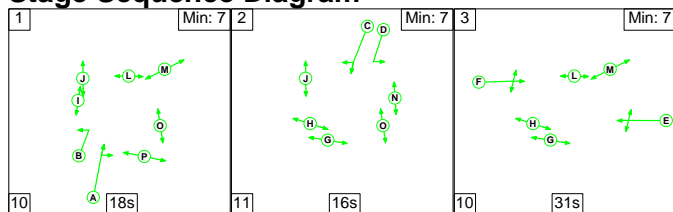
Network Results

| 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 | - | - | | - | - | - | - | - | - | 81.7% |
| St Mary's Lane - Station Road | - | - | N/A | - | - | | - | - | - | - | - | - | 81.7% |
| 1/1 | St Mary's Lane (A124) Left | U | N/A | N/A | F | | 1 | 29 | - | 424 | 1806 | 564 | 75.1% |
| 1/2+1/3 | St Mary's Lane (A124) Ahead Right | U+O | N/A | N/A | F | | 1 | 29 | - | 477 | 1915:1915 | 534+87 | 76.8 : 76.8% |
| 2/1+2/2 | St Mary's Lane (B187) Ahead Right Left | U+O | N/A | N/A | E | | 1 | 30 | - | 532 | 1906:1650 | 541+119 | 80.4 : 81.4% |
| 3/2+3/1 | Station Road Left Ahead | U | N/A | N/A | C D | | 1 | 25 | - | 436 | 1925:1772 | 422+119 | 80.5 : 80.5% |
| 3/3 | Station Road Right Ahead | U | N/A | N/A | C | | 1 | 25 | - | 377 | 1784 | 483 | 78.0% |
| 4/2+4/1 | Corbets Tey Road Left Ahead | U | N/A | N/A | A B | | 1 | 17:22 | - | 320 | 1915:1804 | 277+115 | 81.7 : 81.7% |
| 4/3 | Corbets Tey Road Right Ahead | U | N/A | N/A | A | | 1 | 17 | - | 266 | 1836 | 344 | 77.3% |
| 5/1 | St Mary's Lane exit (A124) | U | N/A | N/A | - | | - | - | - | 698 | Inf | Inf | 0.0% |
| 6/1 | St Mary's Lane exit (B187) | U | N/A | N/A | - | | - | - | - | 681 | Inf | Inf | 0.0% |
| 7/1 | Station Road exit | U | N/A | N/A | - | | - | - | - | 838 | Inf | Inf | 0.0% |
| 8/1 | Corbets Tey Road exit | U | N/A | N/A | - | | - | - | - | 615 | Inf | Inf | 0.0% |

Full Input Data And Results

Scenario 5: '2030 + LTC AM' (FG7: 'Do Something 2030 + LTC AM', Plan 1: 'Network Control Plan 1')

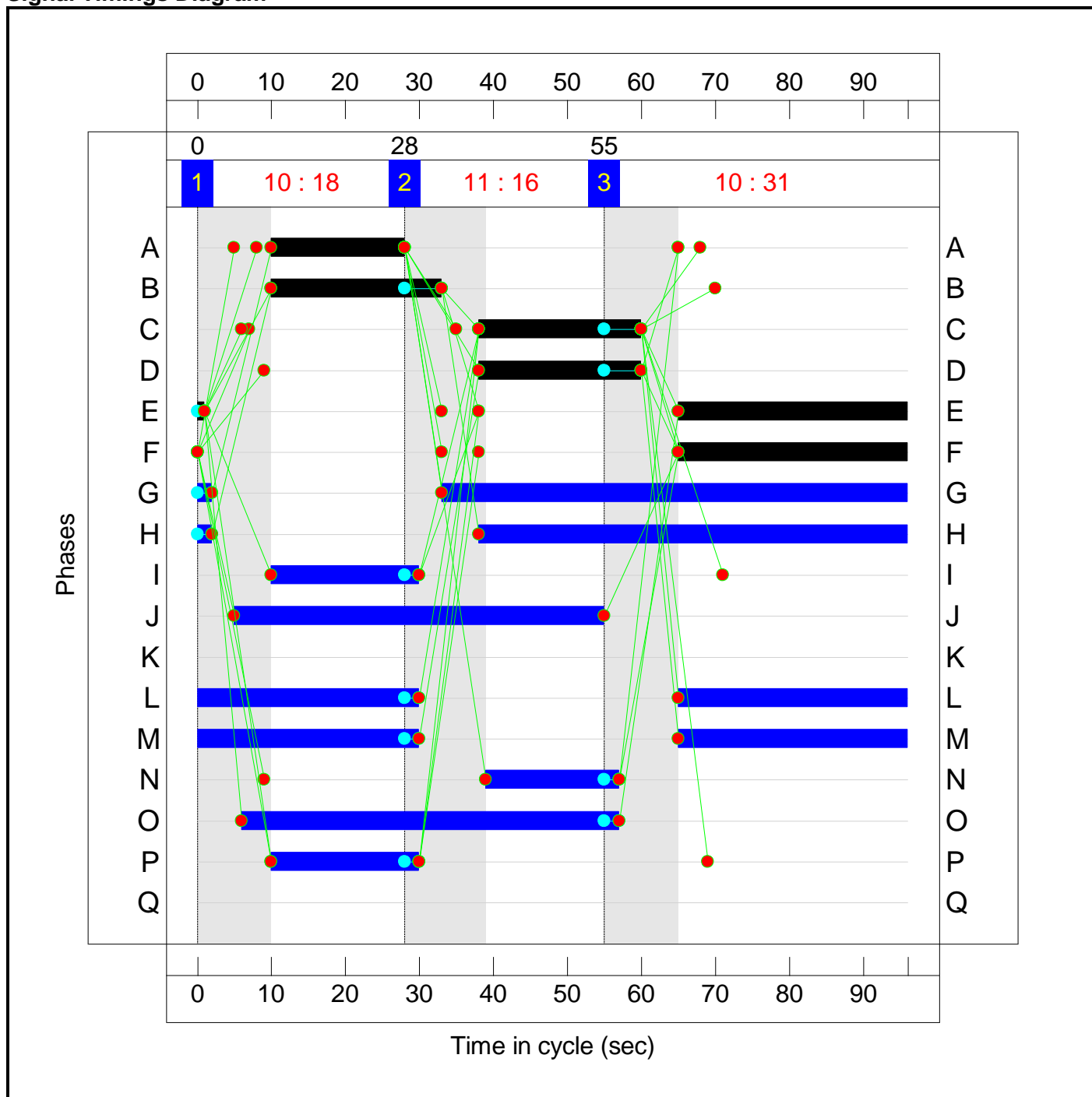
Stage Sequence Diagram



Stage Timings

| Stage | 1 | 2 | 3 |
|--------------|----|----|----|
| Duration | 18 | 16 | 31 |
| Change Point | 0 | 28 | 55 |

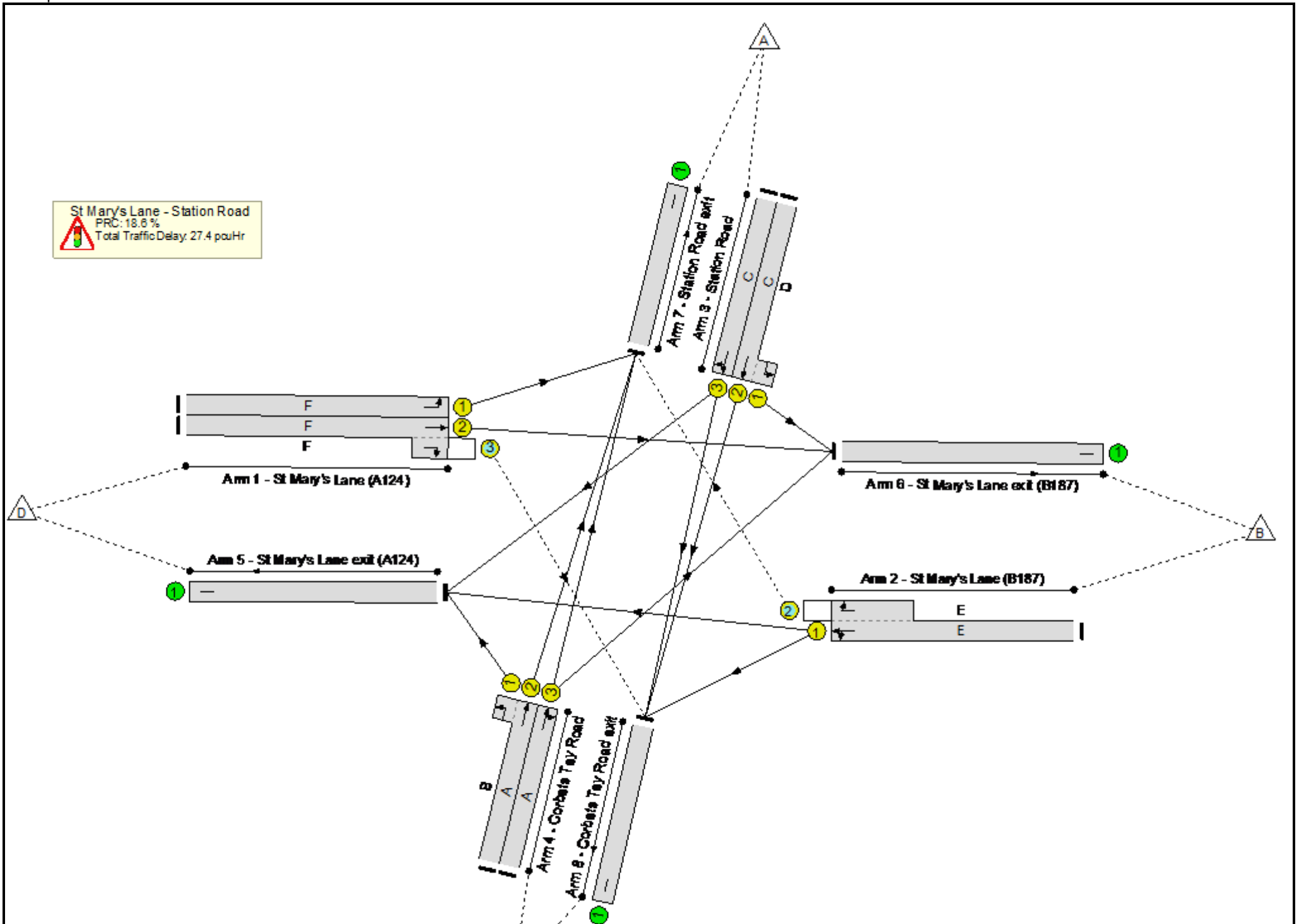
Signal Timings Diagram



Full Input Data And Results

Full Input Data And Results
Network Layout 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 | - | - | | - | - | - | - | - | - | 75.9% |
| St Mary's Lane - Station Road | - | - | N/A | - | - | | - | - | - | - | - | - | 75.9% |
| 1/1 | St Mary's Lane (A124) Left | U | N/A | N/A | F | | 1 | 31 | - | 457 | 1806 | 602 | 75.9% |
| 1/2+1/3 | St Mary's Lane (A124) Ahead Right | U+O | N/A | N/A | F | | 1 | 31 | - | 325 | 1915:1915 | 574+85 | 49.3 : 49.3% |
| 2/1+2/2 | St Mary's Lane (B187) Ahead Right Left | U+O | N/A | N/A | E | | 1 | 32 | - | 325 | 1916:1650 | 568+134 | 46.1 : 46.9% |
| 3/2+3/1 | Station Road Left Ahead | U | N/A | N/A | C D | | 1 | 22 | - | 359 | 1925:1772 | 418+58 | 75.4 : 75.4% |
| 3/3 | Station Road Right Ahead | U | N/A | N/A | C | | 1 | 22 | - | 301 | 1767 | 423 | 71.1% |
| 4/2+4/1 | Corbets Tey Road Left Ahead | U | N/A | N/A | A B | | 1 | 18:23 | - | 291 | 1915:1804 | 321+82 | 72.4 : 72.4% |
| 4/3 | Corbets Tey Road Right Ahead | U | N/A | N/A | A | | 1 | 18 | - | 254 | 1864 | 369 | 68.9% |
| 5/1 | St Mary's Lane exit (A124) | U | N/A | N/A | - | | - | - | - | 534 | Inf | Inf | 0.0% |
| 6/1 | St Mary's Lane exit (B187) | U | N/A | N/A | - | | - | - | - | 432 | Inf | Inf | 0.0% |
| 7/1 | Station Road exit | U | N/A | N/A | - | | - | - | - | 901 | Inf | Inf | 0.0% |
| 8/1 | Corbets Tey Road exit | U | N/A | N/A | - | | - | - | - | 445 | Inf | Inf | 0.0% |

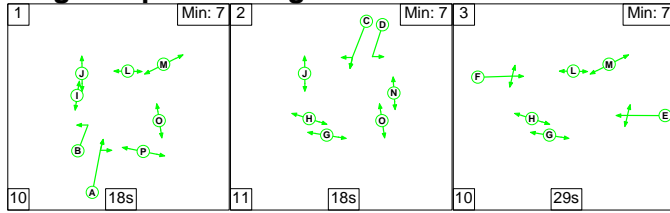
Full Input Data And Results

| 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 | - | - | 104 | 0 | 1 | 19.5 | 7.5 | 0.4 | 27.4 | - | - | - | - |
| St Mary's Lane - Station Road | - | - | 104 | 0 | 1 | 19.5 | 7.5 | 0.4 | 27.4 | - | - | - | - |
| 1/1 | 457 | 457 | - | - | - | 3.6 | 1.5 | - | 5.2 | 40.7 | 10.8 | 1.5 | 12.3 |
| 1/2+1/3 | 325 | 325 | 42 | 0 | 0 | 2.3 | 0.5 | 0.1 | 2.8 | 31.1 | 6.4 | 0.5 | 6.9 |
| 2/1+2/2 | 325 | 325 | 62 | 0 | 1 | 2.1 | 0.4 | 0.4 | 2.9 | 32.2 | 5.2 | 0.4 | 5.7 |
| 3/2+3/1 | 359 | 359 | - | - | - | 3.3 | 1.5 | - | 4.8 | 48.4 | 8.5 | 1.5 | 10.0 |
| 3/3 | 301 | 301 | - | - | - | 2.8 | 1.2 | - | 4.0 | 47.9 | 7.3 | 1.2 | 8.5 |
| 4/2+4/1 | 291 | 291 | - | - | - | 2.8 | 1.3 | - | 4.1 | 50.5 | 6.8 | 1.3 | 8.0 |
| 4/3 | 254 | 254 | - | - | - | 2.5 | 1.1 | - | 3.6 | 51.1 | 6.3 | 1.1 | 7.4 |
| 5/1 | 534 | 534 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 6/1 | 432 | 432 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 7/1 | 901 | 901 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 8/1 | 445 | 445 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| C1 | | | PRC for Signalled Lanes (%): | 18.6 | Total Delay for Signalled Lanes (pcuHr): | | | 27.40 | Cycle Time (s): 96 | | | | |
| | | | PRC Over All Lanes (%): | 18.6 | Total Delay Over All Lanes(pcuHr): | | | 27.40 | | | | | |

Full Input Data And Results

Scenario 6: '2030 + LTC PM' (FG8: 'Do Something 2030 + LTC PM', Plan 1: 'Network Control Plan 1')

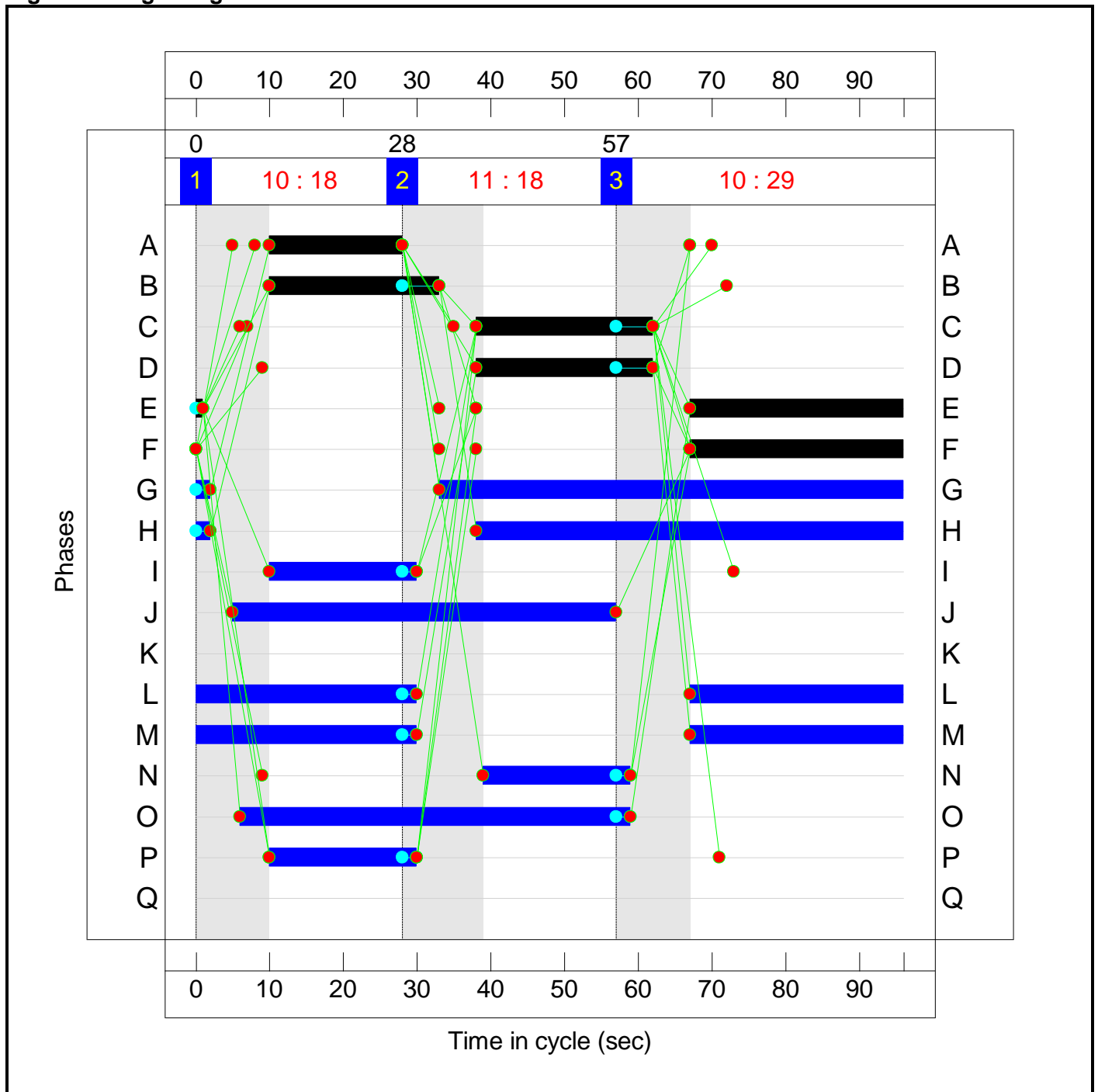
Stage Sequence Diagram



Stage Timings

| Stage | 1 | 2 | 3 |
|--------------|----|----|----|
| Duration | 18 | 18 | 29 |
| Change Point | 0 | 28 | 57 |

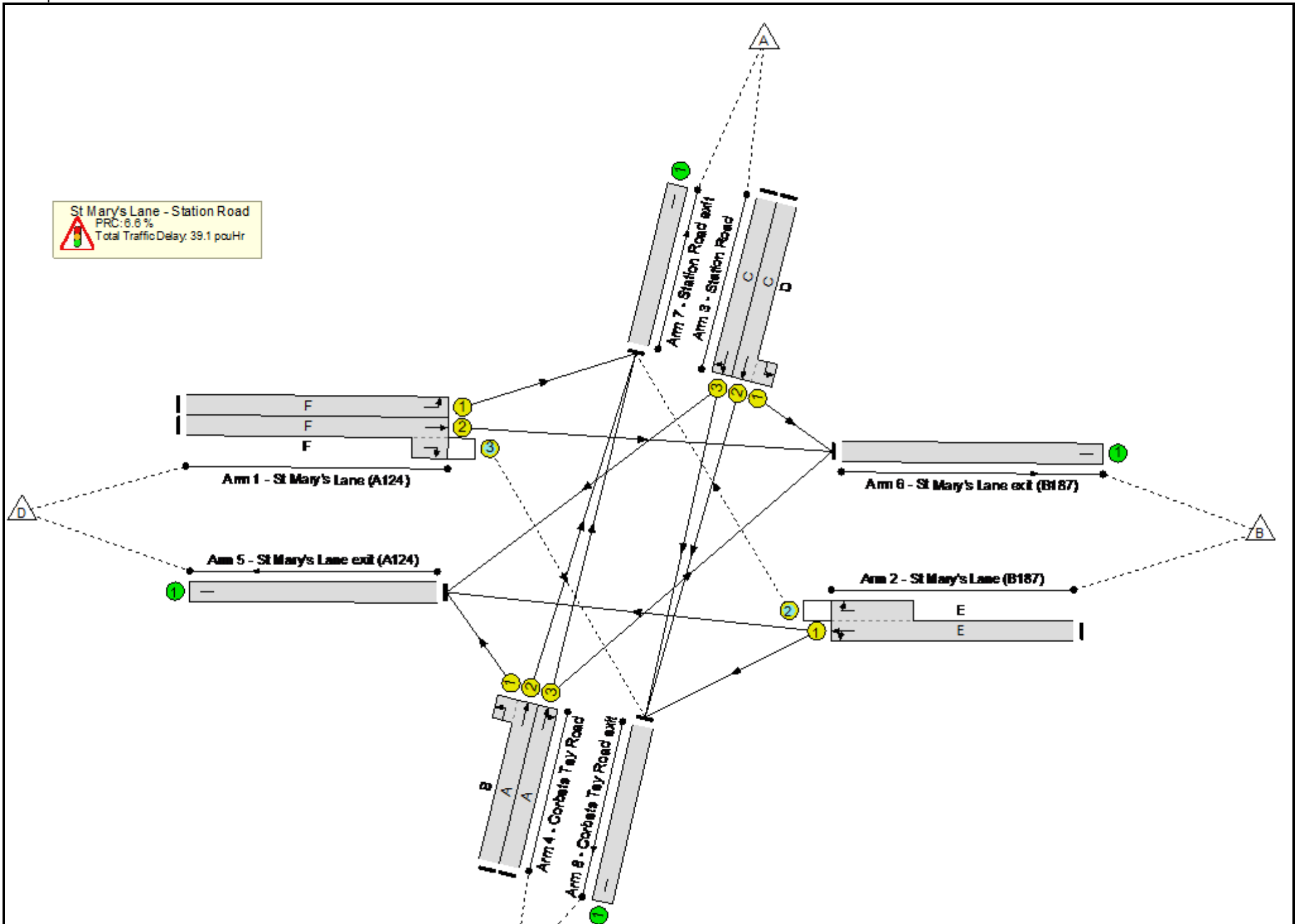
Signal Timings Diagram



Full Input Data And Results

Full Input Data And Results
Network Layout 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 | - | - | | - | - | - | - | - | - | 84.4% |
| St Mary's Lane - Station Road | - | - | N/A | - | - | | - | - | - | - | - | - | 84.4% |
| 1/1 | St Mary's Lane (A124) Left | U | N/A | N/A | F | | 1 | 29 | - | 421 | 1806 | 564 | 74.6% |
| 1/2+1/3 | St Mary's Lane (A124) Ahead Right | U+O | N/A | N/A | F | | 1 | 29 | - | 494 | 1915:1915 | 526+97 | 79.3 : 79.3% |
| 2/1+2/2 | St Mary's Lane (B187) Ahead Right Left | U+O | N/A | N/A | E | | 1 | 30 | - | 505 | 1906:1650 | 537+115 | 76.0 : 84.4% |
| 3/2+3/1 | Station Road Left Ahead | U | N/A | N/A | C D | | 1 | 24 | - | 431 | 1925:1772 | 409+113 | 82.7 : 82.7% |
| 3/3 | Station Road Right Ahead | U | N/A | N/A | C | | 1 | 24 | - | 367 | 1767 | 460 | 79.8% |
| 4/2+4/1 | Corbets Tey Road Left Ahead | U | N/A | N/A | A B | | 1 | 18:23 | - | 341 | 1915:1804 | 294+115 | 83.2 : 83.2% |
| 4/3 | Corbets Tey Road Right Ahead | U | N/A | N/A | A | | 1 | 18 | - | 289 | 1829 | 362 | 79.8% |
| 5/1 | St Mary's Lane exit (A124) | U | N/A | N/A | - | | - | - | - | 714 | Inf | Inf | 0.0% |
| 6/1 | St Mary's Lane exit (B187) | U | N/A | N/A | - | | - | - | - | 717 | Inf | Inf | 0.0% |
| 7/1 | Station Road exit | U | N/A | N/A | - | | - | - | - | 845 | Inf | Inf | 0.0% |
| 8/1 | Corbets Tey Road exit | U | N/A | N/A | - | | - | - | - | 572 | Inf | Inf | 0.0% |

